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Sexual and reproductive health and rights: Agreements and Disagreements.

A background document of the evidence base

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WORKING GROUP ON SEXUAL AND REPRODUCTIVE HEALTH AND RIGHTS

2016

Sexual and Reproductive Health and Rights

AGREEMENTS AND DISAGREEMENTS

A BACKGROUND DOCUMENT OF THE EVIDENCE BASE

SEVENTH EDITION

DECEMBER 2016

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The seventh edition of the book has updated chapter 3.3 Priority Area 3: Eliminating unsafe abortion.

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1. Introduction: Purpose and Scope of the Background Document

Contributor: Siri Tellier
Updated July 2016

1.1 PURPOSE

In 2010 the Danish International Development Agency (Danida), commissioned the Danish Research Network for International Health, ENRECA, to provide a policy brief with scientific evidence for issues in the field of Sexual and Reproductive Health and Rights (SRHR).

SRHR is a topic which has received much attention in Danida assistance (Danida 2006), and the policy brief was intended to help Danida staff, as well as members of parliament and others who wanted a strengthened evidence base for their own work on programme, policy and advocacy. This was seen as particularly important in preparation for the discussions on the post-2015 Millennium Development Goals.

The 'Working Group on SRHR' took on the task. This working group is composed of members from the five Danish universities teaching and undertaking SRHR research, as well as from Non-Governmental Organisations, Danida and UNFPA. ENRECA has since been discontinued, but the working group continues.

Danida has utilized the document for the purposes mentioned above. In addition, the contributors noted that it filled a gap in existing literature for up-to-date and easily accessible evidence for their own teaching and research, at MA and PhD levels. An abbreviated version has also been produced, for use at BA and summer school levels. Beyond that, the documents have been used for staff and media briefing, advocacy and fund raising. The newest version is available at the working group website, Sexual and Reproductive Health and Rights.

1.2 SCOPE AND APPROACH

The document is primarily intended for an audience interested in global health. Within that, the field of SRHR can be approached in many ways. The working group has chosen the following:

1. *Agreements and disagreements*: Given the rapidly evolving and often political nature of SRHR, the document refers to 'conventional wisdom' in terms of global consensus documents and mainstream academic literature. However, it also attempts to present uncertainties, data gaps and divergent views.

2. *Linkages between SRHR, human rights, gender and culture*: The document is written on the understanding that, perhaps more than for any other field of health, SRHR are closely related to human rights, culture and gender (Cook, Dickens et al. 2003). SRHR are essential preconditions for gender equity and human rights, and conversely, gender equity has a strong bearing on SRHR (Glasier, Gulmezoglu et al. 2006, WHO 2008). The document therefore makes repeated reference to human rights, both the civil right to self-determination and the socio-economic right to access to information and services. The latter are generally assessed with respect to their *Availability, Accessibility, Acceptability and Quality* (AAAQ) (UN 2000, Erdman and Cook 2008, Council 2012, UNFPA & Center for Rep Rights 2013, IMR 2014, OHCHR 2015).

3. An attempt is to take a *multi-disciplinary approach*, reflecting both the topic and perspectives of members of the working group, which include health sciences, gender studies, anthropology, demography, human rights and political science.

4. The focus is on the 6 billion people living in *low and middle-income countries* (L/MIC), but reference is also made to the 1 billion living in high-income countries (HIC) (see Annex 2 for terminology).

5. The background document is a *work in progress*. The working group welcomes corrections, contributions, and suggestions for future editions. It is available free and on-line as an open educational resource. Each year only a selection of chapters are updated. For the July 2016 edition, chapters 1-2, 3.5 and 4.7 have been revised. For the time being, we refer to the issue of SRHR in emergencies through a link to another Open Educational Resource (OER)(Tellier and Roche 2016).

2. What are SRHR? The Actors and the Concept

Contributors: Siri Tellier, Lene Terp
Updated July 2016

Reproductive health has characteristics which distinguish it from other areas of health.

Thus, Cook et al note that, more than any other field of health, it is considered to be central to cultural identity and survival. At the societal level, leaders (not only health practitioners) have instituted strong norms for reproductive behaviour and values. For example, all the major religions identify fertility and faithfulness as ideal female characteristics (Cook, Dickens et al. 2003). States often see population as a crucial factor in political and economic strength, taking great interest in influencing size and growth, either through voluntary or coercive measures.

At the level of inter-personal relations, reproductive health may involve not only two, but potentially three people – mother, father and child (Clévenot, Séd et al. 1987: 569, 571-577, Vallet 1994: 110, UN 2002, WHO 2004).

Therefore, it is perhaps not surprising that politics and 'culture' impact the health response to reproductive health (Gruskin 2004), in terms of the actors, the concept, and the major areas of disagreement. Human rights issues relate both to relations between State/individual, but also to interpersonal relationships.

2.1 The Actors – A Brief Selection

Civil society organisations have historically had a pioneering role in sexual and reproductive health and rights (SRHR). This includes providing services at the national level where governments were not ready to do so (for example access to contraception and safe abortion), as well as advocating for a rights perspective. In Bombay in 1952, many national organisations joined in the International Planned Parenthood Federation (IPPF), which now has member associations in close to 200 countries. Other early global advocates for family planning include Marie Stopes. NGOs with a strong advocacy focus, either on SRHR, or on gender more generally, include the International Women's Health Coalition (IWHC), Development Alternatives with Women for a New Era (DAWN), the Center for Reproductive Rights (CRR), as well as regional organisations and networks of organisations such as Asia Pacific resource and research centre for womem (ARROW) or the European NGOs for sexual and reproductivre health and rights, population and development EuroNGOs). They also include organisations with a strong research focus such as Population Council and Guttmacher Institute. In recognition of the role of civil society, Danida, together with like-minded donors, has established a special fund supporting NGOs working on controversial SRHR issues:, Amplify Change.

Many NGOs have recognized the United Nations (UN) as a useful forum for dialogue with their own governments, providing an opportunity to hold them accountable in international fora. Many NGOs have strategically engaged in UN international consensus processes, for example being accredited with consultative status in the Economic and Social Council (ECOSOC) (UN 2013), and contributing actively to human rights review processes such as the Universal Review Procedure (UPR). The International Conference on Population and Development in 1994 was a pioneer in this respect, as the Chair invited NGOs to participate more actively than had been the case for previous conferences, setting a precedence for future UN conferences (Sai 2012).

In the UN system, the agency which has SRHR at the core of its mandate is the UN Population Fund (UNFPA) – originally the United Nations Fund for Population Activities. UNFPA is primarily mandated to advocate for policies and initiating and funding programmes. The World Health Organization (WHO) is the

specialized technical agency mandated to develop the evidence base and to propose guidelines, but is not primarily operational. Other UN agencies include the United Nations Children's Fund (UNICEF) with respect to issues affecting children, and – indirectly – youth and maternal health as it affects children. The Joint United Nations Programme on HIV/AIDS (UNAIDS) with its eleven UN co-sponsors deal with HIV/AIDS. UN Women places focus on Gender Based Violence. The UN Population and Statistics Divisions are mandated to assemble data and research related to population, including indicators related to monitoring of the Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs). UNAIDS, together with WHO, are mandated to monitor progress on HIV/AIDS.

Bilateral donors such as the United States (US) and Sweden have played an active role, including initiating the creation of UNFPA in 1969. At the time, family planning and population issues were seen as too sensitive for the existing multilateral organisations such as the WHO, and therefore there was need for a new multilateral organisation. The US government remains a main donor in the field, although with some variation in its support for the global consensus.

Additionally, it may be considered unique to SRHR that a large group of stakeholders hold views that are vehemently at odds with those held by the above-mentioned actors. For example, a number of US based NGOs and legislators have influenced US policy as well as funding and supporting opposition in other countries, including Europe as well as in L/MICs, particularly with regard to opposition to abortion, lesbian, gay, bisexual and transgender (LGBT) rights, and education and services for unmarried persons. Several of them dispute any negative linkages between population and socio-economic development. At times, this has turned to violence, e.g. murder of US doctors who provide abortions. There is little reason to believe that this 'Opposition' is or will become less vehement over time (Glasier, Gulmezoglu et al. 2006, Catholics for Choice 2012). There is also great variation between states in their support for individual components reproductive health. We mention some of the main areas of disagreement in chapter 2.3.

2.2 THE CONCEPT

The concept of 'SRHR' has evolved over time, both in terms of what it includes, and what the response should be. It is perhaps helpful to be aware of the basics of that history in order to better understand the continuing source of those disagreements.

A basic theme is the possible disharmony between what States and individuals believe to be the ideal number of children. That is, it becomes a human rights discourse.

Human rights are often classified in simple terms, building on the concepts of 'liberty, equality and brotherhood':

- the right to self-determination (sometimes called 'blue rights' or 'first generation')
- the right to equal access to information and services (sometimes referred to as 'red rights' or 'second generation'),
- the collective rights (sometimes called 'green rights' or third generation') (Vasak 1977)

Whereas the first two are well established in international human rights, the third has proven more difficult to codify and implement.

The issue of disharmony between the goals of States and individuals, as well as the three types of human rights, are well reflected in human rights related to SRHR.

Concerns about population size and growth are as old as the history of human society, the population census in the year 0 being just one such example. Much of the concern was centred on whether or not individual couples should make their own decisions about child bearing, or whether the State should intervene, deciding who should bear children and how many they should bear, and either promoting or restricting access to contraception for individuals or groups. For example, France only legalized contraception in 1967 after long decades of concern about slow population growth.

About a century ago, some civil society organisations began to advocate for a wider right to access to contraception, sometimes motivated by eugenic considerations (that certain 'undesirable' groups should not

procreate). That right became increasingly meaningful, as modern, effective female methods such as the Intra-uterine device or hormonal methods were developed in the 1960s.

In the 1960s, population began to grow rapidly in countries outside the industrialised world, and the discourse, both nationally and internationally, began to focus on 'population control' in those countries. Governments in countries such as India or Ghana began family planning programmes after a population census indicated rapid growth. Sometimes these programmes were forceful, e.g. in India, where they contributed to the fall of the government of Indira Gandhi.

On the other hand, inter-governmental consensus documents began to reflect reproductive rights. In 1979, the Convention on the Elimination of all Forms of Discrimination Against Women became the first binding human rights treaty to formulate what is considered the right to family planning, namely that women and men have:*(t)he same rights to decide freely and responsibly on the number and spacing of their children and to have access to the information, education and means to enable them to exercise these rights ((UN).* This also means a rejection of state intervention to force people to have either more or fewer children than they want.

Notably, this right refers both to the blue ('freely') the red ('access') and the green rights ('responsibly').

Meanwhile, the concept began to broaden. In 1985 an article with the title: where is the M in MCH? drew attention to the fact that many so-called Maternal and Child Health programmes (MCH) actually paid very little attention to maternal issues (Rosenfield and Maine 1985). The issue of HIV/AIDS in the 1980s brought another focus of attention. Staff at WHO coined the term 'Reproductive Health' as an unofficial working definition used to describe a broad, life course health approach, going beyond vertical family planning programmes. However, the concept was still considered too sensitive for official fora such as WHO governing bodies (Singh 2009).

In September 1994, the International Conference on Population and Development (ICPD) was convened, and delegations from 179 UN member states adopted the ICPD Programme of Action by consensus (UN 2013).

The ICPD Programme of Action provides a definition of 'reproductive health':

> *"Reproductive health is 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 to its functions and processes. Reproductive health therefore implies that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so. Implicit in this last condition are the right of men and women to be informed and to have access to safe, effective, affordable and acceptable methods of family planning of their choice, as well as other methods of their choice for regulation of fertility which are not against the law, and the right of access to appropriate health-care services that will enable women to go safely through pregnancy and childbirth and provide couples with the best chance of having a healthy infant. In line with the above definition of reproductive health, reproductive health care is defined as the constellation of methods, techniques and services that contribute to reproductive health and well-being by preventing and solving reproductive health problems. It 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 diseases" (UN 1994: 7.2).*

The definition refers to 'reproductive health', but includes many references to 'rights' (e.g. access to family planning, or that people are 'able to have a safe and satisfying sex life'). Some delegations at ICPD began referring to 'SRHR'. In simplified form, the components are generally seen to include:

- Reproductive health – physical health of the reproductive system throughout the life cycle
- Sexual health – health of the sexual function
- Reproductive rights – the right to decide on the number of children
- Sexual rights – the right to decide on whether, when, and with whom to have sex

(See Annex 6 for a detailed discussion).

The adopted definition has now been incorporated in numerous regional and national plans. For example, the 'Maputo Declaration and Plan of Action' in 2006 contains most of the elements of SRHR as defined above

(African Union 2006). Many analyses and guidelines have been established to translate these general human rights principles into practical policy and programmatic approaches both the 'blue' right to self-determination and the 'red' right to information and services. Services are generally assessed with respect to their *Availability, Accessibility, Acceptability and Quality* (AAAQ) (UN 2000, Erdman and Cook 2008, Council 2012, UNFPA & Center for Rep Rights 2013, IMR 2014, OHCHR 2015).

In 2000 the Millennium Summit produced the *Millennium Declaration*, a general statement of intent to eliminate poverty. The task of producing quantitative time bound goals was delegated to an Inter-Agency Expert Group (IAEG). During the course of 2001, the IAEG developed the Millennium Development Goals, with targets and indicators, as a monitoring framework for the Declaration. The framework picked up most of the quantitative, time-bound targets from the ICPD, such as those referring to maternal health and mortality (MDG5), child and infant mortality (MDG4) as well as the indicator of 'contraceptive prevalence rate', somewhat illogically placed under MDG6 (dealing with AIDS, TB and malaria). The only ICPD target left out was the one which proposed 'universal access to reproductive health'.

At the 2005 Summit, which reviewed progress on the MDGs, the UN Secretary-General submitted a recommendation to include four additional targets, including Target 5B: *'Achieve, by 2015, universal access to reproductive health*'. The 2007 UN General Assembly adopted the report, including the indicators: contraceptive prevalence rate, adolescent birth rate, antenatal care coverage and unmet need for family planning. Thus, reproductive health was added only half way through the MDGs, and it took further time for it to be integrated into organisational plans. Stakeholders note the negative consequences this has had for SRHR (Gillespie 2009).

The process to produce the Sustainable Development Goals has been underway for several years. The 17 SDGs and the associated 169 targets were adopted by the UN General Assembly in September 2015, and the associated indicators by the inter agency and expert working group in March 2016 (UN 2015, UN 2016). As this chapter was written, the indicators were yet to be adopted by the ECOSOC and General Assembly in September 2016.

Under SDG 3 (Ensure healthy lives and promote well-being for all at all ages) several targets and indicators are relevant for SRHR, including:

'3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births
3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births
3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases
3.7 By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes'

Under SDG 5, which deals with gender, the following are particularly relevant:

5.2 Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation
5.3 Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation
5.6 Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences

In addition, under SDG 16:

16.9 By 2030, provide legal identity for all, including birth registration

Observers have noted that in the MDGs 3 out of 8 goals were directly related to health, whereas in the SDGs it is only one goal out of 17. There is concern that this may lead to less commitment to health. However, specifically for SRHR, for the first time sexual and reproductive health are mentioned, both as a health, and as a self-determination goal. Reproductive rights are mentioned, but sexual rights are omitted. It is notable that the ICPD PoA and its review conference outcomes are still referenced in the SDGs, and indeed the ICPD has been extended indefinitely. Thus, in the following frequent reference will be made to the guidance of the ICPD PoA.

In March 2016, another step was taken as the Committee on Economic, Social and Cultural rights adopted General Comment 22, which establishes sexual and reproductive health as a human right, and gives guidelines for their provision, according to the usual categories of availability, accessibility, acceptability and quality (AAAQ). It pays some attention to sexual rights in the context of non-discrimination, e.g. noting that *'Criminalisation of sex between consenting adults of same gender or expression of one's gender identity is a clear violation of human rights*' (OHCHR Committee on Economic 2016, 4 March). In June 2016 another step was taken by the Human Rights Council as it decided '*to appoint, for a period of three years, an Independent Expert on protection against violence and discrimination based on sexual orientation and gender identity* (UN 2016)

2.3 Main areas of disagreement.

Much progress has been made in arriving at international consensus on the concept of SRHR. However, many questions remain hotly debated, and are explored below, including the deep suspicion perception that certain terms are 'code words' for something else.

Do 'reproductive health and rights' include abortion?

Abortion was the major point of controversy at the 1994 ICPD. As noted above, the SDGs still refer to the compromise agreement reached at the conference. Those texts provide that abortion should not be promoted as a means of family planning, that where abortion is not illegal it should be safe, and (added in the review conference in 1999) that states should provide safe services to the extent it is not illegal. The inelegant text here reflects that the Holy See stated that abortion can never be 'legal', it can only be 'not illegal'. Given the great variation in national laws, many observers conclude that at this point there is no universal 'right to abortion'. However, given that only 6 countries completely outlaw abortion, there is still a task to ensure that countries do provide services to the full extent of the law, in accordance with the AAAQ principles.

The main opponents of legalizing abortion at the ICPD were the Holy See and several countries with a Catholic majority, as well as a few countries with a Muslim majority. However, abortion is also a major political issue in the US. Although the US was a strong supporter of the ICPD in 1994, its position over the decades since the 1980s has depended on the political party in power.

The discussion has at times become rather cryptic. The ICPD PoA specifies the target '*…the provision of universal access to reproductive health services, including family planning and sexual health…*' by 2015. Some national delegations at international consensus processes (especially from the US and Europe) have seen the term 'reproductive health services' to be a code word for abortion, and have instead insisted on the term 'reproductive health care' which apparently is seen not to include abortion (see also Annex 6).[1] Other code words are: pro-life (meaning the approach that human life and identity begins at conception and therefore abortion constitutes murder) versus pro-choice (meaning the approach that women should be able to decide on whether or not to have an abortion, at least within certain limits).

Avoiding this discussion, the SDG wording refers only to access to reproductive health and reproductive rights. More details are given in chapter 3.3.

What is included in the concept 'sexual rights'?

The term SRHR was coined by some delegations participating in the ICPD in 1994. The ICPD PoA emphasizes the aspect of rights, especially women's rights and this is followed up in the Beijing Platform for Action, focusing on women's right to decide on issues related to their sexuality.

However, the concept can be taken more broadly to refer to whether or not individuals can decide when, and with whom to have sexual relations. This includes e.g. different sexual orientations, acceptability of sex outside marriage, whether there should be a minimum age for the initiation of sexual relations, whether marital rape is considered acceptable, as well as issues related to sex between HIV/AIDS discordant couples. One of the 'code words' here is 'gender': the Catholic Church objects to this term as not reflecting natural difference between sexes.

The issue generating the most debate is that of sexual orientation. Given that national laws range between extensive rights for LGBT individuals and about 5 countries that maintain the death penalty for homosexual acts, it is a complex process to arrive at anything which could be considered universal human rights. Recent discussions in the Human Rights Council on sexual orientation may contribute. A number of governments, including Denmark, as well as other actors, including the African Union and NGOs such as IPPF, use the inclusive term SRHR. It does appear in the adopted texts, and the SDGs, as well as many UN organisations, exclude sexual rights (referring instead to sexual and reproductive health and reproductive rights).[2 3] (see chapter 3.4 for more detail).

Population growth: the rights of States versus the rights of individuals

As mentioned above, states often see population size, growth and structure as important for national power and economic growth. Often the focus is on birth rates rather than the other aspects that have an impact (e.g. mortality, migration, measures which affect labour force participation and productivity). There are many examples of states coercing individuals to have either more or less children than they want.

The ICPD gives clear guidance: "*Governmental goals for family planning should be defined in terms of unmet needs for information and services. Demographic goals, while legitimately the subject of government development strategies, should not be imposed on family-planning providers in the form of targets or quotas for the recruitment of clients'. (ICPD para 7.12)*

'Recognizing that the ultimate goal is the improvement of the quality of life of present and future generations, the objective is to facilitate the demographic transition as soon as possible in countries where there is an imbalance between demographic rates and social, economic and environmental goals, while fully respecting human rights (ICPD para 6.3).

'In the exercise of this right, they should take into account the needs of their living and future children and their responsibilities towards the community (ICPD para 7.3).

Despite frequent reference to demographic issues in both the ICPD and environmental conferences, they are absent in the SDGs – a reflection of the extreme controversy they generate. However, demographic issues are often introduced in a coded manner, and at times demographically unfounded, into public discourse surrounding reproductive health. See chapters 4.4-6 below for more detail.

The overall debate on the concept of SRHR

Some of this discussion suggests that sexual health should in fact be the umbrella concept, with reproductive health as a sub-component, and in turn with maternal health as a sub-component of reproductive health. This is given the fact that sexual health is a lifelong issue, also outside the reproductive age. This approach criticizes the lack of logic in the 2015 MDGs, where MDG5 originally (2001) dealt only with maternal health, and where reproductive health was added only in 2008, despite opposition. The introduction of the term 'comprehensive sexuality education' reflects both such a paradigm shift, but also the resistance to it.

As will be noted from the above, SRHR can be controversial, even at the conceptual level. Depending on the situation, and in particular at country level, at times the most productive approach may be pragmatic, addressing programmatic priorities rather than discussing the conceptual content.

Therefore, the next chapter structures the discussion along *programmatic* priorities, using the 2004 WHO reproductive health strategy. The strategy presents five priority programmatic areas from ICPD PoA (WHO 2004), referring to health *care* only. Although it does not reflect all recent developments, is quite equivocal on sexual health and does not refer to sexual rights, we will use that strategy to structure the discussion. Annex 7 presents UNFPA's listing of programmatic priorities, as a further example of how this strategy is applied.

The multi-stakeholder 'Global strategy for women's, children's and adolescents' health' was launched in 2015, and gives a road map for the 2010 initiative 'every woman, every child'. Significantly, it includes adolescents as a visible focus. It also takes a multi-sectoral approach, including risk factors related to environmental factors (UN 2015)

In summary

- *SRHR, human rights and gender culture are closely related. Relevant strategies need to recognize this connection.*
- *The term 'reproductive health' has received much attention since the ICPD in 1994. Much has been achieved in agreement on core concepts of a broad, rights based view. However, the term 'Reproductive Health' often refers to a concept which is less comprehensive than foreseen in 1994. In particular, the issues of sexual health and rights are still not fully reflected in international consensus documents, and the term SRHR is not universally utilized. Recent initiatives, e.g. in the Human Rights Council may help to change that.*
- *The original MDGs did not include reproductive health, and it was only in 2008 that there was international consensus on the idea that Reproductive Health is part of the MDGs. The SDGs agreed in September 2015 do include SRH and RR, both in the context of health and self-determination.*
- *In some contexts, it may be important to continue clarification, but in others it may be more productive for Global Health actors to focus on public health programmatic priorities.*

3. Situation and Response – Progress over the past Two Decades

Updated July 2016

The following chapter outlines the situation (trends, determinants and consequences), the response (international guidance, national programme response and progress) as well as quandaries, knowledge gaps and research priorities, as relevant.

We will structure according to five priority areas for health *care*, as outlined in the ICPD PoA from 1994, and structured in the WHO strategy from 2004:

- 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, RTIs, cervical cancers and other gynaecological morbidities
- Promoting sexual health

Overall, reproductive ill health accounts for 18% of the global burden of disease (32% for women of reproductive age and 14% for men). Complications from pregnancy and childbirth are the second leading cause of death among young women in the developing world (WHO 2016) . WHO identifies 'unsafe sex' as the second most important risk factor for disability and death in the world's poorest communities and the ninth most important in developed countries (WHO 2004, PAHO 2007).

3.1 Priority Area 1: Improving Antenatal, Delivery, Postpartum and Newborn Care

Contributor: Stine Lund
Updated July 2014

Terminology

Women of reproductive age usually refer to women aged 15-49 (abortion related metrics generally refer to women aged 15-44).

A *maternal death* is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

The *maternal mortality ratio (MMR)* is the number of maternal deaths per 100 000 live births.

A pregnancy-related death is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the cause of death. This term was introduced to facilitate the identification of maternal deaths in circumstances in which cause of death attribution is inadequate (WHO 2011).

Under-5 mortality rate is the probability of a child born in a specific year or period dying before reaching the age of five, if subject to age-specific mortality rates of that period. Strictly speaking, this is not a rate (i.e. the number of deaths divided by the number of population at risk during a certain period of time) but rather a probability of death (derived from a life table and expressed as rate per 1,000 live births).

Infant mortality rate is the number of deaths to infants under one year per 1 000 live births in a given year or period.

Neonatal mortality rate: Number of deaths during the first 28 completed days of life per 1 000 live births in a given year or period. Neonatal mortality may be subdivided into *early neonatal deaths* occurring during the first seven completed days of life, and *late neonatal deaths*, occurring after the seventh day but before the 28 completed days of life.

Stillbirth: a baby born with no signs of life at or after 28 weeks' gestation

Miscarriage: spontaneous termination of pregnancy, prior to viability (e.g. 28 weeks)

Perinatal period: The perinatal period is the period extending from the gestational age at which the foetus attains the weight of approximately 500g (equivalent to 22 completed weeks of gestation) to the end of the seventh completed day of life. As can be seen, the definitions of 'viability' are at times inconsistent.

Perinatal death: A perinatal death is defined as a composite of either a stillbirth or early neonatal death. A stillbirth is defined as any delivery in the third trimester (greater than or equal to 1000 g birth weight or greater than or equal to 28 weeks of gestation) in which no signs of life (breathing, crying, heartbeat, movement) were evident.

Perinatal mortality rate: Number of perinatal deaths per thousand total births (live births and stillbirths). Sometimes only early neonatal deaths are included.

See Annex 2 for more details on terminology.

Situation – trends

In 1985, attention was drawn to the fact that the 'maternal and child health programmes' within primary health programmes (PHC) so far had limited focus on the 'maternal' aspect (Rosenfield and Maine 1985). The first 'Safe Motherhood' conference was organized in 1987.

One identified challenge was the absence of reliable data on maternal mortality, and this remains a major problem in establishing epidemiology (Yazbeck 2007, Graham, Ahmed et al. 2008). This is both because the population numbers involved to arrive at comparable estimates are very large (given that the ratio is measured per 100 000 live births) and because the attribution of death to maternal causes can be complicated.

Beginning in 1996, UN organisations sponsored the development of estimates for maternal mortality for each country for 1990, 1995, 2000, 2005, 2008, 2010 and now 2013 gradually expanding the scientific range of experts involved and the methods used.

The conclusions have evolved rapidly in recent years – the number of maternal deaths (estimated at 536 000) had not decreased between 1990 and 2007. However, since 2009, estimates are increasingly optimistic. The most recent estimates by WHO, UNFPA, UNICEF and the World Bank are that the global number of deaths was around 289 000 in 2013, and that this represents a 45% reduction since 1990 (WHO 2014). Out of that number, around 2 000 deaths (1%) are in more developed regions, the remainder in less developed regions (WHO 2012). This translates into estimates of a maternal mortality ratio (MMR) which has decreased from around 400/100 000 to around 210/100 000 live births (the birth cohort over the period has stayed rather constant at 130-140 million live births per year (UN 2011)).

Table 3.1.1	
Number of maternal deaths globally	
IHME	292,982 (261,017-327,792) in 2013 down from 376,034 (343,483-407,574) in 1990
WHO	289,000 in 2013 down from 523,000 in 1990
Global maternal mortality ratio (MMR) in 2013	
IHME	209 maternal deaths/100,000 live births.
WHO	210 maternal deaths/100,000 live births (160-290).
MMR range between countries from highest to lowest	
IHME	South Sudan (956.8); Iceland (2.4).
WHO	Sierra Leone (1100; 580-2000); Israel (2;1-4).
Global annual rate of decline (MMR)	
IHME	0.3% from 1990-2003; 2.7% from 2003-2013
WHO	2.6%
Maternal mortality by age	
IHME	Highest MMR among women 40-49 years old (in both 1990 and 2013); lowest MMR among women 20-29 year olds (in both 1990 and 2013); 9.5 % of all maternal deaths are among adolescents aged 15-19, an age group with an MMR only slightly higher than that of the 20-24 and 25-29 year old age groups.
WHO	-
Timing of deaths	
IHME	On average, nearly a quarter of deaths (24.6%; 24.1-25.2) occurred antepartum; a quarter intrapartum and immediately postpartum (27.7%; 27.1-28.2); a third subacute and delayed postpartum (35.6%; 34.9-36.2); and 12.1% (11.9-12.5) late maternal deaths.
WHO	-
Cause of death	
IHME	Causes of maternal death vary significantly by country and income level. In high-income countries, the distribution of causes has changed, with indirect causes being in 2013 the most common ones. Abortion-related death, which was the most important cause of death in high-income countries in 1990, represented a much smaller proportion in 2013. The most important causes of maternal death (such as other direct, abortion and hemorrhage) in low-income countries did not change significantly between 1990 and 2013 with some differences and important trends by region.
WHO	-
Maternal deaths related to HIV in 2013	
IHME	2070 deaths represent only 0.4% of all maternal deaths worldwide, but 1.5 % of all maternal deaths in sub-Saharan Africa, rising to 6.2% in southern sub-Saharan Africa. The absolute number of HIV-related deaths did not decrease significantly from 1990-2013.
WHO	From 2003-2009, HIV counted for 5.5% of global maternal deaths; the overall proportion of HIV-related maternal deaths was highest in sub-Saharan Africa at 6.4%.
Proportion of maternal deaths due to indirect causes	
IHME	Globally, they increased slightly from 9.1% (8.9-9.4) in 1990 to 10.2% in (10.0-10.5) in 2013.
WHO	From 2003-2009, more than a quarter of deaths (27.5%) were attributable to indirect causes. The proportion of deaths from indirect causes was highest in southern Asia (29.3%) followed by sub-Saharan Africa (28.6%). Indirect causes accounted for nearly a quarter of the maternal deaths in developed regions. Breakdown on indirect causes of maternal death suggests that more than 70% of them are from pre-existing disorders, including HIV, when exacerbated by pregnancy.
Achievement of Millennium Development 5 goal (Decrease of 75% in MMR from 1990)	
IHME	-
WHO	11 countries with high levels of maternal mortality in 1990 have already reached their MDG target; 63 considered to be "making progress"; still, most countries will not achieve this goal.
Greatest burden of maternal mortality	
IHME	-
WHO	10 countries with greatest burden (60% of maternal deaths): India, Nigeria, DRC, Ethiopia, Indonesia, Pakistan, Tanzania, Kenya, China, and Uganda.

Sources: IHME: (Kassebaum, Bertozzi-Villa et al. 2014). WHO: (Say, Chou et al. 2014).

This year, the Institute for Health Metrics and Evaluation (IHME) and the World Health Organization (WHO), UNICEF, UNFPA, World Bank and United Nations published new estimates quantifying the burden of maternal mortality around the world (Kassebaum, Bertozzi-Villa et al. 2014, Say, Chou et al. 2014). While these are estimates and some differences exist between the two reports, the big picture is that maternal mortality continues to decline. Table 3.1.1 shows the major headlines from each of the reports.

Uncertainties remain about the levels. Only a third of countries (representing 15% of births) have well functioning civil registration systems with good attribution of cause of death. The High-level Commission on Information and Accountability for Women's and Children's Health notes these uncertainties, and one of its ten targets is: 'by 2015, all countries have taken significant steps to establish a system for registration of births, deaths and causes of death and have well-functioning health information systems that combine facilities, administrative sources and surveys.'

Thus, until 2009, the conventional wisdom was that there was no progress toward the MDG target of a 75% reduction of maternal mortality between 1990 and 2015. In the last few years the conclusion is that there may be close to 40% reduction. Yet this still falls short of the target.

Furthermore, all estimates confirm that there is great disparity:

- The vast majority of maternal deaths (99%) occur in L/MICs (where 85% of the world population lives, although those countries also account for around 90% of the births)
- Maternal deaths are concentrated in Sub Saharan Africa and Southern Asia which together accounts for 85% of deaths – countries with the highest levels are also the ones with least progress.
- There is great variation *among* countries (e.g. a lifetime risk of maternal death at around 1 in 16 for Somalia, and 1 in 20 300 for Italy) (WHO 2012).
- There is great variation *within* countries, e.g. around 800/100 000 for the poorest quintile, 100/100 000 for the richest in Peru in 2000 (Chowdhury, Botlero et al. 2007)

MDG5 refers to maternal health, that is, not only mortality. Indeed, maternal mortality constitutes only a part of overall maternal health, and is therefore sometimes referred to as the 'tip of the iceberg'. Estimates are that, for every woman who dies, 10-20 times as many women suffer serious injury or illness as a result of pregnancy (UN 2009).

Maternal morbidities are complex with multiple causes and duration ranging from acute to chronic and including obstetric fistula,[4] uterine prolapse,[5] infertility, anaemia, damaged pelvic structure, and chronic infection. There are also indications that mental disease increases, with some studies showing 10-15 percent of women in developed countries, and an even higher percentage in developing countries, experiencing depression during pregnancy or especially after child birth (WHO/UNFPA 2008) (Scherf, Morison et al. 2002, WHO 2004, Glasier, Gulmezoglu et al. 2006, Reichenheim, Zylbersztajn et al. 2009, Hardee, Gay et al. 2012).

Another reason to see maternal deaths as the tip of the iceberg is that the health of mothers is inextricably related to the development of *the foetus, and the health of children*.

For an estimate the 'total iceberg' of pregnancy outcomes, see chapter 3.3.

As implied in the ICPD definition of reproductive health, and further specified in the WHO strategy, priority area 1 includes the health of the newborn, that is, children up to 28 days of age. The last decade has seen an increased recognition of the close association between newborn (neonatal) deaths and maternal health (Lawn, Kerber et al. 2009).

Thus, overall mortality to children under 5 has decreased over the last few decades – from an estimated 12.5 million in 1990 to 8.8 million in 2008 (Black, Cousens et al. 2010, UNICEF 2010, You, Wardlaw et al. 2010) and 7.2 million in 2011 (Lozano, Wang et al. 2011). This constitutes a substantial decrease with the notable exception of sub-Saharan Africa, where the numbers have increased from 4 million in 1990 to 4.4 million in 2008 (UN 2010).

However, most of this progress has been in older children. Of the 7.2 million deaths amongst children under five in 2011 it is estimated that 2.9 were neonatal deaths, and worldwide neonatal death rates have been the slowest to decline over time (Lawn, Cousens et al. 2005, Lozano, Wang et al. 2011). That is, around 40% of all under five mortality occurs in the 28 days of life, with 99% of deaths occurring in L/MICs. Further focus is now placed on early neonatal deaths, which occur in the first week, and even more specifically, to the intrapartum period – within the first 24 hours of life – where estimates are that up to 2.2 million children die (Lozano, Wang et al. 2011, UNFPA 2014).

Until recently, the issue of stillbirths received limited attention, both in international agreements and research. Recent studies indicate that here again there is great disparity, with about 98% occurring in L/MICs, and

concentrated in the intrapartum period. Thus, one review estimates that there are at least 2.65 million stillbirths annually [2.08-3.79]. Numbers vary from 2 per 1000 total births in Finland to more than 40 per 1000 total births in Nigeria. Of the total stillbirths, it is estimated that 1.19 million [0.82-1.97] occur in the intrapartum period. Most intrapartum stillbirths are associated with obstetric emergencies and poor delivery care whereas antepartum stillbirths are associated with maternal infections and fetal growth restriction (Cousens, Blencowe et al. 2011).

Maternal and neonatal mortality reduction remains a challenge and a new analysis of global progress toward achieving MDG 4 and 5 estimates that even with the current positive trends in the reduction of child and maternal mortality few of 137 the developing countries are likely to achieve both the MDG 4 and 5 targets by 2015 (Lozano, Wang et al. 2011).

Situation – Determinants of maternal and neonatal deaths

With respect to the *determinants* of maternal deaths,[6] estimates vary slightly, but all point to about 80% of deaths being due to direct obstetric conditions, that is, particularly events, which take place during childbirth. Estimates from the 2010 MDG report, which in turn are based on WHO estimates are that: haemorrhage accounts for 35%, hypertension 18%, sepsis 8%, abortion and miscarriage 9%, other direct causes such as obstructed labour, complications of anaesthesia or Caesarean section, and ectopic pregnancy lead to 11%. Indirect causes such as malaria, HIV/AIDS, and heart disease result in 18% of deaths (UN 2010).[7] However, these estimates will presumably change with the new estimates for both total maternal deaths (287 000) and abortion related deaths (47 000) as described in chapter 3.3.

When comparing the two newest papers on causes of maternal death (WHO, for 2003-2009; IHME, re-presenting 2013) (Kassebaum, Bertozzi-Villa et al. 2014, Say, Chou et al. 2014) the ranking and number of deaths varies. The papers disagree on the relative burden of the three leading causes, with better agreement on less common causes. They also vary widely on the numbers, albeit for different periods. WHO estimated almost twice as many haemmorhage deaths and 18 times as many HIV deaths as IHME. The most interesting aspect of both estimates is recognition of the growing burden of indirect deaths.

Table 3.1 Causes of maternal health

	IHME (2013) Ranking [estimated deaths]	WHO (2003-2009) Ranking [estimated mean/year]
Hypertensive disorders	1 [1407]	2 [1875]
Indirect causes, excluding HIV	2 [1073]	3 [1463]
Haemorrhage	3 [1058]	1 [2000]
Other direct causes	4 [1030]	4 [1125]
Abortion	5 [942]	5 [863]
Sepsis	6 [796]	6 [725]
Obstructed labour	7 [430]	7 [413]
HIV	8 [9]	8 [163]

The discrepancy in data reflects the diversity – or lack – of information from health systems with different capacities. Going forward, Say et al have called for investment in developing locally owned information to enable countries and communities to tailor interventions to the disparities within countries, targeting their most vulnerable women who bear the highest burden of ill-health and poor outcomes (Say, Chou et al. 2014).

The direct obstetric conditions at times develop rapidly and with little warning – e.g. untreated severe haemorrhage can lead to death in the span of a few hours, yet it is not possible to predict with certainty which pregnancy will lead to haemorrhage. Complications are quite common and occur in both rich and poor countries: WHO estimates around 42% of all pregnancies in rich or poor countries experience complications, and that 15% are potentially life threatening in the absence of emergency obstetric care (Islam and Gerdtham 2006).

The determinants that lead to these obstetric conditions are first of all poor obstetric care.

When examining the direct causes of newborn deaths, most are due to infections (36%), preterm birth (28%), and asphyxia (23%) (Lawn, Cousens et al. 2005). Lui et al found that a slightly higher number of children died due to preterm birth complications (1.078 million) and 0.717 million due to intrapartum complications (Liu,

Johnson et al. 2012). Most perinatal deaths are linked to the conditions, which also determine maternal death and morbidity, namely poor obstetric care. For example, asphyxia is linked to obstructed labour (Black, Cousens et al. 2010).

Similarly, stillbirths relate closely to antenatal and obstetric care. One usually refers to *'fresh'* or intrapartum stillbirth (that is, where the foetus has recently died, generally induced by poor obstetric care) and *'macerated'* or antepartum (where the foetus has died some time before delivery, often caused by poor health of the woman during pregnancy, e.g. maternal infections and fetal growth restrictions).

In sum, efforts to deal with complications in pregnancy and childbirth, particularly skilled attendance at delivery and emergency obstetrical care, could prevent some 74% of maternal deaths (Wagstaff and Claeson 2004). In particular, care in the intrapartum period is critical.

The literature on contextual factors is rather limited, but for example refers to factors related to education, income, and health systems of countries (Alvarez, Gil et al. 2009, Pyone, Sørensen et al. 2012).

Situation – consequences

The *consequences* of maternal death and disability, apart from the effect on the woman herself, are well documented, e.g. a significant body of research indicates that a mother's death or disability raises the risk that her newborn or other children will die before age five (Ronsmans and Graham 2006). There are also studies showing the economic effect (see chapter on cost of investing, and not investing).

Response

As mentioned above, the first 'Safe Motherhood' conference was called in 1987, inspired by the growing concern about maternal mortality. Building on the Primary Health Care approach, with its emphasis on community level response, the recommendation was to undertake large-scale training of traditional birth attendants (TBAs).

However, by the next Safe Motherhood conference in 1997, it was becoming apparent that this training had no measurable effect on maternal mortality ratio, with the reason given that TBAs could not handle the direct obstetric causes of mortality mentioned above (Sibley and Armbruster 1997, Walraven and Weeks 1999). In other words, maternal deaths were not as predictable, preventable, or easily treatable as previously thought. WHO no longer recommended training of TBAs.

On the other hand, some countries had seen great progress; including Egypt, Romania, Bangladesh and China, with Sri Lanka and Malaysia achieving a fifty per cent reduction of MMR within a decade. Attention focused on the reasons for that improvement, linking it also to historical experience of developed countries. The consensus developed up until the 'Women Deliver' conference in 2007 that three strategies were needed to reduce maternal and perinatal mortality: family planning (both to avoid early, late, and closely spaced births, but also to avoid unintended pregnancies which are more likely to result in unsafe abortion), birth attendance by skilled personnel, and access to Emergency Obstetric Care (EmOC) care where complications arose (Adegoke and van den Broek 2009). Because obstetric emergencies cannot be predicted, the presence of a trained health care worker at the time of delivery and rapid access to emergency obstetric care are essential for maternal and newborn survival. Skilled personnel working in an enabling environment can administer interventions to prevent and manage obstetric complications. A skilled birth attendant is by WHO defined as midwives, doctors or nurses who have been educated and trained in the skills needed to manage pregnancies, childbirth and the immediate postnatal period including identification, management and referral of complications in women and newborn.

In particular, the model of the 'three delays' – delay in making the decision to seek care, delay in reaching care, and delay in medical decision and quality care, threw light on the central role of the time factor and access to emergency obstetric care (Thaddeus and Maine 1994).

The MDGs in their present form build on this understanding, and include indicators on family planning and the presence of a skilled attendant at birth (see Annex 4). Despite progress in skilled birth attendance from

55% in 1990 to 65% in 2010 (UN 2012), around a third of all births in L/MICs still occur without a skilled birth attendant, many attended by a TBA, or with no attendant. It is estimated that over the next five years there will be between 130 and 180 million non-SBA births in South Asia and sub-Saharan Africa and 90% of these will take place in rural areas (Crowe, Utley et al. 2012). Therefore, although controversial, research into intervention to improve the safety of non-attended deliveries could be considered.

The issue is receiving increased attention. An international conference on midwifery was convened 19-23 June 2011 by the International Confederation of Midwives, where UNFPA presented 'The State of the World's Midwifery' on behalf of UN agencies (UNFPA 2014).

Antenatal care is another MDG 5B indicator. The role of antenatal care as an intervention for reducing *maternal mortality* has been downplayed in recent years (UNFPA 2014). As mentioned, this is because the majority of complications arising during child birth, and the resulting maternal deaths, cannot be predicted on the basis of identifying 'high risk' pregnancies (The Kasongo Project Team 1984, Alexander and Keirse 1989, Rooks, Weatherby et al. 1989, Rooks and Winikoff 1990, McDonagh 1996, Smith, Fortney et al. 1997, WHO, UNICEF et al. 1997, Sibley, Sipe et al. 2002, UNFPA 2002).

Nevertheless, there is evidence that antenatal care may improve mortality of children, in particular *perinatal health and survival*, and that it represents an opportunity to deliver interventions which may improve maternal health in the perinatal period, including the likelihood that women will seek post natal care (Villar 2000). WHO has developed a guideline for focused (goal oriented and based on a reduced number of clinic attendance) antenatal care, which to some extent is implemented in health systems in low-income countries. Since 1990 the proportion of women receiving antenatal care at least one time during pregnancy has increased in all regions from 64% in 1990 to 81% in 2009 (UN 2011). However, regular attendance is crucial and the quality of service rendered and the potential of the program is insufficiently documented (Villar and Bergsjø 2002, WHO 2003), and a recently updated Cochrane review indicates that there is an increase in perinatal mortality associated with such focused packages of antenatal care (Dowswell, Duley et al. 2010). WHO is planning a revision of its guidelines (WHO 2011).

Antenatal care may for example include interventions, which target anaemia, such as nutrition, vitamin (and iron) supplementation and malaria/worm treatment. Many women in developing countries are anaemic, and anaemia increases the risk of dying from postpartum haemorrhage (PPH) up to four times (Rush 2000, Brabin, Hakimi et al. 2001, Høj, Cardoso et al. 2005). Yet, there is as yet little evidence to clearly demonstrate the linkage between antenatal care and maternal deaths (see also chapter 4.14, on co-morbidities).

There is no MDG indicator on EmOC partially in recognition of the difficulties of measurement. In 1997 UNICEF, WHO and UNFPA included the density of EmOC facilities as an indicator There should be one basic obstetric care health facility per 125 000 population, which can perform six *basic emergency care* functions addressing the top causes of maternal death, and one *comprehensive emergency care* facility per 500 000 population, which in addition can perform the additional functions which require sterile conditions necessary for surgery or blood transfusion.[8] The indicator is however problematic as it for instance fails to discriminate between two countries which exceeded the minimum acceptable level; Zambia (high maternal mortality) and Sri Lanka (low maternal mortality) (Collender G, Gabrysch S et al. 2012). As for other areas of reproductive health, the indications are that EmOC is very unequally distributed, e.g. in Bolivia in 2003 the proportion of births delivered by Caesarean section varied between 3% for the lowest wealth quintile to 45% for the highest (Ronsmans, Holtz et al. 2006).

Emergency Obstetric Care, including Caesarean section, may be even more important for neonates than for women, and some refer to it as 'EmNOC.' Although much of this care is highly dependent on sophisticated medical care, there is also a growing body of evidence that much can be achieved by 'low-tech' methods such as 'kangaroo' care, meaning simply that low birth weight neonates are placed on a mother's abdomen, to ensure contact and warmth (Conde-Agudelo, Belizan et al. 2011).

It has also been documented that quality of EmNOC can be improved through skills trainings and criterion based audit. A study from Tanzania assessed a basic neonatal resuscitation training at hospital level and demonstrated a remarkable sustained 47% reduction in early neonatal mortality (within 24 hours) and a 24% reduction in fresh stillbirths (Msemo, Massawe et al. 2013). The authors suggested that the most plausible explanation for the reduction in fresh stillbirths was that most non-breathing infants are in primary apnoea

with a heart rate and will initiate spontaneous respirations in response to drying and stimulation only if implemented in a timely manner.

There is general agreement that these are only partial indicators – child, and in particular perinatal (Richardus, Graafmans et al. 1998) and maternal, health are particularly sensitive to overall health system functioning – UNFPA and WHO refer to MMR as 'the litmus test of health systems', and note that continuity of care, which is important for health systems in general, is absolutely essential for maternal and child health.

Furthermore, as noted above, SRHR in general, and MMR in particular, are closely related to extremely diverse contextual and social factors. To name two examples: women's empowerment, e.g. increased education, is positively associated with improved SRHR indicators. Distance from health services, mountainous topography and poor transport possibilities are negatively associated with maternal health outcomes (WHO 2008). Studies e.g. from Sri Lanka, which saw spectacular progress starting in the 1930s, have shown the close relationship with not only health services, but the broader social environment, not least women's education (Perera 1993, Seneviratne and Rajapaksa 2000, Fernando, Jayatilleka et al. 2003, Fernando 2005, Pyone, Sørensen et al. 2012).

Bridging the outreach gap – quality of care, task shifting, TBAs, misoprostol, mHealth, integrated, community based programmes

There are clear and widely accepted guidelines for the kind of care which should be available. The standard is that there should be access to maternal health services including antenatal care, skilled attendance at delivery, emergency obstetric care and family planning. A recent study has identified 56 best interventions that will help to reduce maternal and child deaths at different levels of the health system (WHO 2011). Beyond the above-mentioned strategies immediate postnatal care of the newborn includes thermal care to keep the baby warm and initiation of early breastfeeding with the first hour (Nyamtema, Urassa et al. 2011). In other words it is not lack of evidence base for interventions to improve maternal and neonatal health that constitutes the major barrier to reduce maternal and neonatal mortality (Baker, Tomson et al. 2012).

The four dimensions classically used to evaluate health programmes (Availability, accessibility, acceptability and quality) also hold here: much literature notes the obvious point that utilization and impact of services depends not only on the availability of services, but also their quality, both with respect to SRHR, and health in general (Harvey, Blandon et al. 2007, UNFPA 2014). For instance high coverage of essential interventions does not necessarily imply reduced maternal mortality. If substantial reductions in maternal mortality are to be achieved universal coverage of life-saving interventions is not enough. They need to be matched with comprehensive emergency care and overall improvements in the quality of maternal health care (Souza, Gulmezoglu et al. 2013).

A major remaining issue is that the services required for emergency care are relatively sophisticated. Equitable and ready access, financial, social or geographical, is a challenge, in particular, 'bridging the outreach gap' to far-flung communities.

Several strategies are being considered to overcome this challenge of the outreach gap, to make services more outreach friendly, either '*centrifugal*' (focusing on how to bring the services to the women) or '*centripetal*' (focusing on how to bring the women to the services) (Pyone, Sørensen et al. 2012).

One outreach friendly approach is *task shifting*, that is, training lower level medical staff to perform life saving tasks (e.g. training assistant medical officers or midwives to undertake Caesarean sections).

Another form of task shifting is to reconsider the role of Traditional Births Attendants (TBAs). Whereas the conclusions of the 1997 Safe Motherhood Conference were that training of TBAs had little effect on health outcomes, some observers note that studies lack a clear description of the effect of the context, including whether the traditional birth attendants had full backing of and access to the formal health system. To date there is little evidence that TBAs can improve maternal mortality, but there is rather robust evidence indicating that TBAs can have a positive effect in reducing maternal morbidity, as well as perinatal mortality and morbidity, especially if part of an overall community outreach package, integrated in the health system. Several countries are beginning to examine what roles TBAs could play (Manandhar, Osrin et al. 2004, Sibley and Sipe 2004, Jokhio, Winter et al. 2005, Morrison, Tamang et al. 2005, Sibley, Sipe et al. 2007, Kumar,

Mohanty et al. 2008, Sangathan 2008, Lassi, Haider et al. 2010, Rowen, Prata et al. 2011, Pyone, Sørensen et al. 2012). They note the importance of continuity of care and the cultural role of TBAs (Kruske and Barclay 2004, van Roosmalen, Walraven et al. 2005, Bhutta, Memon et al. 2008). Two new studies on the effectiveness of strategies incorporating training and support of traditional birth attendants found quite convincingly that perinatal and neonatal deaths were significantly reduced while the reduction in maternal mortality was non-significant (Wilson, Gallos et al. 2011, Garces, McClure et al. 2012).

The 2011 UNFPA report on midwifery notes: "*Often trained in a period of months, CHWs*[9] *do have a role to play in strengthening maternal and newborn services by performing some of the essential outreach tasks in the continuum of care. They can, among other things, keep records, promote family planning, urge pregnant women to give birth in a health facility, encourage exclusive breastfeeding and newborn care during home visits, and encourage birth registration. Where outreach services in the community are supervised by and connected to the primary health care centre there is evidence of increased referrals to health facilities and reduced illness and deaths in newborns"* (UNFPA 2014).

The report recommends 'task sharing' between the TBAs and the 'modern' health system, rather than task shifting, in the sense of TBAs attending and dealing with complications of childbirth.

Yet other strategies deal with *outreach friendly drugs*. For example, one way to control postpartum haemorrhage[10] is to administer a hormonal drug that induces uterine contractions. Until recently, the drug of choice has been oxytocin. However, oxytocin is not temperature stable, and needs to be administered parentally (intramuscular). This makes community level utilization more difficult. Recently, the prostaglandin drug misoprostone has gained attention as an alternative, since it is temperature stable, and can be administered sublingually (orally) or as a suppository. Several studies conclude that it reduces severe PPH, and propose it as an alternative first line treatment, where oxytocin is not feasible (Høj, Cardoso et al. 2005, Winikoff, Dabash et al. 2010). A review of ten papers describing two randomised and four non randomised trials found that misoprostol was associated with a significant reduction in post-partum haemorrhage in home-births in low-resource countries (RR 0.58, 95% CI 0.38-0.87) (Hundley, Avan et al. 2013).

Overall, this is one of the most discussed and researched drugs for reproductive health in recent years. WHO deliberated its position for several years, citing lack of conclusive evidence for effectiveness and safety. Some observers criticized this delay, seeing it as a compromise due to outside political pressure, since misoprostol can also be used as an abortifacient (see discussion in abortion chapter) (Hofmeyr, Gulmezoglu et al. 2009, WHO 2009, Potts, Prata et al. 2010, WHO 2010, Starrs and Winikoff 2012). However evidence for effectiveness is based on a limited number of high quality studies and other randomised controlled trials are required to confirm the benefits in different implementation settings. As of May 2011, misoprostol has been included in the Essential Drugs List of the WHO (WHO 2011).

Another outreach friendly approach is the use of *new technologies* such as mobile phones to improve maternal health outcomes. Mobile phone use is rapidly expanding in Africa, amounting to more than 500 million users at present (UN 2009) and it is estimated that half of all individuals in remote areas would have a mobile phone by 2012. Due to the obvious potential to reach large population groups and strengthen health systems, the use of mobile phones in health care, commonly referred to as mHealth, is emerging. The evidence base is weak (Kaplan 2006, Noordam, Kuepper et al. 2011, Tamrat and Kachnowski 2011) and recent review of mHealth for maternal health identified 34 articles and reports of which only four had a quantitative design. There are however indications that mHealth can significantly increase skilled delivery attendance in a resource constrained setting (Lund, Hemed et al. 2012) (see also the e-Health chapter, 4.13).

Several small scale but well designed studies show that *community participation* can have an effect in service uptake – bringing women to the services (Manandhar, Osrin et al. 2004). Although it is not yet part of conventional wisdom, evidence is accumulating that *integrated, community based programmes* can have good effect.

For example, in recent years Ghana has instituted improved community level health outreach including maternal and child health, and family planning services. Within a two-year period, deaths of children under the age of five declined from 224 to 100 per thousand, contraceptive prevalence increased and average family size dropped from 5.2 to 4 children per woman. This community-based approach is now being expanded throughout Ghana (Phillips, Bawah et al. 2006).

Rwanda provides another striking example. In 1992, Rwanda's under five mortality rate (U5MR) was estimated at 150/1000, MMR around 800/100 000, CPR at 13% and total fertility rate (TFR) at around 7 children per woman. After the genocide, rates saw regression, with U5MR rising to 196, MMR over 1000, TFR staying at 7, and CPR dropping to 4%. In 2007, President Kagame, donors, and the NGO community came together to mount a national comprehensive community-based health initiative. In roughly two years, contraceptive prevalence rose from 10% to 27%. TFR declined to 5.5, MMR fell to 750 and U5MR to 103 (Solo 2008). This trend continued for the next two years – in 2010 CPR was at 44%, unmet need was 19% and TFR had dropped to 4.6. However, that TFR was still higher than the desired number of children which was 3.1, and as a result, 47% of pregnancies were unintended and 22% of them ended in abortion, most of them clandestine, 40% of them needing clinical treatment. These are of course short term developments, and more studies are needed to determine longer term sustainability (Basinga, Moore et al. 2012).

Despite a rapidly growing body of evidence and stated agreement on strategy, there are still many uncertainties and unexplored areas, with major shifts happening with each new conference (Miller, Sloan et al. 2003).

All SRHR issues have major issues related to equity, and equitable access to health care services is particularly essential in maternal and child health both regional and within each country (Zere, Kirigia et al. 2012). Yet there are large variations in coverage levels between interventions and countries. Skilled birth attendance is the least equitable intervention and Chad, Nigeria, Somalia, Ethiopia, Laos and Niger were the most inequitable countries in a recent review (Barros, Ronsmans et al. 2012) that also found that interventions delivered in health facilities need specific strategies to enable the countries' poorest individuals to be reached.

Given the particularly high level of disparity, maternal health is also increasingly being presented as a human rights concern, e.g. in the Human Rights Council in June 2009 (UN 2009). The UN Global Strategy for Women's and Children's Health, launched in 2010, also recognizes the human rights and social justice dimensions of improving women's and children's health. Technical guidance is available from The UN High Commissioner for Human Rights who has compiled useful practices of human rights-based approaches to eliminate preventable maternal mortality and morbidity.

There are also several cases where women as individuals or groups have legally challenged the state, in the case of maternal death, and where they have won their cases (Bueno and Kismödi 2012).[11] A human rights approach can strengthen accountability for maternal deaths at the national level and in the recent case of Alyne da Silva Pimentel vs. Brazil it was established that states have a human rights obligation to guarantee women timely and non-discriminatory access to maternal health services. The decision represents the first time that an international human rights treaty body has held a government legally responsible for preventable maternal death. The Committee provided recommendations both concerned Alyne's family and general recommendations concerning the health system. It specifically held that the failure to provide essential health care that only women need, which in this case was EmOC, is a form of discrimination that governments are obligated to prevent and remedy (Cook 2013).

Although 'conventional wisdom' is now clear about the strategies which we need to adopt in order to improve maternal and neonatal health, many studies on the effectiveness of various interventions remain methodologically weak (Miller, Sloan et al. 2003). This includes both studies examining the effectiveness of training of TBAs, but also quality of Skilled Birth Attendants (SBAs) and EmOC.

The Millennium Development Goals and their related targets and indicators have set the agenda for the past 23 years. But the era of the 2015 MDGs is drawing to a close, initiating the post-2015 agenda discussions. In January 2013, over 800 experts in maternal health care met in Arusha Tanzania to present evidence on improving the quality of care for women during pregnancy and childbirth, much of which is mentioned above. As a contribution to the process of redefining development for women after 2015 the participants of the Arusha conference published a manifesto for maternal health post 2015. The manifesto states twelve recommendations for the future including broadening the goal to include women's political, social and economic rights, focusing on maternal morbidities, attacking the appalling global toll of preterm births, preventable stillbirths, and newborn deaths and including the tremendous opportunities of technologies (Langer, Horton et al. 2013).

Research priorities

Some of the areas requiring further research are

- How to improve the quality of SBA and EmOC (not only the quantity).
- Suitable EmNOC indicators, near miss audits and mortality based criterion based audits for routine monitoring in national health information systems for routine monitoring in national health information systems.
- The effects of antenatal care on maternal and neonatal health (see also ch. 4.12 on co-morbidity)
- Other outreach strategies – e.g. the role of TBAs and community involvement, not only on physical but also psychosocial wellbeing, helping in continuity of care.
- Better understanding of the contextual factors – both health systems and beyond, including transport and cost issues.
- Preeclampsia: detection and management
- Use of innovative technologies such as mobile phones to improve health seeking behaviours, access to care and quality of care (see also chapter 4.13 below)
- Strategies to reduce stillbirths and newborn deaths
- How to prevent and manage preterm deliveries

In summary

- *Recent estimates indicate improvements in maternal mortality: from a total of 543 0000 deaths in 1990 to 287 000 in 2010 (corresponding to MMRs of about 400 and 210/100 000). However, this is still not on target to meet the MDG target of 75% reduction. Moreover, MMR remains the MDG health indicator with the most disparity, by a factor of more than a hundred between the countries with the highest and lowest ratios.*
- *In addition to deaths, 10-20 times as many women suffer injury or disability*
- *Maternal health is important for the health of women, but also for their children. Especially neonatal mortality (and still birth rates) is closely linked to skilled delivery attendance and EmOC, and lack of progress is linked to insufficient progress in providing such care. Estimates are that there are 2.7 million stillbirths, and around 2.9 million deaths to children in the first 28 days of life.*
- *Thus, maternal deaths are often referred to as only being 'the tip of the iceberg'.*
- *Evidence-based interventions exists and are well recognized but national policy framework and health systems remain week*
- *'Conventional wisdom' regarding the best strategies for addressing the problem is clear: access to family planning, SBA and EmOC would save about 75% of deaths.*
- *Yet, about 1/3 of all births take place without such care, and 1/3 of all pregnancies are unintended.*
- *Attention to maternal health has increased dramatically in the last 2-3 years, including that is now framed as a human rights concern*

3.2 PRIORITY AREA 2: PROVIDING HIGH QUALITY SERVICES FOR FAMILY PLANNING, INCLUDING INFERTILITY SERVICES

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Updated May 2015

Key points:

- *It is a recognized human right to be able to decide on the number, timing and spacing of your children, and to have the information, education and means to do so. This includes the right to the widest possible range of safe, effective, accessible and acceptable means of family planning. We understand these rights to include both contraception and the prevention and treatment of infertility.*

- *Contraceptive prevalence (all methods) in developing regions has increased over the last 25 years. In least developed countries it increased from 16% in 1990 to 27% in 2000 and 40% in 2015.The level was lowest in sub-Saharan Africa. In the same period, CPR in More Developed Regions remained fairly constant at 68%, 70% and 70% respectively.*
- *There is still great disparity within countries – poor, rural, uneducated women have low contraceptive use, and high levels of unintended births. Adolescents, both married and unmarried, face severe problems in accessing contraception.*
- *About a third of the 210 million annual pregnancies are estimated to be unintended.*
- *Unmet need for all methods of contraception has declined moderately over the period, in Least Developed countries from around 34% to 29%, in More developed regions from 25% to 19%, with the highest rates in sub-Saharan Africa.*
- *If only modern methods are included, about 225 million women (one quarter of the women concerned) have an unmet need. This number is likely to increase, unless efforts are accelerated. If their need were met, unintended pregnancies would fall by more than 70%*
- *Contraceptive method mix varies greatly by country, for example in Albania a large proportion use traditional methods, in Uganda most use injectable hromnoes, in China almost sterilization.*
- *Contraception brings appreciable health benefits to women and their children25% of maternal and 10% of child deaths could be averted, reducing healthy years of life lost due to disability and premature death of women/newborns by 60%*
- *In order to meet this need appropriately, it is important to disaggregate the overall number, also taking into account the reasons for non-use (e.g. fear of side effects).*
- *There is great varation among countries in levels of contraceptive use, unmet need, and health indicators such as maternal and child deaths. There is a considerable body of evidence to show that a supportive public policy can result in improvements within few years.*
- *Some interpret conventional wisdom as showing that contraceptive levels will automatically increase if child mortality decreases. However, this has not been the case, e.g. in sub-Saharan Africa. This paper argues that high quality family planning programmes, within high quality health services, are also a precondition.*
- *International financial and political support for contraception decreased over the last 15 years. This was exacerbated by the lack of priority in the MDGs (reference to contraception was only included in 2008). Several events since then, especially in 2012, show an increased support.*
- *Infertility is recognized by the WHO and World Bank as a disability which is in part preventable. Levels vary greatly depending on the definition used (estimates rage between 5-25% at the global level). It has many causes, which also vary among L/MIC and HICs – including untreated infections, bevioural factors and possibly environmental factors. It can have severe consequences such as financial hardship, depression and social exclusion. Until recently there has been little attention to the issue in L/MICs. Strategies to reduce unwanted childlessness may include fertility awareness, treatment as well as creating the socio-economic conditions where prospective parents can combine child bearing and family formation.*

It is difficult to conduct a study to determine the maximum biological number of children that a population could have, in the absence of family planning methods. The classical study by Tietze in 1957 is still referred to as a unique 'natural experiment'. The study concerned a small Protestant group, the Hutterites. Hutterite women married at around age 20, had stable monogamous marriages, a relatively high standard of health, routinely breast fed their children but used no contraception. They had a child on average every 2 years until they reached menopause, for an average of around 12 children in their lifetime (Tietze 1957).

Levels this high have not been reported for any other population, and, given that it would be difficult to design a controlled experiment, the level of 12-13 children is considered the biological maximum

This also means that other societies with lower birth rates are applying practices which limit the number of children. Such practices range from celibacy, post-partum abstinence of a duration given by tradition, to modern means of contraception. For example, in Europe fertility levels historically have rarely exceeded 5 children, partially because a considerable proportion of the population remained unmarried.

Since the human rights conference in Teheran in 1968, it has been recognized that "…couples have a basic human right to determine freely and responsibly on the number and spacing of their children and a right to adequate education and information in this respect." This was included – in different wording - in the Convention on the Elimination of all forms of Discrimination Against Women (CEDAW) (1979). The basic right to "plan you family" has since been reiterated in a number of international agreements and documents. (see more below)

Here we will use the term '*family planning'* to refer to methods used by women and men to choose the number and timing of births, either contraception (meaning methods used to **prevent** pregnancies) and fertility treatment (meaning methods used to **encourage** pregnancies). We consider the term 'birth control' to be inappropriate, as it has acquired connotations of population control. We also note that some sources criticize the term 'family planning' as it refers to 'families', whereas child bearing may not always be within a family; while on the other hand, the term "family" is increasingly being used – for instance in a Danish context - to cover many more structures of relationships and procreation than the traditional husband-wife-children structure. We will discuss contraception and fertility treatment separately in the following.

3.2.a: Contraception

Terminology

Traditional methods of contraception refer to lactational amenorrhoea, (periodic) abstinence (rhythm) and withdrawal.

Modern methods of contraception refer to female and male sterilization, intrauterine devices (IUDs), hormonal methods (oral pills, injectables, and hormone-releasing implants, skin patches and vaginal rings), condoms and vaginal barrier methods (diaphragm, cervical cap and spermicidal foams, jellies, creams and sponges). Modern methods thus refer to clinic and supply methods, whereas traditional methods are non-supply methods, which do not depend on a clinic or pharmacy. Modern means of contraception are sometimes referred to as *'effective' methods of family planning*, since, as detailed below, modern methods on average are less likely to result in method failure. Some of the most important modern methods of contraception, such as many hormonal methods and the IUD, were only developed in the 1960s.

Contraceptive method failure refers to the proportion of users who become pregnant after a year of usage. It generally divides into '*typical-use'* and *'perfect-use'* reflecting dependence on user utilization patterns.

Contraceptive prevalence (rate): The percent of women of reproductive age (15-49) who are using (or whose partner is using) a contraceptive method at a particular point in time (almost always reported for women married or in sexual union) (Measure DHS 2013).

Most measures refer to *'sexually active'* and '*married or in a union'* as synonyms, although some imply more sophisticated measures, e.g. frequency of sexual activity. Frequency of sexual intercourse can vary greatly, and has strong effect on e.g. number and spacing of pregnancies.

Unmet need for contraception: the percent of women of reproductive age who are fecund (able to conceive) and sexually active but are not using any method of contraception (alternatively: any *modern* method of contraception), and report not wanting any more children, or to want to delay the birth of their next child (by at least two years), divided by the number of women of reproductive age who are married or in a union (UN 2013).

Total demand: the sum of met (contraceptive prevalence) and unmet need for contraception

Total fertility rate: The average number of children a hypothetical cohort of women would have at the end of their reproductive period if they were subject during their whole lives to the fertility rates of a given period and if they were not subject to mortality. It is expressed as children per woman.

See Annex 2 for more detail on terminology.

Data sources and quality considerations

The measures for contraceptive use and unmet need are usually calculated according to the computations developed by the main internationally comparable source (Demographic and Health Surveys, DHS). These are also the ones utilized in the MDG reporting. For exact methods of calculation, see Measure/DHS, WHO, the UN Population Division as well as other sources of global estimates (UNFPA and Guttmacher Institute 2012). Estimates show minor variations. The major differences lie in whether or not rates include all methods of contraception or only modern methods, but several sources do not present for both, making comparisons more difficult. The concept of unmet need is complex, since it refers to intention, which may be difficult to estimate and which may change over time. There is much literature discussing its meaningfulness.(Alkema 2013). Estimates of frequency of sexual activity, although very significant in arriving at conclusions, are also difficult to arrive at, and therefore are not included in most metrics.(Alkema 2013)

Levels and trends

In the following we will refer both to modern methods, rather than all methods.

Contraceptive prevalence (CPR) for all methods has generally increased over the last 25 years. For the least developed countries it increased from 16% to 40%, for more developed regions it stayed rather constant at 68% in 1990, 70% in 2015. Earlier estimates indicated much lower levels, e.g. around 10% for developing countries as a whole (ref)

Table 3.2.1 Contraceptive prevalence, 1990-2015

	1990	2000	2010	2015
Contraceptive prevalence, modern methods				
World	48.1	55.1	57.0	57.5
Least Developed Countries	11.1	20.4	28.8	33.0
Other developing regions	51.4	59.2	60.8	61.1
developed regions	53.7	58.4	60.7	61.2
Contraceptive prevalence, all methods				
World	55.2	61.5	63.3	63.8
Least Developed Countries	16.1	26.6	35.1	39.7
Other developing regions	56.6	64.5	66.5	66.9
developed regions	68.4	70.1	70.0	69.7

Source: United Nations Population Division "Estimates and Projections of Family Planning Indicators 2014", median estimate http://www.un.org/en/development/desa/population/theme/family-planning/cp_model.shtml

However, these averages mask large disparities.

As is the case for other areas of reproductive health, disparity within countries is great. One estimate is that 10% of the poorest quintile of women use contraception and this has not changed over the last decade, whereas 38% of women from the richest quintile are using contraception, and this has increased (modestly) from 34% (UN 2010). There are also great urban/rural disparities (UNFPA 2012). Adolescents are also marginalized (see chapter 4.3).

With respect to *unmet need* for modern methods, the UN estimates are given in table 3.2.2:

Table 3.2.2 Unmet need for contraception (modern methods) 1990-2015

	1990	2000	2010	2015
World	22.4	19.3	18.4	18.3

Least Developed Countries	33.9	32.8	30.1	29.0
Other developing regions	20.0	16.9	16.4	16.4
Developed regions	25.0	21.3	19.0	18.3

Source: *Definition*: *Percentage of married or in-union women aged 15 to 49 who want to stop or delay childbearing, but are not using a modern method of contraception.* Source: United Nations Population Division "Estimates and Projections of Family Planning Indicators 2014" , median estimate, http://www.un.org/en/development/desa/population/theme/family-planning/cp_model.shtml

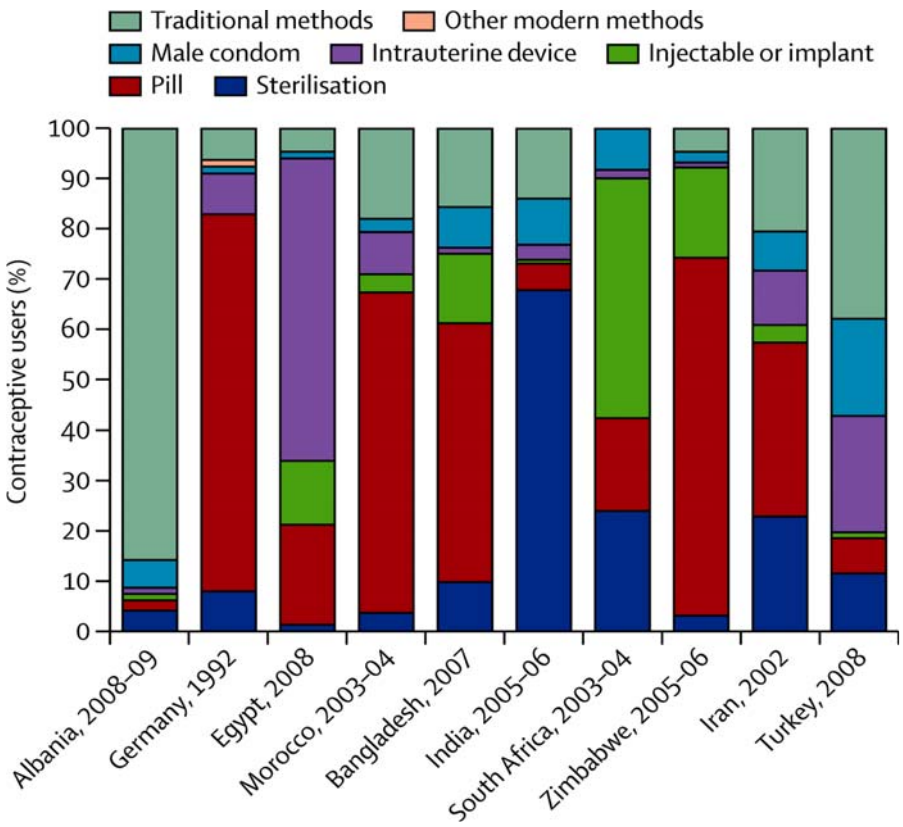
Unmet need has decreased over the period 1990-2015, from 34% to 29% in least developed countries, and from 25% to 18% in more developed regions. It is notable that 'developed regions' have a higher level of unmet need than 'other developing regions'. This is in part attributed to high levels on unmet need in more developed regions such as Eastern Europe.

In terms of numbers, this translates into around 225 million women with an unmet need for modern methods of contraception. Of those, over a third uses traditional methods. The MDG monitoring process refers to all methods, and therefore arrive at lower levels of unmet need.

In summary the total number of women of reproductive age in Developing Regions is	1,556 million
Women In need of contraception	
Use modern contraceptives	74%
Not using modern contraceptives	26%
Not in need	
Unmarried and not sexually active	25%
Want a child soon or are pregnant/postpartum with intended pregnancy	12%
Infecundity	6%

Source: Adding it up 2014, pg. 9

Method mix varies greatly by country. Thus, a country like Albania relies to a great extent on traditional methods, Germany on contraceptive pills, India on sterilization.



Contraceptive method failure varies among methods, as seen from the following WHO estimates.

Table 3.2.3 Contraceptive failure rates and estimated number of unintended pregnancies, 2007

Contraceptive method	No of contraceptive users[a]	Estimated failure rate (typical use)[b]	Number of women with accidental pregnancies (typical use)
	000s	*%*	*000s*
Female sterilization	232564	0.50	1163
Male sterilization	32078	0.15	48
Injectables	42389	0.30	127
IUD: Intra Uterine Device	162680	0.80	1301
Pill	100816	5.00	5041
Male condom	69884	14.00	9784
Vaginal barrier	2291	20.00	458
Periodic abstinence	37806	25.00	9452
Withdrawal	32078	19.00	6095
Total	**712586**	**4.70**	**33469**

a: Based on the estimated number of women aged 15-49 years, married or in union in 2007 and the percentage using specific contraceptive method.
b: Trussell (1998), estimates are based on US data.

Source: (WHO 2011).

On average, traditional methods are less effective than modern methods. In sum, the proportion of women who become pregnant after a year of typical use is

- 0.15%-20% for modern methods
- 19-25% for traditional methods
- 80% for no method (Leridon 2010).

This also means that, if all unmet need were met, unplanned births might be decreased, from 28 to 7 million, but there would still be some method failure (UNFPA and Guttmacher Institute 2012).

If one looks at 'met need' worldwide, that is, the number of unwanted pregnancies which are averted by contraception, the use of contraceptives annually averts an estimated 230 million births, or 1.7 times the global number of live births (Liu, Becker et al. 2008). The proportion of pregnancies which are unintended is around a third, occurring to both those who are using no contraception, and those who have a 'contraceptive failure' (Reading 2012).

Situation – determinants of contraceptive use

The determinants are classically divided into the answer to three questions, sometimes referred to as Ansley Coale's WRA model: 'readiness, willingness and ability':

- Are people aware that family planning is possible and do they consider it acceptable?
- Do they desire to use it themselves?
- Are they able to access contraception, which they consider adequate? (Coale 1973)

With respect to 'readiness', data from 17 European countries show that in 14 of these countries, marital fertility fell by 10 percent within a relatively short period of time (1882-1912) despite a great variation in socio-economic determinants and existing fertility patterns, indicating that "… the adoption of contraception within marriage occurred suddenly, and massively, in large segments of the population where its use had been previously extremely limited because it was either unknown or objectionable"(Knodel and Walle 1979). In other words, contraceptive use seems to reach a tipping point after which they spread widely and regular use becomes normative. That is, once the 'early adopters,' who are usually the wealthier and more educated, adopt family planning, it spreads to other parts of the population.

With respect to 'willingness', there is ample evidence that women's education, urbanization, income levels, and not least under five mortality rates are closely correlated with increasing contraceptive use and falling birth rates. However, as often is the case, there is debate about the direction of causality. The 'child survival theoy' proposed byTaylor in 1976 argues that, if parents trust that their children will survive, this is a sufficient precondition for higher contraceptive prevalence levels and thereby lower fertility. Indeed, there is evidence that few if any developing countries have seen major adoption of contraception and reductions in birth rates without a previous reduction in infant mortality (Taylor, Newman et al. 1976, Schoumaker, Tabutin et al. 2006).[12]

Other studies dispute this view, or nuance it. Some argue that, even if mortality is not high, morbidity remains so, and contributes to the wish by parents to have many children(Aksan). Others note historical differences in policy. In the 1950s, Uganda, Burkina Faso, Chad, and Niger had birth and child mortality rates similar to India, Bangladesh, Vietnam and Indonesia. In the Asian countries, both improved health and family planning programmes were initiated in the 1960s. This resulted in improved mortality rates as well as increasing contraceptive prevalence in the 1970s. In the African countries, only general health programmes, with little focus on family planning, were introduced. This was particularly true of countries with legal systems modelled on that of France, where contraception was illegal. Child death rates improved, but there was neither little increase in family planning nor decrease in birth rates (Bongaarts 2008)Bongaarts, 2008 (Shapiro and Gebreselassie 2008, Bongaarts and Sinding 2009). Thus, the 'ability' referred to above also plays a role.

The composite term *unmet need* requires disaggregation by individual determinants. As described in many demographic and health surveys, the reasons for non-use include lack of access to contraception, but also fear of *side effects*, *becoming temporarily infertile* and *husband or community disapproval*, all of which may be realistic. Therefore, although it is a useful term, it should not simply be translated as lack of physical access (Casterline and Sinding 2000, Hyttel and Tellier 2010, Sedgh and Hussain 2014).

In sum, disparities in contraceptive prevalence, unmet need and desired number of children are great. One example is from Kenya. In 2003, it was esimated that the richest quintile women actually have the same number of children as they desire, whereas the poorest desire 5.4 but have 7.6.

Source: Kenya DHS 2003

This is both a health concern (especially for poor women, having more than 5 children can bring excess mortality for child and mother) but also a human rights concern (having 2 children more than they desire). Whereas the estimates may vary, the tendency is more general.

Consequences

The health consequences of family planning are well documented, for women as well as for children.

With respect to health effects for women, age, parity, spacing and unwanted pregnancy are seen as main risk factors (see also chapter 3.1).

For age, both early and late pregnancy has associated risks. MMR for women under the age of 15, and under 18, has been found to be 5 and 2 times higher than for women 20-29. (UN 2011).

For parity, MMR is highest at extremes of parity. For example in Bangladesh it was found that MMR was up to five times higher for the first birth than for births 2-4, and then rose again for the 5th and subsequent births to 3-4 times higher than the lowest rates (Chen, Gesche et al. 1974). This finding may be compounded by the fact that 80% of Bangladeshi women are married by the age of 18, so many of the primipara women are also very young (DaVanzo, Razzaque et al. 2004, Majoko, Nyström et al. 2004). Studies in many countries show that lower fertility levels (birth rates) contribute to lower MMR (Chowdhury, Ahmed et al. 2009). One estimate puts the percentage of maternal deaths averted by contraception at 44% (Ahmed, Li et al. 2012).

For spacing, evidence from 52 DHS surveys indicates that MMR levels are 2.5 times higher if spacing between delivery and next pregnancy is less than 6 months; the lowest levels occur with spacing 24-48 months, and after that they rise slightly (Razzaque, Da Vanzo et al. 2005, Conde-Agudelo, Rosas-Bermudez et al. 2007). If every women would be able to leave at least a two-year gap between a birth and a subsequent pregnancy, deaths of children under five would fall by 13%, and a three year gap would result in 25% reduction (Rutstein 2008).

Unwanted pregnancy constitutes a particular problem. In 2000, about 90% of global abortion-related and 20% of obstetric-related mortality and morbidity – or a total of 25% of maternal deaths – could have been averted by use of effective contraception by women wishing to postpone or cease further childbearing, partially because a large portion of the unsafe abortions could have been averted (Collumbien, Gerressu et al. 2004, UNFPA and Guttmacher Institute 2009). This figure overlaps with that provided above for maternal health.

In sum, one estimate is that, if unmet need were completely met, around 70,000 maternal deaths could be avoided on an annual basis. This is in addition to an estimated 100,000 deaths already being avoided by contraception.

For children, evidence from 52 DHS surveys indicates that child mortality continues to decrease with longer spacing (Rutstein 2005). Other findings of studies in both rich and poor countries show that conceptions taking place within 18 months of a previous live birth are at greater risk of foetal death, prematurity, and being of small size for gestational age (Zhu 2005, Conde-Agudelo, Rosas-Bermúdez et al. 2006). The mechanisms underlying this association are thought to include postpartum nutritional depletion, especially folate deficiency (Smits and Essed 2001, Rutstein 2005). Conservative estimates assume 10% of under-five deaths could be averted by averting interbirth intervals of less than 2 years (Conde-Agudelo and Belizan 2000, Black, Morris et al. 2003, DaVanzo, Razzaque et al. 2004), and that an estimated 640 000 neonatal deaths could be avoided by meeting unmet need for family planning (UNFPA and Guttmacher Institute 2009). Other studies are even more dramatic, estimating up to 35% of under-five deaths could be averted by family planning (Rutstein 2005).

With respect to women's status, there is a large literature documenting effects of conctraceptive use, such as higher levels of educational attainment and income levels (ref)

With respect to demographic consequences, contraceptive use is a main determinant of birth rates. Since 1960, TFR in less developed regions has decreased, from about six in 1960 to 2.8 in 2000 and around 2.6 in 2010-15 (UN 2013). Here again, sub-Saharan Africa constitutes an outlier: lower and stagnating levels of CPR are parallelled by stagnating levels of TFR decline, with a recent UN estimates of TFR higher than previously projected – over 5 per woman (UN 2013). See also chapter 4.4).

The publication 'Adding it up' (UNFPA and Guttmacher Institute 2012)., which is updated at regular intervals, estimates:

-Current contraceptive use will prevent 231 million unintended pregnancies in developing countries in 2014, and, in turn, will avert 61 million unplanned births, 144 million abortions (of which 38 million are unsafe), 25 million miscarriages and 100,000 maternal deaths.

- Serving all women in developing countries who currently have an unmet need for modern methods would prevent an additional 52 million unintended pregnancies, including 21 million unplanned births, 24 million abortions (of which 14 million would be unsafe) and six million miscarriages; this would also prevent an additional 70,000 maternal deaths and a total of 1.6 million newborn deaths

Response

International guidance on the issue of contraception is provided starting with the Tehran Human Rights Conference in 1968. It stated that *parents* had the right to have *information* about family planning. This was expanded and incorporated in the CEDAW in 1979, which stated that: *"States Parties shall... ensure, on a basis of equality of men and women... (e) The same rights to decide freely and responsibly on the number and spacing of their children and to have access to the information, education and means to enable them to exercise these rights."* (Art 16.1) (UN 1979). This right is reiterated in the ICPD, which also notes that governments should take steps to ensure access to the widest possible range of safe and effective means of family planning. The first version of the MDGs, in 2001, made no reference to family planning. Since 2008 the MDGs include universal access to reproductive health by 2015 as a target (5B), with 'Contraceptive Prevalence Rate' and 'Unmet Need' as indicators. This also makes family planning one of the most clearly human rights based MDG targets or indicators.

A large body of guidelines has also been developed on how to implement a human rights approach at operational level. (Ford Foundation quality of care, General comment 14, UNFPA, WHO)

This focus on human rights is relevant because contraception historically has been closely tied to the issue of population control, as governments wish to increase or to decrease the number of its overall population, or of certain sub-populations, at times against the will of the populations concerned..

The ICPD PoA provides guidance on this issue, stating that demographic goals, while legitimately a concern of governments in their development planning, should not be imposed on family planning providers in the form of targets or quotas for contraceptive use. Family planning programmes should be based on unmet need only.

Given the regular heated debate about population related issues, including that ongoing in many HICs related to ageing, this principle is as relevant as ever.

At the *national* level, as late as the 1960s, contraception was illegal in many parts of the world. For example, in France it was illegal in the period 1922-1967, and in at least one state of the US it was illegal until 1965. Ireland legalized it only in the early 1990s.

Almost all the countries in the world now have legalized contraception. In 2009, 91% of all governments support FP directly or indirectly (UN 2010):

Direct Support	146
Indirect Support	31
No support	17
Limits	1

The state which limits contraception is the Holy Seee

With respect to programme implementation, the history of family planning is replete with particularly terrible examples of contraception being either withheld from or forced on women. Some of the most well known examples are India and China, but there are numerous others, Examples of contraception being forced on sub-populations include Denmark: in the period 1929-67, the Danish State implemented 11,000 sterilizations, some of them coerced (Ritzau 2010). Examples of contraception and abortion being witheld with the intent to increase birth rates include France in the period 1922-67 and Romania in the period 1967-89 (ref. Horga).

Large scale family planning programmes began in many countries in the 1960s, as population growth was at a maximum, and modern methods had recently become available, In general, these programmes resulted in major increases in contraceptive use. Particularly programmes in Asia and Latin America had such effect. Many countries went from negligible contraceptive use to rates of 60-80%, with birth rates falling from around six children per woman to around two, and great reductions in child mortality, within the space of 15-35 years.

In sub-Saharan Africa, overall effect has been more limited. Francophone African countries in particular generally retained the above-mentioned pro-natalist, anti-family planning law of France well beyond the time when it was repealed in France. Several countries experienced increases in contraceptive use, and fertility decline up until the 1990s, followed by stagnation. Research points to many reasons, including lack of political will and financing of programmes, as well as increases in infant mortality. Yet, there are many examples of great impact within a short period.

One example is Kenya, which had the highest birth rate in the world in 1978 with over 8 children per woman. The government instituted a well-supported family planning programme, and in the period 1977-1989, contraceptive prevalence increased, with birth rates dropping to around 4. However, in the period 1991-2003, both the programme, the CPR, and the infant mortality stagnated, and births increased to around 5 per woman, although it may have dropped again to 4.4 in the perod 2010-15 (Crichton 2008, Ojakaa 2008, Schoumaker 2009). This compares to Uganda, where fertility has remained stable at around 7 for the last few decades, although dropping to 5.9 during 2010-2015 (UN 2013). Unmet need has grown to around 40% (one of the highest in the world), in a situation where there is limited political support for family planning.

Another example is Ghana. Ghana was one of the first sub_Saharan countries to adopt a population policy in the late 1960s, and to initiate a family programme, right after conducting its first post-colonial census (UNECA 2000). A recent emphasis on an integrated community level programme dealing with a wide range of health issues seems to be having results, both on contraception and many other health indicators. Rwanda provides one of the most striking recent examples of an integrated programme which has shown major improvements in health indicators including reductions in unmet need, within a few years (solo) (see also chapter 3.1).

International support for contraception stagnated or decreased during part of the last decade, as did political support (UN 2011). This tendency may have been reversed in 2012. The London Summit on family planning,

which included both political leaders and funding icons such as Melinda Gates, produced both major elaboration of the evidence base and political commitments, including the objective of 120 million new modern method users in the world's 69 poorest countries (those with GNI under 2 500 USD per capita in 2010).

Research priorities

Some of the areas requiring further research are

- Explore barriers to uptake of male contraception and long acting reversible contraceptives (LARCs), including vaginal rings, hormonal injections and IUDs, e.g. sub-Saharan Africa
- Further documentation of the integrated community programmes of countries such as Ghana and Rwanda, to determine lessons learned and longer term sustainability
- Increased access to existing methods of dual protection
- Development of highly efficacious and highly acceptable methods of dual protection

3.2.b: Infertility

Infertility is not a new problem. However, in the last decade it has attracted increasing attention, mainly based on three concerns:
1. A medical/clinical concern that an increasing number of couples are seeking Medically Assisted Reproduction (MAR)[1], and that some risk factors for infertility are increasing.
2. An economic/demographic concern regarding decreasing birth rates, leading to reduced labor force.
3. A human rights concern that couples have fewer children than they wish.

Terminology

Terminology related to infertility is extraordinarily complex, referring to all three of the above concerns.

Infertility is defined by WHO as "a disease of the reproductive system defined by the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse" (WHO 2013) where "unprotected" refers both to use of modern contraception or traditional means such as lactation amenorrhea" (WHO 2013).

A distinction should be made between *primary infertility* (having never achieved a pregnancy) and *secondary infertility* (inability to conceive after having achieved at least one pregnancy)

The above definitions are (usually) used in medical literature, although there is variation in the 'time to pregnancy' employed (12 months in the above definition)

In demographic literature, the term *fecundity* is used to denote ability to conceive, whereas the term *fertility* is used to refer to actual births, and demographic literature often refers to a time period of 5 years.

Sterility is thus not a useful term for most studies, and, if at all, should only be used to refer to a permanent condition of the reproductive system causing inability to conceive or deliver a baby e.g. result of surgical sterilization or hysterectomy. (WHO 2013a)

In grey literature there is often the misunderstanding that infertility is a permanent condition although more than two-thirds of couples who experience infertility during a 12 month period subsequently achieve pregnancy within 24 months, without Medically Assisted Reproduction (Leridon 2010). The terminology *sub-fertility* may be less misguiding but is rarely used in the literature"

Medically assisted reproduction (MAR or Assisted reproductive technologies (ARTs) are methods used to achieve pregnancy by means such as insemination, hormone stimulatiion or in vitro fertilzation.

Terminology intended to address human rights concerns include the issue of unwanted childlessness, by estimating the gap between intended and actual number of births. .
For practical reasons, many measures refer to females only, although infertility is equally an issue for males.

Each measure has a purpose. For example a clinician may wish to detect infertility as early as possible to offer appropriate treatment. If such treatment is successful, it may be seen as a medical concern, but not necessarily a human rights or demographic concern. However, it also means that determining the level and trend of infertility depends on the definition used, and comparison across studies is difficult. In particular, the different cut-off points for 'time-to-pregnancy', and the focus either on fecundity or actual births are significant and yield widely different estimates.

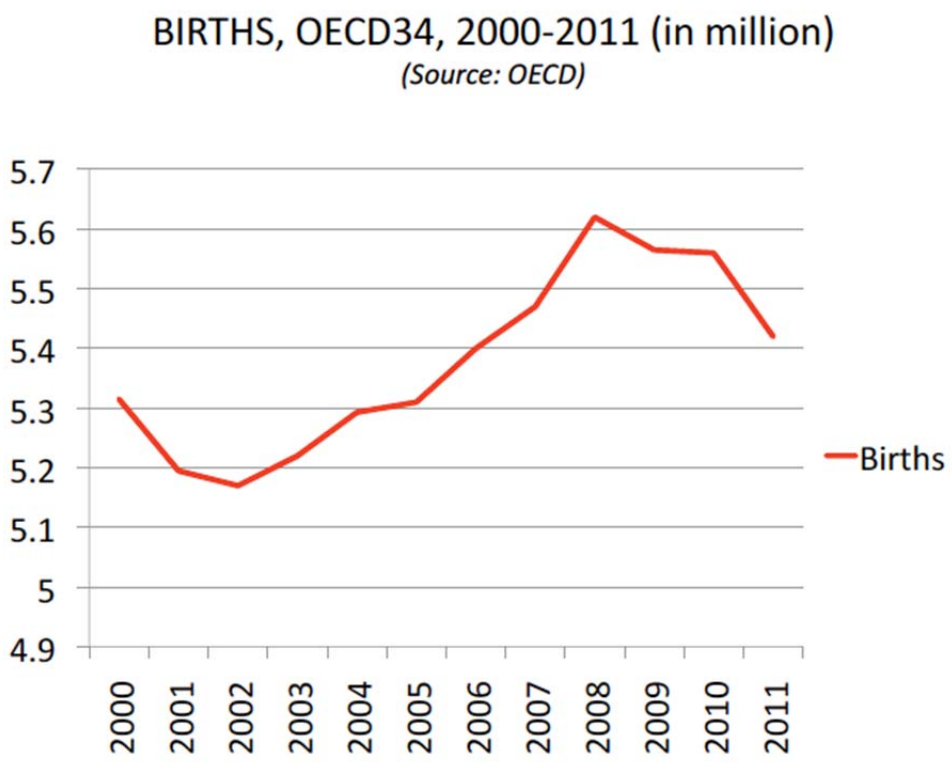
Levels and trends

Given the difficulties in comparing studies, which utilize different methodologies, it would be helpful to have studies which utilize a consistent methodology to a global situation over time. Only one such recent study was located. It uses the demographic definition of failure to bear a child over a 5-year exposure, with the intention to become pregnant, and finds an average of 5% infertility (primary and secondary) among women from 190 countries in 2010. Regional variations are modest. North Africa/Middle East are found to have relatively high levels of primary and low levels of secondary infertility, with the opposite situation in sub-Saharan Africa. With respect to trends1990-2010, the study finds declines of infertility in sub-Saharan Africa and South Asia, but generally regional levels remained relatively stable, including High Income Countries (HICs). The study notes that, as women desire a declining number of children, unwanted childlessness also declines (Mascarenhas et al., 2012).

Other studies, using different methodologies, have found significantly higher levels. Estimates from the 1970s from sub-Saharan Africa indicated primary and secondary infertility as high as 30% and 50% respectively, with tubal occlusion being the underlying factor in approximately 50% (Frank 1983, Mascarenhas, Flaxman et al. 2012). Recent studies from Western countries have found 16-26% lifetime unintended childlessness (Say, Souza et al. 2009).
Another approach to measuring medical/clinical infertility is to estimate how many births occur with MAR. In Denmark, this level has increased rapidly and is now at 8-10% of all live births, the highest in Europe. However, Denmark also has some of the highest rates for other procedures, e.g. pre-natal screening for Down’s syndrome. It is generally attributed to high accessibility of health care services rather than high levels of infertility (Schmidt and Pinborg 2012) and a high level of public reimbursement.

Yet other authors take a decreasing birth rate as an indicator of levels of infertility.

In HICs such as the OECD, birth rates decreased over the period 1950-2000, showed an unexpected increase 2000-2008, and a renewed decrease since then. This is generally attributed to the economic environment, rather than rapidly changing levels of infecundity.



With respect to timing of births, worldwide, and especially in HICs, female age at first birth has increased. In Denmark, the female age at first birth was 22.7 years in 1965, increasing to 29.4 in 2012 (Fagligt Netværk for seksuel sundhed 2014). However, this shift did not automatically result in lower TFR - fertility simply shifted to older ages. Nor has it, thus far, resulted in historically high levels of cohort childlessness – in 1900 childlessness was estimated at 25% (Fagligt Netværk for seksuel sundhed 2014).

With regard to the human rights concern of unwanted childlessness, in OECD countries, both women and men have fewer children than their stated ideal number, with a common gap being around 0.5 children.

In Low and Middle Income countries (L/MICs) women on average have more children than they wish. However, this average conceals the important fact that some couples/women desire more children than they have (OECD 2014).

Determinants

The determinants of infertility are varied, often inter-related, and frequently unknown.

For females, untreated reproductive tract infections, maternal sepsis, and unsafe repeat abortions may result in fallopian tube occlusion and subsequent infertility. This has been, and remains, a major cause of infertility, not least in L/MICs where health care may be less accessible (Frank 1983, Cates, Farley et al. 1985, WHO 2013). The WHO estimates that about 20–30% of unsafe abortions result in RTIs and 20–40% of these cases transform into infertility (Grimes, Benson et al. 2006). Practices such as female genital mutilation (FGM) contribute to pelvic infections increasing the risk of tubal occlusion (Almroth, Elmusharaf et al. 2005, Ahmed, Mansour et al. 2009).

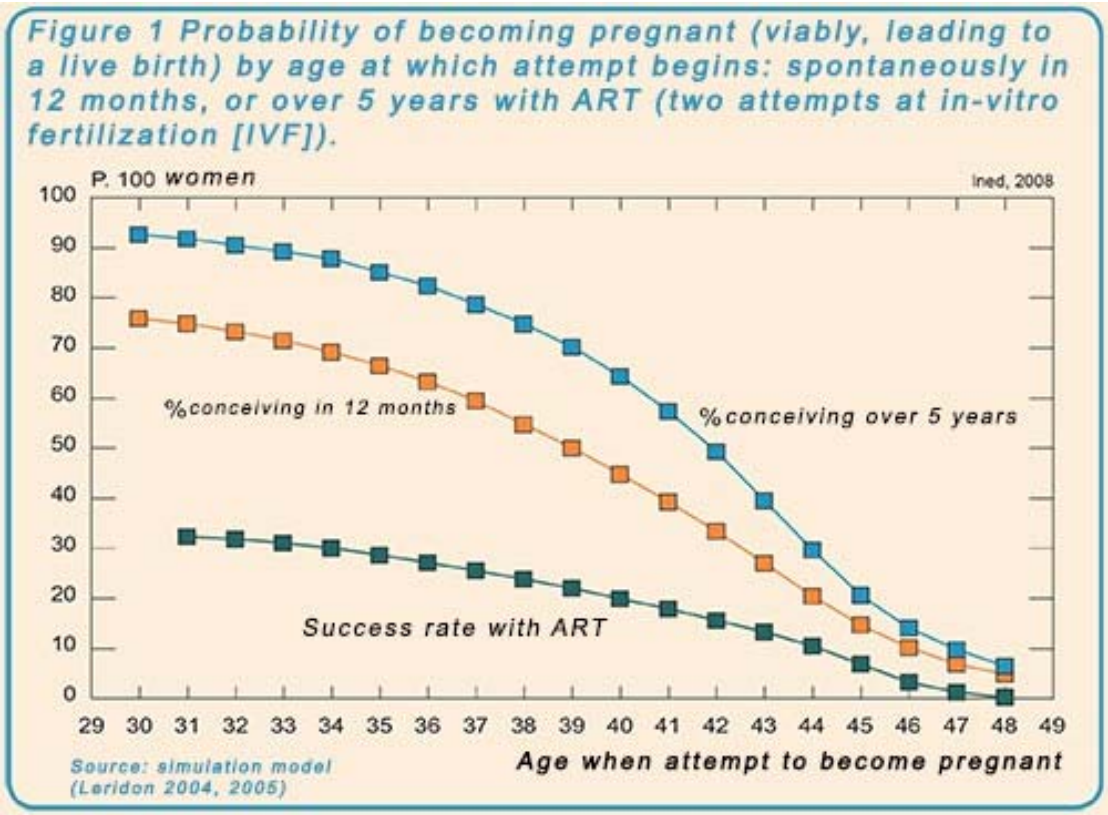
Various other health conditions have been identified as having a negative effect, including endocrine disorders, endometriosis, genetic, anatomical or immunological problems.

Numerous studies note a connection between infertility and behavioural aspects, including smoking, coffee consumption, alcohol intake, as well as over- and underweight. On the other hand, high stress levels have not been conclusively found to increase infertility (Mascarenhas, Flaxman et al. 2012, Schmidt and Pinborg

2012).

For males, infertility may be associated with similar factors as for females: untreated infections, cancer/treatment, diabetes, endocrine or genetic disorders/malformations, as well as behavioural aspects. Several studies have found falling semen quality in Western countries possibly due to environmental factors, but to which extent environmental factors influence semen quality, and fecundity, is still intensively debated (Mascarenhas, Flaxman et al. 2012, Priskorn, Holmboe et al. 2012, Schmidt and Pinborg 2012).

Female age is the single major predictor of infertility, partially because it incorporates many of the other factors (Leridon 2010), and fecundity is at its peak in the 20s. (Lunenfeld, Van Steirteghem et al. 2004). However, it is important not to overinterpret: to date there is no evidence that unwanted childlessness has risen, merely that time to pregnancy may be longer (Leridon 2010). As seen in the graph below, MAR can reduce, if not entirely eliminate, infecundity. Other factors, e.g. frequency of intercourse, may outweigh the risks associated with age. Male age also influences fecundity, and a combination of high ages for both partners is particularly significant both for ability to conceive and avoiding miscarriage.



Beyond the medical, fertility is not only an issue of the ability to bear children. A vast literature has developed over the last decades, exploring the socio-economic determinants of whether they wish to do so. Such determinants include being able to find a partner, attitudes toward child-bearing out of wedlock, the level of male support/availability of external child care, the flexibility of the educational system and labour market, as well as the economic situation. The overall conclusion is that the decision is more likely to occur where especially women are able to combine work and family obligations. This trend is recent. In 1980 the OECD countries with the highest TFR were those where female employment was the lowest, whereas in 2012 the reverse was true. (European Commission 2008).

In summary, although the levels vary significantly among different studies, so far there seems no reason to conclude that levels of infertility have significantly increased in any region over the last few decades. Levels in sub-Saharan Africa have probably declined. However, some of the risk factors may have increased, and utilization of MAR also.

Situation – consequences for the individual and society

In HICs, unwanted childlessness, as well as undergoing treatment with MAR, can lead to devastating distress and reduced quality of life (Schmidt 2006). In L/MICS with limited public old age security, where aged parents rely on their children for support, and where social status depends on 'reproductive success', unwanted childlessness can be an even more serious psychological and financial problem (Wiersema, Drukker et al. 2006). social exclusion and stigmatization due to strong traditions or beliefs prevailing in many developing countries (Vayena, Rowe et al. 2002, Pennings 2008). Financial hardships associated with high expenditures for infertility treatment and lack of financial support from family or partner in developing countries can lead to negative psychosocial effects and loss of economic security (Dyer and Patel 2012).

For economic/demographic concerns, there is vocal concern that birth rates are decreasing. However, thus far, there is little evidence to indicate that infecundity is the main cause (European Commission 2008).

In general, the evidence is not systematical and consistent, and causality can be difficult to assign (Schmidt and Pinborg 2012).

Several high income countries are currently experiencing reduced fertility rates and as such facing aging populations which in europe has prompted member states of the European union to ensure the right of couples to guarantee universal access to infertility treatment and medically assisted procreation by taking steps with a view to reducing the financial and other obstacles.

Response

WHO/World Bank 2011

Global consensus documents refer more or less explicitly to infertility as an integral part of sexual and reproductive health and rights (SRHR). The 1994 International Conference on Population and Development refers to reproductive health as implying 'that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so' (UN 1994). This is reconfirmed in the World Health Assembly Reproductive Health Strategy from 2004.

However, whereas there has been good progress in other areas of SRHR, infertility has received limited attention, especially in L/MICS (Ombelet and van Balen 2012, Asemota and Klatsky 2015). Many reasons have been proposed for this lack of attention, including the high cost of treatment, an unfortunate view that the problem in L/MICs is one of hyper-fertility rather than sub-fertility, as well as the confusion of terminology and consequently on trends (van der Poel 2013, WHO 2013). As pointed out by Inhorn, in many settings infertility is still perceived as a purely female issue (Inhorn 2003), and management often is mistakenly exclusively female based (WHO 2013).

Nevertheless, some progress is being made.

For the medical/clinical concern, WHO is updating global technical guidelines, including on terminology (WHO 2013).

At the national level, much attention has been focused on MAR, but legislation and regulations diverge greatly among countries (Jones and Cohen 2004). In Denmark, MAR is supported by health insurance (at an estimated cost of 76 413 DKK per live birth) (Christiansen, Erb et al. 2014) but in L/MICs, few countries provide subsidized infertility services (Ombelet and van Balen 2012). Infertility can be viewed as a public health threat yet few countries seem to have instituted programmes of prevention to reduce infertility rates, with recent initiatives in Denmark and Australia being apparent exceptions (Fagligt Netværk for seksuel sundhed 2014).

To meet the demographic/economic concern about declining birth rates, several countries have adopted measures to limit access to family planning to increase birth rates. The European Commission, distancing itself from any such measures, has instead identified measures which make it easier for prospective parents to combine work and family obligations, (European Commission 2008).

The same is true of the International Planned Parenthood Federation. On the basis of a review of national laws in the European Region, it concludes that providing a 'comprehensive package of support measures for women and their families is a much more effective approach than measures to limit access to contraception or safe abortion in order to stimulate population growth' (IPPF undated).

A number of studies are also appearing which point to the danger of encouraging a public discourse which is overly simplistic and dramatic, and places all responsibility on young women (Sangstera and Lawsona 2014 (published online 27 Oct 2014).

Looking to the future, lessons can also be learned from the past experience with family planning programmes:

- A human rights approach is essential – in the long run that is both most acceptable and most effective. Campaigns which build on simplistic and exaggerated information can backfire.
- Numerous Knowledge, Attitude and Practice (KAP) studies have shown that knowledge is not enough – the supportive environment and the means to take action are equally important.

Any future policy discussions may involve several dimensions:

- improved evidence base
- fertility awareness and prevention programmes (e.g. to treat infections)
- wider access to treatment
- socio-economic policies which improve the possibility for prospective parents to combine education/work with child bearing
- explicit reference in international policy discussions, e.g. the Sustainable Development Goals and Human Rights Processes such as the Universal Periodic Review

Research priorities

Some of the areas requiring further research are

- Incorporation of infertility prevention and treatment into existing reproductive health care programmes
- Research on cultural, ethical, religious and social aspects of infertility in poor resource settings
- Barriers to access to infertility treatment
- Cost-effectiveness of infertility treatment and prevention of infertility causes in developing countries
- Issues related to infertility – levels, determinants, consequences, possible interventions

3.3 PRIORITY AREA 3: ELIMINATING UNSAFE ABORTION

Contributor: Vibeke Rasch
Updated December 2016

Terminology

The concepts and metrics used in the following discussion are:

(Induced) Abortion	The termination of a clinical pregnancy, by deliberate interference that takes place before 20 completed weeks of gestational age (Zegers-Hochschild, Adamson et al. 2009)
Abortion Rate	The number of abortions for every 1000 women aged 15-44
Abortion Ratio	The number of abortions per 1000 live births
Proportion (%) of pregnancies, which end in abortion	The estimated number of abortions divided by the total number of pregnancies
Unsafe abortion	A procedure carried out either by persons lacking the necessary skills or in an environment that does not conform to minimal medical standards, or both

See Annex 2 for more details on terminology.

Situation - Levels and Trends

Globally, the *number of abortions* was estimated at approximately 56 million each year during 2010-2014. This number signifies an increase from 50 million per year in 1990-1994, the increase in number of abortions mainly reflects an increase in population growth (Sedgh, Bearak et al. 2016).

Table 3.3.1 Global estimates of abortions, 1990-1994 and 2010-2014 (Sedgh et al. 2016)

	No of abortions (millions)		Abortion Rate*	
	1990-1994	2010-2014	1990-1994	2010-2014
World	50.4	56.3	40	35
Developed countries	11.8	6.7	46	27
Developing countries	38.6	49.6	39	37
Africa	4.6	8.3	33	34
Asia	31.5	35.8	41	36
Europe	8.2	4.4	42	30

Latin America	4.4	6.5	40	44
Northern America	1.6	1.2	25	17
Oceania	0.1	0.1	20	19

* Abortions per 1000 women aged 15-44

If one looks at *abortion rates* in 2010-2014, for the world as a whole it was 35. However, women in developing countries have a higher risk of induced abortion than women living in developed countries[13]. Thus, the abortion rates are 37 in developing countries and 27 in developed countries. Between 1990–1994 and 2010–2014, the abortion rate declined markedly in developed countries, from 46 to 27 per 1,000. In contrast, it remained almost the same in developing countries.
Regionally, levels vary. The highest estimated annual rate in 2010–14 was in Latin America at 44 abortions per 1000 women and the lowest were in Northern America at 17 and Oceania at 19. The largest observed reduction between the first and last time periods was in Europe, where the rate fell from 42 abortions per 1000 women in 1990–94 to 30 in 2010–14, reflecting a significant reduction from 54 to 38 in Eastern Europe. The abortion rate also fell in northern America. A non-significant decline was noted in Asia and a non-significant increase in Africa and Latin America (Sedgh, Bearak et al. 2016)

Globally, the estimated *percentage of all pregnancies that resulted in abortion* was 25% in 2010–14 (table 3.3.2). In the developed world, the proportion of pregnancies ending in abortion declined from 39% to 28%, whereas in the developing world, it increased from 21% to 24%.

Table 3.3.2 Percentages of pregnancies ending in abortion, 1990-1994, 2000-2004 and 2010-2014 (Sedgh et al. 2016)

	1990-1994 (90% UI)	2000-2004 (90% UI)	2010-2014 (90% UI)
World	23% (23-26)	24% (23-27)	25% (23-29)
Developed countries	39% (36-44)	34% (32-40)	28% (26-33)
Developing countries	21% (20-24)	22% (21-26)	24% (23-29)

UI= uncertainty interval

In absolute numbers; of the 213 million pregnancies that occurred worldwide in 2012, approximately 56 million were terminated by an induced abortion. An estimated 50% of these abortions were 'unsafe' that is, performed by persons lacking the necessary skills or in an environment not in conformity with minimal medical standards (Huber, Curtis et al. 2016).

As can be seen from the priority area heading above, the focus in international consensus is on eliminating *unsafe abortion*. Unsafe abortion was recognized as an urgent health concern at least as far back as the World Health Assembly in 1967 (WHO 2011). Most 'unsafe' abortions take place outside the national legal system, that is, they are 'illegal'.[14] However, not all illegal abortions are unsafe, neither are all legal ones safe, the overlap is great.

The observed decline in abortion rate from 1990-94 to 2010-14 is due to a decrease in safe abortions. In contrast, the *number of unsafe abortions* has not decreased: in 1995 the number was estimated to be 20 million, 19.7 million in 2003, and 21.6 million in 2008. Almost all (97%) of these unsafe abortion take place in developing countries (WHO 2011).

Situation – determinants

In relation to unsafe abortion there are two determinants, which are of particular interest: contraceptive prevalence and legal regulation.

Intuitively, one might expect *contraceptive prevalence* rates to be inversely related to abortion rates, and experience shows that to be true in the long run. However, in early stages of fertility decline, when women begin to want fewer children, but family planning programmes are new, women may initially resort to abortion to achieve lower levels of fertility. This has been the case for many regions, with some striking examples including Japan and Tunisia. Eastern Europe is a particularly compelling example: until two decades ago contraception was not widely available, and abortion rates were extremely high. The ICPD singled out the region to strongly advocate that better contraceptive services be introduced in order to reduce abortion rates. In the last two decades contraception has become much more available, and abortion rates have decreased remarkably, even with birth rates stable or declining (Requena 1970, Streatfield 2001, Marston and Cleland 2003, Marston and Cleland 2004, Shah and Åhman 2009).

Countries in sub-Saharan Africa also demonstrate this tendency: overall, contraceptive prevalence rates are low (19 and 26 per cent, respectively), abortion laws are highly restrictive (usually permitted only to protect a woman's life or health) and the abortion rates, almost all illegal and unsafe, are 34 abortions per 1000 women aged 15-44 - that is, 2-3 times higher than Western Europe (Sedgh, Bearak et al. 2016).

Every method of family planning has some contraceptive failure, but altogether, modern contraception is estimated to avert 112 million abortions in the developing world every year, especially where programmes are well established, high quality and accessible to all parts of the population.

Given that in most societies family planning is less available to poorer, less educated and more marginalized groups, they will often have higher abortion rates. For example, studies in Western Europe show immigrants to have abortion rates 2-3 times higher than the native population (Carballo, Katic et al. 2005, Carballo and Mboup 2005, Rasch, Gammeltoft et al. 2008). Young women face particular problems, thus 27% of all abortions are performed among unmarried women (Sedgh, Bearak et al. 2016). Unmarried women are generally young and often disadvantaged with respect to their ability to access contraception. This applies in particular for young women in developing countries where cultural attitudes that disapprove of adolescent sexual activity contribute to a severe lack of access to reproductive health information and services. In countries with restrictive abortion laws, young women are at double jeopardy, they are at increased risk of becoming unintendedly pregnant, and if they want to have the pregnancy terminated they are also at increased risk of unsafe abortion, since they often have difficult access to safe abortion information and services.

Another determinant is *legal regulation.* There is no indication that rates of abortion are lower where it is illegal. In general, abortion is much more likely to be illegal in developing than in developed countries, yet in developed countries abortion rates are lower, and have declined much more. Overall, the abortion rate has been shown to be lower in countries where larger proportions of the female population live under liberal laws than in countries where restrictive abortion laws prevail (Guttmacher Institute 2009). Reports on unsafe abortion underscore that in countries with liberal abortion laws, and greater access to contraception, unsafe abortion is low to non-existent (WHO 2011). Although more liberal abortion laws have been implemented in a number of countries during the past decades, abortion remains a controversial subject.

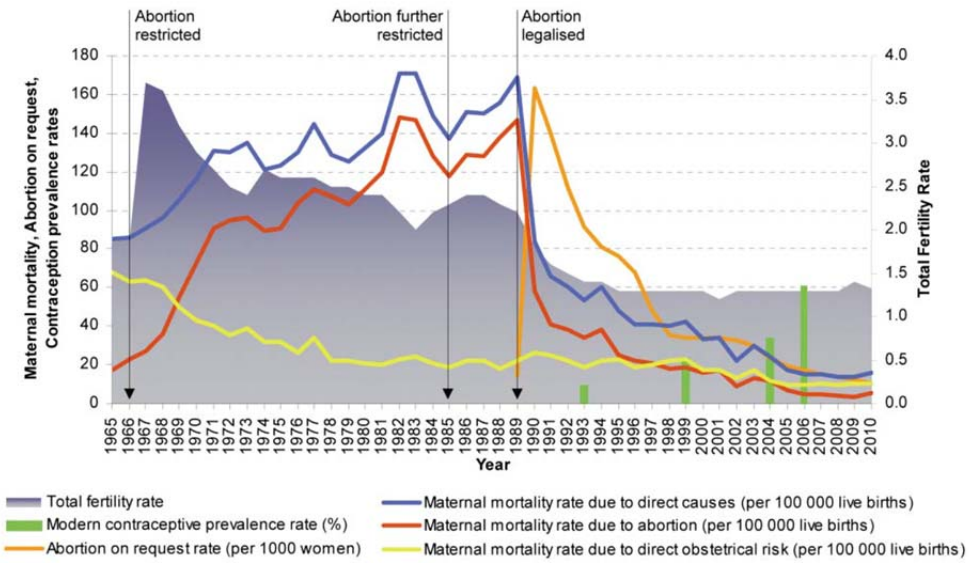
Even in countries like for example Nepal and Columbia, where restrictive abortion laws have been reformed, unsafe abortions still prevail since access to safe quality abortion service remains difficult for some women due to social, economic and health system barriers and the stigma surrounding abortion (Culwell and Hurwitz 2013, Henderson, Puri et al. 2013, Rocca, Puri et al. 2013, Darney, Simancas-Mendoza et al. 2014). In countries where abortion laws are most restrictive and women have low rates of contraceptive use, induced abortion rates are higher overall, and unsafe abortion poses a particular health risk for women.

Situation – consequences

The main investigated consequences are physical and mental health effects.

With respect to *physical health*, abortions performed under safe conditions result in minimal adverse effects (Sedgh, Henshaw et al. 2007, Shah and Åhman 2009). For example, in the US the case fatality rate is 0.6 per 100 000 procedures – about the same as for an injection of penicillin. For sub-Saharan Africa however, where most abortion is unsafe, the rate is 800 times higher. More than half of all deaths from unsafe abortion

worldwide take place in sub-Saharan Africa (WHO 2011). There is compelling evidence that making abortion illegal increases health risk.



One very well documented case is Romania, where both abortion and access to contraception were severely restricted in 1967. As a result, Romania in 1989 had the highest recorded maternal mortality ratio of any country in Europe – 159 deaths/100 000. An estimated 87% of those deaths were due to illegal and unsafe abortion. Romania also had a unique problem of large numbers of abandoned children in orphanages (Benson, Andersen et al. 2011). Immediately after the 1989 revolution, the new government removed restrictions on contraception and legalized abortion, and the maternal mortality ratio dropped to 83 in 1990. Several international organizations (e.g. UNFPA, USAID) have worked with the Romanian ministry of health, increasing access to free contraception in low-income communities, and contributing to an increase in contraceptive prevalence (from 29.5%, 1999 to 38.2%, 2004). A decrease in the average number of abortions a woman has in her lifetime from 2.2 in 1999 to 0.84 in 2004; and a 36.8% decline in abortion-related maternal mortality has been observed a long with these initiatives (USAID 2006).

Another example is South Africa, where the incidence of infection resulting from abortion decreased by 52% after the abortion law was liberalized in 1994, and the abortion mortality dropped by over 90% (Jewkes, Rees et al. 2005). Uruguay provides yet another example, where a rapid reduction occurred in number of maternal death from 1990 to 2015, particularly in number of death resulting from unsafe abortion. This coincided with the application of a model for reducing the risk and harm of unsafe abortions, which finally led to the decriminalization of abortion in 2012 (Briozzo, Gomez Ponce de Leon et al. 2016).

The consequences of unsafe abortion go beyond mortality. Unsafe abortion may also lead to infection, particularly in settings where poor hygienic standards prevail. When infection spreads upwards through the genital tract, it can cause damage to the tubes and ovaries and pelvic inflammatory disease may develop. This condition can result in bilateral tubal occlusion and secondary infertility (AbouZahr, Åhman et al. 1998). Globally, 5 million women are living with temporary or permanent disabilities associated with unsafe abortion, more than 3 million of these women suffer from the effects of reproductive tract infections, and close to 1.7 million experience secondary infertility (Ezeh, Bankole et al. 2016). In Romania, where the upsurge in unsafe abortions after 1967 resulted in a lifetime number of abortions of 5 abortions in 1989, 20% of the women developed acquired infertility (Kirkorian 2004).

With respect to *mental health effects*, evidence for both safe and unsafe abortions is difficult to find. Studies claiming that women have increased risk of adverse mental health effects are generally not very robust. They should also be placed in the perspective that pregnancy in general is associated with increased risk of mental ill health (see chapter 3.1). A few authoritative recent studies demonstrate no increased risk for mental health (Cohen 2006, Munk-Olsen, Laursen et al. 2011).

Response – International guidance – Human rights, Conferences and action plans

Abortion is one of the most controversial issues within the field of SRHR. Therefore, it may be helpful to expand on the existing international agreement.

There is no clear international agreement to consider abortion a human right. However, several individual complaint cases in the UN Human Rights Committee have resulted in rulings which may provide significant precedence.

In 2001, a 17-year old girl in Peru sought an abortion of her 14 week old fetus, which had been diagnosed with anencephaly. Although this was permitted under the law, the hospital refused, on conscience grounds. The baby was born and died within 4 days. In 2005 the Human Rights Committee held Peru accountable, stating that the victim's rights had been violated, under several articles of the International Covenant on Civil and Political Rights (ICCPR) including the right to effective remedy, prohibition on torture and cruel, inhuman and degrading treatment, right to private life and right of minors to measures of protection. In early 2016, Peru paid financial reparations (OHCHR 2016).

A ruling in August 2016 in the UN Human Rights Committee, Mellet vs Ireland, deals with an Irish woman who went to the UK for abortion, developed life threatening complications after her return to Ireland, but could not gain access to health care. The human rights committee ruled that by not providing post-abortion care on non-medical grounds the state had violated the woman's human rights (ICCPR 2016).

The debate on the legality of abortion is ongoing. Thus, there are also recent high profile attempts to limit abortion rights (e.g. in Poland in 2016).

Beyond legally binding human rights, at the ICPD in 1994, the definition of reproductive health states ' … *the right of men and women to be informed and to have access to safe, effective, affordable and acceptable methods of family planning of their choice,* ***as well as other methods of their choice for regulation of fertility which are not against the law...'*** (authors' emphasis). Some interpret this to include abortion, but it must be noted that the wording specifies that the methods should not be against the law of the country concerned.

The 179 government delegations in attendance

- Recognised unsafe abortion as a major public health concern
- Pledged their commitment to reducing the need for abortion through expanded and improved family planning services, with particular reference to areas where abortion rates were high due to poor family planning services (esp. Eastern Europe)
- Recognised that, in circumstances where not against the law, abortion should be safe
- Noted that women should have access to post abortion care.[15]

In 1995, the Beijing Women's Conference reaffirmed these agreements. It also called for Governments to "*…consider reviewing laws containing punitive measures against women who have undergone illegal abortions*…" (UN 1995).

The United Nations General Assembly review and appraisal of the implementation of ICPD in 1999 (ICPD + 5) further agreed that

> *"… in circumstances where abortion is not against the law, health systems should train and equip health-service providers and should take other measures to ensure that such abortion is safe and accessible. Additional measures should be taken to safeguard women's health" (WHO 2003).*

Regional fora have also addressed the issue. In Africa, health ministers have recently been increasingly outspoken about the public health hazards of unsafe abortion. The Maputo Protocol and Plan of Action, adopted by African Union Ministers of Health and subsequently at the Summit by Heads of State, or the ECOWAS meeting, are such examples (African Union 2006).

Neither the Millennium or the Sustainable Development Goals refer to abortion. However, the SDGs specifically refer to ICPD, and therefore any provisions therein are still relevant.

Response – International technical guidance on interventions to reduce unsafe abortion

As indicated above, most unsafe abortions are taking place in low-income countries, especially in Africa. They occur particularly in rural and remote areas, where the shortage of trained health providers is greatest. To minimize the burden of the consequences of unsafe abortion, a combination of approaches that include availability of safe technology, access to safe abortion services, and access to postabortion care for complications from unsafe abortions should be applied. Finally, abortion service should be made available to the full extent of the prevailing law in the different countries.

Availability of safe technology: Abortion in early pregnancy performed by trained personnel using appropriate techniques is one of the safest medical procedures. The WHO recognizes vacuum aspiration (manual and electric) up to 12–14 weeks of gestation as a safe and appropriate surgical procedure (WHO 2012). Medical abortion is an alternative to surgical abortion, where a combination of mifepristone, followed by misoprostol, is used. It is recommended as a safe and effective method that can be used at any stage of pregnancy, although doses and specific protocols change as gestation advances (WHO 2012). If mifepristone is not available, misoprostol, an inexpensive anti-ulcer medicine can be used alone to terminate a pregnancy. The failure rate is higher than when used in combination with mifepristone, but it is still safe and effective, and is a WHO-recommended option (WHO 2012). One of the advantages with misoprostol is that it can be administered by mid-level providers at first level facilities and thus comprise a cost effective alternative to conventional abortion service which are offered at higher level health facilities. The technique has been evaluated in many different setting and studies from e.g. Bangladesh and Mexico have documented that both women and their health providers accept the method (Alam, Bracken et al. 2013, Peña, Dzuba et al. 2014).

Access to service: To address the shortage of health providers in abortion care, WHO has published a guideline to give evidence-based recommendations on the safety, effectiveness, feasibility, and acceptability of involving a range of health workers in the delivery of abortion service (WHO 2015). The guideline states that a broad type of health workers can be authorized to provide abortion service. These include obstetricians and gynaecologists, non-specialist doctors, associate clinicians, midwives, nurses, auxiliary nurses, pharmacists, pharmacy workers, and lay health workers. Many countries follow this guideline and allow associate clinicians, midwives, or nurses to treat incomplete abortion using manual vacuum aspiration. A recent meta-analysis has documented that trained mid-level providers may effectively and safely provide first-trimester surgical and medical termination of pregnancy services (Renner, Brahmi et al. 2013). When focusing on medical abortion, this can be performed as an outpatient, primary-care level intervention up to 64 days pregnancy duration (WHO 2012). There is furthermore strong evidence indicating that after the initial consultation, where the medical eligibility is determined, women can self-manage medications outside the health facility without direct supervision of a healthcare provider (Iyengar, Klingberg-Allvin et al. 2016). Women can also self-assess completion of the medical abortion using simple check lists and low-sensitivity pregnancy tests, which will reduce the need for multiple clinic visits (Iyengar, Paul et al. 2015). Finally, in many settings, a pharmaceutical person may be the first and sometimes only health care contact for a woman who wants to terminate an unwanted pregnancy. Therefore, interventions aiming at providing pharmacy workers with accurate information related to abortion service may help minimizing harm and improve referral linkages with authorized abortion (Sneeringer, Billings et al. 2012, Fetters, Raisanen et al. 2015). For women who do not have physical access to abortion service, the use of telemedicine to provide medical abortions has also been suggested as a mean to help bringing needed care to such women (Gomperts, Jelinska et al. 2008, Grossman, Grindlay et al. 2013).

Access to postabortion care: P**ostabortion care** is considered an effective mean to help reducing deaths and injuries from incomplete and unsafe abortions. It includes three essential elements: 1) Emergency treatment; 2) Contraceptive counseling and service, and where financial and human resources exist, evaluation and treatment of sexually transmitted infections (STIs) as well as HIV counseling and/or referral for testing and; 3) Community empowerment through community awareness mobilization (Huber, Curtis et al. 2016). Whatever the legal context of abortion is, the treatment of women with complications is legal, and postabortion care is a signal function of basic emergency obstetric care and should therefore be made available to all women, regardless of the law.

Services to the full extent of the law: Although laws vary globally, all but six countries allow legal abortion in some circumstances, most often to save the life of the woman and often when the pregnancy is the result of rape or incest (Center for Reproductive Rights 2015). However, women are often unaware of how and where to access abortion services (Adinma, Adinma et al. 2011, Banerjee, Andersen et al. 2013). Therefore, different approaches such as interpersonal communication, drama, theater, radio, and wall signage have been tested. They have proven to enhance the understanding of the local abortion context and the availability of abortion service (Bingham, Drake et al. 2011, Banerjee, Andersen et al. 2013). Telephone help lines may also help provide confidential sources of information and support.

Response – National level

In many countries abortion was made explicitly illegal in 19th-20th century, but most countries have relaxed their laws during the last few decades. However, there is recent evidence that restrictions are also increasingly being introduced, e.g. in the US. Since 1997, the grounds on which abortion may be legally performed were broadened in 17 countries: Benin, Bhutan, Cambodia, Chad, Colombia, Ethiopia, Guinea, Iran, Mali, Nepal, Niger, Portugal, Saint Lucia, Swaziland, Switzerland, Thailand and Togo. One territory and three states in Australia (Capital Territory, Victoria, Tasmania and Western Australia) and one state in Mexico (Mexico Federal District) also liberalized their laws. In contrast, El Salvador and Nicaragua changed their already restrictive laws to prohibit abortion entirely while Poland withdrew socioeconomic reasons as a legal ground (Singh, Wulf et al. 2009).

At present approximately 25% of the world's nations ***only*** allow abortions to save the life of the mother and 42% allow abortions if the mother's life is at risk as well as for at least one other ***specific*** reason, such as to preserve a woman's physical or mental health, in cases of rape or incest, because of fetal impairment or for social or economic reasons. Finally 30% allow abortions on request or for any reason, although many countries do not allow women to terminate their pregnancies after a certain point (e.g., 20 weeks). There are six countries that do not allow abortions under any circumstances, these countries are the Latin American nations of Chile, the Dominican Republic, El Salvador and Nicaragua as well as Vatican City (represented in the U.N. by the Holy See) and Malta, both of which are in Europe (Center for Reproductive Rights 2015). Most country laws graduate restrictions according to the duration of the pregnancy (e.g. Denmark, where abortion is only available on demand in the first trimester). At times, health ministry staff may not be aware of these nuances, and this may make access more difficult, even where it is legal. In some countries, there seems to be no legal limit, but technical protocols limit the period for which abortion is available on demand (e.g. China).

Many national laws balance the right of the woman against the right of the foetus depending on duration of the pregnancy. Many set the point of viability as a limit, or the end of the first trimester (12 weeks) (WHO 2007). Some feminists object to this and feel that abortion is always preferable to bearing an unwanted child (Gita Sen, June 2009, personal communication).

Religion plays a major part in the discourse, and also at times provides guidance, which also takes the duration of the pregnancy as a point of departure. The only religion, which has a position consistently stating that all abortion is murder is official Catholicism – other religions have more nuanced or varied views. For example, some readings of the Koran by Islamic leaders determine that abortion is acceptable up to the 7th or 17th week, of gestation, others that it is not permitted. Contrary to some popular views, most estimates are that Catholics do not have fewer abortions than others; this is supported by the fact that some Latin American countries have high abortion rates

Some of the disagreement may be over what services are included – provision of abortion services, or only post abortion care (e.g. treating women who have already had an abortion and are in need of medical care). The discussion has at times become rather cryptic. Thus, as mentioned above, the ICPD Programme of Action (PoA) specified several quantified, time bound targets, with one of them being '*…the provision of universal access to reproductive health services, including family planning and sexual health…*' by 2015.[16]

Research priorities

- What are preconditions for improved access to safe medical abortion (issues related to attitudes, policy, programme)
- What are issues related to introducing long lasting reversible methods for post abortion family planning
- Is there an association between the use of different abortion methods and the public perception of induced abortion
- How do different abortion methods affect the probability of an individual undergoing future induced abortion
- How do the unsafe abortion or lack of access to safe abortion affect women and men's sexual and reproductive decision-making?

In summary

- *Globally, the number of abortions was estimated at approximately 56 million each year during 2010-2014. This number signifies an increase from 50 million per year during 1990-1994*
- *In the developed world, the proportion of pregnancies ending in abortion declined from 39% to 28%, whereas in the developing world, it increased from 21% to 24%*
- *Unsafe abortion leads to 47 000 maternal deaths every year, more than 99% in developing countries*
- *Laws regarding abortion vary greatly. Generally, abortion is much less restricted in developed than in developing countries.*
- *Vacuum aspiration (manual and electric) up to 12–14 weeks of gestation is a safe and appropriate surgical procedure*
- *Medical abortion, where a combination of mifepristone, followed by misoprostol, is used, is a safe and effective alternative to surgical abortion.*
- *Postabortion care is an effective means to address complications after an unsafe abortion, and is recommended in ICPD*
- *Medical professionals at times have a mistaken impression that abortion is totally illegal. Thus, even with strict laws, some care may be possible. It is therefore important to know the laws of the country concerned.*

Recommended action (in line with ICPD) would include:

- *Clarify the legal situation of the country of concern.*
- *Ensure that permitted reasons for abortion are supported through health systems.*
- *Ensure access to services for management of complications.*
- *Provide post abortion care.*
- *Provide contraceptive services that will also help avoid repeat abortion.*
- *Grant access to services for the management of complications arising from unsafe abortion.*

3.4 PRIORITY AREA 4: COMBATING SEXUALLY TRANSMITTED INFECTIONS (STIS), INCLUDING HIV, RTIS, CERVICAL CANCERS AND OTHER GYNAECOLOGICAL MORBIDITIES

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Updated July 2014

Terminology

STIs *Sexually* transmitted infections – any infection which is transmitted by sexual contact from person to person

STDs Sexually transmitted diseases – less commonly used, since disease is seen to refer to disease which has reached a symptomatic stage, whereas much infection may not be symptomatic

RTIs Reproductive tract infections – including both those which are sexually transmitted, and those which are endogenous (organisms 'normally' present in the reproductive tract) or iatrogenic (e.g. introduced through medical procedures during IUD insertion, abortion, childbirth)

Situation – trends

WHO estimates that every year more than 499 million new cases of common and treatable bacterial and protozoa sexually transmitted infections (i.e. syphilis, gonorrhoea, chlamydial genital infections and trichomoniasis) occur throughout the world in men and women aged 15-49 years. In addition there are millions of cases of mostly incurable viral infections (WHO 2012).

A major problem for many STIs is that many of them are asymptomatic, at least in the early stages, and especially for women. This means that treatment is less likely, and prevention of further spread is made more difficult.

Viral infections of course include HIV. In 2012, 2.3 million new HIV infections were reported worldwide, 260 000 of which were mother-to-child transmissions. 1.6 million AIDS-related deaths were reported in 2012 (UNAIDS 2013). Whereas this background paper will not go into great detail of this enormously complex issue, this area has seen remarkable progress. Preventive interventions have shown their effectiveness and antiretroviral treatment (ART) is saving millions of lives: the number of new HIV infections has decreased from a high of 3.1 million in 1999 to 2.3 million in 2012, and the number of deaths from 2.1 million in 2004 to 1.6 million in 2012. The number of women in low and middle-income countries with access to prevention of mother-to-child transmission of HIV is estimated to have grown from 45 % in 2008 to 66 % in 2012. ART coverage has increased from less than half a million in 2003 to 9.7 million although a total of 14.8 million in L/MIC need it according to the new treatment protocols from WHO. It is particularly notable that there has been great progress in stabilising or declining HIV epidemics and scaling up access to treatment in sub-Saharan Africa. Eastern Europe and Central Asia on the contrary show signs of further deterioration, with sharply increasing HIV epidemics due to a lack of implementation of evidence-based prevention interventions and a low ART coverage in the region causing AIDS related mortality to increase (UNAIDS 2010). Almost half of all new HIV infections are among young people, and more than twice as many young women as men are infected with HIV in sub-Saharan Africa. Despite global success in curbing the HIV epidemic, the mission is still far from being accomplished. HIV transmission continues at alarming rates in many countries of the world, in particular in L/MICs and the number of people living with HIV increases steadily due to improved access to effective life-saving medicine. Millions of HIV infections and millions of deaths due to AIDS could be averted if universal access to HIV prevention, treatment and care is secured (UNAIDS 2010).

As an example of cancers, infection with the sexually transmitted human papilloma virus increases the probability of developing carcinoma of the cervix. The incidence of cervical cancer is about half a million every year, and the number of annual fatalities is estimated to be more than 270 000 women, constituting the second leading cause of cancer-related mortality in females worldwide (WHO 2013). Papilloma virus also increases the risk of anal cancer and is especially prevalent among men who have sex with men (Bean and Chhieng 2010). ICPD, and the WHO STI strategy, do not mention other male cancers, e.g. prostate (testicular) cancer. Although prostate cancer is a disease of the reproductive organs, it is not sexually transmitted, and it is

close to absent from international discourse and will not be elaborated here. It is notable that this, and other conditions affecting the reproductive health of men, receives low visibility.

Situation – determinants

Predisposing factors are as varied and complex as the diseases involved. Unprotected sex, multiple concurrent sexual relationships, pre-existing infections/conditions, stigma attached to STIs and in particular HIV, political hesitation to implement prevention and treatment programmes, weak health systems, legal barriers, discrimination and other social determinants such as poverty, gender based violence and lack of education are contributing to the continued spread of STIs including HIV and to the development of cancers of reproductive organs (WHO 2007). Infection with one STI increases the risk of becoming infected with certain other STIs, by a factor of up to ten (WHO 2013). Extreme cases exist, for example, WHO estimates that genital ulcers or a history of such diseases increase the risk of transmission of HIV 50-300-fold per episode of unprotected sexual intercourse (WHO 2007).

Situation – consequences

WHO estimates that globally, 60-80 million women suffer infertility and consequent involuntary childlessness as a result of untreated or inadequately treated STIs (WHO 2004). Another estimate is that 186 million ever-married women in reproductive age in developing countries excluding China were infertile because of primary or secondary infertility, but that rates have declined in most countries (Rutstein and Shah 2004).

Such infections may cause tubal blockage, resulting in both adverse outcomes of pregnancy, such as stillbirth and perinatal death due to syphilis, and blindness caused by gonococci and chlamydial infections. Chlamydial infections, gonorrhoea and syphilis can produce serious and often life-threatening conditions in unborn and newborn children, including congenital disease, pneumonia and low birth weight (van Zandvoort, de Koning et al. 2001, WHO and MeasureDHS 2005).

STIs (including HIV), RTIs and cancers of the reproductive organs together account for 8% of the global burden of disease (WHO 2004) and several STIs may have a deadly outcome for infants as well as adults. HIV infection is of course a special case and represents the main cause of adult mortality in Africa (ibid. 18). HIV is arguably the only single disease which has caused a long term decline in life expectancy in a whole region (e.g. in a number of countries in Southern Africa, life expectancy declined by up to 20 years 1980-2000) (UN 2011). In addition to the health burden, these diseases place a huge economic burden on individuals as well and societies as a whole. Loss of productivity due to these diseases is severely compromising the development potential of countries. STIs and their complications rank in the top five disease categories for which adults seek health care in developing countries and thus place a huge burden on health systems (ibid.: 5).

Sex work and HIV/AIDS

A new field of concern in the UN is the vulnerability of sex workers to HIV/AIDS and other STIs and new measures are recommended to prevent HIV infection among this group.

Sex workers in many places are highly vulnerable to HIV and other sexually transmitted infections due to multiple factors, including large numbers of sex partners, unsafe working conditions and barriers to the negotiation of consistent condom use. Moreover, sex workers often have little control over these factors because of social marginalization and criminalized work environments. Alcohol, drug use and violence in some settings may further exacerbate their vulnerability and risk.

Acquisition of HIV and other STIs are important occupational hazards of sex work. Clients can infect sex workers who may transmit infection to other clients and from them to their sex partners. Preventing infection among sex workers thus has the potential to both improve the health of individual sex workers as well as to slow HIV and STI transmission among wider populations. Early interventions in countries such as Brazil, India, Kenya and Thailand have succeeded reducing STI transmission in sex work by increasing condom use, leading to improved health outcomes for sex workers and control of HIV epidemics.

In 2012 three UN reports recommended that middle- and low-income countries take a new approach to sex work and sex workers health and rights (UNDP 2012, UNDP 2012, WHO 2012).

Good practice recommendations from WHO included statements that:

1. All countries should work toward decriminalization of sex work and elimination of the unjust application of non-criminal laws and regulations against sex workers.
2. Governments should establish antidiscrimination and other rights-respecting laws to protect against discrimination and violence, and other violations of rights faced by sex workers in order to realize their human rights and reduce their vulnerability to HIV infection and the impact of AIDS. Antidiscrimination laws and regulations should guarantee sex workers' right to social, health and financial services.
3. Health services should be made available, accessible and acceptable to sex workers based on the principles of avoidance of stigma, non-discrimination and the right to health.
4. Violence against sex workers is a risk factor for HIV and must be prevented and addressed in partnership with sex workers and sex worker led organisations.

Furthermore the report emphasized these evidence-based recommendations. WHO recommends:

1. Interventions to enhance community empowerment among sex workers.
2. Correct and consistent condom use among sex workers and their clients.
3. Offering periodic screening for asymptomatic STIs to female sex workers.
4. Offering female sex workers, in settings with high prevalence and limited clinical services, periodic presumptive treatment for asymptomatic STIs.
5. Offering voluntary HIV testing and counselling to sex workers.
6. Using the current WHO recommendations on the use of antiretroviral therapy for HIV-positive general populations for sex workers.
7. Using the current WHO recommendations on harm reduction for sex workers and in particular sex workers who inject drugs.

The recommendations of antidiscrimination and non-criminalization of sex workers combined with comprehensive HIV/AIDS education, harm reduction and empowerment of sex workers are a result of years of research carried out by UN related organisations, NGOs and independent internationally acclaimed researchers (Rekart 2005).

Response

With the notable exception of HIV, this is clearly an area that has received very little attention. STIs (excluding HIV), RTIs and cancers are not visible in the MDGs, despite their considerable burden of disease and death. Many reasons are quoted for this: the general population may be unaware of the diseases, the fact that many of the infections are asymptomatic and do not cause death, there may be low interest in funding due to the stigma attached to the diseases, and there may be difficulties in integrating into other health system efforts (WHO 2004).

However, HIV/AIDS is a special case. The high burdens of disease and mortality have contributed to the attention it has been given. It has translated into phenomenal increases in financial support. From the 1990s until 2009, funding for the HIV epidemic increased substantially. In 2012, an estimated $18.9 billion was spent on HIV/AIDS (UNAIDS 2013) compared to $300 million in 1996 (UNAIDS 2006) – although still far from the target of mobilizing $ 22-24 billion in 2015 (UNAIDS 2012) .

From 2002-2008, in particular, funding increased six-fold. Since 2009, however, total global funding for HIV and AIDS in low- and middle-income countries have levelled off. Where the increase in funding from 2007 to 2008 was more than 23 % (from $ 11.5 to $ 14.2 billion), the following year the increase was reduced to 4.2%

(UNAIDS 2012). However, it should be mentioned that from 2011 to 2012 the increase in funding was at 10 %.

In conclusion, the HIV epidemic has had exceptional impact, political and financial support, and, in the last few years, there has been exceptional success in controlling it. Yet, it is not clear that this momentum will be maintained, if political and financial support wane. On the other hand, conventional wisdom rarely addresses other aspects of STIs, cancers and infertility – they are close to invisible, despite their major contribution to the burden of disease and mortality. Integrating and linking HIV programmes with STI control and sexual and reproductive service programmes is gaining global momentum as a way to strengthen STI control, reproductive health programmes as well as the HIV response.

In summary

- *There has been unprecedented attention to HIV and AIDS, and in the last decade, also much progress.*
- *For the other STIs and cancers, despite their great burden of disease, there is little attention, and little progress. There is particularly little focus on male morbidity.*
- *The response to STIs, cancers of the reproductive organs and HIV will benefit from an integrated approach to health service delivery including prevention, treatment, care and support.*

3.5 PRIORITY AREA 5: PROMOTING SEXUAL HEALTH

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Updated July 2016

Terminology

As mentioned in Chapter 2, the concept of sexual health is still not clearly defined in consensus documents, although many elements are implicit in the ICPD definition of reproductive health. The current definition of sexual health by a WHO working group states: *"Sexual health is a state of physical, mental and social well-being in relation to sexuality. It requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence."* WHO notes that this is not an official expression of WHO policy, let alone international consensus (see Annex 6) (Glasier, Gulmezoglu et al. 2006).

It is also increasingly recognized that the ICPD definition of sexual health as a component of reproductive health can be questioned. In fact, given its broad scope, sexual health could be considered as the umbrella concept, with reproductive health as only one of multiple components. Sexual activity has wide-ranging reproductive health consequences, but most sexual acts are not directly associated with reproduction and many sexual health problems reach far beyond the realm of childbearing. Thus, sexual activities are present in non-fertile phases of life, i.e. childhood and senior years. Moreover, in late-modern Western societies, the separation of sexual desire and reproduction has been a dominating and rising trend since the inter-war period.

WHO identifies 'unsafe sex' as the second most important risk factor for disability and death in the world's poorest communities and the ninth most important in developed countries. As indicated by the broad, bio-psycho-social WHO definition, however, promotion of sexual health implies more than simply the prevention of disease, and it is closely linked to the concept of sexual rights as indicated by the ICPD, which highlights the notion of sexual satisfaction: '*Reproductive health therefore implies that people are able to have a satisfying and safe sex life…*' (para 7.2).

In line with the thought that sexual health is an inclusive umbrella term, many components have already been discussed in chapters 3.1-4. Here we will discuss some additional components:

- Sexual dysfunction
- Mental health issues related to sexual health
- Violence related to gender and sexuality
- Sexual health and discrimination of specific groups such as adolescents, people with disabilities, individuals with non-conforming sexual orientations such as lesbians, gays, bisexuals, and transpersons (LGBT), sex workers and elderly people.[17]

Sexual dysfunction related problems include low sexual desire/arousal, male erectile dysfunction, inability to achieve orgasm, premature ejaculation, pain during intercourse and vaginismus. Between 8% and 33% of the adult population in developed countries are estimated to experience some kind of sexual dysfunction in their lifetime, and some studies suggest that the actual figure may be higher (Laumann, Paik et al. 1999). These problems are relatively common, but often remain unaddressed and untreated. Studies around the globe have found that sexual dysfunction is associated with low quality of life scores, low self-esteem, relational troubles and even mental depression. Sexual dysfunction, thus, can cause considerable distress, inhibiting an individual's ability to form or maintain intimate relationships. Further, unaccommodated sexual difficulties in chronically ill patients may possibly affect treatment adherence and coping negatively (De Berardis, Franciosi et al. 2002).

Violence related to sexual health is an important human rights and public health issue. Sexual/gender-based violence includes rape, coerced sex, intimate partner violence, female genital mutilation, 'honor' related crimes, and forced prostitution. Sexual violence can take a variety of forms, but the most prevalent is violence towards women exercised by their intimate partner (WHO 2005). Violence has been shown to be a key factor in unwanted pregnancy, in the transmission of STIs, and in sexual dysfunction, and psychosocial morbidity worldwide (Watts and Zimmerman 2002). According to one multi-country survey undertaken by WHO, on average one woman in four suffers violence at the hand of an intimate partner, and 4-20% suffer violence during pregnancy (WHO 2004, WHO 2005).

Groups with particular sexual health issues include people whose sexual lives do not conform with dominant ideas about gender, relationships, sexual practices, and reproduction: individuals who are not (yet) married (such as adolescents); individuals who are not expected to reproduce (such as people with disabilities); and individuals whose sexual desires and/or gender identity do not concur with conventional heterosexual models and gender perceptions (such as LGBT persons) (O'Toole and Doe 2002, WHO 2009). Further, people with chronic illnesses often represent specific needs for sexual aid and counselling.

Adolescents are often sexually active, yet often lack access to essential sexual/reproductive health services. People with physical or mental disabilities are, like adolescents, often expected not to be sexually active, and their sexual health needs are rarely accommodated by the health care system – partly due to problems with physical access and normative constraints. Historically, disabled people have been subjected to forced sterilizations, forced abortions, or forced marriages (WHO 2009); and parenthood is often not considered an option for the disabled (O'Toole and Doe 2002).

Another group whose sexual health needs often remain unmet is people whose sexual orientations differ from the heterosexual norm: those who engage in same-sex activities or transgender persons whose self-identification differ from their biological sex. People with non-conforming sexual orientations and/or gender identities often experience drastic forms of discrimination, exclusion, and violence exercised by other individuals or by state institutions. Hence, increased suicide ideation and general health distress have been repeatedly documented among the Western LGBT population (Plöderl, Wagenmakers et al. 2013). This, obviously, constitutes a grave sexual health threat.

Finally, chronically ill patients represent a group of people, whose frequent sexual problems – caused by complications or drug related side effects – are rarely addressed in the medical sectors around the world.

Situation – trends

We fully recognize that the data on the global epidemiology on aspects of sexual health are not plentiful, and that we have hardly covered all issues of significance. Generally, it is estimated that between 8% and 33% of the adult population in developed countries experience some kind of sexual dysfunction during their lifetime,

although some studies suggest that the true figure may be even higher (Laumann, Paik et al. 1999). This, presumably, is due to the rising incidence of life-style related diseases that often include a sexual symptomatology.

Financial necessity is often the cause of high-risk sexual behaviour in developing countries. Thus, in such contexts health interventions can only be effective if the relationship between economic need and health outcome is understood. However, the relationship between individual sexual behaviour, power dynamics and financial dependence is often underestimated (Luke and Kurz 2002, Luke 2003). An assumption exists that, with the necessary information and tools, everyone will automatically make decisions that improve or preserve their health, but this has been shown to be unjustified, for example in relation to the HIV pandemic (Kamali, Quigley et al. 2003). In a developed country context, too, knowledge has been shown to be a necessary, but not sufficient precondition for risk behaviour modification.

In developing countries, the context of expected behaviour change is particularly important. A woman or girl who is poor may know about the dangers of HIV and other STIs, but engaging in transactional or commercial sex may be the only way for her to earn money, and getting pregnant can be one way of getting access to resources and child support (Reddy and Dunne 2007). How can her risk and vulnerability best be reduced? In the short term, strategies that encourage her clients to use condoms may be the best approach. In the longer term, however, her risk and vulnerability will be reduced only when her economic power and position are improved (Weiss and Rao Gupta 1998).

Response

We see nascent discussion of what the programmatic response should be. Most sources agree that these are not only health system issues, but must also include:

- Laws, policies and human rights
- Education
- Society, culture and general inclusion
- Economics

Programmes that have improved sexual health outcomes include those of Thailand, Mozambique and Uganda (for reducing HIV infection) and Bangladesh, Romania and Vietnam (for reducing unwanted pregnancies). They often owe their success to a variety of actions that were implemented simultaneously (Celentano, Nelson et al. 1998). Early debates focused on whether these “interventions” should be offered in an integrated manner, or whether vertical programmes (implemented alongside one another) can achieve equivalent results. The broad consensus now is that a comprehensive approach is needed (Askew and Berer 2003).

The recommended sexual health services can be provided as part of primary health care, including reproductive health services, or as a stand-alone service, and should address the most significant sexual health problems and concerns. As a minimum, the health system of a country should provide at least the following:

- Sexual health education and risk prevention information for young people, single adults, and couples, where confidentiality and privacy are assured
- Counselling facilities regarding sexual health concerns or needs and sexual empowering on matters of sexual, reproductive or contraceptive preferences
- Identification and referral for victims of sexual and other forms of violence
- Voluntary counselling, testing, treatment and follow-up for STIs, including HIV
- Diagnosis, screening, treatment and follow-up for RTIs, reproductive cancers, and associated infertility
- Diagnosis and referral for sexual dysfunction
- Promotion and distribution of condoms and other protective measures
- Safe abortion to the full extent of the law
- Post-abortion care, including provision of contraceptive information, counselling and methods

Accessible, acceptable, affordable and high-quality sexual health services, as mentioned above, are fundamental for achieving a sexually healthy society (WHO 2002).

As mentioned in the introduction, until very recently, the issue was close to invisible in academic literature and technical debates (Horton 2008), but during recent years it has gained some prominence in international policy debates, attempting to arrive at discussion and consensus.

These discussions have focused on the thought that sexual health and sexual rights are closely interrelated. Sexual rights have been of particularly low visibility, and indeed it has not always been clear what they encompass; let alone how they are assured. Issues such as gender based violence have become vastly more visible in the last decade, but child marriage, male vulnerability, prisoners vulnerability, sexual orientation, LGBT health, sex workers' rights or other issues are rarely addressed (Arnott and Crago 2009).

A few significant developments in the last decade include:

1. At the initiative of Louise Arbour (then UN High Commissioner for Human Rights) a technical group of human rights lawyers and other technical experts was convened in Yogyakarta in November 2006, resulting in 'Yogyakarta Principles on the Application of International Human Rights Law in relation to Sexual Orientation and Gender Identity' being subsequently presented to the UN Human Rights Council. The principles address documented evidence of abuse of rights of lesbian, gay, bisexual and transgender (LGBT) people, noting grave human rights abuses against persons due to sexual orientation and gender identity. For example, at the time, in 77 countries homosexuality was illegal, and in seven of these the death penalty was imposed on homosexuals. These principles have not been adopted by States in a treaty, and are thus not by themselves a legally binding part of international human rights law
2. October 2008, IPPF published a declaration, which was the result of intense consultation over several years. This declaration closely links sexual rights to sexual health, and to general human rights (IPPF 2008). This approach is increasingly taken by many civil society organisations and activists, as well as academic institutions (Berer 1998). There is a growing and rich literature on the issue (Petchesky 2000, Miller 2001, Miller and Vance 2004, Gruskin 2005, 2007, Parker 2007, IPPF 2008, Dixon-Mueller, Germain et al. 2009, Berer 2011). It is also the approach now taken at the technical level (WHO 2010).
3. At the UN General Assembly level, no mention of the subject was made until 2008, when France and the Netherlands presented a statement in favour of rights to sexual diversity, backed by the European Union. It was originally intended to be adopted as resolution, but prompted an Arab League-backed statement opposed it. Both statements remain open for signature, with neither officially adopted by the United Nations General Assembly, and therefore are not in force.
4. 10 December 2010, UN Secretary-General Ban Ki-moon, attending a human rights day event, noted that over 70 countries still consider homosexuality a crime. He appealed for its complete and universal decriminalization, deplored discrimination against homosexuals, and the violence of which they are often victims, and for which the perpetrators escape punishment. He stressed that human rights must always trump cultural attitudes and societal strictures.
5. 17 June 2011, South Africa submitted a request to the United Nations Human Rights Council requesting the United Nations High Commissioner for Human Rights to draft a report detailing the situation of LGBT citizens worldwide. The resolution passed 23 to 19 with the three abstentions being Burkina Faso, China, and Zambia.
6. June 2011, a resolution adopted in the UN Human Rights Council noted that, although treaties are not explicit, where national laws are discriminatory, "Such laws, even if they are never enforced, breach State obligations under international human rights law" (UNHCHR 2012).
7. 17 November 2011, the United Nations High Commissioner for Human Rights submitted the report entitled *Discriminatory laws and practices and acts of violence against individuals based on their sexual orientation and gender identity*. The report documents discriminatory laws and practices and acts of violence against individuals due to their sexual orientation and/or gender identity and details the role of international human rights law in combating such violence (UN 2011).

In summary

- *Further studies are needed to describe the epidemiology and effective programmatic approaches to sexual health and rights.*

- *Until recently, sexual health and rights have been close to invisible in international consensus documents. Technical and programmatic discussions have become more frequent in the last decade, both in academic or civil society fora, as well as at technical level of UN organisations.*
- *During the last five years, the subject has gained momentum, with increasing discussion at scholarly, practical and political levels.*
- *Clearly, this is not the easiest area for advocacy. However, the fact that there are now several operational definitions at hand, makes possible guidelines on operative components, as well as the discussion at a political level promising.*

4. Selected Additional Issues

Contributor: Siri Tellier
Updated June 2013

4.1 POLITICAL SENSITIVITY/SUPPORT

As noted by Cook and colleagues, reproductive health is quite different from other areas of health. It is central to 'social and cultural' identity. Therefore, for as long as there have been cultures, their leaders (not only medical practitioners) have instituted strong norms for reproductive behaviour and values; for example, all the major religions attribute fertility and faithfulness as ideal female characteristics (Cook, Dickens et al. 2003). The fact that reproductive health is lifelong makes it unique, extending well beyond the years of reproduction. It is closely related to gender, to personal relations, to human rights, and to the role of those rights in inter-personal relations, among not only two, but potentially three people – mother, father, child (Clévenot, Séd et al. 1987: 569, 571-577, Vallet 1994: 110, UN 2002, WHO 2004). Therefore, it is perhaps not surprising that politics intrude on the health response to reproductive health (Gruskin 2004).

Political support for reproductive health, especially international assistance, has undergone several shifts in the last few decades. In the 1974 population conference in Bucharest, there was strong support for family planning, and for limiting population growth, by a number of developed countries including the US. Developing countries as a group, including China, were quite sceptical. By the 1984 Population conference in Mexico City, the positions had shifted: China strongly supported family planning for demographic reasons, whereas the US, under the Reagan administration, considered population 'a neutral factor' for development (US National Academy of Sciences 1986, Singh 1998, Singh 2009). At the same time, concern was growing about human rights violations in family planning programmes, especially in Asia.

The ICPD conference in 1994 was perhaps a (short-lived) window of opportunity for agreement, where also women's groups had an unprecedented effect on the outcome document, and with all 179 states in attendance associating them with the consensus. Developing countries have continued to increaseingly embrace the broad concept of reproductive health, and family planning in particular. The number of developing country governments that supported family planning increased from two in 1960 to 115 in 1996 (UNFPA 2004).

Until very recently however, support for family planning from developed countries has waned – many observers confess they still do not understand entirely why, but some of the reasons could include the failure to establish a clear link between population and economic growth (although there are few other linkages which can be made more clearly either), the fact that birth rates had begun to decline and therefore concerns about population growth abated, increasing concern about violations of human rights in family planning programmes, and, especially until recently, a shift toward more conservative leadership in some countries such as the US. There is also a diffuse notion that the fact that women's issues had been given such prominence was in itself frightening to some (Glasier, Gulmezoglu et al. 2006). In financial terms, this has resulted in a number of estimates that funding for family planning has declined, with one estimate being a reduction from USD 723 million in 1995 to 338 million USD in 2007, before increasing again (see also chapter 4.14).

The US has had an important role, both in support and opposition. The Obama US administration has been more positive, just like every previous change of US administration has occasioned a change in position on this issue. However, the majority on the House/Senate is less consistently so.

4.2 SEXUALITY OUTSIDE MARRIAGE/FAMILY

The other issue resulting in major disagreement at ICPD was that of the 'family'. The position of several delegations was that any sexuality outside marriage between a man and a woman (a family) was unacceptable. Thus, several delegations agreed to the term 'couples and individuals' only on the understanding that 'individuals' meant 'married individuals', and that families meant unions between a man and a woman (Singh 1998).

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Updated June 2013

4.3 YOUTH, WHETHER MARRIED OR NOT

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Updated June 2013

The other issue resulting in major disagreement at ICPD was that of the 'family'. The position of several delegations was that any sexuality outside marriage between a man and a woman (a family) was unacceptable. Thus, several delegations agreed to the term 'couples and individuals' only on the understanding that 'individuals' meant 'married individuals', and that families meant unions between a man and a woman (Singh 1998).

The family issue is linked to approaches to youth and their sexual behaviour, and young people have particular reproductive and sexual health issues (see Annex 2 for definitions of 'children, adolescents, youth and young people').

Much opposition has centred on provision of sex education to young people. Yet, evidence indicates that in urban areas, of e.g. Mozambique and South Africa, where youth have more education, including sex education, they have later onset of sexual debut, lower risk taking behaviour and boys tend to develop more gender-equitable male behaviours (Groes-Green 2009, Groes-Green 2011).

Youth have lower access to or utilization of all the services mentioned above. About half of abortions are in young people (WHO 2004), and young women have a higher unmet need for family planning than older women. Out of the approximately 340 million new cases of curable STIs, the highest rate is among 20-24 year olds, followed by 15-19 year olds. One in 20 young people is believed to contract an STI every year, excluding HIV and other viral infections. Yet, a minority of adolescents have access to acceptable and affordable STI services (Dehne and Riedner 2005). About half of all new HIV infections are in young people; most of them girls in sub-Saharan Africa and Asia. Ratios of new female-to-male infections among young people between ages 15-24 run as high as 8:1 in South Africa (WHO 2004, UNFPA 2009).

Maternal mortality is often estimated as being 2 times higher for women 15-18 than for older women, and 5 times higher for women under 15 (WHO 2001). Many factors may contribute to this including physical, social and financial factors (UNFPA 2004, WHO 2004, UNFPA 2005, WHO 2006). Yet, in Asia, 30% and 60% of women are married by the ages 15 and 18, respectively; (Bruce and Clark 2003), e.g. the estimates in India for 2005-6 were that 45% of women were married by age 18, and 300 000 had given birth to at least one child by age 15. The proportion of first births that take place during adolescence is about 2% in China, 18% in Latin America and the Caribbean and more than 50% in sub-Saharan Africa, but the levels are decreasing (IIPS 2006, UN 2011, UN 2013).

The acceptable age of marriage is an unclear issue in human rights terms, with most human rights scholars interpreting it as being 18, based on the 1948 Universal Declaration of Human Rights and the 1989

Convention on the Rights of the Child, however, many countries have marriage laws condoning much earlier marriage, and some Muslim scholars interpret early marriage to be acceptable.

Age of mother at time of giving birth is important for the health of babies. In Vietnam the infant mortality rate was 27/1000 for mothers aged less than 20, and 15/1000 for mothers aged 20-29,[18] and globally, among mothers under age 20, infant mortality rates average 100 deaths per 1000 live births; among mothers aged 20-29 and 30-39, the rate is 72-74 deaths per 1000 live births. Stillbirths and death in the first week of life are 50 per cent higher among babies born to mothers under 20 than among babies born to mothers who are 20-29 years (UNFPA 2007, WHO 2008). HIV is also a particular risk in early marriage (Clark 2004) (Data compiled by Population Council). UNICEF provides yearly estimates of the number of children married by 15 and 18 respectively (UNICEF 2012).

ICPD addressed this issue, calling for reduction of adolescent birth rates, reproductive health education for adolescents, and the full participation by adolescents in the "planning, implementation and evaluation" of reproductive and sexual health information and services. To achieve this, *"countries should, where appropriate, remove legal, regulatory and social barriers to reproductive health information and care for adolescents"* (ICPD PoA Para's 7.45-47).

4.4 POPULATION GROWTH AND FAMILY PLANNING

Contributor: Siri Tellier
Updated June 2013

The UN produces population estimates and projections every two years, with the latest being the 2012 Revision. World population grew from around 1.5 billion in 1900, to 2.5 billion in 1950, and 7 billion in 2011.

Projections are based on 3-5 different scenarios, where the main difference among the scenarios relates to utilization of family planning. A 15-17-percentage increase in CPR is estimated to reduce TFR by one (Cleland, Conde-Agudelo et al. 2012).

Small adjustments in estimates and assumptions result in major differences in projections. For example, the 2050 median projection of world population was 9.3 billion in the 2010 revision, but was adjusted upwards to 9.6 billion in the 2012 revision. The main reason for this adjustment is that CPR in a number of sub-Saharan countries has stagnated.

If contraceptive prevalence, and fertility, stay at present levels in the individual countries concerned, then the projection is that population will increase to 11 billion by 2050, and 29 billion by 2100 (UN 2013).

Population growth is much faster in developing countries than it was in the now industrialized countries. The United Kingdom's population increased about 3.5 times in the century between 1800 and 1900. Uganda is likely to increase 18 times in the century between 1950 and 2050, despite a serious HIV/AIDS epidemic, and even with fertility reductions assumed in the UN's medium scenario (Turner 2009).

4.5 POVERTY REDUCTION AND FAMILY PLANNING

Contributor: Siri Tellier
Updated June 2013

In the 1960s and 1970s, many economists especially in the developed world were of the opinion that family planning, and reduction of birth rates, was a necessary precondition for poverty reduction (Coale and Hoover 1958). Then followed a period of scepticism or neutrality in the 1980s (US National Academy of Sciences 1986).

However, since then a growing body of evidence has pointed to the economic benefit of fertility reduction, although it seems as yet to have had little traction (Birdsall, Kelley et al. 2003). Thus, the Population and Development Commission that took place 11-15 April 2011 noted that:

> *"The medium-term effects of fertility reductions on economic growth in both developed and developing countries are estimated to account for about 20 per cent of per capita output growth between 1960 and 1995. Declining fertility has also contributed to poverty reduction. Between 1960 and 2000, demographic change alone accounted for a 14 per cent drop in poverty levels in developing countries and could produce an additional 14 per cent reduction during 2000 to 2015 if fertility decline accelerated in high-fertility countries" (UN 2011).*

At the macro (national) level, one study of 45 countries estimated that the proportion of people living in poverty would have fallen by a third if the crude birth rate had decreased by five per 1000 population in the 1980s, and many others attribute a major part of the economic miracles of Asia to the rapidly declining birth rates of those countries (Bloom and Williamson 1998, Eastwood and Lipton 1999, Bloom, Canning et al. 2000, Eastwood and Lipton 2001, Bloom and Greenhill 2012, Bongaarts, Cleland et al. 2012, Canning and Schultz 2012).

There is however general agreement on the effect of age structure, which is a direct result of falling birth rates and to a lesser extent, increasing life expectancy, which occur during the 'demographic transition'. Populations transit through three stages. In the first phase, high birth rates and death rates result in a high proportion of children. As rates decline, that 'bulge' of children ages into a 'bulge' of working age. And a few decades later, they result in a bulge of 'older people' over 60. The transition can be translated into a demographic window of opportunity, if societies are able to make use of the high proportion of working age population – China being a prime example of such a country (UNDP and World Bank 2001).

At the micro (family) level, there is no doubt about the existence of a strong correlation between poverty and fertility. In 56 developing countries, on average, the poorest quintile of women had a fertility rate of six births, compared with 3.2 births in the wealthiest quintile (Gwatkin, Rutstein et al. 2004). However, interpretations of the direction of the causality have varied. The assumption of many economists is that behaviour is rational, thus fuelling widespread beliefs that poor people need many children, e.g. for help with household production and for security in old age, and that family-planning promotion cannot succeed in very poor countries.

This tends to be unsupported by evidence. Contraceptive use has increased dramatically in very poor countries such as Bangladesh. The 'threshold' of income at which fertility starts to decline varies, and it depends on the quality of family planning programmes. This and other examples indicate that much of the fertility difference between rich and poor is due to unmet need for preferred family planning methods and services, not to desired higher fertility (Lipton 1998).

Households with many children are more likely to become poor and less likely to recover from poverty than families with only a few children (Aassve, Engelhardt et al. 2005). Children from large families are usually less well-nourished and less well educated than those from smaller families (Greene and Merrick 2005). In Asia, daughters suffer most of the effects of many siblings in a low-income household (Schultz 1993, Lloyd 1994). In most developing countries, for instance, women's participation in the labour force has increased as fertility has fallen (UN 2010).

Thus, there is no prospect on immediate agreement on this issue, which seems also to be mired in a political positioning – free market economists tending to deny any connection between fertility levels and poverty, whereas those tending more to the 'liberal' (in the American sense of the term) side arguing that there is such a connection. It should be noted that many other relationships are also difficult to prove (e.g. there is much disagreement on what other factors influence economic growth.) However, whereas theoretical discussions amongst economists may continue, it is clear that developing country governments are clearer about the causality: out of the 50 least developed countries, the percentage which considered population growth in their country to be too high has increased from 26% in 1976 to 76% in 2007 (UN 2010).

20% of GDP growth in developing countries between 1960 and 1995 is attributed to reductions in fertility and changes in age structure (Kelley and Schmidt 2005, UN 2009).

4.6 CLIMATE CHANGE AND SRHR

Contributor: Siri Tellier
Updated June 2013

The connections between SRHR and climate change (or other environmental issues) are complex. The International conferences on Environment in 1972 and 1992, as well as the ICPD PoA, clearly note that the consumption patterns, especially that of developed countries, is the most important factor in climate change and environmental issues. However, population dynamics also have a role (Tellier 2010, The Royal Society 2012).

- Family planning has a central effect on population growth. Essentially the UN alternative projections for 2100 are based on differing assumptions about contraceptive prevalence: if the CPR (and thereby TFR) stays at the same level as today, world population will grow to 27 billion, if CPR continues to increase at the same rate as in recent years world population will be 10 billion.
- Population growth is not the most important factor in climate change, according to most observers. Thus, the average CO2 emissions per capita in Niger is 0.1tonnes per year, the average in the US is 19 tonnes. Since the US population is projected to grow by 90 million over the next few decades that would be the equivalent of 9 billion additional people in Niger, at present levels of consumption.
- On the other hand, the IPCC estimates that there is need to reduce by half the global CO2 emissions within the next few years, from a global total of around 30 billion tonnes, or 4 tonnes per capita, to around 15 billion, or 2 tonnes per capita. In other words, the recommendation is to see CO2 as a global good, which would then presumably need to be shared equitably among the world's peoples – a rather Malthusian calculation. Therefore, many analysts utilize the formula I = PAT where I is environmental impact, P is population size, A is affluence (or energy intensity of consumption) and T is technology. That is, all factors have an impact.
- Family planning is a right, and given that up to a third of all births are unplanned or unwanted, especially for poor and uneducated women, taking a rights based approach to meet this need would also as a side benefit be positive for the environment. In fact, given that reproductive health is seen as a precondition for women's empowerment (Beijing) it will also improve resilience and adaptation to climate change.
- Almost all governments of Least Developed Countries see population growth as something, which will negatively impact on their ability to handle climate change.

In sum, providing SRHR will be an important factor both in mitigation and adaptation to climate change, especially for women. There is also some literature indicating that climate change will affect maternal health (Homer, Hanna et al. 2009, Rylander, Odland et al. 2013).

4.7 FEMALE GENITAL MUTILATION

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Updated July 2016

Terminology

The term Female Genital Mutilation (FGM) refers to procedures that alter or cause injury to the external genitalia of girls for non-medical reasons. While the United Nations and others use the term *female genital mutilation*, some United Nations agencies and NGOs use the term *female genital mutilation/ cutting* (FGM/C) to reflect the importance of using a non-judgmental terminology when working with communities that practice the tradition. Both terms recognize the practice as a violation of the human rights of girls and women, no matter the type of FGM and no matter the conditions under which it is performed (UN 2012, UNFPA 2015).

According to WHO, FGM is classified into four major types.

Clitoridectomy: partial or total removal of the clitoris and, in very rare cases, only the prepuce (the fold of skin surrounding the clitoris).

Excision: partial or total removal of the clitoris and the labia minora, with or without excision of the labia majora.

Infibulation: narrowing of the vaginal opening through the creation of a covering seal. The seal is formed by skin and scar tissue from cutting and repositioning the inner, or outer, labia, with or without removal of the clitoris. Infibulation leaves girls with just one small opening which can be as small as a pea for passing urine and menstrual blood.

Other: all other harmful procedures to the female genitalia for non-medical purposes, e.g. pricking, piercing, incising, scraping and cauterizing the genital area .

FGM is practiced on girls of different ages in different practising communities – from new-borns to young girls up to 15 years of age.

Trends

At global level, UNICEF estimates that about 200 million women live with the consequences of FGM(UNICEF 2016) in the 30 countries in Africa, the Middle East and Asia where FGM is most prevalent. In Africa, FGM is known to be practiced among certain communities in 29 countries: Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Cote d'Ivoire, Democratic Republic of Congo, Djibouti, Egypt, Ethiopia, Eritrea, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Somalia, Sudan, Tanzania, Togo, Uganda and Zambia. Certain ethnic groups in Asian countries practice FGM, including in communities in India, Indonesia, Malaysia, Pakistan and Sri Lanka. In the Middle East, the practice occurs in Oman, the United Arab Emirates and Yemen, as well as in Iraq, Iran, the State of Palestine and Israel. In South America, certain communities are known to practice FGM in Columbia, Ecuador and Peru. And in many western countries, including Australia, Canada, Europe, the United States and the United Kingdom, FGM is practiced among diaspora populations from areas where the practice is common(UNFPA 2015).

More than 3 million girls under the age of 15 are estimated to be at risk of being subjected to the procedure every year. . While there has been an overall decline in the prevalence in FGM over the past three decades, current progress is insufficient to keep up with population growth in affected countries. If these trends continue the number of girls and women affected by FGM will rise significantly over the 15 years. (UNFPA 2008, UNICEF 2013).

Situation – Determinants

The origins of the practice are not clear, but it may have originated in Egypt several thousand years ago. However, it is also reported that forms of FGM have been practiced in different parts of the world and thus it may have arisen independently in different places. While male circumcision is a commandment under both Judaism and Islam, FGM predates both Islam and Christianity, is not required by either religion but is practiced by followers of both. In local communities, FGM is most often a deep-rooted and century old tradition that is practiced without questioning, a taboo to discuss and maybe even believed to be universally practiced. When discussed, reasons for practising FGM vary. People – including local religious leaders – may think the procedure is in fact connected to religion, and the procedure may be seen as a requirement for girls to gain respect, purity and to be marriageable. It follows that parents in practising communities think that FGM is the best thing to do for their daughters (UNICEF 2010, UNFPA 2015).

Situation – Consequences

FGM has negative health consequences. First, immediate complications for the girls undergoing the practice include severe pain, shock, haemorrhage (bleeding), tetanus or sepsis (bacterial infection), urine retention, open sores in the genital region and injury to nearby genital tissue (WHO 2014). The most severe of these complications can lead to death. Second, long term consequences include infertility, cysts, and recurrent bladder and urinary tract infections; and reduced sexual enjoyment for the women. Moreover, FGM may cause increased morbidity and mortality for pregnant women and their babies. Previously evidence was inconclusive (WHO 2000), but in 2006, a study in six African countries confirmed that deliveries by women who have undergone FGM are significantly more likely to result in caesarean section, extensive bleeding, longer hospital-stays after delivery, prolonged labour, and the need for episiotomies. Such deliveries are more likely to result in death, for both women and babies. The risk increases with the severity of the cutting (Banks, Meirik et al. 2006, Eke and Nkanginieme 2006). A follow-up study calculated that for the 2.8 million young women aged 15 years old in those six countries, this would result in the loss of 130,000 life years, or half a month from each lifespan (Adam, Bathija et al. 2010). In addition, studies have demonstrated psychological effects of FGM (Behrendt and Moritz 2005). In general, the effects of FGM depend on the type performed, the conditions under which it is performed, including hygiene, practitioner skills and the general health condition of the girl/young woman undergoing the procedure. Complications may occur in all types of FGM, but are most frequent with infibulation (UNFPA 2015).

Response

International guidance

NGOs, both international and national, have been campaigning for the abandonment of FGM for several decades.

In the United Nations, although the issue was recognized as a problem as early as the 1950s, concerted action is more recent. The UN perceives FGM as a human rights concern, with reference both to the convention on torture and to CEDAW (Art 5(a) which calls for the elimination of traditional practices which are harmful to women and children (UN 1984, UNOHCHR nd). In March 2012, the UN Secretary General submitted a report to the Commission on the Status of Women, calling for the complete elimination of FGM (UN 2012, UN 2012). On 20 December 2012 the UN General Assembly adopted Resolution 67/146 on "Intensifying global effort for the elimination of female genital mutilations" which inter alia calls for enhanced and strengthened interventions, legislation and enforcement of legislation against FGM, for national action plans and strategies on the elimination of FGM and for improved data collection on FGM. The UN resolution, which was adopted unanimously without vote shows wide agreement on a zero tolerance stance on FGM among governments of the world. ("Zero tolerance" implies that ***no*** type of FGM is accepted and that ***no conditions*** around FGM can make it acceptable – for instance FGM can also not be accepted even if performed by medical personnel in medical settings). On 16 June 2014, the UN Human Rights Council held its first high-level panel discussion on the identification of good practices in combating female genital mutilation. In 2015, FGM is included in the Sustainable Development Goals (SDGs) under Target 5.3, "Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation." (http://www.unfpa.org/resources/female-genital-mutilation-fgm-frequently-asked-questions#international_regional_instruments)

For several years UN organisations have worked to accelerate the abandonment of FGM. In 2008, a group of UN organisations developed a widely supported inter-agency FGM statement (WHO 2008). The statement advocates for a holistic approach, which addresses for example national data collection and legislation, awareness raising for medical staff, and advocacy at community level.

National action and results

Many countries in Africa have promulgated laws against FGM, while others have State laws against this practice, or ministerial decrees which forbid medical personnel from performing FGM. Most African countries with FGM also have national policies aiming at eradicating the practice. Numerous NGOs, both national and international, are contributing with action and advocacy.

Since 2008, UNFPA and UNICEF have implemented a joint programme to accelerate the abandonment of FGM in 17 countries in Africa to assist those national activities. Much emphasis is placed on community level action, working through religious and community leaders, health personnel, media, schools and other local authorities and outreach workers to reach communities with information on the harmful consequences of FGM, with information on human rights and on the lack of links to religion. Such information forms the basis on which communities can make a joint decision to abandon the practice. The latest numbers show that the number of communities, which have committed to stop the practice passed 13,000 in 2014. In additions to communities, different other groups – for instance groups of religious leaders or of traditional circumcisers – are reached with information and awareness raising initiatives inspiring them to publicly declare that they have abandoned the practice. Subsequently they are actively engaged in the fight against FGM (UNFPA 2008, UNFPA and UNICEF 2011). The "UNFPA-UNICEF Joint Programme on FGM/C" has a declared goal of eradicating FGM within one generation.

Action is also on-going in developed countries. Thus, in Denmark, FGM is illegal – since 2003 also if the procedure is performed in other countries than Denmark. The Association against Circumcision (*Foreningen mod Pigeomskæring*) met with Danish imams, resulting in a statement (Fatwa) in 2005 by the imams saying that FGM is not recommended by Islam, and is against Danish law (na 2007).

In 2001 the European Parliament adopted a resolution on FGM, seeing it as a human rights violation and calling for member states to take action against the practice both nationally and internationally. However, no binding measures were taken at that point. Since then civil society pressure, amongst others through the "End FGM: European Campaign", has called for more action on EU level. In the spring 2013, the European Commission ran a consultation on FGM and a communication is expected by the end of 2013 (EU 2010).

4.8 HUMAN RESOURCES

Contributor: Siri Tellier
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The human resources for health shortage remains a high profile issue, compounded by the brain drain to industrialized countries, in particular the 'MOMS' (midwives or others with midwifery skills). The world needs an estimated 700 000 midwives to ensure universal coverage with maternity care, but currently face a 50% shortfall. In addition, it requires 47 000 obstetricians, particularly in rural areas (WHO 2005). The world needs an additional 4.3 million health workers, with particular shortfall in the 73 countries where maternal and neonatal mortality is highest (WHO 2006, UNFPA 2014).

4.9 LINKAGE HIV AND FAMILY PLANNING

Contributor: Siri Tellier
Updated June 2013

One of the most unfortunate aspects of the political sensitivity surrounding SRHR is the delinking between different components – in particular vertical programmes for HIV/AIDS, other reproductive health including family planning, and other STIs, which sometimes get completely lost between the cracks. Such 'verticalization' was also the situation for family planning programmes in the 1970s and 1980s. Part of the cause is the US 'Mexico Conference Gag Rule' which states that no US federal international funding may go to organizations that provide, or inform about, abortion, even if it is with their own funding. Since many family planning programmes do inform about abortion, that has excluded them from funding. To avoid defunding, both national NGOs, but also international organizations have made efforts to delink, e.g. WHO

has separated activities dealing with 'safe motherhood' and moved HIV/AIDS to the communicable disease division, from their original place in the division of Reproductive Health and Research. Compartmentalized funding for example in the Global Fund to combat AIDS TB and Malaria has only served to strengthen this, as national government sought to avoid defunding.

Many efforts have been made to 're-link'. For example, UN agencies began a process of consultations to identify linkages in Glion in 2004 (UNFPA 2004) and consultations have also included NGOs such as the IPPF (WHO 2005). Recent studies point to cost benefit for both maternal health and HIV programmes to link. Some of the linkages identified are: general management of sexually transmitted infections, screening for HIV status, promoting safer sex including condom use, integrating HIV with Maternal and Infant health care (e.g. for the prevention of mother to child transmission), integrating STI into FP including discussion of counselling regarding sexuality outreach to men, counselling and information regarding sexuality. Organizations such as the Global Fund are now also integrating such ideas into their action plans. The intention is that this would actually imply cost savings or efficiencies, rather than additional costs.

In addition, many other health systems issues have been identified as barriers to improving reproductive health, and which should be considered in health system strengthening:

- Mobilizing political will
- Legislative frameworks. For example those influencing access: do unmarried people have access? What is minimum age? Financial barriers for the poor?
- Limitations such as rules which prohibit midwives to remove placenta or administer other basic emergency obstetric care – general task shifting
- Limitations on over the counter commodities such as emergency contraception, or limitations in terms of import of certain drugs
- Lack of access due to distance
- Lack of staff or commodities that limit quality in service provision (especially reproductive health are demanding in terms of permanent flow of commodities, even in times of no emergency).
- Sustainable health financing mechanisms included in plans
- Research community level and general info including strengthen monitoring and e.g. maternal audits (WHO 2004)

4.10 TREATMENT AS PREVENTION

Contributor: Jeff Lazarus
Updated June 2013

With the advent of combination antiretroviral therapy, people living with HIV can now live long and healthy lives. The focus during the last decade has therefore been on scaling up this treatment as quickly as possible, particularly in low-income countries. This has reinforced the importance of improving testing strategies, as most people living with HIV are unaware of their status and often present late for the care they need. To do this, stigma and discrimination in the society at large and among healthcare providers need to be reduced, health systems strengthened and synergies sought, not least with antenatal care services and SRH services in general.

For many years, doctors and others had observed that among serodiscordant, in which the person living with HIV was on and adhering to antiretroviral therapy, HIV transmission to the sexual partner was seldom observed. This gave rise to the notion that the often-debated division between prevention and treatment of HIV was a false dichotomy. If, like with other communicable diseases, reducing the amount of virus in the body would reduce the likelihood of transmission, then treatment would have a preventive effect. Yet the evidence for this was lacking and as a result it could not be suggested as a public health approach.

This changed in 2010 when WHO revised its antiretroviral therapy guidelines in the light of studies demonstrating that earlier ART initiation significantly reduces morbidity and mortality (Siegfried, Uthman et al.

2010) (Kitahata, Gange et al. 2009), and had a significant impact on reducing HIV transmission (Donnell, Baeten et al. 2010). And in 2011 a randomized, controlled clinical trial demonstrated the efficacy of ART to prevent the sexual transmission of HIV in serodiscordant couples (NIAI 2011). In July 2011, WHO released guidelines recommending treatment of HIV-positive partners in serodiscordant relationships regardless of CD4 count to prevent the sexual transmission of HIV. The following month Cohen and colleagues (Cohen, Chen et al. 2011) published findings supporting the use of ART as a part of a public health strategy to reduce the spread of HIV-1 infection.

These developments gave rise to the so-called WHO/UNAIDS treatment 2.0 strategy (WHO/UNAIDS 2011), which sets out to stimulate innovation and dramatically improve the efficiency and impact of HIV care and treatment programmes in resource-limited countries. It highlights the importance of integrating ART programmes with other health services, and here SRH services should be central (in addition to TB and drug use centres, for example). Specifically, the Treatment as Prevention Framework for Action (WHO 2011) calls for integrating and simplifying approaches to delivering the four pillars of PMTCT: preventing unwanted pregnancies, preventing primary HIV infection, preventing mother-to-child transmission, and care and treatment for women, their infants and families with other areas, such as sexual and reproductive health services, in order to expand access to treatment-eligible individuals.

Many, as an answer to how to mitigate the HIV epidemic, have welcomed the treatment as prevention paradigm. However, not everyone agrees and further research is clearly needed, including in other populations, such as men who have sex with men (Rodger, Phillips et al. 2011), who will typically transmit HIV easier than heterosexual couples. Other areas of concern include the sustainability of ART programmes, ensuring adherence, addressing drug resistance and preventing other STIs that may spread if condom use is reduced among those on ART.

4.11 MALE CIRCUMCISION AND HIV/AIDS

Contributors: Dan Meyrowitsch & Christian Graugaard
Updated July 2014

Three randomised controlled trials in Kenya (Bailey, Moses et al. 2007), Uganda (Gray, Kigozi et al. 2007) and South Africa (Auvert, Taljaard et al. 2005) have suggested that adult male circumcision reduces the risk of acquiring HIV infection in female to male transmission of HIV by approximately 60% in such high-prevalence areas. Based on these finding, WHO and UNAIDS in 2007 recommended male circumcision as an additional strategy for the prevention of heterosexually acquired HIV infection in men. WHO concluded that the greatest potential public health impact will be in settings where HIV is hyper endemic (e.g. HIV prevalence in the general population exceeds 15%), spread predominantly through heterosexual transmission, and where a substantial proportion of men (e.g. greater than 80%) are not circumcised (WHO/UNAIDS 2007).

In addition to preventing transmission of HIV from women to men male circumcision has also been shown to reduce the risk of invasive penile cancer (Larke, Thomas et al. 2011) and to reduce the risk of transmitting Human Papillomavirus (HPV) and thereby preventing cervical cancer in women with circumcised partners (Auvert, Sobngwi-Tambekou et al. 2009, Larke 2010, Wawer, Tobian et al. 2011, Albero, Castellsague et al. 2012), although a correspondingly reduced transmission of HIV to female partners is not evidenced (Turner, Morrison et al. 2007, Baeten, Donnell et al. 2010, Tobian, Kigozi et al. 2012). However, results of a recent study suggest that male circumcision seem to reduce the risk of seven specific subtypes of HPV, whereas circumcision will increase the risk of two other subtypes of HPV. In addition, a faster clearing of HPV infections was observed among circumcised males as compared to uncircumcised males (Albero, Castellsague et al. 2014). Concerning prevention of other sexually transmitted diseases than HIV and HPV, data from clinical trials indicate that male circumcision may be protective against genital ulcer disease, Herpes simplex type 2 and Trichomonas vaginalis infection in men. No evidence exists of a protective effect against Chlamydia trachomatis or Neisseria gonorrhoea (Larke 2010).

A recently published systematic review of eight randomized controlled trials concerning the safety and efficacy of non-therapeutic adult male circumcision in an operative setting showed no reports of mortality due to the procedure itself and the reported adverse effects were infrequent (of three RCT studied, 4,8% adverse events were reported). The included studies differed in the manner in which adverse events were defined, detected, and reported, yet severity of complications were generally reported as mild to moderate, and most resolved within hours or days. Serious, permanent adverse effects, such as erectile dysfunction, occurred rarely (Perera, Bridgewater et al. 2010). Similar findings were observed in a review of the three RCTs from sub-Saharan Africa. This review found little evidence of serious adverse events from being circumcised (Larke 2010).

A major concern about the increased uptake of male circumcision is that risk compensation will occur among circumcised men (i.e. the men will increase their level of high risk sexual behaviour due to a lowered self-perceived risk of contracting HIV) (Lazarus, Giordano et al. 2008). Data from the three African RCTs show little evidence of risk compensation following male circumcision (Auvert, Taljaard et al. 2005, Bailey, Moses et al. 2007, Gray, Kigozi et al. 2007, Mattson, Campbell et al. 2008). However, it should be noted that the RCTs provided the highest standards of preventive care including intensive individual counselling, and that participants were not aware that circumcision reduced their risk of HIV infection (Krieger 2011). A qualitative study on sexual behaviour change among recently circumcised men found a minority of men reporting increased risk behaviour and a majority of men actually changing to more protective behaviour post circumcision. This change to adopting protective behaviours was associated with the HIV risk reduction counselling and HIV testing that study participants received. Findings from this study show that risk compensation following male circumcision does occur, but also that circumcision can foster protective sexual behaviour change and that this is possibly influenced by the counselling offered (Riess, Achieng' et al. 2010). Future studies of risk compensation among the thousands of newly circumcised men in sub-Saharan Africa will hopefully provide a clearer picture of the level of risk compensation among men circumcised as part of the HIV prevention strategy.

It is generally assumed that neonatal male circumcision will result in fewer complications as compared to the present Voluntary Medical Male Circumcision initiatives targeting adult males. However, a recent Danish study from the University Hospital of Copenhagen evaluated 315 cases of ritual circumcision 1996-2003 and found that 5,1% of the boys had significant complications (Thorup, Thorup et al. 2013). The U.S. President's Emergency Plan for AIDS Relief (PEPFAR) is presently advocating for neonatal and/ or adolescent circumcision programs to be integrated and sustained within maternal and child health systems (PEPFAR 2011). WHO has presently not endorsed neonatal male circumcision as an HIV preventive measure.

A recent Danish cross-sectional study on male circumcision and sexual function associated male circumcision with frequent orgasm difficulties and with a range of sexual difficulties in women (Frisch, Lindholm et al. 2011). This contrasts findings from the RCTs in Kenya and Uganda, which found that male circumcision unlikely will adversely affect either male or female sexual function or satisfaction (Kigozi, Watya et al. 2008, Krieger, Mehta et al. 2008, Kigozi, Lukabwe et al. 2009). As male circumcision is being implemented as a HIV prevention strategy in many sub-Saharan countries it is important to further study the possible sexual consequences of male circumcision to ensure sexual rights, particularly as this pertains to the consent of the circumcised.

Many countries in sub-Saharan Africa are reporting an overwhelming interest in and demand for male circumcision (IRIN News 2008, Post Zambia 2009, IRIN News 2010, Lundsby, Dræbel et al. 2011). Hence, male circumcision as an HIV prevention strategy can be said to be a succesful intervention, at least in terms of number of men demanding and seeking the intervention. Unpublished data (Lundsby, Dræbel et al. 2011) looking at post circumcision experiences among Zambian men have shown how recently circumcised men ascribe value to and make sense of circumcision through highlighting a variety of values including; enhanced hygiene, perceived lower risk of STIs and cancers, enhanced sexual performance, perceived preference by women and social prestige. These findings are useful in understanding the reasons behind the popularity of this HIV preventive intervention seen in many sub-Saharan countries. It is suggested that the positive take up of this intervention is based on the ability of the target population to give meaning to circumcision as a broader social health matter, which largely transcends the personal HIV risk of the individual.

Beyond the scope of male circumcision as a preventive measure for HIV/AIDS in selected areas of Sub-Saharan Africa, the heated debate regarding neonatal male circumcision on ritual/cultural grounds in the Western world continues. In 2012, the American Academy of Pediatrics (AAP) published a Technical Report concluding that current evidence indicates that the health benefits of newborn male circumcision outweigh the potential risks (Task Force on Circumcision 2012). In 2013, 38 medical doctors challenged this conclusion in a commentary in the same journal (Frisch, Aigrain et al. 2013). In the latter publication, Frisch and co-authors conclude that only one of the arguments in the AAP Technical Report, the possible protection against urinary tract infections in infant boys, has some theoretical relevance. According to Frisch and colleagues, the other health benefits, including protection against HIV/AIDS, genital herpes, genital warts, and penile cancer, are questionable, and likely to have very limited public health relevance in a Western context.

4.12 OTHER LINKAGES AND CO-MORBIDITIES

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Interestingly, though less well known, Danish researchers amongst others are addressing the issues of co-morbidities and linkages between SRHR and other health issues, both communicable diseases, non-communicable diseases and nutrition (Bygbjerg 2012).

For example, pregnancy associated malaria (PAM) affects both maternal and foetal health. Especially in malaria endemic areas in Africa, PAM associates with low birth weight, due to intrauterine growth retardation (IUGR). The mechanism leading to IUGR due to PAM is complicated and there is a need for better understanding of this mechanism (Umbers, Aitken et al. 2011, Umbers, Boeuf et al. 2011). Most studies indicate that the first half of pregnancy is the most vulnerable time period with the most severe consequences of malaria on intrauterine growth and birth weight (Huynh, Fievet et al. 2011, McGready, Lee et al. 2012, Valea, Tinto et al. 2012). However, signs of intrauterine growth retardation are most often observed only in the 2nd and 3rd trimester of pregnancy even though infections occur much earlier in pregnancy (Rijken, Papageorghiou et al. 2012, Schmiegelow, Minja et al. 2013). Yet, in low-income countries, most pregnant women attend health facilities late. The consequence of malaria on growth may continue after birth with a decreased growth in the first year of life among offspring of mothers who suffered from malaria during pregnancy (Kalanda, van Buuren et al. 2005, Walther, Miles et al. 2010).

PAM is estimated to result in 75 000-200 000 infant deaths each year (Guyatt and Snow 2004, Desai, ter Kuile et al. 2007). It is also linked to maternal anaemia and possibly hypertensive disorders including pre-eclampsia, leading to an increase in maternal mortality ratio by 9/100 000 (Muehlenbachs, Mutabingwa et al. 2006, Ndao, Dumont et al. 2009, Adam, Elhassan et al. 2011, Umbers, Aitken et al. 2011, Umbers, Boeuf et al. 2011).

Finally a better understanding of the importance of nutrition in the context of PAM is important, with some studies raising the question whether nutritional (including micronutritional) status might affect the consequence of PAM on fetal growth (Landis, Lokomba et al. 2009).

With respect to non-communicable diseases, diabetes is one of several NCDs with a strong negative interrelation with pregnancy. This is a two-way process, and a double danger: on the one hand, obese mothers are at risk of developing gestational diabetes and overweight babies at increased risk for malformations and subsequent diabetes. On the other hand, underweight, anaemia (due to communicable (e.g. malaria) or non-communicable diseases (iron deficiency)) or infection (by parasites (e.g. malaria), virus (e.g. HIV) or bacteria (e.g. urinary tract infections)) increase the risk of low birth weight (LBW) and subsequent early development of hypertension, cardiovascular disease, and type 2 diabetes in particular when changing living conditions and life styles e.g. urbanization (Christensen, Kapur et al. 2011, Vaag, Grunnet et al. 2012). Thus, prevention of NCD in the adult may begin during pregnancy and early childhood amongst others by combating infection as well as under- and over-nutrition.

There is also an understanding of breast feeding may help prevent diabetes and heart disease in later life, and of the importance of controlling gestational diabetes – e.g. one study showing that women with pre gestational diabetes had a lower risk of infant malformations if their condition was under metabolic control (0.9% vs 7.1%). The understanding of 'foetal programming', in particular the relationship between low birth weight and higher

rates of non-communicable diseases such as diabetes and cardio-vascular disease in later life, has grown rapidly since the 1990s (Hales and Barker 1992, Barker 1997). Foetal programming might be mediated through epigenetic changes; methylation of the DNA. Recent studies giving proof of concept have showed that the maternal micronutrient status at the time of conception is reflected in the level of DNA methylation in the neonates (Dominguez-Salas, Moore et al. 2014), that BMI and epigenetic changes are associated in adults (Dick, Nelson et al. 2014), and finally that methylation levels of key genes in metabolism are altered in adults with type 2 diabetes (Gu, Gu et al. 2013).

Research priorities

1. How do non-communicable and communicable diseases interact with respect to short (fetal growth and birth weight) and long term (fetal programming) health consequences?
2. The most vulnerable time period in pregnancy with respect to foetal programming – with the current ANC strategies targeting nutrition, infections and anaemia – are we focusing on the right time periods?
3. Is fetal programming reversible and what are the benefits and consequences of "overfeeding" new-borns born small for gestational age? Do we have the right interventions to address the consequences of infections/malnutrition during pregnancy and are we applying them at the right moment?

In summary

- *Infectious diseases, and in particularly pregnancy-associated malaria (PAM) poses a great risk to both mother and child. The timing of malaria during pregnancy determines the severity of the consequences, and PAM might be associated with non-communicable diseases such as preeclampsia.*
- *The linkages between SRHR, CDs, NCDs and nutrition are rapidly becoming more visible. Recognizing these linkages in health programming holds promise of increasing cost-effectiveness, avoiding building up vertical programmes for each disease.*

4.13 NEW TECHNOLOGIES – EHEALTH

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The advent of new technologies is changing many aspects of health, including SRHR.

A particular issue which should be addressed in the future is that of eHealth, that is, the utilization of IT in health, in particular mHealth or utilization of mobile phones, either for health information, consultation or financial transactions. In the last few years, mobile phone ownership has increased from a few per cent to over 50 per cent of the population of L/MICs, much faster than, for example, computer ownership or telephones (UN 2010). Globally there are 6.8 billion mobile phone subscriptions. Mobile penetration in the developing world is 89 per cent making it the most equitable communication technology (ITU 2013, ITU 2013). With an increase in the number of mobile phone subscribers from 17 million in 2000 to 650 million in 2011, sub Saharan Africa is experiencing a technological revolution and many governments have realized the potential to use technologies as a driver for development also in the health sector (World Bank and African Development Bank 2013). Thus, innovative technical solutions holds particular promise to dramatically increase access to health information and services in low and middle-income countries. mHealth is a relatively new area of health care service as well as research but it has in recent years established itself as an autonomous field of study. The mHealth area covers a wide range in use; from highly developed countries to developing countries and from simple low-tech solutions to highly advanced monitoring sensors. It is applied diversely in health promotion, self-management, monitoring, data gathering, adherence to treatment and medical education.

There are an increasing number of mHealth pilot projects in low-income countries, most of which have a disease specific focus (Deglise, Suggs et al. 2012). The 2012 Lancet report of technologies for global health

identified only nine randomised controlled trials for mHealth in low-income countries and generally the evidence for effectiveness remains weak (Howitt, Darzi et al. 2012). In 2012, four Cochrane Reviews and four other reviews analysed the existing evidence for mHealth interventions (Car, Gurol-Urganci et al. 2012, de Jongh, Gurol-Urganci et al. 2012, Gurman, Rubin et al. 2012, Gurol-Urganci, de Jongh et al. 2012, Guy, Hocking et al. 2012, Vodopivec-Jamsek, de Jongh et al. 2012, Free, Phillips et al. 2013, Free, Phillips et al. 2013). The most robust evidence is on the effectiveness of SMS reminders increasing attendance to health care services. Reviews have independently have found that SMS reminders substantially increase the likelihood of attending clinic appointments. These reviews however included only a limited number of randomised controlled trials and all were from high and middle-income countries. Hence, external validity for the developing world is limited. There is also evidence, although limited, that in certain cases text message interventions may provide a benefit in supporting long-term illnesses and that in certain cases mobile phone messaging interventions may support preventive health care, to improve health status and health behaviour outcomes (de Jongh, Gurol-Urganci et al. 2012, Gurol-Urganci, de Jongh et al. 2012).

There is also evidence of mHealth as a tool for behavioural change. A review by Cole-Lewis et al. found that out of nine studies, eight concluded significant behavioural outcomes (Cole-Lewis and Kershaw 2010). However, all but one of these studies took place in developed countries and as such are incomparable due to socioeconomic and cultural differences also in use of mobile phones. More recent reviews suggest benefit in other areas but the only high quality evidence is on text messaging interventions increasing adherence to antiretroviral treatment and smoking cessation (Gurman, Rubin et al. 2012, Free, Phillips et al. 2013).

One of the best designed and executed studies is a study from Kenya on effects of SMS messaging on antiretroviral treatment adherence that found significant improved self reported adherence in the intervention group, reduced viral load but no statistically significant benefit on mortality (Lester, Ritvo et al. 2010). In 2012, Deglise and colleagues concluded that mobile phones are an appropriate and promising tool for disease control in developing countries (Deglise, Suggs et al. 2012).

The benefits of using mobile phone technology in health care systems in low- and middle-income countries include improved reporting in health information systems, support tools to health workers, treatment compliance, data collection, disease surveillance, health promotion, disease prevention and emergency medical response. Most of the existing evidence from low- and middle-income countries is on interventions targeting HIV/AIDS and tuberculosis and the majority are located in India, South Africa and Kenya.

mHealth for maternal and neonatal health

Mobile health has a great potential for sexual and reproductive health to improve the accessibility, knowledge and quality of care. It is seen as a key area in achieving the goals of the United Nations and WHOs Global Strategy for Women's and Children's Health (WHO 2012). For instance providing village health workers with mobile phones makes it possible for instance calling for emergency care when needed, which can make emergency responses faster. Thus the mere introduction of mobile devices creates a possibility for saving lives. Generally mobile phone applications for reproductive health are well accepted by women and health workers (L'Engle, Vahdat et al. 2013).

A major part of the evidence for sexual and reproductive mHealth comes from the use of text reminders. Studies primarily indicate potential to expediting emergency obstetric referrals and improve knowledge and awareness (Tamrat and Kachnowski 2011). A small randomized trial from Thailand reported higher satisfaction and confidence levels amongst women who received SMS support during antenatal care but found no difference in pregnancy outcome (Jareethum, Titapant et al. 2008). A more substantial study from Zanzibar has produced evidence of increased skilled delivery attendance amongst urban women benefiting from a mobile phone intervention (OR 5·73 95% CI 1·51-21·81) (Lund, Hemed et al. 2012). The same trial also found that mobile phone intervention was associated with an increase in antenatal care attendance (OR, 2.39; 95% CI, 1.03-5.55) and a significant reduction in perinatal mortality (OR 0.50; 95% CI, 0.27-0.93) (Lund, Hemed et al. 2012, Lund, Nielsen et al. 2014, Lund, Rasch et al. 2014). Another intervention addressed the low coverage of qualified health personnel through midwives being able to seek advice with experience health staff through mobile phones and showed significant increase in midwives confidence to solve challenging health problems

(Chib 2010). Generally mobile phone applications for reproductive health are well accepted by women and health workers.

There are no published studies on the contribution of mHealth to improve clinical management and quality of maternal and perinatal health care. There is some evidence that adherence to procedures and protocols can be improved using mobile phones. Mitchell and colleagues found that using an electronic Integrated Management of Childhood Illness (IMCI) protocol improved the completeness and consistency of clinical assessments compared to paper IMCI (Mitchell, Hedt-Gauthier et al. 2013).

There are indications that positive behavioural effects in relation to maternal and perinatal health can be reached in low- and middle-income countries. However, the current state of evidence in mHealth is insufficient and particularly health outcomes need more robust reporting (Nurmi 2013). de Jongh and colleagues state that *"given the enthusiasm with which so-called mHealth interventions are currently being implemented, further research into these issues is needed"* (de Jongh, Gurol-Urganci et al. 2012). Yet, the 2012 Lancet report of technologies for global health identified only nine randomised controlled trials for mHealth in low- and middle-income countries (Howitt, Darzi et al. 2012). There is a gap in interventions and research that target the most remote geographical regions and health conditions, particularly peripartum where mothers and newborn babies are most vulnerable.

The diversity and complexity of mHealth innovations are increasing. One such example is the *Safe Delivery* app that aims to increase health workers skills and knowledge through a smartphone based app. The app contains animated videos to teach midwifes in the periphery of health systems to manage normal and complicated deliveries.

Suggestions for further research

There is much to be learned about the true potential of mHealth for maternal and perinatal health in low and middle-income countries. Much of the existing research in mHealth is descriptive and in the form of pilot studies. There is some evidence of improved access, clinical benefit and patient satisfaction but little evidence of cost effectiveness and clinical effectiveness. There is particularly a demand for well-designed and appropriate mHealth studies from low and middle-income countries preferably with a health outcome as a primary outcome. mHealth has been criticized for the proliferation of pilots and a lack of a rigorous evidence base to support these strategies. As stated by Labrique and colleagues: *"The rigor of evidence will not only help legitimize mHealth as a valid strategy to optimize health systems but also justify investments where resources are limited"* (Labrique, Vasudevan et al. 2013).

The impact of mHealth at a larger scale and integrated in existing health care systems in low- and middle-income countries need to be further explored. Research should focus on generating a sufficient evidence base of effectiveness of specific mHealth interventions to inform policy makers before commencing into national scale up. For mHealth programmes that are being scaled up implementation research should be included to inform others going down the same path.

mHealth research is complex because it is interdisciplinary in the sense that it includes technology as well as public health with different terminology, requirements and interests. Many studies make the mistake of being either focused on technology or health. Applying mixed methods and supplementing randomised clinical trials with qualitative research would enhance understanding of the underlying mechanisms behind improved pregnancy outcomes in mHealth interventions.

Further studies and cross-disciplinary approaches are needed to enhance understanding of

- The effectiveness of mobile phone interventions to improve health seeking behaviour and access to care
- The effectiveness mobile phone interventions to improve quality of care
- The effectiveness of mobile phone interventions to improve pregnancy outcomes
- The cost-effectiveness of mobile phone interventions
- The scalability of mHealth interventions from research or pilot projects to national programmes
- Implementation research
- The effect of extending existing health system based mobile phone interventions to community level

- The potential of mobile phone interventions to reduce the urban-rural equity gab rather than increasing it
- The effectiveness of mHealth interventions in complex situations, such as emergencies

4.14 PRE-NATAL SEX SELECTION

Contributors: Siri Tellier & Birgitte Bruun
Updated June 2013

There is a rapidly growing field of reproductive health technologies, including fertility treatment for in fecundity and measures to select aspects of reproduction. A recent conference at Copenhagen University addressed this sensitive area (University of Copenhagen 2012).

One of the involved is that of pre-natal sex selection. It can be discussed from many different angles. Here we will discuss it from the angle of rapidly developing technology.

Situation – Trends

In most populations, sex ratio at birth is between 103 – 107 boys per 100 girls. In 1990, international attention first became focused on unusual sex ratios at birth in a number of Asian countries (Sen 1990). In the last three decades, it has risen from 'normal' to much higher levels in countries such as China (120 in 2010) (UNFPA China 2007, UNFPA 2011), India (111 in 2010) (UNFPA India 2010), Republic of Korea (116 in 1994), Albania, Vietnam (above 110). Some unusual ratios are also seen in diaspora populations, e.g. Indians who are living in the US (Abrevaya 2009). Only one country seems to have experienced a return to near-normal levels, namely the Republic of Korea (109 in 2011) although several are reporting normalization in sub-national populations, such as individual states/ provinces in China, India and Vietnam (Guilmoto 2009).

Situation – Determinants

Much discussion has concentrated on determinants. Some researchers have concluded that the imbalance is non-existent – that data are misleading, that biological factors such as Hepatitis B are the cause, or that most of the imbalance is due to post-natal sex selection. Some have since retracted their conclusions (Oster 2005, Oster and Chen 2008). Yet, there seems increasing agreement that the major proximate (that is, biological) determinant is the increasing utilization of technologies for sex selection. Such technology is used at different stages: pre-conception, pre-implantation, or during pregnancy. The most common technologies include a combination of sex identification of the foetus (usually through ultrasound) followed up by sex selective abortion. These technologies are undergoing rapid development, increasing their availability and ease of administration. For example, commercial outlets now market sex identification kits over the internet at a cost of 25USD, and claim they can identify sex as early as six weeks of gestation (Amazon nd). Studies indicate that DNA sex identification through blood tests may take place as early as 7-9 week of pregnancy (Scheffer, van der Schoot et al. 2010). The proximate biological determinant is combined with underlying 'son preference' and decreasing birth rates. Son preference may exist in many cultures, but what makes it result in sex selection is that having a son is seen as a cultural or economic imperative (e.g. in patrilineal societies), or that having daughter is seen as a liability (e.g. where parents need to pay dowries) (Gu and Roy 1995, UNFPA 2011).

Situation – Consequences

One of the inevitable consequences is demographic: the imbalance at birth will result, 20 or so years later, in a sex imbalance in the marriage age population. It is important to note this lag time – it means both that it is only now that the greatly imbalanced birth cohorts are reaching marriage age, but also that, even if sex ratios

were to revert to normal levels today, children born in the last decades would still face what is often termed a 'marriage squeeze'. Various estimates have been made of the quantity of this 'marriage squeeze' but clearly, if 10-20% of girls are eliminated, that also results in a similar proportion of excess young men some years down the line. Apart from the demographic consequences, many hypotheses have been put forward, about increased risk of violence and militarism, trafficking etc., but most are as yet not documented in terms of large scale results (Hudson and den Boer 2004).

Response

International guidance

The recommended response is generally framed in terms of reducing the demand (by decreasing son preference) or reducing the supply (by restricting access to the technology).

The issue is mentioned in the ICPD in 1994, which recommends taking measures to increase the value of the girl child, that is, to reduce demand. The Beijing Platform for Action in 1995 frames the issue as violence against women. There is no global human rights guidance, which deals with the issue explicitly, but in line with the Beijing PoA the UN Special Rapporteurs on Violence Against Women have included it in their reporting. In 2011, UN/OHCHR, UNFPA, UNICEF, WHO published a joint statement which recommends some limitations on supply, but mostly focuses on reducing demand, and strongly reiterates that any restrictions should not result in general limitations on abortion (WHO 2011). The issue is widely discussed – e.g. The European Society on Human Reproduction and Embryology Task Force on ethics and law discussed it but could not come to an agreed position on recommending action for sex selection for non-medical reasons (Dondorp, De Wert et al. 2013).

National action and results

At the national level, most of the countries affected have made sex selection illegal (both sex identification and sex selective abortion). Most have also instituted measures intended to improve the situation of the girl child, including both longer-term social policy and shorter-term advocacy campaigns. The success of the Republic of Korea in reversing the trend has been attributed variously to reducing supply but also to the dramatic societal changes in the 1980s and 1990s, which were not aimed at reducing sex selection, but which in effect transformed the country from a highly paternalistic to a more egalitarian nation, and thereby reduced demand. Several observers speculate that this experience may not be easily transferable to other countries, including because Korea is at a more advanced stage of development in terms of income, education etc. (Kim 2004, Das Gupta and W 2007). There has been progress in recognizing the problem, and a few local successes, leading some observers to cautious optimism for the future (UNFPA 2011). In Europe, the Council of Europe has adopted a resolution outlawing sex selection (Council of Europe 2011) and the European Parliament likewise has suggested restrictions, whereas Sweden has reportedly ruled that sex selection is not illegal (na 2009).

Quandaries and Knowledge Gaps

Apart from the fact that we do not yet have a good handle on the trends, or on what works, one of the main issues is that, if sex selection is done by abortion, then any limitations may lead to restrictions on abortion in general (Ganatra 2008). Indeed some have attempted to use the unfortunate understanding from the Beijing PoA to frame sex selective abortion in the same category as infanticide. Thus, any response must be very careful to address whether that is intended. It must also be recognized that this is a market in explosive growth with great earning potential from producers, and therefore limiting supply will be increasingly difficult. The authors of this chapter suggest that restrictions in the access to the technology of sex selection is becoming increasingly difficult as it becomes more advanced (e.g. if sex identification is possible at week 7-9, and abortion is on demand until week 12) and also that any such restrictions, even if effective in a demographic sense, still would not solve the underlying problem of son preference, and therefore the problem can be used to effect social change, and track progress (Tellier 2014).

Another issue is that many countries perceive sex selection as embarrassing, and may be reluctant to acknowledge and address it, especially if they perceive it to be unique to their society. For example, in 1994 UNFPA wished to organize a workshop in Beijing to discuss the matter. Due to the sensitivity of the issue, the workshop was relocated to Seoul (Gu and Roy 1995).

4.15 MENSTRUAL HEALTH

Contributors: WoMena & Nanna Maaløe
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Terminology

Menstruation is often referred to as *'menses'* or *'period'*. *Menarche* refers to a girl's first menstruation. In this discussion, we will refer to *menstrual health* as relating to all menses-related aspects of physical, social and mental health, including reproductive infections, social life and socioeconomics. The term *menstrual hygiene management* (MHM)[19] will also be used.

Situation – Trends and determinants

Girls and women in low-income settings face several challenges related to their MHM. First, there are knowledge issues. Girls' main information sources are usually female relatives and peers. However, studies indicate that menstruation remains a taboo in many cultures, with girls reporting not having received guidance prior to their menarche (Crichton, Ibisomi et al. 2012, Connolly and Sommer 2013). Additionally, some knowledge sources lack correct information about MHM. As a result, the information received is often not timely or correct resulting in knowledge gaps and misconceptions on e.g. the origin of menstrual blood or that bathing during menstruation is unhealthy (Garg, Sharma et al. 2001, Ali and Rizvi 2010, Lawan, Yusuf et al. 2010). Boys often receive even less information on menstruation than girls, and therefore boys and men's knowledge on menses is sometimes laced with negative gender stereotypes, e.g. regarding menses as a weakness of the female gender, rather than a normal biological function (FAWE 2004, Cheng, Yang et al. 2007, Allen, Kaestle et al. 2011).

In addition, many girls and women in low-income countries cannot access or afford suitable or preferred menstruation management methods, i.e. methods that are effective (do not leak), comfortable (cause no chafing), and safe to use (do not increase the risk of infections), including pads and tampons. Instead, they often have to use what they have at hand, such as reusable strips of cloth, cotton wool, tissue paper, newspaper, school exercise books, sponge torn from mattresses or bark cloth (Averbach, Sahin-Hodoglugil et al. 2009, APHRC 2010, McMahon, Winch et al. 2011).

Finally, lack of private hygienic toilets, and facilities and costs for hand washing and cleaning of reusable cloths, as well as appropriate disposal of used methods create challenges for MHM in schools and other settings (UNICEF 2013). Thus, while some of the methods mentioned above can be effective and safe, such as clean cloths, some women do not clean them appropriately, e.g. do not dry washed reusable cloths in the sun, due to the fear of stigma.

Situation – Consequences

As a result of the above mentioned knowledge issues, many girls describe being surprised by their menarche, with some worrying they had an illness (Abioye-Kuteyi 2000, Khanna, Goyal et al. 2005, Ali and Rizvi 2010, Connolly and Sommer 2013). Lack of suitable methods and unhygienic menstrual management practices may also increase risk for reproductive tract- and other infections (Khanna, Goyal et al. 2005). However, there is a lack of evidence on the actual health risks associated with inadequate menstrual hygiene (House, Mahon et al. 2012).

In some cultures menstruation is considered shameful and unclean, and menstruating women are stigmatised and excluded from certain social interactions, e.g. praying, and cooking (Goel and Kundan 2011, McMahon, Winch et al. 2011). Use of methods that easily leaks can be especially problematic in such settings. Boys and men's lack of information on menstruation can result in lack of empathy and negative attitudes on menstruation leading to teasing and harassment of girls and women (McMahon et al, 2011). Furthermore, lack of understanding among fathers and husband can make them less willing to pay for sanitary products (Pillitteri 2012).

Menstruation has also been linked to decreases in school attendance for girls (World Bank 2005, Kyalimpa 2009, Taylor 2011). Reasons that some girls do not attend school during their menses include stigma, fear of leaking while in school, as well as chafing of menstrual cloths (McMahon, Winch et al. 2011). In some cultures menstruation is seen as a sign that a girl is ready for motherhood, leading to girls being taken out of school to get married when their start their menses (Taylor 2011). Although some studies have provided estimates on schooldays missed due to menstruation (Dasgupta and Sarkar 2008), no systematic research has been conducted on the relationship between the lack of suitable menstrual management methods and the dropout rate of adolescent girls. However assuming that girls stay out of school during menstruation and menstruate 4 days out of 28 days (some being during the weekend), this would mean that they miss 10-20% of school days. Similar findings have been reported for female workers: In Bangladesh, studies by the HER project found that menstrual hygiene management issues compels women to stay home from work for up to six days a month, affecting their earning power and income.

In addition, disposable sanitary products can have negative consequences for the environment. On average a North American woman uses 11.000 tampons during her lifetime. Many disposable products contain harsh chemicals including pesticides and dioxin, a serious environmental pollutant, and they require hundreds of years to biodegrade. In landfills, these substances can leach into the groundwater, causing pollution and health concerns, particularly in low-income countries with limited waste disposal infrastructure.

Other less explored implications include: micro-level costs of menstruation management methods including soap and water for washing soiled methods and clothes; macro-level costs related to disposal of used methods including hygienic risks, as well as the implications for women's status and participation in social activities.

Response

Policy & programming

Based on the described association with girls' school absenteeism, menstrual hygiene management (MHM) is linked to the UN Millennium Development Goal 3a: 'Eliminate gender disparity in primary & secondary education', as well as the Programme of Action from the 1994 International Conference on Population and Development (ICPD), which notes the rights of adolescents to reproductive health information, counselling and services (UN 1994). MHM falls under UNFPA's work with adolescent girls, as well as UNICEF's mandate, which acknowledges that: *"Giving girls the knowledge and facilities necessary for good menstrual hygiene is key to their dignity, their privacy, their educational achievement and their health. Adolescent girls are empowered through improved menstrual hygiene management"* (UNICEF 2009). This has translated into UNICEF operational guidelines, which promote child-friendly water and sanitation facilities, and hygiene education in schools. MHM is also mentioned in the NGO network, the Sphere Project's global humanitarian emergency guidelines, which note that women and girls should have access to suitable materials to manage menstruation (Sphere Project 2011).

The onset of puberty and specifically menstruation is an opportune moment for reaching girls as well as boys to discuss reproductive health issues. However, menarche and menstrual health have been overlooked in

global and national reproductive health policy and practice in low-income countries, and until recently, there was very little peer-reviewed data available on menstrual hygiene management practices in sub-Saharan Africa (Averbach, Sahin-Hodoglugil et al. 2009, Ali and Rizvi 2010, Sommer 2011, Mason, Nyothach et al. 2013). However, recent initiatives, such as the WHO/ UNICEF Post-2015 Monitoring of Drinking-Water, Sanitation and Hygiene process has renewed focus towards hygiene, specifically soap hand-washing and menstrual hygiene management (WHO and UNICEF 2012). This initiative identifies the following target to be translated into global indicators:

- **Target 2**: By 2030 everyone uses basic drinking-water supply and hand washing facilities when at home, all schools and health centres provide all users with basic drinking-water supply and adequate sanitation, hand washing facilities and menstrual hygiene facilities, and inequalities in access to each of these services have been progressively eliminated.

In addition, MHM interventions including the following are increasingly being implemented in development and humanitarian emergency contexts, with promising results:

- *Education*: Experiences indicate that menstrual health education by community workers and teachers in school can improve knowledge and understanding and promote menstrual hygiene (Dongre, Deshmukh et al. 2007, Oster and Thornton 2011, Fakhri, Hamzehgardeshi et al. 2012, Montgomery, Ryus et al. 2012).
- *Method development*: Alternatives such as biodegradable pads made of natural materials; self-made pads; as well as reusable cloth pads are increasingly being considered as a possible way to improve the menstrual management of women and girls in low-income countries. Reusable menstrual cups are also increasingly being seen as an option with advantages such as lower costs, less leakage, and limited requirements for waste management (Stewart, Greer et al. 2010). Ongoing studies are exploring whether cups can be used in poor settings (WoMena 2014).
- *Menstruation-friendly school toilets*: Girls' menstrual hygiene management needs are being addressed through water, sanitation and hygiene (WASH) in school programming, including provision of: private spaces for changing materials, washing hands and clothes; access to soap and water; private spaces for drying re-usable menstrual materials; and disposal facilities for used menstrual methods (WHO and UNICEF 2012).

Questions and research

While noting that there are several ongoing studies related to menstrual management,[20] the following areas would be useful to explore in future research:

- Actual health risks associated with inadequate menstrual hygiene and/or use of different types of menstrual management methods;
- Financial costs to women of buying menstruation management methods as well as accessibility to soap and water for washing soiled clothes;
- Numbers of school days missed due to menstruation and effects of improved menstrual hygiene management on school attendance;
- Practicality, sustainability and cultural acceptability of different menstrual management options in low-income settings.

4.16 FINANCING SRHR

Contributor: Siri Tellier
Updated July 2014

Data sources

Data on financing SRHR are not easily accessible.

Internationally, data on 'Official Development Assistance' (ODA) are generally problematic, and particularly so with respect to SRHR. The fact that external funding is increasingly provided in terms of 'sector support' or that different donors have different ways of categorizing make this even more so. Domestic data are even more difficult to assemble, and not all such data are captured by international tracking mechanisms. This makes accountability difficult.

Most overall ODA data tracked here come from the OECD/DAC database. Those specific to SRHR particularly derive from the Resource Flows project. This is a project which was initiated according to General Assembly resolutions 49/128 and 50/124 in order to track progress on the ICPD targets of funding on the four components mentioned above, and to form the basis for a report by the UN Secretary General to the Commission on Population and Development. Since 1997, UNFPA and the Netherlands Interdisciplinary Demographic Institute (NIDI) have tracked these resource flows, and were joined in 2005 by the Indian Institute for Health Management Research (IIHMR) and in 2011 by the African Population and Health Research Centre (APHRC). Other sources of analysis include the Guttmacher Institute (UNFPA and Guttmacher Institute 2009, Guttmacher Institute 2010, UNFPA and Guttmacher Institute 2012) and the MDG report of the UN, which also uses these data as a source for their analysis.

Costs

In 1994, the ICPD PoA provided an early estimate of what would be needed to provide a basic package of 'population related' activities and services, including family planning, basic reproductive health services including safe maternity, prevention of sexually transmitted infections, including HIV/AIDS and population data, research and policy analysis. For an overview of one list of the components of a full sexual and reproductive health package, see Annex 6.

At the time, the projected costs for 2005 were that these activities would require $18.5 billion: $11.5 billion for family planning (including all delivery system costs), $5.4 billion for safe maternity services, $1.4 billion for STI/ HIV/AIDS services, and $0.2 billion for the research component. In addition to the estimates themselves, the 179 nations attending the ICPD agreed that donor countries would provide one-third of the financial resources needed, with the remaining two-thirds to come from developing countries themselves. The intention was also that these estimates should be reviewed regularly.

In terms of what is actually expended, one recent estimate is that donor disbursements to reproductive health activities in all countries amounted to USD 5 579 million in 2009 and USD 5 637 million in 2010 – an increase of 1.0%. More than half was for HIV for women of reproductive age. Overall ODA to general reproductive health amounted to 15.9% and ODA to Family Planning was 7.2% (Hsu, Berman et al. 2013).

Exact levels vary considerably between different sources, partially because different categories are used. The following text should be read with that in mind. However, there is agreement on overall trends.

Overall ODA has increased over the last decade. In 2010 it was at 147 billion USD (with 128.5 billion from OECD countries, the remainder from non-OECD countries). This is the highest to date (DSW/EPF/NIDI 2011).

Within overall health ODA, *ODA for health* increased even more dramatically after 2000, with estimates generally above 20 billion in 2010 (Ravishankar, Gubbins et al. 2009).

With respect to *ODA for reproductive health*, as mentioned above the resource flows project disaggregates it into family planning, basic reproductive health including maternal and neonatal care, and STIs/HIV/AIDS.

Table 4.16.1 ODA in USD and %

	1990	1995	2000	2005	2009
Total	60 B	67 B	60 B	120 B	147 B
Health	5.6 B	n.a.	6.6 B	12.6 B	19.8 B
HIV/AIDS and STDs		118 M	570 M	4 896 B	7 364 M
Family Planning		723 M	516 M	476 M	758 M

Overall, there has been a great increase, however, much of this is due to the particularly dramatic increase in funding for HIV/AIDS, the precise level depending on the source with following estimates dating from 2011 (DSW/EPF/NIDI 2011).

Other aspects of reproductive health such as *family planning* saw a quick increase in early stages of development assistance, from 168 million USD in 1971 to 512 million in 1984 (UNFPA 1988). Peak donor support earmarked for family-planning commodities and service delivery was in 1995, with one estimate being 723 million USD committed for that year. Since then, ODA has decreased in both relative and absolute terms, with the estimate for 2007 at about 338 million. The estimate is that since 2008 it is increasing again and in 2010 it was at about the same level as in 1995 (UN 2004, Obaid 2009, UNFPA 2009, UNFPA and Guttmacher Institute 2009, UN 2012). With the 2012 family planning summit (see below) a further boost was added to funding for family planning.

The latest estimates as provided to the UN Commission on Population and Development in April 2012 was that overall assistance for the four above-mentioned components of population activities was 10.7 billion in 2010. Of this, approximate percentages for each component were: family planning 7%, STD/ HIV/AIDS 66%, other reproductive health 24% and data/policy around 3%.

With respect to individual donors, it is notable that the US, despite its uneven political support for reproductive health and particularly family planning, provides very high proportions of ODA for these areas. European donors provide 63% of overall ODA, but only 5% of family planning assistance. The US provided 20% of overall ODA, but 90% of family planning assistance (DSW/EPF/NIDI 2011). The World Bank gave 18% of its health funding to reproductive health in 1995, by 2007 10% (World Bank 2010).

With respect to *domestic spending* in developing countries, Government spending for health in constant US$ from domestic sources increased by approximately 100% from 1995 to 2006. Overall, this increase was the product of rising GDP, slight decreases in the share of GDP spent by government, and increases in the share of government spending on health. At the country level, while shares of government expenditures to health increased in many regions, they decreased in many sub-Saharan African countries (Lu, Schneider et al. 2010).

With respect to domestic spending for population activities, the latest UN estimate is that it is at 32 billion USD, with out of pocket payments by consumers at around 22.9 billion (UN 2012). Out of this, about 30% was for HIV/AIDS, that is, the proportion of funding for HIV/AIDS is appreciably lower for domestic spending than for ODA (UN 2012).

Including both national and international sources, the estimate is that today's investment is 11.8 billion USD per year for family planning and maternal and newborn care for all women in developing countries (UNFPA and Guttmacher Institute 2009).

What would be needed? The estimated cost of filling the unmet need for both family planning and maternal and newborn care for all women in developing countries is estimated at $24.6 billion per year by 2015, or double today's investment.

Of this, 17.9 billion would be for maternal and newborn care (compared to the present investment of about 9 billion) and 6.7 billion USD for family planning (compared to the present investment of 3.1 billion). Providing each pregnant woman in the developing world with quality care would cost an average of $123 – $43 for antenatal care; $75 for delivery, newborn, and postpartum care; and $5 for post-abortion care, or 4.50 per capita (UNFPA and Guttmacher Institute 2009).

These global estimates are reflected in regional estimates. For example the African Union in its Maputo Declaration in 2006 noted that in 2007 total expenditure for SRHR was at USD 3.5 billion, and that USD 4.6 billion would be needed in 2010, or a total of 6-8 USD out of the total 34 USD needed for a basic package of health (African Union 2006).

Providing a full package would cost less than the sum of the parts: for example the additional 3.6 billion for family planning would result in lowering the overall cost of maternal and neonatal health by 5.1 billion (Guttmacher Institute 2010).

A few studies have attempted to quantify the financial cost of not investing. One widely cited study is that pregnancy-related death of women and newborns costs the world $15 billion in lost productivity every year (Gill, Pande et al. 2007, Starrs 2007).

Benefits

The recent update of 'Adding it up' by the Guttmacher Institute gives some of the estimated benefits if the gap between demand and supply for family planning was met:

- Current contraceptive use will prevent 218 million unintended pregnancies in developing count- tries in 2012, and, in turn, will avert 55 million unplanned births, 138 million abortions (of which 40 million are unsafe), 25 million miscarriages and 118,000 maternal deaths.
- Serving all women, in developing countries, who currently have an unmet need for modern methods would prevent an additional 54 million unintended pregnancies, including 21 million unplanned births, 26 million abortions (of which 16 million would be unsafe) and seven million miscarriages; this would also prevent 79,000 maternal deaths and 1.1 million infant deaths.
- Contraceptive care in 2012 will cost $4.0 billion in the developing world. To fully meet the existing need for modern contraceptive methods of all women in the developing world would cost $8.1 billion per year.

Depending on what services are offered, each US dollar spent of family planning can save governments 2-6 US dollars in spending on health, housing, infrastructure (USAID 2006, UNFPA and Guttmacher Institute 2009).

Recent Commitments

Finally, remarkable dynamic changes have taken place in the last 5-10 years. The Women Deliver Conference in 2007 took place in an environment where there was little to show progress in RH, nor much commitment to tackling the problems. Reproductive health, family planning and maternal mortality were seen as outstanding examples of inadequate policy commitment.

However, the last few years have seen many positive developments (Women Deliver 2010).

- The 2009 Consensus for Maternal, Newborn and Child Health and the Women Deliver conference in July 2010 provided a common set of priority actions. One particularly visible new support was by Melinda Gates, who announced a commitment of 1.5 billion USD in grant money for maternal and newborn health.
- New estimates of maternal mortality and AIDS in 2010 and 2012 demonstrated progress for those issues, although little is apparent for family planning.
- The Maternal mHealth Initiative within the mHealth Alliance, was launched in June, engaging a wide variety of stakeholders, both public and private.
- The Renewal of the Maputo Plan of Action at the 15th African Union Summit, July 2010.
- G8/G20 Commit to Improving Maternal Health, June 2010 (Mushoka/Ontario) called for 5 billion USD over the years 2011-15 for a maternal health fund).
- Secretary-General Ban Ki-moon launched the Global Strategy for Women and Child Health, and variety of stakeholders (private, government, international, non-profit, research) pledged new over $40 billion during the global summit on the Millennium Development Goals. For example, in 2011 Merck pledged

500 million over the next ten years (Associated Press 2011). Establishment of the United Nations Commission on Information and Accountability for Women's and Children's Health.

- Recognition e.g. by the World Bank that it has given insufficient attention to RH in the past, and commitment to do more in the future (World Bank 2010).[21]
- ICDP extended indefinitely, by a UN General Assembly decision, mid-Dec. 2010. ICPD achievements to date will be considered in 2014 (ICPD@20)
- Several donors have put family planning high on their agenda again, such as the German government with its new Initiative on Voluntary Family Planning.[22]
- In April 2011 the WHO, UNICEF and UNFPA launched a priority list of medicines for woman and child health, and a report was presented to the leadership of the Global Strategy (UNFPA 2012)
- There is also increased focus on adolescent health, by the Commission on the Status of Women in 2011, and by the UN organizations UN Women, UNFPA, WHO and UNICEF, as well as by IPPF, e.g. the UN Adolescent Girls Task Force (UNAGTF).
- Former Presidents Tarja Halonen, of Finland, and Joaquim Chissano, of Mozambique, have co-chaired a new High-Level Task Force dedicated to advancing sexual and reproductive health and rights (SRHR) worldwide. Members of a working group that is helping plan the task force include the Permanent Representative to the UN from Denmark Ambassador Carsten Staur, Dr. Steven W. Sinding, Adrienne Germain and Dr. Carmen Barroso.
- Misoprostol was included in WHO list of essential medicines 2011.
- A number of human rights initiatives concerning both maternal health, abortion as well as sexual rights, including an address to the UN General Assembly in December 2011 stating that ‘gay rights are human rights’ (UN 2011).
- The International parliamentarian Union (IPU) in April reconfirmed its support to ICPD, including universal access to post-abortion care and to making sure that abortions are safe where they are legal as a means of saving the lives of girls, adolescent and women (IPU 2012).
- A high level task force for ICPD was formed to support ICPD in the post 2015 agenda.
- In July 2012, a High level meeting was organized in London by DFID and Bill and Melinda Gates Foundation to make universal access to RH including family planning a reality (DFID 2012). The meeting received much attention, as did the recommendations stemming from it, in particular the pledge to provide access to contraception to 120 million women by 2020 (now known as ‘FP2020’). In April 2014, the Bill and Melinda Gates Foundation signed an agreement with UNFPA to follow up on this pledge. Invariably, some concern has also been expressed that any such target driven initiative may be problematic for women’s rights (Hardee, Kumar et al. 2014).
- UNAIDS maintains an update of the legal situation in different countries (UNAIDS 2013).

4.17: SRHR in fragile states and emergency situations

- A separate document, elaborated in a similar process as this one, deals with SRHR in humanitarian action. http://globalhealth.ku.dk/phha/PHHA_OER_Textbook.pdf
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ANNEX 1: ABBREVIATIONS

ART	Antiretroviral therapy
CDs	Communicable Diseases
CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
CHW	Community Health Workers
CPR	Contraceptive Prevalence Rate
Danida	Danish International Development Agency
DFID	Department for International Development, United Kingdom
ECOWAS	Economic Community of West African States
EmOC	Emergency Obstetric Care
ENRECA	ENRECA Health – Danish Research Network for International Health
FGM	Female Genital Mutilation
HIC	High Income Countries
HIV/AIDS	Human Immune Deficiency Virus/Acquired Immune Deficiency Syndrome
IAEG	Inter-Agency Expert Group
ICPD (PoA)	International Conference on Population and Development (Programme of Action)
IPCC	International Panel on Climate Change
IPPF	International Planned Parenthood Federation
IPU	Inter-Parliamentary Union
IUD	IntraUterine Device
IUGR	Intrauterine Growth Retardation
L/MICs	Low and Middle Income Countries
MDGs	Millennium Development Goals
MMR	Maternal Mortality Ratio
NCDs	Noncommunicable Diseases
NGO	Non Governmental Organization
NIDI	Netherlands Interdisciplinary Demographic Institute
ODA	Official Development Assistance
OECD/DAC	Organization of Economic Cooperation and Development/development assistance committee
PAM	Pregnancy Associated Malaria
PHC	Primary Health Care
PMTCT	Prevention of Mother to Child Transmission
PPH	Postpartum Haemorrhage
RCT	Randomized Controlled Trials
RTI	Reproductive Tract Infection
SBA	Skilled Birth Attendants
SRHR	Sexual and Reproductive Health and Rights
STI	Sexually Transmitted Infection
TBA	Traditional Birth Attendants
TFR	Total Fertility Rate
U5MR	Under Five Mortality Rate
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNECOSOC	UN Economic and Social Council
UNICEF	United Nations Children's Fund
UNFPA	United Nations Population Fund
UNIFEM	United Nations Development Fund for Women
US	United States
WHO	World Health Organization

ANNEX 2: TERMINOLOGY

Given that definitions may vary according to the source, we have given more than one source for some of the following concepts.

Concept	Definition
Abortion	A procedure for provoking termination of a pregnancy, where pregnancy is taken to begin with implantation in the womb. We were not able to find a definition of abortion, so this one is constructed by the editor, based on the definition of 'pregnancy' as given by WHO (see below) (WHO 2012).
Abortion Rate	(Number of induced abortions/number of women aged 15–44 years) × 1,000 (Chan and Keane 2004).
Abortion ratio	The number of abortions per 1000 live births
Adolescents	See below under 'young people'
Contraceptive Prevalence Rate	The percentage of women who are currently using, or whose sexual partner is currently using, at least one method of contraception, regardless of the method used. It is usually reported for married or in-union women aged 15 to 49 (UN 2011). See also footnote 12.
Developed/Developing Countries	Europe, N. America, Japan, Australia, and New Zealand. *Synonym*: Developed regions/All other countries than the developed ones. *Synonym*: Developing regions (UN 2011). This is a typology utilized for statistical purposes and does not imply any judgement on behalf of the UN on the level of development of the country concerned.
Family planning	According to WHO family planning *'allows individuals and couples to anticipate and attain their desired number of children and the spacing and timing of their births. It is achieved through use of contraceptive methods and the treatment of involuntary infertility'* (WHO 2014). This definition does not distinguish 'modern' from traditional' methods of contraception. Neither does it address the role of abortion, which might be considered a means of family planning under this definition, but is not a method of contraception.
Foetal death	*"Death prior to the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy; the death is indicated by the fact that after such separation the fetus does not breathe or show any other evidence of life such as beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles"* (UN 2001).
Induced Abortion	A procedure for termination of pregnancy (WHO 1996). *Synonym*: provoked abortion
Infant mortality rate	'Number of deaths to infants under one year per 1 000 live births in a given year or period' (WHO 2011). *Infant mortality rate* (IMR): the number of deaths to children under 1, per 1000 live births. *Infant mortality*: Probability of dying between birth and exact age 1. It is expressed as deaths per 1,000 births' (UN 2013).
Infertility	WHO defines infertility as inability to conceive after 2 years of trying (WHO 2013). Others define differently. In demographic literature, the term fecundity is used to denote ability to conceive, whereas the term fertility is used to refer to actual births.
Liberal Abortion Laws	Countries where abortion is legal on request or on socioeconomic grounds, and countries whose laws allow for abortion to preserve the physical or mental health of the woman (Sedgh, Singh et al. 2012).
Live birth	The complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life – e.g. beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles – whether or not the umbilical cord has been cut or the placenta is attached (WHO 2012).
Low, Middle, High Income countries (L/MICs, HICs)	The World Bank categorizes countries according to annual GDP per capita. In 2012, countries were categorized as Low Income Countries (LIC) if the GDP/cap was under 1 006 USD, Middle Income Countries (MIC) if incomes were 1 006-12 276 USD (sub-divided in to low middle income (1006-3975 USD) and Upper Middle income (3976-12 276 USD) and High Income Countries (over 12 276 USD). The categories are close to, but not entirely consistent with, the categories utilized by the UN: least developed (LLDR), less developed regions – least developed, (LDR-LLDR) and more developed regions (MDR). Very approximately, there are about 1 billion inhabitants of least developed and low income countries, about 5 billion inhabitants of middle income and LDR-LLDR, and 1 billion inhabitants of high income/MDRs (World Bank 2014).
Maternal death	The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective

	of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incident causes (WHO 2012).
Maternal health	The health of women during pregnancy, childbirth and the postpartum period (WHO 2012).
Maternal mortality rate	Number of maternal deaths in a given period per 100.000 women of reproductive age during the same time-period (WHO 2010).
Maternal mortality ratio	Number of maternal deaths during a given time period per 100.000 live births during the same time period (WHO 2010).
Menstrual health management	Definition of MHM: *"Women and adolescent girls use a clean material to absorb or collect menstrual blood, and this material can be changed in privacy as often as necessary for the duration of the menstruation. MHM also includes using soap and water for washing the body as required, and having access to facilities to dispose of used menstrual management materials"* (WHO and UNICEF 2012).
Miscarriage	See spontaneous abortion
Neonatal mortality	*'Number of deaths during the first 28 completed days of life per 1 000 live births in a given year or period. Neonatal mortality may be subdivided into early neonatal deaths occurring during the first seven days of life, and late neonatal deaths occurring after the seventh day but before the 28 completed days of life'*. Synonym: newborn mortality (WHO 2011).
Perinatal period	'The perinatal period is the period extending from the gestational age at which the foetus attains the weight of approximately 500g (equivalent to 22 completed weeks of gestation) to the end of the seventh completed day of life' (WHO 2011). *"The perinatal period commences at 22 completed weeks (154 days) of gestation (the time when birth weight is normally 500 g), and ends seven days after birth"* (WHO 1994). Some countries have adopted other periods, in recognition of the fact that the limit of 'viability' is gradually being pushed back to earlier periods of gestation. Thus, the standard in Australia is 'The perinatal period commences at 20 completed weeks (140 days) of gestation and ends 28 completed days after birth'. (e.g., METeOR 2011). Perinatal mortality is calculated as the number of stillbirths and deaths in the first week of life per 1000 live births.
Pregnancy	The nine months or so for which a woman carries a developing embryo and fetus in her womb (WHO 2012)
Pregnancy related death	Death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the cause of death. This term has been introduced to facilitate the identification of maternal deaths in circumstances in which cause of death attribution is inadequate (WHO 2011).
Prenatal sex selection	The practice of using medical techniques to choose the sex of offspring before birth (WHO 2012).
Proportion (%) of pregnancies which end in abortion	The estimated number of abortions divided by the total number of pregnancies
Reproductive Age	The period of a woman's life between puberty and menopause. Defined by WHO as women aged 15–49 years (WHO 2010) but also defined by WHO as women aged 15–44 years (WHO 2011). In relation to data on abortion the age span 15–44 years is most often used, but for contraceptive prevalence it is often 15-49 years. *Synonym*: Childbearing age.
Reproductive tract infection	Infections of the reproductive tracts, either endogenous (growth of organisms 'normally' present in the RT) or iatrogenic (introduced thought medical procedures e.g. in IUD insertion, abortion, child birth) or sexually transmitted.
Safe Abortion	Abortions that meet legal requirements in countries with liberal laws, or where the laws are liberally interpreted such that safe abortions are generally available (Sedgh, Singh et al. 2012). The Catholic Church and others note that abortion is never 'safe' from the point of view of the foetus.
(Population) sex ratio	Number of males per 100 females (in a population). For sex ratio at birth, sometimes referred to as number of male births per one female birth (UN 2013).
Sexually transmitted diseases	A disease which is transmitted sexually (including orally, anally, vaginally)
Sexually transmitted infections	An infection, which is transmitted through sexual activity – in recent years, the term infection is commonly used rather than disease, since a person may have an infection, without being symptomatic (having a disease).
Skilled birth attendant	The original definition of skilled attendant was developed jointly by WHO, UNFPA, UNICEF, and the World Bank in 1999 as referring: *"exclusively to people with midwifery skills on management of normal deliveries, recognition on the onset of complications and performance of*

	necessary interventions including management on referral of obstetric complications which are beyond their capacity in a given environment" (WHO 1999). This definition was revised by WHO, ICM (International Confederation of Midwives) and FIGO (the International Federation of Gynaecology and Obstetrics) as: *"an accredited health professional – such as a midwife, doctor or nurse – who has been educated and trained to proficiency in the skills needed to manage normal pregnancies, childbirth and the immediate postnatal period, and in the recognition, management and referral of complications in women and newborns"* (WHO 2004).
Spontaneous abortion	Unprovoked (spontaneous) termination of pregnancy, prior to viability, where viability is defined variously as 22-28 weeks. *Synonym*: Miscarriage (WHO 1992, WHO 1996). Spontaneous abortion: *"Termination of pregnancy by expulsion of embryo/fetus before 22 weeks of pregnancy or below 500g or weight*" (WHO 1996).
Stillbirth	A baby born with no signs of life at or after 28 weeks' gestation (WHO 2011). In most cases, *miscarriage* refers to spontaneous termination of pregnancy before *viability* of the foetus, and *stillbirth* to spontaneous termination after viability. However, the lower limits of gestational age (20-28 weeks) and birth weight (350-1000 g) that are used to define stillbirth vary across geographical areas. Dying in utero during the last 3 months of pregnancy. *Stillbirth*: *"Birth of a baby showing no signs of life (fetal death). For international comparisons of perinatal mortality rates only such stillborn infants with a birth weight of 500g or more are included. If the baby is not weighed, a gestational age of 22 completed weeks can be taken as equivalent"* (WHO 1994).
(Total) fertility rate	The average number of live births a woman would have by the end of her reproductive life if she were subject, throughout her life, to the age-specific fertility rates observed in a given year (WHO 2011). 'The average number of children a hypothetical cohort of women would have at the end of their reproductive period if they were subject during their whole lives to the fertility rates of a given period and if they were not subject to mortality. It is expressed as children per woman' (UN 2013).
Traditional means of family planning	Include lactational amenorrhoea (reduced fecundity due to breast feeding), various forms of total or periodic abstinence and *coitus interruptus*. Modern methods include barrier methods (such as condoms), intra uterine devices, and hormonal methods (INFO Project 2003). *Traditional* methods are basically those for which you need no pharmacy – including reliance on lactational amenorrhoea (reduced fecundity due to breast feeding), coitus interruptus (withdrawal), various forms of total or temporary abstinence (INFO Project 2003).
Under five mortality rate	Under-5 mortality rate is a leading indicator of the level of child health and overall development in countries. It is also a MDG indicator. However, there are several ways of defining and calculating it, and they are not always applied in a strict manner. Under five mortality (U5MR): the proportion of children who die before their 5th birthday, or, the probability of a child born in a specific year or period dying before reaching the age of five, if subject to age-specific mortality rates of that period (WHO 2011). 'Mortality under age 5: 'probability of dying between birth and exact age 5. It is expressed as deaths per 1,000 births' (UN 2013). The metric is, strictly speaking, not a rate (i.e. the number of deaths divided by the number of population at risk during a certain period of time) but a probability of death derived from a life table and expressed as rate per 1,000 live births which would make it more akin to a ratio. WHO, which defines the term as above, nevertheless also indicates: 'Number of deaths to children under 5 per 1 000 live births in a given year or period' (WHO 2011). In emergency situations, where the establishment of health metrics can be a challenge, the usual calculation is: number of deaths to children aged <5 years during the time period divided by the number of children aged <5 years in the mid-point of the time period, that is, those at risk of dying. The rate is calculated per 10 000 population per day (John Hopkins 2008).
Unintended pregnancy	A pregnancy that is not expected (WHO 1996).
Unmet need for family planning	Defining the need for modern contraception - Women of reproductive age (15–49) are considered to be in need of contraception if they are using contraceptives—modern or traditional—or are using no method but are married or are unmarried and sexually active (i.e., had had sex in the three months prior to being surveyed), are fecund and do not want a child soon (in the next two years) or at all; identify their current pregnancy as unintended; or are experiencing postpartum amenorrhea after an unintended pregnancy. - Women in need who are not currently using a modern contraceptive method –that is, women who use no method or a traditional method – are considered to have an unmet need for modern

	methods. Women who use traditional methods are included as having unmet need for modern contraception because the methods they are using are more likely to fail than modern methods. Modern methods include male and female sterilization, IUDs, implants, injectables, pills, male condoms and other supply methods, such as spermicides and female condoms. Traditional methods mainly include withdrawal and periodic abstinence. The number of women who are currently married, or unmarried and sexually active, are able to become pregnant and want to stop childbearing or to wait at least two years before having a child, or another child, yet are not using an effective means of contraception (UNFPA and Guttmacher Institute 2009, UNFPA 2011). 'The proportion of women of reproductive age (15-49 years) who are married or in union and who have an unmet need for family planning, i.e. who do not want any more children or want to wait at least two years before having a baby, and yet are not using contraception' (WHO 2011). The distinction is between 'effective'' or 'any' means of contraception
Unsafe Abortion	A procedure for terminating unwanted pregnancy by persons lacking the necessary skills or in an environment lacking the minimal medical standards or both (WHO 1996). A procedure carried out either by persons lacking the necessary skills or in an environment that does not conform to minimal medical standards, or both (WHO 2012). An unsafe abortion is "a procedure for terminating an unwanted pregnancy either by persons lacking the necessary skills or in an environment lacking the minimal medical standards, or both" (WHO 1992).
Unwanted pregnancy	A pregnancy that for a variety of often overlapping reasons is unexpected and undesired. Reasons a pregnancy may be unwanted include, but are not limited to, social/cultural, environmental, economic, and/or health factors (WHO 1996).
Young people/ Youth/ adolescents/ child	In international discussions, *young people* often refer to those between 10 and 24, *'youth to those between 15 and 24'*, and *adolescents* to those between 10 and 19 (WHO, UNICEF, UNFPA agreement on conventional usage, 1998). **The betrothal and the marriage of a child shall have no legal effect**, and all necessary action, including legislation, shall be taken to specify a **minimum age for marriage** and to make the registration of marriages in an official registry compulsory (UN 1979; Article 16.2). *"A child means every human being below the age of eighteen years unless under the law applicable to the child, majority is attained earlier"* (UN 1989; Article 1). However, a majority of national laws do not follow this, e.g. Uzbekistan (14), Nepal (16), Pakistan (18 for males, 16 for females) and with exceptions for married minors and minors in the armed forces. *"States Parties […] shall ensure that the child has **access to information** and material from a diversity of national and international sources, especially those aimed at the promotion of his or her social, spiritual and moral well-being and **physical and mental health"*** (UN 1989; Article 17). See also: CRC Art. 12, 13, 28, 29 B, CEDAW Art. 10, 14, 16, ICERD Art. 5 (e) (v), 7, ICESCR Art. 13,14, CMW Art. 13.

ANNEX 3: RELEVANT QUOTES FROM THE ICPPD

"Reproductive health is 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 to its functions and processes. Reproductive health therefore implies that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so. Implicit in this last condition are the right of men and women to be informed and to have access to safe, effective, affordable and acceptable methods of family planning of their choice, as well as other methods of their choice for regulation of fertility which are not against the law, and the right of access to appropriate health-care services that will enable women to go safely through pregnancy and childbirth and provide couples with the best chance of having a healthy infant. In line with the above definition of reproductive health, reproductive health care is defined as the constellation of methods, techniques and services that contribute to reproductive health and well-being by preventing and solving reproductive health problems. It 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 diseases" (Paragraph 7.2).

"Bearing in mind the above definition, reproductive rights embrace certain human rights that are already recognized in national laws, international human rights documents and other consensus documents. These rights rest on the recognition of the basic right of all couples and individuals to decide freely and responsibly the number, spacing and timing of their children and to have the information and means to do so, and the right to attain the highest standard of sexual and reproductive health.

It also includes their right to make decisions concerning reproduction free of discrimination, coercion and violence, as expressed in human rights documents..." (Paragraph 7.3).

"Governmental goals for family planning should be defined in terms of unmet needs for information and services. (…) All countries should, over the next several years, assess the extent of national unmet need for good-quality family-planning services…" (Paragraphs 7.12 and 7.16).

"In no case should abortion be promoted as a method of family planning. All Governments and relevant intergovernmental and non-governmental organizations are urged to strengthen their commitment to women's health, to deal with the health impact of unsafe abortion as a major public-health concern and to reduce the recourse to abortion through expanded and improved family planning services. Prevention of unwanted pregnancies must always be given the highest priority and every attempt should be made to eliminate the need for abortion. Women who have unwanted pregnancies should have ready access to reliable information and compassionate counselling. Any measures or changes related to abortion within the health system can only be determined at the national or local level according to the national legislative process. In circumstances where abortion is not against the law, such abortion should be safe. In all cases, women should have access to quality services for the management of complications arising from abortion. Post-abortion counselling, education and family planning services should be offered promptly, which will also help to avoid repeat abortions" (Paragraph 8.25).

Source: Programme of Action of the 5th International Conference on Population and Development, New York, United Nations, 1994.

ICPD+5 added the following "Key Actions":

"(ii) Governments should take appropriate steps to help women avoid abortion, which in no case should be promoted as a method of family planning, and in all cases provide for the humane treatment and counselling of women who have had recourse to abortion.

(iii) In recognizing and implementing the above, and in circumstances where abortion is not against the law, health systems should train and equip health service providers and should take other measures to ensure that such abortion is safe and accessible. Additional measures should be taken to safeguard women's health" (Paragraph 63).

Key Actions for the Further Implementation of the ICPD Programme of Action. Special session of the United Nations General Assembly (ICPD+5), June 1999.

Sources: (UN 1994, UN 1994).

ANNEX 4: THE MILLENNIUM DEVELOPMENT GOALS, TARGETS AND INDICATORS

Official list of MDG indicators. All indicators should be disaggregated by sex and urban/rural as far as possible. Effective 15 January 2008

Millennium Development Goals (MDGs)	
Goals and Targets (from the Millennium Declaration)	**Indicators for monitoring progress**
Goal 1: Eradicate extreme poverty and hunger	
Target 1.A: Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day	1.1 Proportion of population below $1 (PPP) per day[23] 1.2 Poverty gap ratio 1.3 Share of poorest quintile in national consumption
Target 1.B: Achieve full and productive employment and decent work for all, including women and young people	1.4 Growth rate of GDP per person employed 1.5 Employment-to-population ratio 1.6 Proportion of employed people living below $1 (PPP) per day 1.7 Proportion of own-account and contributing family workers in total employment
Target 1.C: Halve, between 1990 and 2015, the proportion of people who suffer from hunger	1.8 Prevalence of underweight children under-five years of age 1.9 Proportion of population below minimum level of dietary energy consumption
Goal 2: Achieve universal primary education	
Target 2.A: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling	2.1 Net enrolment ratio in primary education 2.2 Proportion of pupils starting grade 1 who reach last grade of primary 2.3 Literacy rate of 15-24 year-olds, women and men
Goal 3: Promote gender equality and empower women	
Target 3.A: Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015	3.1 Ratios of girls to boys in primary, secondary and tertiary education 3.2 Share of women in wage employment in the non-agricultural sector 3.3 Proportion of seats held by women in national parliament
Goal 4: Reduce child mortality	
Target 4.A: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate	4.1 Under-five mortality rate 4.2 Infant mortality rate 4.3 Proportion of 1 year-old children immunised against measles
Goal 5: Improve maternal health	
Target 5.A: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio	5.1 Maternal mortality ratio 5.2 Proportion of births attended by skilled health personnel
Target 5.B: Achieve, by 2015, universal access to reproductive health	5.3 Contraceptive prevalence rate 5.4 Adolescent birth rate 5.5 Antenatal care coverage (at least one visit and at least four visits) 5.6 Unmet need for family planning
Goal 6: Combat HIV/AIDS, malaria and other diseases	
Target 6.A: Have halted by 2015 and begun to reverse the spread of HIV/AIDS	6.1 HIV prevalence among population aged 15-24 years 6.2 Condom use at last high-risk sex 6.3 Proportion of population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS 6.4 Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14 years
Target 6.B: Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it	6.5 Proportion of population with advanced HIV infection with access to antiretroviral drugs
Target 6.C: Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases	6.6 Incidence and death rates associated with malaria 6.7 Proportion of children under 5 sleeping under insecticide-treated bednets 6.8 Proportion of children under 5 with fever who are treated with appropriate anti-malarial drugs 6.9 Incidence, prevalence and death rates associated with tuberculosis 6.10 Proportion of tuberculosis cases detected and cured under directly observed treatment short course
Goal 7: Ensure environmental sustainability	

Target 7.A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources *Target 7.B*: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss	7.1 Proportion of land area covered by forest 7.2 CO2 emissions, total, per capita and per $1 GDP (PPP) 7.3 Consumption of ozone-depleting substances 7.4 Proportion of fish stocks within safe biological limits 7.5 Proportion of total water resources used 7.6 Proportion of terrestrial and marine areas protected 7.7 Proportion of species threatened with extinction
Target 7.C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation	7.8 Proportion of population using an improved drinking water source 7.9 Proportion of population using an improved sanitation facility
Target 7.D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers	7.10 Proportion of urban population living in slums[24]
Goal 8: Develop a global partnership for development	
Target 8.A: Develop further an open, rule-based, predictable, non-discriminatory trading and financial system Includes a commitment to good governance, development and poverty reduction – both nationally and internationally *Target 8.B*: Address the special needs of the least developed countries Includes: tariff and quota free access for the least developed countries' exports; enhanced programme of debt relief for heavily indebted poor countries (HIPC) and cancellation of official bilateral debt; and more generous ODA for countries committed to poverty reduction *Target 8.C*: Address the special needs of landlocked developing countries and small island developing States (through the Programme of Action for the Sustainable Development of Small Island Developing States and the outcome of the twenty-second special session of the General Assembly) *Target 8.D*: Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term	*Some of the indicators listed below are monitored separately for the least developed countries (LDCs), Africa, landlocked developing countries and small island developing States.* *Official development assistance (ODA)* 8.1 Net ODA, total and to the least developed countries, as percentage of OECD/DAC donors' gross national income 8.2 Proportion of total bilateral, sector-allocable ODA of OECD/DAC donors to basic social services (basic education, primary health care, nutrition, safe water and sanitation) 8.3 Proportion of bilateral official development assistance of OECD/DAC donors that is untied 8.4 ODA received in landlocked developing countries as a proportion of their gross national incomes 8.5 ODA received in small island developing States as a proportion of their gross national incomes *Market access* 8.6 Proportion of total developed country imports (by value and excluding arms) from developing countries and least developed countries, admitted free of duty 8.7 Average tariffs imposed by developed countries on agricultural products and textiles and clothing from developing countries 8.8 Agricultural support estimate for OECD countries as a percentage of their gross domestic product 8.9 Proportion of ODA provided to help build trade capacity *Debt sustainability* 8.10 Total number of countries that have reached their HIPC decision points and number that have reached their HIPC completion points (cumulative) 8.11 Debt relief committed under HIPC and MDRI Initiatives 8.12 Debt service as a percentage of exports of goods and services
Target 8.E: In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries	8.13 Proportion of population with access to affordable essential drugs on a sustainable basis
Target 8.F: In cooperation with the private sector, make available the benefits of new technologies, especially information and communications	8.14 Fixed-telephone subscriptions per 100 inhabitants 8.15 Mobile-cellular subscriptions per 100 inhabitants 8.16 Internet users per 100 inhabitants

The Millennium Development Goals and targets come from the Millennium Declaration, signed by 189 countries, including 147 heads of State and Government, in September 2000 (UN 2000) and from further agreement by member states at the 2005 World Summit (Resolution adopted by the General Assembly – A/RES/60/1) (UN 2005). The goals and targets are interrelated and should be seen as a whole. They represent a partnership between the developed countries and the developing countries *"to create an environment – at the national and global levels alike – which is conducive to development and the elimination of poverty"*.

Source: (UN 2008)

ANNEX 5: REPRODUCTIVE HEALTH IN THE MDGS AND POST-2015 GOALS

Following the 2005 World Summit, four additional MDG targets were identified by the UN Secretariat and recommended by the UN Secretary-General in his report on the "Work of the Organization" which was noted by the 61st General Assembly in October 2006.

The four targets are:

- Achieve full and productive employment and decent work for all
- Achieve, by 2015, universal access to reproductive health
- Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it
- Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss.

The Inter-Agency Expert Group on the MDG Indicators (IEAG), mandated to propose technically sound indicators for the four new targets, reached agreement in November 2006.

The new MDG Framework was adopted by the 62nd General Assembly in October 2007 when delegates took note of the UN Secretary-General's report, "Work of the Organization," in which the Framework was proposed.

The new MDG Framework became effective on 15 January 2008 when the UN Deputy Secretary-General sent a written communication to UN agencies instructing them to use it as the basis for all global and national reporting and monitoring.

The official website of the MDG Indicators, managed by the UN Statistics Division, lists the new MDG Framework (UN 2008).

MDG Target 5.B: "Achieve, by 2015, universal access to reproductive health"

INDICATORS

- Contraceptive prevalence rate
- Number of women of reproductive age (15-49) married or in union who are using contraception to the total number of women of reproductive age
- Adolescent birth rate
- The number of births occurring to all women aged 15-19 per 1000 women in the 15-19 age group
- Antenatal care coverage
- Percentage of women who used antenatal care provided by skilled health personnel for reasons related to pregnancy at least once *and* at least four times during pregnancy, as a percentage of live births in a given time period
- Unmet need for family planning
- The proportion of women who are married or in consensual union who are at risk of pregnancy who desire to delay their next birth at least two years or avoid another one who are not using a method of family planning

ANNEX 6: DEFINING SEXUAL HEALTH AND RIGHTS

Panel 3: Definition of sexual issues

SEXUAL HEALTH

Sexual health is a state of physical, emotional, mental, and social wellbeing in relation to sexuality; it is not merely the absence of disease, dysfunction, or infirmity. Sexual health needs a positive and respectful approach to sexuality and sexual relationships, and the possibility of having pleasurable and safe sexual experiences that are free of coercion, discrimination, and violence. For sexual health to be attained and maintained, the sexual rights of all individuals must be respected, protected, and satisfied.

SEXUALITY

Sexuality is a key aspect of humanity and encompasses sex, gender identities and roles, sexual orientation, eroticism, pleasure, intimacy, and reproduction. Sexuality is experienced and expressed in thoughts, fantasies, desires, beliefs, attitudes, values, behaviours, practices, roles, and relationships. Although sexuality can include all of these dimensions, not all are always experienced or expressed. Sexuality is affected by the interaction of biological, psychological, social, economic, political, cultural, ethical, legal, historical, religious, and spiritual factors.

SEXUAL RIGHTS

Sexual rights embrace human rights that are already recognised in national laws, international human rights documents and other consensus statements. They include the right of all individuals, free of coercion, discrimination and violence, to:

- The highest attainable standard of sexual health, including access to sexual and reproductive health care services;
- Seek, receive, and impart information related to sexuality;
- Sexuality education;
- Respect for bodily integrity;
- Choose their partner;
- Decide whether or not to be sexually active;
- Consensual sexual relations;
- Consensual marriage;
- Decide whether or not, and when, to have children;
- Pursue a satisfying, safe and pleasurable sexual life.

The responsible exercise of human rights requires that all individuals respect the rights of others.

These working definitions were elaborated as a result of a WHO-convened international technical consultation on sexual health in January 2002, and subsequently revised by a group of experts from different parts of the world. These definitions do not represent an official WHO position, and should not be used or quoted as WHO definitions.

Sources: (Glasier, Gulmezoglu et al. 2006, WHO 2011)

Attention to sexual health (and sexual rights) includes:

1. Prevention, screening and treatment for sexually transmitted infections
2. Prevention, treatment, care and support for people with HIV

- Decriminalization of HIV transmission, homosexuality, and some believe also sex work. Each of these is very controversial.
- Dealing with sexual violence, sexual abuse, sexual harassment, sexual coercion, forced marriage and child marriage
- Comprehensive sexuality education
- Sexual problems in women and men
- Intersection of HIV and sexual and reproductive health

Source: Marge Barer, personal communication to Tine Gammeltoft, 2011

ANNEX 7: UNFPA PRIORITY OPERATIONAL CONCERNS

UNFPA gives priority to providing basic reproductive health services to young people, pregnant women, and hard-to-reach populations, including those displaced by humanitarian crises. Linking reproductive health services to HIV and AIDS prevention, treatment and care is increasingly being seen as a critical strategy to expanding access to both types of care. In recognition that men are integral to reproductive health, the Fund also is expanding its support to services that can make men healthier and more responsible sexual partners.

Both men and women need access to information and appropriate health services throughout their lives. Such information and services should be gender sensitive and allow:

- All individuals to make informed choices about sexuality and reproduction, and to have a safe and satisfying sexual life, free of violence and coercion
- Women to go safely through pregnancy and childbirth
- Couples to have the best chance of having a healthy infant
- Women to avoid unwanted pregnancy and to address the consequences of unsafe abortion
- Access to prevention, treatment and care for sexually transmitted infections, including HIV.

Offering essential services

Almost all programme countries struggle to expand access to services. Because of limited resources, many countries initially offer a core package of basic services, which can be expanded as resources become available. For the convenience of users, and streamlining of management, reproductive and sexual health services should be integrated within a system that offers primary health care and referrals for more specialized needs.

A full sexual and reproductive health package includes:

- Family planning/birth spacing services
- Antenatal care, skilled attendance at delivery, and postnatal care
- Management of obstetric and neonatal complications and emergencies
- Prevention of abortion, management of complications resulting from unsafe abortion
- Prevention and treatment of reproductive tract infections and sexually transmitted infections including HIV/AIDS
- Early diagnosis and treatment for breast and cervical cancer
- Promotion, education and support for exclusive breast feeding
- Prevention and appropriate treatment of sub-fertility and infertility
- Active discouragement of harmful practices such as female genital cutting
- Adolescent sexual and reproductive health
- Prevention and management of gender-based violence

NOTES

_ENREF_542_ENREF_541[1] For the European Union, where legislation on abortion is less restrictive than any other region, the Council Presidency has clearly stated that the Council's commitment to promote 'reproductive health' did not include the promotion of abortion: European Parliament, 4 December 2003: Oral Question (H-0794/03) for Question Time at the part-session in December 2003 pursuant to Rule 43 of the Rules of Procedure by Dana Scallon to the Council. In the written record of that session, one reads: Posselt (PPE-DE): *"Does the term 'reproductive health' include the promotion of abortion, yes or no?"* European Parliament. (2003). "ORAL QUESTION for Question Time at the part-session in December 2003 pursuant to Rule 43 of the Rules of Procedure by Dana Scallon to the Council." Retrieved 14 July, 2014, from http://www.europarl.europa.eu/sides/getDoc.do?type=QT&reference=H-2003-0794&language=EN. Likewise, the European Commission, in response to a question from a Member of the European Parliament, clarified: The term *reproductive health* was defined by the United Nations (UN) in 1994 at the Cairo International Conference on Population and Development. All Member States of the Union endorsed the Programme of Action adopted at Cairo. The Union has never adopted an alternative definition of 'reproductive health' to that given in the Programme of Action, which makes no reference to abortion European Parliament. (2002). "ORAL QUESTION for Question Time at the part-session in October 2002 pursuant to Rule 43 of the Rules of Procedure by Dana Scallon to the Commission. H-0670/02." Retrieved 14 July, 2014, from http://www.europarl.europa.eu/sides/getDoc.do?type=QT&reference=H-2002-0670&language=EN..

[2] Ambassador Ellen Margrethe Løj State Secretary, Ministry of Foreign Affairs, Denmark, Hague Forum, 8-12 February 1999.

[3] Ambassador Ellen Margrethe Løj State Secretary, Ministry of Foreign Affairs, Denmark, Hague Forum, 8-12 February 1999.

[4] An opening between the birth canal and the urethra or colon, caused by trauma associated with prolonged and obstructed labour, and resulting in incontinence and other sequel.

[5] Falling or sliding of the uterus from its normal position in the pelvic cavity into the vaginal canal, sometimes protruding from it. There are various risk factors, one being multiple vaginal deliveries accompanied by hard physical labour Bodner-Adler, B., C. Shrivastava and K. Bodner (2007). "Risk factors for uterine prolapse in Nepal." International Urogynecology Journal **18**(11): 1343-1346..

[6] Cause of death as defined in the International Classification of Disease, ICD10.

[7] See also under the paragraph on 'co-morbidities'.

[8] Six basic signal functions: Administer parenteral antibiotics, Administer parenteral oxytocic drugs, Administer parenteral anticonvulsants for pre-Eclampsia and Eclampsia, Perform removal of placenta, Perform removal of retained products (e.g. manual vacuum aspiration), Perform assisted vaginal delivery, additional 2 comprehensive signal functions: Perform blood transfusion, Perform surgery (Caesarean Section).

[9] CHWs: Community Health Workers

[10] Postpartum hemorrhage is traditionally defined as blood loss greater than 500 mL during a vaginal delivery or greater than 1000 mL with a caesarean delivery. However, significant blood loss can be well tolerated by most young healthy females, and an uncomplicated delivery often results in blood loss of more than 500 mL without any compromise of the mother's condition Yiadom, M. and D. Carusi (2010). Postpartum Hemorrhage in Emergency Medicine..

[11] A maternal health case before the Inter-American Committee on Human Rights was resolved through a friendly settlement agreement is the case of Paulina Ramirez Jacinto of Mexico. The petitioners alleged that Paulina Ramirez, aged 13, was the victim of sexual violence, was prevented from exercising her right to a legal abortion because she and her mother were the victims of intimidation and delays on the part of agents of the State. In 2007, the parties ratified a friendly settlement agreement that includes public recognition of the responsibility of the Government of Baja California and a series of measures to compensate the victim and her child, including court costs for processing the case, medical expenses arising from the events and health services, financial support for their maintenance, housing, education and professional development, psychological care, and reparation for moral damages OAS. (2010). "Access to maternal health services from a human rights perspective." OEA/Ser.L/V/II. Retrieved 14 July, 2014, from http://cidh.org/women/SaludMaterna10Eng/MaternalHealth2010.pdf..

[12] For example, Professor Hans Rosling from the Karolinska Institute claims in his TED Talk from February 2006 that TFR falls only and apparently automatically, after U5MR falls below 10%.

[13] There are some controversies regarding the terminology "developed/developing countries" since the definition is considered unclear. As a response the World Bank has developed the term: Low income countries (LIC), Middle income countries (MIC) and High income countries (HIC), depending on the country's gross national income. In the present chapter, however, we use developed/developing countries, since this terminology is being used by Sedgh et al and Guttmacher , whom we are referring to.

[14] In international dialogue, some delegations favouring restricting access to abortion will state that abortion can never be 'legal' and therefore the wording is frequently 'against the law'.

[15] ICPD Programme of Action, para 8.25; ICPD+5 para 63, see Annex 1.

[16] Para 1.12. Other time bound and quantified targets included: a) universal access to primary education by 2015, b) reducing IMR to <35/1000 and U5M to <45/1000 by 2015, c) reducing MMR to half the 1990 levels by 2000, and by half again by 2015, d) increasing life expectancy at birth to 75 years or more by 2015 and e) Raise 17 billion US$ per year for implementation of the ICPD, one third (5.7) from DC, two thirds (11.3) from LDC. There is no quantitative goal on contraceptive prevalence rates, fertility or population growth

[17] The Convention on the Rights of Persons with Disabilities states that States Parties need to "provide persons with disabilities with the same range, quality and standard of free or affordable health care and programmes as provided to other persons, including in the area of sexual and reproductive health and population based public health programmes." Art 23

[18] Population Reference Bureau, based on data from Macro DHS.

[19] Definition of MHM: "Women and adolescent girls use a clean material to absorb or collect menstrual blood, and this material can be changed in privacy as often as necessary for the duration of the menstruation. MHM also includes using soap and water for washing the body as required, and having access to facilities to dispose of used menstrual management materials" WHO and UNICEF (2012). Consultation on Draft Long List of Goal, Target and Indicator Options for Future Global Monitoring of Water, Sanitation and Hygiene. Geneva, World Health Organization and UNICEF..

[20] For example, J-PAL's *Menstrual Management and Sanitation Systems study* in Bihar, India; the African Population and Health Research Centre's *Menstruation Project* in Nairobi, Kenya; the *Menstruation and Education in Nepal Project*, and WoMena Ltd's *Pilot study, Schoolgirls' acceptability, hygienic safety & school attendance when using menstrual cups* in Gulu, Uganda.

[21] *"A renewed global consensus on the need to make progress on Millennium Development Goal 5, together with greater attention to gender issues within and outside the Bank is refocusing attention on reproductive health and offering an unprecedented opportunity to redress the neglect of the previous decade"* World Bank (2010). World Bank Reproductive Health Action Plan 2010-2015. Washington DC, World Bank.

[22] BMZ, GIZ, DSW, UNFPA. New York 11 April 2011, side event organized during the 44th session of the UN Commission on Population and Development (CPD). Family Planning: Key to Saving Lives.

[23] For monitoring country poverty trends, indicators based on national poverty lines should be used, where available.

[24] The actual proportion of people living in slums is measured by a proxy, represented by the urban population living in households with at least one of the four characteristics: (a) lack of access to improved water supply; (b) lack of access to improved sanitation; (c) overcrowding (3 or more persons per room); and (d) dwellings made of non-durable material.

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