

Women's health priorities and interventions

Building on the unfinished agenda, **Marleen Temmerman and colleagues** elaborate actions needed to improve the health and wellbeing of women and girls around the world

Over the past decades, governments have taken steps towards improving women's health in line with commitments made in key international summits. Progress has been made in reducing maternal mortality,¹ which accelerated with the launch of the United Nations secretary general's Global Strategy for Women's and Children's Health in 2010. Use of maternal healthcare and family planning has increased in some countries.² Progress has also been seen on two determinants of women's health—school enrolment rates for girls and political participation of women—but not for others such as gender based violence.³

However, societies are still failing women in relation to health, especially in low resource settings. Discrimination on the basis of their sex leads to health disadvantages for women.⁴ Structural determinants of women's health, along with legal and policy restrictions, often restrict women's access to health services.

This paper elaborates the health problems women face, and priority interventions to overcome them, as a background for and informing the updating of the Global Strategy for Women's, Children's and Adolescents' Health.

KEY MESSAGES

Substantial progress has been made in the past two decades in improving maternal health, with a 45% reduction in maternal mortality, but much remains to be done

It is imperative to accelerate the momentum and protect the gains made for women's health, as well as to tackle critical gaps and acknowledge the lessons learnt

Key health systems interventions are needed to address structural determinants of women's health, reduce inequities in access, improve quality of care, strengthen accountability, and promote adoption of innovations that improve performance

Priority interventions for women's health include providing health information and contraceptive services, strengthening maternal healthcare, tackling non-communicable diseases, and preventing and responding to violence against women and girls

Methods

This paper is based on a desk review and synthesis of evidence drawing on global epidemiology and health estimates to identify gender differentials in mortality and morbidity. The interventions are based on syntheses of evidence drawn from evidence reviews previously conducted for WHO initiatives.⁵⁻⁷ We used three selection criteria to identify priority interventions. (1) Interventions that tackle major causes of morbidity and mortality in women and adolescent girls. (2) Interventions that have been shown to have a high impact on health and development of women and adolescent girls. (3) Interventions critical for the overall health and wellbeing of women, children, and adolescents (such as interventions related to harmful practices and violation of human rights). We circulated a draft of the paper for comments through a web based consultation and finalised it according to comments received and expert feedback.

Unfinished agenda for women's health

Poor sexual and reproductive health outcomes represent a third of the total global burden of disease for women aged 15-44 years. Unsafe sex and violence are major risk factors for death and disability among women and girls in low and middle income countries and continue to disproportionately affect marginalised groups in high income countries.⁸

Although the global maternal mortality ratio—the number of maternal deaths per 100 000 live births—halved between 1990 and 2013, this progress is not sufficient to reach the target of millennium development goal 5 of a 75% reduction by 2015.⁹ In 2013 an estimated 289 000 women died from complications of pregnancy and childbirth; and 22 million unsafe abortions occurred in 2008 (half all induced abortions in that year), nearly all in low and middle income countries.¹⁰ The burden of maternal morbidity, such as obstetric fistulas and uterine prolapse, continues to be high.¹¹ Catastrophic and out of pocket health expenditure for healthcare services, such as treatment of complications resulting from unsafe abortion, continues to affect women and girls around the world.¹² Each year, 5.4 million women endure pregnancies that end in stillbirth (2.6 million in 2009) or neonatal death (2.8 million in 2013).¹³ Worldwide, an

estimated 225 million women have an unmet need for modern contraception.¹⁴

In 2013 almost 60% of all new HIV infections among young people aged 15-24 years occurred in girls and young women.¹⁵ Tuberculosis is often linked to HIV infection and is among the leading causes of death in women of reproductive age (and among women aged 20-59 years) in low income countries. Nearly 30% of women and adolescent girls are affected by anaemia, leading to adverse effects on their overall health and wellbeing, especially during pregnancy and childbirth.

Sexually transmitted infections, of which human papillomavirus infection is the most common, disproportionately affect women and adolescent girls. About 70% of cases of cervical cancer worldwide are caused by human papillomavirus.¹⁶ Untreated syphilis is responsible for about for 212 000 stillbirths/early fetal deaths and about 92 000 neonatal deaths every year.¹⁷

One in three women aged 15-49 years has experienced physical violence, sexual violence, or both by an intimate partner or sexual violence by a non-partner, with many short and long term consequences for their health.¹⁸ One in four girls and one in seven boys experience sexual violence before the age of 18.¹⁹

Emerging priorities for women's health

Shifts in population dynamics towards more ageing populations, along with an unprecedented growth in the world's adolescent population, have led to greater complexities in the global burden of ill health, including an increase in non-communicable diseases (NCDs).⁸ In 2012 most premature deaths from NCDs among women aged 30-70 years (82% or 4.7 million) occurred in low and middle income countries, with higher rates in women aged 15-59 years than in high income countries.²⁰

Gender norms and societal structures mean that the mobility and physical activity of women and girls in some parts of the world is often restricted. This can be further compounded by factors related to income, household hierarchies, and roles. In some regions, this has an adverse effect on the health and wellbeing of women and girls.²¹ Furthermore, gestational diabetes affects about 15% of women worldwide.²²

Globally, tobacco use accounts for about 9% of all deaths due to NCDs in women.

Maternal smoking is associated with risks in pregnancy, including ectopic pregnancy, preterm birth, placental problems, miscarriage, and stillbirth.²³ Harmful use of alcohol, illicit drugs, and other psychoactive substances by girls and women, including during pregnancy, is increasing in many parts of the world. In 2012 an estimated 4% of deaths of women were attributable solely to alcohol use.²⁴

Women's cancers, especially breast and cervical cancer, result in high rates of mortality and morbidity, especially in low and middle income countries. Widespread major inequalities in access to early detection and screening lead to large variations in clinical outcomes and survival after treatment. Breast cancer, the leading cause of deaths from cancer in women (1.7 million new cases and 0.5 million deaths in 2012), is diagnosed in low and middle income countries mostly at advanced stages, when palliative care is the only option.²⁵ Cervical cancer is the fourth most common cancer affecting women worldwide. In low and middle income countries, it is the third leading cause of death from cancer in women, and in most cases women have limited access to screening and treatment of pre-cancerous lesions, with resultant late stage identification.²⁶

Mental disorders constitute another critical emerging health problem for women and girls. Suicide is a leading cause of death in adolescent girls and in women aged 20-59 years globally.²⁷ Women experience more depression and anxiety than men.²⁸ Patterns of mental health problems differ between men and women as a result of different gender roles and responsibilities, biological differences, and variations in social contexts.²⁷ Women who have been exposed to violence by intimate partners are twice as likely to have depression and alcohol use disorders and four times more likely to commit suicide, compared with women not exposed to this violence.¹⁸ Mental health services are often limited in lower income countries, and women benefit even less from these services than do men.²⁷

Chronic obstructive pulmonary disease is also a leading cause of disease and death among older women. In low income countries, the primary risk factor for women's ill health is exposure to indoor air pollution caused by the burning of solid fuels for heating and cooking. However, health systems are not adequately equipped to provide prevention and treatment of these conditions.

Globally, women represent a higher proportion of older adults. Traditionally, women have provided most of the care in the family, looking after both children and older people,

often to the detriment of their own participation in the paid workforce. The consequences in older age include a greater risk of poverty, more limited access to good quality health-care and social care services, and poor health. Several serious medical conditions of older age, including dementia, are more common in women, yet women find it harder to access the treatment they need.

Strengthening health systems and tackling structural determinants of women's health

Persistent obstacles in health systems to the realisation of women's health and related human rights, including sexual and reproductive health and rights, include a lack of gender responsiveness, reflected by a lack of sex disaggregated data and gender analysis. This results in health services not taking into account the specific needs and determinants of women's health or the effect on it of gender inequality. Removing these obstacles requires targeted innovations that tackle structural inequalities and improve the quality, coverage, and completeness of health services for women. Box 1 summarises health systems interventions for women's health.

Structural determinants of women's health

Sex based biological factors interact with inequalities based on gender, age, income, race, disability, ethnicity, class, and environmental factors among others in shaping women's exposure to health risks, experience of ill health, access to health services, and health outcomes. Gender inequalities in

the allocation of resources, such as income, education, healthcare, and nutrition, are strongly associated with poor health, requiring a multisectoral approach integrating the contribution of non-health sectors to the overall health and wellbeing of women and girls.

Creating an enabling legal and policy environment

Laws and policies have a direct bearing on the realisation of health and human rights by women and girls, including on sexual and reproductive health and rights. National and sub-national legal and policy frameworks should be aligned with recognised human rights norms and standards, and countries should establish or strengthen mechanisms to implement these standards.

Reducing inequalities

Another key focus in tackling the remaining gaps should be the persistent inequalities and inequities in the accessibility and quality of health systems across and within countries.²⁸ In many settings, health systems continue to have limited accessibility for certain populations, such as for poor people, older people, adolescents, rural residents, and residents of urban slums, and for uninsured or undocumented people,²⁹ as well as limited capacity as measured by indicators such as health worker density, coverage of critical services, use of health information systems, availability of essential medicines and supplies, and quality assurance.²⁹

BOX 1 HEALTH SYSTEMS INTERVENTIONS FOR WOMEN'S HEALTH

- Universal health coverage for key health interventions for women
- Inequities in access
 - Steps to enhance coverage (physical, social, geographic, linguistic, financial)
 - Removal of barriers to access, including legal and policy barriers, criminalisation, third party authorisation, and overly broad conscientious objection
- Quality of care, including supplies
 - Quality assurance of service delivery, update of evidence based norms, standards, and policies
 - Adequate supplies for key women's health problems
 - Respectful care standards and cultural sensitivity
- Health workforce
 - Development and distribution of health workforce for women's health problems, including midwives
 - Pre-service and in-service training
 - Provision of incentives to enhance quality, retention, etc.
- Monitoring and accountability
 - Investing in strengthening the overall governance of the health system to ensure better accountability for results and for realisation of rights
 - Strengthening management capacity at national and sub-national levels
- Adoption and institutionalisation of innovations that enhance quality, coverage, efficiency, and/or completeness of health interventions to women
 - Client specific innovations that improve access and reduce barriers, including the use of digital technologies
 - Health system innovations that improve performance and drive measurement and accountability, including digital innovations for vital events

Quality of care

Women's health services, particularly sexual and reproductive health services, are often not provided at a level of quality that meets human rights standards.³⁰ The persistence of poor sexual and reproductive health outcomes despite availability of supplies and facilities underscores the need to strengthen the quality of health systems.³¹ According to the recent WHO multi-country survey on maternal and newborn health, even when the coverage of effective interventions is high (above 80%) many women still die or experience severe morbidity from haemorrhage, hypertensive and other disorders of pregnancy, and prolonged obstructed labour (often resulting in death, stillbirth, or obstetric fistulas).³²

Quality of care must therefore go side by side with the increase of service coverage, as this alone does not guarantee the health results.^{32 33} Strengthening health networks, transportation, and referral systems is still an unfinished agenda in many countries. Upgrading of first and second level facilities with appropriate infrastructure and equipment, and providing adequate numbers of skilled and motivated health workers, with ongoing training and mentoring for women's health, including on sexual and reproductive health and abortion care, and on tackling violence against women, is necessary to increase coverage and facilitate access.

Quality of care is a multidimensional concept that is affected by stakeholders' priorities and context.³³ Attributes of quality of care include access to care, effectiveness of care, safety, equitability, communication, acceptability, efficiency, and privacy and confidentiality.³³

Enhancing accountability

The Commission on Information and Accountability for Women's and Children's

Health emphasised multiple dimensions of accountability, by adopting a framework built on three pillars: monitoring, review, and action (including redress).³⁴ The independent Expert Review Group, established to monitor and assess progress in implementation of recommendations made by the commission, has stated that accountability needs to be based on certain core principles: clarity about stakeholders' responsibility for action; accurate measurement; independent verification; impartial, transparent, and participatory review; and clear recommendations for future action.³⁴

Accountability is also intrinsic to ensuring that individuals' agency and choice are respected, protected, and fulfilled. Agency and choice are fundamental to enabling people to have a voice and to hold governments and all relevant stakeholders to account.

Promotion and protection of the international development agenda requires placing the human rights and health of women and adolescent girls, particularly sexual and reproductive health and rights, at its centre. Participatory monitoring and accountability mechanisms that meaningfully engage women at the sub-national, national, and global levels are a critical part of this.

Priority interventions for women's health

On the basis of the existing evidence and reviews conducted,⁵⁻⁷ we propose several priority interventions. Box 2 gives a synthesis of these interventions, which are not in an order of priority.

Providing health information and comprehensive sexuality education

Evidence based health information and comprehensive sexuality education (CSE) is a key intervention for promotion and protection of women's health. Such education and information should be available to all adolescents

and youths, in and out of school, as well as to adult women. CSE provides thorough, scientifically accurate, non-judgmental information and assists people to develop skills for decision making, critical thinking, communication, and negotiation of interpersonal relationships. Quality CSE programmes cover human rights, gender equality, respectful relationships, human sexuality, and sexual and reproductive health and rights. Effective CSE programmes seek to roll out nationwide curriculums and teacher training materials based on interactive methodologies; they select and supervise teachers and facilitators; and they work with parents, school principals, and programme managers, among others, at community level and through meaningful participation of adolescents.³⁵ Specific attention needs to be paid to adolescent girls in the context of CSE programmes.

Contraceptive information and services for all who need them

Information on contraception and integrated comprehensive sexual and reproductive health services are vital means for women and girls to maintain health, and their availability is necessary for women and girls to enjoy their human rights. Contraception has clear health benefits. For example, prevention of unintended pregnancies results in a subsequent decrease in maternal and infant mortality and morbidity. Providing access for all women in developing countries who have an unmet need for modern methods of contraception would prevent 54 million unintended pregnancies, 26 million abortions (of which 16 million would be unsafe), and 7 million miscarriages; this would also prevent 79 000 maternal deaths and 1.1 million infant deaths. This situation would particularly benefit adolescent girls, who are at increased risk for medical complications associated with pregnancy and who are often forced to make compromises in education and employment that may lead to poverty and lower educational attainment.³⁶

Effective policies at the national and local levels should ensure availability of a mix of accessible, acceptable, and high quality modern contraceptive methods, including emergency contraception, to meet women's needs across the life course; these should be evidence based and free from bias, discrimination, and unnecessary medical eligibility criteria. Financing for family planning should be strengthened through costed implementation plans, health finance facilities, and national budgets. Providers should be trained and supervised to meet human rights standards for quality care.

BOX 2 SUMMARY OF PRIORITY HEALTH INTERVENTIONS AND HEALTH SYSTEM ENABLERS FOR WOMEN'S HEALTH

- Health information and comprehensive sexuality education
- Comprehensive and integrated package of sexual and reproductive health services, including family planning
- Prevention of unsafe abortion; provision of safe abortion and post-abortion care
- Pregnancy care
- Management of pregnancy complications and maternal morbidities
- Counselling and birth preparedness
- Skilled care at birth; comprehensive emergency obstetric and newborn care
- Prevention of and response to violence against women and harmful traditional practices
- Cervical and breast cancer screening and treatment
- Testing and treatment for HIV, sexually transmitted infections, and tuberculosis according to need
- Promotion of healthy behaviours for preventing non-communicable diseases (for example, tobacco, alcohol, obesity)
- Human papillomavirus vaccine
- Adequate nutrition
- Mental health and psychosocial support

Strengthening maternal healthcare

As maternal and child mortality continues to decrease sharply in many countries, to make more progress, priority attention is needed to ensure the quality of maternal healthcare. Functioning health systems will include emergency obstetric and newborn care and strong capacity at the secondary level to treat complications of childbirth, with effective referral from the community and primary levels.^{37 38} Further strengthening of health services delivery systems is also needed, taking into account task shifting and innovative approaches such as mhealth and ehealth.

Strengthening the health workforce

Attention is needed to educate, deploy, retain, and improve the quality of the cadres of primary healthcare workers, such as midwives and nurses, through quality education, effective regulation, and an enabling work environment that includes effective referral.³⁹ Healthcare workers should be empowered and provided with the necessary knowledge, skills, medicines, and equipment. Furthermore, health workers should be provided with training and capacity building to sensitise them to approach the health needs of women and adolescent girls in a more responsive manner.

Providing safe abortion and post-abortion care

Unsafe abortion, one of the leading causes of maternal death and injuries, is entirely preventable because technologies and safe procedures are well known, cost little, and should be widely available. WHO's technical and policy guidelines for access to safe abortion should be implemented.⁴⁰ Laws restricting access to safe abortion do not reduce or end recourse to abortion, and abortion related mortality is higher in countries with restrictive laws. The UN Special Rapporteur on the Right to Health has found that criminalising reproductive behaviours, including abortion, is a violation of human rights and contributes to poor health outcomes.⁴¹ Although access to post-abortion care for treatment of the complications of unsafe abortion has increased, women in many countries still do not have access to this life saving care or are mistreated when they seek it.

Preventing and treating sexually transmitted infections and HIV in women

To effectively end the AIDS epidemic by 2030 and reduce the burden of other sexually transmitted infections (STIs), governments and the international community should fully implement effective prevention interventions; ensure access for

young and marginalised people, including young women and girls and higher risk populations, to information and services on the risks and symptoms of STIs and HIV and to the skills and means to protect themselves; provide universal access to antiretroviral drugs; ensure privacy and confidentiality; invest in development of inexpensive technologies for diagnosis, treatment, and vaccines; strengthen STI surveillance, including of microbial resistance; and challenge prevailing gender and sexuality norms.

Preventing and responding to violence against women and girls

Challenging social norms and gender inequalities is a critical element in preventing and responding to all forms of violence against women and girls. This requires multi-sector programmes and strategies that address structural determinants, including gender equality and the empowerment of women. Laws, policies, protocols, and guidelines are needed for all sectors, emphasising that violence against women and girls is a violation of human rights, imposes enormous health burdens on individuals, families, and society, and will not be tolerated. The health system has an important role in the prevention of and response to violence against women and girls by ensuring access to timely, effective, and affordable health services for women and girls who are victims of violence, particularly sexual and reproductive health services. Sexual and reproductive health, adolescent health, and maternal health services offer unique entry points to identifying violence and providing the necessary support and care to women and girls exposed to violence, including mental health, emergency contraception, safe abortion, and STI and HIV prophylaxis for post-rape care, in line with WHO's clinical and policy guidelines. This requires providers to be adequately trained and supported.

Tackling non-communicable diseases

As detailed above, women are increasingly facing a disproportionate burden of NCDs. Prevention requires interventions to promote healthy behaviours and reduce risk factors for NCDs, and governments need to take steps to overcome economic, socio-cultural health inequalities and geographic barriers. Providing women with clean cooking and heating devices reduces their risk for several NCDs while also protecting the health of infants and young children. Interventions include integration of prevention and control of NCDs into existing health systems initiatives; protection of women and girls from

aggressive marketing of tobacco products through accelerated and effective implementation of the Framework Convention on Tobacco Control; inter-sectoral collaboration to identify and promote actions outside health systems in relation to NCDs; greater involvement of women and girls in identifying problems and solutions and implementing policies in the fight against NCDs; integration of sex and gender in the design, analysis, and interpretation of studies on NCDs by research institutions; and innovative partnerships to improve access to affordable, high quality, essential medicines to treat NCDs.⁴²

Tackling women's cancers

"Changing reproductive health needs over the life cycle" includes the prevention, diagnosis, and treatment of reproductive system cancers. The human papillomavirus vaccine makes widespread primary prevention, as well as screening and treatment of precancerous lesions, potentially feasible in countries with weak health systems. Advances for breast cancer are primarily in treatment and identification, which can be used for risk screening and need to be further available for all. Important new work is being done in low income countries to inform women, and to train community and primary healthcare workers to support them, to seek diagnosis and care early enough for curable cases to be treated and to improve the management of greatly overburdened treatment facilities. This work needs to be strengthened.

Adequate nutrition

Iron deficiency anaemia increases the risk of haemorrhage and sepsis during childbirth. It causes cognitive and physical deficits in young children and reduces productivity in adults. Women and girls are most vulnerable to anaemia owing to insufficient iron in their diets, menstrual blood loss, and periods of rapid growth. In some regions, women and girls are denied access to nutrition owing to cultural factors and societal norms. This severely affects the overall health and wellbeing of women and girls, especially during pregnancy, and leads to severe birth outcomes and health conditions. This requires cross sectoral collaboration to ensure provision of adequate nutrition to women and girls. For example, the paper by Branca and colleagues recommends that interventions to reduce iron deficiency anaemia need to be rolled out at a larger scale, achieving universal coverage.⁴³ This also requires interventions to ensure gender equality and promotion of women's empowerment to ensure women's

full access to and control over resources and social protection.

Mental health

Gender is a critical determinant of mental health and mental illness. The morbidity associated with mental illness has received substantially more attention than the gender specific determinants and mechanisms that promote and protect mental health and foster resilience to stress and adversity. Gender differences occur particularly in the rates of common mental disorders such as depression, anxiety, and somatic complaints. These disorders affect approximately one in three people in the community (with a female predominance), are closely associated with intimate partner violence, and constitute a serious public health problem. Reducing gender disparities in mental health requires action at many levels. In particular, national mental health policies must be developed on the basis of an explicit analysis of gender disparities in risk and outcome. This further requires investments in gender sensitive treatment approaches and services to be developed at the national level.⁴⁴ For women to be able to access treatment at all levels from primary to specialist care and inpatient as well as outpatient facilities, services must be tailored to meet their needs.⁴⁴ Women must therefore have access to meaningful assistance to seek treatment, and the full range of women's psychosocial and mental health needs must be addressed. This, according to WHO, involves services adopting a life course approach, by acknowledging current and past gender specific exposures to stressors and risks and by responding sensitively to life circumstances and ongoing gender based roles and responsibilities.⁴⁴

Conclusion

Despite progress, persisting and emerging problems challenge women's health. Responding to these requires a comprehensive approach including implementation of effective interventions at both clinical and health systems level. Additionally, environmental, social, economic, and political determinants that result in unequal access to care should be tackled to ensure the ending of preventable deaths, morbidities, and disabilities among women and improve their health. A focus on inequalities and on marginalised groups, including in humanitarian settings, will help in achieving convergence between high and low income countries within a generation.

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- Say L, Chou D, Gemmill A, et al. Global causes of maternal death: a WHO systematic analysis. *Lancet Glob Health* 2014;2:e323-33.
- United Nations Inter-agency Group for Child Mortality Estimation. Levels and trends in child mortality. United Nations Children's Fund, 2014 (available at www.who.int/maternal_child_adolescent/documents/levels_trends_child_mortality_2014/en/).
- World Health Organization. Women and health: 20 years of the Beijing declaration and platform for action. 2015. http://apps.who.int/gb/ebwha/pdf_files/EB136/B136_18-en.pdf.
- World Health Organization. Women and health: today's evidence tomorrow's agenda. WHO, 2009.
- World Health Organization, Partnership for Maternal, Newborn and Child Health, Aga Khan University. Essential interventions, commodities and guidelines for reproductive, maternal, newborn and child health (RMNCH). PMNCH, 2011.
- Stender K, Axelson H, Sheehan P, et al. Advancing social and economic development by investing in women's and children's health: a new global investment framework. *Lancet* 2014;383:1333-54.
- World Health Organization. Strategies toward ending preventable maternal mortality. 2015. www.who.int/reproductivehealth/topics/maternal_perinatal/epmm/en/.
- World Health Organization. Global health estimates 2000-2012. WHO, 2014.
- World Health Organization (WHO), United Nations Children's Fund (UNICEF), United Nations Population Fund (UNFPA), World Bank. Trends in maternal mortality: 1990-2013. WHO, UNICEF, UNFPA and The World Bank estimates. WHO, 2014.
- World Health Organization. Unsafe abortion: global and regional estimates of the incidence of unsafe abortion and associated mortality in 2008. 6th ed. WHO, 2011.
- Firoz T, Chou D, von Dödelshen P, et al. Measuring maternal health: focus on maternal morbidity. *Bull World Health Organ* 2013;91:794-6.
- World Health Organization. Designing health financing systems to reduce catastrophic health expenditure. WHO, 2005 (available at www.who.int/health_financing/pb_2.pdf).
- Save the Children. Surviving the first day: state of the world's mothers. Save the Children, 2013.
- Singh S, Darroch JE, Ashford LS. Adding it up: the costs and benefits of investing in sexual and reproductive health, 2014. Guttmacher Institute, 2015.
- Joint United Nations Programme on HIV/AIDS. Global report: UNAIDS report on the global AIDS epidemic. UNAIDS, 2012.
- World Health Organization. Global incidence and prevalence of selected curable sexually transmitted infections—2008. WHO, 2012.
- World Health Organization. Sexually transmitted infections. Factsheet 110. 2013. www.who.int/mediacentre/factsheets/fs110/en/.
- World Health Organization, London School of Hygiene and Tropical Medicine, South African Medical Research Council. Global and regional estimates of violence against women: prevalence and health effects of intimate partner violence and non-partner sexual violence. WHO, 2013.
- Centers for Disease Control and Prevention. Sexual violence: facts at a glance. 2012. www.cdc.gov/violenceprevention/pdf/sv-datasheet-a.pdf.
- Abouzahr C. Trends and projections in mortality and morbidity. Paper prepared for the ICPD Beyond 2014 Expert Meeting on Women's Health—rights, empowerment and social determinants, Mexico City, 2013.
- World Health Organization. Update on the WHO Commission on Ending Childhood Obesity. 2014. http://apps.who.int/gb/ebwha/pdf_files/EB136/B136_10-en.pdf.
- International Diabetes Federation. Policy briefing. Diabetes in pregnancy: protecting maternal health. IDF, 2011 (available at www.idf.org/publications/diabetes-pregnancy-protecting-maternal-health).
- World Health Organization. WHO global report on mortality attributable to tobacco. WHO, 2012.
- Nelson D, Jarman DW, Rehm J, et al. Alcohol-attributable cancer deaths and years of potential life lost in the US. *Am J Public Health* 2013;103:641-8.
- World Health Organization. Breast cancer: prevention and control. 2011. www.who.int/cancer/detection/breastcancer/en/.
- World Health Organization. Human papillomavirus (HPV) and cervical cancer. Factsheet 380. 2013. www.who.int/mediacentre/factsheets/fs380/en/.
- De los Angeles CP, Lewis WW, et al. Use of mental health services by women in low and middle income countries. *Journal of Public Mental Health* 2014;13:4.
- United Nations Secretary-General. Summary report on the assessment of the status of implementation of the Programme of Action of the International Conference on Population and Development. United Nations, 2014 (available at http://icpd2014.org/uploads/browser/files/sg_report_on_icpd_operational_review_final.unedited.pdf).
- Say L, Raine R. A systematic review of inequalities in the use of maternal health care in developing countries: examining the scale of the problem and the importance of context. *Bull World Health Organ* 2007;85:812-9.
- Germain A. Meeting human rights norms for the quality of sexual and reproductive health information and services: discussion paper. ICPD beyond 2014. International Conference on Human Rights. 2013.
- Independent Expert Review Group (IERG). Every woman, every child: strengthening equity and dignity through health. The second report of the independent Expert Review Group (IERG) in information and accountability for women's and children's health. WHO, 2013.

- 32 Souza JP, Gulmezoglu AM, Vogel J, et al. Moving beyond essential interventions for reduction of maternal mortality (the WHO Multi-country Survey on Maternal and Newborn Health): a cross-sectional study. *Lancet* 2013;381:1747-55.
- 33 Bruce J. Fundamental elements of the quality of care: a simple framework. *Stud Fam Plan* 1990;21:61-91.
- 34 Commission on Information and Accountability for Women's and Children's Health. Keeping promises, measuring results. WHO, 2011 (available at www.who.int/topics/millennium_development_goals/accountability_commission/Commission_Report_advance_copy.pdf).
- 35 Haberland N, Rogow D. Sexuality education: emerging trends in evidence and practice. *J Adolesc Health* 2015;56(1):S15-21.
- 36 World Health Organization. WHO guidelines on preventing early pregnancy and poor reproductive outcomes among adolescents in developing countries. WHO, 2011.
- 37 World Health Organization. Working with individuals, families and communities to improve maternal and newborn health. WHO, 2010.
- 38 Murray SF, Pearson SC. Maternity referral systems in developing countries: current knowledge and future research needs. *Soc Sci Med* 2006;62:2205-15.
- 39 Van Lerberghe W, Matthews Z, Achadi E, et al. Country experience with strengthening of health systems and deployment of midwives in countries with high maternal mortality. *Lancet* 2014;384:1215-25.
- 40 World Health Organization. Safe abortion: technical and policy guidance for health systems. WHO, 2012:90-1.
- 41 UN General Assembly. Interim report of the Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health. A/66/254. 2011. www.ohchr.org/EN/HRBodies/SP/Pages/GA66session.aspx.
- 42 NCD Alliance. Non-communicable diseases: a priority for women's health and development. 2011. www.who.int/pmnch/topics/maternal/2011_women_ncd_report.pdf.
- 43 Branca F, McLean E, Piwoz E, et al. Nutrition and health in women, children, and adolescent girls. *BMJ* 2015;351:h4173.
- 44 World Health Organization, Department of Mental Health and Substance Dependence. Gender disparities in mental health. 2009. www.who.int/mental_health/media/en/242.pdf?ua=1.

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