

THEME: INTEGRATED AND COMPREHENSIVE SRH SERVICES: A GLOBAL VIEW

Sexual and reproductive health: Progress and outstanding needs

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We examine progress towards the 1994 International Conference on Population and Development (ICPD) commitment to provide universal access to sexual and reproductive health (SRH) services by 2014, with an emphasis on changes for those living in poor and emerging economies. Accomplishments include a 45% decline in the maternal mortality ratio (MMR) between 1990 and 2013; 11.5% decline in global unmet need for modern contraception; ~21% increase in skilled birth attendance; and declines in both the case fatality rate and rate of abortion. Yet aggregate gains mask stark inequalities, with low coverage of services for the poorest women. Demographic and Health Surveys and Multiple Indicator Cluster Surveys from 80 developing countries highlight persistent disparities in skilled birth attendance by household wealth: in 70 of 80 countries (88%), ≥80% of women in the highest quintile were attended by a skilled provider at last birth; in only 23 of the same countries (29%) was this the case for women in the lowest wealth quintile. While there have been notable declines in HIV incidence and prevalence, women affected by HIV are too often bereft of other SRH services, including family planning. Achieving universal access to SRH will require substantially greater investment in comprehensive and integrated services that reach the poor.

Keywords: sexual and reproductive health; maternal health; ICPD

Background

A hallmark of the 1994 International Conference on Population and Development (ICPD) Programme of Action (POA) (United Nations Population Fund [UNFPA], 1995) was the consensus that increasing access to sexual and reproductive health (SRH), and protecting human rights especially of women and adolescents, would ultimately secure a better future for all. To achieve these objectives, ICPD affirmed the commitment by member states to make comprehensive SRH services accessible to all persons through the primary health care system by 2014. States reaffirmed that commitment in the 1999 Key Actions (UNFPA, 1999), specifying the need to strengthen ‘basic health care systems, from which people living in poverty in particular can benefit’, and Millennium Development Goal (MDG) 5B reaffirmed that universal access to reproductive health is a global priority. This paper examines progress towards those goals through a review of trends in key SRH outcomes, and the use of related services over the past two decades.

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Improvements in SRH outcomes have been considerable since ICPD, reflecting growing public and government support for gender equality, widespread gains in primary education, breakthroughs in communications technology, a decline in the number of persons living in extreme poverty and improvements in health systems themselves. Yet aggregate gains in SRH outcomes mask substantial inequalities, and people's ability to exercise their reproductive rights is neither universal nor equitable. While the number of maternal deaths per 100,000 live births (the maternal mortality ratio, MMR) fell by 45% over the past two decades, 800 women a day still die from causes related to pregnancy and childbirth; and while use of modern contraceptives has increased by 10% since ICPD, an estimated 25% of reproductive age women in Africa still have an unmet need for contraception (United Nations Department of Economic and Social Affairs [UNDESA], Population Division, 2014b; UNFPA, 2012a). As anti-retroviral (ARV) drugs have averted an estimated 5.2 million deaths in low- and middle-income countries (LMICs), new treatment guidelines (World Health Organization [WHO], 2013b) suggest more than 65% of treatment-eligible persons need care (UNAIDS, 2013). Further, the celebrated decline in new HIV infections coincides with vastly unequal progress between countries (UNAIDS, 2013), and rising HIV incidence in parts of Eastern Europe, Central Asia, the Middle East and North Africa (UNAIDS, 2013).

The current paper examines inequalities in SRH outcomes and services both between and within regions and countries, highlighting wealth differentials in access to both skilled attendance at birth, and the use of modern contraception. National and state briefs published in this same series describe policy conditions that have enhanced or obstructed progress towards universal SRH since ICPD in diverse settings, emphasising the essential and persistent need for greater state investments, cooperation between governments and civil society, more accountability, and greater recognition that comprehensive health system investments will be needed to achieve progress in SRH at significant scale. Regional and national distinctions in SRH coverage are notable, but the overall findings underscore the persistent unmet need to increase access to services for the world's poorest women.

Methods

This review draws on multiple sources, including analyses undertaken for the Framework of Actions for the follow up to the Programme of Action of the ICPD Beyond 2014 (United Nations Economic and Social Council [UN-ECOSOC], 2014a, 2014b) and the corresponding summary by the same title (UN-ECOSOC, 2014a); publicly available data on service utilisation (e.g. skilled birth attendance, antenatal care [ANC], emergency obstetric and newborn care [EmONC]), and contraceptive prevalence collected through the Demographic and Health Surveys (DHS) (ICF International, 2014) and the Multiple Indicator Cluster Surveys (MICS) (select indicators are displayed by household wealth quintiles for the survey years noted) (UNICEF, 2014). Annual estimates of maternal mortality and incident cases of sexually transmitted infections (STIs) are based on values collected and published by the WHO; estimates of HIV prevalence, coverage of ARV therapy and incident infections are all based on data available from UNAIDS, including their national online reports. Estimates of urban versus rural access to the management of post-partum haemorrhage (PPH) were generated using publicly available data from the Maternal and Neonatal Effort Index (MNPI) project (MEASURE Evaluation PRH, 2014). All data sources are provided within the text.

Aggregate progress masks severe inequalities by wealth

Maternal mortality

Of all SRH outcomes, the greatest gains in the past two decades have been in reducing maternal death. In absolute numbers, more than half a million women died each year from largely preventable causes related to pregnancy and childbirth in 1994, a number estimated at 289,000 deaths in 2013 (WHO, 2014b). The MMR decreased from 380 in 1990 to 210 in 2013 (WHO, 2014b), a decrease of 45%.

Declines in MMR over the past 20 years reflect advances in both clinical and social determinants, including increased use of ANC, skilled attendance at delivery and EmONC; gains in female education, delays in the age of marriage and first birth; and a decrease in mortality related to abortion (WHO, 2013d, 2014b). A decomposition of the progress in reducing maternal death in South Asia (SA) since 1994, for example, suggests that approximately 32% of the reduction in the absolute number of maternal deaths was attributable to declining fertility enabled by greater use of contraception (Jain, 2011), a resulting lower number of pregnancies and better pregnancy spacing (Jain, 2011; WHO, 2014b). Vaidyanathan (2014) attributes a dramatic decline in MMR in the Indian state of Tamil Nadu from the mid-1980s to 2007–2009 to a combination of innovative financing that strengthened primary health care, and social reforms that enhanced women's empowerment (Acharya, Vaidyanathan, Muraleedharan, Dheenadayalan, & Dash, 2011; Gupta, Desikachari, Somanathan, & Padmanaban, 2009; International Institute for Population Science [IIPS] & Macro International, 2007; Muraleedharan, Dash, & Gilson, 2009; Padmanaban, Raman, & Mavalankar, 2009; Ramasundaram et al., 2001; State Health Society, 2012; Visaria, 2000; WHO, 2009b).

Differences in the risk of maternal death between developed and developing countries continue to be extreme. Women living in industrialised countries have a 1 in 4000 lifetime risk of dying of maternal causes, while the comparable risk of women in the least developed countries is 1 in 51, and in sub-Saharan Africa (SSA), the risk is 1 in 38 (WHO, 2014b).

Among the 50 countries with MMR \geq 500 in 1990, eight have already achieved MDG 5, target A, i.e. to reduce the MMR by three quarters between 1990 and 2015 (WHO, 2014b); these countries include Bhutan, Cambodia, Equatorial Guinea, Eritrea, Lao People's Democratic Republic, Nepal, Rwanda and Timor-Leste. Another 17 have reduced MMR by \geq 50% but less than 75%, while 25 countries have not yet reduced their 1990 MMR by 50%. All but one of these latter 25 countries are located in Africa (the exception being Haiti), where there continues to be inadequate coverage of skilled providers and SRH services, especially in rural or remote areas and slums (Ahman & Shah, 2011).

Antenatal care

The percentage of pregnant women who had at least one ANC visit increased globally from 63% in 1990 to 80% in 2010, an overall improvement of approximately 30%. Similar to maternal mortality, accomplishments mask regional disparities: in southern Africa 94% of women had one ANC visit in 2010, compared to only 67% in West Africa. In Latin America, nearly all women now have at least one ANC visit (96%) and 88% have at least four (ICF International, 2014; UNICEF, 2014).

Skilled attendance at birth

The proportion of deliveries attended by skilled health personnel is highly correlated with MMR (AbouZahr & Wardlaw, 2001; Ronsmans et al., 2003), and is among the strongest indicators of where health systems are able to reach women in reproductive emergencies. It is a better predictor of MMR than ANC coverage (Lancet Maternal Survival Series Steering Group, Campbell, & Graham, 2006), and is a valuable indicator of health system access, indicating the extent to which acute skilled care is available to pregnant women and to newborns in a given country. The worldwide proportion of skilled attendance rose from 57% in 1990 to 66% in 2010, a gain of approximately 15% (Figure 1), and by 2012 had reached 69% (United Nations, 2013). Despite this positive trend, access to skilled attendance remains highly inequitable between regions, countries and between women in the lowest and highest wealth quintiles within the same country. Recent DHS and MICS surveys (2004 or later), from 80 developing countries, highlight stark differentials in such access by household wealth in the last decade (Table 1).

In 70 of 80 countries surveyed (88%), more than 80% of women in the highest wealth quintile were attended by a skilled provider at last birth, suggesting that most developing countries are able to provide skilled care at least for women in the wealthiest households. Of the 10 countries unable to provide skilled care even for pregnant women in the highest wealth quintile, five are in Africa (e.g. Chad, Ethiopia, Guinea-Bissau, Niger and Somalia); two in SA (Bangladesh, Pakistan); plus Haiti, Timor-Leste and Yemen. In contrast, in only 23 of the 80 countries surveyed (29%), were more than 80% of pregnant women in the lowest wealth quintile attended by a skilled provider at last birth,

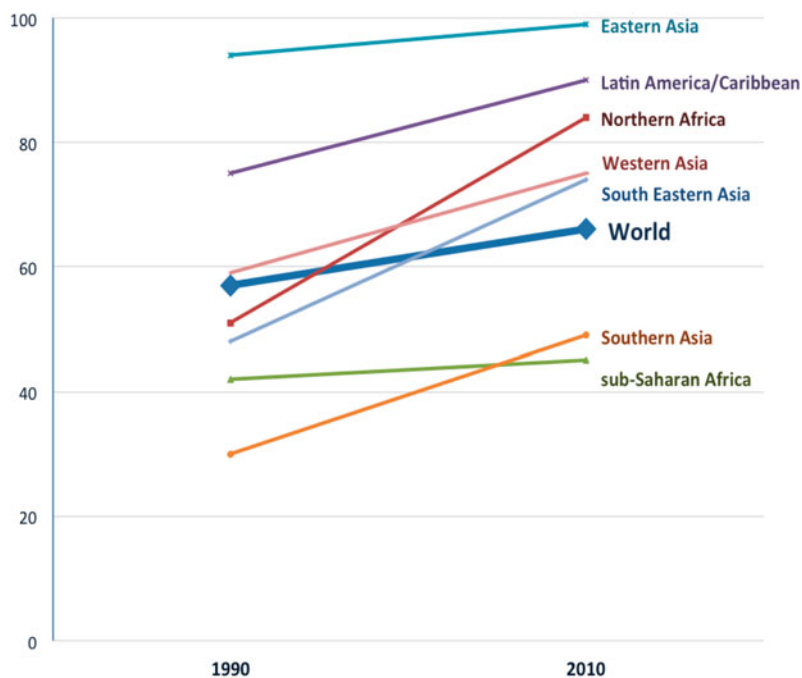


Figure 1. The percentage of women who had a skilled attendant (doctor, nurse or mid-wife) at birth increased approximately 15% globally from 1990 to 2010, but with notable distinctions in progress between regions.

Source: DHS and MICS data, as reported in UN-ECOSOC (2014b).

Table 1. Coverage of skilled birth attendance at last birth (%), and modern contraceptive prevalence (%), by household wealth quintiles in 80 developing countries, 2004 or later.

Country	Year	Source	Skilled attendance at birth (%)						Modern CPR (%)					
			Poorest 20%	Second 20%	Middle 20%	Fourth 20%	Richest 20%	Δ-highest to lowest	Poorest 20%	Second 20%	Middle 20%	Fourth 20%	Richest 20%	Δ-highest to lowest
Albania	2008–2009	DHS	100	99	99	100	100	1	11	9	11	9	14	4
Angola	2006–2007	MICS	16	35	61	86	94	78	–	–	–	–	–	–
Armenia	2010	DHS	100	100	100	99	100	0	21	17	27	34	38	16
Azerbaijan	2006	DHS	76	88	91	99	100	24	11	11	10	18	21	10
Bangladesh	2011	DHS	12	19	28	43	64	52	53	54	52	51	51	–2
Belarus	2005	MICS	100	100	100	100	100	0	49	53	59	60	59	9
Belize	2006	MICS	84	100	100	100	98	14	–	–	–	–	–	–
Benin	2006	DHS	59	72	82	93	98	39	2	4	5	7	13	11
Bhutan	2010	MICS	34	43	67	81	95	61	69	66	65	66	62	–7
Bolivia (Plurinational State of)	2008	DHS	39	69	83	94	99	59	23	27	34	41	47	24
Bosnia and Herzegovina	2006	MICS	99	100	100	99	100	0	4	10	7	13	20	15
Burkina Faso	2010	DHS	51	64	74	83	96	45	7	9	10	16	34	26
Burundi	2010	DHS	55	59	64	66	83	28	15	14	17	17	26	12
Cote d'Ivoire	2006	MICS	29	40	59	79	95	66	3	5	6	10	18	15
Cambodia	2010	DHS	49	64	75	87	97	48	35	37	37	34	31	–4
Cameroon	2011	DHS	19	56	78	91	98	79	2	8	14	22	26	23
Chad	2004	DHS	2	7	9	14	52	50	0	0	1	0	7	7
Colombia	2010	DHS	86	98	99	100	99	14	69	73	73	75	75	6
Congo	2005	DHS	69	78	92	98	99	30	9	7	12	16	18	9
Democratic Republic of the Congo	2010	MICS	60	68	69	85	96	36	1	2	3	7	14	13
Dominican Republic	2007	DHS	90	96	96	98	98	8	67	71	72	71	69	3
Egypt	2008	DHS	58	73	85	91	97	39	52	55	59	59	62	10
Ethiopia	2011	DHS	3	4	4	9	50	48	13	22	24	30	48	35
Gambia	2006	MICS	28	46	59	73	89	60	–	–	–	–	–	–
Georgia	2005	MICS	95	99	99	99	99	3	12	16	18	23	28	16
Ghana	2008	DHS	23	52	66	82	96	73	12	14	16	20	21	9

Table 1 (Continued)

Country	Year	Source	Skilled attendance at birth (%)						Modern CPR (%)					
			Poorest 20%	Second 20%	Middle 20%	Fourth 20%	Richest 20%	Δ–highest to lowest	Poorest 20%	Second 20%	Middle 20%	Fourth 20%	Richest 20%	Δ–highest to lowest
Guinea	2005	DHS	15	20	35	58	87	72	3	3	4	7	13	10
Guinea-Bissau	2006	MICS	19	26	31	54	79	59	1	2	3	9	19	18
Guyana	2009	DHS	82	96	96	98	97	15	31	39	43	41	45	14
Haiti	2012	DHS	10	21	38	55	78	68	30	30	35	34	28	–7
Honduras	2005–2006	DHS	38	56	81	91	98	61	41	52	59	62	65	24
India	2005–2006	DHS	21	34	52	70	90	69	35	44	50	55	58	23
Indonesia	2007	DHS	47	69	80	89	96	50	50	60	59	59	58	8
Jordan	2007	DHS	99	99	100	100	100	2	35	38	41	49	47	12
Kazakhstan	2006	MICS	100	100	100	99	100	0	40	45	49	51	57	17
Kenya	2008–2009	DHS	23	32	42	56	82	59	17	33	43	50	48	31
Kyrgyzstan	2006	MICS	93	99	97	98	100	7	47	40	43	48	49	1
Lao People's Democratic Republic	2011–2012	DHS/ MICS	11	24	45	64	91	80	33	41	47	49	40	7
Lesotho	2009	DHS	52	65	70	84	95	42	29	37	45	48	61	32
Liberia	2007	DHS	30	32	46	74	82	52	3	6	13	14	17	14
Madagascar	2008–2009	DHS	22	28	42	58	90	68	18	24	29	36	36	19
Malawi	2010	DHS	68	70	72	80	91	23	35	40	41	45	48	14
Maldives	2009	DHS	93	96	97	100	100	7	29	27	27	26	26	–3
Mali	2012–2013	DHS	35	46	50	75	94	59	3	5	6	13	23	18
Mauritania	2007	MICS	21	41	71	90	95	75	–	–	–	–	–	–
Mongolia	2005	MICS	98	99	100	99	100	2	65	63	63	59	53	–12
Montenegro	2006	MICS	98	99	100	98	100	3	8	18	17	19	23	15
Morocco	2003–2004	DHS	32	52	74	88	96	64	51	55	55	55	57	5
Mozambique	2008	MICS	37	45	53	66	89	52	5	5	9	15	30	25
Namibia	2006–2007	DHS	61	75	85	95	98	37	30	46	47	66	68	39
Nepal	2011	DHS	21	39	54	67	90	70	36	41	43	45	49	13
Niger	2012	DHS	12	18	21	29	71	59	9	8	8	13	24	15
Nigeria	2013	DHS	6	17	40	62	85	79	1	4	9	14	23	22
Pakistan	2006–2007	DHS	18	28	40	56	79	62	12	16	22	26	32	19

Table 1 (Continued)

Country	Year	Source	Skilled attendance at birth (%)						Modern CPR (%)					
			Poorest 20%	Second 20%	Middle 20%	Fourth 20%	Richest 20%	Δ-highest to lowest	Poorest 20%	Second 20%	Middle 20%	Fourth 20%	Richest 20%	Δ-highest to lowest
Peru	2007–2008	DHS	44	67	90	98	99	55	36	41	49	54	54	18
Philippines	2008	DHS	26	56	76	86	94	69	26	36	37	39	33	7
Republic of Moldova	2005	DHS	99	99	100	100	100	1	37	39	43	46	51	15
Rwanda	2010	DHS	70	72	76	82	91	21	39	41	47	49	50	11
Sao Tome and Principe	2008–2009	DHS	76	75	85	89	92	16	31	32	31	37	37	6
Senegal	2010–2011	DHS	30	52	74	87	95	65	4	7	12	15	23	18
Serbia	2010	MICS	99	100	100	100	100	0	11	17	20	25	31	21
Sierra Leone	2010	MICS	44	56	64	72	85	41	5	5	9	12	21	16
Somalia	2006	MICS	11	14	20	45	77	66	0	0	0	2	4	4
Suriname	2006	MICS	81	91	98	93	96	15	29	44	49	48	51	22
Swaziland	2010	MICS	65	76	87	89	94	29	55	60	62	66	68	13
Syrian Arab Republic	2006	MICS	78	95	98	97	99	21	29	37	44	48	53	23
Tajikistan	2005	MICS	70	81	87	90	91	21	26	32	32	36	39	13
Thailand	2006	MICS	93	98	98	99	100	7	79	79	75	74	70	–8
The Former Yugoslav Republic of Macedonia	2005	MICS	95	99	98	100	100	5	8	10	6	8	17	9
Timor-Leste	2009–2010	DHS	12	16	24	41	71	59	15	16	17	24	32	17
Trinidad and Tobago	2006	MICS	98	99	94	99	100	2	37	34	35	39	45	8
Uganda	2011	DHS	45	53	58	63	91	46	13	21	25	31	39	26
Ukraine	2007	DHS	99	98	100	99	100	1	36	45	47	51	53	17
United Republic of Tanzania	2010	DHS	31	35	44	62	88	57	19	22	23	35	38	19
Uzbekistan	2006	MICS	100	100	100	100	100	0	61	60	61	58	57	–4
Vanuatu	2008	MICS	55	78	73	87	90	35	28	40	34	39	44	16
Viet Nam	2011	MICS	72	96	100	100	99	27	65	62	60	55	58	–7
Yemen	2006	MICS	17	20	32	50	74	56	5	9	19	29	35	30
Zambia	2007	DHS	26	27	36	72	92	65	31	24	23	39	48	18
Zimbabwe	2010–2011	DHS	46	55	62	79	90	44	52	53	56	60	64	11

Source: Demographic and Health and Multiple Indicator Cluster Surveys.

illustrating the present shortfall in achieving universal access to skilled delivery care. Coverage for pregnant women in the lowest wealth quintile ranged from 2% in Chad to 100% in Albania, Armenia, Belarus, Kazakhstan and Uzbekistan; no country in Africa or SA achieved 80% coverage of skilled attendance at birth for pregnant women in the poorest wealth quintile. Other regional disparities are notable: skilled attendance was nearly universal in 13 of the 15 European and Central Asian countries surveyed, with coverage between 93% and 100% across all quintiles except in Tajikistan and Azerbaijan, where differences in coverage between the highest and lowest quintiles were 21 and 24 percentage points, respectively (Table 1).

Among the six countries surveyed in SA, differentials in the coverage of skilled birth attendance between the lowest and highest wealth quintiles were far greater, e.g. more than 50 percentage points in Bangladesh, Bhutan, India, Nepal and Pakistan. Coverage for the wealthiest pregnant women reached 90% or greater in Bhutan, India, Nepal; while coverage for pregnant women from the lowest wealth quintiles of these countries was 34%, 21% and 21%, respectively, and reached only 12% and 18%, respectively, of the poorest women in Bangladesh and Pakistan (Table 1).

Among the 35 countries surveyed in SSA, the mean disparity between rich and poor (52 percentage points) was similar to that observed in SA, with skilled coverage for the wealthiest pregnant women above 90% in 20 of 35 countries, while the lack of coverage among the poorest quintile was particularly extreme. In 13 countries, fewer than 25% of the pregnant women in the lowest wealth quintile had skilled coverage, including only 6% in Nigeria (2013), 2% in Ethiopia (2011) and 2% in Chad (2004, with the 2014 DHS pending).

Changes in skilled care by wealth in a selection of countries since 1990 (Figure 2), illustrate the diversity in trends, with widening disparities in some countries (e.g. Bangladesh, Cameroon, Haiti, Nigeria and Peru), declining inequalities in others (e.g. Bolivia and Vietnam) and no change in a number of others (e.g. Philippines, Tanzania).

Emergency obstetric and newborn care

Even with ANC and skilled attendance at birth, delivery complications arise in approximately 15% of all pregnancies, a majority of which can be managed if quality EmONC is accessible (UNICEF, WHO, & UNFPA, 1997). Yet, EmONC coverage remains seriously inadequate in developing countries (UNFPA, 2012b), and unmanaged pregnancy complications contribute to the estimated 289,000 maternal deaths each year (WHO, 2014b) with millions more suffering from chronic morbidities. Access to EmONC, expressed as the density of EmONC facilities per annual number of births, is correlated with lower MMR (Gabrysch, Zanger, & Campbell, 2012).

A majority of facilities that offer maternity care still fail to provide all functions required for classification as an EmONC facility (basic or comprehensive), and geographic and financial barriers persist (Gabrysch et al., 2012). Management of basic obstetric and neonatal emergencies includes the administration of oxytocics, antibiotics, anticonvulsants, manual extraction of the placenta, removal of retained products and neonatal resuscitation, while management of comprehensive EmONC includes capacity to perform C-section surgery in cases of obstructed labour, and blood transfusions. The rural versus urban differential in key components of EmONC (e.g. management of PPH) (Figure 3), reflect the continuing challenges of delivering services to women with structural obstacles to care (e.g. few or no transport options and poor or seasonal roads) (Gabrysch et al., 2012). The recommended minimum density of basic and comprehensive

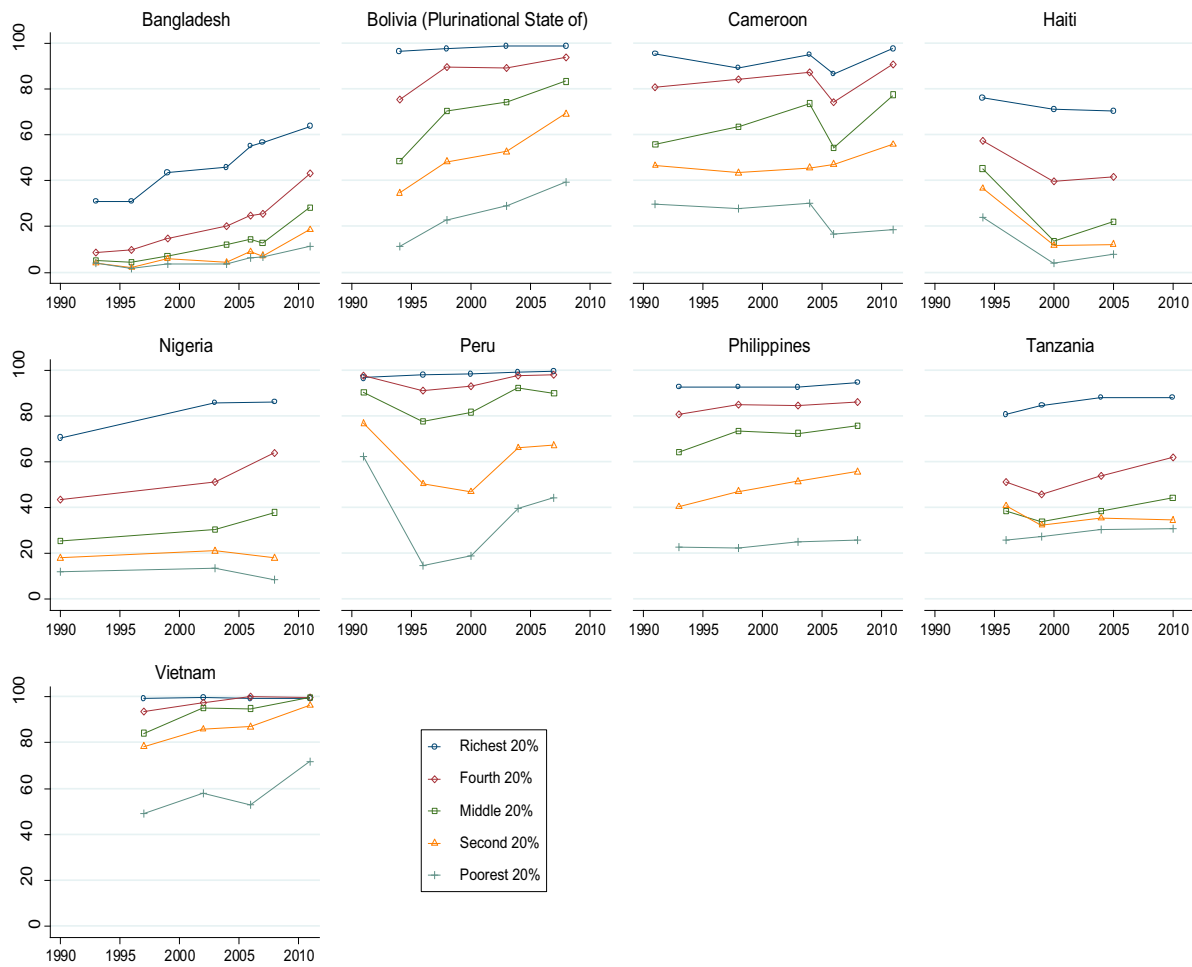


Figure 2. Trends from select countries display the changing inequalities by household wealth in the percentage of women who had a skilled attendant (doctor, nurse or mid-wife) at last birth between 1990 and 2010. Source: DHS and MICS data, as reported in UN-ECOSOC (2014b).

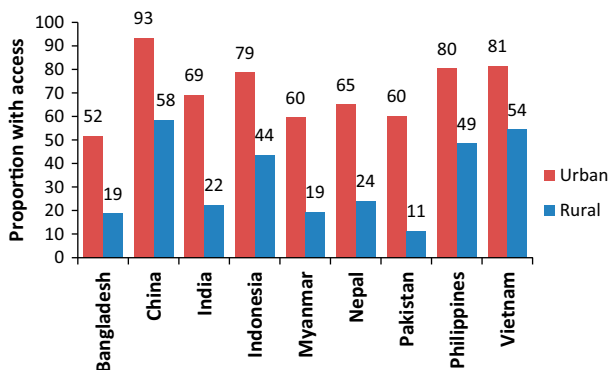


Figure 3. Proportion of women in select Asian countries with access to management of postpartum haemorrhage in 2005, with specific focus on urban versus rural access.

Source: UN-ECOSOC (2014b); Analysis based on data from the Maternal and Neonatal Program Effort Index (MNPI): <http://www.policyproject.com/pubs/mnpi/getmnpi.cfm>.

EmONC facilities differs depending on the metrics used (e.g. facilities per births or per population), but given the unpredictable nature of complications, the need for skilled care that can either manage all complications, or provide timely referral to comprehensive emergency care if complications arise, is not disputed (Campbell & Graham, 2006), only underscoring the continuing need to address the structural inadequacies in health systems (UN-ECOSOC, 2014a, 2014b).

Fertility decline and increasing contraceptive use obscure unmet needs

Globally, the total fertility rate (TFR) fell by 23% between 1990 and 2010 (UNDESA, Population Division, 2013a). Aspirations for smaller families correspond to other changes in development, including increasing child survival and expanding opportunities for women, especially education. In Africa as a whole, and SSA in particular, fertility decline has been slower than in other regions, and despite large increases in the proportion of women using any method of contraception in the past two decades, contraceptive prevalence rates (CPR) remains low (especially CPR for modern methods), and TFRs are almost twice those in other regions (UNDESA, Population Division, 2014a, 2014b).

Global CPR increased from a median estimate of 58.7 in 1994 to 63.7% in 2014, an increase of approximately 8.5%. CPR in the least developed countries increased by 87% over the same period, admittedly from a lower starting point (20.7%), but reaching 38.8% in 2014. Despite these changes, overall contraceptive use remains rare in a number of extremely poor countries of Africa (e.g. in Chad, Guinea and South Sudan), where CPR is less than 10%. It should be noted that CPRs reflect the use among women age 15–49 who are married or in union, providing no data on use among single women; the importance of this limitation will increase in the near future, given that the age of first marriage, the proportion of women who never marry, and rates of divorce are all rising. Global use of modern methods of contraception (i.e. CPR for any modern method), increased from 51.9% in 1994 to 57.4% in 2012, a rise of approximately 11%; both overall CPR and CPR of modern methods increased more during the decade of the 1990s than it has since then (UNDESA, Population Division, 2014b; Alkema, Kantorova, Menozzi, & Biddlecom, 2013).

Global unmet need for modern contraception declined by 11.5% from 1994 to 2014; this masked dramatic declines in unmet need for modern methods in Eastern Europe (from 36.9% to 25.1%, a decrease of 32%), and Southern Europe (from 37.6% to 27.1%), a smaller decline in the least developed countries (from 33.3% to 29.2%, a change of 12.3%), and a mere 6.5% decline in SSA, from 32.3% to 30.2% (UNDESA, Population Division, 2014b; Cleland & Shah, 2013). In 2014, the unmet need for modern methods of contraception affects more than 30% of women in Africa, 34.2% in Western Asia and 41.8% in Polynesia; within Africa, the highest unmet need for modern methods is in Middle Africa (38%).

Differentials in modern CPR by household wealth (Table 1) were high in several countries (e.g. Yemen, Bolivia, Honduras), but generally more equitable than skilled attendance at birth, and a number of countries from all regions have both high and equitable modern CPR (e.g. with no wealth quintile at less than 50% CPR), e.g. Columbia, Dominican Republic, Bangladesh, Belarus, Bhutan, Egypt, Indonesia, Mongolia, Morocco, Swaziland, Thailand, Uzbekistan, Vietnam and Zimbabwe. In some countries from both East Asia and the Pacific (EAP) and SA, modern CPR is actually highest among women from poorer households. For example, in Bangladesh, Bhutan, Cambodia, Indonesia, the Maldives, Mongolia, Thailand and Vietnam, women in the poorest or second poorest households had the highest CPR.

Contraceptive method mix

The diversification of modern contraceptive methods over the past 20 years has been modest compared to the expansion of new methods that took place in the two decades preceding ICPD (Brache & Faundes, 2010; fhi360, 2013; Nelson, 2010; Power, French, & Cowan, 2007). Because clients differ in their method preferences and clinical needs (including, e.g. contraindications) over the life-course, a range of distinct contraceptive method types needs to be available to allow trial and error or periodic switching, and expanded choice increases contraceptive use (Ross, Hardee, Mumford, & Eid, 2002; Seiber, Bertrand, & Sullivan, 2007; Stover & Ross, 2010; Sullivan, Bertrand, Rice, & Shelton, 2006; UN-ECOSOC, 2014a, 2014b).

In 1994, global contraceptive method mix was dominated by widespread use of the intrauterine contraceptive device (IUD) in China, early and almost universal use of female sterilisation in India, and the use of pills, barrier methods and sterilisation in Europe and the Americas (UNDESA, Population Division, 1996). Twenty years later, these patterns have shifted within given countries, but the overall mix of contraceptive methods used has diversified only slightly, mostly by increased use of injectable methods, and to a lesser extent, contraceptive implants.

Without a choice of contraceptive methods, and quality provision of counselling, information and care, use of contraception is interrupted and unplanned pregnancies lead to an increase in the demand for abortion. Contraceptive services in Brazil are characterised by poor quality of counselling and limited choice, and the country has high rates of unplanned and unwanted pregnancies (see Diniz & Araujo, 2014; Curtis, 2012; Diniz & Medeiros, 2012; Diniz, d'Oliveira, & Lansky, 2012; do Carmo Leal et al., 2012; Ministerio de Saude, 2009; Silva & Surita, 2012; Victora et al., 2011; Vieira, 2012).

In the world's two largest countries, China and India, a majority of contraceptive users still rely on one or two methods, suggesting limited choice of commodities and/or limited knowledge and counselling capacity within family planning services. Since the outset of its family planning programme, China's family planning programme has relied

heavily on the IUD (40.6% of all methods used in 2013) (UNDESA, Population Division, 2014a), using domestically manufactured IUDs that have increased in quality over time (Bilian, 2007; Kaufman, 1993). In 2013, approximately 28.7% women relied on female sterilisation, 4.5% relied on male sterilisation, and from 1988 to 2013, reliance on male condoms rose from 3.9% to 8.5% of all methods (UNDESA, Population Division, 2014b; Zheng et al., 2012). Despite the rise in condom use, sterilisation (both female and male) and the IUD still account for 73.8% of all contraceptive use, and only a minority of women use other reversible modern methods, e.g. pills, implants.

The high reliance on female sterilisation in India – 74% of modern method use in 2007–2008 – has been virtually unchanged since 1992–1993 (International Institute for Population Science [IIPS], 2010; UN-ECOSOC, 2014b), reflecting an under-resourced public health sector, as well as a legacy of widespread public distrust of state or private sector contraceptive promotion, among other factors (see Vaidyanathan, 2014), (Berer, 1993; Singh, Pallikadavath, Ram, Ogollah, & Noor, 2012). India faces a major challenge to strengthen health system capacity and accountability to improve promotion and quality provision of modern reversible methods (Oliveira, Dias, Padmadas, & Leone, 2014; Koenig, Foo, & Joshi, 2000).

Men's use of contraception

Europe is the region with the highest reliance on male condoms (25.2% of all methods used) (UNDESA, Population Division, 2014a), but use has increased among young people ages 15–24 years in many countries since 1994 (UN-ECOSOC, 2014b) and may not be captured in CPR estimates based on married women. Beyond condoms, male sterilisation offers the only modern means for men to assume responsibility for contraception, an explicit objective of the ICPD POA. Of 92 countries with more than two data points on the proportion of contraceptive prevalence attributable to male sterilisation (UNDESA, Population Division, 2013b), and with at least one data point during or since 2005, 38 countries (41.3%) report no use of male sterilisation, and in only 4 countries does male sterilisation contribute to more than 10% of contraceptive prevalence: the UK (21%), the Republic of Korea (16.8%), the USA (12.7%) and Bhutan (12.6%). Twenty-seven countries (29.3%) have actually seen declines in the relative use of male sterilisation since 1994, including Sri Lanka (–3.7%), India (–2.4%), Thailand (–1.9%), Myanmar (–1.4%) and the USA (–0.5%), suggesting either absolute declines in use of male sterilisation or increased reliance on other methods (UN-ECOSOC, 2014b; Darroch, 2008; UNDESA, Population Division, 2013a; 2013b).

Abortion continues to be widely used

Reliable, and especially comparative, abortion statistics are not easy to collect, but recent estimates suggest that the risk of death due to unsafe abortion has decreased from an estimated 69,000 deaths in 1990 to 47,000 in 2008 (Sedgh et al., 2012; UN-ECOSOC, 2014b). This is widely attributed to growing use of medical abortion, increasing legal provision for abortion, safer technologies and better standards for post-abortion care (Baggaley, Burgin, Campbell, & Gravenor, 2010; Dzuba, Winikoff, & Peña, 2013; Harper, Blanchard, Grossman, Henderson, & Darney, 2007; Ngo, Park, Shakur, & Free, 2011; Prata, Sreenivas, Vahidnia, & Potts, 2009).

The absolute number of abortions declined from 45.6 million in 1995 to 43.8 million in 2008, of which an estimated 22 million are unsafe (WHO, 2012b). The overall rate of

abortions declined globally from 35 per 1000 women (ages 15–44 years) in 1995, to 28 per 1000 in 2003, but remained stable at 29 per 1000 in 2008 (Sedgh et al., 2012) the latest year of available estimates. The global decline was largely driven by a declining rate of abortion in Eastern Europe, the sub-region that still has the highest rate of abortions (43 per 1000), despite CPRs that are increasingly comparable to those in Western Europe (UN-ECOSOC, 2014b). The persistence of relatively high rates of abortion in Eastern Europe despite rising contraceptive use suggests that method use may be intermittent, technologies inadequate or long-standing reliance on abortion has not been amenable to rapid change. The lowest sub-regional rate is in Western Europe (12 per 1000), and an estimated 86% of all abortions in 2008 took place in the developing world (Sedgh et al., 2012).

Nearly all abortions in Africa (outside of Southern Africa) and in Central and South America remain unsafe (97%) (Sedgh et al., 2012), with the risk of death due to abortion being 15 times higher in Africa than in Latin America and the Caribbean (WHO, 2007b; 2011). It is also in Africa where the number of deaths due to unsafe abortion has declined the least since 1990; in Latin America, deaths declined from 80 to 30 per 100,000 abortions, while in Africa deaths declined from 680 to 460 per 100,000 abortions (and to 520 per 100,000 in SSA). An estimated 41% (8.7 million) of all unsafe abortions involve adolescents (Shah & Åhman, 2012), who experience a higher risk of complications. Women under the age of 25 account for almost half of all abortion-related deaths (UN-ECOSOC, 2014b; WHO, 2007b, 2011). (See Santhya & Jeejeeboy, 2014, for a thorough review of SRH needs among adolescents).

Diagnosis, treatment and surveillance of STIs remain woefully inadequate

Among key SRH clinical outcomes, data on STIs are among the least reliable at the regional or global level, precluding our ability to report on global trends since 1994. While diagnostic methods have improved for many STIs, discontinuities in national surveillance systems, and the sheer inadequacy of incidence or prevalence studies, undermine the reliability of aggregate regional or global data (WHO, 2012a).

Data on the prevalence of syphilis are the most complete, due in part to the availability of a cheap and simple diagnostic test, and initiatives to screen and treat syphilis among pregnant women (WHO, 2012a). An estimated 1.3 million pregnant women annually have active syphilis infections, and failure to screen and treat pregnant women for syphilis leads to an estimated ~200,000 stillbirths, ~90,000 neonatal deaths, ~60,000 preterm or low birth weight infants, and ~150,000 infected newborns each year (Newman et al., 2013). Screening and treatment is highly effective if undertaken in the first or second trimester of pregnancy (Hawkes, Gomez, Broutet, & Heimesaat, 2013), strengthening the rationale for comprehensive and early ANC for all pregnant women.

WHO consultations have called for a concerted global effort to build systematic screening, treatment and reporting for STIs (WHO, 2002, 2007a, 2012a), highlighting the poor quality and coverage of available data on STI incidence outside of Europe and a few industrialised countries, the fact that global estimates of major infections (e.g. trichomoniasis), are based on very few data points (WHO, 2002), and an increasing need to monitor reports of decreased susceptibility of *Neisseria gonorrhoeae* to cephalosporins (WHO, 2012a). Although infection with STIs enhances the transmission of HIV, the quality and coverage of STI services even for HIV-infected persons is fragmented (Church & Mayhew, 2009; Mak et al., 2013). Additionally, HIV-related investments have not resulted in the clinical infrastructure needed to screen, diagnose,

treat and monitor STIs for much of the developing world (Dehne, Snow, & O'Reilly, 2000; Mullick, Watson-Jones, Beksinska, & Mabey, 2005; WHO, 2007a).

Infertility

The ICPD POA included commitments to prevent and address infertility, which is not only a great personal sadness for many women and couples but in many parts of the world is also a cause for social exclusion, divorce and even violence against women. Recent estimations of infertility suggest stable prevalence estimates for primary (i.e. before the experience of any pregnancy) and secondary (i.e. following the experience of pregnancy) infertility since 1990 (Mascarenhas et al., 2012). The only measurable decline observed since 1990 was a modest decline in the prevalence of primary infertility in SA and SSA, regions with some of the highest prevalence rates in 1990. There is continuing need for better research on the full range of different STIs (*as noted above*), as they can have differing effects on the probability of conception, pregnancy loss and stillbirth. Due to population growth, the absolute *number* of couples affected by infertility worldwide rose from 42 million in 1990 to 48.5 million in 2010 (Mascarenhas et al., 2012), and while assisted reproduction has matured as a clinical service in developed countries over the past two decades, infertile couples in developing countries have limited access to the benefits of such scientific progress (Vayena, Peterson, Adamson, & Nygren, 2009; WHO, 2003).

Unmet SRH needs and the rights of persons living with HIV and AIDS

In 1993, an estimated 14 million people were living with HIV, but within a decade an estimated 32 million people were infected. Governments and global aid institutions mobilised in response, but not before deaths from AIDS had reached a peak of 2.3 million per year in 2005, with HIV rising from the 33rd largest cause of disability-adjusted life years (DALYS) in 1990, to the 5th largest in 2010 (UN-ECOSOC, 2014b).

In 2012 ARV therapy reached 9.7 million people in LMICs, representing 34% of treatment eligible persons (UNAIDS, 2013; WHO, 2013b). The percentage of pregnant women living with HIV who have access to ART reached an estimated 67% globally in 2013, contributing to an estimated 40% decline in transmission of HIV from mothers to their children since 2009 (WHO, 2014a). Yet, access remains uneven: among 22 priority countries needing increased coverage of ART, 4 provide ART to less than 50% of pregnant women living with HIV, and only 5 have coverage levels of 80% or higher (UNAIDS, 2013; UN-ECOSOC, 2014b).

SSA is home to three quarters of all HIV-infected persons. Women aged 15–49 comprise 61% of those infected, with the highest rates of infection coinciding with peak reproductive years, ages 18 to 30 (UNAIDS, 2013). Increased access to ART has been associated with a rebound in fertility desires among persons living with HIV (Maier et al., 2009; Rudy, Murphy, Harris, Muenz, & Ellen, 2009), and in some countries, increased incidence of pregnancy (Myer et al., 2010). For women living with HIV, pregnancy demonstrates continuing health as well as confidence and investment in the future (UNICEF, WHO, & UNFPA, 1997). However, tacit discriminatory and stigmatising attitudes against the childbearing of persons living with HIV and AIDS, particularly by health providers, may hinder women's ability to pursue their fertility aspirations (Cooper, Harries, Myer, Orner, & Bracken, 2007; Myer et al., 2010). At the same time, women living with HIV desire fewer children than do their HIV-negative counterparts, even in

the context of widespread access to ART (Kaida et al., 2011; Snow, Mutumba, Resnicow, & Mugenyi, 2013), leading to increased need for contraceptive methods and counselling.

Contraceptive use averts even more HIV-positive births than ART (Reynolds, Janowitz, Wilcher, & Cates, 2008), yet rates of contraceptive use among HIV-positive persons vary considerably (Kakaire, Kaye, & Osinde, 2010; Polis et al., 2011; Snow et al., 2013), and unmet need for contraception remains high: in Uganda, nearly 75% of sexually active men and women living with HIV wanted no more children but were not using a condom or other contraceptive (Nakayiwa et al., 2006).

Current WHO guidelines for contraceptive use by women living with HIV and AIDS (WHO, 2012c) allow all methods except the IUD, and also strongly recommend dual protection – a condom and another method. However, certain classes of ART (Mascarenhas et al., 2012), including non-nucleoside reverse transcriptase inhibitors (NNRTIs) and protease inhibitors, in addition to Rifampicin, an anti-tuberculosis (TB) drug (TB is a common co-morbidity in HIV and AIDS), interact with hormonal contraceptives and potentially reduce their efficacy (Coll, Lopez, & Hernandez, 2008; WHO, 2012c). Concerns over a possible role of progestin-only injectable contraception, i.e. depot medroxyprogesterone acetate (DMPA), in HIV acquisition have not abated, but demand more and better research (Heffron et al., 2012; The Lancet Infectious Diseases 2012; Morrison et al., 2010). Assisted reproductive technologies for persons living with HIV and AIDS, particularly HIV-discordant couples, are not widely available in developing countries (Lampe, Smith, Anderson, Edwards, & Nesheim, 2011; Matthews & Mukherjee, 2009; Van Leeuwen, Repping, Prins, Reiss, & Van Der Veen, 2009). Therefore, irrespective of whether women living with HIV desire additional children or not, the weak integration of HIV and SRH services in many countries constrains access to much-needed counselling, technologies and support.

Young people living with HIV/AIDS are especially vulnerable

While HIV and AIDS services have not fully addressed the SRH needs of HIV-affected women, they are even less adequate for adolescents and youth living with HIV and AIDS who may not be welcome in either paediatric or adult services (UNFPA, 2009). Young people, infected or otherwise affected by HIV and AIDS, face greater challenges than adults with adherence, accessing routine care, and managing disclosure, and require tailored clinical and social support. HIV-affected youth are increasingly recognised to be at increased risk of psychiatric and psychological disorders (Benton & Ifeagwu, 2008; Havens & Mellins, 2009) due to the complexity of health and social stresses with which they are coping, including a greater likelihood of parental illness, orphanhood, poverty and lack of social protection, HIV-related co-morbidities, difficulties accessing health and social welfare services and the burden of managing a chronic disease from a young age. Developing comprehensive and integrated adolescent SRH services that include support for HIV-affected youth is a global priority.

The persistent fragility of health systems obstructs progress

For numerous countries reviewed in Table 1, the distributions of skilled attendance and modern CPR by household wealth were characterised by two striking patterns: in Eastern Europe and Central Asia, almost universal skilled birth attendance coincided with almost universally low CPR (e.g. see Albania, Azerbaijan, Bosnia and Herzegovina,

Macedonia); while in EAP, and SA, modern CPR was more equitably distributed by wealth than skilled attendance for pregnant women.

In EAP, and SA, access to skilled birth remains highly skewed by wealth, while modern contraceptives are used by many women living in the poorest households. This suggests not only that demand for contraception is comparatively high in the region, but also that investments in family planning delivery, admittedly easier to provide, have outpaced those to ensure life-saving delivery care. These contrasts are especially stark in Bhutan, Nepal and India, where modern CPR was 69%, 36% and 35%, respectively, among women living in the lowest wealth quintile, while skilled attendance reached only 34%, 21% and 21%, of pregnant women in this quintile.

In Bangladesh, early emphasis on family planning led to dramatic declines in both TFR and the unmet need for contraception, and CPR is highly equitable across wealth quintiles (Table 1). Jahan and Afsana (2014) describe how ICPD led to gradual expansion of programmes to address other dimensions of reproductive health, but the persistent weakness of the health system has hindered progress in providing skilled delivery care, which is accessible to only 12% of women in the lowest wealth quintile (Afsana & Wahid, 2013; ICDDR, B & Center for Reproductive Health, 2012; Khan, Jahan, & Begum, 1986; NIPORT, MEASURE DHS, & ICDDR, B, 2011; NIPORT, Mitra Associates, & ICF International, 2011; Roachat et al., 1981; Sen, 2013).

Bangladesh is far from alone, as fewer than 55% of women in SSA deliver with a skilled birth attendant (Ngo et al., 2011). The need for sustained attention to building health systems that can provide skilled delivery care to poor women is evident across numerous countries, especially in Africa and SA. Among 49 countries with the lowest per capita income, for example, only 5 meet the minimum WHO thresholds for health worker density, and in the 58 countries where 91% of all maternal deaths occur, it is estimated that 20% of maternal deaths could be averted if the current number of trained midwives was doubled (UNFPA, 2011; WHO, 2013a).

While actions are needed in the short term to redress these shortfalls, they should be designed within a framework of long-term commitments to strengthen the quality, integration and capacity of health systems, including critical dimensions of infrastructure such as human resources for SRH (WHO, 2009a, 2013e), medical records systems that allow for continuity of care (AbouZahr & Wardlaw, 2001; Allen et al., 2007; Forster et al., 2008; Ginsburg, Hoblitzelle, Sripipatana, & Wilfert, 2007), health management information systems (HMIS), commodity security and health financing for SRH services (WHO, 2013f). Attention to continuity of care is especially needed, given the rapid pace of urbanisation, increasing internal mobility, especially by young people, and the interdependence of pre-pregnancy, maternal, child and long-term health. A study of prevention of mother-to-child transmission of HIV (PMTCT) programmes in 18 countries found that only 9% of infants born to HIV-positive mothers could be identified at their first immunisation visit (Ginsburg et al., 2007), highlighting the absence of medical records systems that could be linked between health facilities (Forster et al., 2008). Emerging technologies including mobile phones hold promise for linking people to better SRH care, and efforts to integrate rural and urban, community and hospital, primary and referral health care via Internet- and phone-based communication systems are evolving rapidly (WHO, 2011), offering a possibility for under-resourced health systems to connect remote providers and patients to centres of SRH excellence. (See Sen & Govender, 2014, for a more thorough discussion of health system strengthening.)

Donor assistance to population and SRH was estimated at 12 billion US dollars per annum in 2011, with 66% of these funds directed to HIV/AIDS activities (UN-ECOSOC,

2014b). A recent analysis of the impact of HIV donor aid per capita on maternal and child health service provision across SSA from 2003 to 2010 suggests only marginal gains for SRH from HIV-directed aid, and only in the most under-resourced health systems where the HIV burden was not high (Mellins et al., 2011). In this paper comparing maternal and child health service indicators with HIV disbursements from the previous year, HIV development assistance was associated with no measurable gains in ANC coverage, except in health systems where HIV prevalence and health worker densities were lowest. Illustrating these very challenges at country level, Nigeria has shown extraordinary success in bettering access to AIDS-related therapy (see Ahonsi, 2014), but these investments have not contributed to increasing public access to other SRH services, and few of the successful, NGO-led SRH service projects scattered across Nigeria have received the requisite federal funding to take them to scale (British Council & UKaid, 2013; Cooke & Tahir, 2013; Esiet & Whitaker, 2002; Mandara, 2012; Mellins et al., 2011; National Agency for the Control of AIDS, 2013; National Population Commission & UNFPA, 2013; Shittu et al., 2010; WHO, 2014b).

Research and knowledge systems improved but still seriously inadequate

A challenge after ICPD was how to improve SRH in countries that lacked reliable information on SRH needs – a lack of data that was especially striking in the poorest, and therefore many of the highest burden countries. A singular achievement since ICPD has been the improved scope and quality of available SRH epidemiologic and behavioural data from developing countries, due to expansions in the topics covered by DHS surveys, supplemented by the MICS, as well as growth in the network of demographic surveillance sites (UN-ECOSOC, 2014b). But despite gains in available knowledge, national capacity for the effective use of these data for planning and programme evaluation remains weak.

In addition, SRH data are inadequate for monitoring quality and holding governments accountable for several dimensions of SRH, including the accurate diagnosis and surveillance of STIs; balanced contraceptive method mix; integrated SRH care for HIV-affected persons, especially for adolescents and youth; and continuity of SRH care, especially for rural residents and the poor.

Outstanding needs

Maternal mortality and HIV/AIDS-related outcomes have seen comparatively better progress than other dimensions of SRH in the past two decades, accomplishments that reflect targeted commitments by national governments and donors to meet the MDGs, and large investments in programming to stem the AIDS crisis. Such progress illustrates the level of achievements that are possible with a combination of targeted activism, funding and global accountability structures.

Yet inadequate coverage of skilled birth attendance and low contraceptive use for women from the poorest households, particularly in Africa and Asia, as well as weaker progress in other dimensions of SRH care, underscore the need to further strengthen access, comprehensiveness, integration and quality of SRH prevention and care for all persons. Aggregate progress in reducing MMR and HIV/AIDS has coincided with very limited success in strengthening the global response to STIs, and current capacity for diagnosis, treatment and surveillance of these and other SRH morbidities remains weak. The difficulties of providing fertility counselling and services, as well as long-term care

for HIV-affected mothers and their infants, and young people living with HIV, highlight the continuing need to better integrate HIV and AIDS and SRH prevention and care, and to invest in medical records and HMIS that will enable providers to respond effectively to synergistic SRH needs over a lifetime.

An adequate number and rational distribution of skilled SRH health workers, especially those with midwifery skills that can address almost all SRH services, are essential to meeting these needs, and must be complemented by heightened investments to ensure a vibrant SRH knowledge sector, serving both government and civil society policy-making, planning and accountability. The need for improved health systems that provide all persons with comprehensive and integrated SRH prevention and care is no less urgent today than in 1994, and remains pivotal to fulfilling commitments of the ICPD and the Key Actions for Further Implementation.

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