

Talking Points:

Maternal mortality reduction in Germany, Brazil, Italy, France & Japan

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Impact is pleased to make available in one document these five short summaries which highlight challenges & successes in achieving reductions in maternal mortality in Germany, Brazil, Italy, France & Japan. Prepared with the G8 and G20 summits in mind each one discusses the key characteristics relevant to the historical decline in maternal deaths in these countries and other key aspects of reproductive health in each particular context.

Talking Point 1: *"In spite of" - Sustaining reductions in maternal deaths under challenging circumstances - the case of Germany*

Talking Point 2: *Tackling maternal mortality in Brazil - the challenges for a large and rapidly urbanising country*

Talking Point 3: *Trends in maternal mortality over the last fifty years in Italy: sustaining success*

Talking Point 4: *The march of maternal mortality in France*

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**“IN SPITE OF”:
SUSTAINING REDUCTIONS IN MATERNAL DEATHS UNDER
CHALLENGING CIRCUMSTANCES – THE CASE OF GERMANY**

1. Over the last 60 years, Germany² has reduced maternal mortality by 98%.

In 1949, the number of maternal deaths per 100,000 live births was around 250,³ and in 2006/2007 it was around 6.⁴

One of the targets of MDG5, (a 75% reduction in maternal mortality over a 25 year period), was achieved by Germany in just 20 years (between 1949 and 1969).

2. This period in German history witnessed major political, economic and social upheavals and challenges, but maternal mortality continued to decline.

The experience of Germany has relevance to countries challenged today with high levels of maternal mortality.

Maternal mortality declined in Germany *in spite* of the shocks and demands of:

- conflict and post-conflict reconstruction following World War II;
- economic cycles of growth and decline – national and global;
- political separation and unification – in 1949 and in 1990 respectively;
- demographic and social change impacting on the risks of maternal death, including age and frequency of childbearing and the increase in immigrant populations;⁵
- health system organisational changes.

3. Germany’s success shows maternal mortality need not worsen in low income countries, despite the current global economic crisis.

How was Germany able to sustain falling maternal mortality?

- a. by protecting the momentum (the “*snow ball effect*”) which was established before the shocks set in.

By 1949, maternal mortality in Germany was at about the same level as currently in Indonesia - a G20 member. The downward trend seen right across Northern Europe started back in the late 1800s and steepened further during the 1930s.⁶

A key protective component was the introduction of compulsory health insurance,⁷ which dated back to Bismarck’s 1883 Insurance Act. This aimed to provide universal coverage of quality maternity services (amongst other services) for all residents. Initially only the formally employed were included but over time coverage was extended to all citizens (although it was not until 2009 that coverage was mandatory for all). Under this system, women are entitled to choose where they deliver: hospital, birth centre or home.⁸

In 1933, 84% of women delivered at home. By 1960 this had halved and in 1991, just 0.8% of women chose to deliver at home.⁸

b. by enabling a second major phase of fertility decline (mid-1960s to mid-1970s) through the provision of effective contraception and by the legalisation of abortion from 1971⁹.

Between 1965 and 1975, the Total Fertility Rate (TFR – a similar measure to average completed family size) fell from about 2.51 to 1.50.¹⁰ The first fall in fertility was from 1870s/1880s to 1930s, when the TFR fell from 4.70 to 1.96.

Since unification in 1990, there have been further sharp falls in fertility, with a historic low TFR of 0.77 in 1994 for the population of the former East Germany.¹⁰

3. by using the challenges as opportunities to introduce legal reforms and organisational changes to the health system relevant to maternal health.

For example, in 1955 the mothers' protection law was introduced. This regulated working conditions for mothers.¹¹

Guiding principles to assure the quality of antenatal and intra-partum care were introduced in 1996, along with a "pregnancy passport" to document the care each mother received.

The role of the professional midwife was strengthened and assured through legal reform in 1985, with a midwife being legally required to be present at every delivery, endorsing an earlier law dating back to 1938.⁸

4. Gains in maternal mortality reduction in the G20 developing economies and in other transitional countries must not be allowed to slip – momentum must and can be sustained.

Hard-won progress in reducing maternal mortality since 1990 can be seen in selected countries and world regions.

Between 1990 and 2005, falls in the maternal mortality ratio (maternal deaths per 100,000 live births) of more than 20% were seen in Northern Africa, Eastern and South-Eastern Asia, Latin America and the Caribbean, Oceania and in all developed countries of the G20 industrial nations.¹²

5. Germany shows that a dramatic decline in maternal mortality follows national commitment to social progress. And once that transformation has begun, it's unstoppable (the *snow-ball effect*). In those developing countries yet to achieve this momentum, a targeted injection of effort is needed to kick-start progress.

END NOTES

¹ Prepared by Immpact, University of Aberdeen, UK: March 13th 2009 (v2).
www.immpact-international.org

² Statistics cited here for the period prior to 1990 and to unification derive primarily from the former Federal Republic of Germany (West Germany)

³ Derived from WHO database for ICD-7, direct maternal deaths for 1952, adjusted to include estimated indirect deaths from proportional split reported in Welsch H, et al. (2003) Maternal mortality in Bavaria between 1983 and 2000. *American Journal of Obstetrics and Gynecology*, 191 (1): 304-308.

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⁶ Van Lerberghe W, De Brouwere V. Of blind alleys and things that have worked: history's lessons on reducing maternal mortality. In De Brouwere V & Van Lerberghe W (eds.). (2001) Safe motherhood strategies: a review of the evidence. *Studies Health Serv Organ Policy*; 17: 1273–1280.

⁷ Razum O et al (1999) Maternal mortality in the former East Germany before and after reunification: changes in risk by marital status. *BMJ* 319: 1104-1105.

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TACKLING MATERNAL MORTALITY IN BRAZIL – THE CHALLENGES FOR A LARGE AND RAPIDLY-URBANISING COUNTRY

1. Brazil is the largest country in the Latin America and Caribbean Region in terms of both area and population, but has one of the lowest levels of maternal mortality.

In 2005, the number of maternal deaths per 100,000 live births was estimated at 110, compared with the highest figure in the region of 670 for Haiti.¹

Although the risk of death is comparatively low, because Brazil has such a large population it accounts for just over a quarter of the estimated total number of maternal deaths each year in the region.

2. Fertility has declined dramatically since the 1960s and this is reflected in the low lifetime risk of maternal mortality in Brazil.

Lifetime risk is the indicator which captures both the frequency of pregnancy and the risk of dying of maternal causes once pregnant.

In Brazil, a woman reaching reproductive age has a 1 in 370 chance of dying of maternal causes before she reaches the age of 49. This contrasts markedly with the much greater risk of 1 in 44 in Haiti and 1 in 289 for the whole region.

3. Falls in fertility reflect the so-called “contraceptive revolution” and have been sustained despite periods of growth and economic crisis in Brazil.

In 1960, Brazilian women had on average 6 children; now they have close to 2.

The main intervention to enable this is the availability and uptake of modern contraception, which has also helped to reduce the number of higher risk deliveries, such as to women who are older or have short birth intervals.²

Births have fallen in Brazil regardless of economic growth or downturn, as shown in the attached graph.³ This has enabled resources to be concentrated on strengthening maternity services.²

¹ Prepared by Impact, University of Aberdeen, UK: Mar 23rd 2009(v2).
www.impact-international.org

4. Urbanisation has been a major driver of fertility and social change in Brazil, but with it come challenges for maternal health.

Less than 20% of the population live in rural areas in Brazil.² This makes it difficult to meet the large demand for services in towns and also to address the needs of rural women.

In Brazil, an estimated 97% of deliveries occur in public or private hospitals and are mostly attended by doctors.⁴ This heavy demand on hospitals means that shortages of beds for deliveries occur and the quality of care can be compromised.⁵

5. Caesarean section rates in Brazil have become among the highest in the world and are widely regarded as unacceptable.

An estimated 40% of all deliveries are by caesarean section. This average masks very high levels in some states like Sao Paulo where in 2003 over 80% of deliveries were by caesarean section.⁶

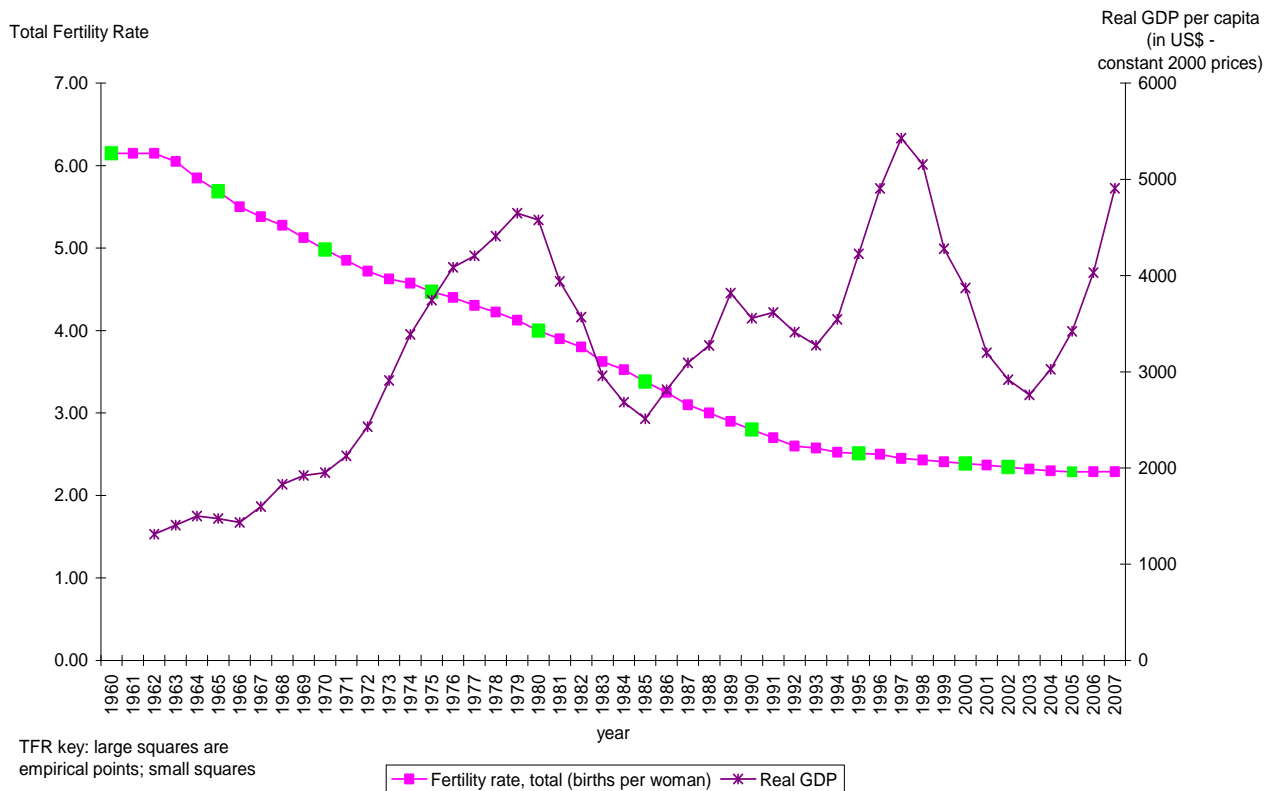
The Government of Brazil acknowledges the situation as amounting to an epidemic of caesarean sections.

Many factors are felt to contribute to these high rates, including for example the third party payment mechanism (insurance) which enables some doctors to 'induce' demand for caesarean section.

The Brazilian National Pact to Reduce Maternal and Neonatal Mortality in the National Programme of Women's Health Care⁷ seeks to tackle the high level of caesarean delivery, along with other challenges such as adolescent fertility, unsafe abortion, and under-reporting of maternal deaths.

6. Brazil shows that a key driver of reductions in maternal mortality – fertility – can be sustained despite economic shocks. But it also shows that as progress occurs, new challenges to safe motherhood emerge – so requiring a responsive and committed Government to re-review and re-adjust strategic plans and actions.

Time trends in fertility and economic indicators for Brazil³



END NOTES

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² Guzmán JM, et al. (2006) The Demography of Latin America and the Caribbean since 1950. *Population* 61 (5/6): 519-620

³ Impact - graph prepared by Impact using data from <http://www.worldbank.org/wdi>

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TRENDS IN MATERNAL MORTALITY OVER THE LAST FIFTY YEARS IN ITALY: SUSTAINING SUCCESS

1. Over the last half-century, Italy has reduced its level of maternal mortality by almost 97%.

At the beginning of the 1950s, Italy had a maternal mortality ratio of around 150 maternal deaths per 100,000 live births¹ – a similar level to that estimated today for some low-income countries, like Colombia, Egypt and Vietnam.²

Italy has now one of the lowest levels³ in the world at 5.2 maternal deaths per 100,000 live births (2003).⁴ This is over 400 times smaller than the highest figure in the world – in Sierra Leone.²

2. This impressive decline was achieved mostly in just 25 years – the duration of time set for achieving one of the targets of Millennium Development Goal 5.

Women in Italy starting their childbearing in the 1950s will have witnessed an incredible fall in the risk of dying during pregnancy or childbirth by the time their reproductive years were completed.

Between 1952 and 1977, maternal mortality fell by 89%,⁴ speeding-up a sharp downward trend dating back to the 1930s which was seen across Northern Europe.⁵

The march of declining maternal mortality was sustained during World War II when real GDP per capita fell in Italy by 45%⁶ and during more recent economic shocks such as in the early 1980s.

3. Progress in tackling maternal mortality has occurred across all three areas of Italy – north, central and south, but closing the regional gap in the risk of death has been harder.

In the late 1950s, the maternal mortality ratio was about 30% higher in the southern and generally-regarded as poorer areas of Italy compared with the industrial north, and this gap persisted well into the 1980s.⁷

One published series suggests this may be linked with the persistently higher fertility in the south and with the greater proportion of deliveries that occurred at home.⁸

¹ Prepared by Immpact, University of Aberdeen, UK: April 3rd 2009.
www.immpact-international.org

4. Falling fertility has been another dominant feature in Italy over the last 50 years helping to drive maternal mortality downwards.

By the 1970s, the total fertility rate (or TFR – a similar measure to average completed family size) in Italy was just 2.4 and further decline occurred until the mid-1990s, reaching a low of just 1.18. Since then the TFR has increased slightly to 1.35 in 2006.⁴

This fall in fertility has been accompanied by a shift upwards in the average age at delivery of women, and Italy now has the highest proportion in Europe of women giving birth aged 35 years and over.⁹ This proportion (24%) for Italy contrasts markedly with that in Poland at 9% and France at 16%.

The risk of maternal death is well-known to rise with age. The trend in Italy towards women having births at older age presents a challenge in terms of avoiding a possible future increase in the level of maternal mortality.¹⁰

5. Place of delivery has changed dramatically over the last fifty years, with less than 10% of births in Italy now occurring in small maternity units.

Like many countries in Europe, Italy achieved universal access to delivery with a health professional over fifty years ago.

The trend in place of delivery has been away from local level, small maternity units delivering less than 500 babies a year, to large facilities attending more than 2000 deliveries where now almost a third of births occur. This trend in Italy compares markedly with Germany where only 7% of deliveries occur in large facilities.⁸

Like many other countries in Europe, a very small percentage (0.1%) of births in Italy now takes place at home.

Italy, however, does differ from other countries in the region in terms of the caesarean section rate, which stood at 38% in 2002 – the highest in Europe, and almost three-times the rate in, for example, the Netherlands.⁸

The high rate of caesarean section is attributed to many factors, with increases in maternal age at birth playing a part.

6. The experience of Italy shows how maternal mortality can be reduced dramatically in the lifetime of one generation of women.

Once achieved, low levels of mortality for mothers and for babies can be sustained if political commitment remains and if health systems respond to the newly-emerging challenges - in Italy's case, for example, providing maternity services also appropriate to the changing age-profile of mothers.

Such political commitment and health system responsiveness are necessary preconditions for progress at all levels of maternal mortality.

END NOTES

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THE MARCH OF MATERNAL MORTALITY IN FRANCE

1. Since the 1920s, France has reduced maternal mortality by almost 100%.

Estimates from the 1920s suggest the magnitude of maternal mortality was around 664 deaths per 100,000 live births.¹ This is similar to the estimates for many of the poorest countries of the world today – including, for example, Haiti, Djibouti and Laos.²

From this high level in the early part of the last century, it took just 28 years³ to achieve a three-quarters reduction in maternal mortality – the magnitude of the fall sought for one of the targets of Millennium Development Goal 5.

The march of declining maternal mortality was sustained across several periods of economic turmoil, including the Great Depression and World War II when real GDP per capita fell in France by 16% and 49% respectively.⁴

2. For recent generations of women, France has also achieved dramatic falls in maternal mortality.

Women in France in the 1950s faced a risk of dying during pregnancy or childbirth of around 86 deaths per 100,000 live births.⁵ The equivalent figure for women in France today is just 5 – one of the lowest levels in the world.⁶

This figure is indeed a world apart from, for example, francophone countries in West Africa like Niger and Benin with equivalent estimates of 1800 and 840 respectively.²

Haemorrhage, however, remains the main cause of maternal death today both in France, accounting for 18%,⁷ and in many low-income countries.

3. France has long sought to strengthen its information system in order to track maternal mortality.

Vital registration of deaths and births has long provided a source of data in France to monitor the magnitude of maternal mortality and to inform action.

This has, however, increasingly been complemented by other sources in recognition of the tendency for official statistics to underestimate maternal deaths, even in high-income country where the main reason is misclassification of causes.

¹ Prepared by Impact, University of Aberdeen, UK: April 5th 2009.
www.impact-international.org

The importance of tracking maternal mortality as a direct marker of the quality of services, of the functionality of the wider health system and of the development of the nation as a whole has been widely-accepted in France.⁸

This is reflected in repeated efforts to identify underreporting and to strengthen information systems.^{9,10} Since 1995, for example, maternal deaths in France have been identified and characterized through a Confidential Enquiry on Maternal Deaths (Enquête Confidentielle sur les Morts Maternelles).⁸

4. Levels and patterns of fertility have changed markedly in France over the last century and in recent years, with consequences for the risk of maternal death.

By the 1970s, the major fertility transition had already brought the total fertility rate down to just 2.4 (TFR – a similar measure to average completed family size).⁶ Further falls continued until the mid-1990s and the TFR remained low until the last 3-4 years. France, like other countries in Europe, has seen a recent upward turn in fertility, and in 2006 the TFR was 1.98.¹¹

This small increase in fertility, however, should be contrasted with the very high levels which still prevail in many low-income countries – making a significant contribution to maternal mortality.

In France, fertility has also changed in other ways, such as the rise in the mean age of birth – reaching 29.8 years in 2006, and the rising contribution of never-married women to the TFR.¹² Comparatively high rates of abortion and of teenage pregnancies¹³ are two further modern day challenges in France.

The risk of maternal death is well-known to rise with age. In 2004, for example, maternal mortality for women aged 35 years and above was estimated at 13.6 per 100,000 live births, compared with 5.3 and 5.5 for women under 25 years and 25-34 years respectively.⁷ The rising age at birth is seen as a threat to the maintenance of low levels of maternal mortality in France and in other European countries.¹⁴

5. Maternity services in France have evolved to provide a continuum of care for women and babies.

Over 95% of pregnant women now take-up antenatal care during the first trimester and over a third of deliveries take place in large maternity units with more than 2000 births per year.⁷ Recent statistics suggest that there are virtually no home deliveries in France.

Today in France almost a third of deliveries are instrumental or conducted by caesarean section. Recent work in France has identified a three-fold increase⁸ in the risk of postpartum maternal death after caesarean section compared with vaginal delivery, so prompting review of quality assurance mechanisms.

6. France illustrates the power of information in driving and informing action - at both high and low levels of maternal mortality.

END NOTES

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- ³ Assuming an exponential rate of decline.
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- ⁵ Derived from WHO database for ICD-7. Analysis by Impact (Bell J, et al).
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- ⁷ EURO-PERISTAT Project (2008). Perinatal Health Report. Data from 2004. EURO-PERISTAT project in collaboration with SCPE, EUROCAT & EURONEOSTAT. Available: <http://www.europeristat.com>
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- ¹⁰ Bouvier-Colle MH et al (2004) Maternal mortality estimation in France, according to a new method. *J Gynecol Obstet Biol Reprod*; 33(5): 421-9
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JAPAN: SETTING AN EXAMPLE TO THE WORLD IN REDUCING MATERNAL MORTALITY

The remarkable success of Japan in reducing deaths among mothers and babies has been achieved within the lifetime of one generation. It has thus been witnessed by the current generation of senior statesmen and stateswomen in Japan. There is an opportunity to share this success with the rest of the world. The leadership of the G8 by Japan provides this opportunity – let us seize this historic moment at the Summit in July 2008.

- In 1950, Japan had a maternal mortality ratio (MMR) of around 180 deaths for every 100,000 live births – similar to that found in some developing countries today, like Jamaica and Tajikistan.
- By 2004/5, this level had been reduced dramatically to just 6 maternal deaths for every 100,000 live births – making it one of the lowest levels of maternal mortality in the world. This compares favourably with other countries in the G8, particularly the United Kingdom (MMR= 8), Russia (MMR=28), and the USA (MMR=11).
- Japan achieved a particularly dramatic fall in maternal mortality over just a ten-year period from 1960 to 1970, with the MMR declining from around 130 to 50 – almost a two-thirds reduction. This provides encouragement to many developing countries trying to achieve significant falls in maternal mortality in the period remaining up to 2015 – the target year for the Millennium Declaration.
- Japan's achievements in relation to MDG5 – reducing maternal mortality, are mirrored in their very low levels of perinatal mortality. In 2002, for every 1000 deliveries, just 5.5 babies were born dead or died in the first week of life. This gives some optimism to the world in terms of achieving MDG4 which focuses on child mortality – most of which is made-up of deaths among babies. Japan's level of baby deaths is one of the lowest among the G8 nations.
- The success of Japan in tackling maternal mortality is due to a host of factors, but also provides evidence of the three main interventions which are needed everywhere in the world:
 - **Access to family planning to prevent unwanted and mistimed pregnancies:**
 - Japan has one of the lowest total fertility rates in the world, at just 1.32 children per woman by the end of her reproductive life.
 - Japan has also managed to achieve a low level of adolescent fertility, at just 4 births per 1000 women aged 15-19 years.
 - **Universal access to skilled care at delivery:**
 - Japan has long invested in the training of professional midwives and nurses, and ensuring their availability to women during pregnancy, delivery and post-natally – **at no cost to families.**

¹ Prepared by Prof Wendy J Graham, Impact, University of Aberdeen, UK: May 29th 2008

- Today 100% of deliveries in Japan occur with health professionals and in health facilities equipped to manage normal cases or to promptly refer on complications to higher-level hospitals. This universal access in Japan is in stark contrast to that seen in neighbouring countries like Cambodia and Myanmar – where the percentage is just 44% and 57% respectively.
 - Through the provision of quality skilled care, Japan has virtually eliminated one of the major causes of deaths to mothers and babies – sepsis. This is a clear marker of a functioning and effective health system which is providing truly skilled care at a particularly vulnerable time for mother and baby.
 - All women in Japan have the opportunity to experience a continuum of care from before, during and after pregnancy, and for their children. This is partly enabled through the issuing of Maternal and Child Health Handbooks, which help the Government to monitor the number of women and babies needing care from the health system. Japan has had a vital registration system since 1899, and is able to track all births and deaths, and thus show the progress from implemented health policies and programmes.
- **Timely access to Emergency Obstetric Care for all women with complications:**
 - Japan has established a functioning health system which connects all women to the service providers and facilities relevant to their needs during pregnancy, childbirth and after delivery.
 - The custom of Japanese women returning to their home towns in the final stages of pregnancy poses challenges in terms of ensuring continuity of care, but the Government recognizes this as women's choice and right, and endeavours to meet this need. In many developing countries, women's right to care is neither acknowledged nor respected.
 - In many developing countries, a significant drain on emergency obstetric care facilities relates to managing complicated induced abortion. Such abortions continue to kill many, many women where family planning is not available and safe abortion services lacking or illegal. Japan has virtually eliminated the tragedy of abortion-related death, and emergency obstetric care resources can thus now be focused on women suffering complications that can never be totally prevented, such as massive haemorrhage.

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