

# India

## Achieving MDG 5

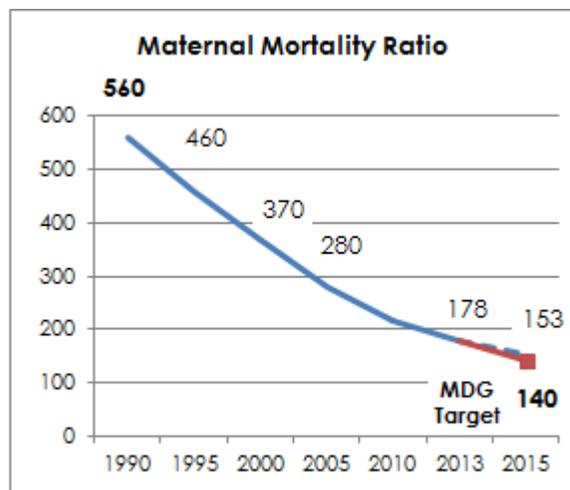
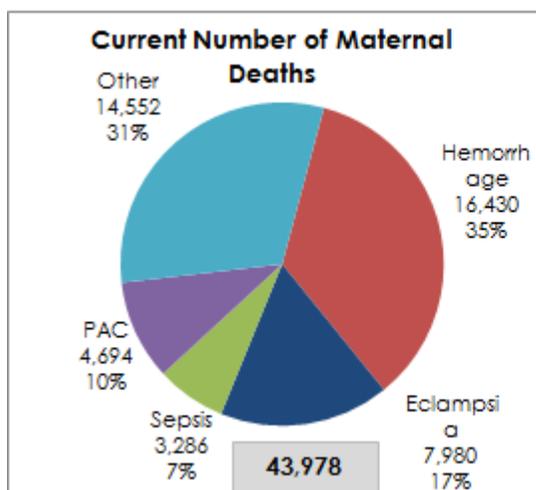
### Maternal Mortality

With a population of over 1.2 billion in 2013<sup>i</sup>, India is the second-most populous country in the World. It is also among the top ten countries in the world when it comes to the number of maternal deaths per year. With almost 44,000 women dying in pregnancy or childbirth each year, India accounts for about 15% of the global maternal death burden<sup>ii</sup>.

India has made significant progress in reducing the maternal mortality ratio and is actually currently on track to reach the 75% reduction in the MMR required by the MDG5. According to national SRS data, in 2013 it had a MMR of 178 per 100,000 live births<sup>iii</sup>. If the current trend continues, India should be able to reach its MDG goal of an MMR of 140 (or about 35,000 annual deaths) by 2015.

Just under 70% of all maternal deaths in India are due to just four conditions - hemorrhage, eclampsia, sepsis and abortion complications<sup>iv</sup>.

An estimated 6,000 of maternal deaths are among adolescents<sup>v</sup>.



### Family Planning and Maternal Health

<b>Population:</b>	1,236,686,732	(vi)
<b>Women of Reproductive Age:</b>	319,536,909	(vi)
<b>% Married:</b>	72%	(vii)
<b>Married WRA:</b>	229,022,902	
<b>Total Fertility Rate:</b>	2.5	(vi)
<b>Contraceptive Use (Any Method):</b>	56.3%	(viii)
<b>Contraceptive Use (Modern Methods):</b>	48.5%	(viii)
<b>Number of Modern Users:</b>	111,076,107	
<b>Unmet Need:</b>	21.3%	(viii)
<b>Number of Women with Unmet Need:</b>	48,781,878	
<b>Total Number of Births:</b>	24,706,771	(vi)
<b>Antenatal Care Coverage (4+ Visits):</b>	37%	(ix)
<b>% of Births with Skilled Birth Attendant:</b>	76%	(ix)
<b>No. of Births with SBA:</b>	12,921,641	
<b>No. of Births w/o SBA:</b>	11,785,130	
<b>% of Births to Adolescents (15-19):</b>	10.8%	(vi)
<b>No. of Births to Adolescents (15-19):</b>	2,679,446	(vi)

In addition to a 75% reduction in the MMR, MDG5 also calls for universal access to reproductive health care by 2015. The following shows current coverage with key reproductive services in India.

#### Family Planning

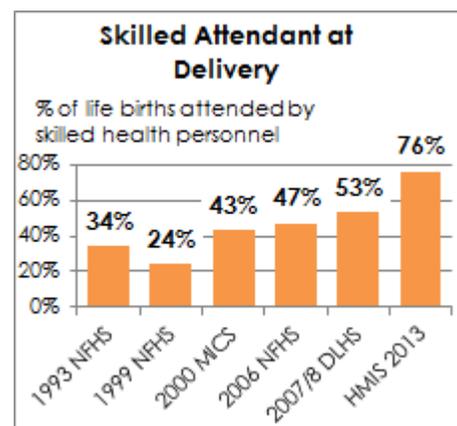
While 48.5% of women in India use modern family planning methods, 21.3% still have an expressed unmet need for family planning<sup>viii</sup>.

#### Antenatal Care

According to the 2013 HMIS data, 75.4% of the women whose pregnancies were registered under the public health system received three or more ante-natal check-ups.

#### Skilled Delivery Care

As measured by India's HMIS system in 2013, 76% of the annual close to 25 million births in India were assisted by a skilled attendant.



### Estimated Impact of Universal Access to Reproductive Health

#### Family Planning

Providing women with access to family planning and making it possible for them to decide how many children they want and when to have them, reduces the overall number of deaths by reducing the number of women dying due to pregnancies they

never intended to have, and by reducing the pregnancies at greater risk of maternal mortality, i.e. those that are too soon, many, and too close.

Meeting only 25% of the unmet demand for family planning in India, i.e., supplying 12.2 million additional women with access to family planning would reduce the number of unintended pregnancies by 4.5 million and deaths related to unintended births and abortions by over 8,000.

### Maternal Health

Most maternal deaths are preventable, as the health-care solutions to prevent or manage complications are well known. The following interventions and drugs tackle the four top causes of maternal deaths in India:

- Prevention and management of hemorrhage/treatment of postabortion complications - **Oxytocin/Misoprostol**:
- Management of eclampsia with **Magnesium sulfate**
- Prevention and treatment of sepsis with **Clean delivery kits** and **antibiotics**

### Number of Maternal Deaths that Could be Prevented

Providing all women with the required maternal health medicines and supplies would prevent an additional 20,000 deaths, reducing the annual number of deaths to under 20,000 and the MMR to 80, making it possible for India to not only reach, but substantially exceed its MDG goal of 140.

In addition, these interventions would have a significant impact on child, and in particular, newborn mortality. Currently India has about 750,000 neonatal deaths a year. More than 13% of those, or over 100,000 could be prevented by providing women with the above life-saving interventions<sup>x</sup>.

	Current Maternal Deaths	Deaths Prevented	Projected Maternal Deaths
Hemorrhage	16,430	12,299	1,276
Eclampsia	7,980	3,561	3,033
Sepsis	3,286	2,498	217
PAC	4,694	1,842	2,036
Other	14,552	0	12,024
<b>All MH</b>		<b>20,200</b>	
Averted by meeting 25 % of Unmet Need for FP		<b>8,157</b>	
<b>TOTAL</b>	<b>46,943</b>	<b>28,357</b>	<b>18,586</b>

### Essential Drug Requirements and Costs

#### Maternal Health Drugs For Universal Coverage

	Units	Total Cost
Oxytocin injections	14,259,948	\$2,138,992
Misoprostol tablets	32,585,690	\$9,123,993
Magnesium sulfate injections	2,066,746	\$1,302,050
Clean delivery kits	10,861,897	\$29,707,287
Other sepsis prevention supplies		\$1,452,233
Antibiotics		\$3,608,079
<b>TOTAL</b>		<b>\$47,332,634</b>

Drug and commodity requirements to provide the care detailed above in 2015 would cost approximately \$63 million, including \$16 million for additional FP supplies and \$47 million for maternal health (detailed calculations are available in Annex 1.<sup>xi</sup>)

### Required health system investments

Additional investments will be necessary to strengthen the country's logistics systems and to ensure that health providers (both at facility and community level) know how to administer these drugs.

India has a policy of universal coverage of all births by a Skilled Birth Attendant, irrespective of whether the delivery is conducted in a health facility or a domiciliary setting. Drugs like injection Oxytocin (for prevention and management of PPH) and injection Magnesium sulfate (for management of eclampsia) are to be used even at the lowest level of care, i.e. at a health sub-centre that caters to a population of 3,000 to 5,000. In cases where a significant proportion of women are unable to come to a health facility for delivery (such as those living in difficult and hilly terrains, snow bound areas, desert areas etc.) there is a policy for community-based distribution of Misoprostol for prevention of PPH. Along with these technical interventions GOI has also many supporting policies, which include

- JSY, a conditional cash transfer scheme, which has increased demand for institutional deliveries
- JSSK, a free service entitlements scheme has reduced out of pocket expenditures by providing every pregnant woman who seeks services at a public health facility with free drugs, diagnostics, diet and transport.
- Free transport to all women who choose to deliver in a public health facility, including referral to a higher centre if required, and dropping back home 48 hours after delivery.
- Adoption of a time to care approach, wherein all women should be able to access a health facility within 30 minutes and a referral centre with EmOC services within 2 hours, forms the basis for operationalisation of existing health facilities and creation of new ones.

Such policies and programmes with universal coverage have helped India reduce its MMR from 560/100,000 live births in 1990 (UN data) to 178 in 2010-2012 (RGI, SRS). Skilled attendance at birth has increased from 47% (DLHS-3 2007-08) to 70% (CES 2009) and 76% (HMIS 2013).

India's challenge lies in the provision of quality of care at health facilities, and ensuring that providers adhere to standard treatment protocols, otherwise the push for institutional deliveries may result in shifting of deaths from home to health facility.

India has taken significant measures to improve quality of care, (such as finalizing standard protocols and guidelines, and has even firmed up a "Quality assurance" guidelines recently). It even has a policy on maternal death reviews, both at the facility and community level, in place to understand the gaps in maternal health care service delivery. However, there remains a large gap between policy and implementation, due to various reasons such as inadequate supervision and monitoring, lack of accountability within the public health care system and varying degrees of governance in different states.

In brief it can be said that most of the evidence based policies and guidelines that are required for reduction of MMR are in place. However, the country needs to address the implementation challenges and ensure quality of care at all levels.

## Annex 1. Methodology

The following describes the methodology used to arrive at the impact and cost estimates in the factsheet.

### Maternal Mortality

The number of current annual maternal deaths was calculated using the 2013 MMR from the 2014 publication:

Trends in Maternal Mortality: 1990-2013. UNFPA, WHO, World Bank, UNICEF

<http://www.who.int/reproductivehealth/publications/monitoring/maternal-mortality-2013/en/> applied to the estimated number of births in 2013 (based on population data from the UN Population Division).

### Deaths Prevented through Family Planning

The number of unintended pregnancies averted was calculated by comparing the number of pregnancies that would have happened if the 12.2 million (25% of the 49 million women with currently unmet need in India) had not been able to access contraception to the number of pregnancies that would occur if these women used contraception (i.e. only experienced pregnancies due to failure of their chosen method). It was assumed that 40% of all women would have gotten pregnant if not using contraception. The average failure rate of contraceptives was estimated to be 3%.

Based on regional data collected by the Guttmacher Institute for its 2014 update of "Adding It Up" it was estimated that only about 39% of unintended pregnancies would be carried to term, 49% would be aborted and 13% would end in a miscarriage.

	Number	Comment
<b>Current Number of Women using FP</b>	111,076,107	Women Married or in Union x Modern CPR
<b>Additional Number of Women Using</b>	12,200,000	If estimated number of number of women with unmet need available, 25% of that number, otherwise increase in current number of modern method users by 25%
<b>Would have gotten pregnant</b>	4,880,000	Assumption that without contraception 40% of women would get pregnant in a year
<b>Now getting pregnant (method failure)</b>	366,000	Assumption that 3% of women get pregnant despite using contraception (average failure rate)
<b>Unintended Pregnancies Prevented</b>	4,514,000	Pregnancies that would have occurred without FP minus births that would occur with FP
<b>Unintended Births Prevented</b>	1,742,930	Averted Pregnancies x % that would have been carried to term (about 39% of all unintended pregnancies)
<b>Abortions Prevented</b>	2,202,258	Averted Pregnancies x % that would have been aborted (49%)
<b>Miscarriages Prevented</b>	568,812	Averted Pregnancies x % that would have been miscarried (13%)
<b>Deaths Prevented through Contraception</b>	8,157	Number of deaths that would have occurred during childbirth/abortions

Note: Family planning reduces the absolute number of maternal deaths in a country but since it reduces both numerator AND denominator of the Maternal Mortality Ratio (defined as deaths per 100,000 live births) the reduction in maternal deaths caused by family planning is not reflected in the MMR. The estimated reduction in number of deaths required to achieve the country's MMR goal differs therefore slightly depending on the assumption made about the number of births. The estimate in the first paragraph uses the current number of births, while the estimate in the Estimated Impact paragraph is based on a lower number of births (originally projected number of births minus unintended births averted through the provision of contraception to women with unmet need).

### Deaths Prevented through Maternal Health Interventions

It was assumed that half of the women currently covered by skilled birth attendance, i.e. about 38%, already had access to the three life-saving drugs. This coverage was then scaled up to 100%.

The following effectiveness data were used in estimating the expected reduction in maternal deaths:

Intervention	Effectiveness	Source
1. Hemorrhage Prevention - Oxytocin	62%	Prendiville WJ, Elbourne D, McDonald S. Active versus expectant management in the third stage of labour. In: The Cochrane Library, Issue 1.
2. Hemorrhage Prevention - Misoprostol	43%	Found to be about 30% less effective than oxytocin Gulmezoglu AM, Villar J, Ngoc NTN, et al. WHO multicentre randomized trial of misoprostol in the management of the third stage of labour. Lancet. 2001; 358:689-695
3. Hemorrhage Treatment - Oxytocin	80%	Pollard et al. Estimating the impact of interventions on cause-specific maternal mortality: a Delphi approach. BMC Public Health 2013, 13(Suppl 3):S12
4. Eclampsia Management - MgSulfate	43%	Cochrane Database Syst Rev. 2010 Nov 10
5. Sepsis Prevention - Facility Births	60%	Pollard et al. Estimating the impact of interventions on cause-specific maternal mortality: a Delphi approach. BMC Public Health 2013, 13(Suppl 3):S12
6. Sepsis Prevention - Home Births	60%	Pollard et al. Estimating the impact of interventions on cause-specific maternal mortality: a Delphi approach. BMC Public Health 2013, 13(Suppl 3):S12
7. Sepsis treatment - Antibiotics	80%	Pollard et al. Estimating the impact of interventions on cause-specific maternal mortality: a Delphi approach. BMC Public Health 2013, 13(Suppl 3):S12
8. PAC management - Misoprostol	50%	

The MMR after FP and MH scale-up was calculated by dividing the remaining number of maternal deaths by the number of births expected at the new contraceptive prevalence level (current 24.7 million births annually minus 1.4 million averted through increased use of family planning).

### Cost Estimates Family Planning

Unit costs for the different supply methods were taken from UNFPA's RH Interchange database and multiplied by the amount required to provide one couple-year of protection (CYP). It was assumed that 15 cycles of the pill, 120 condoms and 4 injectables would provide one CYP. IUDs and Implant were assumed to provide 3.5 years of protection or CYPs. Their cost was thus divided by 3.5. The RH Interchange price for implants (\$18.80) was replaced with a cost estimate per implant of \$8.50 to reflect the recent price reduction seen, but not yet reflected in the database, due to the introduction of Sino-Implants.

Drug and supply cost for male and female sterilization came from calculations carried out by the Guttmacher Institute for its Adding It Up 3 publication using UNFPA's RHCT costing tool with updated 2013 prices.

It was assumed that new users would adopt methods based on the current modern method mix.

### Cost Estimates Maternal Health Interventions

Based on WHO treatment guidelines the following drugs and supplies were costed using drug prices from both the MH International Drug Price Indicator and the UNICEF Supply Catalogue.

#### Hemorrhage Prevention and Treatment

Drug	Unit Costs	No. of Units Required	Total Costs	Source
<b>Hemorrhage Prevention</b>				
<b>Facility births</b>				
Oxytocin, injection, 10 IU in 1 ml	\$0.15	1	\$0.15	UNICEF
<b>Home births</b>				
Misoprostol, tablet, 200mcg	\$0.28	3	\$0.84	MSH
<b>Hemorrhage Treatment</b>				
Oxytocin, injection, 10 IU in 1 ml	\$0.15	4	\$0.60	UNICEF
<i>For atonic uterus. Not included: Syringes, IV sets, IV solutions</i>				

#### Sepsis Prevention and Treatment

Drug	Unit Costs	No. of Units Required	Total Costs	Source
Gloves, exam, latex, disposable, pair	\$0.05	2	\$0.10	UNICEF
Soap for handwashing	\$0.01	1	\$0.01	UNICEF
Chlorohexidine for cord care	\$0.01	1	\$0.01	UNICEF
			<b>\$0.12</b>	
Delivery Kit	\$2.74	1	<b>\$2.74</b>	UNFPA 200 FOR \$547
<b>Non-Severe Cases</b>				
Amoxicillin, caplet, 250 mg	\$0.05	2	<b>\$0.10</b>	MSH
<b>Severe Cases</b>				
Ampicillin, powder for injection, 500mg	\$0.14	24	\$3.46	MSH
Gentamicin, injection, 40 mg/ml in 2ml	\$0.09	6	\$0.54	MSH
Metronidazole, injection, 500 mg in 100	\$0.47	8	\$3.76	MSH
			<b>\$7.76</b>	

#### Pre-Eclampsia/Eclampsia Treatment

Drug	Unit Costs	No. of Units Required	Total Costs	Source
Magnesium sulfate, injection, 500 m	\$0.63	9	\$5.67	UNICEF
<b>For complications</b>				
Calcium carbonate, tablet, 600mg	\$0.02	1	\$0.02	MSH
<i>Needle for initial injection, afterwards IV, not included in costing</i>				

<sup>i</sup> UN Population Division. World Population Prospects: The 2012 Revision, data for 2013

<sup>ii</sup> National data of MMR (178/100,000 live births (SRS 2010-2012).

<sup>iii</sup> SRS data.

<sup>iv</sup> WHO and UNICEF. 2012 Countdown, Country Profiles

<sup>v</sup> Based on: Blanc et al. 2013. New Findings for Maternal Mortality Age Patterns: Aggregated Results for 38 Countries. PLoS ONE 8(4): e59864.

<sup>vi</sup> UN Population Division. World Population Prospects: The 2012 Revision

<sup>vii</sup> UN Population Division. World Marriage Data 2012.

<sup>viii</sup> DLHS-2 2007/8.

<sup>ix</sup> India HMIS April 2013-March 2014.

<sup>x</sup> Futures Institute. Spectrum, LiST module.

<sup>xi</sup> India has an Essential Drug List for the country, which includes MH drugs and FP commodities. Under its recent RMNCH+A strategy, India has developed a 5x5 matrix, which also lists down essential commodities required for RMNCH+A.