Achieving MDGs 4 and 5 in Sindh: The Role of Family Planning

This briefing paper focuses on the policy options available to the Sindh government in affecting just how much the province’s population will grow by 2050 and its potential to achieve MDGs 4 and 5.

THE STATE OF MATERNAL HEALTH IN SINDH

Maternal mortality is a leading cause of death among women of reproductive age in Sindh – about 24% of deaths in this age group were due to pregnancy related causes (PDHS 2006/07).

Approximately 2,800 women die each year in Sindh alone due to pregnancy-related causes despite some recent improvement in reproductive health indicators. Pregnancies that occur too early, too late, or too frequently, can increase the risk of maternal death. Lowering fertility rates by increasing the use of family planning can help reduce the number of pregnancy-related deaths.

Maternal health indicators have improved and about 78% women in Sindh received antenatal care (ANC) in 2012 — a rise of 32 percentage-points since 1991. The proportion of women assisted by a skilled birth attendant (SBA) during childbirth has also risen two times from 32% in 1991 to 61% in 2012 (Figure 2). However, this masks wide urban-rural disparities since skilled birth attendance is 79% in urban Sindh and 49% in rural Sindh (PDHS 2012/13).

![Figure 1: Trend in maternal mortality ratio and the MDG 5 target](image1)

The good news is that there has been a decrease in maternal mortality in Sindh (Figure 1). The maternal mortality ratio (MMR) was estimated at 334 per 100,000 live births in 2001; in 2006, it was measured at 314, and by 2012 it had fallen to 214 per 100,000 live births.

![Figure 2: Maternal health indicators (in %)](image2)

There are also considerable differences across districts — those in the north and southeast of the province have the lowest levels of SBA. For example, less than 20% of pregnant women were assisted by SBAs in Jacobabad and Tharparkar, while more than three quarters of the women in urban districts such as Karachi, Hyderabad, and Sukkur availed these services (PSLMs 2010/11).

2,800 women in Sindh die annually due to pregnancy-related complications.
THE MISSED OPPORTUNITY IN MATERNAL HEALTH: LOW CONTRACEPTIVE PREVALENCE IN SINDH

The contraceptive prevalence rate (CPR) among women in Sindh remains low, with just 30% of married women of reproductive age using any method of contraception – a rise of 3 percentage-points since 2006/07 (Figure 3). This represents a 0.5 percentage-points annual rise over the last six years. The use of modern methods has increased from 9% in 1990 to 25% in 2012.

![Figure 3: Current contraceptive use in Sindh](image)

The use of modern contraceptive methods is particularly low in Sindh’s less developed districts — e.g., 13% in Ghotki — while in districts such as Karachi, it is as high as 35%.

![Figure 5: CPR by district](image)

Women’s fertility preferences indicate, however, that most women want to space or limit their next birth: 47% want no more children and 25% want to space their next pregnancy. Only 25% want another child soon (Figure 6).

![Figure 6: Fertility preferences of women in Sindh](image)

The district-wise distribution shows that regions of high fertility correspond to a low CPR (Figure 5). There are also substantial geographical variations, with the CPR ranging from less than 17% in districts in northern Sindh to 45% in Karachi.

72% of women and 62% of men in Sindh prefer smaller and better-spaced families.
INFANT AND CHILD HEALTH

MDG 4 sets a target of reducing infant and under-five mortality by two thirds between 1990 and 2015. These rates have declined in Sindh from 1990 to 2012. The infant mortality rate (IMR) has decreased from 81 in 2006/07 to 74 per 1,000 live births in 2012/13 (Figure 7) and the under-five mortality rate has decreased from 101 to 93 between 2006 and 2012. Sindh has to bring down its infant and under-five mortality rates to 27 and 35, respectively, to achieve its MDG 4 targets.

![Image](image_url)

**Figure 7: Infant and under-five mortality rates and MDG targets in Sindh**

Source: PDHS

Averages tend to mask the variations in IMRs across socioeconomic groups and regions within the province. Maternal education has a considerable impact on the IMR — children with mothers who have had no schooling account for more than double the IMR of those whose mothers have studied up to or beyond secondary school (Figure 8). The differences by economic status, however, are less clear in Sindh.

<table>
<thead>
<tr>
<th>Education Level</th>
<th>IMR 2012/13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rich</td>
<td>48</td>
</tr>
<tr>
<td>Middle</td>
<td>92</td>
</tr>
<tr>
<td>Poor</td>
<td>78</td>
</tr>
<tr>
<td>Secondary +</td>
<td>37</td>
</tr>
<tr>
<td>Primary</td>
<td>83</td>
</tr>
<tr>
<td>No Schooling</td>
<td>83</td>
</tr>
</tbody>
</table>

**Figure 8: Socioeconomic differentials in IMR in Sindh**

Source: PDHS 2012/13

Sindh has to bring down its IMR to 27 and its under-five mortality rate to 35 to achieve the MDG 4 target by 2015.

The IMR has declined significantly in urban areas — from 72 to 54 per 1,000 live births between 1990 and 2012. While in rural areas IMR has slightly declined, from 90 to 85 per 1,000 live births (Figure 9).

![Image](image_url)

**Figure 9: IMRs by place of residence in Sindh**

Source: PDHS

This calls for more attention, facilities, and care to be focused on the less developed regions of Sindh.

The children of the least educated mothers have higher IMRs.

High level of infant mortality rate in rural Sindh is a cause for alarm.
THE MISSED OPPORTUNITY: BIRTH SPACING AND INFANT AND CHILD HEALTH

Sindh’s persistently high levels of neonatal and post-neonatal mortality are cause for alarm. Neonatal mortality has increased from 44 to 54 per 1,000 live births between 1990 and 2012.

At the same time, post-neonatal mortality declined from 36 to 28 per 1,000 live births between 1990 and 2006. By 2012, it had fallen to 20 per 1,000 live births.

Improving access to and use of modern family planning methods would enable women to limit early or late childbearing and closely spaced births, thereby reducing the probability of infant and child mortality.

Birth intervals of less than two years account for the highest neonatal and post-neonatal mortality rates (Figure 11). There is a marked reduction in neonatal and post-neonatal mortality when the birth interval is two or more years. Neonatal mortality can be reduced to 44 per 1,000 live births with a birth interval of two or more years, and to 16 per 1,000 with a birth interval of three or more years. Post-neonatal mortality would fall by more than double with a birth interval of three or more years.

The strong association between maternal health and infant survival, particularly for neonates, is the basis of the Healthy Spacing and Timing of Pregnancies initiative launched by the World Health Organization. A child’s risk of dying is strongly correlated with certain fertility behaviours. The risk of death is much higher among children born to mothers who are too young (under 18 years) or too old (over 35 years) and among those born after a short birth interval (less than 24 months) or to mothers with high parity (3+ children).

About three fifths of the births in Pakistan are characterized as high-risk due to short intervals and high parity. Other interventions such as immunization and ORS are applied to prevent post-neonatal deaths. However, the use of family planning to space births is an extremely effective but as yet untapped route to reducing infant and particularly neonatal mortality.

Women who practice family planning can avoid high-risk births and reduce their chances of having a baby who will die in the neonatal and infancy period.

Longer birth intervals will help reduce neonatal mortality.
UNWANTED FERTILITY AND THE UNMET NEED FOR FAMILY PLANNING

This brief presents a prescription for bringing about a significant decrease in the number of maternal deaths. It is well established internationally and in Pakistan that unintended pregnancies and unsafe abortions are leading causes of maternal deaths.

We also know that about 72% of women in Sindh want to prevent or delay pregnancy. Moreover, the recent PDHS 2012/13 indicates that, despite some gains, there is still a large unmet need for family planning — about a fifth of women have indicated an unmet need for contraception to space and limit their childbearing (Figure 12).

Figure 12: Unmet need for family planning
Source: PDHS 2012/13

The unmet need for contraception to limit family size is higher in rural areas than in urban areas. This reflects greater room for raising the CPR in rural Sindh. If the demand for family planning were satisfied, the CPR would rise to 51% in Sindh.

POST-ABORTION COMPLICATIONS

Unwanted pregnancies can also lead to post-abortion complications (PAC), which result primarily from induced abortions.

Sindh accounts for almost 25% of the annual PAC caseload out of a total of 696,000 cases estimated nationally. It has an estimated 174,908 PAC cases per year (Figure 14). Out of every 1,000 women of reproductive age (15–49), sixteen sought treatment for PAC in 2012 in Sindh. PAC cases are treated predominantly in the private sector in Sindh – about 58% (Figure 14).

Figure 13: Average number of children per woman
Source: PDHS 2012-13

On average, a woman in Sindh has 3.9 children over her reproductive lifespan (Figure 13). If women could prevent the child that they did not want at all or wanted later, the fertility rate in Sindh would fall to 3.1 children per woman.

Women in Sindh want three children – but have almost one unwanted child on average.

Figure 14: Number of PAC cases in Sindh
Source: Post-Abortion Care in Pakistan: A National Study, Population Council, 2013

Investing resources in family planning would clearly help achieve MDGs 4 and 5 by preventing the nearly one third of total two million pregnancies in Sindh that are unintended.
POTENTIAL SCENARIOS FOR SAVING MOTHERS’ AND CHILDREN’S LIVES

MATERNAL MORTALITY

There is untapped potential for increasing the CPR by accelerating the use of family planning to eliminate unmet need. Below, we present the potential benefits of increased family planning and skilled birth attendance (Figure 15) — the two major drivers of change in reducing maternal deaths.

This analysis includes three different scenarios to present the case for family planning and fertility decline as an effective way of reducing maternal deaths.*

Scenario 1: Increase the coverage of SBA to 80%. This will lower the number of maternal deaths from 2,807 to 2,138, saving 669 maternal lives.

Scenario 2: Focus solely on increasing family planning and increase the CPR to 51% by eliminating the unmet need for family planning (21%). This will reduce maternal deaths by 33% — from 2,807 to 1,876, saving 931 maternal lives.

Scenario 3: If the CPR is increased to 51% and SBA to 80%, then the number of maternal deaths will drop to 1,430 — about half of the current number of maternal deaths — saving 1,377 maternal lives.

Just increasing contraceptive prevalence to 51% will reduce the current number of maternal deaths by almost 33%.

INFANT AND CHILD MORTALITY

Using the established relationship between contraceptive use, high-risk fertility behaviour, and infant and child mortality, we have run simulations for two contraceptive-use scenarios that capture the effect of increased contraceptive use on infant and child mortality*.

Scenario 1: If contraceptive use increases to 40%, the number of infant deaths will decrease from 97,072 to 80,019, saving 17,053 infant lives. The number of child deaths (children aged 1–4) will fall from 24,924 to 15,741, saving an additional 9,183 children’s (aged 1–4 year) lives.

Scenario 2: By eliminating the entire unmet need for family planning in Sindh and increasing contraceptive use to 51%, there would be 34,106 fewer infant deaths and 18,365 fewer child deaths (aged 1–4 year).

![Graph showing impact of family planning on infant and child mortality](image)

* Figure 16: Impact of family planning on infant and child mortality
Source: PDHS 2012/13 and simulation based on the FAMPLAN model.

Figure 15: Impact of family planning on maternal deaths in Sindh
Source: PDHS 2012/13 and simulation based on Maternal Mortality 2000:

34,106 infant and 18,365 child (ages 1–4) deaths could be averted by eliminating the unmet need for family planning.
SINDH’S DEMOGRAPHIC PROSPECTS

The population of Sindh has increased sevenfold in the last 60 years since independence. However, the pace of growth accelerated during the 1980s and 1990s as mortality rates declined and fertility remained high. The total population trebled from 6 million in 1951 to 19 million in 1981, and reached 43 million in 2012, with an annual growth rate of 2.3%.

A rapidly growing population results in a struggle to ensure access to basic healthcare, education, and economic opportunities for an increasing number of people. Sindh’s population of more than 43 million is already placing huge stress on the province’s infrastructure and increasingly scarce resources. Governance and stability are also becoming more difficult.

SINDH’S DEMOGRAPHIC TRANSITION

Figure 17 shows “population pyramids” for 1972, 2013, and 2050, which depict Sindh’s transition in terms of age structure and its progression through the demographic transition.

Sindh is currently passing through the middle phase of the demographic transition, although it still has a large youth population: 68% of its population was under the age of 30 in 2010. If fertility rates continue to decline at a moderate pace, by 2050 the proportion of the population under 30 years of age will have decreased to 45%. Falling dependency ratios, resulting from a rising working-age population and declining numbers of children and the elderly, offer the opportunity of a demographic dividend in Sindh.

Figure 17: Stages of the demographic transition in Sindh
Source: Population Council estimates.

FERTILITY DECLINE: SLOW AND UNEVEN

Although the population continues to grow, fertility rates have declined significantly throughout the province since the 1970s (Figure 18). Fertility has dropped from 6.7 children per woman in the 1970s to 5.1 in 1991 and 3.9 in 2012.

Figure 18: Total fertility rates in Sindh

Sindh has the chance to benefit from a fertility decline that could result in both improved maternal and child health and economic development through the demographic dividend.
Despite overall gains in fertility reduction, the change has not been uniform across the province. There are significant differences in fertility rates by place of residence and socioeconomic status. Women in rural Sindh continue to have almost two children more than their urban counterparts, while the poorest families have approximately three children more than the richest families (Figure 19). Fertility rates are also lower for women with higher levels of education: the total fertility rate (TFR) is 4.8 children for those with no education, 4 for women with primary schooling, 3 for those with secondary education, and 2 for those with tertiary education.

Geographical variations in Sindh are even more marked when we examine the data by district. Overall, districts in northern Sindh, such as Dadu in the west and Thatta in the south, have fertility levels of more than four children per woman. However, Karachi’s fertility levels (data available only for selected districts) are lower, with about three children per woman.

![Fertility rates by place of residence and socioeconomic status](image)

**Figure 19: Fertility rates by place of residence and socioeconomic status**
*Source: PDHS 2012/13*

Sindh’s population will continue to grow over the next few decades largely due to continuing high levels of fertility and the momentum built into population growth, given the province’s youth population. Future growth will be driven by three main demographic factors:

- **The persistently high levels of fertility particularly in rural Sindh**
- **A young age structure due to high fertility**
- **The large number of young women entering their childbearing years.**

Future fertility levels will determine whether the population of Sindh will rise to 62 million or 83 million by 2050 (Figure 20). The decision to invest in a rapid fertility decline through a strong family planning program could make the difference of 21 million more people in Sindh by 2050.
BRINGING IT ALL TOGETHER: THE BENEFITS OF MEETING THE UNMET NEED FOR FAMILY PLANNING AND ACCELERATING THE FERTILITY DECLINE

Reducing the high unmet need for family planning offers the opportunity to lower infant, child, and maternal mortality through the provision of good-quality family planning services in Sindh. Expanding family planning services and increasing contraceptive use will have a direct impact on the birth rate and on maternal mortality.

Clearly, investing resources in family planning would help achieve MDGs 4 and 5 because it would prevent almost half the total of about 2 million pregnancies in Sindh that are unintended.

The decrease in the number of unwanted pregnancies will reduce recourse to unsafe abortions as well as the number of post-abortion care clients. This will also reduce the number of deliveries significantly, allowing the Sindh government to utilize its already overburdened resources and facilities to improve the quality of maternal care.

THE KEY TO EXPANDING ACCESS TO FAMILY PLANNING SERVICE DELIVERY

Access to family planning services will increase substantially if the entire public health system delivers these services. In particular, lady health workers (LHWs) are needed to facilitate the outreach of family planning services. Figure 21 shows how access to family planning services is limited if they are provided solely by the Population Welfare Department through family welfare centers (FWCs) in Thatta. The GIS maps are based on a census of reproductive health facilities and show how family planning services could be enhanced dramatically for this district if Department of Health static outlets and LHWs were effectively involved.

Access to family planning services will increase substantially if DOH static outlets and LHWs are effectively involved.

Figure 21: Map of Thatta district a) just FWCs, b) FWCs with MOH static clinics, and c) FWCs, static clinics, and LHWs.
CONCLUSIONS

This briefing paper combines a wide range of data sources, including several rounds of the PDHS 2012/13, and FALAH 2008/12, to make the case for prioritizing family planning to meet MDGs 4 and 5.

Although fertility rates in Sindh have declined, the pace of decline, especially in rural areas, has been slow. Progress in the stages of the fertility transition across districts is uneven. Greater efforts are required to establish parity in the fertility decline province-wide.

There is a strong correlation between fertility rates and maternal mortality. While wanted fertility has declined in Sindh, unwanted fertility has increased. Contraceptive prevalence remains low despite the fact that most women in Sindh want to space or limit their family size.

Infant and child mortality are also closely linked to fertility rates — a major reason for the persistently high infant and neonatal mortality levels in Sindh. The data shows that longer intervals between births decrease neonatal and infant mortality.

Addressing the unmet need for family planning (21% of married women) will not only lead to marked reductions in both maternal and infant mortality, but also spur other outcomes in education, employment, and economic opportunities within and beyond Sindh.

Multi-sectoral integrated approaches are required to expand access to family planning services. For example, the FALAH program has demonstrated that a higher uptake of birth spacing is possible in almost all districts of the country. There is an opportunity here to bring the health and population welfare sectors together to expand access to family planning services. Sindh is well positioned to benefit from a demographic dividend, but accelerating the fertility decline is a necessary precondition.

SOME RECOMMENDATIONS TO ACCELERATE FAMILY PLANNING EFFORTS

- Increase provincial political support and resource allocation for family planning efforts.
- Promote family planning as a health intervention.
- Include birth spacing services as part of the health policy.
- Ensure the availability of contraceptive supplies by strengthening procurement and logistics systems for all public health and private service outlets.
- Improve the technical and communication skills of service providers through client-centered family planning training for better service quality.
- Utilize the Population Welfare Department’s training facilities to train health providers.
- Focus on vulnerable regions and segments of the population.
- Increase access through public-private partnerships and by contracting out mechanisms already being promoted by the provincial government to improve service delivery.

* A more detailed report titled “Prioritizing Family Planning for Achieving Provincial Maternal Child Health and Development Goals” elaborates on the data and methods presented in this briefing paper.

‘Prioritizing Family Planning for Achieving Provincial Maternal Child Health and Development Goals’ is a project funded by the Maternal and Newborn Health Programme – Research and Advocacy Fund (RAF), and is implemented by the Population Council.

March 2014