

**Population Programs in Bangladesh:
Problems, Prospects
And Policy Issues**

By

**Dr. Atiqur Rahman Khan
Ms. Mufaweza Khan**

Dhaka, March 2010

About the authors:

Dr. Atiqur Khan, a physician, obtained a Master's and a Doctorate degree in Public Health with a major on population dynamics from the Johns Hopkins University in USA. He, now retired, worked until 1986 with the population and family planning programs in Bangladesh, in different capacities, including as Director of Training, Director of MCH-FP Services and Chief of Population in the Planning Commission. He was also founder-Directors (concomitantly) of Mohammadpur Model Clinic (later renamed as Mohammadpur Fertility Service and Training Centre) and Bangladesh Fertility Research Program (later renamed as Bangladesh Institute of Research for Promotion of Essential & Reproductive Health and Technology). Subsequently, he worked in different technical capacities with United Nations Population Fund (based in Nairobi and New York) and with World Health Organization (based in Geneva and Bangkok).

Mufaweza Khan is the Executive Director of Concerned Women for Family Development (CWFD), one of the oldest NGOs in Bangladesh, organized and managed solely by women. She has experience in consultation with NGO activities in India, Pakistan and Maldives and as resource person in many international forums. She was the recipient of Margaret Sanger Award (1990), CEDPA Leadership Award (1990), Special Award for Advancing Women's Issues by CEDPA (2002) and Time Global Health "Heroes" Honor (2005).

Preface

This paper was originally prepared for and with support from Robert Gillespie, President, Population Communication Inc., California, USA in January 2009. Recently when advised to disseminate the paper, since more than a year had passed from its first write-up, it was felt necessary to update and revise the paper taking into account more recent developments.

The title of the paper, and a clear focus on selective approach in fertility regulation, were deliberately chosen. Even though the seriousness of population problems in Bangladesh deserve an over riding consideration to focus on fertility regulation in its population policies, the authors carefully considered the needs of population policies within the broader principles of human rights and the ICPD commitments. Given the convincing evidences indicating that achievement of replacement level fertility, and eventual stabilization of population, is possible by meeting unmet needs and demands, the paper focuses on program efforts in fertility regulation sector. The authors however do not de-emphasize the policy needs on other sectors such as social, economic and legal sectors.

The authors gratefully acknowledge the support and encouragement from Robert Gillespie, President, Population Communication Inc.

Atiqur Khan
Mufaweza Khan
Dhaka, March 2010

Contents

Background scenario

- a. Current situation in Bangladesh
- b. Population policies in the past
- c. Population stabilization, replacement fertility, zero growth – conceptual issues

Fertility levels and trends in Bangladesh

- a. Stagnation in fertility decline
- b. Causes of fertility stagnation
 - Contraceptive method mix and its implication
 - Decline in new acceptance of contraceptive
 - Shrinking role of public sector in service provision
- c. Demand factors, unmet needs
- d. Early child-bearing, teen-age fertility
- e. Regional variation
- f. Current program performance and prospect for change

A Proposed Path to Population Stabilization

Scopes for expanding family planning services

- a. Selected method specific actions
 - (i) Promote use of IUDs
 - (ii) Promote sterilization
 - (iii) Make emergency contraception widely known and available
 - (iv) Introduce new generation of implants
 - (v) Improve client-provider interaction
 - (vi) Promote use effectiveness of injectable
 - (vii) Ensure continuity of commodity supplies
 - (viii) Define problems through research
- b. Strengthening of community level services including community clinics
- c. Strengthening of private service outlets
- d. Managing an appropriate system for financial compensation
- e. Improving quality of care
- f. Focussing communication strategies
- g. Implement region-specific strategies
- h. Strengthen technical support

Reproductive health

- a. Safe motherhood
- b. Prevention of unsafe abortion
- b. Infant and child survival
- c. Adolescent health
- d. Integrated approach

Policy interventions on social factors

- a. Women's perspectives
- b. Education
- c. Age at marriage, early child bearing and adolescent health
- d. Development of community institution

Background scenario

a. Current situation in Bangladesh

With an estimated population of 162 million in 2009, Bangladesh is the seventh most populous country in the world (UN 2009). A total land area of mere 147,500 sq. kms accommodating the above population size makes it by far the most densely populated among the populous countries. The per capita GNI PPP is around 1440 dollar which is still among the lowest in the world (PRB 2009).¹ Even after a considerable rise in adult literacy in recent years reaching 56 percent of male and 49 percent of female population 15 years and above, nearly half the people still cannot read and write (BBS 2009). In the face of ever shrinking agricultural land, majority of people are employed in agrarian occupation, with a quarter of population in service sector and only about a tenth in industry. A large scale unplanned rural-to-urban migration, which is mainly driven by increasing landlessness and poor sustainability in agricultural occupation, has been a significant strain on urban infra-structure resulting in a constant unintended growth of slum population, road congestion, environmental degradation and air pollution. Even after a significant decline in fertility during the decades of 1970s and 1980s, population related problems in Bangladesh remains serious. The extremely high density of population, rapid unplanned urban growth, wide-spread illiteracy and conservative socio-cultural environment, together with poor reproductive health status – characterised by as yet high maternal and infant mortality and morbidity, high incidence of communicable diseases, wide spread malnutrition and a very high teen-age fertility rate with limited access to services for adolescents – makes the problems desperately serious. On a longer term perspective, another unwelcome, but inevitable, prospect of rising sea level caused by greenhouse gas effect of climate change, would lead to large scale displacement of population from low lying coastal areas. With very little absorption capacity in the rural areas of the already crowded country, a large proportion of the excess population would likely gravitate to urban centres resulting in further growth of slum population. The above situation depicts the challenging scenario for the policy makers.

b. Population Policies in the Past

Soon after liberation in 1971, development policies in Bangladesh took into cognizance the pressing need to reduce population growth rate in order to ease mounting pressure on its finite resources. The sense of urgency was amply expressed in the First 5-Year Plan statement “*No civilized measure would be too drastic to keep the population of Bangladesh on the smaller side of 15 crores for the sheer ecological viability of the nation*” (Planning Commission 1974). Since mid-1970s, major efforts were made to expand access to family planning services and widen choice of methods. These measures greatly contributed to rise in contraceptive prevalence. All subsequent governments maintained a strong emphasis on population programs though commitment to implementation began slackening since mid-1980s. The current population policy, formulated in October 2004, laid down a target of reaching replacement-level fertility by 2010 and to stabilize the population at 210 million around the year 2060 (MOHFW 2004). In terms of expressed intent and broad objectives, the stated policies, as well as program approaches, are reasonably adequate. However, as noted earlier, operationally viable issue-specific strategies need to be designed to achieve the stated objectives.

c. Population stabilization, replacement fertility, zero growth – conceptual issues

In early 1990s, after fertility levels showed a steady decline from a TFR of 6.3 in 1975 to 3.4 in 1993-94, the goal of reaching replacement fertility appeared well within reach and planners even began to consider policy odds to attain population stabilization, though stabilization growth rate with attainment of “zero” growth rate would have been elusive for reasons explained below. First,

¹ GNI PPP is gross national income in purchasing power parity

fertility decline process became stagnant during early 1990s which made it uncertain when replacement level would be reached. Second, most important, even after replacement level is reached, population momentum effect, an inevitable consequence of high fertility in the past, would continue to add to population growth till the age structure stabilizes. Thirdly, on an immediate term, prospects of further mortality decline would partly offset the impact of fertility decline on population growth rate. Theoretically speaking, the future impact of population momentum can be minimized if fertility could be reduced more sharply to, at least temporarily, below replacement level – an unlikely prospect under the recent program performance in Bangladesh – and also by increasing age at marriage, delaying child bearing within marriage and increasing child spacing (birth interval) which should, in any case, receive serious policy consideration.

Fertility levels and trends in Bangladesh

In spite of a seemingly unfavourable socio-economic environment, as depicted above, family planning programs in Bangladesh achieved a remarkable success in promoting family planning practice and lowering fertility over a period of about twenty years from mid-1970s to mid-1990s. For example, total fertility rate (TFR) declined from 6.3 in 1975 to 3.4 in 1993-94 with a simultaneous increase in contraceptive prevalence from 7.7 percent to 44.6 percent during the same time (Table 1). During next ten years, contraceptive prevalence rose further from 44.6 percent to 58.1 percent though fertility decline was minimum or static. Subsequently, contraceptive prevalence stagnated between 2004 and 2007 though there was a small decline in fertility to reach 2.7 in 2007.

Data source	TFR	Any method	Modern method	Traditional method
BFS 1975	6.3	7.7	5.0	2.7
CPS 1983	--	19.1	13.8	5.4
CPS 1985	--	25.3	18.4	6.9
BFS 1989	5.1	30.8	23.2	7.6
CPS 1991	4.3	39.9	31.2	8.7
BDHS 1993-94	3.4	44.6	36.2	8.4
BDHS 1996-97	3.3	49.2	41.6	7.7
BDHS 1999-2000	3.3	53.8	43.4	10.3
BDHS 2004	3.0	58.1	47.3	10.8
BDHS 2007	2.7	55.8	47.5	8.3
Source: NIPORT et al 2009				

Notably, fertility decline in Bangladesh was not preceded by any significant degree of socio-economic development. In fact, fertility decline came as a surprise to many demographers who never thought it possible under the existing social setting. Increase in contraceptive practice resulting from a strong family planning program, in the absence of any noteworthy socioeconomic change, was regarded as the major cause of the fertility decline (Cleland 1994).

In fact, major successes in population sector programs were achieved in expanded access to family planning services with introduction of a broader range of modern and effective methods. For example, soon after liberation, oral pill was introduced for the first time in Bangladesh.

Lubricated, better quality condoms were made available in place of old dry condoms. Most importantly, introduction of minilaparotomy procedure for female sterilization, performed on an outpatient basis without general anesthesia, greatly expanded the method's accessibility. Mohammadpur Model Clinic, established in 1975, offered a broad range of modern methods – including newer generation IUDs (such as Copper T IUD 380A), long acting injectable contraceptives, menstrual regulation, female and male sterilization, oral pills, including low dose formulations and condoms – all under one roof. The Clinic also facilitated clinical trials on the methods. A research agenda, drawn on safety, effectiveness and acceptability of new modern methods, facilitated wider expansion of the methods. Many of the above methods, initially introduced under NGO efforts, were later replicated in the nation wide program in 1979-80. A policy of financial compensation to service providers, acceptors and referrer played an important role in promoting method acceptance. A technical supervision and monitoring system, instituted to oversee quality of care of permanent methods, which was later extended to other clinical methods, helped building user confidence. These measures resulted in a significant rise in new acceptance of contraceptives, especially that of more effective methods (Annex Table 3).

The decline in fertility created so much optimism in early 1990s that replacement fertility appeared to be within easy reach. The observed parallel relationship between contraceptive prevalence and fertility was used as an optimistic basis to project that replacement fertility could be attained by raising the contraceptive prevalence to around 70 percent. This success, unfortunately, developed a sense of complacency among the program managers resulting in slip of grip on the program performance as noted below.

a. Stagnation in fertility decline

Disappointingly, as noted above, decline in fertility came to a stall in early 1990s with TFR remaining at around 3.3 in two subsequent inter-survey periods between 1993 and 2000. In fact, based on a demographic analysis, it was concluded:

“The actual level of fertility in Bangladesh in 1999-2000, after adjusting for tempo effect, would be close to 4, more precisely 3.9, as compared to that of 3.8 in 1996-97. In other words, there is a slight increase in the level of fertility during the recent past. The conventional TFR appears to be lower due to an upward shifting in the parity specific birth intervals. An increase in the parity specific birth intervals causes a decline in the level of conventional TFR” (Islam 2002).

The above trend created a major concern among planners. Subsequently, however, TFR decreased slowly to 3.0 (BDHS 2004) and thereafter to 2.7 (BDHS 2007). Notably, even during the period of fertility stall, contraceptive prevalence continued to rise for the first few years, then slowed and stagnated at around 58 percent in 2004. Thereafter, overall contraceptive prevalence showed a small decline to 55.8 in 2007, though use of modern methods remained static. Age-specific data showed an uniform decline in fertility across all age groups and, subject to more elaborate analyses, this suggest fertility decline process should continue if contraceptive services and supplies are widely available and accessible.

b. Causes of fertility stagnation

The phenomenon of stall or near-stall in mid-transition was also observed in several other countries mainly in sub-Saharan Africa. As noted by Bongaarts, two major factors played major roles in sub-Saharan countries; first, socio-economic variables, including “poorly performing economy and rising mortality” which were among plausible causes in many sub-Saharan Africa. Secondly, “lower priority assigned to family planning programs in recent years” was cited as relevant in sub-Saharan areas (Bongaarts 2008), appears distinctly relevant to and consistent with concomitant program performance in Bangladesh. Several program trends provide consistent clues to the above

hypothesis: (i) a shift in contraceptive method mix toward less effective method, (ii) significant decline in new acceptance of effective methods, (iii) shrinking role of public sector in contraceptive service delivery, (iv) an increase in unmet needs, and (v) de-emphasis of outreach services.

Contraceptive method mix and its implication on fertility process: Contraceptive method mix, its pattern from mid-1970s to 2007 is reviewed (Annex Table 1). Since mid-1970s, there was distinct rise in the use of permanent methods mainly that of female sterilization which became the most widely used method. This may have played an important role in the rapid fertility decline during the 1970s and 1980s. Regrettably, however, during the decade of 1990s and thereafter, contraceptive practice trends took a turn towards use of less effective methods. For example, use of female sterilization which peaked at 41 percent of modern methods of modern method in 1989 slowly declined to only 12 percent in 2007.

Overall, practice of more effective methods, including sterilization, decreased from around 50 percent of all modern method users in 1989 to around 15 per cent of all modern methods in 2007, whereas that of oral pill increased from 41 percent to 60 percent of all modern methods during the same time (NIPORT 2009). A gradual decline in the percent users of sterilization, when there was a simultaneous increase in the proportion of women who would like to permanently limit their child bearing, but were not using any contraception clearly implies decreased access to these methods. These changes, which should be attributed to a diminishing role of public sector in family planning service provision, surely played an important role in resultant fertility impact of contraceptive practice. Contraceptive method mix pattern in selected countries in the region (Annex Table 2) shows that use of long term and permanent methods (LAPM) in Bangladesh was lower as compared to China, India, Iran, Nepal, Sri Lanka and Thailand. Even Pakistan with a very low overall contraceptive prevalence had a higher use of sterilization.

Early marriage and early childbearing patterns in Bangladesh makes contraceptive method mix an important factor, because women on average have to spend a longer span of reproductive life requiring protection from unwanted pregnancy. As per 2007 Survey, median age at first birth was about 18 years with 51.0 percent having had the first birth by that age. By the age of 25 years women usually have 2 children when they still have about 25 years of reproductive life span remaining to be protected. Obviously, in this situation, methods with higher failure rates would disproportionately increase unwanted births. A comparative review of failure rates should make the contention clearer. For example, in theoretical term, during perfect use, oral pill would be a most effective method with a failure rate of only 0.3 percent (Table 2).

Table 2: Incidence of unintended pregnancy per year in typical use as compared to perfect use			
Method	Typical use	Perfect use	Continuation at one year
Oral pills	8.0	0.3	68
Condoms	15	2	53
IUD (Copper T)	0.8	0.6	78
Injectable	3	0.3	56
Implanon	0.05	0.05	64
Male sterilization	0.15	0.10	100
Female sterilization	0.5	0.5	100
Source: Hatcher et al 2007			

However, in typical use, taking into account, forgetfulness, incorrect and inconsistent use, failure rate of pill would reach as high as 8.0 percent (Hatcher et al 2007)². Therefore, if a woman plans contraceptive protection with oral pill from age 25 years when she already has had two children, at above failure rate, she would end up with two additional pregnancies.

Decline in new acceptance of contraceptives: Overall, contraceptive acceptance rates also bear out as a reason for the fertility patterns as well as the method mix. As shown in Table 3 (more detailed individual years' data is shown in Annex Table 3), new acceptance of effective methods rose steadily from 1973 until mid-1980s, number of sterilization rising from only 1,462 in 1973-74 to 552,424 in 1983-84 and thereafter dropping to only 30,397 in 2000-2001.

Year	Voluntary sterilization			IUD	Implant
	Female VS	Male VS	Total VS		
1973-1974	1,016	446	1,462	27,590	--
1978-1979	81,719	24,705	106,424	22,631	--
1983-1984	336,502	215,665	552,162	303,338	--
1988-1989	130,946	13,027	143,973	361,698	--
1993-1994	71,225	49,134	120,359	335,840	40,359
1998-1999	45,220	16,500	61,720	176,514	50,183
2000-2001	19,205	11,192	30,397	101,160	34,127

Note: Years are from July to June; source: Program statistics compiled by EngenderHealth, Bangladesh

Similarly, new acceptors of IUDs rose from 27,590 in 1973-1974 to 303,338 in 1993-1994 and, thereafter, numbers steadily declined to 101,160 in 2000-01. Obviously, this trend was reflected in subsequent survey findings of reduced use rates of these methods.

Shrinking role of public sector in service provision: A significant decline in public sector role as sources for contraceptive services, concurrently with a growing number of people obtaining services from private sector outlets, also explained for the change in method mix. A simultaneous shift in official policy away from outreach domiciliary services to clinic based services also reflected in a decline in the number of field workers' home visit. These trends resulted in a drop in percent of users who obtained pills from GOB sources from 61.4 in 1996-97 to only 29.6 in 2007 (Al-Sabir 2008). These findings provide, at least partly, plausible explanations for recent downslide of program effectiveness including the shift from more effective to less effective methods. An aid memoire jointly prepared by the World Bank and its development partners remarked "*Between 1997 and 2004, the share of public sources in contraceptive provision declined from 74 percent to 57 percent largely due to the diminishing role of the government's outreach programme*" (Haq 2005).

As the BDHS 2004 Reported "*One of the major controversial aspects of HPSP was the proposed transition from outreach or domiciliary family planning services to static community clinics (CCs). In the confusion surrounding this issue, the public sector lost a substantial share of family planning service provision, very little of which was picked up by the CCs. Household visits for family planning by GOB fieldworkers have fallen dramatically since the mid-1990s*" (NIPORT et al 2004).

² These data were based on large studies conducted in USA under National Surveys of Family Growth (NSFG) in 1995.

Regarding the community clinics, the above World Bank aid memoire noted “*the intention to increase the delivery of services through the CCs failed*” (Haq 2005).

The World Bank Country Director Christine Wallich, in a letter to Health Secretary also noted “*We are concerned at the decline in share of the public health services delivery and insufficient level of transfers of public health subsidies to the poor.*”

Since public sector is the major source for longer term and permanent methods, shift in source of services appears consistent with decreased use of effective methods. As noted above, while outreach system was de-emphasized, the proposed alternative, that is community clinical outfit, as noted above, did not actively replace vacuum created by stopping of the outreach system as anticipated. There are several possible reasons for failure of the community clinic strategy. Clinical service system envisaged under the given administrative structure lacked accountability, with no viable mechanism to oversee its implementation and to ensure physical presence of clinical staff. In retrospect, it now appears clear that too much stake was put on the community clinic system, without gaining sufficient prior experience to justify stopping outreach services prematurely.

c. Demand factors, unmet needs

Unmet needs for fertility regulation, defined as “fecund women who are currently married and say that they either do not want any more children or that they want to wait two or more years before having another child, but are not using contraception”. As Table 4 shows, unmet needs fell steadily from 18.2 percent in 1993-94 to 11.3 in 2004 implying that unmet needs were partially met by services offered by the program. Subsequently however, as found in BDHS 2007, unmet needs increased considerably from 11.3 percent in 2004 to 17.5 percent in 2007.

	BDHS 1993-94	BDHS 1996-97	BDHS 1999-00	BDHS 2004	BDHS 2007
Unmet needs – non-users (A)	18.2	15.7	15.3	11.3	17.5
Expressed limiters	9.0	7.9	7.3	6.2	10.8
Expressed spacers	9.2	7.8	8.0	5.1	6.7
Met needs – users of modern methods (B)	36.2	41.5	43.4	47.3	47.5
Total needs – users + non-users (A+B)	54.4	57.2	58.7	58.6	65.0

Source: NIPORT et al 2009 reporting from various surveys from 1993-94 to 2007

Most interestingly, the proportion of “expressed limiters” who wanted to terminate childbearing altogether, which earlier declined from 9.0 percent in 1993-94 to 6.2 percent in 2004, thereafter rose to 10.8 percent in 2007. Trends in unmet needs are important indicators to show, in one hand, program’s success or failure in creating access to contraceptive services and, in the other hand, scopes and opportunities that exist for future policy options. The above trends appear to show diminishing access to contraceptive services, especially for permanent methods, as indicated by a greater proportionate increase in the expressed ‘limiters’ as compared to ‘spacers’, 74 percent as compared to 54 percent. This clearly points to the policy need to expand access to permanent methods. Based on a finding of BDHS 1996-97 that “about one third of births in the three years prior to the survey were reported to be unplanned – 20 percent were mistimed and 11 percent were unwanted”, it was concluded:

“If unwanted births could be eliminated altogether, the total fertility rate in Bangladesh would reach replacement level of 2.1 births per woman instead of actual level of 3.3” (Mitra et al 1997).

Regarding intended future use, 70 percent of non-users expressed intention to use contraception in future which also reflects on the extent of unmet needs (BDHS 2007). Conventional measures of unmet needs often does not take into account use of inappropriate and less effective methods or cases of pregnancies arising from method failure, which further emphasizes the use of long acting and permanent methods. As past experience suggest demand for fertility regulation is likely to grow with improved access to services as well as with social and economic development, which should be taken into account while assessing scopes and options.

Wanted fertility measure, based on questions if births during the preceding 5 years were planned (wanted then), mistimed (wanted, but at a later time) or unwanted (wanted no more children), shows that total wanted fertility rate (TWFR) was 2.0 in 2004 and 1.9 in 2007 as compared to conventional total fertility rates (TFR) of 3.0 and 2.7 respectively (Table 5).

	BDHS 2004		BDHS 2007	
	TWFR	TFR	TWFR	TFR
Khulna	1.9	2.8	1.5	2.0
Rajshahi	1.7	2.6	1.7	2.4
Barisal	1.7	2.9	1.8	2.8
Dhaka	1.9	2.9	1.9	2.8
Chittagong	2.3	3.7	2.1	3.2
Sylhet	2.9	4.2	2.4	3.7
Total	2.0	3.0	1.9	2.7

Source: BDHS 2004 and BDHS 2007

Based on these findings, it has been concluded in the BDHS 2007 Report “*This means that if all unwanted births could be eliminated, the TFR would drop below replacement level of fertility (2.1 children per woman)*”.

d. Early child bearing, teen-age fertility

Fertility control effort in Bangladesh is constrained by early child bearing practices, which showed only small change during the past decades. For example, number of births per 1,000 women aged 15-19 years is 72 in Bangladesh, which compares to only 13 in Malaysia, 18 in Iran, 30 in Sri Lanka, 40 in Indonesia, 46 in Pakistan and 68 in India (UNFPA 2009). The high teen-age fertility partly arises from early and universal marriage. Age at marriage in Bangladesh is lowest in the region. Nearly half the women 15-19 years of age in Bangladesh are ever married as compared to only 6.9 percent in Sri Lanka, 8.5 percent in the Philippines, 17.4 percent in Thailand, 24.9 percent in Pakistan and 34.5 percent in India. Asian countries, where replacement fertility was achieved, have a much higher age at marriage. Because of the young age structure of the population, teenage mothers share 30 percent of all births. Even though there was some postponement of 2nd and 3rd births when many couples adopted family planning after the first birth (the so-called “tempo effect”), there was no significant rise in age at marriage for women, or in age at first birth. Consequently, women under age 30 account for 75 percent of all births. The need to protect a longer reproductive life span, arising from low age at marriage and early child bearing practices, underscores the importance of more effective methods.

Probable role of other proximate determinants of fertility, such as postpartum infecundity, age at marriage and pregnancy termination, in recent fertility trend has not been precisely defined yet. As

shown in Table 6, for example, median duration of postpartum amenorrhea steadily decreased from an average of 10.3 months in 1993-1994 to 5.8 months in 2007 (NIPORT 2009).

Year	PPA
1993-1994	10.3
1996-1997	8.4
1999-2000	7.9
2004	6.1
2007	5.8
Source: NIPORT 2009	

The declining practice of breastfeeding, with reduced the fertility reducing impact of postpartum infecundity, partly offset the program's impact. Notably, the duration and intensity of breastfeeding practices was all along the most dominant factor in determining fertility level until 1990s when contraceptive practice overtook as the most dominant factor (Islam et al 2002). Pregnancy termination by menstrual regulation has perhaps played an important role in the fertility decline process. In fact, its role as a back up to deal with contraceptive failures has been significant.

e. Regional variation

An important policy issue emerges from the wide variation in the level and trend of fertility change, as well as contraceptive practice, between different regions (Table 7). Fertility level varies from a TFR of only 2.0 in Khulna to 3.7 in Sylhet and contraceptive prevalence varies from a low 32 percent in Sylhet to 65 percent in Rajshahi. Wide differential is also seen in family size desire. More than half the women in Sylhet and Chittagong regions desire three or more children compared to only 22 percent and 26 percent in Khulna and Rajshahi respectively.

Regions	TFR	Contraceptive practice	% desire 3 or more children
Khulna	2.0	63.1	22
Rajshahi	2.4	65.9	26
Barisal	2.8	56.3	38
Dhaka	2.8	56.4	34
Chittagong	3.2	43.9	51
Sylhet	3.7	31.5	56
Bangladesh	2.7	55.8	
Source: BDHS 2007			

The two high fertility regions (Sylhet and Chittagong) are also widely known as socially conservative and culturally orthodox. They also show greater gap between their desired family size and actual family size possibly reflecting on socio-cultural barriers to contraceptive practice.

f. Current program performance and prospect for change:

A review of more recent program performance shows that, after a decade of low performance, there is a turn around in the numbers of new acceptors of long term and permanent methods. As noted earlier in Annex Table 1 (also Table 8) numbers of new acceptor of selected more effective methods was lowest in the year 2000-2001. Thereafter new acceptance rose steadily, with total sterilization rising from only 30,397 in 2000-01 to 216,400 in 2008-09 and IUDs rising from 30,397 to 330,709 during the same time.

Year	Voluntary sterilization			IUD	Implanon
	Female VS	Male VS	Total VS		
2000-2001	19,205	11,192	30,397	101,160	34,127
2001-2002	28,974	22,364	51,338	161,679	57,876
2002-2003	32,761	43,203	75,964	181,762	66,163
2003-2004	52,132	41,839	93,971	195,018	68,307
2004-2005	83,627	60,645	144,272	208,769	105,958
2005-2006	71,133	52,658	123,791	257,915	74,871
2006-2007	100,571	91,486	192,057	222,259	13,812
2007-2008	105,787	92,890	198,677	236,960	177,351
2008-2009	115,754	100,646	216,400	330,709	86,720
2009-2010 *	51,155	70,804	121,959	86,359	5,324

Note: Years are July-June, Program statistics compiled by EngenderHealth, Bangladesh,
* = numbers under 2009-2010 are for 4 months (July-October)

A small decline in fertility between 2004 and 2007 may perhaps be attributed to the above increase in contraceptive acceptance. Since permanent methods do have a cumulative effect greater impact would be expected in future, especially if this rising trend continues.

A Proposed Path to Population Stabilization

In view of an earlier conclusion that “*if all unwanted births could be eliminated, the total fertility rate in Bangladesh would reach replacement level or below replacement level*”, it appears feasible to achieve population stabilization without losing the human rights perspectives as committed at the International Conference on Population and Development in 1994. The existing unmet needs justifies making family planning services as the most priority focus in population policies. Policies should aim at, first, expanding access to safe, effective and affordable contraceptive services, secondly, improving reproductive health, and thirdly, implementing social and economic measures that would generate further demand for fertility regulation.

Scopes for expanding family planning services

Considerable opportunities exist to improve program performance by focussing on expanding access, improving quality of care, creating awareness of benefits of newer generation methods through communication support and making special efforts in low performing areas.

a. Selected method specific actions

Within the broader principle of equal choice, in Bangladesh context, a special emphasis on more effective methods is legitimate. The ICPD-POA recommended policies that ensure: “*...informed choices and make available a full range of safe and effective methods...*” (UN 1995). Experts reviewing Bangladesh context emphasized that “*programs for sterilization need to be given renewed priority to improve the effectiveness of the method-mix*” (Islam et al 2002). As also noted by Bongaarts “the wide availability of **effective** methods through the public or private sector is required to achieve high levels of effectiveness” (Bongaarts 2008). Following method-specific strategies are recommended to reach an effective and desirable method mix.

(i) Promote use of IUDs: Modern IUDs, such copper T 380A and hormonal IUDs, are greatly more effective and safer as compared to the older generations such as Lippe’s loop. Regarding low use of IUDs, it has been concluded “misperceptions about safety of the IUD help explain low rates of use in many countries” including Bangladesh (Salem et al. 2006). This misperception has clearly originated from old

unpopular IUDs in the 1960s and 1970s and their delivery under poor and inadequate service conditions. It may be noted that IUDs are quite popular in Muslim countries. For example, as shown in Annex Table 2, rate of IUD use, as percent of eligible couples, is 49.7 percent in Uzbekistan, 36.5 percent in Egypt, 27.6 percent in Tunisia, 25.7 percent in Syria, 24.8 percent in Palestinian territory and 23.6 percent in Jordan as compared to only 0.9 percent in Bangladesh (PRB 2008). The new IUDs are almost as good as sterilization with the added advantage of being reversible. For example, WHO sponsored multi-centred studies have found failure rate of copper T 380A at 0.4 percent which is comparable to that of sterilization (UNDP et al. 1997). Many experts in the field believe that IUDs are the most under utilized potential in the contraceptive field and, if promotional actions are taken, IUDs can play a major role in attaining replacement fertility. IUDs would likely be more acceptable if only facts are known widely. Notably, recent changes to *WHO guidelines now allow women with STIs other than gonorrhoea, Chlamydia or purulent cervicitis to have IUDs inserted* (WHO 2004). Minor RTIs such as bacterial vaginosis, trichomoniasis, moniliasis, non-specific cervicitis, do not constitute a contraindication for IUD insertion. Long-term studies showed that risk of pelvic inflammatory diseases (PID) was comparable to that in population at large (Salem 2006).

To make IUDs popular it is essential to (a) prepare well-designed, innovative strategies to communicate above facts and to create a new image of IUDs; (b) strengthen counselling efforts to dispel doubts and remove misperceptions about IUDs; (c) improve quality of clinical services, especially that for aseptic precaution, proper screening for contraindications and use of correct insertion techniques; (d) revise clinical indication to IUD use in conformity with recent WHO's eligibility criteria (see explanations below); and, thereby, (e) create a cadre of satisfied users to act as peers to inform others.

Concern has been expressed regarding a high incidence of reproductive tract infections (RTIs) which may constitute contraindications for IUD use. A review of the patterns of RTIs (Annex Table 5A & 5B) defines clinical measures necessary. In fact, IUD acceptance offers a standard clinical screening which is an excellent opportunity for detection and treatment of RTIs among potential users who otherwise would not come for such screening. Moreover, as noted above, not all RTIs should contraindicate IUD use. It should however be useful to undertake further research to define the current incidence and pattern of RTIs as a basis to formulate a simpler standard syndromic management regime for RTIs.

(ii). Promote sterilization: As per recent program performance, number of new acceptors of sterilization is already on the rise. Of a particularly positive note is a proportionately greater rise in male sterilization, which may be attributed to a wider use of no-scalpel vasectomy (NSV). Because of high unmet needs, especially that for complete termination of family size, easier access to quality services, should increase acceptance of sterilization further. Wider involvement of doctors, in both private and public sector, in sterilization services is necessary, by making it financially appealing for them. Further expansion of no-scalpel vasectomy (NSV), together with well-designed communication materials focussing on prevailing doubts about its safety and confusion regarding possible effect on masculinity, can promote acceptance of male sterilization further. To make it more user-friendly, with easy accessibility, names of centres providing sterilization should be enlisted and publicized, with hours of service availability.

(iii). Make emergency contraception more widely known and available: Use of emergency contraceptives (ECs) after unprotected sexual exposure can prevent unwanted pregnancy. However, since it must be used within a short window of only 3-5 days after an unprotected sexual exposure, without prior knowledge of the method, its use would unlikely to be even thought of. A recent study shows that only 23 percent of wives and 26 percent of husbands knew about emergency contraception, while only 14 percent of wives and only 12 percent of husbands had specific knowledge of emergency contraceptive pills (Khan et al 2009). Only 1.3 percent had ever used ECPs. Given that major sources of the knowledge were relatives and spouse, effectiveness of that knowledge can be doubted. To promote use, its knowledge must be widely disseminated, its availability, sources for supplies and use instructions expanded. An innovative idea can be to display informative posters on walls for all reproductive health clinical facilities. Several commercial brands of emergency pills are available in the market which should be known to family planning service providers. Family planning service providers training should include how standard dose oral pills can be used as ECs. Specific communication strategies are needed to disseminate the relevant knowledge. Another possible option to widen use of EC would be to offer it through social marketing

channels, which should receive serious consideration. Knowledge of copper bearing IUDs as an effective emergency contraception should also be promoted.

(iv). Introduce newer generations of implants: Recent introduction of Implanon, which have only one rod as compared to six in Norplant, would likely make implantable devices more popular. Consideration should also be given to introduction of Sinoimplant (II) which, with four years of protection, would be more convenient and with less than half the cost as compared to any comparable western product, would be an affordable substitute, for longer term use. It may be noted that Sinoimplant (II) is gaining increasing popularity in recent years in several countries including China and Indonesia (Ringheim and Gribble 2009).

(v). Improve contraceptive effectiveness by strengthening client-provider interaction: Notably, discontinuation of contraceptive use is not only high, but, in fact, has increased in recent time between 2004 and 2007 (table 9).

Table 9: Rates of discontinuation of selected contraceptive methods after 12 months of use		
Method	BDHS 2004	BDHS 2007
Pill	46.5	54.2
Injectables	48.7	53.0
Condoms	71.5	75.7
IUDs	--	32.7
All methods	49.5	56.5
Sources: BDHS 2004 and BDHS 2007		

Regarding cause of discontinuation, as shown in BDHS 2004 (note: cause specific break down of discontinuation pattern was not investigated in BDHS 2007), side effects and health reasons were among the most common as reasons for discontinuation, with 20.8 percent for pills and 33.6 percent for injectables. This pattern of discontinuation, especially the rising trend in recent years, requires strengthening of inter-personal communication and clinical counselling to dispel doubts and confusion about the methods. Stoppage of home visits by outreach workers may have contributed to increased rates of discontinuation. Contraceptive effectiveness can be improved by strategically designing counselling efforts to address reasons for discontinuation, and by offering appropriate alternative method as and when necessary. Since pills are mostly obtained from private sources, sales person should receive written instruction on what to advice in case of problems and side effects.

(vi) Promote use effectiveness of injectables: In spite of a decline in Injectable use rate from 9.7 percent in 2004 to 7.0 percent in 2007, it is still popular second to only oral pills. BDHS 2007 data on intended future use showing 15 percent of non-users expressed interest to use injectables implies, in one hand, that many of them were unable to access services and, on the other hand, that improved access to services should raise Injectable use significantly. To meet the needs of expressed future users, services should be expanded, supplies should be regular and counselling should be strengthened. Besides above actions, introduction of simpler technique can allow wider use of the method. Recently developed Depo-SubQ Provera (DepoSQ), which has been specially reformulated for administration by subcutaneous route, can be provided by community based workers (Landey and Richey 2009). The new device is already available in USA and several European countries. A still newer innovation is awaiting introduction soon which provide DepoSQ in pre-filled uninject single syringe.

(vii). Improve quality of and access to menstrual regulation services: Demand for menstrual regulation (MR) has all along been very high in Bangladesh since liberation and, in fact, MR has played an important role in preventing many abortion related maternal mortality as well as unwanted births. Presently, high use rate of less effective methods, involving risk of method failures, makes MR an important back-up method to minimize unwanted births. Curiously, there is no indication that its use is rising. As quoted in BDHS 2007 Report “Rates of ever use of MR increased gradually between the years 1996-97 and 2004 BDHS surveys” (NIPORT 2009). Since 2004, ever use of MR has remained nearly static, rather with a small decline (Table 10).

Age	BDHS 2004	BDHS 2007
15-19	1.4	1.3
20-24	3.6	3.6
25-29	7.1	5.8
30-34	8.6	8.2
35-39	9.0	8.6
40-44	7.4	7.9
45-49	5.9	5.2
Total	5.9	5.7

Source: BDHS 2004 and BDHS 2007

Because the indicator is ‘ever use’, due to averaging effect, even a small change would mean a greater decline in recent years. This, together with a rise in unwanted births in recent years, provides suggestive evidences that access or quality of MR services has fallen. A recent report estimates number of MRs performed annually at 400,000 to 500,000 (Hossain 2008). It is however generally believed to be underestimated. Even though MR is supposed to be free in public sector clinics, only 11 percent received free services. All others had to pay even in public sector facilities, with around 40 percent paying more than 500 Takas per service (Akhter 1998). This amount would pose financial constraint for many poor women limiting accessibility. On the other, providers receiving payments for MR services, which were supposed to be free, are inclined not to report the cases, leaving most cases unreported (Khan 2000). There are an unknown number of MR cases performed by untrained providers in unsafe environment on clandestine basis, many of which may in fact end up with complications representing an important health problem. Wider access to safe and quality services should prevent this health problem.

The existing gap between total fertility and wanted fertility indicates the potential for increased use of MR if safe services are available more widely, which in turn would significantly impact health and fertility. Importance of MR services is underscored by the fact that an analysis of in 170 countries found that none had achieved replacement level fertility without access to safe services for pregnancy termination (Campbell and Adams 2001). Possible scopes for action are expanded availability, improved quality of care and improved provider skill and technical competence through training and monitoring. Besides its impact on fertility, greater access to safer MR services can prevent clandestine abortion and health complications arising out of that eventually improving maternal health and saving hospital resources (Khan et al. 1984). An institutional mechanism should be established to monitor and also assure quality of its services. The bar imposed on NGOs receiving USAID funding requires that Government assume a greater role and responsibility in MR program. Government may organize a non-AID NGOs consortium supported by donors who have a liberal policy on MR services to coordinate and promote its services.

(viii). Ensure continuity of commodity supplies: The high method discontinuation is known to be at least partly due to inadequate or irregular supplies and temporary stock-outs. Therefore, regular supplies of commodities must be ensured at every service point. To ensure regular channels to all service points and to avoid small pockets of temporary unavailability, it may be useful to establish a reproductive health commodity supply (RHCS) monitoring cell under the logistics system that will keep a watch on stock levels at peripheral points.

(ix). Define problems through research: The existing method acceptance pattern is inconsistent with expressed demand structure implying insufficient understanding of the methods and their implication. Therefore, besides actions proposed above, scientific efforts, including operations research on quality of care, acceptability studies are needed to identify method-specific issues and problems. Clinical studies are needed to define the incidence and pattern of contraindications and gaps in clinical practices and technical competence. For example, a useful study can be undertaken by using interdisciplinary approach in methodology to define existing incidence and pattern of reproductive tract infections (RTIs), current

practices in clinical procedures in IUD insertion, MR procedure and antenatal care, which would greatly contribute to improved reproductive health as well as increased method use.

b. Strengthening of community level services including community clinics

Importance of bringing services closer to people is underscored by a finding in Bangladesh that couples were two and a half times less likely to use contraception if obtaining a method would require a travel time of 30 minutes or more from home (Levin et al. 2000). Priority attention is therefore needed to make the existing community clinics function at an optimum level of their projected capacity. Creation of a new cadre community health care provider (CHCP) has been announced to manage and run the community clinics (Rahman 2010). Accordingly, plans are underway to recruit 13,500 married women with higher secondary education and computer literacy in this new cadre (Ujjal 2010). Besides bringing services nearer to door-step, the community clinics are likely to increase the overall role of public sector in contraceptive services.

Success of the clinics depends on the appropriate training and supervision of this cadre. Several propositions in this regard are (i) strengthening of supervision and guidance; (ii) designing and instituting a system of accountability for the clinical service providers; (iii) contracting out some selected clinics, especially those located within operational reach of, to some reputed NGOs for operational management and supervision; and (iv) making community leadership responsible to oversee a few selected clinics on experimental basis. In reference to premature stoppage of outreach services by field workers, as indicated from BDHS 2007, likelihood of using modern contraceptives was found to be 1.6 times higher for those who were visited by a field worker. Therefore consideration should be given to restore domiciliary level outreach services at least until community clinics replace their needs and at least in selected low performing conservative areas. In the mean time more scientific studies and reviews should be undertaken to determine their future role.

c. Strengthening of private service outlets

Growing use of private sources for contraceptive services calls for strategic efforts to strengthen technical capacity of these sources. The reported high discontinuation from health problems (20.8% for pills and 33.6% for injectables) can be partly attributed to inadequate or lack of counselling for supplies received from pharmacies and retail stores. New acceptors are especially vulnerable to insufficient information and therefore remain unprepared to deal with side effects. For this purpose, provision should be made for better, updated information and advice on use instruction in case of methods. These efforts should be in conformity and coordinated with the technical support system in the mainstream program. Because of privacy and convenience in obtaining supplies, private sources' role is likely to further increase. Adequate provision is needed for instructional materials and technical manuals to pharmacies and retailers. Pharmacist curricula in the universities should be reviewed and updated to include newer generation of contraceptives and new scientific evidences influencing user instructions. Such policy updates should be undertaken periodically on regular basis and as warranted by new developments.

d. Managing an appropriate system for financial compensation

Even though compensation for providers and acceptors were used and abused in the past, and the payments were also seen as to conflict with 'informed choice', there are sufficient justification for keeping a suitably designed compensation structure to promote more effective, longer term and permanent methods. Payments to clinical providers is particularly important because the existing health system, by default, allows the health care providers in government facilities to practice privately and earn extra money which necessitates that compensation amounts are financially competitive with what they would otherwise earn. However, amount of compensation payments is critically important because, in one hand, unnecessary high amount can invite abuse and fraud

or allure insufficiently motivated acceptors just for money, which is the main argument on its conflict with ‘informed choice’. On the other hand, lower amount may be insufficient to compensate for loss of wage and transportation of acceptors and may also not be financially competitive for the clinical providers.

Possibility of abuse and fraud can be minimized if the amounts paid to acceptors and providers are just enough to compensate for their lost time and travel for service, not too high or too low. A scientific monitoring system should be instituted for periodic review of amounts of compensation. Recently, the compensation/payment amounts, including that for providers and acceptors, has been reviewed and revised. Possible impact of this change on program performance and possible abuse remains to be seen.

e. Improving quality of care

Improvement of quality of care is essential to reduce method discontinuation, frequent switching of methods, promote acceptance and, thereby, promote effective use. Improvement of quality of care remains as the major frontline for the program to focus on if further gains in contraceptive prevalence are to be achieved (Khan 2000). Two strategies are important. First, improved provider skills in counselling can effectively address issues such as appropriate choice of methods, knowledge to deal with side effects and encourage continuity, and facilitate cross referrals as and when necessary (Bruce 1989). Secondly, improved technical skills, especially for aseptic precaution and screening for contraindication, can reduce side effects and complications and, thereby, promote method continuation and effectiveness. It was observed in the past that even simple confusion or doubts about any contraceptive could affect acceptance of the method or continuity of its use. Given the method mix trend, efforts should focus on “raising the awareness and availability of under-used methods, overcoming provider biases for and against certain methods, and strengthening provider’s counselling skills” (UNFPA/PATH 2008). An often neglected aspect of quality of care is provision of unbiased information, including those on expected side effects and possible complications. It must be noted that, quality of care principles are most effective when access to all methods is equal.

f. Focussing communication strategies

Communication efforts in support of family planning programs and services have been grossly inadequate or unfocused in recent years. It is a misnomer to say that knowledge of family planning is universal because, in many instances, knowledge of a method is incorrect, unsupported by sources of availability, and often shrouded by doubts, confusion and misperceptions. There is also wide-spread ignorance regarding safe motherhood and child care needs. A strong relationship between education and fertility behaviour is clearly understood. However, as shown in Table 11, educational attainment is unrelated to total wanted fertility meaning it does not influence the fertility motive. Quite clearly, therefore, education influence fertility by empowering women to access and effectively use fertility control means.

Table 11: Wanted and total fertility and the difference by educational attainment			
	TWFR	TFR	Difference (%)
No education	1.9	3.0	59
Primary incomplete	2.0	2.9	45
Primary complete	1.9	2.9	53
Secondary incomplete	1.9	2.5	32
Secondary complete or higher	1.8	2.3	28
Total	1.9	2.7	42

Source: BDHS 2007

In theoretical term, the gap between wanted fertility and total fertility can be eliminated by innovative communication approaches and education programs. Properly planned approach in behaviour change communication (BCC) can be an essential tool to translate policy intents into public acceptance. However, for effective BCC strategy, it is necessary to identify the extent and pattern of ignorance, misinformation, doubts, rumours, confusion and, accordingly, design specific communication materials. A few areas of essential communication support are to disseminate appropriately designed information that would (a) improve knowledge of methods, including their benefits, side effects, use instructions, especially those for more effective methods such as IUDs and sterilization; (b) dispel existing doubts, misinformation and rumours about contraceptives; (c) popularize the community clinic system; (d) create awareness about health and social implications of early marriage and early child bearing; (e) promote social equity for and participation of women in all walks of life; and (f) create social awareness about maternal and child health issues. To reinforce a message, BCC strategy should use both mass media (TV, radio, news paper, posters, bill boards) as well as inter-personal communication, at outreach and in clinical settings (Shane 2006). To promote inter-personal communication, it is necessary to reinstate outreach services at least in selected areas and make pointed efforts to activate the community clinics. As efforts are made to strengthen clinical and outreach services, simultaneously, method-specific and issue-specific strategies should be designed to promote client-provider interaction.

g. Implement region-specific strategies

Wide regional variation in program performance calls for special attention to diverse regional issues. As noted earlier, some of the low performing areas are also widely known as socially conservative and culturally orthodox. Socio-cultural factors that affect family size norm or act as a barrier to contraceptive practice are uniquely different in magnitude and nature between regions, which calls for formulation of region-specific micro-strategies. In this respect, the basic principles underlying policy proposition *“Decentralize population activities and ensure the people’s participation in population, nutrition and health activities, decentralization of services through devolution of power to the upazila level and further below”* appears sound and should be acted upon (GOB 2004). However, such decentralization should be planned carefully. While decentralization is appropriate to address the local issues and problems, there must be back-up support for technical oversight and quality assurance to be applied uniformly without compromise. In addition, centrally or regionally instituted technical expertise should be maintained to assist in micro-level problem solving. For example, conservative, religious issues – mostly arising from ignorance about religious teachings – may be an important factor in Sylhet. Accordingly, communication strategies, both at mass level and inter-personal level in that region should be specially designed in the regions. Recent surveys and selected research findings provide regional data on social, economic and cultural factors that should be useful in identifying region-specific issues. The findings of the BDHS 2007 report that by and large the poorer section of population obtain contraceptive services from public sector implying the need for emphasizing the role of field workers in selected areas inhabited by poorer population such as urban slums.

h. Strengthen technical support

A technically competent support system is needed to monitor quality of care on a regular basis, including clinical procedures, aseptic precautions, counselling practices, follow-up arrangements, and availability of equipment and supplies. Watching on if and how clinical staff manages emerging problems on side effects and rumours is important to ensure continuity and client satisfaction. Unless identified timely and addressed promptly, even minor issues and problems may make a method unpopular. In conformity with the policies proposed above, it would be necessary to redefine and reorient human resource development needs, with provision for training

and re-training of all providers and supervisors at all levels with curricula that are revised and re-oriented in line with above strategies.

Reproductive health

Even though the primary focus of the paper is population and family planning, reproductive health issues are so closely linked and interactive with family planning and population that the relevant issues are briefly reviewed, and due attention to policies on maternal health, infant and child health and adolescent health is solicited, preferably within an integrated approach, to make family planning more widely acceptable.

a. Safe motherhood

Safe motherhood programs have undergone significant transition in the recent decades with emergence of new innovative strategies to address the problems. For example, after nearly two-decades of unsuccessful trial with trained traditional birth attendants (TBAs), in 1997 an Inter-Agency Consultation on safe motherhood in Colombo acknowledged that policies to “Ensure Skilled Attendance at Delivery” as the single most critical intervention for safe motherhood” (Starrs 1997). Accordingly, this new strategy has been adopted in Bangladesh. However, in spite of some improvement in coverage, as of 2007, only around 18 percent of births are attended by a medically trained provider (BDHS 2007). Continued efforts are needed to train midwives and other medical personnel and equip facilities to improve safe motherhood. Another important strategic recommendation emphasized at the above Inter-Agency Consultation was to “delay marriage and delay first birth”.

Noting that pregnancy complications can occur unpredictably and “during pregnancy, any woman can develop serious, life-threatening complications”, the Inter-Agency Consultation recommended that all pregnant women must have access to emergency obstetric care (EOC) if and when necessary. Antenatal care would focus on management of pregnancy and planning and preparing for child birth. To address emerging problems referral arrangements needs to be made for and provision of EOC. The role of community and family is critically important to ensure timely decision on referral for EOC. Therefore, towards preparedness for safe birth, during pregnancy, women and family members should be educated on early detection of danger signs and preparedness for taking quick decision for referral and prompt transfer to EOC facilities. The EOC facilities in turn must be organized to provide doctor’s attention on immediate basis. Timely performance of caesarean section when necessary in case of obstructed labour can prevent many long-term consequences, including vesico-vaginal fistula and urinary incontinence. A study investigated 4 sub-components of delays in seeking treatment for a life-threatening complication and found that, on average, it took 2.8 hours to recognize a complication followed by an average wait time of less than 2 hours on decision making. Thereafter, most patients reached a facility within an hour and two-thirds were seen immediately and nearly all within an hour (NIPORT et al 2003). The study emphasized the need for “interventions for recognition of complications”. Safe motherhood programs in Bangladesh have already incorporated strategies to offer EOC at two levels – basic and comprehensive – available and accessible at several tiers of service points, including hospitals and health centres. Since early detection and timely referral has been critical for effective utilization of EOC services, community mobilization has been proposed.

Because caesarean section is the single most important intervention that prevents long term maternal morbidity it is often used as a proxy indicator of access to EOC. As per 2007 DHS, 7.5 percent of all births were delivered by caesarean section. Compared to overall coverage of births by medically trained personnel (18 percent) this would normally appear a reasonable access.

However, distribution by income shows unequal access to both deliveries attended by medically trained personnel and caesarean section.

Table 12: Percent deliveries attended by a medically trained person and percent delivered by caesarean section		
Wealth quintile	Delivered by medically trained personnel (%)	Delivered by caesarean section (%)
Lowest	4.8	1.8
Second	6.7	1.9
Middle	12.1	3.3
Fourth	22.5	8.5
Highest	50.9	25.7
Total	18.0	7.5
Source: BDHS 2007		

As shown in Table 12, poorer sections of people have much less access to both medically trained personnel at delivery and to caesarean section which is an indirect indicator of access to EOC. This lack of equity in access to safe motherhood services pose as an important challenge to consider viable policy options that would create equitable access to health facilities.

Another recent intervention came out of a WHO hosted technical consultation in 2006 on Perspectives on Postpartum Haemorrhage Initiative (PPPHI) designed to reduce postpartum haemorrhage (PATH 2007). This involves (i) active management of the third stage of labour (AMTSL) by skilled attendant or, when that is not an option, (ii) administration of an uterotonic drug (oxytocin or misoprostol) by a trained health worker. In view of high incidence of postpartum haemorrhage in Bangladesh at 17.5 percent (Akhter 1996), the above intervention deserve due incorporation in the service structure. Based on new interventions a user-friendly manual should be prepared suitable for Bangladesh situation or, more conveniently WHO manual on recommended interventions may be adapted to local settings (WHO 2007).

b. Prevention of unsafe abortion and management of post-abortion complication

Prevention of unsafe abortion has been recognized by the ICPD-POA as an important and essential element of reproductive health. Pregnancy termination conducted under unsafe and unsanitary conditions may give rise to serious complications such as sepsis, uterine perforation, cervical laceration or even death (Khan et al 1984). Wider access to safe, affordable and effective contraception should be created to prevent unsafe abortion. Management of post-abortion complication deserves a priority attention as an opportunity to motivate clients to use contraception in future. Provision should be made for management of incomplete abortion by vacuum aspiration services.

c. Infant and child survival

Child survival has improved significantly in the recent years, which can be attributed to successful immunization programs, wider use of oral rehydration solution (ORS), wider availability of potable water and sanitary latrines. Recent studies have also shown that son-preference has diminished in recent decades. However, child survival still remains as an important barrier to further decline in fertility (M. Islam et al. 2002). A possible reason could be the lag period between improved child survival and change in parental perception of the chance of survival of their existing children. While innovative communication strategy may be used to develop parental confidence in this regard, continued efforts are needed for further improvement in infant and child health. Besides continuing the effective immunization programs, efforts must be made to improve nutritional status, prevent diarrheal diseases, prevent and manage acute

respiratory infection and improve hygienic practices. A recent study finding that infant mortality can be reduced by 15 percent if 1,500 i.u. of Vitamin A is given to newborns opens another intervention opportunity to improve child survival (Anfi 2008). Similarly, personal hygiene of hand washing may be tried to prevent diarrheal diseases.

d. Adolescent health

As noted earlier, teen-age fertility in Bangladesh is very high which adversely affect their future life. Ideally, all adolescents should be mentally, psychologically and physically mature before they enter reproductive life to ensure that they act more responsibly in their fertility behaviour. Towards this objective, programs should focus on providing information to adolescents through public facilities, mass media, NGOs, as well as through in-school and out-of school youth activities. Information and communication should concentrate on life skills education including appropriate reproductive health and sex education. Innovative educational approaches, including peer counseling for youth and orientation for parents, should also be promoted. Population education in non-formal educational settings, vocational training institutes or youth clubs should also be strengthened. Parental counseling and community mobilization should be used to create social legitimacy in favor of sex education of adolescents. An important barrier to accessible services for adolescents is lack of positive attitude of providers which must be changed through proper training and orientation.

e. Integrated approach

An integrated service structure allows clients reach more services in one visit making them more acceptable with mutually reinforcing health impact. During the last three decades there have been administrative and structural changes several times on grounds of integration and separation, and it is undesirable to make any further structural changes. Integrated approaches have already been clearly adopted though most service components are not under one roof. Even without any further structural integration, there exist opportunities to promote the principles of integration through better coordination and cross referral between different components of reproductive health.

Policy interventions on social factors

Socioeconomic development was seen as a “key driver of fertility decline” during early demographic transition in the developed world (Bongaarts 2008). More recent fertility transition in many developing countries however showed that certain social indicators, such as education, women’s development, organized community efforts and legal reforms, can influence fertility even independent of any significant economic progress. Notwithstanding the need for economic progress, therefore, selective policy actions in social sectors – many such issues have already been considered on their own merit – needs to be pursued more vigorously. Most important among the social factors are the following.

a. Women’s perspectives

Improved status of women in the family and society is an important determinant in fertility decline process. Women’s economic and social roles – specially those requiring out-of-home activities – provide the motive, knowledge and power to prevent unwanted pregnancy and also positively contribute to economic progress. The UN Forum acknowledges that:

“ensuring gender equity and equality and empowerment of women depends in part on overcoming cultural, social and economic constraints that limit women’s access to education, as well as providing universal access to reproductive health services that allow them to control their fertility” (U.N. 2002).

Recognizing this interrelationship, Government has shown commitment to women's development as reflected in its development policies and program actions in all relevant sectors. A number of legal measures have also been taken, including Dowry prohibition Act (1980), Cruelty to women Act (1983), Family Court Ordinance (1985), Women and children repression prevention Act (1995) and Acid Offenses Prevention Act (2002). More recently, legal reform are being considered for equal rights of women to inherit property. Increased political role of women have been noticeable. The policy and program actions and legal reforms have created a favourable environment leading to considerable improvement in women's participation in social and economic activities with visible transformation in women's situation especially in urban areas. However, by and large women, especially in rural areas living in a conservative social structure, are still subjected to discrimination. Orthodox rural society, together with wide-spread ignorance shrouded by deep-rooted religious misconception, has been a limiting factor for women to play their share in the rural societies.

Further opportunities exist to achieve policy intents by: (a) efforts to create social support in favour of women's education, enhanced women's role in social, political and economic activities and women's participation in gainful employment, (b) social and legal measures to prevent violence against women, (c) culturally compatible, micro-level strategies to counter social and religious misconceptions (such as the one that lead to so-called "fatwas"), (d) enforcements of legal provisions to identify and change discriminatory provisions against women, (e) making provision for fixed quota for women in all walks of life, including political, economic and social sphere.

b. Education

Education, especially for women, is the single most important social factor which can remove superstition, ignorance and misgivings and promote family planning in one hand and create aspirations and opportunities in life, on the other hand, to influence family size desire and generate further demand. In recent years, there has been significant increase in school enrolment, especially that for girls, though socio-cultural and economic barriers still pose as major hindrance in retention of girl children in school. Innovative policies, such as provision of lunch, books and supplies, stipends, parental education and community mobilization, are needed to improve retention in schools. It is particularly important to retain girl children in schools until physical and emotional maturity to understand the implications of early marriage and early child bearing. Suitably designed population subjects need to be integrated in education curricula, including that for existing madrasha education system, and reviewed on a regular basis to ensure these are in conformity with correct interpretation of knowledge.

c. Age at marriage, early child bearing and adolescent health

Age at marriage in Bangladesh, as noted earlier, has remained very low with teen-age pregnancy rate at one of the highest in the world. Both these factors have been relatively un-responsive to program and policy actions and pose as major obstacles for fertility decline. As per BDHS 2007, 66 percent of women are married before 18 years, the legal age of marriage for women. Low age at marriage with early child bearing also bears important health and economic implications for the mothers and as well as for the children. Recommended options are: (a) Social and legal measures to enforce legal age at marriage. With new birth certification systems it should be easier to enforce legal provision now than ever before. (b) Behavior change communication (BCC) activities and public campaign to create social awareness in favor of allowing girls to become physically and emotionally mature before they are married. Innovative communication strategies should focus on health hazards of early child bearing (c) Education of girls as a means to keep

them busy. (d) Community based activities designed to encourage delayed marriage, delay in first birth as well as child spacing. (e) Adolescents health programs designed to enhance and create access to reproductive health and sexuality knowledge, counseling, services and supplies. (f) Re-assessment of current age at marriage law to explore possible options to increase it to 20 years.

d. Development of community institution

Sector-wide policies and programs may benefit from institution of a structure of community organization that would generate community consensus in favour of policies and programs. For the purpose, community facilities should be in place to facilitate meetings, promote exposure to media through provision of news papers, books, radios and television and, where possible, organizing cultural events. Once instituted, communities can be involved in vetting policies and programs including those on population. Such organized community efforts can be a powerful legitimizing force for raising literacy and education, girl's education, women's role in society, addressing maternal health needs (focusing on 3 delays), access to adolescent knowledge and services, awareness about health and social implications of early marriage and early child bearing.

References

- Al-Sabir, A., “*Determinants of Low use of Contraception*”, A power-point presentation based on BDHS 2007 preliminary Report, Dhaka 2008.
- Akhter, H. H., Chowdhury, M. E. & Sen. A., *A Cross-Sectional Study on Maternal Morbidity in Bangladesh*, Bangladesh Institute of Research for Promotion of Essential & Reproductive Health and Technologies, Dhaka 1996.
- Akhter, H.H., *A Study to Assess the Determinants and Consequences of Abortion in Bangladesh*, BIRPERHT Technical Report No 66, Dhaka 1998.
- Anfi, M., “*Improving the Odds: Research Offers Hope for Newborns in the Developing World*”, quoting research by Klemm and West, Johns Hopkins Public Health, Fall 2008.
- Bangladesh Bureau of Statistics (BBS), *Statistical pocket Book of Bangladesh 2008*, Bangladesh Bureau of Statistics, Dhaka, 2009.
- Bongaarts, J., 2008, “*Fertility Transition in Developing Countries: Progress or Stagnation*”, Studies in Family Planning, Population Council, New York, V.39, No. 2 June 2008.
- Bruce, J. (1989), *Fundamental Elements of Quality of Care: A Simple Framework*, Population Council Working Paper No 19, and Studies in Family Planning, 21(2):61-91.
- Campbell, M., Adams, K.. 2001. “*Is replacement level fertility possible without access to abortion?*” Poster for the annual meeting of the International Union for the Scientific Study of Population: Salvador, Brazil, 20–24 August.
- Cleland, J. (1994). *Fertility levels and trends in Bangladesh*, in J. Cleland et al. (ed.), *Bangladesh Fertility Survey, 1989, Secondary Analysis*, National Institute of Population Research and Training (NIPORT), Dhaka 1994.
- GOB (2004), *Bangladesh Population Policy 2004*, Ministry of Health and Family Welfare, Government of Bangladesh, Dhaka 2004.
- Haq, Naimul, *The Daily Star (front page)*, an English daily newspaper, Volume 5, No. 380, Dhaka, June 22, 2005.
- Hatcher, RA., Trussell, J., Nelson, AL., Cates, W., Stewart, F., & Kowal, D., *Contraceptive Technology: 19th Revised Edition*, Ardent Media, Inc, New York 2007.
- Hossain, A., *Mapping of MR programme in Bangladesh: Need emphasis on public-private collaboration*, Health & Rights, Vol 1, Issue 4, Oct-Dec 2008.
- Islam, A., Islam, M. and Chakroborty, N., 2002, “*Plateauing of Fertility Level in Bangladesh: Exploring the Reality*”, Dept of Statistics, University of Dhaka, Dhaka 2002.
- Khan, AR, Begum SF, Convington DL, Janowitz B, James S, Potts M (1984), *Risks and Costs of Illegally Induced Abortion in Bangladesh*. Journal of Biosocial Science, No. 16, (89-98) 1984.
- Khan, AR., *History of Menstrual Regulation in Bangladesh*, National Reproductive Health Profile of Bangladesh, World Health Organization, SEARO, New Delhi 2000.
- Khan, AR. (2000), *Quality of Care in Reproductive Health*, Presented at the Exchange Forum in Quality of Care, Seoul, 16-30 April 2000.

- Khan, T. I., Nahar, L. and Akhter, S., *Knowledge and Practice of Emergency Contraceptives among the Newly Married Couples in Bangladesh*, Bangladesh Institute of Research for Promotion of Essential & Reproductive Health and Technologies (BIRPERHT), Dhaka 2009.
- Landey and Richey, *Expanding Services for Injectables*, quoted in Ringheim, K. & Gribble, J., *Expanding Contraceptive Choice: Five Promising Innovations*, Policy Brief, Population Reference Bureau, Washington DC 2009.
- Levin, A., Bruce, C., and Khuda, B., *Demand for family planning services in rural Bangladesh: Effect of cash prices and access*, Paper presented at the IUSSP Seminar on Family Planning Programmes in the 21st Century, Dhaka, Bangladesh 2000.
- Ministry of Health and Family Welfare (MOHFW), Bangladesh 2004, “*Bangladesh Population Policy*”, Government of Peoples Republic of Bangladesh, Dhaka 2004.
- Mitra, SN, Al-Sabir A, AR and Jamil, K (1997), *Bangladesh Demographic and Health Survey 1997-1997*, NIPORT, Mitra Associates and Macro International, Dhaka December 1997.
- National Institute of Population Research and Training (NIPORT), ORC Macro, Johns Hopkins University, & ICDDR,B, *Bangladesh Maternal Health Services and Maternal Mortality Survey*, Dhaka, 2003.
- NIPORT, Mitra and Associate, and ORC Macro. 2005. “*Bangladesh Demographic and Health Survey 2004*”, Dhaka, Bangladesh and Calverton, Maryland [USA]: National Institute of Population Research and Training, Mitra and Associates, and ORC Macro.
- National Institute for Population Research and Training (NIPORT), Mitra Associates and Macro International, *Bangladesh: Demographic and Health Survey 2007*, NIPORT, Dhaka 2009.
- Oliveras. E., Johnston, H., Nahar, L., Chowdhury, ME., Sabir, AA., & Islam, MS., *Situation Analysis of Unsafe Abortion and Menstrual Regulation in Bangladesh*, International Center for Diarrheal Diseases and Research, Dhaka 2008.
- PATH, *Changing Global perspectives on postpartum hemorrhage*, Directions in Global Health, Vol 4, Issue 2 September 2007.
- Planning Commission (1974), *the First Five Year Plan*, Ministry of Planning, Government of Peoples Republic of Bangladesh, Dhaka 1974.
- Population Reference Bureau (PRB), *Population Reference Bureau, 2008 Family Planning Worldwide 2008 Data Sheet*, Washington DC 2008.
- Population Reference Bureau (PRB), *Population Reference Bureau 2009 World Population Data Sheet*, Washington DC 2009.
- Rahman, AKMM, Line Director, Clinical Contraception services Delivery Program, *Personal communication*, Dhaka 2010.
- Ringheim, K. & Gribble, J., *Expanding Contraceptive Choice: Five Promising Innovations*, Policy Brief, Population Reference Bureau, Wshington DC 2009.
- Salem, R. M., “*New Attention to the IUD*”, Population Reports, Johns Hopkins University, Series B, No. 7, Feb 2006.
- Shane, B., *Encouraging healthy sexual and reproductive health behaviors*, PATH, Outlook Vol 22, No 3, August 2003.

Starrs, Ann, “*The Safe Motherhood Action Agenda: Priorities for Next Decade*”, Report on Safe Motherhood (Inter-Agency) Technical Consultation, 18-23 October 1997, Colombo.

Ujjal, M., *Sarkari chakuri pachchen sare tero hajar shikhito bibahito mahila*, Jugantor, A Bengali daily news paper, Dhaka, 11 February, 2010.

United Nations (2007), “*State of the World Population 2007*”, UNFPA, New York 2007

United Nations (2009), “*State of the World Population 2009*”, UNFPA, New York 2009

UNFPA/PATH, “*Outlook 25th Anniversary Issue*”, Program for Appropriate Technology in Health (PATH), Seattle, V. 25, No. 1, Nov 2008

United Nations (1995), “*Population and Development: Programme of Action, International Conference on Population and Development*”, Cairo, 5-13 September 1994, UN. ST/ESA/SER.A/149, New York, 1995.

UNDP, UNFPA, WHO and World Bank Special Programme on Research, Development and Research Training in Human Reproduction, *Long-term reversible contraception: Twelve years' experience with TCu380A TCu220C*, Contraception, 56 (6), 1997.

United Nations, *Population, Reproductive Health and the Millennium Development Goals: How the ICPD-POA Promotes Poverty Alleviation and Human Rights*, UNFPA, New York 2002.

World Health Organization, *Medical Eligibility Criteria for Contraceptive Use*, 3rd edition, Department of Reproductive Health and Research, WHO, Geneva 2004.

World Health Organization, *Integrated Management of Pregnancy and Child Health: WHO Recommended Interventions for Improving Maternal and Newborn Health*, WH/MPS/07.05, WHO, Geneva 2007.

Method	1975 BFS	1983 CPS	1985 CPS	1989 BFS	1991 CPS	1993- 1994 BDHS	1996- 1997 BDHS	1999- 2000 BDHS	2004 BDHS	2007 BDHS
Any method	7.7	19.1	25.3	30.8	39.9	44.6	49.2	53.8	58.1	55.8
Modern method	5.0	13.8	18.4	23.2	31.2	36.2	41.5	43.4	47.3	47.5
Pill	2.7	3.3	5.1	9.6	13.9	17.4	20.8	23.0	26.2	28.5
IUD	0.5	1.0	1.4	1.4	1.8	2.2	1.8	1.2	0.6	0.9
Injectable	--	0.2	0.5	0.6	2.6	4.5	6.2	7.2	9.7	7.0
Implant	--	--	--	--	--	--	0.1	0.5	0.8	0.7
Condom	0.7	1.5	1.8	1.8	2.5	3.0	3.9	4.3	4.2	4.5
Fem. Ste'zation	0.6	6.2	7.9	8.5	9.1	8.1	7.6	6.7	5.2	5.0
Male ste'zation	0.5	1.2	1.5	1.2	1.2	1.1	1.1	0.5	0.6	0.7
Traditional meth	2.7	5.4	6.9	7.6	8.7	8.4	7.7	10.3	10.8	8.3
Per. Abstinence	0.9	2.4	3.8	4.0	4.7	4.8	5.0	5.4	6.5	4.9
Withdrawal	0.5	1.3	0.9	1.8	2.0	2.5	1.9	4.0	3.6	2.9
Other tradi	1.3	1.8	2.2	1.8	2.0	1.1	0.8	0.9	0.6	0.6

Source: NIPORT et al 2009 reporting from various surveys from 1975 to 2007

	Any method					Voluntary sterilization		Source of supply		
		Pill	IUD	Inject	Condom	Male	Female	Tradi	Public	Private
Bangladesh	55.8	28.5	0.9	7.0	4.5	0.7	5.0	8.3	57	38
China	86.9	1.7	39.6	0.1	4.3	6.9	33.0	0.7	-	-
India	56.3	3.1	1.7	0.1	5.2	1.0	37.3	7.8	71	24
Indonesia	60.3	13.2	6.2	27.8	0.9	0.4	3.7	3.6	28	67
Iran	73.8	18.4	8.5	2.8	5.9	2.7	17.1	17.8	76	25
Nepal	48.0	3.5	0.7	10.1	4.8	6.3	18.0	3.7	77	20
Pakistan	29.6	2.1	2.3	2.3	6.8	0.1	8.2	7.9	57	18
Sri Lanka	70.0	6.7	5.1	10.8	3.7	-	23.1	20.5	-	-
Thailand	71.5	30.9	1.2	10.4	1.4	1.0	24.5	1.4	-	-
Viet Nam	75.7	9.0	35.9	1.2	7.6	0.5	5.8	14.8	86	14

Source: Population Reference Bureau, 2008 Data Sheet, Washington DC

Year	Permanent methods			IUD	Implant	Injectables
	Female	Male	Total			
1972-73	129	240	369	15,600		-
1973-74	1,016	446	1,462	27,590		-
1974-75	4,707	14,469	19,176	50,391		58
1975-76	11,078	37,839	48,917	77,840		1,908
1976-77	41,248	75,066	116,314	59,421		2,548
1977-78	44,722	32,643	77,365	40,464		4,527
1978-79	81,719	24,705	106,424	22,631		11,280

1979-80	171,248	27,534	198,782	21,801		26,028
1980-81	232,497	26,296	258,793	41,601		112,010
1981-82	235,084	67,824	302,908	83,668		81,065
1982-83	274,842	88,315	363,157	117,743		72,697
1983-84	336,502	215,665	552,167	303,338		122,457
1984-85	232,389	259,210	491,599	432,465		165,933
1985-86	116,418	151,125	267,543	367,668		216,489
1986-87	140,625	209,935	350,560	420,338		314,748
1987-88	96,169	99,846	196,015	379,128		389,299
1988-89	130,946	13,027	143,973	361,698		598,702
1989-90	141,953	83,109	225,062	365,623		1,257,581
1990-91	97,404	67,896	165,300	274,231		1,689,114
1991-92	92,133	69,142	161,275	269,565		2,254,778
1992-93	63,200	50,416	113,616	261,770		2,561,166
1993-94	71,225	49,134	120,359	335,840	40,359	3,533,643
1994-95	53,821	16,821	70,642	244,891	49,448	4,333,234
1995-96	39,074	10,266	49,340	195,111	23,925	5,454,159
1996-97	43,286	7,603	50,889	175,487	40,359	6,305,035
1997-98	55,955	13,117	69,072	194,535	99,448	6,552,054
1998-99	45,220	16,500	61,720	176,514	50,183	7,193,788
1999-00	33,839	21,617	55,456	146,270	50,565	6,926,575
2000-01	19,205	11,192	30,397	101,160	34,127	
2001-02	28,974	22,364	51,338	161,679	57,876	
2002-03	32,761	43,203	75,964	181,762	66,163	
2003-04	52,132	41,839	93,971	195,018	68,307	
2004-05	83,627	60,645	144,272	208,769	105,958	
2005-06	71,133	52,658	123,791	257,915	74,871	
2006-07	100,571	91,486	192,057	222,259	13,812	
2007-08	105,787	92,890	198,677	236,960	177,351	
2008-09	115,754	100,646	216,400	330,709	86,720	
* 2009-10	51,155	70,804	121,959	86,359	5,324	
* 2009-10 figures represent for July-October.						

Annex table 4: Percent married women using any FP method and IUDs in selected countries		
Countries	Any method	IUDs
Selected Muslim countries		
Uzbekistan	64.9	49.7
Egypt	59.2	36.5
Tunisia	62.6	27.6
Syria	58.3	25.7
Palestinian territory	50.2	24.8
Jordan	55.8	23.6
Turkey	71.0	20.2
Lebanon	58.0	13.8
Iraq	49.8	12.2
Libya	45.2	11.2
Qatar	43.2	9.0
Iran	73.8	8.5
Indonesia	60.3	6.2
Pakistan	29.6	2.3
Bangladesh	55.8	0.9
Other countries		
North Korea		42.8
China		39.6
Source: PRB Family Planning Worldwide Data Sheet 2008		

Annex 5: Reproductive tract infections (RTI)

Limited evidence indicate that incidence of reproductive tract infections is common. Findings of 3 community based studies, which used laboratory backup for confirmation of diagnosis, are summarized in below (Rahman 1999). Proportion of rural women reporting symptoms of RTI were from 22 to 67 percent, whereas incidence of RTIs/STDs confirmed by laboratory tests, were from 15 to 26 percent.

Annex Table 5A – Summary findings of 3 rural studies				
Author	Study area, sample size	Reported symptoms	Laboratory evidence of infection	
			As % of symptomatic cases	as % of total sample
Wasserheit JN et al 1989	Matlab N = 2,929	22 %	68% (28% STDs & 40% non-sexual RTIs)	15% (6% STDs; 9% non-sexual RTIs)
Hussain MA et al. 1996	Nasirnagar N = 613	47%	56% (34.6% BV; 12% CT; 9% Mon; 9% NSRTI; 1.1% gon)	26% (16.3% BV; 6% CT; 4% Mon; 4% NSRTI; 0.5% gon)
Hawkes S et al 1997	Matlab N = 666	67%	22% (11% candidiasis, 9% BV, 1% Syph, 0.5% TV, 0.5% gon, 0.2% CT)	15% (7% cand; 6% BV; 0.7% Syph; 0.3% TV; 0.3% gon)
Notes: BV= Bacterial vaginosis, CT= Chlamydia trachomatis, Mon= Moniliasis, NSRTI= non-specific RTI, TV= trichomonous vaginalis, gon= gonorrhoea Source: Rahman et al. 1999				

Another clinic-based sub-urban study, which also confirmed diagnosis by laboratory tests, found that about 60 percent of women in age group 18-40 years suffer from some type of reproductive tract infections, shown in Table 2.10 (Chowdhury 1995).

Annex Table 5B – Prevalence of reproductive tract infection among women aged 18-40 years

Type of infection	Percent
Bacterial vaginosis	46.1
Trichomoniasis	5.4
Candidiasis	4.7
Mucopurulent cervicitis	0.2
Gonorrhoea	4.3
Syphilis	1.0
Non-specific vaginosis	0.3
No infection	40.1
Source: Chowdhury et al 1995; Note: percentages do not add up to 100 due to multiple infections	

Common infection was bacterial vaginosis (46.1%), followed by trichomoniasis (5.4%), candidiasis (4.7%) and gonorrhoea (4.3%). The types of infection include both sexually transmitted diseases (STDs) and RTIs of non-sexual origin.

References:

Chowdhury SNM et al (1995), *A Study to Determine the Prevalence of Reproductive Tract Infections Among Health Care Users of a Bangladesh Women's Health Coalition Clinic*, BWHC, Dhaka 1995.

Rahman S et al (1999), *Prevention and Management of Reproductive Tract Infections and Sexually Transmitted Diseases: A Review*, Operations Research Project, ICDDR,B, Dhaka, 1999.