The public sector’s role in infertility management in India

Anjali Widge1* and John Cleland2

Accepted 8 October 2008

This objective of this paper is to explore the public sector’s role in infertility management in India. It focuses on services available in the public sector, problems faced by and critiques of public sector providers. A postal survey was conducted with a sample of 6000 gynaecologists and in-depth interviews were conducted with 39 gynaecologists in four cities. The role of the public sector in infertility management is weak as even basic investigations and services were limited or incomplete. Inadequate infrastructure, inappropriate management including time management, lack of information and training, absence of clear protocols at all levels, private practice by public health doctors, pre-occupation with other health issues and lack of regulation were the main problems mentioned by providers. Amongst key recommendations are realistic and low-cost management, streamlining and regulating services, counselling of couples, providing information and raising awareness of patients, health personnel and policy makers.

Keywords Infertility, India, public, private, providers, assisted reproductive technologies

KEY MESSAGES

- The role of the public sector in infertility management is weak. Basic investigations and services are limited or incomplete, there is inadequate infrastructure and management, lack of information and training, absence of clear protocols, private practice by public health doctors, pre-occupation with other health issues and lack of regulation.
- Realistic and low-cost management, streamlining and regulation of services, counselling couples, providing information, and raising awareness of patients, health personnel and policy makers are recommended.

Introduction

Infertility is a significant issue for women and couples and affects more than 80 million people worldwide (Daar and Merali 2002). In general, one in 10 couples experience primary or secondary infertility, but rates vary amongst countries from less than 5% to more than 30%. Most of those who suffer from infertility live in developing countries (Vayena et al. 2001).

In recent years, more attention has been paid to infertility and reproductive medicine, and the importance of the infertile couple’s desire to have children, especially in developing countries (Becker 1990, 2000; Greil 1991; Sandelowski 1993; Inhorn 1994, 1996; Franklin 1997; Inhorn and Balen 2002; Thompson 2002). The literature emphasizes the importance of taking into account local cultural, social, economic and political considerations of childlessness (Sandelowski 1993; Inhorn 2002). Social scientists exploring infertility have proposed a move towards creating political and cultural conditions in which basic infertility services are available for women to fulfil their reproductive preferences, and have also argued for a rational and consistent set of policies to manage the misuse of hi-tech assisted reproductive technologies (ARTs) (Blank 1990; Stanworth 1997; Stacey 1992; Becker 2000; Inhorn 1996; Greil 1991; Sandelowski 1993). The increasing medicalization of women’s bodies should be addressed by placing the issues of ‘safety’, ‘informed choice’ and ‘ethics’ in context, especially with regard to reproductive technologies (Lingam 1995).

In India, evidence on the prevalence of infertility is sparse and dated. The WHO’s estimates of primary and secondary infertility in India are 3% and 8%, respectively...
Hierarchical gender relations and unequal gender norms impact women’s sexual and reproductive health and choice, and act as significant obstacles to access to services and facilities. Access is also inhibited by such structural factors as poverty and malnutrition, early marriage and inadequate educational and health systems. Women have limited autonomy and face huge constraints on decision making, mobility and access to resources. Lack of awareness, lack of spousal intimacy and communication on sexual matters, and widespread gender-based violence compound women’s inability to negotiate safe sex, seek appropriate health care or experience a healthy pregnancy (Jejeebhoy 2004).

Infertility is deeply feared by women, their identity, status and security are affected and they experience stigmatization, isolation and a loss of bargaining power and empowerment in the family and society. It is a major source of anxiety, leading to lowered self-esteem and a sense of powerlessness (Unisa 1999; Mulgaonkar 2001; Widge 2001). Moreover, bearing a son still remains an important factor in the socio-economic well-being of most Indian women (Das Gupta et al. 1995). Most childless women face barriers to autonomous decision-making because of structural differences in their social, political and economic context (Singh and Dhaliwal 1993; Patel 1994). For example, the social and economic disadvantages women face, make childless women more vulnerable to blame, mental and physical violence, threats of abandonment and divorce, social exclusion and lack of access to adequate treatment (Desai et al. 1992; Singh et al. 1996).

The causes of primary and secondary infertility relate to both males and females, and the conditions that directly contribute to infertility vary widely by region and culture. Amongst women, tubal factor has been found to be the most common cause followed by anovulation, and accessory gland infection was the most common factor for men (Cates et al. 1985). In cases where infertility is caused by infections, leading underlying factors are STIs and iatrogenic factors, including unsafe abortions and unhygienic delivery conditions (Farley and Belsey 1988). The dominant cause of infertility in Asia among women was found to be either an STI or unsafe management of abortion and delivery. Among men with a demonstrable cause, about one in three may have become infertile as a result of an STI experience (Cates et al. 1985). In India, the prevalence of STIs was found to be high among women reporting infertility and pelvic inflammatory disease (Kushagti et al. 1991; Chhabra and Fali 1992; Brabin et al. 1998). For several reasons including unequal gender relationships, access and quality of care issues, RTI/STIs and unsafe abortions have not been adequately addressed in India.

The socio-cultural, behavioural and bio-medical determinants of infertility are manifold. They include STIs, maternal health factors such as unhygienic delivery, postpartum infection, unsafe obstetric and abortion procedures linked to sepsis and pelvic infections. Severe malnutrition and anaemia are also observed to affect infertility, as are such morbidities as tuberculosis. Correlates also include nutritional status, lack of information, side-effects of contraceptive use and lifestyle changes (Kochar 1980; Jejeebhoy 1998). Levels of infertility may also increase as the age of marriage rises. Age at first marriage in India has risen steadily in the last three decades, though more amongst urban than rural women, with a variation between the states (IIPS 2000). Factors contributing to this rise include socio-economic changes, particularly improvements in education, urbanization and expansion of work opportunities outside agriculture (Das and Dey 1998).

Infertility may be an outcome of diverse aetiologies exacerbated by severe social isolation, restrictions and stigma. Childless women suffer a great deal in a family context and even though only a small fraction of women and couples are affected by infertility in the population, it is an important reproductive health and rights issue. Its effective prevention and management is a crucial element of a more holistic approach to women’s reproductive health and their physical and mental well-being. Moreover couples from the lower socio-economic strata tend to suffer the most as they are socially most at risk. Nevertheless the problem has been mostly ignored by research and policy in India. Little emphasis has been placed on assisting couples who are unable to produce children. Although many countries with high rates of infertility also have elevated rates of unwanted fertility, these two are distinct issues and each needs specific attention (Okonofua 2002).

The International Conference on Population and Development (ICPD) in 1994 focused attention on women’s reproductive health, including services for infertility (ICPD 1994). As mentioned earlier, government policies in India have largely ignored the issue of infertility. The Indian National Population Policy mentions it briefly in the context of providing information, counselling and regular supply of medication but only for tribal communities, displaced and migrant populations who ‘may not need fertility regulation’ (MOHFW 2000). There is limited focus on services for the infertile in the Reproductive and Child Health Programme, though the five-year plan of the government has discussed access to essential clinical examination, investigation, management and counselling services for infertility (Planning Commission 2002). The main development in the last 15 years or so has been a proliferation of infertility services in the private sector. This includes ARTs which are mostly unaffordable, of varying quality and costs with low success rates and are usually accessed only by middle and upper class couples who can afford them.

This paper originates from a study that had explored the significance of fertility and motherhood and women’s experience of childlessness in India; pathways leading involuntarily childless women to assist reproduction with technology; and their experiences with such technologies (Widge 2001, 2005).
It derives from an understanding that care-seeking options for childless women continue to be few. There has been no documentation of the service delivery setting for infertility in the public and private sectors in India and this study could be an important step in addressing the issue. This paper focuses on the role of the public sector in providing infertility services in India; specifically it explores the context of the public and private health sector, existing public sector services for infertility, problems faced by providers, critiques of providers and possible recommendations to address existing gaps.

Context of the health sector (public/private) in India

India has a large public health sector but spending on health is about 1% of GDP, which is below what is needed to provide basic health care to the population (Peters et al. 2002). Several issues facing the public sector in India are also applicable to SRH services including infertility. The broader issues are poor governance, rigid management systems, low resources, funding unlinked to the needs of the community or to use of services, and untrained managers who have limited incentives to perform well and who usually lack authority to make decisions (Peters 2002). Compared with private sector services, public health services are less accessible, with long waiting periods, unhygienic surroundings, inadequate provisions for testing, shorter opening hours, lower availability of staff and drugs, limited confidentiality and unfriendly health worker–patient attitudes. As public sector doctors need to supplement their incomes, many of them offer services privately and some divert their patients to their private clinics where the patients have to pay for more personalized care (Sengupta and Nundy 2005).

Due to inadequate provider knowledge-base and poor clinical practice, Indians are increasingly opting for the private health sector (Brugha and Zwi 1998). It accounts for more than 80% of all health spending, and even 79% of outpatient care (which is of low quality) for those below the poverty line (Peters et al. 2002).

The government continues to encourage the growth of the private sector through subsidies and incentives. The rationale presented for the expansion of the private sector is that it reduces the burden on the state, offers consumers choice and stimulates competition (World Bank 1993; Preker et al. 2000; WHO 2000). But the situation in the private sector has changed in the last couple of decades as new large corporations dominate the market for health. The sector is unregulated, with no standardization of quality or costs (Brugha and Zwi 1998; Sengupta and Nundy 2005). Further expansion of the sector had been envisaged and regulation recommended, but this is not perceived as a solution by those who believe in a single-level universal health care system. Multi-faceted and context-specific strategies including practice of evidence-based care, educating patients to adopt treatment-seeking and treatment-taking behaviour, feasible mechanisms for monitoring service quality, and a thoughtful application of public-private partnerships are suggested (Uplekar et al. 2001).

Methods

This research was funded by grants from the Ford Foundation and UNFPA (India) and the Soros Foundation and conducted in partnership with the Federation of Obstetricians and Gynaecological Societies of India (FOGSI), which is a large specialist organization with 16 000 members. The research was approved by the ethics committees of the London School of Hygiene and Tropical Medicine and FOGSI in India and informed consent of all interviewees was obtained.

In the first phase a postal survey was conducted with a nationally representative sample of 6000 gynaecologists practicing in the public and private sectors, randomly selected out of a list of all FOGSI members. The purpose was to explore the range of infertility services that are being offered in these sectors. The survey focused on background information, services offered, referrals for ARTs and adoption, and impediments to effective infertility treatment. Despite reminders, the final response rate was 8%, yielding 470 responses: 365 (78%) from the private sector, 55 (12%) from the public sector and 49 (10%) from those who practice in both. This was sufficient to sustain rudimentary statistical analysis, though obviously the achieved sample may not be representative. The data were analysed using SPSS, frequency tables were generated and tests of significance were conducted for some variables.

In the second phase, in-depth interviews were conducted with 39 providers (27 from the private and 12 from the public sector) in two major cities (New Delhi and Mumbai) and two medium cities (Agra and Nashik) in India. These providers were randomly selected from those who responded to the survey and agreed to be interviewed. The interview guides focused on the following: patient-related information; barriers to prompt care-seeking for women/couples; quality of treatment; screening process; costs; information; informed consent procedures; strengths and weaknesses; coping strategies of patients; adoption; and problems associated with infertility services. In-depth interviews were conducted and taped with informed consent, and categories of responses were coded and analysed using thematic content analysis with the help of Excel worksheets. Relationships between themes were then analysed.

Results

Infertility services available in the public sector

Of the 470 gynaecologists surveyed, 12% (55) practiced in the public sector and 78% (365) in the private sector. Amongst the public sector gynaecologists, 22 practiced at a tertiary/teaching hospital, 19 at a District Hospital, 7 at Primary Health Centres (PHC)/Community Health Centres (CHC), 2 at a sub-divisional hospital, 2 at a municipal hospital, 1 at a police hospital, 1 at a satellite hospital and 1 at an Employees State Insurance Corporation hospital. Almost all public sector doctors routinely managed infertility in their clinical practice. Public and private sector doctors reported that they had seen an average of 23 cases in the last month at the primary facility (range 0–400 cases). Out of these, on average there were 5 cases of male factor, 13 of female factor, 3 of combined factor and 2 of unexplained infertility.
The survey results revealed no significant differences between what the public and private sector providers reported in terms of infertility management including basic and intermediate management and on most treatments provided. ART services were offered mostly by the private sector providers. Infertility services specifically offered by public sector doctors at the primary (in-house) facilities include female and male diagnosis, testing, treatment and surgery. Sixty to seventy per cent of the public sector doctors reported treating infection of the male genital tract, providing induced ovulation and prescribing fertility drugs. Fifty to sixty per cent offered diagnostic services such as basal body temperature (BBT), pelvic ultrasound, endometrial biopsy, laparoscopy, follicular studies, behavioural treatment for males and empirical vitamins, female sterilization reversal, treatment for polycystic ovarian disease (PCOD) and counselling for couples. Semen analyses, ultrasound, hysterosalpingogram (HSG-fallopian tube testing), tubal surgery, open microsurgery, treatment of PCOD by Gonadotropins was offered by 40-50% of doctors in the public sector.

None of the public sector providers offered ARTs like in vitro fertilization, only 36% offered intrauterine insemination (IUI) and 38% artificial insemination by husband (AIH) as compared with 57% IUI and 55% AIH in the private sector. The public sector doctors do not have any facilities for sperm banking and do not deal with donor materials. Most providers in the survey (public and private) felt that the high cost of treatment was the strongest impediment to effective infertility treatment for patients, followed by low education level of couples, low rates of success, varying infrastructure and facilities, and lack of specialized training. As compared with private sector doctors, the public sector doctors were less likely to offer female cannulation surgery, laparoscopic surgery, fulguration, ovulation induction and Clomiphine for PCOD, ovarian drilling, treatment of unexplained infertility and counselling for couples.

The in-depth interviews with the public/private sector providers suggest a different picture. They revealed differences between the services provided, with private sector doctors providing more services at all levels. Most public sector providers were of the opinion that only basic investigations are available in the public sector, that services for infertility, especially at the PHC level, are lacking and, if at all, they are available at some tertiary level facilities, especially at the medical colleges. Some public sector doctors maintained that basic infertility treatment is available in the public sector at the primary and secondary levels, even though it may be time consuming for the patient and facilities are not available under one roof. A senior doctor from a premier government hospital said that there are almost no services available at these levels, though some are available at a few tertiary centres. But tertiary services are difficult to access for people living in small towns and villages. The facilities at this level too are limited or scarce, and have not been upgraded, are not specialized or standardized. A public sector gynaecologist summarized these issues as follows:

The concentration in the public sector has been in providing basic services so specialized services have been grossly inadequate, which has resulted in a wide gap between the two. Medical college hospitals have not been upgraded and are not commensurate with modern research or needs.

Most providers were of the view that services were marginally better at the teaching hospital levels and that the challenges were greater at the PHC/CHC levels because of pressures on staff and lack of proper infrastructure. Most private sector providers and a few public sector providers thought that, where available, the basic diagnostic work up is usually inadequate. Most private sector providers felt that limited information is provided on conception, infections, infertility treatment, unsafe abortion-related infertility, effects of repeated abortions, hygiene and over-use of oral contraceptives. There is no provision for counselling, semen testing, hormonal profiles, fallopian tube testing (HSG) and IUIs. Investigations are usually unavailable for STIs/RTIs. Overall, there is no focus on prevention even though most providers (public and private) felt that 20–30% of infertility is preventable.

Most private sector and some public sector providers said that patients accessing the public sector encounter long queues and waiting periods for consultations and results. As a consequence, they shift to the private sector for treatment as they bear some costs in the public sector anyway. Their suggestions include tertiary facilities like a separate infertility unit (as they felt that at least half the patients in gynaecology departments are seeking treatment for infertility), diagnostic surgery, HSG test, blocked tubes correction and IUI, and CHC level facilities such as laboratory facilities, male and female screening, ultrasound, hormonal testing and ovulation induction.

Some providers suggested that low cost IVF could be provided in the public sector but most felt that this would require specialists and raise costs. Some providers recommended that public-private partnerships could help mitigate some of these deficiencies, if private practitioners were willing to contribute their time and were compensated adequately.

Problems faced by public sector doctors

Most public sector providers at the PHC and CHC level expressed concerns about infrastructure, management, salaries, career prospects, lack of or dysfunctional equipment, inadequate or absent staff, medical supplies and hygiene. A public sector provider described her experience:

I used condoms instead of gloves to examine the patients at the PHC, usually we are unable to do anything for infertility patients.

They felt that infertility treatment was time consuming, requires dedicated staff, there were no protocols and few medical education programmes enhancing infertility knowledge and management and counselling skills. Many felt that while the number of infertility patients in gynaecology departments has increased substantially, the system is inadequately prepared to deal with them. Moreover, it is difficult to counter the stigma associated with reporting STIs/RTIs, male testing and superstition amongst patients. Infertility, they felt, was a low priority for the government even though basic services do not require huge budgets and low cost options could be considered. But some providers felt that there were other more important reproductive health issues to be addressed. The general
perception was that there were too many pressures on the system, with a focus on fertility reduction and a lack of will at decision-making levels. A public sector provider stated:

... the government wants results, and those are about how many sterilizations are done, they are not concerned with how many normal, institutional or difficult deliveries were done or how many infertility cases were treated. Obviously there are no targets for infertility.

Critiques of public sector providers

Most private sector providers criticized public sector providers for practicing privately, and the state for providing them with too much job security. A private sector provider said that:

... even though public sector doctors say that have much work load, they still manage to do their private practice. It is a question of involvement and justice to the job you are doing.

Some private providers were of the opinion that the public sector providers deliberately divert patients to their private clinics and conduct investigations there. Moreover, they are thought to lack knowledge, clinical exposure and understanding of protocols. A private sector provider felt that:

Usually they don’t have a holistic view of comprehensive health care. They keep trying the same drugs. They are ready to remove an organ if it’s creating problems rather than treat the cause.

Some others felt that the attitude of doctors was casual and their mindsets conservative. These providers discussed possible misappropriation of funds and corruption, improper allocation of funds, and rivalries between some hospitals which result in wasteful expenditures. Issues that emerged from many discussions included: lack of accountability; inadequate coordination, governance, regulation; frequent transfers and paucity of staff; focus on fertility reduction; and the lack of a comprehensive view of health care. Some discussed ethical issues such as unwillingness to treat HIV-positive patients at some facilities.

Discussion/conclusion

The public health system does not offer adequate preventive, curative and counselling services for infertility. Therefore most people access infertility services in the private sector. Infertility treatment is theoretically available at government facilities, but effective treatment is often difficult to access as there is little coordination between gynaecologists, infertility specialists, surgeons and laboratory technicians. The quality and the costs of private services vary considerably and there is scope for exploitation. Those from the lower socio-economic classes suffer the most as they usually find it difficult to afford private services. Providers reported that childless women undergo treatments from traditional healers, quacks and private physicians, which often result in long cycles of diagnosis and treatments. In most public sector facilities, there are no fixed days for infertility consultations; there is a lack of trained providers, of information provided and of a clear referral chain.

Box 1 Barriers to public sector infertility management

- Lack of infrastructure and equipment
- Lack of information, skills, training and exposure
- Preoccupation with other public health issues
- Low priority at all levels
- Infertility patients are time intensive and high maintenance
- Private practice by public sector doctors
- Non-implementation of clear protocols at primary, secondary and tertiary levels
- Inadequate regulatory mechanisms

(UNISA 1999; MULGAONKAR 2001; INHORN 2002; OKONOFUA 2002). This sector’s role in infertility management is marginalized primarily because of various barriers, as listed in Box 1.

What can be done?

The results suggest that basic low-cost infertility services could be provided and services could be improved if doctors were more accountable, incentives were provided to work at the primary level and opportunities provided for training and capacity building. Streamlining the system at all levels and coordination between different levels and facilities could also yield better services. Facilities could be upgraded at the tertiary and secondary levels, and medical colleges could play a more positive role as they have the capacity. Existing protocols for standardization for infertility management could be implemented to enhance knowledge and skills and establish clear referral systems (WHO Task Force on the Diagnosis and Treatment of Infertility 1987; CDC 2000; UNFPA 2002).

Providing information on causes and treatment of infertility is critical, as is a progressive change in the attitude of doctors. Awareness of unsafe abortions as a likely cause of infertility, and triple protection, i.e. STI/RTIs and HIV prevention and infertility prevention, could be emphasized amongst adolescents and couples. Encouraging adoption by providing incentives, collaboration with adoption agencies and prevalence studies to understand the extent of primary and secondary infertility in India were amongst other suggestions from providers.

Integrating infertility in the larger reproductive health agenda and training was considered important, including messages in safe motherhood programmes. NGOs, media, consumer and patient groups could play a supportive role in creating awareness and providing services. Public-private partnerships with thoughtful application could be considered in this context. The government could also consider affordable cost-recovery methods as the majority of public sector patients incur costs even in the public sector (BHATIA and CLELAND 2001).

Reproductive health programmes can be an entry point for couples with infertility problems. Prevention and treatment of infertility is possible on a small scale. For example, the Family Planning Association of India under its Bhiwandi based ‘Comprehensive Reproductive Health for All’ project is providing high-quality, affordable services to infertile couples where infertility care is largely unaffordable in the private sector and
unavailable in the public sector. In Nigeria, where the service options are similarly limited and the prevalence of infertility is now rising above 20%, the ‘Women’s Health and Action Research Centre’ offers comprehensive reproductive health care, including management of infertility. Both programmes combine education, counselling, careful history taking, laboratory testing, minor pharmacological and surgical therapies, and referral (Okonofua 2002).

Among key recommendations are the following:

- **Communication strategies** to disseminate information on preventive and curative aspects of infertility, increase public awareness to improve preventive behaviour and provide information on adoption agencies and legal procedures.

- **Awareness raising** of health staff and policy makers and elaboration of a policy on infertility care as part of an integrated reproductive health care programme (Van Zandvoort 2000). Considerations of priorities in health resource allocation, costs, feasibility, quality control, sustainability, and equity and access to health care are important (Rowe 1999).

- **Management of infertility** in the public health context by providing adequate services and having effective systems for higher level care (Singh 1996; Satia and Dohlie 2001; Van Zandvoort et al. 2001). Interventions need to be inexpensive, practical, efficient, effective and sustainable (Brugh and Zwi 1998). Developing effective services for infertile couples requires an approach that includes education about the causes and treatment of infertility at the community level; training of health care providers for thorough assessment of infertile couples; recording histories, conducting physical examinations of both partners and following standard protocols; establishing firm diagnoses, and counselling of couples about infertility, treatment options and the likelihood of pregnancy; and managing psychosocial and sexual problems (Okonofua et al. 1997; Van Balen and Gerrits 2001). These should be part of reproductive health services and are possible in low-resource settings. Infertile couples could be screened at local clinics and referred to secondary and tertiary health facilities as needed (Rowe 1999). Table 1 presents suggestions for infertility management at various levels of the health care system (WHO Task Force on the Diagnosis and Treatment of Infertility 1987; CDC 2000; Okonofua 2002; UNFPA 2002). It may be possible to make these levels operationally feasible and cost-effective in Indian programme settings.

- **Regulatory mechanisms**: It is important to create a set of rational and consistent policies to regulate and manage infertility services, including ARTs, in the private sector to monitor misuse. Services should be professionally and ethically delivered within a regulated environment. The guidelines drafted by the Indian Council of Medical Research refer to infertility management protocols but highlight the private sector’s emphasis on hi-tech solutions, and do not emphasize adequately the need for prevention of infertility as a public health measure (ICMR and NAMS 2005). In the present context, only low-tech ARTs seem to be appropriate for the public sector. The guidelines should also ensure that the rights of women as users of these ARTs are not compromised and that unequal power relationships between ART providers and users are minimized.

- **Public-private partnerships** with thoughtful application could be considered.

Though the State has made a commitment to comprehensive reproductive health service delivery, the lack of preventive and curative infertility services has not been addressed. The results of the study suggest that the role of the public sector in infertility management is extremely limited as it is unable to provide adequate quality services for reasons mentioned above. As these issues are similar to those plaguing other reproductive health services and there are large gaps in services for maternal care, STIs/RTIs and abortion still waiting to be adequately addressed, it may be a long time before this deficiency is remedied. Infertility services need to be provided and streamlined in the public sector in the current context of an unregulated and commercialized private sector; this would save high levels of anxiety and expenditure by poor patients. Infertility management is realistically possible in low-resource settings but there is no case for ARTs to be introduced in the public sector except for low-tech IUI. The State has a commitment to provide basic reproductive health services including for infertility and there is

| Table 1 Infertility management at community, primary, and tertiary levels |
|-----------------------------|--------------------------------------------------|
| **Facility level** | **Service provision** |
| Community/primary level | - Counsel couples on fertile period, coital frequency, psychosocial aspects, examination of men and women - Record psychosocial and gynaecological history - Record BBT - Recognize symptoms of UTI, PID, TB and STIs/RTIs and refer appropriately |
| Secondary level | **Diagnostic services** |
| | - Screen couples |
| | - Cervical mucus records |
| | - Pelvic examination of women/men |
| | - Low cost pregnancy testing |
| | - Semen analyses |
| | **Treatment services** |
| | - Treatment for genital discharge, ulcer, lower abdominal pain |
| | - Treatment of TB, STIs, UTIs and RTIs |
| | **Referral services** |
| Tertiary level | **Diagnostic services** |
| | - Endometrial biopsy |
| | - Blood sampling for basic hormone levels |
| | - Tubal patency tests |
| | - Laparoscopy |
| | - Detailed semen analyses |
| | **Treatment services** |
| | - Ovulatory drugs |
| | - Treat cervical mucus problems |
| | - Management of varicocele |
| | - Counselling and referral for surgery |
| | - IUI |

**Notes:** BBT = basal body temperature; UTI = urinary tract infection; PID = pelvic inflammatory disease; TB = tuberculosis; STI = sexually transmitted infection; RTI = reproductive tract infection; IUI = intrauterine insemination.
a pressing need to address this in a practical and sustainable manner.

Acknowledgements
Funding was provided by the Ford Foundation and UNFPA (India) and the Soros Foundation. The authors would like to thank the Federation of Obstetricians and Gynaecological Societies of India, all the interviewees, Sunetra Deshpande who assisted in the analysis and Susannah Mayhew for comments on the draft.

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