Can Public Private Partnership reduce Maternal Mortality?
Assessing efforts made by the 'Chiranjeevi' scheme in Gujarat

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Introduction

Maternal mortality remains a serious public health problem in developing countries and its reduction has been emphasized as one of the major Millennium Development Goals (MDGs). The World Health Organisation (WHO) estimates that, every year more than 5,00,000 women die due to pregnancy related causes world wide (leaving over a million motherless children) and almost all of these deaths occur in the developing world. Reasons for maternal mortality due to pregnancy complications include obstructed labor and ruptured uterus, postpartum hemorrhage, postpartum infection, hypertensive disease of pregnancy and eclampsia. Emergency Obstetric Care (EmOC) is required to tackle such complications; however such care is usually not available in resource poor settings. In developed countries, maternal mortality was a serious problem till late nineteenth century. For example in England and Wales, the maternal mortality rate was 441 in 1934, which was brought down to 39 by 1960, due to improvements in maternity care that included sepsis control, availability of blood transfusions, introduction of antibiotics, access to safe cesarean sections and abortion services (Loudon 1992). Today the difference in the maternal mortality rate is dramatic between the developed and the developing world, reflected in current MMR statistics of 1000 (per 1,00,000 live births) for Africa and 10 for North America (WHO 2001). This difference is all the more tragic as no new drugs or technologies are needed to save these lives; the problem is lack of access to ante natal care and life saving EmOC services. Developing countries like Sri Lanka and Malaysia have reduced their maternal mortality substantially, through maternal health interventions such as increased access to skilled birth attendance accompanied by referral to EmOC in case of need (Mavlankar 2005). However, maternal mortality is not only a health issue but also a human rights issue, relating to women's rights to life, health, equality and non-discrimination (UN 2008), suggesting other societal changes are required alongside implementation of new health policy.

Maternal Health in India

India, with a population of more than one billion people, and per capita income of about USD500 and 86 per cent of the population living on less than USD 2 a day, reports maternal mortality of 540 (WHO 2006). This means that more than 1,00,000 women are dying every year in India due to pregnancy complications, which is more than 20 per cent of all world maternal deaths. In rural areas, where a majority of Indians still live, it is often difficult to access EmOC facilities in case of need, as most of the public providers are running short of qualified gynecologists and obstetricians as well as anesthetists[1]. In such cases, women in need of EmOC services have to travel several kilometers up to District Hospitals (DH) where the obstetrician and anesthetist might be available, but then the barriers such as distance, transport cost, problems with supplies of medicines at the district hospital and poor staff attitudes towards the poor remain. Due to these barriers, many women hesitate to travel and seek care at a far away place and die at home or in transit if they decide to travel. Studies conducted in the Indian states of Andhra Pradesh, Maharashtra, and Rajasthan found that 42 per cent to 52 per cent of maternal deaths occurred at home or in transit to a hospital (Mavlakar & Rosenfield 2005). Even though the Indian rate of maternal deaths is declining, at the present rate neither India nor any of its states will reach their

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[1] Unlike many other countries, the restrictive health policy in India doesn't allow a Nurse or even a doctor without postgraduate degree to administer anesthesia or perform EmOC services.

MDG maternal mortality targets for 2015 (UN 2008). Better availability of qualified obstetrician with EmOC facility in the vicinity is likely to encourage institutional delivery and thereby reduce maternal mortality but there remains a question over how such a policy can be implemented. The next section considers one possible solution

The 'Chiranjeevi Yojana' of Government of Gujarat

Gujarat is a state located on the western coast of India. The state has a population of about 55 million and is known for its industrial development and a progressive private sector. The state ranks very high on variables like growth of the State Gross Domestic Product (SGDP), industrial investment, per capita income etc. However, Gujarat does not fare very well on human development indicators such as education, health and gender equality (MGLI 2004). The Infant Mortality Rate (IMR), considered a good indicator of women's status in general and of healthcare facilities for pregnant women in particular, is 54 for Gujarat, which is above Maharashtra, Uttranchal, Jharkhand and West Bengal. Further, there has been an increase in malnourished children in the state from 45% in 1998-99 to 47% in 2005-06 (IIPS 2007). More than 5000 women die every year in the state while delivering babies mostly in remote, coastal and tribal areas. The state maternal mortality rate has been estimated to be 389 per 1,00,000 live birth. As is the case with other states in the country Gujarat also faces acute shortage of qualified gynecologists in public health facilities. However, many of the deprived and low-income areas have presence of private gynecologists with EmOC facilities and therefore the Government of Gujarat (GoG) decided to enlist support of the private sector in reducing maternal mortality.

The *Chiranjeevi* (meaning long life) *Yojana* (CY) is a scheme based on a Public-Private Partnership (PPP) model in which poor woman can go to empanelled private nursing homes for delivery and the cost will be borne by the GoG. Moreover, eligible women are also entitled to receive Rs. 200 towards transport cost and Rs. 50 for the accompanying person. Thus, CY aims to remove financial barriers for the poor in accessing qualified private providers. Any private qualified gynecologist with basic facilities like labour and operating room, access to blood and anesthetist etc. can enroll under the CY. These Empanelled Private Providers (EPPs) have to agree to perform free delivery for women designated as below poverty line (BPL). EPPs are paid Rs. 1,79,500 (about $4000) for a bunch of every 100 deliveries including cesarean section and complicated deliveries. To discourage unnecessary cesarean sections (a common problem with the Indian private sector), there is no separate or additional payment for them. The remuneration package has been designed by a group of experts in which all possible complications (15 percent of all cases) have been included (see Table 1). EPPs receive an advance payment of Rs. 15,000 while signing an agreement (MoU) with GoG and the Chief District Health Officer (CDHO) is responsible for identifying and recruiting eligible private providers into the scheme.

Table: 1 Remuneration Package for EPPs under the CY

Procedure	**Cases per 100 deliveries**	**Cost per procedure (Rs.)**	**Total (Rs.)**
Normal Delivery	85	800	68000
Complicated Cases	15		
Eclampsia/Forceps/ Vacuum/ Breech	3	1000	3000
Septicemia	2	3000	6000
Blood Transfusion	3	1000	3000
Caesarean Section	7	5000	35,000
Other costs			
Pre delivery visit	100	100	10,000
Investigation	100	50	5000
Sonography	30	150	4500
NICU support	10	1000	10,000
Food	100	100	10,000
Dai	100	50	5000
Transport	100	200	20,000
Total	100		**1,79,500**

Source: CDHO Office, Surat

Chiranjeevi Yojana was launched in five poor district of the state on pilot basis in December 2005, and from January 2007 it has been extended to the entire state of Gujarat.

Discussion

The *Chiranjeevi Yojna* is considered to be a successful PPP model and has also received a prestigious Asian Innovations Award by the Wall Street Journal. It is a flagship scheme of the Gujarat state ministry of health and family welfare and is being recommended for up scaling-up at the national level. It has been claimed by the government that maternal as well as neonatal deaths have been substantially reduced under the scheme. The reported maternal deaths within the scheme have been compared with the expected maternal deaths based on the Gujarat's maternal mortality rate and are found to be more than 20 times lower (See Table 2).

Table 2: Lives saved through the CY scheme

Total Deliveries under Chiranjeevi scheme	Expected Maternal Death	Maternal death reported under Chiranjeevi scheme	Mothers saved under Chiranjeevi scheme	Expected New born death	New born death reported under Chiranjeevi scheme	New born saved
131329	393	30	363	5252	429	4823

Source: Presentation by Health Ministry, GoG, Gandhinagar

Such unusual success in reducing maternal mortality needs further examination so that success factors can be replicated elsewhere. A range of aspects need to be studied, such as whether poorer women prefer institutional delivery over home delivery, the influence of location of CY EPPs, the

existence of remaining other social or cultural barriers faced by the poor in using private providers, how well CY is targeted towards BPL families, and the extent to which the current remuneration package for the CY EPPs is appropriate to cover expenditures. Further, scaling up such a scheme involves major resource transfer implications from the public to private sector, which need to be estimated for meaningful comparison before replicating in other states.

To gain a preliminary understanding of the scheme, recently we undertook a small number of discussions with government health officials in CDHO, enrolled private obstetricians, and a few beneficiaries in Surat city. We found that out of around 200 gynecologist and obstetriticians in Surat district, only 56 were registered for the scheme as per the CDHO data. Most of these were located in Surat city, with the remainder in bigger towns like Bardoli, which is only about 25 km from Surat. Thus, no private nursing homes from remote areas have volunteered to be part of the scheme. Out of the registered 56 EPPs, very few have been active and performed deliveries under the scheme. The majority of EPPs in Surat have taken the first instalment of Rs. 15,000 from CDHO and have not performed the number of deliveries that would be expected. Although the scheme appears to be well advertised, the reasons for such under performance were unclear, and as such require further investigation.

There appeared two main motivational factors for EPPs to join the scheme. Either they were new in "practice" and joined the scheme to build "reputation" by performing more deliveries to gain "experience", or they were at the end of their career and wanted to do some charitable service for the poor. None of the EPPs joined the *Chiranjeevi Yojna* as part of their mainstream activity. Leading gynecologists of the city who are mid career professionals had no incentive to be part of what they viewed as "charitable" schemes of government. An overriding view of all EPPs is that they saw the scheme less as public-private partnership but rather a charitable activity to help the poor. Some also wished to join hands with government in a hope to become licensed providers for abortion by gaining MTP (Medical Termination of Pregnancy) certificate.

It was observed that some EPPs only take "safe" cases of normal delivery and divert complicated cases to the public hospitals. Although the financial package does budget for pregnancy complications, some EPPs refuse to continue the treatment in case of complications requiring EmOC and some warned BPL families before admission that they had to move to the public hospital in case of complications. The rationale provided by EPPs for this is that the cost of treating complications is far more that what is being remunerated under the package with the result that they cannot afford to treat complications. Some also claimed that the caesarean section rate of 7% budgeted in the government package was totally unrealistic and in their experience it was more than 30%. In fact, the CDHO office has also received withdrawal applications from some EPPs.

Surat also has a huge influx of migrants, which is about 21 per cent of the total population of the city (Acharya 2008). These migrants mostly stay in slum-like low-income settlements and do not have documentary evidence like BPL cards that are required to access the scheme. As most of the EPPs are located in better-off areas of the city, poor people fear treatment as they are apprehensive of some latent charges, even if the scheme is free. *Aanganwadi* workers play a very crucial role in linking the potential BPL beneficiaries with EPPs as they suggest opting for free institutional delivery under the scheme rather than choosing home delivery. Nonetheless, there are reports of EPPs demanding additional money from BPL patients, which clearly breaks the trust between BPL families and *Aanganwadi* workers. Such a situation does not augur well for the continued functioning of the scheme. Further, EPPs claim that many beneficiaries are not really BPL, despite holding a card.

If this is the general scenario then the entire purpose of the scheme is defeated as complications requiring EmOC are the root cause of maternal mortality and not the "safe" cases that these EPPs are treating. It is also clear that if only safe cases are treated then the reduction in maternal mortality under the scheme cases is naturally going to be very high as the complicated cases (the real culprit cause for the death due to delivery) are being diverted elsewhere and not considered as a part of the scheme in the first place. Widespread replication of these motivations and behaviours amongst all private providers clearly would pose serious repercussions for the effectiveness and cost-effectiveness of the scheme, were it to be scaled-up to other areas. Essentially, the scheme may only end up shifting the problem – the management of complications requiring EmOC – to public providers. At present, what is required is a full scale evaluation of the costs and outcomes (complications, caesarean section rates, maternal mortality rate) associated with introduction of the scheme from a community sample, not only a selected sample of individuals who were attended by EPPs.

To conclude, shortage of human resources in the health sector has been one of the most important barriers in achieving health related Millennium Development Goals. Since the private health sector is present as well as preferred in India, possible contributions through Public-Private Partnership (PPP) models like *Chiranjeevi Yogna* should be considered. However, the contribution of such a model should be studied in further detail before widespread replication as a viable health care financing strategy in addressing health equity and reducing maternal mortality.

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