

Health Systems

The Problem

Indian healthcare sector has evolved both in terms of quality and quantity overtime. This sector has a vital role in both the wellbeing of the community and the development of the nation. Overall performance of the healthcare sector in India is considerably below international benchmarks. India has made significant progress in health sector. The mortality rate has declined from 27 per 1000 population to less than 7 per 1000 population, life expectancy has increased from a low of 32 years to the current 69 years. There has been a phenomenal decline in the infant mortality rate (~200/1,000 live births) and maternal mortality rate (~500/100,000 live births) to 37 per 1,000 live births and 167 per 100,000 live births (Govt. of India). According to NFHS 4, only 30.3% of pregnant women received full antenatal care. In rural areas, only 16.3 % of pregnant women received full antenatal care, in contrast to their urban counterparts (31.1%).

However, India faces serious challenges in the implementation of policy intentions and strategies. There are gross inequities in access and availability of health services, especially for the poor and disadvantaged. Despite a vast network of public-sector healthcare institutions, a large health workforce and resource mobilization, almost 70% people use a private health facility for outpatient care. They incur about 70% of total health expenses out of pocket (Nandi et al., 2017) (T et al., 2015).

Andhra Pradesh (AP) is one of most progressive states in India and has achieved its demographic goal of reaching replacement fertility levels, with a TFR of less than 2.1 (current level 1.8). It has also almost accomplished MDGs 4, 5 and 6 (NFHS 4, 2015). It has some significant achievements in improving key health indicators in the state; namely, maternal mortality rate (92 per 100,000 live births), and Infant mortality rate (35 per 1000 live births), which are much below the national average (Govt. of India). The coverage with full immunization among children aged 12-23 months is slightly higher than the national average, at 65.3 % compared to 62.0%. About 40% of pregnant women received full antenatal care and 76.3% received at least four requisite visits during pregnancy. However, the state of nutrition among women and children was a concern, as 52.9% of pregnant women and 58.6% of children were reported to be anaemic. Malnutrition among children under five was high, with 31.4% found to be stunted, 31.9% underweight, 17.2% wasted and 4.5% severely wasted (NFHS 4, 2015). Still, a lot needs to be done to achieve SDG targets in the next 12 years.

This study analyses the costs and benefits of the following three interventions.

Solutions

Interventions	BCR	Total benefit (INR crore)	Total cost (INR crore)
Maternal and Neonatal health	7.3	22,107	3,028
Ambulance (Urban)	16.8	16,837	999
Ambulance (Rural)	6.0	47,867	7,950
Family planning (per capita-years)	16.3	6,310	386

Total costs and benefits are discounted at 5% & Benefits and Cost values are in crores of INR except family planning which are in per capita-years.

The full paper by **SD Gupta, Neeraj Sharma, Mahbub Hossain and PR Sodani** of IIMR University, Jaipur is available on www.APpriorities.com/healthsystems

Strengthening basic and surgical capacity for reducing maternal and neonatal deaths

The Problem

Complications during pregnancy and childbirth cause around 800 maternal deaths and 12,100 neonatal deaths per year in AP. Maternal Mortality Ratio (MMR) was 92 per 100,000 live births in 2011-13. In AP, the female population forms virtually half of the 15-49 years age group. This population group experiences enormous suffering due to the unequal distribution of maternal and child health services. NFHS 4 report show that 60% of females among the reproductive age group (15-49 years) are anaemic in AP.

The state has relatively better indicators compared to other states, but it still requires significant effort to achieve related SDG targets. Coverage of basic and emergency obstetric care is a critical factor to improve maternal and child health.

The Solution

The key focus was on reducing maternal mortality by strengthening the service quality of maternal health interventions. The intervention will work in a prospective manner initially for 20 years. It is assumed that the benefits will be same for next 19 years as in the first year. The target of this intervention is a decrease in the Maternal Mortality Rate (MMR) by 40% compared to the pre-intervention status.

Costs

The total cost includes investments in physical and human infrastructure (building, renovation, and equipping medical facilities; training and retaining staff; improving the referral and medical supply system) as well as demand creation, outreach, supervision, monitoring and evaluation activities

Total cost is estimated at INR 3,028 crores at 5% (annual) discount rate.

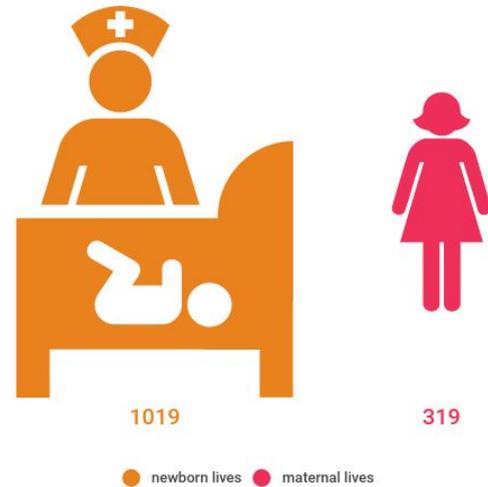
Benefits

The study used incidence and case fatality rate of haemorrhage, obstructed labour, hypertensive disorder, sepsis, and unsafe abortion. These interventions are estimated to result in a reduction of maternal mortality by 40%, saving 319 maternal lives

per year. They will also reduce neonatal mortality by 8%, saving 1,019 newborn lives per year.

Total estimated benefit due to this intervention is INR 22,107 crores at 5% discount rates..

Averted deaths per year



Improved emergency referral management by 108 ambulance services

The Problem

Ambulance services constitute a critical component of Emergency Medical Services (EMS) to transport patients to health facilities on time, which is essential to ensure timely and adequate care. In AP, there is a shortage of ambulances, which results in an unintended delay in delivering timely health services. It often leads to the death of victims in a number of medical and surgical emergencies.

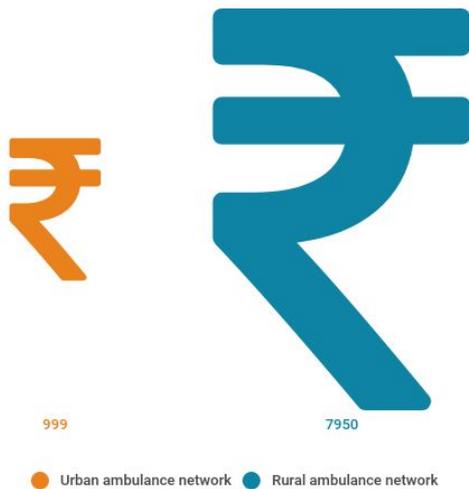
As per NFHS-4 data only 24% of pregnant females were transported during the study period by any (public/private) ambulance service in India. The situation in AP was even worse, with a coverage of only about 14%. In AP, currently, 468 ambulances are providing services, of which about 42% are deployed in urban areas.

The Solution

The intervention considers deployment of additional ambulances, which are expected to remain operational for next 10 years. The indicator to measure the improvement in population health will be the coverage of the ambulance services.

Costs and averted deaths over 10 years

Total costs in crore rupees over 10 years



Total averted deaths



Costs

The cost estimates factor both capital and recurrent costs. The capital cost is a one-time investment for the

next 10 years; in addition, there will be recurrent costing such as salaries, maintenance, training etc.

It is estimated that the total number of ambulances required as 33 per million population in the urban area and 99 per million in rural areas. Hence, the total cost to fulfil the need for ambulances in the urban and rural areas of the state comes to INR 999 crores and INR 7,950 crores, respectively.

Benefits

For estimation of benefits the data of referrals for ischemic heart disease, road traffic accidents, and obstructed labour cases was used. A total of 4,236 and 12,076 deaths in urban and rural areas are avoided and 48,731 and 138,541 DALYs averted at 5% discount rates in urban and rural areas respectively.

The total benefit in economic terms would be INR16,837 crores in urban areas and INR 47,867 crores in rural areas.

Family Planning

The Problem

In 1952, India launched the world’s first National Programme for Family Planning. This initiative gradually led to the National Population Policy (NPP) in 2000 to reduce fertility rates. Globally, the prevalence of unmet need for contraception is still high (MoHFW, 2016).

The National Population Policy (NPP) of India was adopted in 2000 to achieve a total fertility rate (TFR) of 2.1 by 2010 from 2.7 of 2005/2006. However, in 2017, it is still about 2.3, although in 17 states the TFR has reached below 2.1, and Andhra Pradesh is among them, with a TFR of 1.8. Along with this, the total unmet need for contraception stands at 4.7% (NFHS 4, 2015) and this indicates there is a demand for family planning measures as well.

The Solution

Family planning helps women to have their desired number of children and/or ensure the spacing of pregnancies. It is achieved using contraceptive methods and the treatment of infertility. It prevents unwanted pregnancy-related health risks in women, indirectly reduces infant mortality, reduces the spread of sexually transmitted diseases, empowers people and enhances education, reduces adolescent pregnancy, helps in reducing population growth etc.

This intervention looked forward over the next 50 years, as the target is to reduce the number of unwanted children and decrease the prevalence of unwanted pregnancy related abortion.

Costs

The cost of the intervention includes the cost of service delivery and procurement of contraceptives for the target population. The total per capita cost is about INR 386 per capita years at 5% discount rate.

Benefits

The major benefits would come by way of demographic dividends but the child and maternal lives saved due to family planning methods would also be important. The total economic benefits would be about INR 6,310 per capita years at 5% discount rate.