

THE WORLD WE WANT FOR EVERY NEWBORN CHILD

Paediatrics

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ABSTRACT

Newborn health is clearly dependent on the health of mothers. The health of an adolescent girl impacts on pregnancy; the health of a pregnant woman on the health of the newborn and therefore, care during various life stages becomes important. Transforming care for every small and sick newborn, finds that among the newborn babies most at risk of death and disability are those with complications from prematurity, brain injury during childbirth, severe bacterial infection or jaundice, and those with congenital conditions. Additionally, the financial and psychological toll on their families can have detrimental effects on their cognitive, linguistic and emotional development. The study shows the mortality indicators which are of prime importance in evaluating the level of health care. The Neonatal Mortality Rate at the Urban Tertiary care center, Madurai is 34 per 1000 live births for the year 2017 in comparison with Tamilnadu's NMR of 19 and 24 for India for the year 2017. Tamilnadu is next only to Kerala in the management of Newborn morbidity and mortality. The need of the hour is higher quality care in vulnerable areas by integrating maternal, newborn and child health services in a single continuum of care and thereby rehabilitating the workforce. The Man, Machine and Material have been well provided by the state government of Tamilnadu. The government's will in implementing the health schemes ardently in accordance with WHO guidance, relentlessly through the years has prioritized health care especially after 2005 when NRHM was introduced. Tamilnadu's political will, will bring down the IMR to a single digit, being second only to Kerala, similar to the statistics of developed countries and to reduce neonatal mortality to at least as low as 12 per 1,000 live births by 2030 in accordance with Sustainable Developmental Goals. The government has set out on a vision of the state in which there are no preventable deaths of newborns or stillbirths; where every pregnancy is wanted and every birth celebrated; and where women, babies and children survive, thrive and reach their full potential. MAKE EVERY MOTHER AND CHILD COUNT.

KEYWORDS

newborn, mortality, morbidity, new born care.

1. INTRODUCTION

Our newest and youngest citizens have a better chance of survival today than they did 20 years ago is a huge achievement. The Indian government is rolling out one of the biggest publicly funded healthcare plan in the world and is clamping down on prices of medical devices, even as global investments are pouring into tertiary care India's Constitution tasks each state with providing health care for its people. The Ministry of Health in India was established in 1947 along with its independence. The government has made health a priority in its series of five-year plans, each of which determines state spending priorities for the coming five years. The National Health Policy was endorsed by Parliament in 1983. The policy aimed at universal health care coverage by 2000, and the program was updated in 2002. The health care system in India is primarily administered by the states. By a host of metrics, women and their children have been getting healthier in recent years. Between 1990 and 2013, the annual number of maternal deaths dropped from 523 000 to 289 000. – The Lancet 2014. The child mortality story is just as impressive. Since 1990, deaths in children younger than 5 years have declined by 47%. Given the critical role that women and children have in securing a healthy, prosperous, and stable future for everyone, this is encouraging news. But it's NOT ENOUGH. Millions of small and sick babies and women are dying every year because they simply do not receive the quality care that is their right. "When it comes to babies and their mothers, the right care at the right time in the right place can make all the difference, said Omar Abdi, UNICEF Deputy Executive Director. WHO commends India for its ground-breaking progress in recent years in reducing the maternal mortality ratio (MMR) by 77%, from 556 per 100 000 live births in 1990 to 130 per 100 000 live births in 2018. India's present MMR is below the Millennium Development Goal (MDG) target and puts the country on track to achieve the Sustainable Development Goal (SDG) target of an MMR below 70 by 2030. India ranks 129 among 184 nations on maternal mortality with an MMR of 130 and ranks 145 out of 193 nations with an IMR of 34, according to WORLD BANK. 2018. Newborn health is clearly dependent on the health of mothers. The health of an adolescent girl impacts on pregnancy; the health of a pregnant woman on the health of the newborn and therefore, care during various life stages becomes important. "For every mother and baby, a healthy start from pregnancy through childbirth and the first months after birth is essential," said Dr Soumya Swaminathan, Deputy Director General for Programmes at WHO. "Universal health coverage can ensure that everyone – including newborns – has access

to the health services they need, without facing financial hardship. Progress on newborn health care is a win-win situation – it saves lives and is critical for early child development thus impacting on families, society, and future generations." Worldwide, neonatal mortality has decreased by 2% each year between 1990 and 2012, from 33 to 21 deaths per 1000 live birth. Although the world has certainly improved for newborn babies, progress has been considerably slower than for mothers and children. Newborn deaths account for 45% of deaths among children under five globally, resulting in 2.7 million lives lost each year. In addition, 2.6 million babies die in the last 3 months of pregnancy or during childbirth (stillbirths) and 303,000 maternal deaths occur each year. Every year, these 2.7 million newborn babies die largely from preventable causes, and these are appallingly high numbers. The countries/ states commitment for ensuring high-quality healthcare for women and girls is essential in the prevention of preterm births. A road map of strategic actions by the state WILL put an end to preventable newborn mortality and stillbirth and will contribute in the reduction of maternal mortality and morbidity. In India, the annual burden of neonatal deaths has reduced from 1.35 million in 1990 to 0.76 million in 2012, but we still face a huge challenge to reduce the number of deaths. Neonatal mortality accounts for 70% of the IMR, and in neonatal mortality, early neonatal mortality accounts for 70% of the deaths – said Sarada Suresh, former director, Institute of Child Health, and former professor of Paediatrics, Madras Medical College. This is where the sick neonatal intensive care units or NICUs have come in handy. Besides, the process for referrals to government hospitals have been simplified, and the availability of 108 emergency ambulances within a short time to shift women who have gone into labour or the new born have also contributed to the increasing survivability. The Schemes present in INDIA through the years enabling reduction in newborn morbidity and mortality under NHM are:

1. Facility Based Integrated Management of Neonatal and Childhood Illness (F-IMNCI): 2003
2. Integrated Management of Neonatal & Childhood Illnesses (IMNCI): 2003
3. Home Based New Born Care (HBNC): 2009 for post partum care of mother & newborn by NRHM and NIPI
4. Navjat Shishu Suraksha Karyakram (NSSK) programme on Basic Newborn Care and Resuscitation.: September 2009
5. NHM Health Statistics Information Portal
6. Facility Based Newborn and Child Care : 2011

7. Janani Shishu Suraksha Karyakram (JSSK): 1st June, 2011
8. RMNCH+A Reproductive, Maternal, Newborn, Child and Adolescent Health - 2013
9. Mother and Child Tracking System

These are the steps taken towards ensuring zero out of pocket expenditure for the vulnerable sections of society. While efforts to reduce maternal and child mortality rates over the past 20 years have had a striking impact, stillbirths and newborn deaths have over the same period been missed out. The government has also developed now, the India Newborn Action Plan (INAP) in response to the global Every Newborn Action Plan (ENAP) launched at the World Health Assembly in June 2014. INAP, in which UNICEF is a key partner, aims to significantly reduce **preventable** newborn deaths and stillbirths and to bring down the Neonatal Mortality Rate and Still Born Rate to "single digits" by 2030. India has shown good progress in the MDGs' era and narrowly missed its MDG 4 target for under five mortality, achieving an under five mortality rate of 43 per 1000 against the target of 42 per 1000 live births. However in spite of these gains, the burden still remains high, with India contributing to one fifth of under-five mortality burden and a quarter of neonatal deaths globally that is 30% of global neonatal deaths. In terms of absolute numbers, this translates into 1.1 million under 5 deaths, of which 630,000 happen during the first four weeks of life. It is nearly half of under 5 deaths occur in neonatal period and most of these deaths occur within first few days of birth. As a result, neonatal deaths are an increasing proportion (44%) of children younger than 5 years. So, an attempt to improve child survival hinges on improving the newborn health. India has the largest number of births in the world – more than 26 million a year. The major causes of newborn deaths in India are

- pre-maturity (35 per cent);
- neonatal infections (33 per cent);
- intra-partum related complications/ birth asphyxia (20 per cent);
- congenital malformations (9 per cent).
- Birth asphyxia and sepsis are the major causes of these deaths.

Initiation of breastfeeding within one hour of life itself is estimated to save a number of new born lives, but 3 out of 5 neonates are not being breast fed.

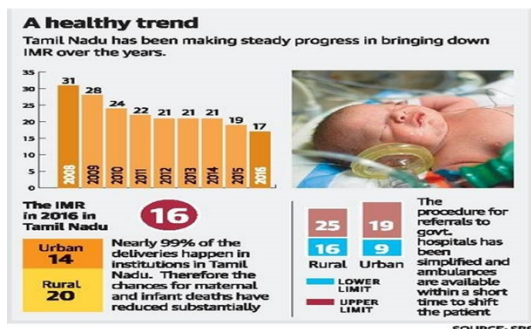


FIGURE 1: IMR comparison

It is the last mile that is really tough, and we are well on our way towards our own goal of achieving an IMR of 10 by 2023, says K. Kolandaisamy, Director, Public Health. **TAMILNADU'S MMR is 62 / 1 lakh live births** as on 2018 well below the national average of 130 / 1 lakh and THE SUSTAINABLE DEVELOPMENT GOAL (SDGs) : Goal 3 : to reduce the global maternal mortality ratio to less than 70 per 100,000 live births by 2030

THE WORLD NEWBORN SCENARIO : ITS DIFFERENT NOW

The report by WHO: Survive and Thrive: Transforming care for every small and sick newborn, finds that among the newborn babies most at risk of death and disability are those with complications from prematurity, brain injury during childbirth, severe bacterial infection or jaundice, and those with congenital conditions. Additionally, the financial and psychological toll on their families can have detrimental effects on their cognitive, linguistic and emotional development. Without specialized treatment, many at-risk newborns won't survive their first month of life, according to the report. In 2017, some 2.5 million newborns died, mostly from preventable causes. Almost two-thirds of babies who die were born premature. And even if they survive, these babies face chronic diseases or developmental delays. In addition, an estimated 1 million small and sick newborns survive with a long-term disability. WHO defines preterm birth as all births before

37 completed weeks of gestation, or fewer than 259 days from the first date of a woman's last menstrual period. Complications of preterm birth were the leading cause of death in children younger than 5 years of age globally in 2016, accounting for approximately 16% of all deaths, and 35% of deaths among newborn babies. Preterm neonates who survive are at greater risk of a range of short-term and long-term morbidities. Common complications of preterm birth are high rates of respiratory distress syndrome, bronchopulmonary dysplasia, necrotising enterocolitis, sepsis, periventricular leucomalacia, seizures, intraventricular haemorrhage, cerebral palsy, infections, feeding difficulties, hypoxic ischaemic encephalopathy, and visual and hearing problems. Although the risks of mortality and morbidity are much higher in early gestation (<34 weeks), late preterm birth (34-37 weeks) occurs more often, and newborn babies born late preterm have significantly higher risks of adverse outcomes than babies born at term. The 37 week cutoff for preterm birth is somewhat arbitrary, as early term births (37 and 38 weeks) have higher rates of adverse outcomes than full term gestations (39 and 40 weeks). Preterm birth is associated with significant costs to health systems, and the families of preterm newborns often experience considerable psychological and financial hardship. Every newborn that survives or does not survive teaches us something. In India, an estimated 26 millions of children are born every year. About 46% of under-five deaths take place within the first 7 days of birth, 61% within first one month of birth. India has an avowed responsibility towards taking care of its newborns and ensuring that each child has a fighting chance of surviving to adulthood and realizing his or her potential and well being. Every effort must be made to address **AVOIDABLE** stillbirths and newborn deaths. We are committing ourselves to bring NMR and SBR to single digits by 2030. Difficult as it may seem, India has expertise, experience and political will also now to achieve this.

3.RESULTS:

Table 1: OUR HOSPITAL STATISTICS

S. No	Total number	2017	2018
1	Total Deliveries	13133	12752
2	Caesarean sections	5467	5615
3	Live-births	12971	12567
4	Still-births	256 (19 per 1000 births)	185 (14 per 1000 births)
	Fresh	Macerated	0 256 0 185
5	Term babies	9878	9521
6	Birth weight of babies		
	>=2500gm	9988 (76%)	9311 (74%)
	< 2500gm	2983 (22%)	3256 (26%)
	1500-2499gm	2164 (17%)	2660(21%)
	1000-1499 gm	729 (5.6%)	499(4%)
	<1000 gm	90 (0.7%)	97 (0.8%)
7	Preterm births Gestation < 37 weeks	3093 (23%)	3046 (24%)
8	No of newborns who required resuscitation at	1334	1291
9	Total no. of new born deaths (LR/Postnatal 1000LB)	458 (35 per 1000LB)	438 (32 per 1000LB)

Table 2: Inborn and outborn records for the year 2017 and 2018

S. NO.	Total number	Inborn 2017	Outborn 2017	Inborn 2018	Outborn 2018
7	Admission in the Unit	3131	1917	4470	2110
a	Male	1701	1135	2411	1191
b	Female	1430	782	2059	919
8	Birth weight/weight at admission (Inborn – Record the birth weight/ Extra-mural – Record birth weight if available; if it is not available ,record and report weight at admission)				
a	>= 2500gm	1783	1103	2746	1231
b	1500-2499gm	1075	614	1415	664
c	1000-1499gm	201	132	239	157
d	<1000gm	74	71	79	60
9	Gestation				
a	> 37 weeks	2119	1339	3182	1457
b	34- 37 weeks	564	301		344
c	< 34 weeks	450	280	495	311
10	Morbidity Profile				

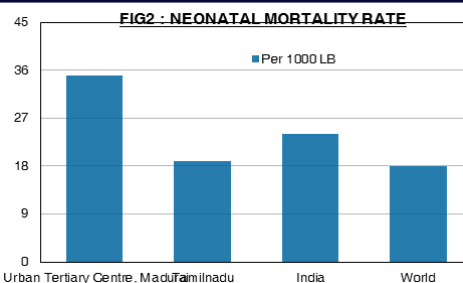
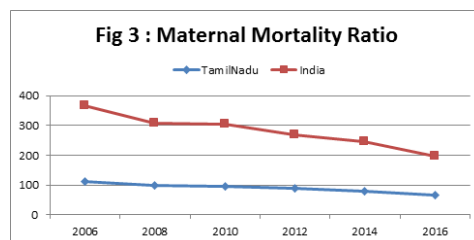
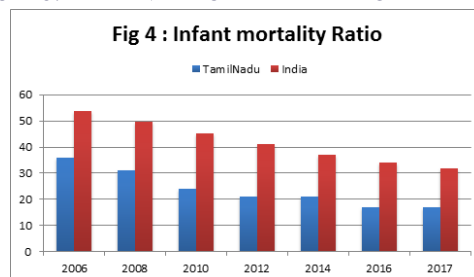
a	Respiratory Distress syndrome	11	12	9	7
b	Meconium aspiration syndrome	39	50	66	31
c	Other causes of respiratory distress	108	37	238	59
d	HIE/Moderate-Severe Birth Asphyxia	99 /149	116 /95	126/278	115/116
e	Sepsis/Pneumonia/Meningitis	519 /0/1	343/1/1	657/0/2	397/0/7
f	Major Congenital Malformation	194	177	126	169
g	Jaundice requiring phototherapy	323	218	904	279
h	Hypothermia	8	4	5	2
i	Hypoglycemia	4	2	2	2
j	Others	1676	875	2050	906
11	Average Duration of Stay	7.63	6.69	7.13	8.18

Table 3 :MORTALITY PROFILE

S. no		Inborn 2017	Outborn 2017	Inborn 2018	Outborn 2018
11	Age at death				
A	<1 day	47	22	44	17
B	1-6 days	354	374	284	305
	Early Neonatal Mortality Rate	31 per 1000 LB		26 per 1000 LB	
C	>= 7 days	62	162	81	178
	Late Neonatal Mortality Rate	4 per 1000 LB		6 per 1000 LB	
	Neonatal Mortality Rate	35 per 1000 LB		32 per 1000 LB	
12	Birth weight / Admission weight				
A	>=2500 gm	126	214	102	215
	BWSDR >=2500gm (Birth Weight Specific Death Rate)	12 per 1000 LB >=2.5Kg		11 per 1000 LB >=2.5Kg	
B	1500-2499 gm	146	195	116	151
C	1000-1499 gm	119	82	120	83
D	<1000 gm	72	67	71	51
	BWSDR < 2500gm	112 per 1000 LB <2.5kg		94 per 1000 LB <2.5Kg	
13	Gestation				
A	Term	172 (37% of NMR)	272 (48% of NMR)	128 (31% of NMR)	255 (51% of NMR)
B	Preterm	291 (63% of NMR)	286 (53% of NMR)	281 (69% of NMR)	245 (49% of NMR)
C	Post term	0	0	0	0

4.DISCUSSION

The study shows the mortality indicators which are of prime importance in evaluating the level of health care. The Neonatal Mortality Rate at the Urban Tertiary care center, Madurai is 34 per 1000 live births for the year 2017 in comparison with Tamilnadu's NMR of 19 and 24 for India for the year 2017. Tamilnadu is next only to Kerala in the management of Newborn morbidity and mortality. This has been achieved mainly due to the sustained commitment throughout the years and the political will shown towards health care which has largely helped the newest citizens of Tamilnadu to have a healthy start. In Madurai GRH, the early neonatal death contributes to nearly 90% of newborn mortality which is 31 out of 35 per 1000 Live Births and Birth Weight Specific Death Rate in neonates less than 2.5 Kg around 112 per 1000 live births in comparison to 12 per 1000 live births in > 2.5Kg. This is an area of focus, which when prioritized will help in the betterment of newborn care, thereby reducing the neonatal mortality. At the outlook there is a huge correlation between Maternal health and Infant health and their mortality rates.

**FIGURE2: NEONATAL MORTALITY RATE****FIGURE 3:MATERNAL MORTALITY RATIO****FIGURE 4: INFANT MORTALITY RATIO****Table 4 :Comparing the low performing states and high performing states:**

		MMR (2016)	IMR (2016)
Low Performing	Assam	237	44
	Uttar Pradesh	201	43
	Rajasthan	199	41
High Performing	Kerala	46	10
	TamilNadu	66	17
	Andhra Pradesh	74	34

Source: NITI ayogya official website 2016

Infant Mortality has decreased significantly in India over the past 5 years from an IMR of 44 to 34. Currently we are in the last mile to achieve a single digit IMR which is tougher but not impossible. As India strives towards achieving its commitments to the SDG 2030 goal 3 of reducing neonatal mortality to at least 12 per 1000 live births, there is a need to rethink our strategies to deliver higher quality newborn care. The newborn's health starts with the mother's health.

Recommendations:

Now is the time for High quality care

- Adolescent health care and Maternal Nutrition - reflects on baby's weight, which is a prime factor influencing newborn morbidity and mortality – as evidenced by our study.
- 100% Maternal immunization -especially MR in order to prevent congenital anomalies due to rubella.
- Folic acid administration – to prevent NEURAL TUBE DEFECTS (congenital anomalies)
- Vitamin K administration of Newborns for prevention of Hemorrhagic disease of newborn.
- Newborn screening
- Rigorous Exclusive Breastfeeding (44% lower risk if all-cause mortality was reported in early breast fed infants) and Kangaroo Mother Care

4.CONCLUSION:

WHO reports that the world will not achieve the global target of HEALTH FOR ALL unless it transforms the care for EVERY

newborn. The need of the hour is higher quality care in vulnerable areas by integrating maternal, newborn and child health services in a single continuum of care and thereby rehabilitating the workforce. The Man, Machine and Material have been well provided by the state government of Tamilnadu. The government's will in implementing the health schemes ardently in accordance with WHO guidance, relentlessly through the years has prioritized health care especially after 2005 when NRHM was introduced. Tamilnadu's political will, will bring down the IMR to a single digit, being second only to Kerala, similar to the statistics of developed countries and to reduce neonatal mortality to at least as low as 12 per 1,000 live births by 2030 in accordance with Sustainable Developmental Goals. The government has set out on a vision of the state in which there are no preventable deaths of newborns or stillbirths; where every pregnancy is wanted and every birth celebrated; and where women, babies and children survive, thrive and reach their full potential. MAKE EVERY MOTHER AND CHILD COUNT.

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