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Title of the Paper

POLICY FOR PREVENTING INFANT MORTALITY IN KARNATAKA STATE

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Child mortality is one of the major issues in the processes of human development. All the developing countries are having high infant mortality. Reducing child mortality and improving the maternal health are the two goals of millennium development. The rate of child mortality and women dies in child birth is very high in developing countries. In developed countries 13 women die in child birth for every 100,000 live birth, whereas in poor countries this is ten times more. It is estimated that more than 50,000 women die every year at the time of child birth over the globe.

The death is due to poverty, malnourished, weakened by diseases, exposed to multiple pregnancies, lack of access tot rained health care worker and modem facilities. Similarly every year more than 10 million children in developing countries die before the age of five. In many poorest countries the IMR is 71 per 1000 live births. In India the IMR is 50 to 60 per 1000 live birth. The child deaths are due to disease or combination of diseases.

Realizing the importance of reducing IMR and improving the health of mother many programs are launched throughout the country. However, still the rate of child death and mother death not reduced to the expected level. As per the millennium target goal of reducing the rate by 2015, the existing schemes to be strengthened and efficiently implemented in India.

Maternal and child health policies are the pivotal in reducing infant and child mortality. The Govt. of India started the programs of MCH in the first five year plan. (1951-56).Subsequently in 5^{th} five year plan (1974-79) the integration MCH and nutrition services was introduced as a part of minimum needs program.1 The main objectives of this program was to provide basic public health services to vulnerable groups of pregnant women, lacking mothers and pre-school children. Later on the comprehensive programs evolved under MCH scheme.

The former president of India Dr. APJ Abdul Kalam stated in his book India 2020 A vision for the millennium, women and child bearing age and children under five represent the maternal and child category in any population profile. As per the 1991 census 56 percent of the population in India fall under this category, anemia, chronic under nutrition and complications during pregnancy and child birth are the orders of priority for maternal health, in the case of children, the priorities are diarrhea diseases, anemia prenatal disorders and a deficiency. Effective antenatal care, prophylactic iron and folic acid supplements, food security, improved sanitation and drinking water facilities universal immunization coverage are some of the necessary which would reduce the problem of MCH. 2.

There are three key causes of child mortality,

The first comprises preventable diseases like diarrhea, pneumonia and measles and neonatal insertion. Nearly 4/5 of all deaths of under five in Indian occur on the first five years, studies shows that around 16% of under five mortality could be prevented by exclusive breast feeding for the first six months of life. And one of the best ways to ensure children survive their earliest hours and days is to ensure that births are attended by skilled personnel.

Malnutrition is the second killer, hunger and malnutrition are associated with more than half of all child deaths. In such cases children are more vulnerable to infections. Thirdly and crucially it is the root causes the lead to premature death in children such as poverty, lack of access to health services, lack of safe drinking water and sanitation and structural discrimination on the basis of gender, ethnicity and caste.3

India is still among high mortality rate countries. IMR has declined slowly from 204during 1911-15to 129 per live births in 1970 and remained static at around 127 for many years and then declined a bit once again to 114 in 1980 and coming down to 69 in 2000. Despite this significant decline the IMR rates are very high as compared to developed countries which are having the range of 5-8 per 1000 live births. 4. India is a vast country with widely varying population hence there is a vast regional variation in IMR. Orissa state having IMR of 98 which is very high, Kerala has 16 per 10000 live births.

Profile of Karnataka State

Karnataka is one of the provinces of India situated in the southern part of India. The total geographical area of the state is 191791 sq kms with the population of 52850512 (2001).Of the total population 17961529 are living in urban area and 34889033 are living in rural area. (33percent and 67 percent)There are 27 districts in the state which are delineated for convenient administrative purpose. As per

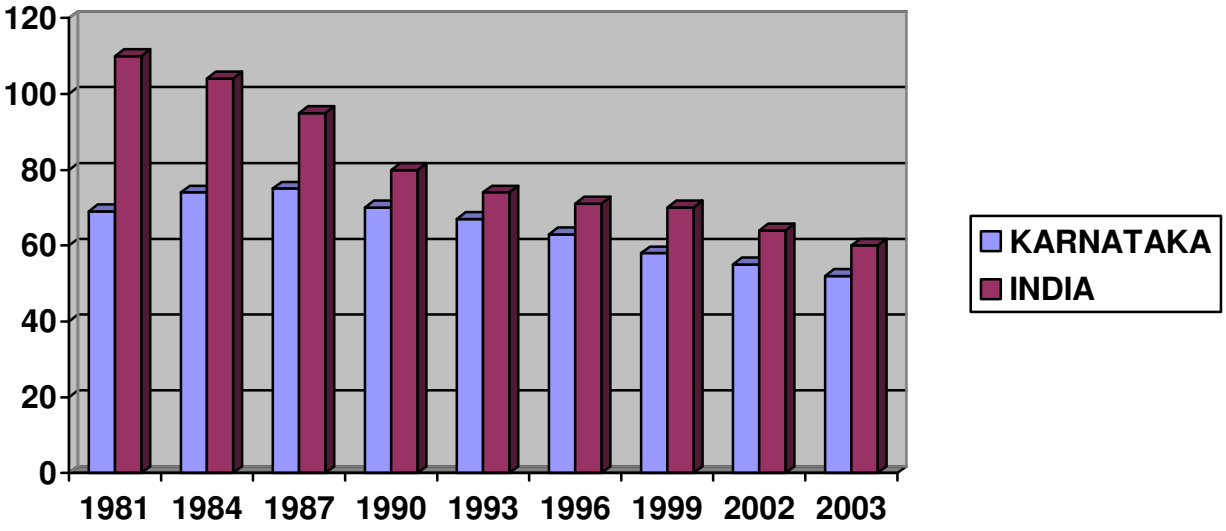
health services are concerned, at the state level there is a Directorate which will control the all District administration headed by District Health Officers who are in charge of implementing all health programs in the District. There are 177 hospitals, 1696 primary health centers and 581 primary health units in the state which are rendering maternal and child health services.

Infant and child mortality in Karnataka

The present level of infant mortality in Karnataka is 55 per thousand live births (SRS 2003) – a significant decline of about 40per cent from 95 in 1971. At the national level, the decline in IMR is about 60 per cent though the estimated level of IMR at both points of time is higher than that of Karnataka (Table 1)

Table 1: IMR for Karnataka and India

Year	Karnataka					India
	Total	Rural	Urban	Total	Rural	Urban
1981	69	77	45	110	119	62
1984	74	84	43	104	113	66
1987	75	86	41	95	104	61
1990	70	80	39	80	86	50
1993	67	79	4	74	82	45
1996	63	71	40	71	80	45
1999	58	69	24	70	75	44
2002	55	65	25	64	69	40
2003	52	61	24	60	66	38



IMR per 1000 live births

The various rates of IMR and child mortality rate (CMR) by residence (NFHS-1 and NFHS-2) are presented in Table 2. There has been a decline of about two infant deaths per 1000 live births each year. However, the SRS data on IMR for Karnataka prior to both surveys showed a faster decline during 1971-81. Rural mortality rates are significantly higher than the urban rates. If two segments of IMR, viz. neonatal and post-neonatal are separated, it is clear that the proportion of neonatal deaths to the total IMR has shown a three percentage points increase between two surveys as against a decline of three percentage points in post-neonatal deaths.

Table 2 Infant and child mortality in NFHS-1 and NFHS-2: Karnataka

Year	Neonatal mortality			Post-neonatal mortality			Infant mortality			Child mortality			Under-five mortality		
	R	U	T	R	U	T	R	U	T	R	U	T	R	U	T
NFHS-1 (1988-92)	47.7	39.4	45.3	20.0	20.6	20.2	67.7	60.0	65.4	28.6	11.3	23.5	94.4	70.6	87.3
NFHS-2 (1994-98)	39.3	32.1	37.1	17.2	8.1	14.4	56.5	40.1	51.5	23.9	9.0	19.3	79.0	48.8	69.8
Decline during the period (per cent)	17.6	18.5	18.1	14.0	60.6	28.7	16.5	33.2	21.3	16.4	20.4	17.8	16.3	30.9	20.1

Table 3: IMR in the regions of Karnataka, all-India and selected states

Regions	IMR	
	1990-91	2001-02
Karnataka	82	55
South Karnataka	72	50
Hyderabad Karnataka	86	60
Bombay Karnataka	85	59
All India	86	64
Kerala	17	10
Orissa	123	87

A sizeable decline of about 61 per cent has occurred in the urban post-neonatal death rate.

During 2001-02, Dakshina Kananda district (44) had the lowest IMR followed by udupi, Bangalore Urban and Shimoga (45). The district with the highest IMR is Dharwad (69) followed by Bijapur and Gulbarga (67), Bidar and Gadag (66). All districts with an IMR higher than the national average are in north Karnataka. Overall, the southern districts in Karnataka present the best scenario with an IMR of 50 compared with Bombay Karnataka (59) and Hyderabad Karnataka (60). Karnataka will have to step up its efforts to catch up with states like Kerala (10) and Tamil Nadu (44). Currently, only the best performing district is on a par with the Tamil Nadu aggregate.There has also been a drop of about 20 per cent in child mortality and in under-five mortality.

There is a correlation between high IMR and the low socio-economic standing of families, gender disparity, illiteracy and lack of institutional support. Contributory factors to infant mortality range from low per capita income, under representation of women in the non-agriculture sector, early marriage for women, female illiteracy under-nutrition of both the mother and fetus, high CBR and CDR, poor access to antenatal care (ANC), low birth weight, unsafe deliveries and the inadequate reach of the services provided by the healthcare system. Kolar, Bijapur, Bagalkot, Dharwad, Haveri, Gadag, BHidar, Gulbarga, Koppal, Chikmagalur, Hassan, Raichur, uttara Kannada, Mysore, Mandya and Kodagu have an IMR higher than the state average. While most districts have some or most of the pre-disposing factors for high IMR mentioned above, it is indeed surprising to find the relatively better developed districts such as Hassan and Kodagu performing poorly.The regional variation in IMR in Karnataka is due to the leveal of development of regions . Both Bombay Karnataka and Hydrabad Karnataka which are in the northern part part of karnataka are considerd as socially and economically backward regions. (Dr Najundappa report).

Table 4

District	Infant Mortality Rate (IMR)	
	1991-92	2001-02
Bagalkot	95	64
Bangalore Urban	64	48
Bangalore Rural	64	45
Belgaum	65	45
Bellary	79	53
Bidar	87	66
Bijapur	95	67
Chamarajnagar	79	57
Chikmagalur	92	62
Chitradurga	75	54
Dakshina Kannada	59	44
Davangere	75	52
Dharwad	97	69
Gadag	95	66
Gulbarga	94	67
Hassan	95	59
Haveri	95	66
Kodagu	86	62
Kolar	78	59
Koppal	92	65
Mandya	87	62
Mysore	79	56
Raichru	80	59
Shimoga	60	45
Tumkur	76	53

Udupi	59	45
Uttara Kannada	85	59
Karnataka	82	55

The above table shows the regional variation of IMR in Karnataka state.

Infant and child mortality declines considerably with increases in standards of living (Table 5).The poor are caught in a cycle of low income and ill-health, which are mutually self-reinforcing. The poor cannot afford the costs of a nutritious diet or antenatal and post-natal care, the absence of which can result in high-risk pregnancies which mean either indebtedness or maternal death. High rates of female illiteracy have very adverse effects on the survival of mothers and their children in terms of women's lack of awareness of nutrition or postpartum care.

Table 5

Characteristics		Neonatal	Post-neonatal	Infant mortality	Child mortality	Under-five mortality
Residence	Urban	35.6	8.5	44.1	12.1	55.7
	Rural	48.3	22.0	70.3	27.1	95.5
Sex of child	Male	53.6	16.5	70.1	21.1	89.7
	Female	34.6	19.3	54.1	23.8	76.6
Religion/ Caste/Tribe	Hindu	47.5	18.1	65.5	24.0	86.0
	Muslim	33.0	16.4	49.5	17.0	65.0
	SC	46.9	23.0	69.9	37.4	104.6
	ST	63.2	21.9	85.0	38.9	120.6
	Others	39.6	16.8	56.4	14.2	69.8
Standard of living	Low	60.9	21.2	82.2	38.5	117.5
	Medium	36.9	17.7	54.6	13.6	67.5
	High	28.7	9.5	38.2	12.4	50.1
Mother's education	Illiterate	52.9	23.3	76.2	29.2	130.1
	Middle school	40.8	10.9	51.7	4.3	55.8
	High school and above	29.3	8.5	37.8	5.65	43.1
Mother's age at birth	< 20	55.2	19.3	74.4	22.9	96.7
	20 – 29	36.6	16.7	53.3	20.7	72.9
	30 – 39	52.8	20.4	73.2	31.6	102.3
Birth order	1	4.9	13.7	61.5	13.4	74.1
	2	34.7	16.7	51.4	14.3	65.0
	3	40.7	21.2	69\1.9	30.9	90.9
	4+	54.4	22.5	76.9	36.8	110.9
Birth interval	< 24 months	68.3	30.5	98.8	40.0	134.8
	24-47 months	29.0	16.1	45.1	21.3	65.4
	48+ months	25.2	7.1	32.3	10.1	42.1

Factors Affecting Infant Mortality

Infant mortality is due to several factors, such as biological , economical and social factors.

The biological factors comprises birth weights, age of the mother, birth order ,birth spacing ,multiple births,, family size and high fertility which are very common in developing counties.

The economic factors include availability of health care poverty, malnutrition, anemia.

The social factors are breast feeding, religion, caste, early marriage, gender, quality of mother, illiteracy and sanitation.

To over come this problems government of Karnataka has been implementing several policies.

Antenatal care

This is one of the major program to prevent IMR which is implemented in all the Primary Health center and Primary Health Units in the state**.** It is a mandatory on the part of every Axillaries and paramedical staff that they should visit every houses in the villages to identify the pregnant women and provide antenatal care As result of this, the proportion of pregnant women receiving antenatal care (ANC) increased by about 3 percentage points between two surveys. In urban areas, this proportion has increased much more significantly than in rural areas. The proportion of pregnant women among Scheduled Tribes receiving professional care has declined though there has been an increase among Scheduled Caste women. Antenatal examinations by doctors have also increased. Table 6.shows the pregnant of women of various economic groups, of urban and .rural got the antenatal care by different sources like at home health institutions etc.

The main components of the government's antenatal care program are supply of iron and folic acid tablets, tetanus (TT) immunization, and three ANC visits. The RCH rapid household survey during 1997-98 provides information about district level ANC services (Table 7). Coverage of pregnant women by a complete ANC package comprising a minimum three ANC visits, at least one TT injection and supply of IFA tablets, varied from a high 88 per cent in Kodagu to 26 per cent in Bellary with the state averaging 60 per cent. In northern Karnataka, while the coverage the coverage by any type of ANC is high, coverage by the complete ANC package is alarmingly low. Women who do not complete the full course do not get the protection required to withstand anemia and tetanus and potential problems are not identified in time for treatment. The situation is more serious when data on full ANC services of 2002 is analyzed. It shows that while coverage by any type of ANC service has improved, the percentage of women receiving full ANC has declined. One inference is that healthcare staff was not able to ensure that women who initially utilized ANC services were motivated to complete the course. Possibly staff failed to ensure full coverage for various reasons ranging from lack of personnel to inadequate supplies of drugs and diagnostic kits.

Table 6: Percentage of pregnant women who received antenatal services by background characteristics

Background characteristics		NFHS-1				NFHS-2			
		At home	From doctor	From other health profe-ssionals	Total	At home	From doctor	From other health profe-ssionals	Total
Mother's age	< 20	17.3	58.l6	4.5	80.4	3.4	65.6	13.5	82.5
	20-24	18.7	60.7	5.9	85.3	5.5	72.9	10.0	88.4
Residence	Urban	5.0	77.8	3.9	86.7	1.2	86.7	6.5	94.4
	Rural	24.1	52.0	5.9	82.0	6.4	62.9	13.3	82.6
Caste	SC	24.7	51.7	5.1	80.5	7.1	63.3	12.0	82.4
	ST	20.5	53.6	4.5	78.6	9.9	48.5	13.4	71.8
Standard of living	Low	NA	NA	NA	NA	6.8	54.0	13.5	74.3
	Medium	NA	NA	NA	NA	4.6	74.2	11.4	90.2
	High	NA	NA	NA	NA	1.4	90.9	5.9	98.2
Total		18.6	59.4	5.4	83.4	4.8	70.3	11.2	86.2

Table 7: Percentage of women who received ANC services: 1998-99 and 2002

Districts	Any type of ANC		Full ANC (3 ANC visits at least one TT+IFA given)	
	1998-99	2002	1998-99	2002
Bangalore Urban	98.7	98.2	78.4	45.6
Bangalore Rural	93.9	94.3	69.1	49.8
Belgaum	91.7	96.3	45.6	25.1
Bellary	65.0	NA	26.5	NA
Bidar	79.6	87.3	37.9	18.5
Bijapur	73.3	NA	34.4	NA
Chikmagalur	97.8	98.3	68.2	39.9

Chitradurga	91.0	NA	67.8	NA
Dakshina Kannada	98.5	NA	84.9	NA
Dharwad	91.8	NA	60.4	NA
Davangere	70.1	80.0	28.1	12.8
Hassan	97.2	98.3	70.2	26.3
Kodagu	100.0	98.0	88.4	34.6
Kolar	95.2	97.0	75.3	34.6
Koppal	NA	81.1	NA	24.4
Mandya	91.7	97.0	67.2	28.7
Mysore	96.4	NA	75.8	NA
Raichru	78.7	69.7	32.6	25.5
Shimoga	97.6	NA	82.2	NA
Tumkur	95.4	94.2	76.5	41.1
Uttara Kannada	98.4	98.8	76.4	34.6
Average (all dists)	88.9	92.0	60.1	31.5

The above table revels the percentage of pregnant women receives the ANC care. .Kodagu district has achieved 100 percent ANC care, where as few district like Bellary ,Bidar, Raichur the percentage of ANC care received by pregnant women is around 70 percent which reflect the regional variation.

Institutional delivery:

The second important focus of the reproductive and child health (RCH) program is safe delivery. .Government of Karnataka has given importance for safe delivery by the trained personnel. Delivery, should take place in hygienic conditions and under the supervision of trained health professionals. Safe deliveries are less likely to be accessible to the rural poor and the Scheduled Castes and Tribes(dalits) for several reasons However there has been a considerable improvement in the proportion of safe deliveries at the district level

though the number is low in northern Karnataka. Women resort to home deliveries for economic reasons primarily, although distance from the health facility, customary practices and lack of knowledge about the facilities available are other reasons. The government has converted 400 primary health centers into 24-hour service providers in 2005-06 to increase institutional deliveries. This is a step in the right direction.

Family planning

This is an other important policy implemented to control population growth and IMR. The implementation of family planning would help to maintain the spacing of child birth.The current contraceptive prevalence rate of 60 per cents is slightly higher than the all-India average, which is 58.8 per cent. Female sterilization (52.5 per cent) IUD (3.5 per cent) CC users (1.0 per cent) and traditional methods (1.3 per cent) are the principal methods. Male sterilization is a low 0.7 per cent. The prevalence rate varies from 39 per cent in Gulbarga to 75 per cent in Hassan. Similarly, for spacing methods, Gulbarga records a low prevalence rate of 0.9 per cent and Dakshina Kannada records 11.4 per cent, which is not satisfactory.

Nutrition

Nutrition is a significant determinant of good health and the incidence of mal- and under-nutrition in the community affects certain indicators such as IMR and MMR adversely. For the poor, an improvement in per capita income combined with the availability of cheaper food is a step towards ensuring higher levels of food consumption. The status of nutrition is, however, also dependent on food consumption patterns, which, in turn, are shaped to a great degree by women's status relative to men. Custom dictates that women eat least and last in the feeding order, followed closely by children. Not surprisingly, the greatest levels of poor nutrition occur among women and children. An insufficient food intake and ignorance about nutrition coupled with low immunity ensure that the

most vulnerable experience very fragile health. In this context, the greatest changes can occur only when there is an improvement in women's status and an enhancement of per capita food availability.

Child nutrition

The NFHS-2 has examined the nutritional status of children up to 3 years of age by weight-for-age, height-for-age and weight-for-height. Children who are more than -250 below the reference median on any of the indices are considered to be undernourished and children who are more than -3SD below the reference median are considered to be severely undernourished. Table. 8 presents the percentage of children classified as undernourished by selected characteristics. About 44 per cent of children below three yeas of age are underweight and about 37 per cent are stunted. The proportion of children who are severely undernourished is about 17 per cent according to the weight-for-age and about 16 per cent according to height-for-age. These figures are lower than India. The level of wasting weight-for-height) is about 20 per cent, which is higher than all-India (16 per cent). Girls are more underweight and stunted than boys while boys are more wasted. Undernourishment is considerably higher among rural children and among SC and ST children. The importance of female education is flagged by the fact that the children of illiterate mothers are more undernourished than the children of literate mothers and that the proportion of undernourished children declines sharply with an increase in the living standards of parents.

In 1998-99, the weight-for-age index (a composite measure of chronic and acute under-nutrition) showed that 43.9 per cent of children below 3 years of age were underweight. This proportion is the highest among the southern states through lower than all India. With regard to the height-for-age index 36.6 per cent of children below 3 years are undernourished. Andhra Pradesh has the highest proportion of undernourished children with 38.6 per cent while Kerala and Tamil

Nadu have lower proportions. According to the weight-for-height index 20 per cent of children, below 3 years are undernourished, the highest among southern states and above all-India as well (Table 9). The National Nutrition Monitoring Bureau, in its Rural Survey 2004 has more current information on the nutritional status of rural children and women of Karnataka. Table 9 presents the proportion of children in the age group 1-5 years according to three anthropometric measures.

It is thus clear that the nutritional profile of rural children ahs improved over the last five years. However, the height-for-age factor remains a matter of concern. The average intake of food (gm/day) for children (rural) also shows a somewhat even distribution and a varied diet (Table 6.18). Children are not consuming enough protein as the proportion of children with 'protein-calorie adequacy' is 23.3 per cent of the children in the age group 1-3 years and 31.6 per cent of the children in the age group 4-6 years. However, the scenario in Karnataka is better than Tamil Nadu and Kerala for corresponding age groups (NNMB, Rural Survey, 2004).

State interventions in nutrition

The Centre-state co-financed Integrated Child Development Scheme (ICDS) was launched in the country in 1975 on an experimental basis in 33 blocks, one of which was T. Narasipura of Mysore district (Karnataka). The scheme has multiple objectives of which the improvement of the nutrition and health of children (0-6 years), pregnant women and nursing mothers is a significant component. There are now 185 ICDS projects in the state. Self-sufficient in food production in a country will not reduce malnutrition among the poor particularly among children and women unless food is available at affordable prices. The Public Distribution System (PDS) ensures that food grain procured and stocked by the Food Corporation of India is distributed to state governments for distribution through fair price shops. In 2004, the Karnataka government

introduced the distribution of 10 kilograms of rice and wheat at Rs. 3 per kg to each yellow cardholder. While this intervention will have a considerable impact on the diet of the poor, it must be matched by building nutrition awareness so that people can supplement their diets with nutritious, locally available, vegetables and fruits. Akshara Dasoha, the mid-day meals program for school children, which was introduced in the seven educationally backward districts of north Karnataka in 2002-03, and was subsequently up-scaled to cover the entire state in 2003-04 is a major initiative which will substantially enhance young children's nutrition levels.

Table 8: Percentage of undernourished children below 3 years

State	Weight-for-age		Height-for-age		Weight-for-height	
	-3SD	-2SD	-3SD	-2SD	-3SD	-2SD
Andhra Pradesh	10.3	37.7	14.2	3.6	1.6	9.1
Karnataka	16.5	43.9	15.9	36.6	3.9	20.0
Kerala	4.5	26.9	7.3	21.6	0.7	11.1
Madhya Pradesh	24.3	55.1	28.3	51.0	4.3	19.8
Tamil Nadu	10.6	36.7	12.0	29.4	3.8	19.9
India	18.0	47.0	23.0	45.5	2.8	15.5

Anemia in children

Anemia has serious implications for children's mental and physical growth as well as making them vulnerable to infectious diseases. The high risk group is children aged 6-24 months. The level of anemia for children age 6 to 35 months as measured in NFHS-2 (Karnataka) shows that about 71 per cent of children have some level of anemia; 20 per cent are mildly anemic, 43 per cent are moderately anemic and 8 per cent are severely anemic. Mainly, boys, children in rural areas

and SC and ST children have high levels of anemia The level of anemia among children in Karnataka is lower than in Andhra Pradesh and all-India

Table 9: Average intake of foodstuffs (gm/day) of children: Karnataka 2004

Foodstuffs	Children 1-3 years	Children 4-6 years
Cereals and millets	136	229
Pulses	9	22
Leafy vegetables	5	12
Other vegetables	9	23
Roots and tubers	14	13
Milk and milk products	37	84
Fish/Meat	2	2
Fruit	14	21
Fat and oil	3	5
Sugar and jaggery	10	11

Table.10: Percentage of children who received vaccination, Vitamin A, iron and folic acid tablets/liquid

Districts	Complete BCG+3 DPT+ 3 Polio+Measles	None	Percentage of children who received at least one dose of Vitamin A	Percentage of children who received IFA tablets/liquid
Bangalore Urban	77.7 (90.3)	0.0	38.5	4.3
Bangalore Rural	83.7 (87.7)	0.6	42.1	6.0
Belgaum	64.8 (57.8)	3.3	46.9	7.6
Bellary	52.6	9.3	31.8	5.7
Bidar	50.3 (65.8)	7.9	19.8	3.7
Bijapur	53.2	6.1	27.9	11.3
Chikmagalur	83.5 (85.1)	0.0	40.4	9.0
Chitradurga	88.4	1.3	54.2	5.0
Dakshina Kannada	86.0	0.5	43.1	7.4
Dharwad	74.8	3.9	59.2	6.0
Gulbarga	25.3 (48.1)	31.1	16.6	1.3
Hassan	92.8 (85.6)	0.6	65.5	1.9
Kodagu	94.8 (88.6)	0.5	54.9	7.1
Kolar	90.6 (86.8)	0.0	61.4	1.3
Mandya	88.0 (89.5)	0.5	73.0	8.0
Mysore	92.7	0.4	55.1	3.3
Raichur	37.2 (57.6)	22.0	20.6	7.6
Shimoga	92.9	0.5	81.8	5.0
Tumkur	88.0 (87.7)	0.5	73.0	8.0
Uttar Kannada	89.9 (92.2)	1.5	66.0	10.5
Karnataka	71.8 (78.2)	5.7	48.8	5.6

Immunization of children

Table 10 shows the percentage of immunization achieved in various district of Karnataka states. The northern districts like Bellary Bijapur Gulberga and Bellary has less percentage of immunization. Immunization of children against six serious but preventable diseases viz. tuberculosis, diphtheria, pertussis, tetanus, poliomyelitis and measles is an important instrument of child survival. The state's program also includes administration of five doses of Vitamin A for the prevention of night blindness and iron folic acid solution for iron supplementation. The reproductive and child health (RCH) survey of Karnataka (1998-99) shows that the coverage is satisfactory except in some of the northern districts. The immunization coverage for the children has improved in 14 districts other than Belguam, Hassan, Kodagu and Kolar (RCH 2004). The desired objective of complete coverage seems quite attainable in some districts, but the performance in some others, like Raichur, is disappointing indeed.

Anemia among women

Given the inadequacy of their diet, iron deficiency anemia is widely prevalent among the ever married women in the age group 15-49. About 42 per cent of women in the reproductive age are anemic. All age groups are uniformly affected, with a slightly higher prevalence in younger ages, which is a matter of concern, as they constitute the largest proportion of the fertile population among women in the state. In order of severity, about 72 per cent are mildly anemic, about 13 per cent are moderately anemic and a little over two per cent are severely anemic. Women living in urban areas have significantly lower levels of all grades of anemia compared to women in rural areas. This may be an important pointer to the levels of poor hygienic and environmental sanitation in rural areas leading to a high prevalence of intestinal worm infection. Women from the SC and ST communities have a higher prevalence of anemia.

Birth weight

The weight of an infant at birth is an important measure of the nutritional status of the mother and an indicator of the child's survival rate. An infant with birth weight less than 2,500 grams is at high risk. It is also probable that mothers with poor nutritional status will deliver low-weight babies. The RCH survey data on birth weight observed that about 20 per cent of the infants were below 2,500 grams. In many districts more than one-fifth of the infants were reportedly under weight. The lowest proportion of under-weight babies was in Bangalore Urban (9 per cent) and the highest in Dharwad district (39 per cent). More than half of the districts had more than 20 per cent under weight babies which is a grim testimony to the incidence of female under nutrition.

Conclusion

Although several preventive measures are taken to reduce the rate of infant mortality the rate is 55per 1000 live birth. This rate is comparatively low in Karnataka when compared to all India level where the rate of infant mortality is 64 per 1000live births. And in many states like Orissa and Bihar it is 87 -90 per 1000live birth. However there are still many district in Karnataka where the rate of infant mortality is higher than all India rate. Particularly northern districts like Bidar, Gulberga, Baglkote, Bijapur, Dharwad, Gadag the rate of infant mortality is from 64-67 per 1000 live births. Between 1991-1992 to 2001-2002 the rate of child death in Karnataka state has been declined from 82 to 55 per 1000live births. This has been possible by the implementation of several policies implemented in Karnataka.

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