MATERNAL AND CHILD HEALTH ISSUES & INTERVENTIONS

Compiled by:
Dr. K.P.M. Prabhu
Asst Commissioner (MCH)

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INTRODUCTION:

The Constitution of India envisages the establishment of a new social order based on equality, justice and dignity of the individual. Among other things it directs the States to record improvement in the public health as one of its primary duties and aims at securing the health and strength of workers, men and women, specially ensuring that children are given opportunities and facilities to develop in a healthy manner. During the last three decades considerable progress has been achieved in the improvement of health status of our people. Yet much remains to be done to fulfill the cherished goals enshrined in our Constitution.

MATERNAL MORTALITY

Definitions:

Maternal death

Intuitively one would expect the definition of a maternal death to be a simple matter. Childbirth is a memorable event and death in childbirth even more so. In practice, however, matters are not that clear cut. If the definition of a maternal death is to include all deaths due to pregnancy and childbirth it must include deaths taking place before childbirth (e.g. abortion, ectopic pregnancy), those taking place during childbirth (e.g. antepartum, intrapartum and postpartum haemorrhage), as well as deaths taking place some time after the actual event of childbirth (e.g. sepsis). Moreover, not all maternal deaths are directly due to conditions resulting solely from pregnancy. Some are caused by pre-existing conditions which have been aggravated by pregnancy (hepatitis). This latter distinction is not new. Traditionally maternal deaths have been classified as "true maternal" deaths when the pregnancy was directly responsible for the sequence of events that lead to the death, and associated or indirect causes where the condition that lead to the death was unrelated to the pregnancy (0587). This distinction is reiterated in the Ninth Revision of the International Classification of Diseases (ICD 9) which defines a maternal death as follows (0881):

> "A maternal death is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes."

Maternal deaths should be subdivided into two groups:

(1) **Direct obstetric deaths:** those resulting from obstetric complications of the pregnant state (pregnancy, labour and puerperium), from interventions, omissions, incorrect treatment, or from a chain of events resulting from any of the above.

(2) **Indirect obstetric deaths:** those resulting from previous existing disease that developed during pregnancy and which was not due to direct causes, but which was aggravated by physiologic effects of pregnancy."

A significant feature of this definition is that implicit in the definition is the notion of exclusion -- "a maternal death is the death of a women while pregnant ... but not from accidental or incidental causes" -- which if followed could significantly reduce the bias inherent in most of the maternal mortality rates published today. A WHO Working Group has suggested that the Tenth Revision (ICD 10) should go even further and define a maternal death as "the death of a women while pregnant or within 42 days of termination of pregnancy irrespective of the duration of or the site of the pregnancy". The recommendation goes on to say -- "this should be the total definition. We wish to have included in 'maternal mortality' all known deaths of women known to be pregnant. In this regard all death certificates of women in the reproductive age group, 12-50, should have the certificate specially annotated if the woman was known to be pregnant at the time of her death or was known to have been pregnant at any time within the previous 42 days. Maternal death should then be subdivided into three groups: firstly, direct obstetric death, secondly, indirect obstetric death and, thirdly, the fortuitous or coincidental death of a woman where the condition causing the death was not obstetric or did not aggravate the obstetric state. It is realized that in many situations it will not be possible to obtain all deaths in the three categories but certainly the principles should be maintained." (0882) Maternal mortality is thus being defined as a 'time of death' measure, analogous to infant mortality which can, where such information is available, also be analyzed by cause.

Present Status of Maternal Mortality in India:

Maternal morbidity and mortality rates in developing countries including India are quite high. As the majority of child births in India take place in houses and deaths are not always reported, correct information on maternal mortality rate also is not available. The cause-wise rate available for the year 1972 is given as follows:

Maternal Deaths in rural India (1972) per 100,000 live births:

Cause	Rate
1. Haemorrhage	96.3
2. Abortion	56.2
3. Toxaemia	56.2
4. Anaemia	50.2
5. Puerperal sepsis	46.2
6. Malpresentation	28.1
7. Other causes	84.3
All causes:	417.6

Source: Model Registration Unit, Survey of Causes of Death 1972, R.G.I.

Percentage distribution of deaths by causes related to child birth and pregnancy (maternal):

Specific causes	1980	1981	1982
1. Abortion	12.5	13.7	10.1
2. Toxaemia	12.4	8.0	12.5
3. Anaemia	15.8	17.7	24.4
4. Bleeding of pregnancy and puerperium	15.8	23.4	26.2
5. Malposition of child leading to death of mother	13.4	9.2	7.2
6. Puerperal sepsis	12.4	13.1	8.3
7. Not classifiable	17.7	14.9	11.3
Total	100.0	100.0	100.0

Source: R.G.I.

India ranks amongst countries with high maternal mortality. It is essentially a rural country with 80% people living in villages with inadequate sanitation, weak economy and low educational standards. Female literacy rate (all ages) at all India level is 24.8%. Mean age at marriage-females is 18.3. Total fertility rate 1981 (SRS) is 4.5. Approximately 80% deliveries take place in houses. Majority are attended by traditional birth attendants (dais), relatives of pregnant women or female health worker (auxiliary nurse midwife). In case of abnormal or difficult labour it becomes difficult to transport the patient to the nearest health facility. Early marriage and early pregnancy and repeated pregnancies make women prone to higher risk due to cephalopelvic disproportion, toxaemia, intrauterine inertia, etc. Anaemia of mothers which is an important cause of maternal mortality is of nutritional origin. Poverty, illiteracy, ignorance, superstition, all aided by lack of proper antenatal, intranatal and postnatal care result in a high maternal death rate.

Strategies to improve women's and children's health and steps taken:

The National Health Policy provides highest priority for the improvement of maternal and child health with a special focus on the less privileged section of the society. While efforts are continuing at providing refresher training and orientation to the traditional birth attendants, schemes and programmes are being intensified to ensure that progressively all deliveries are conducted by competently trained persons so that complicated cases receive timely and expert attention within a comprehensive programme providing antenatal, intranatal and postnatal care.

Some of the goals for Health and Family Welfare Programmes are as follows:

Indicator	Current Level	Goals 1990	Goals 2000
1. Infant mortality rate			
Rural:	107 (1985)		
Urban:	59 (1985)		
Total:	97 (1985)	87	Below 60
Perinatal mortality	67 (1976)		30-35
2. Crude death rate	11.8	10.4	9.0
3. Pre-school child (0-4 yrs) mortality)	41.2 (1984)	15-20	10
4. Maternal mortality rate	4-5 (1976)	2-3	Below 2
5. Life expectancy at birth			
Male	54.1 (1980)	57.6	64
Female	54.7 (")	57.1	64
6. Babies with birth weight below 2500 gms (percentage)	30	18	10
7. Crude birth rate	32.9 (1985)	27.0	21.0
8. Effective couple protection (percentage)	35.8	42.0	60.0
9. Net Reproduction Rate (NRR)	1.48 (1981)	1.17	1.00
10. Growth rate (annual)	2.25 (1971-81)	1.66	1.20
11. Family size	4.4 (1975)	--	2.3

Indicator	Current Level	Goals 1990	Goals 2000
12. Pregnant mothers receiving antenatal care (%)	40-50	60-75	100
13. Deliveries by trained birth attendant (%)	30-35	80	100
14. Immunization status (% coverage)			
TT (for pregnant women)	20	100	100
TT (for school children)			
10 years		100	100
16 years		100	100
DPT (children below 1 year)	25	85	85
Polio (infants)	5	85	85
BCG (infants)	65	85	85
DT (new school entrants 5-6 years)	20	85	85
Typhoid (new school entrants 5-6 years)	2	85	85

CHILD MORTALITY

DEFINITIONS

Infant Mortality Rate (IMR)	:	Number of infants dying under one year of age in a year per 1000 live births of the same year.
Neonatal mortality rate	:	Number of infants dying within the first month of life (under 28 years) in a year per 1000 live births of the same year.
Postnatal mortality rate	:	Number of infants deaths at 28 days to one year of age per 1000 live births in a given year.
Perinatal mortality rate	:	Number of still births plus death within 1st week of delivery per 1000 live births in a year.

The infant mortality rate (IMR) is considered to be an indicator of socio-economic and health conditions prevailing in the community. The IMR in India was about 161 in 1947 and it has been progressively declining since then. It was 104 in 1983-84 and has dropped to 97 per thousand live births in 1985.

Principle causes of High IMR in India:

According to the information available, the major causes of infant mortality in the country are:

(a) prematurity
(b) respiratory infections
(c) complications at birth
(d) diarrhoea
(e) fevers, and
(f) tetanus

Trends in Infant Mortality Rate - Major States: (1976-85)

The Infant Mortality Rate for 1985 has been estimated at 97 per 1000 live births which represents a significant fall of 7 points from 1984. During the period 1976-85, the Infant Mortality Rate at all India level has declined by 32 points. The State of Kerala has recorded the minimum IMR of 31 in 1985. Excepting the State of Orissa, the Infant Mortality Rate has declined in all the major States between 1976 and 1985. In Orissa, the IMR increased by 20 points between 1976 and 1977, thereafter,

declined by 14 points between 1977 and 1978 and again increased by 16 points between 1978 and 1979. After 1979, however, the IMR is consistently on the decline in the State (except for 1984-85). The average decline between 1976 and 1985 varied between 1-4 points per year in Assam to 5.3 points per year in Gujarat. The extent of decline in 15 major States is given as follows:

0 - 1.0 points per year	- Nil
1.0 - 2.0 points per year	- Assam (1.4) Madhya Pradesh (1.7) Maharashtra (1.6)
2.0 - 3.0 points per year	- Karnataka (2.2) Kerala (2.8)
3.0 - 4.0 points per year	- Bihar (4.0) Haryana (3.0) Andhra Pradesh (3.9) Rajasthan (3.7) Tamil Nadu (3.2)
4.0 - 5.0 points per year	- A.P. (4.3) Punjab (4.1) U.P. (4.0) West Bengal (4.25)
5.0 - 6.0 points per year	- Gujarat (5.3)

The estimate for 1985 reveals that the Infant Mortality Rate has shown an increase in 1985 as compared to 1984 in the States of Andhra Pradesh (5 points), Assam (12 points), Bihar (10 points), Kerala (2 points), Madhya Pradesh (1 point), Punjab (5 points), Orissa (1 point) and Tamil Nadu (3 points).

The Statewise position is given below:

1. Andhra Pradesh:

The Infant Mortality Rate was estimated at 83 per thousand live births in 1985 as compared to 122 in 1976. During 1976-1985, the IMR has registered a decline of 39 points (4.3 points per year) and the most significant decline of 25 points has occurred between 1978 and 1980. The rate is observed to be increasing since 1983.

2. Assam:

The Infant Mortality Rate during 1976-85 has declined by 13 points (1.4 points per year) to 111 per thousand live births in 1985 as compared to 124 in 1976. The maximum decline of 14 points occurred between 1978 and 1979. The rate is observed to be increasing since 1983.

3. Bihar:

The estimates for 1976 to 1980 are not available. The IMR has declined by 12 points (4.0 points per year) from 118 in 1981 to 106 in 1985. The maximum decline is observed during 1982-83 and the rate has shown an increase in 1985 as compared to 1984.

4. Gujarat:

The State has reported the maximum decline of 48 points (5.3 points per year) among the major States during 1976-1985. The IMR was estimated at 98 per thousand live births in 1985 as compared to 146 per thousand live births in 1976. The maximum decline by 16 points was observed between 1977 and 1978, followed by a decline of 10 points between 1979 and 1980.

5. Haryana:

The IMR has declined by 27 points (3 points per year) from 112 in 1976 to 85 in 1985. The maximum decline of 16 points is observed between 1984 and 1985. The rate also showed a significant increase of 10 points between 1983 and 1984.

6. Karnataka:

The Infant Mortality Rate in the State declined by 18 points (2 points per year) from 89 in 1976 to 71 per thousand live births in 1985. The maximum decline of 12 points occurred between 1979 and 1980.

7. Kerala:

The State has recorded the lowest Infant Mortality Rate of 31 per thousand live births among all the major States in 1985 and this is reported to have declined by 25 points (2.8 points per year) between 1976-1985. The maximum decline of 9 points occurred between 1976 and 1977, followed by 7 points decline between 1981 and 1982. The rate has, however, shown an increase in 1985 as compared to 1984.

8. Madhya Pradesh:

The IMR in the State has declined by 16 points (1.7 points per year) from 138 in 1976 to 122 in 1985. The IMR increased by 10 points between 1976 and 1977 but consistently declined thereafter upto 1984 and recorded an increase of 1 point in 1985.

9. Maharashtra:

The IMR in the State has declined by 15 points (1.6 points per year) from 83 in 1976 to 68 per thousand live births in 1985. The IMR recorded a significant increase of 15 points between 1976 and 1977, 5 points between 1978 and 1979 and 9 points between 1982 and 1983. The maximum decline of 11 points occurred between 1979 and 1980, followed by a decline of 8 points between 1984 and 1985.

10. Orissa:

The State of Orissa is the only State which has shown an increase of 5 points in IMR between 1976 and 1985. The IMR which was estimated at 127 in 1976 went up to 132 per thousand live births in 1985. The IMR increased by 20 points between 1976 and 1977, declined between 1977 and 1978 and again between 1980 and 1981 and thereafter there was a downward trend till 1983 but it has shown an increase in 1984 and 1985.

11. Punjab:

The IMR in this State has declined by 37 points (4.1 points per year) from 108 in 1976 to 71 in 1985. However, there was an increase of 12 points between 1977 and 1978, 2 points increase between 1980 and 1981, 5 points increase between 1982 and 1983 and 5 points increase between 1984 and 1985.

12. Rajasthan:

The IMR in this State has declined by 34 points (3.7 points per year) from 142 in 1976 to 108 in 1985. However, there was an increase of 3 points between 1980 and 1981, 12 points between 1982 and 1983, and 13 points between 1983 and 1984.

13. Tamil Nadu:

The IMR in this State has declined by 29 points (3.2 points per year) from 110 in 1976 to 81 in 1985. However, there was an increase of 2 points between 1977 and 1978, 4 points between 1982 and 1983, and 3 points between 1984 and 1985.

14. Uttar Pradesh:

This State has been having the highest IMR in the country. Even in this State there has been a declining trend. The IMR in this State has declined by 36 points (4.0 points per year) from 178 in 1976 to 142 in 1985. However, there was an increase of 9 points between 1977-78 and 8 points between 1982 and 1983.

15. West Bengal:

For this State the figures of IMR are available only from 1981. In the 4 years, upto 1985, there has been a decline of 17 points (4.25 points per year). The decline in this State has been consistent so far.

Estimated Infant Mortality Rate - Major States (1976 - 1985)

		1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986 Provisional
1.	Andhra Pradesh	122	125	117	106	92	86	79	77	78	83	82
2.	Assam	124	115	118	104	103	106	102	94	99	111	109
3.	Bihar		— Not available —				118	112	99	95	106	99
4.	Gujarat	146	138	122	123	113	116	111	106	106	98	107
5.	Haryana	112	113	109	100	103	101	93	91	101	85	85
6.	Himachal Pradesh		— Not available —								84	88
7.	J & K		— Not available —								87	81
8.	Karnataka	89	83	82	83	71	69	65	71	74	71	74
9.	Kerala	56	47	42	43	40	37	30	33	29	31	27
10.	Madhya Pradesh	138	148	143	143	142	142	134	125	121	122	117
11.	Maharashtra	83	108	81	86	75	79	70	79	76	68	63
12.	Orissa	127	147	133	149	143	135	132	126	131	132	123
13.	Punjab	108	105	117	92	89	91	75	80	66	71	67
14.	Rajasthan	142	142	140	108	105	108	97	109	122	108	104
15.	Tamil Nadu	110	103	105	100	93	91	83	87	78	81	80
16.	Uttar Pradesh	178	168	177	162	159	150	147	155	155	142	132
17.	West Bengal		— Not available —				91	86	84	82	74	71
	All India	129	130	127	120	114	110	105	105	104	97	96

The interventions that are considered necessary to reduce MMR and IMR are antenatal care, perinatal care, immunisation, control of deaths due to dehydration in diarrhoeal diseases through ORT, breast feeding and infant nutrition, drinking water and better sanitation, improved health care, health education, family planning and female education.

PROGRAMME COMPONENTS OF MATERNAL & CHILD HEALTH CARE IN INDIA

CARE OF PREGNANT WOMEN & NURSING MOTHERS:

LEVEL-I CARE (Sub-centre and Primary Health Centre)

1. **Antenatal care** - Prenatal care consists of an early detection of pregnancy, identification of high risk mothers, immunisation of the mother against tetanus, nutrient supplements with iron and folic acid followed by an antenatal check up of pregnant mothers at 20th, 30th, 34th and 38th weeks of pregnancy. This antenatal assessment is aimed at detection and management of anaemia, malnutrition, pre-eclampsia, heart disease and an early diagnosis of intra uterine growth retardation and prevention of neonatal tetanus.

2. **Intranatal care** - It consists of (a) conducting delivery in a well lighted, clean room (either in the patient's own home or at the sub-centre) of normal cases with proper asepsis, (b) referring the abnormal cases to the PHC, subdivisional or district level hospital as the case may be.

3. **Postnatal care** - It comprises (a) a check up of the newly delivered mother once daily for the first 7 days and twice weekly for the next three weeks, (b) encouraging breast feeding, (c) educating the mother regarding personal hygiene, proper diet, and (d) at a later date suitable advice regarding family planning methods.

LEVEL-II CARE (Selected Taluk/Sub-divisional/Dist. Hospitals)

1. **Antenatal care** - The prenatal care is given on the same line as in level-I care. Since complicated and referred cases are dealt with, at these centres, more frequent antenatal check up, as and when necessary is done by the specialists. Specialized equipment, instruments and facility of blood transfusion is available for dealing with such complicated cases.

2. **Postnatal care** - The high risk cases delivering in the level-II hospital are kept as indoor patients for the first seven to ten days and later, followed up in the postnatal clinics or by home visits, with emphasis on educating them regarding diet, personal hygiene, exercise, breast feeding and later on advising them regarding family planning through the post partum centres established at these levels.

LEVEL-III CARE (Medical Colleges and selected District-level hospitals)

1. **Antenatal care** - The prenatal care is given, in the level-III hospitals through well established antenatal clinics where specialists are available, alongwith the special equipments such as ultra-sound, colposcope etc. and facilities for sophisticated biochemical tests required for ensuring the well being of the foetus in utero.

2. **Intranatal care** - Labour rooms at these centres have a foetal monitoring system, facility for blood transfusion, and a good operation theatre near the labour room, with specialists to deal with any abnormality arising during labour.

3. **Postnatal care** - This is given for the first few days in the hospital by daily check up of the mother and baby and later on in the postnatal clinic with particular emphasis on educating the mothers regarding diet during postnatal period, hygiene, breast feeding, exercises and later on family planning methods through the post-partum centres available at all these centres.

I. Prophylaxis against nutritional anaemia among mothers:

Anaemia is one of the health problems affecting women of child bearing age in the country. Anaemia in pregnant mothers is an important cause of maternal morbidity and mortality. Apart from affecting the health of the pregnant mother, it also affects the newborn adversely. Studies have shown that the great majority of cases of anaemia in mothers are of nutritional origin. In order to prevent nutritional anaemia among mothers, one tablet of Iron & Folic Acid containing 60 mg elemental iron (180 mg of ferrous sulphate) and 0.5 mg of folic acid is given daily. The administration of the tablets is continued till the level of haemoglobin is maintained at a satisfactory level. The beneficiaries of the scheme are expectant and nursing mothers and other women who have accepted Family Planning method (sterilisation and I.U.D. insertions).

The objective of the scheme is to prevent the development of overt anaemia among the mothers. An initial estimation of haemoglobin should be done wherever possible to decide whether a woman is frankly anaemic and needs anti-anaemic therapy or is fit to be kept on the prophylactic regimen. The level of haemoglobin - 10 gms percent for women is taken as critical level for deciding on anti-anemic treatment or prophylactic management. To enable greater surveliance and follow up of the beneficiaries put on the prophylaxis programme, Iron & Folic Acid Tablets are not being distributed through the hospitals outdoor departments, but are given through the special clinics for mothers, antenatal clinics, postnatal clinics, etc. For the convenience of rural mothers, they are given the tablets for a fortnight or a month and the ANM during the home visits verifies the actual intake by mothers. Iron and folic acid tablets are known to be issued in much larger quantities than required for a month. Closer scrutiny is kept normally, and not more than the supply for a fortnight is issued. Supplies for longer periods are only given in exceptional cases. The tablets are to be taken continuously for a period of 100 days. Anganwadi workers are actively involved in this programme.

The target population for this scheme is estimated to be 50% of pregnant women, 50% of the nursing mothers and 25% of the women acceptors of terminal methods and I.U.D. In 1987-88, 80% of this target group is expected to be covered. By the year 1990, the entire target population is expected to be covered. This will be about 30 million women.

Care of the children:

1. Immunization programme:

Immunization can help in reducing the IMR directly by controlling morbidity and mortality amongst children due to vaccine preventable diseases and indirectly, by preventing secondary infection and malnutrition which follows occurences of these diseases. Sample surveys have indicated that 0.28 million children die annually due to neonatal tetanus alone within the first month of birth, if there is no TT immunization for the pregnant women.

Benefits of Immunization:

The immunization programme has a definite role to play in the reduction of IMR besides significantly reducing the incidence of diseases in children. It is estimated that 0.2 million children suffer from paralytic poliomyelitis and 18 to 20 million children get whooping cough and measles annually. Other diseases which are controlled as a result of immunization are diphtheria, tetanus and childhood tuberculosis. Immunization programme was started in the IV Five Year Plan in a modest way and was expanded later with greater coverage and inclusion of more vaccines.

EPI:

The expanded programme on immunization was started in 1978 with the objective of reducing the morbidity and mortality due to diphtheria, pertussis, tetanus and tuberculosis by making vaccination services progressively available to all eligible children and pregnant women.

Oral polio vaccine was introduced in the National Programme in 1979-80 and measles vaccine was introduced in 1985.

Some of the vaccines such as DPT, OPV and TT are required to be given in repeated doses for protection. The coverage is monitored in terms of beneficiaries with completed schedule.

Coverage during Sixth Plan & Proposed Seventh Plan:

It is estimated that about 22 million children are born in the country every year. During the Sixth Plan period 37.5 million pregnant women received TT vaccine, 50.2 million children received DPT vaccine, 26.8 million children received polio vaccine and 66.8 million children received BCG vaccine. During the Seventh Plan, it is proposed to immunise 92 million pregnant women and 82 million infants.

Universal Immunisation Programme:

In order to accelerate the vaccine coverage of eligible population and ensure high quality of service, a major shift in the strategy was adopted in 1985 with the launching of Universal Immunization Programme, as a "living memorial to the memory of the late Prime Minister Smt. Indira Gandhi". Under the programme, 30 districts were selected during 1985-86 with the aim of achieving 85% coverage of infants and 100% coverage of pregnant women during the year. It is expected to cover the entire country by 1990. The major tasks in the Universal Immunisation Programme are expansion of vaccine coverage of the eligible population, strengthening of cold chain of vaccines, procurement and distribution of essential equipment, training of health personnel, preparation of health education material, promotion of community participation, development of surveillance system operational research, monitoring and evaluation.

Integration with ICDS:

All ICDS blocks in the country are covered under the expanded programme of immunization. Universal immunization was taken up in 30 districts initially during 1985-86. Out of 628 blocks of these districts, 113 blocks were ICDS blocks. In 1986-87, 62 districts with 1049 blocks were taken. Thus out of a total of 1677 blocks in 92 districts of UIP 356 (27.2%) have ICDS in operation. It is appropriate that the scheduling of ICDS blocks and the UIP districts proceeds in a synchronised and integrated manner but due to the resources constraint and different selection criteria on the ICDS side, the ICDS coverage of all blocks would be possible only by 1995, hopefully.

Pre-requisite for success:

For the successful implementation of this programme, careful planning, effective monitoring and optimal use of available resources are required. Training of medical and paramedical manpower has been given a high priority. Modern techniques of mass media are being used for generating public demand for these services. Close monitoring of cold chain equipment used for storage, and distribution of vaccine is done. Since these services are being delivered within the framework of the existing health care delivery system, a close coordination is solicited and ensured at all levels of implementation possible, both at Central and State level.

Volume of work:

This is one of the largest immunization programmes undertaken anywhere in the world. By 1990, we aim to provide services to 23 million pregnant women and over 18 million infants annually. During the Seventh Plan period, we expect to cover 92 million pregnant women and 82 million infants. The magnitude of the tasks can be well imagined from the fact that funds sanctioned under UIP are not released in time. The training programmes are not satisfactory specially at the lower levels. The logistic support is not adequate. Field supervision and monitoring of the programme is not satisfactory. Higher priority given to some other programmes such as family planning or malaria control for example, leads to poorer performance under UIP since the same health workers must do all the activities. Hence it is essential that these activities have to be planned carefully at the grass root level.

Community Involvement:

Community involvement is a pre-requisite for achieving success in these programmes and the major impediment in this sphere is the lack of motivation in the community. Ministry of Health & Family Welfare is developing publicity material to cover these gaps. In these programmes, drugs and vaccines are being given, under a single roof, so that people do not have to move from place to place for different vaccines and drugs. The programme provides immunization services in areas which are not within easy reach through outreach operations. Services of nongovernmental agencies, professional bodies and voluntary organizations are encouraged in this programme, particularly for demand generation, preparation of lists of eligibles and undertaking health education activities and reporting suspected cases of Tetanus and Poliomyelitis etc.

II. Prophylaxis against nutritional anaemia amongst children:

Nutritional anaemia among pre-school children is also a health problem in India. Apart from affecting the health of the children, it affects their growth and development.

The magnitude of the problem is almost the same as is seen in women. Under this programme, children in the age group of 1 to 5 years are given 1 tablet of Iron and Folic Acid containing 20 mgm of elemental iron (60 mgm of ferrous sulphate) and 0.1 mgm of folic acid is given daily for a period of 100 days to prevent dietary deficiency. The tablets are sugar-coated and taken during or after meals, for smaller children who cannot swallow tablets, a limited quantity of liquid preparation is also being given. The daily dose of liquid preparation is 2 ml which is equivalent to one small tablet. In view of the limited stability of the preparation and the side-effects associated with the preparation of iron in liquid form this is mainly used in children's clinics, hospitals or Post Partum Centres attached to the institutions. The objective of the scheme is to prevent the development of overt-anaemia among children. An initial estimation of haemoglobin is done wherever possible to decide whether a child is frankly anaemic and needs anti-anaemic therapy or is fit to be on prophylactic management. A level of 8 gms percent of haemoglobin is taken as critical level to decide on anti-anaemic treatment or prophylactic management.

To enable greater surveillance and follow up of the beneficiaries to be on the prophylaxis programme the iron and folic acid tablets are not distributed through hospital outdoor departments, but are given through special clinics for children. For the convenience of the rural children, the tablets are given for a fortnight or a month and the ANM during the home visits verifies the actual intake by the children. Iron and folic tablets are known to be issued in larger quantities than required for a month. Closer scrutiny is kept and not more than the supply for a fortnight is issued. Supplies for longer periods are only given in exceptional cases. Anganwadi workers are actively involved in this programme in the ICDS projects.

The target population for this scheme is estimated to be 50% of the children in the age group 1-5 yrs. In 1987-88, 44% of the target population is expected to be covered. By the year 1990, 50 million children are expected to be covered which constitutes the entire target group.

Prophylaxis against blindness (in children) caused by Vitamin-A deficiency:

Surveys carried out in the southern and eastern parts of the country in late 1970's, have revealed that 20 to 30 percent of the children in the pre-school age group have eye manifestations as a result of Vitamin-A deficiency. It has also been estimated that not less than 12,000 to 14,000 children go blind in the country every year as a result of Keratomalacia -- the most severe form of Vitamin-A deficiency coupled with malnutrition and infection.

Investigations in India and other parts of the world have shown that if Vitamin-A in a large dose is administered to children by mouth, the concentration of Vitamin-A is maintained in the body in such a manner that the child is protected from Vitamin-A deficiency for almost one year. Vitamin-A is readily stored in the liver from where it is gradually released for utilization in the body. The oral administration has been equated with prophylactic vaccination against the disease.

Coverage of children living in tribal blocks, chronically drought prone areas, other backward areas, ICDS blocks, urban slums etc. are given priority in the implementation of this programme.

In selected areas efforts are made to cover all children in the age group 1-5 years. 2.00 lakhs I.U. of Vitamin-A solution is given orally every six months to this group of children till they cross five years of age. Concentrated solution of synthetic Vitamin-A in arachis oil containing one lakh I.U. in one ml. is kept in amber coloured bottles of 100 ml. This is orange flavoured. Enclosed with each bottle of Vitamin-A solution is a plastic spoon to measure 2 ml. (2 lakhs I.U. of the solution. Vitamin-A solution has a short shelf life and has to be used before the expiry date, indicated on the bottles. It is administered to children in the homes or in children's clinics personally by peripheral workers like: LHV, ANMs, Male Multipurpose Workers etc. However, in order to obtain maximum coverage of children in the required age group, children may be collected at appointed places, sub-centres, Anganwadis, Balwadis, Day-care centres for administration of the drug. The bottles of Vitamin-A solution are carefully stored at the primary health centres and issued to the workers who actually administer it to the children at the scheduled times.

The Anganwadi workers in ICDS blocks are also utilized for distributing Iron Folic Acid tablets liquid and Vitamin-A solution for better coverage of the eligible groups in these blocks.

The target group for this scheme is estimated to be 50% of the children in the age group 1-5 years. In the year 1987-88, 60% of the target population is expected to be covered. By the year 1990, 50 million children are expected to be covered. This constitutes the entire target group. Wherever, the incidence of Vitamin-A deficiency is a public health problem, as revealed by surveys, coverage could be increased in such areas only.

IV. Programme of Oral Rehydration Therapy:

Diarrhoeal diseases are also a major health problem in the country, especially amongst children below 5 years of age. Diarrhoea is associated with multiple socio-economic factors such as lack of clean water supply, low environmental sanitation, lack of knowledge of personal hygiene, etc. The incidence of the disease is more in the lower socio-economic segments of the community. Except cholera, diarrhoeal diseases caused by other organisms are not notifiable. As such, it is not possible to assess the exact magnitude of the problem. However, longitudinal surveys carried out in the different parts of the country indicate that a child may suffer from as many as 3 episodes of diarrhoea per year. One hundred million children below 5 years of age suffer about 300 million episodes of which 10% i.e., 30 million may develop dehydration and 1% i.e., 3 million may face death. By far the most serious consequence is dehydration and repeated attacks of diarrhoea (chronic diarrhoea) may lead to malnutrition, stunted growth, disability and death.

Under this programme, the entire country is expected to be covered by 1990 A.D. A sum of Rs. 25 crores has been allocated during the Seventh Plan and the details of implementation of this programme have been worked out. The major components of this programme are:

1. Training of medical and paramedical workers at all levels.
2. Extensive health education of the population - especially the mothers
3. Supply of Oral Rehydration Salts.

During the year 1987-88 a sum of Rs.500 lakhs has been allocated.

Steps taken by GOI for implementing the MCH programmes.

(a) Expansion of health infrastructure:

To provide better care to mothers during the pregnancy, delivery and puerperium and children after birth, infrastructure of health services in rural and urban areas have been developed and is being extended during Seventh Plan Period.

The programme of establishing primary health centres with 3 subcentres and 4-6 beds per primary health centre (PHC) in Community Development Block, having a population of 60,000 to 80,000 was launched as an integral part of the Community Development Programme in October 1952.

Consequently, over the past 3 decades the health services organization and infrastructure have undergone extensive changes and expansion in stages following review by a number of expert committees, namely the Mudaliar Committee (1974) and Srivastava Committee (1975). Progressive changes have been introduced into the programme during successive Five Year Plan periods.

The delivery of Primary Health Care including Maternal and Child Health Services is the foundation of rural health care system and forms an integral part of the national health care system, to develop the country's vast human resources and accelerate the socio-economic development and attain improved quality of life.

In the rural area, services are provided through a network of integrated health care and family welfare delivery system. Priority has been accorded to extension, expansion and consolidation of the rural health infrastructure viz., sub-centres, primary health centres and community health centres.

(i) **Subcentres:** Subcentres are being established on the basis of one sub-centre for every 5000 population in general and for every 3000 in hilly, tribal and backward areas. Each subcentre is manned by a trained female health worker (ANM) and a trained male health worker. All the subcentres required in the country would be established by 31.3.90.

(ii) **Primary Health Centre:** Primary health centres are established for an average of every 30,000 rural population in hilly, tribal and backward areas. This primary health centre is manned by a Medical Officer, and other paramedical staff. All the primary health centres required in the country are expected to be established by 31.3.90. Each PHC provides supportive supervision to 6 subcentres and serves as a referral institution for these subcentres.

(iii) **Community Health Centre:** There would be one community health centre for every 1 to 1.20 lakh of population so as to serve as a referral institution having a minimum of 30 beds and 4 specialists, for 4 primary health centres. By 31.3.90, it is expected to have 50% of the total required community health centres in position in the country.

The present status of subcentres, primary health centres and community health centres is given below:

Institution	No. in position as on 30.9.87	No. required by 31.3.90
Subcentres	1,02,160	1,30,000
Primary Health Centres	14,409	21,666
Community Health Centre	1,293	2,708

(iv) **Training Facilities:** A large number of training centres/schools have been established in the country to train ANMs, LHVs and multipurpose workers (M). Regional Teachers Training Institutions have also been established in order to meet the shortage of nursing teachers/nurses in the Female Multi-purpose Worker and Health Assistants Schools in the country. Training programmes have also been initiated for the training of lab-technicians, community health officers (CHO), pharmacists and specialists working at primary health centres and community health centres.

There are 47 Health and Family Welfare Training Centres in the country. 441 ANM training schools with an annual admission capacity of 22,989 students. There are 44 promotional training schools for LHVs with an annual admission capacity of 3221.

LEVEL OF ACHIEVEMENT OF SOME NORMS
ALL INDIA POSITION AS ON 30.9.1987

	Parameters/Indicators	National Norms	Norms achieved/ established (approximate)
1.	Population covered by a subcentre	3000-5000	5648
2.	Population covered by a PHC	20,000-30,000	40041
3.	Population covered by a Community Health Centre	About 1 lakh	4.45 lakhs
4.	No. of subcentres for each PHC	6 sub-centres	7 sub-centres
5.	No. of primary health centres for each community health centre	4 PHCs	11.1 PHCs
6.	Trained Village Health Guide	1 for each village/1000 population	1.49 villages/ 1298 population
7.	Trained Dai Guide	Atleast one for each village	1.07 villages/ 1031 population
8.	Population served by Health Workers (Male and Female)	M: 3000-5000 F: 3000-5000	6777 5364
9.	Ratio of HA(M) : HW(M)	1 : 6	1 : 3.4
10.	Ratio of HA(F) : HW(F)	1 : 6	1 : 6.2

(b) Training of manpower:

One of the most important steps taken by GOI in reducing the maternal and infant mortality rate is training of the Traditional Birth Attendants (Dais). This was being done at a very slow pace till 1976. This was intensified by reducing the period of training to one month for various reasons.

Training is also given to medical and paramedical personnel working in the field with an accent on "risk" approach so that mothers at "risk" are referred to appropriate referral institutions colleges.

As on 30.9.87, 5.59 lakhs Traditional Birth Attendants (Dais) 1,07,593 Female Health Workers (ANMs), 17,272 Female Health Assistants (LHVs) and 19,169 PHC Medical Officers have been trained. Inservice training is also given to medical and paramedical personnel at all levels under immunization programme and the programme of oral rehydration therapy.

(c) Health Education:

Education of the community about diets of mothers during pregnancy and after, minimum antenatal and postnatal care and care of child when to report to the health worker etc. is provided through multi-media activities and also through inter-personnel efforts. Special manuals, handbooks and pamphlets prepared for these personnel give emphasis on MCH care including maternal and child nutrition.

(d)

The details of the immunization programme, prophylaxis schemes and the scheme of ORT for control of diarrhoea have already been given earlier.

(e) Abortion:

Abortion also is an important cause of maternal mortality. Many of these maternal deaths are due to abortion conducted by untrained hands in an illegal way. To avoid this MTP act has been enacted and termination of pregnancy has been liberalized. At present MTP facilities are available in 3336 government institutions and 1875 nongovernmental organizations. The facilities of MTP are being gradually extended to all parts of the country.

(f) Family Planning:

As pregnancy at early age and frequent pregnancies adversely affect maternal and child health, steps have been taken to raise the age at marriage and educate mothers to accept family planning methods to avoid frequent pregnancies.

(g) Integrated Child Development Services (ICDS) Programme:

The Ministry of Human Resource Development through its ICDS projects is providing an integrated package of services comprising :

- supplementary nutrition
- immunization
- health check-up and referral services
- nutrition and health education and nonformal education.

The beneficiaries are pregnant mothers and children. As per latest information available 1605 projects have been sanctioned in the country and most of them are functioning. The projects are in tribal, backward rural areas and urban slums. The programme is gradually being extended throughout the country.

CHILD SURVIVAL SUMMARY CHART

MAJOR IMPEDIMENTS TO CHILD SURVIVAL	SELECTED INGREDIENTS OF THE ROAD TO HEALTH
DIARRHOEAL DISEASE	. Oral Rehydration Therapy (ORT) - Administration of oral rehydration solution - Continued feeding - Referral when appropriat . Breastfeeding . Hygienic practices in household (e.g., handwashing, hygienic handling and storage of food and water) . Improved water and sanitation supplies . Immunization
VACCINE-PREVENTABLE DISEASES Diphtheria, Measles, Pertussis (Whooping Cough), Polio, Tuberculosis	. Immunization by age 1 . Adequate nutrition . Less crowded living conditions
Tetanus	. Immunization by age 1 . Hygienic treatment of wounds and injuries
Neonatal Tetanus	. Immunization of women of childbearing age . Hygienic conditions and practices at birth (especially sterile treatment of umbilical cord) . Assistance at birth by trained birth attendants
ACUTE RESPIRATORY INFECTION	. Immunization for vaccine preventable diseases . Curative drug therapy . Adequate nutrition . Improved housing conditions (e.g. less crowding) . Health education for parents and other caregivers to recognize and seek treatment for severe respiratory infection . Expanded availability of services for the treatment of acute respiratory infections

MAJOR IMPEDIMENTS TO CHILD SURVIVAL	SELECTED INGREDIENTS OF THE ROAD TO HEALTH
MALARIA	. Environmental control of mosquito vector (e.g., limiting breeding sites) . Chemical control of mosquito vector (e.g., spraying with insecticides) . Limiting malaria transmission through preventive action (e.g., use of screens and bed nets) . Anti-malarial drugs . Education on the patterns and prevention of malaria
MALNUTRITION	. Improved maternal health and nutrition during pregnancy . Breastfeeding . Improved weaning practices (e.g., timely initiation, adequate duration and maintenance of a balanced diet through weaning) . Improved child feeding practices (e.g., meeting the protein, energy, and micro-nutrient needs of a growing child) . Feeding during illness . Growth monitoring
HIGH-RISK FERTILITY	. Lengthening birth intervals . Shifting childbearing away from very young and very old reproductive ages . Avoiding very high parity . Breastfeeding . Provision of family planning services: - Wide and reliable distribution of contraceptive methods - Information and education on use and benefits of family planning

Provisional

Estimated Annual Birth & Death Rates - 1985

(Rates are based on SRS data of continuous enumeration and six monthly cross-check survey)

States/Union Territories	Area	Birth rate	Death rate
STATES			
1. Andhra Pradesh	Combined	29.9	10.3
	Rural	29.8	11.1
	Urban	30.2	7.3
2. Assam	Combined	34.3	13.2
	Rural	35.0	13.5
	Urban	25.0	8.4
3. Bihar	Combined	37.8	15.0
	Rural	38.5	15.6
	Urban	31.1	9.0
4. Gujarat	Combined	33.0	10.8
	Rural	33.8	11.8
	Urban	31.2	8.7
5. Haryana	Combined	35.7	9.1
	Rural	36.5	9.7
	Urban	32.9	7.1
6. Himachal Pradesh	Combined	30.2	10.5
	Rural	30.7	10.8
	Urban	23.8	6.5
7. Jammu & Kashmir	Combined	33.6	9.8
	Rural	35.9	10.5
	Urban	25.4	7.2

States/Union Territories	Area	Birth rate	Death rate
STATES			
8. Karnataka	Combined	29.6	8.8
	Rural	30.9	9.8
	Urban	26.2	6.1
9. Kerala	Combined	23.3	6.5
	Rural	23.1	6.5
	Urban	24.1	6.6
10. Madhya Pradesh	Combined	39.4	14.2
	Rural	41.0	15.3
	Urban	33.0	9.4
11. Maharashtra	Combined	29.0	8.4
	Rural	29.8	9.4
	Urban	27.7	6.7
12. Manipur	Combined	28.5	7.7
	Rural	29.8	7.9
	Urban	24.4	7.1
13. Meghalaya	Combined	39.1	12.7
	Rural	42.4	14.3
	Urban	24.1	5.6
14. Nagaland	Combined	25.3	6.3
	Rural	28.4	7.0
	Urban	11.2	3.0
15. Orissa	Combined	30.7	14.0
	Rural	30.9	14.6
	Urban	28.3	8.1
16. Punjab	Combined	28.5	8.9
	Rural	28.8	9.7
	Urban	27.6	6.7

States/Union Territories	Area	Birth rate	Death rate
STATES			
17. Rajasthan	Combined	39.7	13.2
	Rural	41.1	14.0
	Urban	33.6	9.6
18. Sikkim	Combined	33.1	10.7
	Rural	35.1	11.7
	Urban	4.2	6.2
19. Tamil Nadu	Combined	24.7	9.5
	Rural	25.2	10.9
	Urban	23.8	6.9
20. Tripura	Combined	27.3	9.9
	Rural	27.6	10.1
	Urban	24.5	8.0
21. Uttar Pradesh	Combined	37.6	15.8
	Rural	39.0	17.2
	Urban	31.6	9.6
22. West Bengal	Combined	29.4	9.6
	Rural	33.0	10.7
	Urban	20.5	6.8

States/Union Territories	Area	Birth rate	Death rate
UNION TERRITORIES			
1. A & N Islands	Combined	28.3	6.8
	Rural	30.6	7.9
	Urban	20.9	3.4
2. Arunachal Pradesh	Combined	35.5	14.3
	Rural	35.9	15.2
	Urban	30.5	2.2
3. Chandigarh	Combined	24.5	4.0
	Rural	32.3	6.1
	Urban	23.9	3.8
4. Dadra & Nagar Haveli	Rural	36.9	11.9
5. Delhi	Combined	32.8	8.1
	Rural	35.8	10.1
	Urban	32.6	7.9
6. Goa, Daman & Diu	Combined	19.5	8.0
	Rural	19.6	9.0
	Urban	19.4	6.0
7. Lakshadweep	Combined	35.0	7.2
	Rural	37.2	9.2
	Urban	32.7	5.0
8. Mizoram	-	-	-
9. Pondicherry	Combined	22.1	7.2
	Rural	26.1	8.3
	Urban	18.8	6.3
INDIA	COMBINED	32.9	11.8
	RURAL	34.0	13.0
	URBAN	28.1	7.8

THE NATIONAL IMMUNIZATION SCHEDULE

Beneficiaries	Age	Vaccine	No. of doses
Infants	1 1/2 - 9 months	DPT	3
		Polio	3
	0-12 months	BCG	1
	9-12 months	Measles	1**
	18-24 months	DPT	1
		Polio	1
Children	5-6 years	DT	1*
		Typhoid	2
	10 years	TT	1*
		Typhoid	1*
	16 years	TT	1*
		Typhoid	1*
Pregnant women	16-36 weeks	TT	1*

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* two doses if not vaccinated previously

** available only at selected places.

Note: - Interval between doses should not be less than one month.

- Minor coughs, colds and mild fever are not a contraindication to vaccination.

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