

PREVENTIVE MEDICINE IN OBSTETRICS, PAEDIATRICS AND GERIATRICS



**DR MUHAMMAD SAEED RAZA
LECTURER
DEPARTMENT OF COMMUNITY
MEDICINE
SARGODHA MEDICAL COLLEGE**

RECENT TRENDS IN MCH CARE



- 1. INTEGRATION OF CARE**
- 2. RISK APPROACH**
- 3. MANPOWER CHANGES**
- 4. PRIMARY HEALTH CARE**

INDICATORS OF MCH CARE



1. Maternal mortality ratio
2. Perinatal mortality rate
3. Neonatal mortality rate
4. Post neonatal mortality rate
5. Infant mortality rate
6. 1-4 year mortality rate
7. Under-5 mortality rate
8. Child survival rate

1. MATERNAL MORTALITY RATIO



Maternal death is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of duration and site of pregnancy, from any cause related to or aggravated by pregnancy or its management but not from accidental or incidental causes.

Total no. of female deaths due to complications of pregnancy, childbirth or within 42 days of delivery from “puerperal causes” in an area during a given year

Total no. of live births in the same area and year

× 1000 (or 100,000)



- **MATERNAL MORTALITY RATE**

Number of maternal deaths in a given period per 100,000 women of reproductive age during the same time period.

- **PREGANANCY RELATED DEATH**

Death of a women while pregnant or within 42 days of termination of pregnancy, irrespective of the cause of death.

- **LATE MATERNAL DEATH**

The death of a woman from direct or indirect causes >42 days but <1 year after termination of pregnancy.



- **ADULT LIFETIME RISK OF MATERNAL DEATH**

The probability of dying from a maternal cause during a woman's reproductive lifespan.

- **THE PROPORTION OF MATERNAL DEATHS OF WOMEN OF REPRODUCTIVE AGE**

The number of maternal deaths in a given time period divided by the total deaths among women aged 15-49 years.

MATERNAL DEATHS



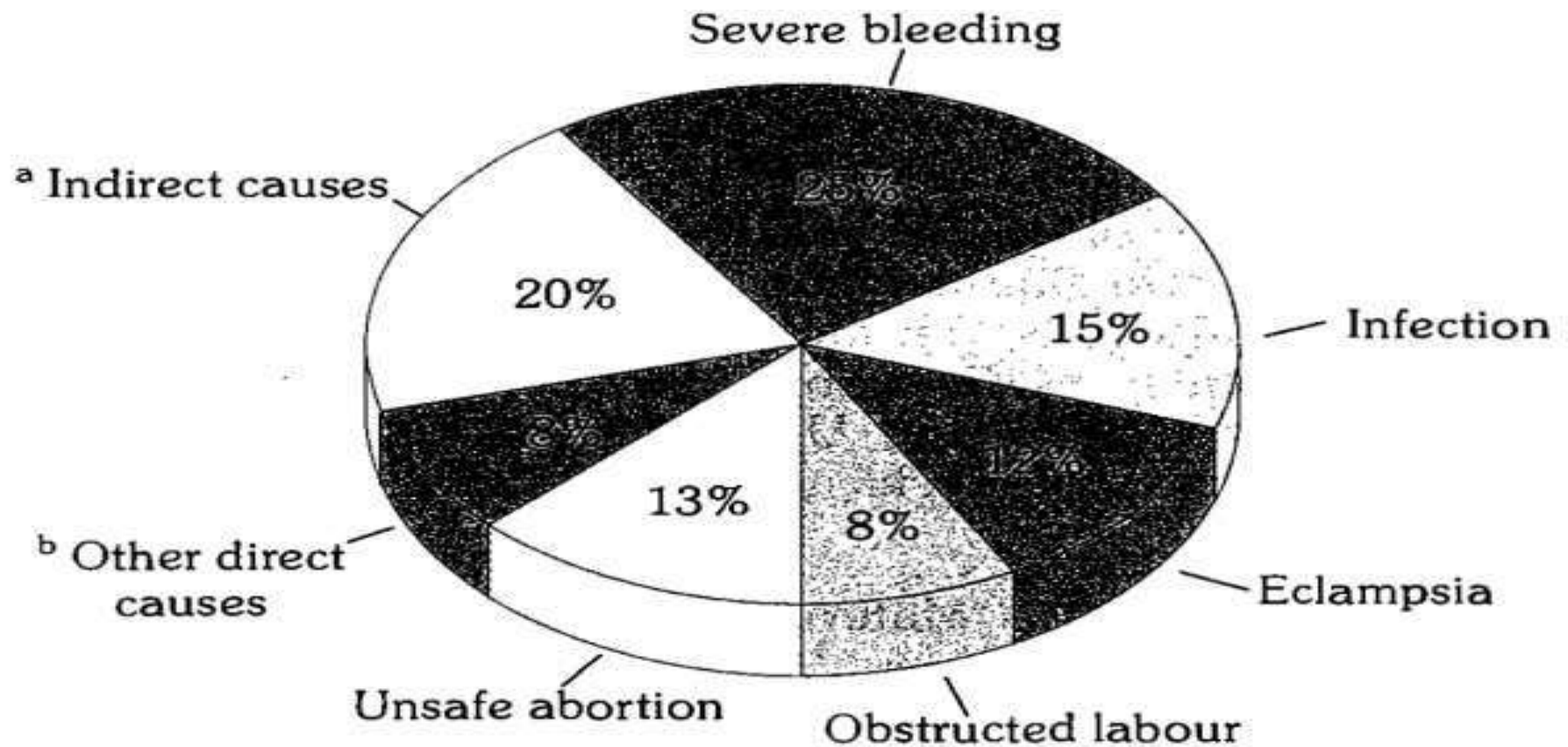
➤ Direct obstetric deaths

Those resulting from obstetric complications of pregnant state (pregnancy , labor , puerperium) from interventions omissions, incorrect treatment, or from a chain of events resulting from any of above.

➤ Indirect obstetric deaths

Those resulting from previous existing disease or disease that developed during pregnancy and which was not due to direct obstetric causes but which was aggravated by physiological effects of pregnancy.

- ❖ The maternal mortality rate, the direct obstetric rate and the indirect obstetric rate are fine measures of the quality of maternal services



- ^a Indirect causes including for example: anaemia, malaria, heart diseases
- ^b Other direct causes including, for example : ectopic pregnancy, embolism, anaesthesia-related

FIG. 10
Causes of maternal deaths worldwide

PREVENTIVE AND SOCIAL MEASURES



1. Early registration of pregnancy
2. At least 4 antenatal check ups
3. Dietary supplementation, including correction of Anemia
4. Prevention of infection and hemorrhage during delivery
5. Prevention of complications

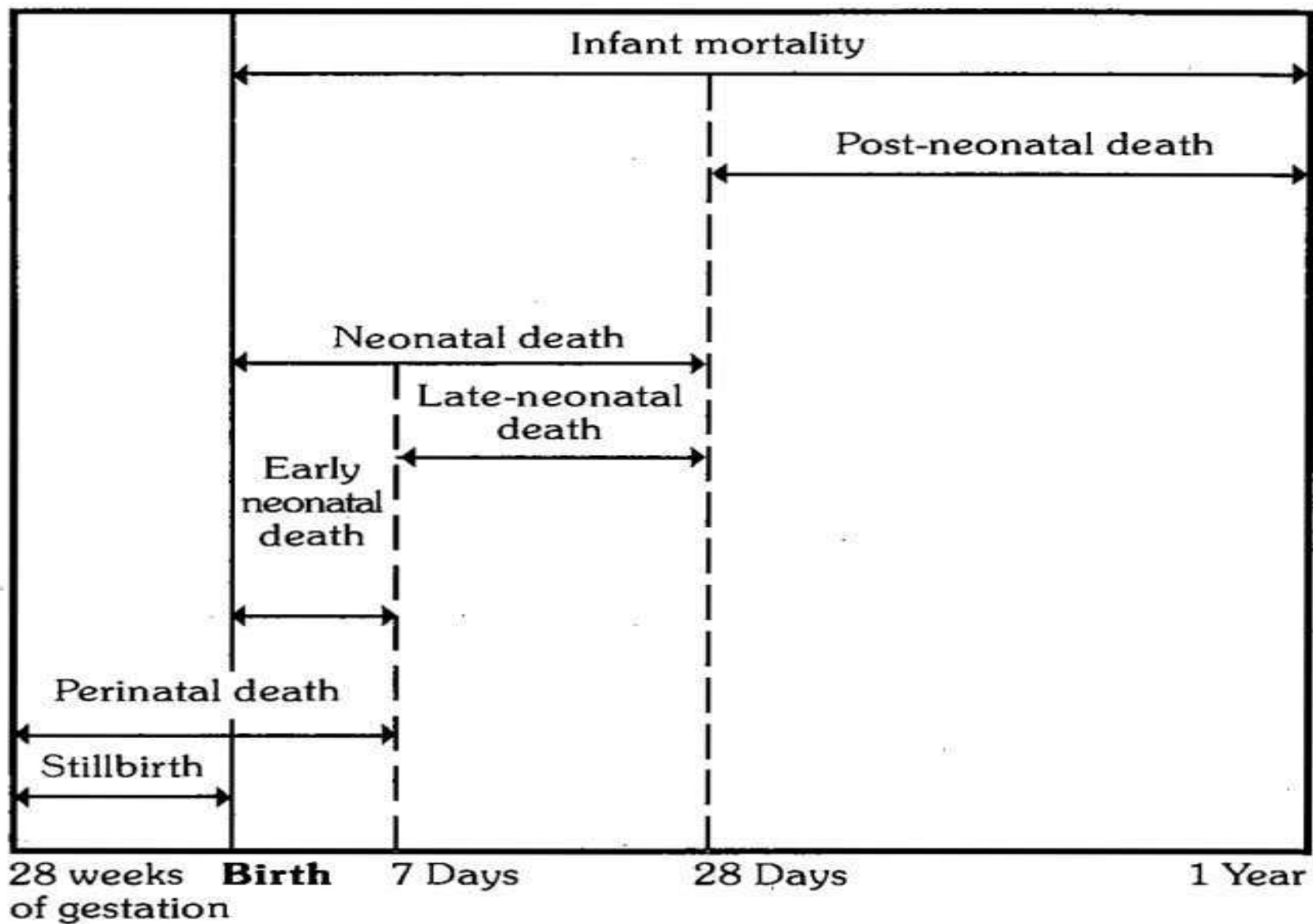


6. Treatment of medical conditions
7. Anti-malaria and tetanus prophylaxis
8. Clean delivery practice
9. Trained local dais and LHWs
10. Institutional deliveries
11. Promotion of family planning
12. Identification of every maternal death and its cause
13. Safe abortion services

Mortality in Infancy and Childhood



- PERINATAL PERIOD
- EARLY NEONATAL PERIOD
- LATE NEONATAL PERIOD
- NEONATAL PERIOD
- POST NEONATAL PERIOD



FOETAL DEATH



Fetal death is death prior to the complete expulsion or extraction from its mother of a product of conception, irrespective of duration of pregnancy. The death is indicated by the fact that after such separation the fetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles. Defined variously as death after the 20th or 28th week of gestation (the definition of length of gestation varies between countries).

STILL BIRTH RATE



$$\text{Stillbirth rate} = \frac{\text{Foetal deaths weighing over 1000 g at birth during the year}}{\text{Total live + stillbirths weighing over 1000 g at birth during the year}} \times 1000$$

2. PERINATAL MORTALITY RATE



- Babies chosen for inclusion in perinatal statistics should be those above a minimum Birth weight i,e 1000 gm at birth
- If birth weight is NA, a GA of at least 28 wks should be used
- If 1 and 2 are NA, body length of at least 35cm should be used

The WHO's definition, more appropriate in nations with well established vital records of stillbirths is as follows :

$$\text{PMR} = \frac{\text{Late foetal deaths (28 weeks gestation and more)} + \text{early neonatal deaths (first week) in one year}}{\text{Live births + late foetal deaths (28 weeks gestation and more) in the same year}} \times 1000$$

The WHO's definition, more appropriate in nations with less well established vital records, is :

$$\text{Perinatal mortality rate} = \frac{\text{Late foetal deaths (28 weeks + of gestation) + postnatal deaths (first week) in a year}}{\text{Live births in a year}} \times 1000$$

There is a difference in denominator of the perinatal mortality rate defined by the WHO and industrially developed nations. This makes international comparisons difficult.

For international comparisons, the WHO Expert Committee on the Prevention of Perinatal Mortality and Morbidity (1970) recommended a more precise formulation : “Late foetal and early neonatal deaths weighing over 1000 g at birth, expressed as a ratio per 1000 live births weighing over 1000 g at birth”. It is calculated as :

$$\text{Perinatal mortality rate} = \frac{\text{Late foetal and early neonatal deaths weighing over 1000 g at birth}}{\text{Total live births weighing over 1000 g at birth}} \times 1000$$

WHY PERINATAL MORTALITY RATE?



- With decline of IMR, PMR has assumed greater significance as a yardstick of obstetric and pediatric care before and around the time of birth
- 2 types of death rates are combined that is stillbirths and early neonatal death
- A proportion of deaths occurring after birth are incorrectly registered as stillbirths, thereby inflating stillbirth rate and lowering neonatal death rate
- The value of PMR is that it gives a good indication of the extent of pregnancy wastage as well as the quality and quantity of health care available to the mother and the newborn

CAUSES OF PERINATAL MORTALITY



a) Antenatal Causes;

1. Maternal diseases : HTN,DM,TB,Anemia,Cardiovascular disease
2. Pelvic diseases : Uterine myomas,endometriosis,ovarian tumor
3. Anatomical defects : uterine anomalies, incompetent cervix
4. Endocrine imbalance and inadequate uterine preparation
5. Blood incompatibilities
6. Malnutrition
7. Toxemia of pregnancy
8. Antepartum hemorrhage
9. Congenital defects
10. Advanced maternal age



b) Intranatal Causes

1. Birth injuries
2. Asphyxia
3. Prolonged effort time
4. Obstetric Complications

c) Postnatal Causes

1. Prematurity
2. Respiratory distress syndrome
3. Respiratory and alimentary Infections
4. Congenital anomalies

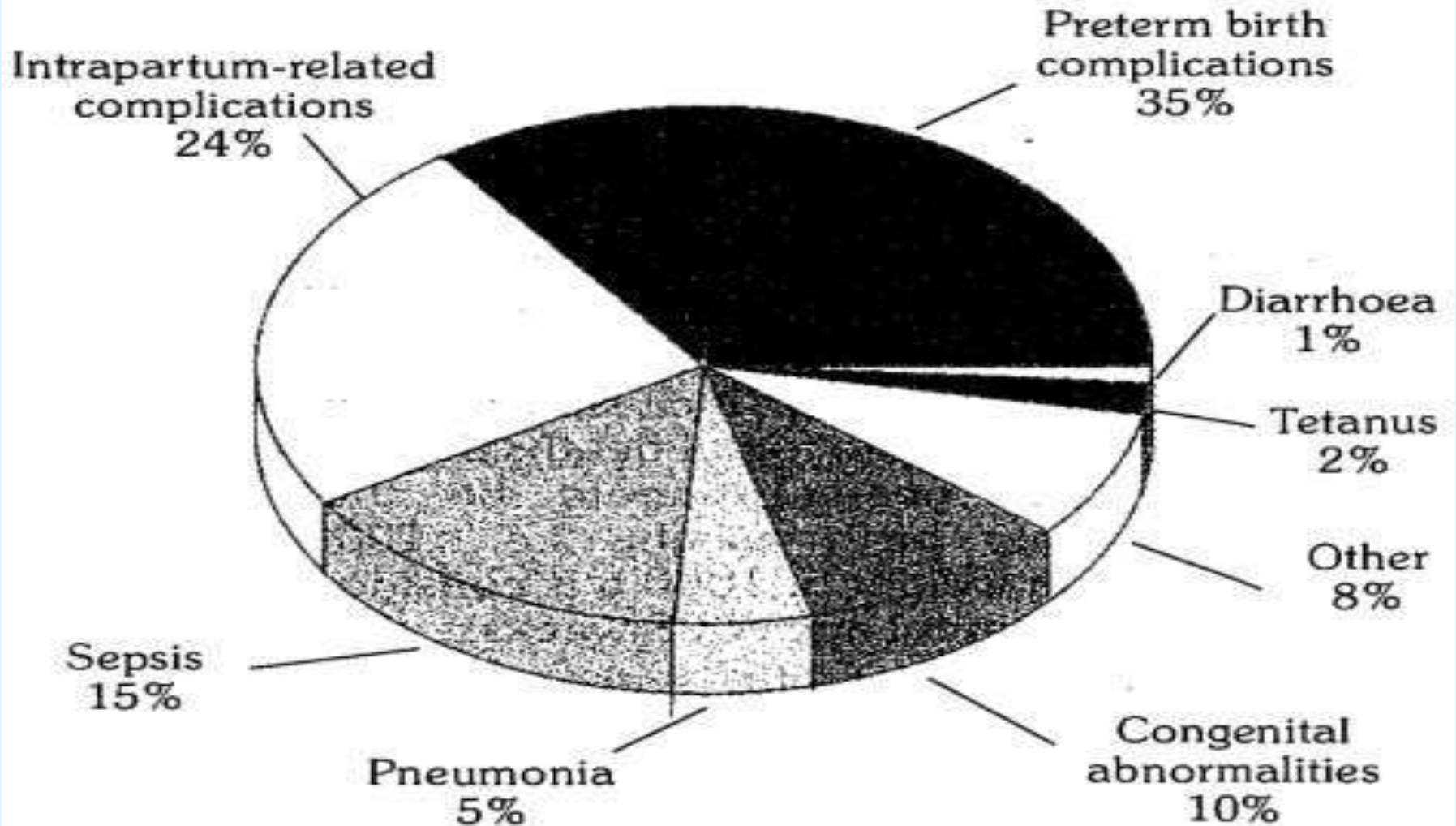
d) Unknown causes

3. NEONATAL MORTALITY RATE



Neonatal mortality rate is tabulated as

$$= \frac{\text{No of deaths of children under 28 days of age in a yr}}{\text{Total live births in the same year}} \times 1000$$





- Neonatal mortality is a measure of intensity with which endogenous factors affect infant life
- Directly related to Birth weight and Gestational Age

4. POST NEONATAL MORTALITY RATE



No of deaths of children b/w 28 days & 1 yr of age in given year X 1000
Total live births in the same year



- Whereas NMR is dominated by endogenous factors, post-neonatal mortality is dominated by exogenous factors.
- Diarrhea and ARI are main causes
- In developed countries, congenital anomalies is the main cause
- Malnutrition is an additional factor

5. INFANT MORTALITY RATE



$$\text{IMR} = \frac{\text{No of deaths of children less than 1 yr of age in a yr} \times 1000}{\text{No of live births in same year}}$$

- IMR is universally regarded not only as the most important indicator of health status of a community but also the level of living of people in general, and effectiveness of MCH services in particular



- Largest single age category of mortality
- Deaths at this age are due to peculiar set of diseases and conditions to which adults are less prone
- Affected rather quickly and directly by specific health programs

Causes of infant mortality

Neonatal mortality (0-4 weeks)	Post-neonatal mortality (1-12 months)
1. Low birth weight and prematurity	1. Diarrhoeal diseases
2. Birth injury and difficult labour	2. Acute respiratory infections
3. Sepsis	3. Other communicable diseases
4. Congenital anomalies	4. Malnutrition
5. Haemolytic diseases of newborn	5. Congenital anomalies
6. Conditions of placenta and cord	6. Accidents
7. Diarrhoeal diseases	
8. Acute respiratory infections	
9. Tetanus	

FACTORS AFFECTING INFANT MORTALITY



- A. BIOLOGICAL FACTORS
- B. SOCIAL FACTORS
- C. ECONOMIC FACTORS

A. BIOLOGIC FACTORS



- ❖ Birth weight
- ❖ Age of the mother
- ❖ Birth order
- ❖ Birth spacing
- ❖ Multiple births
- ❖ Family size
- ❖ High fertility

B. SOCIAL FACTORS



- ❖ Breast feeding
- ❖ Religion and caste
- ❖ Early marriages
- ❖ Sex of the child
- ❖ Quality of monitoring
- ❖ Maternal education
- ❖ Quality of health care
- ❖ Broken families
- ❖ Illegitimacy
- ❖ Brutal habits and customs
- ❖ The indigenous dais
- ❖ Bad environmental sanitation

C. Economic Factors



- Infant mortality rates are highest in slums and lowest in richer residential localities.
- Major improvements in health status and a decrease in infant mortality require continuing socio-economic development, including provision of health services.

PREVENTIVE AND SOCIAL MEASURES



- ❖ Prenatal nutrition
- ❖ Prevention of infection
- ❖ Breast feeding
- ❖ Growth monitoring
- ❖ Family planning
- ❖ Sanitation
- ❖ Provision of primary health care
- ❖ Socioeconomic development
- ❖ Education

6. 1-4 YEAR MORTALITY RATE



No of deaths of children aged 1-4 yrs during a yrX1000
Total no of children aged 1-4 yrs at middle of yr

- In the age group 1- 4 years the second year is the period when the young child runs the highest risk of dying.

Leading cause of death in 1-4 years age group



DEVELOPING COUNTRIES

- Diarrheal diseases
- Respiratory infections
- Malnutrition
- Infectious disease
- Other febrile diseases
- Accidents and injuries

DEVELOPED COUNTRIES

- Accidents
- Congenital anomalies
- Malignant neoplasm
- Influenza
- Pneumonia

7. UNDER 5 MORTALITY RATE



Under 5 Child Mortality rate=

No of deaths of children <5yrs in given year X 1000
No of live births in the same year



A large number of maternal and child deaths are attributable to **3 delays**

1. *The delay in deciding to seek care*
2. *The delay in reaching the appropriate health facility*
3. *The delay in receiving quality care once inside an institution.*

8. CHILD SURVIVAL INDEX



Child survival rate = $\frac{1000 - \text{Under 5 mortality rate}}{10}$



INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESS



Most sick children present with signs and symptoms related to more than one conditions. This overlap means that a single diagnosis may not be possible or appropriate and the treatment may be complicated by the need to combine therapy for several conditions. Surveys of the management of sick children at these facilities reveal that many children are not properly assessed and treated and that their parents are poorly advised. Providing quality care to sick children in these conditions is a serious challenge. In response to these challenges, WHO and UNICEF developed a strategy known as IMCI.

3 COMPONENTS



- Improvements in the case Management skills of health staff through the provision of locally adapted guidelines on IMCI and through activities to promote their use.
- Improvements in the health system required for effective management of childhood illness.
- Improvements in family and community practices.

INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESS



- Diarrhoea
- Ari
- Malaria
- Measles
- Malnutrition

ELEMENTS:



ASSESS

- ASSESS A CHILD BY CHECKING FIRST FOR DANGER SIGNS, ASKING QUESTIONS ABOUT COMMON CONDITIONS, NUTRITION, IMMUNIZATION STATUS AND OTHER HEALTH PROBLEMS

CLASSIFY

- CHILD'S ILLNESS USING A COLOR CODED TRIAGE SYSTEM



IDENTIFY

- IDENTIFY SPECIFIC TREATMENTS FOR THE CHILD. IF REQUIRES REFERRAL, GIVE ESSENTIAL TREATMENT BEFORE TRANSFER
- IF NEEDS IMMUNIZATION, IMMUNIZE

TREAT

- PRACTICAL INSTRUCTIONS ON HOW TO GIVE ORAL DRUGS, FEED, OR FLIDS
- ASK TO RETURN FOR FOLLOW UP AND HOW TO RECOGNIZE DANGER SIGNS TO RETURN IMMEDIATELY TO THE FACILITY



COUNSEL

- BREAST FEEDING PRACTICES
- COUNSEL ABOUT MOTHER'S HEALTH

FOLLOW-UP CARE

- REASSESS THE CHILD FOR NEW PROBLEMS

THANK YOU

