

Maternal and Child Health L-4



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Objectives :

- Definition of child health**
- Identify objectives of child health services**
- Outline health of newborn(causes, and measurement of different mortality rates)**
- Recognize the priority areas to improve newborn health.**
- Define infant mortality, its causes and key elements for reduction through MCH.**

Child health and survival

Making sure every child in every community can thrive

Every year, millions of children die from causes that are preventable and treatable



The childhood is divided into the following age-periods:

I. Infancy (up to 1 year of age)

a. Neonatal period (first 28 days of life)

b. Post neonatal period (28th day to 1 year)

2. Pre-school age (1-4 years)

3. School age (5-14 years)

Child health is a state of physical, mental, intellectual, social and emotional well-being and not merely the absence of disease or infirmity.

Healthy children live in families, environments, and communities that provide them with the opportunity to reach their fullest developmental potential.

Why is children's health important?

- ❖ **For children, the right to health is vital because they are vulnerable beings, more at risk to illness and health complications.**
- ❖ **Child's health is the foundation of all growth and development.**
- ❖ **Child's health includes more than physical growth. Some other important parts of child's health include their cognitive (learning and thinking) development, social and emotional growth, and mental health.**

When children are safe from disease, they can grow into healthy adults, and in this way, contribute to the development of dynamic and productive societies.

According to UNICEF/WHO Strategy “The focus moves from the survival of children under 5years old to a whole view of child and adolescent health and attention shifts to health promotion, disease prevention, early risk factor management and monitoring of chronic conditions”

Main Components of Child Health Care

- **Preventive Care:** Regular well-child visits, immunizations, and screenings for development and vision/hearing are crucial for detecting potential issues early.
- **Nutritional Support:** Ensuring children receive adequate nutrition, including breastfeeding, to support growth.
- **Physical Safety:** Measures to protect children from accidents and injury, such as proper car seat usage, childproofing, and monitoring for safety.
- **Mental and Emotional Health:** Addressing behavioral, emotional, and social needs, including cognitive development and mental well-being.
- **Chronic Illness Management:** Care and support for children with ongoing conditions like asthma or diabetes.

Factors Influencing Child Health

- **Environmental Factors:** A safe and secure home and community environment is vital for a child's development.
- **Socioeconomic Status:** Children living in poverty often face greater health challenges and reduced access to care.
- **Access to Services:** Access to pediatric specialists, vaccinations, and primary care is essential, particularly in areas facing provider shortages.

Objectives of Child Health Services

- 1. Promote the health of children to ensure that they achieve optimal growth and development both physical and mental.**
- 2. Protect children from major hazards through specific measures (immunization, chemoprophylaxis, & dietary supplements) and through improvement in the level of care provided by the mother and the family.**
- 3. Treat diseases and disorders with emphasis on early diagnosis, the aim is to provide an effective remedy at an early stage before complications occur.**

The Risk Factors that may Influence the Child Health

- **Birth weight less than 2.5 kg.**
- **Fifth child & more.**
- **Brothers or sisters under nourished.**
- **Birth less than 2 years after last birth.**
- **Twin.**
- **3 or more children in the family died.**
- **Single parent.**

- **Malnutrition**
- **Not breast feeding**
- **Overcrowded conditions**
- **Unsafe drinking water and food**
- **Poor hygiene practices.**



HEALTH OF NEW BORN

ENDING PREVENTABLE NEWBORN DEATHS & STILLBIRTHS

EVERY YEAR:

2.6 million babies die in the first 28 days of life. Most in the first week.

THE TOP CAUSES:

1. Prematurity
2. Complications during birth
3. Severe infections



AN ADDITIONAL:

2.6 million stillbirths occur each year



BUT:



of newborn deaths CAN be prevented with high-quality care. So can the majority of maternal deaths and stillbirths.



Healthy mother



Healthy birth



Good health in the first days of life



The start of a healthy childhood

The infancy is the 1st year of human life, the infancy traditionally divided into two periods, which are:

➤ **Neonatal**

➤ **Post neonatal**

The neonatal period comprises the first (28 days**) of life, in terms of health and disease, it is the single most important period of all infancy and childhood during which the highest mortality occurs.**

Globally 2.3 million children died in the first 28 days of life in 2022. There are approximately 6500 newborn deaths every day, amounting to 47% of all child deaths under the age of 5 years.

Essential newborn care

All babies should receive the following care :

1-Thermal protection (e.g. promoting skin-to-skin contact between mother and infant)

2-Early and exclusive breastfeeding(within the first hour of life ("The Golden Hour")).

3-Assessment for signs of serious health problems or need of additional care (e.g. those that are low-birth-weight, sick or have an HIV-infected mother)

4- Infection prevention (e.g. immunization BCG and Hepatitis B, vitamin k and ocular prophylaxis) as well as Proper hygiene, handwashing, and hygienic umbilical cord care

5-Resuscitation: Ensuring health workers are skilled in neonatal resuscitation with a bag-and-mask for babies not breathing spontaneously.

Causes of Neonatal Morbidity and Mortality

The most important common causes are:

1- Prematurity and intrauterine growth retardation

2-Low birth weight

Approximately 80% of infants who die within 48 hours of birth weight less than 2500g

3-Neonatal Infection

4-Respiratory Distress Syndrome (RDS)

5-Congenital Abnormality

6-hyperbilirubinaemia

7-birth complications (birth asphyxia/trauma)

8-Babies born to mothers with chronic disease

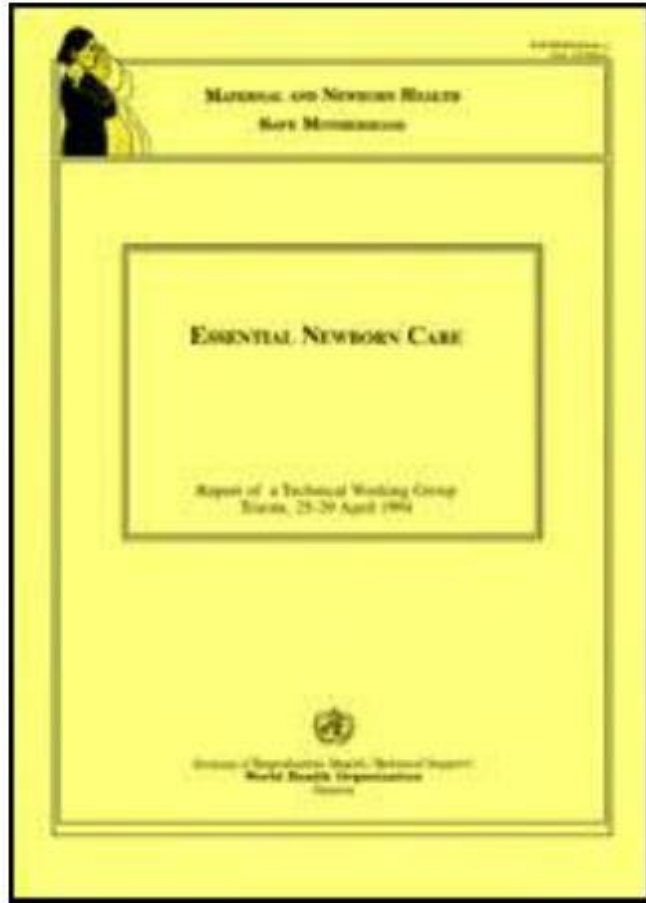
Targeting the time around birth with proven high impact interventions and quality care for small and sick newborns may prevent close to 80 per cent of newborn deaths.

Key interventions include

- **Care by a skilled birth attendant**
- **Emergency obstetric care**
- **Immediate care for every newborn baby (including breastfeeding support and clean birth practices such as cord and thermal care)**
- **Newborn resuscitation.**



Essential Newborn Care-Components



1. Cleanliness
2. Thermal protection
3. Early and exclusive breastfeeding
4. Initiation of breathing, resuscitation
5. Eye care
6. Immunization
7. Management of newborn illness
8. Care of the preterm and/or low birth weight newborn

Care for small and sick newborns could avert 30 per cent of neonatal deaths.

Key interventions include:

1-Kangaroo mother care: Kangaroo mother care is a method of care of preterm infants. priority must be given to infants with birth weight less than 2000 grams.

- The method involves infants being carried, usually by the mother, with skin-to-skin contact. During kangaroo mother care, newborns were not completely bare. Suitable clothing, and a soft hat were used to keep the newborns head warm .Duration of KMC was at least 1-3 hours which was repeated at least three times a day.**

The FIVE components of kangaroo mother care?

The WHO has defined KMC as early, continuous, and prolonged skin-to-skin contact (SSC) between the mother and preterm babies; exclusive breastfeeding or breast milk feeding; early discharge after hospital-initiated KMC with continuation at home; and adequate support and follow-up for mothers at home

Reasons to do kangaroo care

- **Mother makes more milk and has a better chance of breastfeeding.**
- **Baby stays warmer and body temperature is better.**

- **Baby has improved heart rate and breathing rate (vital signs)**
- **Baby has improved weight gain.**
- **Baby cries less and has lower stress levels.**
- **Baby has improved sleep.**



2-Prevention or management of neonatal sepsis

3-Addressing neonatal jaundice

4- Preventing brain damage after birth-related oxygen deprivation.

Families should be advised to:

- **Seek prompt medical care if necessary (danger signs include feeding problems, or if the newborn has reduced activity, difficult breathing, a fever, fits or convulsions, or feels cold).**
- **Register the birth**
- **Bring the baby for timely vaccination according to national schedules.**

Some newborns require additional attention and care during hospitalization and at home to minimize their health risks.

Measures of mortality during Infancy

1. Perinatal mortality

- **Perinatal period is lasting from 28th week of gestation to the seventh day after birth.**
- **Perinatal mortality includes both late fetal deaths (Still birth) and early neonatal deaths.**

Causes of perinatal deaths are :

- **Intrauterine and birth asphyxia**
- **Low birth weight**
- **Birth trauma**
- **Intrauterine and neonatal infection**

Peri- Natal Mortality Rate

Late fetal deaths (28 wks. gestation & more) +
early neonatal deaths (first week) in one year

$$\text{PNMR} = \frac{\text{Late fetal deaths + Live Births (total birth) In The Same Year}}{\text{Late fetal deaths + Live Births (total birth) In The Same Year}} \times 1000$$

Neonatal Mortality

- **These are deaths occurring during the neonatal period, beginning at birth and ending 28 completed days after birth. This usually divided into:**
 - ☛ Early neonatal death 1st seven days
 - ☛ Late neonatal death 8-28days

A child's risk of death in the first four weeks of life is nearly 15 times greater than any other time before his or her first birthday.

About a third of all neonatal deaths occurring within the first day after birth and close to three quarters occurring within the first week of life.

Neonatal Mortality Rate

Number of deaths of children under
28 days of age in a year

NMR =

Total live births in the same year

x 1000

Causes of neonatal mortality :

- **Low birth weight**
- **Birth asphyxia**
- **Atelectasis**
- **Birth injuries**
- **Congenital malformation**

- **Infections (tetanus , diarrhea)**

- ❖ **NMR is more in boys as they are biologically more fragile than girls**



Early Neonatal Mortality Rate

$$\text{ENMR} = \frac{\text{Number of deaths of children} \\ \text{<1 wk. of age in a year}}{\text{Total live births in the same year}} \times 1000$$

Late Neonatal Mortality Rate

$$\text{LNMR} = \frac{\text{Number of deaths of children} \\ \text{after 7}^{\text{th}} \text{ day till 28}^{\text{th}} \text{ day of age in a year}}{\text{Total live births in the same year}} \times 1000$$

- **Perinatal and neonatal mortality reflect causes of deaths related to maternal health prior to pregnancy as well as events during pregnancy, delivery and early neonatal period.**

Children who die within the first 28 days of birth suffer from conditions and diseases associated with lack of quality care at birth or skilled care and treatment immediately after birth and in the first days of life.

Priority Areas to Improve Newborn Health

- **Before & during Pregnancy**
- **During Pregnancy**
- **During & soon after Delivery**
- **During the First Month of Life**

Before & during Pregnancy

- **Well-timed, well-spaced, & wanted pregnancies(family planning)**
- **Well-nourished & healthy Mother**
- **Tetanus & rubella immunization for the mothers**
- **Prevention of mother to child transmission of infection (HIV)&HB.**
- **Female education**

During Pregnancy

A-Early contact with health system(ANC) for :

1-Birth & emergency preparation

2-Early detection & treatment of maternal complications

3-Monitoring of fetal well-being & timely interventions for fetal complications

4-Tetanus immunizations

5-Prevention & treatment of infections

B-Good diet during pregnancy

C-Prevention of violence against women

During & Soon After Delivery

- 1- Safe & clean delivery by skilled attendant**
- 2- Early detection & prompt management of delivery & fetal complications**
- 3- Emergency obstetric care for maternal & fetal conditions(EmOC)**
- 4- Newborn resuscitation**
- 5- Newborn care ensuring warmth & cleanliness**
- 6- Newborn cord, eye & skin care**
- 7- Early initiation of exclusive breast feeding**

8- Early detection & treatment of newborn complications

9- Prevention & control of infections

10- Information & counseling on home care, danger signs & care seeking

• *During the First Month of Life*

1-Early post-natal contact

2-Protection, Promotion & support of exclusive breast feeding

3-Prompt detection & management of disease in newborn infant

4-Immunization

5-Protection of girl child

Family and community engagement in improve newborn healthcare

Parents are primary agents of change and need support to provide care safely at home.

- Parental Empowerment:** Training parents to recognize danger signs (e.g., poor feeding, difficult breathing, cold skin) and involving them in hospital care ("Zero Separation").
- Postnatal Contacts:** Ensuring at least four postnatal health contacts (on day 1, day 3, between days 7–14, and at 6 weeks) through facility visits or home visits.
- Mental Health:** Prioritizing maternal and paternal mental health, as parental well-being directly impacts the quality of care an infant receives

Post neonatal period

Post neonatal mortality is the death of children aged 29 days to one year.

The major contributors to the health during post neonatal period are malnutrition, infectious disease, and problems with the home environment.

Causes of Infant Death in The Post neonatal Period: Post neonatal deaths are caused by two major factors:

1-Infection

2- Malnutrition

The immediate causes of deaths in this age group are:

- **Diarrheal diseases culminating in dehydration**
- **Acute lower respiratory infections [pneumonia]**
- **Other communicable diseases like measles.**

The PNM is more closely linked to environmental factors especially socioeconomic disadvantages.

The probability of dying after the first month and before reaching one year of age was 11 per 1,000 in 2018

Post Neonatal Mortality Rate

Total number of deaths of children between
28 days and one year of age in a given year

$$\text{PNMR} = \frac{\text{Total number of deaths of children between 28 days and one year of age in a given year}}{\text{Total live births in the same year}} \times 1000$$

Infant Mortality

Infant mortality refers to the death of an infant between 1 day and 1 year of age.

The five leading causes of infant death are :

- **Birth defects. congenital anomalies are a top cause of death worldwide in the days just after birth, but not among older infants**
- **Preterm birth and low birth weight.**
- **Sudden infant death syndrome.**
- **Maternal pregnancy complications**
- **Infections, especially blood infections**
- **Lower respiratory infections (such as flu and pneumonia)**
- **Diarrheal diseases**



This rate indicates the following :

1-Health status of community

2-Level of living

3-Effectiveness of MCH services.

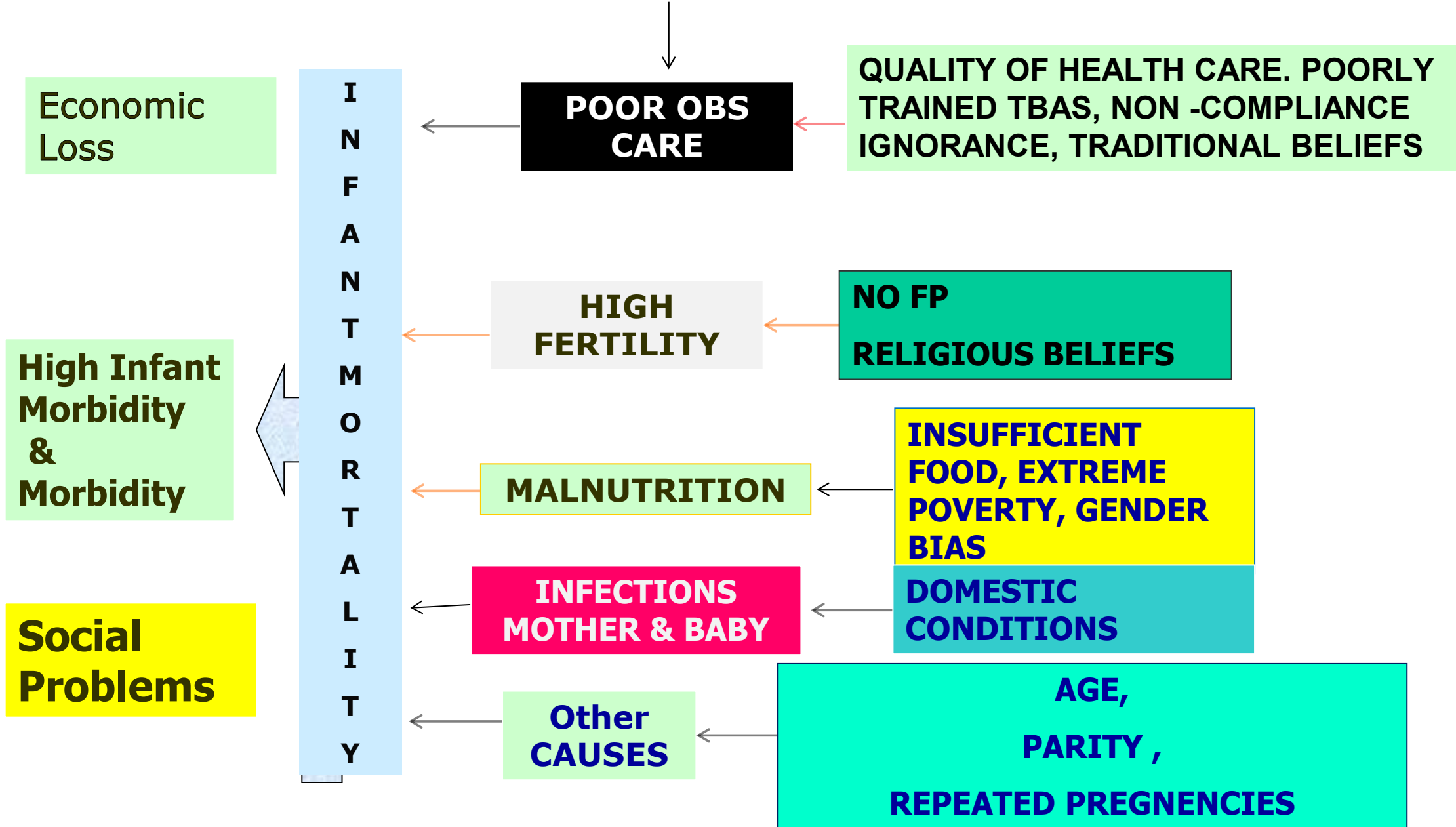
4-The overall state of maternal health as well as quality and accessibility of PHC available to pregnant women and infants.

High infant mortality rates are generally indicative of unmet human health needs in sanitation, medical care, nutrition, and education.

Infant mortality is given a specific and separate ATTENTION because:

- **It is largest single age category of mortality**
- **Deaths are due to peculiar set of disease and conditions**
- **It is affected quickly by special health programme.**

Multiple Causation Web Model For Infant Mortality



Predisposing Factors of Infant Mortality

1-Biological Factors

Birth weight, Age of the mother, Birth order, Birth spacing, Multiple births, Family size, High Fertility.

2-Economic Factors

Low socioeconomic factors, quality & availability of health care

3-Cultural & Social Factors

Breast feeding, Early marriage, maternal education

INFANT MORTALITY RATE

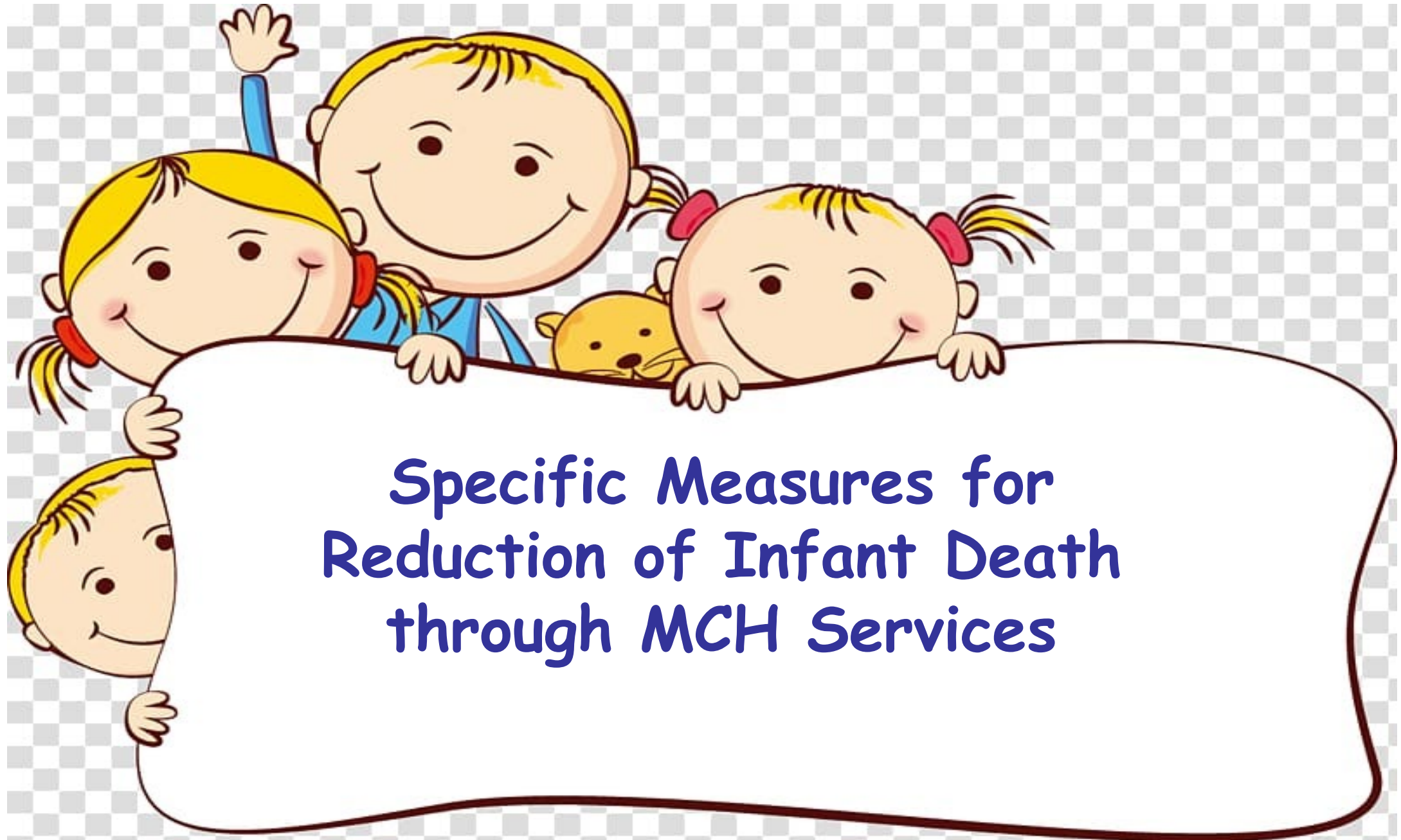
$$\text{IMR} = \frac{\text{Number of deaths of children less than 1 year of age in a year}}{\text{Number of live births in the same year}} \times 1000$$

- Afghanistan has the highest child mortality rate by country, with 103.06 deaths per 1000 live births. Jul 19, 2023
- Throughout the world, the following countries have the lowest infant mortality rates: Monaco with 1.91 deaths per 1,000 births. Luxembourg with 2 deaths per 1,000 births. Finland with 2 deaths per 1,000 births. Dec 1, 2023
- In 2021, infant mortality rate for Iraq was 21 deaths per thousand live births. Infant mortality rate of Iraq fell gradually from 76.67 deaths per thousand live births in 1971 to 22.47 deaths per thousand live births in 2020.

Infant Mortality Rate

Used for international comparisons; a high rate indicates unmet health needs and poor environmental conditions.

$$\text{Infant mortality} = \frac{\text{Number of infant deaths among infants aged 0-365 days during the year}}{\text{Number of live births during the year}} \times 1,000 \text{ live births}$$



**Specific Measures for
Reduction of Infant Death
through MCH Services**

1.Promotion and protection of breast feeding at least the first six months [exclusive breast feeding].

2.Ensuring the introduction of appropriate supplementary foods at six months of age [complementary food].

3.Nutritional and health education of mothers with emphasis on correct weaning [weaning refers to termination of BF, WHO recommends that no child be fully weaned before the age of 2years] and feeding with adequate food & hygiene precautions.

4.Promoting maximum immunization coverage of all infants for the childhood diseases.

5-Screening for hypothyroidism and PKU

6-Monitoring child growth and development



7-Integrates management of the most common childhood problems through Maternal Neonatal and Child Health (MNCH) (pneumonia, diarrhea, measles, malnutrition, anemia, ear problems) through PHC .

Any question ?



- **World Health Organization, 2022, WHO recommendations on maternal and newborn care for a positive postnatal experience. Geneva, 2022.**
- **UNICEF, The State of the World's Children 2023, UNICEF, New York, 2023.**
- **United Nations Inter-agency Group for Child Mortality Estimation (IGME), Levels and Trends in Child Mortality, Report 2022, UNICEF, New York, 2022.**