

MOTHER AND CHILD HEALTH SERVICES

MCH-2

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CARE OF CHILDREN

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Childhood periods: (Age groups)

- Infancy (upto 1 Year of age)
 - Neonatal period (first 28 days of life)
 - Post neonatal period (28 days to 1 year)
- Pre-school age (1-4 years)
- School age (5-14 years)

INFANCY

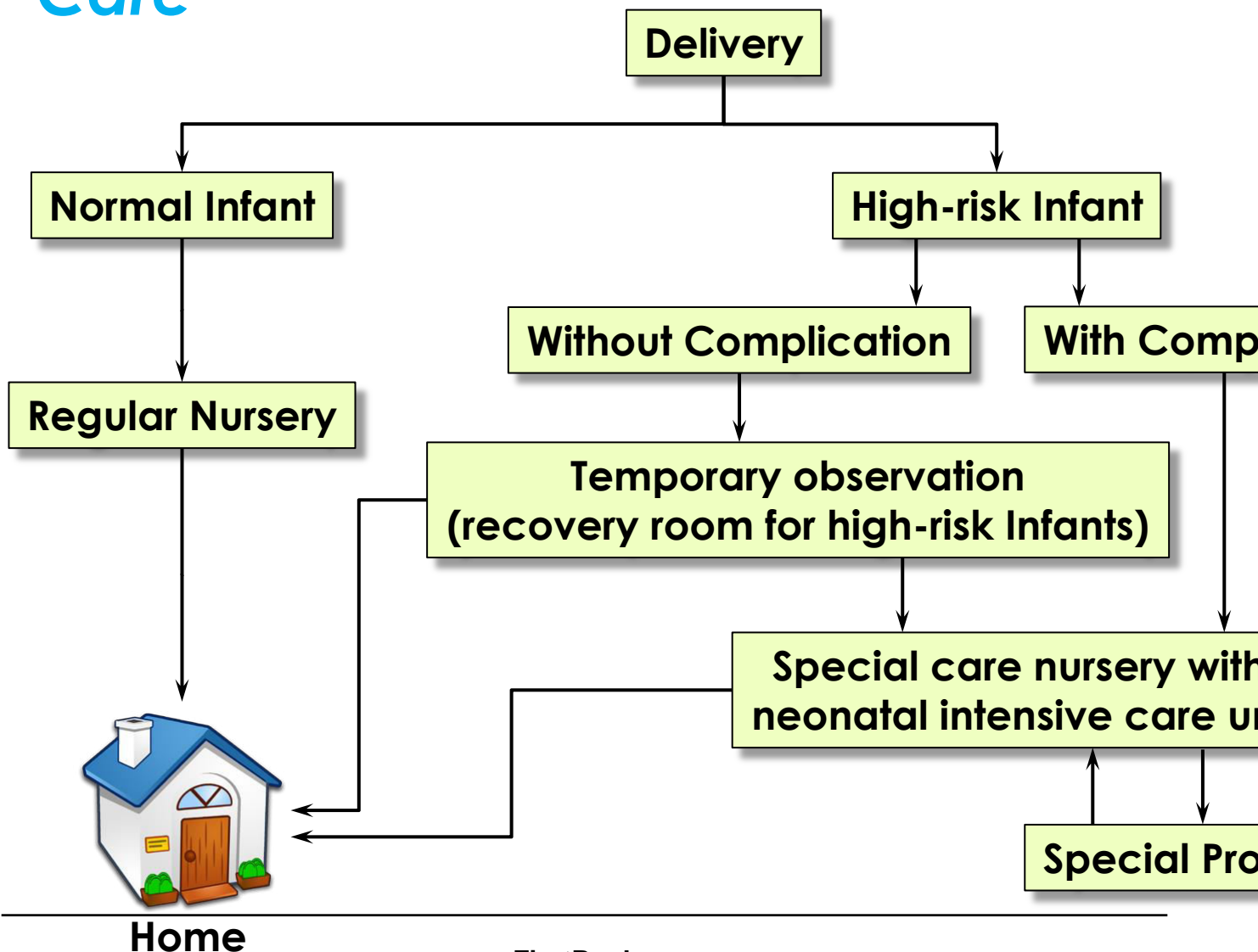
- **Infants-** from 0-1 year of age.
- About 40 percent of the total infant mortality occurs in the first month of life.
- **Measures for saving life of children:**
- Immunization, breast feeding, birth spacing, growth monitoring, improved weaning, oral rehydration.

NEONATAL CARE

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- This aspect of family health services has been named “**neonatology**”.
- This is dependent on team work in which disciplines of obstetrics and gynaecology, paediatrics, preventive and social medicine, community health services, and nursing have an important part to play.

Optimum Newborn Care



Early neonatal care

The risk of death is the greatest in the first 24-48 hours after birth.

Objectives:

- Establishment and maintenance of cardiorespiratory functions
- Maintenance of body temperature
- Avoidance of infection.

Early neonatal care

- Establishment of satisfactory feeding regime
- Early detection and treatment of congenital and acquired disorders especially infections.

Immediate Care

1- Clearing the Airway:

- Establishment and maintenance of cardiopulmonary functions (e.g breathing)
- To establish breathing, the airways should be cleared of mucus and other secretions.
- Resuscitation is necessary if natural breathing fails to establish within a minute, as in the case of babies having hypoxia during labour.

2. Apgar Score

- The Apgar score is taken at 1 minute and then again at 5 minutes after birth.
- It requires observation of the heart rate, respiration, muscle tone, reflex response, and colour of the infant.
- Each sign is given a score 0,1,2.
- **A score below 5:** needs prompt action. Infants with low apgar score at 5 minutes of age are subject to high risk of complications and death during the neonatal period.

Apgar Score

Sign	0	Score 1	2
Heart Rate	Absent	Slow (below 100)	Over 100
Respiratory effort	Absent	Slow Irregular	Good cry
Muscle tone	Flaccid	Some flexion of extremities	Active motion
Reflex response	No response	Grimace	Cry
Colour	Blue, pale	Body pink Extremities blue	Complete pink
Total Score = 10	Severe depression 0-3	Mild depression 4-7	No depression 10

3.Care of Cord

- In the case of normal infant, the umbilical cord should be cut when it has been stopped pulsating.
- The advantage is that the baby derives about 10 ml extra blood, if the cord is cut after the pulsation ceases.

- Care must be taken to prevent tetanus by using proper sterilized instruments and cord ties.
- It dries and shrivels up and separates by aseptic necrosis in 5-8 days.

4- Care Of the Eyes:

- Before the eyes are opened, the lid margins should be cleaned with sterile swabs.
- Instill a drop of freshly prepared silver nitrate solution to prevent gonococcal conjunctivitis
- Alternatively a single application of tetracycline ointment can be given

Opthalmia neonatorum:

Organisms involved are:

- N. Gonorrhoea, C. Trachomatis, Staphylococcus, Streptococcus, Candida spp.
- Most serious cause of conjunctivitis of new born is infection with N. Gonococcus as it can rapidly cause blindness.
- **Prevention:** Specific maternal genital tract infections should be treated prior to or during pregnancy
- Special care should be taken while conducting face or breech delivery.

5-Care of the Skin:

- When the baby is few hours old, the first bath is given to remove vernix, meconium, and blood clots.
- Care should be taken regarding temperature of water to avoid cooling the body temperature.

6-Maintenance of the body temperature:

- A new born has little thermal control and can lose body heat quickly.
- Immediately after birth the child is quickly dried with a clean cloth and wrapped in warm cloth and given to the mother for skin to skin contact and breast feeding.

7- Breast feeding:

- It should be initiated within an hour of birth, which helps to establish feeding and a close mother child relationship, known as “**bonding**”.
- The first milk is called “**colostrum**” which is most suitable for baby and it contains a high concentration of protein, other nutrients, and anti infective factors.
- The regular milk comes on the third to sixth day after birth.

Neonatal Examination

a-First Examination:

It is done soon after birth.

The examination is:

- To ascertain that the body has not suffered injuries during the birth process.
- To detect malformation especially those requiring urgent treatment.
- To assess maturity.

The following abnormalities found on examination should be immediately attended to:

- Cyanosis of the lips and skin
- Any difficulty in breathing
- Imperforated anus
- Persistent vomiting
- Signs of cerebral irritation such as twitching, convulsions
- Temperature instability.

b-Second Examination:

It should be made preferably by a paediatrician within 24 hours after birth. It is a detailed systemic examination from head to toe.

The following protocol should be followed:

1- Body Size:

Body weight; crown-heel length, head and thoracic perimeters.

2- Body temperature:

3- Skin:

Observe for cyanosis of lips and skin, jaundice, pallor, generalized erythema

4-Cardio-respiratory activities:

Cardiac murmurs, central cyanosis
respiratory rate over 60 per minute

5- Neuro-behavioural activity:

Posture: neck retraction, hyper flexion of all limbs

Muscle tone: tendon reflexes, cry, movements

6- Head and face:

Hydrocephalous. large fontanelles.

Eyes: cataract, conjunctivitis **Ears:** accessory auricles. **Mouth and lips:** hare lip, cleft palate

7-Abdomen:

Signs of distention, abnormal masses, imperforate anus.

8- Limbs and joints:

Deformities of joints, congenital dislocation of hips, extra digits

9-Spine:

Neural tube defects

10-External Genitalia:

Male: Hypospadias, undescended testis, hydrocele

Female: fused labia, enlarged clitoris

The Infected Newborn

Neonatal Infection-main cause of neonatal mortality.

Common infections:

- Neonatal tetanus
- Congenital syphilis
- New born with an HBV positive mother
- New born with an HIV positive mother.

a-Neonatal Tetanus:

It can be prevented by vaccination of pregnant women and sero-vaccination of new borns in case of at risk delivery.

b-Congenital syphilis

- Diagnosis is based on evidence in the mother. Since clinical signs of congenital syphilis often do not occur at once.
- In case of doubt and if there is risk of inadequate medical surveillance of baby :
- **Treatment** with 2.4 to 4.8 million U of Benzathine Penicillin may be recommended

C- New Born with an HBV mother

- Babies may be infected at birth when the mother is a carrier.
- Transmission occurs through the blood and the genital secretions and affects the new born during the perinatal period and infancy.
- Not a contraindication of breast-feeding.

- **If the new born is infected:** the baby may become a chronic carrier, and tend to develop active chronic hepatitis, cirrhosis or primary cancer of liver during adult hood.
- **Prevention of Perinatal transmission:** by sero prophylaxis combined with vaccination –
- Intramuscular injection of 0.5 ml of hepatitis B Immunoglobulin along with hepatitis B vaccine within 24 hours of birth. The vaccine may be repeated at 6, 10 and 14 weeks of age.

d-New born with an HIV positive mother:

- About 30 percent of babies born to HIV positive mothers get infected.
- Transmission usually occurs at the end of pregnancy and is not influenced by the type of delivery.
- The virus has been isolated in the breast milk.

- The risk of transmission depends on the severity of the mother's case.
- Unlike hepatitis- B there is no prevention for the new born.

Measuring the baby

Measurement of birth weight, length and head circumference are the simplest and reliable methods by which the health and maturity can be measured.

1- Birth weight: It should be taken within the first hour of life, before postnatal weight loss has occurred. The naked baby should be placed on a clean towel on the scale pan.

2-Length (height):

- It should be recorded within first 3 days. The length is taken by the **“Infantometer”**.

3- Head circumference:

- This measure may change slightly during the first 5 days owing to moulding during labour.
- It is taken with a measuring tape on the fronto- occipital diameter.

Neonatal Screening

- **Objectives:** Primarily to detect infants with treatable genetic, developmental and other abnormalities
- To provide their parents with genetic counselling.
- 10-15 ml of cord blood should be collected at birth and saved in the refrigerator for 7 days for typing, Coomb's testing and other tests.

Common disorders which are screened:

- Phenylketonuria (PKU)
- Neonatal hypothyroidism
- Coomb's test
- Sickle cell or other haemoglobinopathies
- Congenital dislocation of hips

Identification of “at risk” Infants:

- Birth weight less than 2.5 kg
- Twins
- Birth order 5 and more
- Artificial feeding
- Weight below 70 percent of the expected weight (2nd and 3rd degree malnutrition)

- Failure to gain weight during three successive months
- Children with PEM, diarrhoea
- Working mother/one parent

LOW BIRTH WEIGHT

- **Groups of low birth weight babies:**
Born prematurely (short gestation)
- With foetal growth retardation.
- **By International agreement:**
- Defined as a birth weight of less than 2.5 kg (upto and including 2499 g), the measurement being preferably during the first hour of life, before significant post natal weight loss has occurred.

- **Apart from birth weight, babies can be classified into three groups according to gestational age as follows:**
- **Pre-term:** Babies born before the end of 37 weeks gestation (less than 259 days)
- **Term:** Babies born from 37 completed weeks to less than 42 completed weeks (259 to 293 days) of gestation
- **Post-term:** Babies born at 42 completed weeks or any time thereafter (294 days and over) of gestation.

Low Birth Infant

- Any infant with a birth weight of less than 2.5 kg regardless of gestational age.
- **It includes two kinds of infants:**
 - a. Pre-term Babies
 - b. Small for dates (SFD) babies

a- Pre-term babies:

- These are babies born too early, before 37 weeks of gestation.
- Their intrauterine growth may be normal. That is their weight, length and development may be within normal limits for the duration of gestation.
- Given good neonatal care, these babies can catch up growth and by 2 to 3 years of age will be of normal size and performance.

b-Small- for- date (SFD) babies:

- These may be born at term or pre-term.
- They weigh less than the 10 th percentile for the gestational age. These are clearly the result of retarded intrauterine foetal growth.
- The **factors** related to intrauterine growth retardation are multiple and interrelated to mother, the placenta or to the foetus.

a-Maternal factors:

- Malnutrition
- Severe anemia
- Malaria
- Toxemia
- Smoking
- Low socio economic status
- Heavy physical work during pregnancy
- Short maternal stature
- Very young age
- High parity
- Close birth spacing

b-Foetal Causes:

- Foetal abnormalities
- Intrauterine infections
- Chromosomal abnormalities
- Multiple gestation

Risk factors for Low birth weight

- In the developing countries, adverse prenatal and post natal development of the child is associated with **three interrelated conditions**:
- Malnutrition
- Infection
- Unregulated fertility

Prevention

- Interventions have to be “**cause specific**”.
- Main attention is given to ways and means of preventing LBW through good prenatal care and intervention programs, rather than treatment of LBW babies born later

a-Direct Intervention Measure

- The incidence of LBW can be reduced if pregnant women “**at risk**” are identified and steps are taken to reduce the risk.
- The women should be identified early in the pregnancy.
- Both malnutrition and morbidity due to infections during pregnancy can be prevented.

Some direct interventions are

- Increasing food intake
- Controlling infections
- Early detection and treatment of medical disorders.

b-Indirect Interventions

- Family planning
- Avoidance of excessive smoking
- Improved sanitation measures
- Improving health and nutrition of young girls
- Improvement of socio economic status
- Environmental conditions

Treatment

From the point of view of treatment the LBW can be divided in to 2 groups:

➤ **Those under 2 kg:**

Require first class modern neonatal care in an intensive care unit until the weight reaches that of the second group.

➤ **between 2-2.5 kg**

May need an intensive care unit for a day or two.

Intensive care comprises:

- Incubatory care
- Feeding
- Prevention of infection

Leading cause of death in LBV

- Atelectasis
- Malformation
- Pulmonary hemorrhage
- Intra cranial bleeding, secondary to anoxia or birth trauma
- Pneumonia and other infections

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Thanks