Child Health And Intervention
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- Human body is start from a types of single cell that is **Zygote [Fusion of Sperm & Ovum]** Zygote contain 23 pair/ 46 Number Chromosome
- Study about child health is called **Pediatric**

Pediatric

- Pediatric is the branch of Medical science that deals with the care of children from **Birth to Adolescent** related to Health and Disease
- Pediatric word derived from **Greek word**
- Pediatric term is the **combination 2 Word**
  - Pedia :- Child
  - Itric :- Treatment

= **Care or Treatment of child up to**

- ✓ Developing country :- **Up to 16 Years**
- ✓ Developed country :- **Up to 18 Years**

- Father of Pediatric **is Dr. Abraham Jacobi**
- Specialist of Pediatric **is called Pediatrician**
- Temperature of pediatric ward **around 26- 28^{0c}**
- National Children Day **29 Bhadra**
- Universal Children day **20 November**
- **Pediatric divided in to 2 parts**
  a. Intra Uterine
  b. Extra Uterine

Intra Uterine

- Intra Uterine includes **3 Components**
- **Ovum** [Germinal period] :- From **0 - 2 weeks/ 14 days**
- **Embryo** [Organogenesis Period] :- **From** 3- 8 weeks
- **Fetus :- From 9 weeks - Up to Birth**

Extra Uterine

- **Neonate** :- 0 - 28 days / 1 month / 4 weeks on life
  - **Neonate divided in to 2 parts**
    - ✓ **Early neonate :- 0- 7 days** of birth
    - ✓ **Late Neonate :- 8 - 28 days** of birth
    - ✓ **Neonatal Mortality rate :- 21/ 1000 (NDHS 2016)**
- **Infancy / Infant** :- 28 days to 1 years of life
- **Toddler :-** 1 -3 years
- **Pre- School Age** :- 3- 6 years
- **School Age** :- 6 -10 years/5-14 years
- **Children :-** 1- 14 years
- **Puberty :-**
  - Also called **Over lapping of Life**
  - **Male :- 9-13 years**
  - **Female :- 8-11 years**
- **Adolescent :-**
  - Also called **Dreaded Age** (समस्या मल्क)
  - **10-19** years **[A/C to WHO]**
  - **Adolescent divided into 3 Parts**

1	**Early Adolescent**	10-13 years [Puberty]
2	**Middle Adolescent**	14-16 Years
3	**Late Adolescent**	17- 19 years

- **Young** :- 10-24 years
- **Youth :-** 15 - 25 years
- **Old Age/ Geriatric** :- > 60 years
  - ✓ Also called **Dreaded age of life**
- **Independent :-** 15- 64 years
- **Dependent :-** ≤14 & ≥ 65 years

Terminology

- **Live Birth :-** If Fetus present **Heart beat and Movement condition**
- **Still Birth :-** Dead of Fetus **After 22 weeks** of gestation to Delivery time
- **Pre term Delivery :-** Delivery **< 37 weeks** of Gestation [Less than 259 days]
  - ✓ Pre-term delivery divided into 3 parts
    1. **Moderate Pre-term :-** 32-37 weeks
    2. **Severe Pre-term :-** 28-32 weeks
    3. **Extreme preterm :-** < 28 weeks
- **Term Delivery :-** Delivery within 38 - 42 weeks of Gestation [259-293 days]
- **Post Term Delivery :- Delivery** after 42 weeks of Gestation [More than 294 days]
- **Perinatal period :-** From 28 weeks of gestation to 7th Days of Delivery [High MMR In this Condition]
- **Extended perinatal Period :- from** 22 weeks of Gestation to 7 Days of Delivery
- **Gestation Period :-** 280 days/ 9 month 7 days/ 40 Weeks
- **Gestation Period From Ovulation :-** 266 days

Criteria of New borne Healthy baby

- Criteria of New borne healthy baby are
  1. Term baby **(37-42 Weeks)**
  2. Delivery without any complication
  3. Respiration start within **30 Second of Delivery**
  4. Each Vital sign should be Normal
     - Temperature :- **36.5 - 37.5^{0c}**
     - Pulse :- **120-140** Beat/ Min
     - Respiration :- **30-40** respiration/ Min
     - B.P :- **80/50 mm** of Hg
     - Blood volume :- **80 ml / Kg** / Body weight
     - Brain Weight :- **300-500 gm**
     - Lungs capacity :- **150 ml**

Care of New borne baby

- New borne baby care are
  1. Maintenance of Airway
  2. Assessment of APGAR Score
  3. Umbilical cord cutting
  4. Wrap the baby
  5. Start physical examination
  6. Injection Vitamin K
  7. Immunization A/C to Protocol

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Airway clearness

- Also known as Maintenance of Airway
- Baby provide **Head low position**
- **Start succession**
  - its men's **clear the Airway than help in Respiration**
  - **Site of Suction :-**
    - **A. 1st in Mouth :-** Oropharyngeal suction
    - **B. 2nd in Nose :-** Nasopharyngeal Suction
    - **C. Trachea :-** Teacheal suction (Today not use)
  - **Peinguin** suction commonly ues
  - **Time of Suction :-**
    - Giving suction maximum up **to 5 min**
    - **Not more than 10 sec each episode**
    - But Endotracheal Suction **:- 15 sec**

Technique of Suction :-

10 sec Suction
↓
20 – 30 sec gap
↓
10 sec suction
↓
10 – 20 sec gap Suction

Suction Pressure Apply :-

- **Adult :-** 100-120 mm of Hg
- **Child :-** 80- 120 mm of Hg
- **Infant :-** 60 - 80 mm of Hg
- **Term baby** :- 40-60 mm of Hg
- **Pre term :-** < 40 mm of Hg

Complication

- Most common complication is **Hypoxia** (So Before & After suctioning supply O2)

Assessment of APGAR Score

- It is used for Immediate Neonatal assessment of new borne baby.
- Also called **Babies first test after Birth**.
- Discovered By **Virginia Apgar at 1952**
- APGAR score मा **3 body system access** गरिन्छ :
  - Respiratory System
  - Cardiac System
  - Nervous System.
- **Assessment time :-**
  - 1st Time :- **1st Minute of life**
  - 2nd Time :- **5 min of life** (Most important)
- Maximum Score **:- 10**
- Minimum Score **:- 0**

APGAR Scoring Table

Indicator		0 point	1 point	2 point
A	Appearance	Whole blue	Pink body blue extremities	Whole Pink
P	Pulse	Absent	< 100/min	>100/min
G	Grimace	Floppy/No response to stimulation	Grimace on Suction	Cry on Stimuli
A	Activity	Absence	Flexed limbs	Active
R	Respiration	Absent	Slow & Irregular	Regular

Scoring Interpretation

S.N	Score	Indicate	Action
1	0-3	Severe Asphyxia	Need resuscitation
2	4-7	Moderate asphyxia	Start O_2 Therapy
3	8-10	No Asphyxia	Normal care

Notes :-

- Most important Component **:- Pulse/ Heart rate**
- Most important Time **:- 5th minute taking**
- Most critical Condition **:- 0-3 Apgar score**
- **Acrocynasis :-** Bluish discoloration of Leg & Hand (Limbs)

Umbilical cord cutting

- Umbilical cord Tie & cut after **5 (3-5)** Minute of Birth (80-100 ml blood gets to baby than prevent Anemia)
- Umbilical cord Tie & cut on **2 sites**
  - **1st Tie :-** From 5 cm of Baby
  - **2nd Tie :-** From 2.5 cm of First tie
- Cutting between 1st & 2nd tie place
- Stump remove from **24 Hours** of Delivery
- Apply **Navimalm 1 whole tube** on Umbilical & Around the umbilical
- Umbilical cord Dry and Fall about **7-8 days**
- Inflammation of Umbilical cord is called **Omphilitis**

Warp the baby

- Firstly Dry and Clean by Soft clothes (**Clean Vernix caseosa**)
- Keep baby Dry and Worm by Soft blanket
- Wrap the baby prevent **Hypothermia**
- Provide **KMC** (Kangaroo Mother Care)

Medication

- After essential care give Injection **Vitamin K**
  - Route **:- I/M**
  - Site **:- Vastus lateralis muscle**
  - **Dose :-**
    - Preterm :- 0.5 mg
    - Term :- 1 mg

Growth & Development

- **Different between Growth & Development**

S.N	Growth	Development
1	Change in the Physical or Physiological structure	Change in the Function & Activities of Different organ
2	It is Physiological changes	It is Psychological changes
2	Can be Directly Measured	Can't be Directly measured
3	Quantities measurement	Qualitative measurement
4	Growth stop at Particular stage	Development is Continues process

Growth :-

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- Growth denotes increase in Shape & size of the body

Assessment of Growth & Development

- Assessment of Growth includes
  1. Weight
  2. Height
  3. MUAC
  4. Chest circumference
  5. Head circumference

Weight [तौल]

- Weight should be measure within **1 hours of life** & Result always written in **Gram not in Kg**
- Baby body weight & Height measured by **Salteral Scale**
- **Average Weight : - 2.5 - 3.5 kg** [3 kg / **7-9 pound**] (**WHO** 2.5kg)
- **Category of Weight**
  1. low Birth Weight [LBW] **: - <2500gm / 2.5 kg**
  2. Very Low Birth Weight **: - <1500gm / 1.5 kg**
  3. Extreme LBW/VVLBW **: - < 1000gm / 1kg**
  4. Abortion Weight **: - < 500 gm**
- Weight **more than 4 kg** That condition is called **Macrosomia, Over weight/ Large baby**
- After Delivery About up to 5-7 days Weight loss **10 %,** Remain equal baby weight of Burn about **7- 10 days** and After **10 days** Weight increase
- Weight Gain for **first 3 month about 25- 30 gm day**
- After 3 month than **400gm / month** up To first year

Weight Chart

Age in Year	Multiply by	Weight increase
At Birth	2.5 -3.5 kg [3kg]	
5 / 6 month	2 times	6 kg / Double weight
1 years	3 times	9 kg/ Triple weight
2 years	4 times	12 kg/ Quadriple
3 years	5 times	15 kg / 5 fold
5 years	6 times	18 kg

Notes: -

- Weight is the **best single parameter of Arising physical growth**
- Most sensitive measure of growth is **Weight**
- Most common causes of LBW Prematurity , Maternal malnutrition
- **SGA [Small for Gestation) : -** The delivery of baby less than 10th of centile in weight
- **AGA [Appropriate For Age) : -** The delivery of baby between 10th & 90th centile weight
- **LGA [Large For Gestation) : -** The delivery of baby > 90th centile weight expected for Gestation

Height / Length

- Height should be take in **Standing Position**
- **Height measured by**
  - **Under 2 Years : - Infantometer**
  - **After 2 years : - Stadiometer**
- Average Length of baby at Birth time **50 cm [50-60]**
- Length increase average
  - 0-6 month **2.5 cm/ Month**
  - 6-12 month **1.25cm / Month**
  - **At 1 years** Increase **25 cm** [50 + 25= 75 cm]
  - **At 2 years** increase **12cm** [75+ 12= 87 cm]
  - **At 3 years** increase **7cm** [87+ 7 = 94 cm
  - **At 4 years** increase **6 cm [94 + 6= 100cm]**
- Height **Double at 4 Years (100 cm)**
- **Height Triple at 13 years [13-14 years]**

Head Circumference

- Head circumference is Measured by **Non Stretchable tape/ Ordinal tape/ Non elastic tape**
- Measurable site **Anterior Supra orbital ridge** & **Posterior Occipital protrusion**
- At Birth **Head Circumference 35cm [33-35 cm)**
  - **< 33 cm : - Microcephaly**
  - **> 35 cm : - Macrocephaly**
- At the 3 month **40cm**
- At 1 years **45 cm**
- At 2 years **48cm**
- At 12 years **52 cm**
- **Adult Head circumference [At 12 year] : - 52cm**

Notes : -

- If the growth excess 1cm in 2 weeks during the first 3 month than suspect **Hydrocephalus.**

Chest Circumference

- Head & Chest circumference is measured by **Non stretchable tape/ inches tape / Ordinal tape**
- Measurable site is **At the level of Nipple**
- At birth Chest Circumference about **32 cm** [31-33]
- Difference between the Head & Chest Circumference At birth Time **3cm**
- **Head & Chest circumference Equal** 9-12 month **[Best 12 month]**
- Chest circumference is more than head circumference after 1 years

MUAC (Mid Upper Arm Circumference)

- MUAC measure Nutrition status of Children
- MUAC Measured by **Shaker's tape**
- It is taken from left arm form 6 month to 5 years age .
- MUAC Contain 3 Coding colour (Red, Yellow, Green)
- Emergency अवस्थामा बचचाको पोष्ण स्थिति पता लगाउन MUAC बढि प्रभावकारि मानिन्छ ।

Result of MUAC

MUAC color	MUAC Level	Condition
Red	< 115mm(<11.5cm)	SAM
Yellow	>115mm -125mm(12.5cm	MAM
Green	>125mm(>12.5cm)	Normal

The Growth Chart

- Also called **Road to health chart .**
- Growth Chart is designed by **first David Marley** & Later modify **WHO**
- Road to Health Chart Used for **Growth monitoring**
- **Total 36 times** growth monitoring up to 5 years

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✍ **Schedules of Growth monitoring**

S.N	Schedules	Times	Timing
1	Up to 2 Years	24	Every month
2	3 Years	6 times	Every 2 month
3	4 Years	4 Times	Every 3 month
4	5 Years	2 times	Every 6 month

Growth chart is Relation Between **Height** & **Weight**

Development :-

✍ शरिरको विभिन्न अंगको काममा हुने परिपक्तालाई विकाश भनिनछ [Development Denotes Increase the skill And Function/Functional & Physiological measurement of individual level]

✍ Brain develop within 2 year about **:- 80%** :- Golden thousand day

✍ Within 5 year :- 90 % Brain Development

✍ Up to life :- 100 %

Development

AGE	Development
1 Month	Turn head to sound / Alert to sound
2 Month	Social smile / Smile after beings talk
3 Month	**Neck Holding, Mother Recognize**
4 Month	Lough Loud, Grasp object placed in hand
5 Month	**Rolls over,** Mirror smile, Put feet in Mouth, Weight gain Double
6 Month	Mono syllabus [pa, ma, ba,], Stranger Anxiety (अपरिचित व्यतिः चिनिनु) , Eruption of Teeth , Sit with support, Tripod Position
7 Month	Palmer Grasp [Using palm], Sit alone with use of Hand , Name response
8 Month	**Sitting with out Support, Parasute Reflex Appear,**
9 Month	**Standing with support, Bi- Syllabus [mama, papa],**
10 Month	**Walking With support, Creeping,**
11 Month	**Crawling (बामे सर्नु]**
12 Month	Stands with out support, Play simple ball
13 Month	**Walking With out Support**
18 Month	**Running**
24 Month / 2year	Walking upstairs [सिढि चढन थाल्नु], Simple sentence, Up to 2 feet jump & Balanced
36 Month / 3year	Riding try cycle, **Know gender** [लिङ्ग पहिचान], Name , age , sex, 3 word speak,
48 Month / 4 year	Go to Toilet self

Common Congenital Abnormality of Child

✍ **Common congenital abnormality are**

A. Cleft lips
B. Cleft palate
C. Spinal bifida
D. Fontanelle defect

Cleft Palate

✍ Also called **Palatoschisis**
✍ Commonly seen in **Female**
✍ Cleft palate creates a problem during Beast feeding
✍ Suitable Repair time **6-12 month** of Birth
✍ Final treatment by Surgery (**Palatoplasty**)

Cleft lips

✍ Also called **Chelochiasis**
✍ Commonly seen in Male & usually Unilateral
✍ Suitable Repair time **3-6 month of birth**
✍ **Rules of Ten** is related to Cleft lips (Weight 10 ibs, Hb 10 gm, Age 10 weeks)
✍ Final treatment by Surgery (**Cheiloplasty**)

Spina Bifida

✍ Also called Spinal defect/ NTD / Vertebral defect
✍ Due to deficiency of **Folic acid deficiency**
✍ **Prevention :-** Folic acid taken 1st trimester

Fontanelle

✍ दुई suture बिचको gap लाई Fontanelle भनिन्छ ।
✍ **Total Fontanelle Child :- 2 But New baby मा 6 वटा हूनछ ।**

A. Anterior Fontanelle
B. Posterior Fontanelle

Anterior Fontanelle

✍ Anterior Fontanelle Also called **Bregma**
✍ **Anterior fontanelle is closed by 12-18** month and shaped is **Diamond shape**
✍ **Largest Fontanelle**

Posterior Fontanelle

✍ Posterior called **Lambda**
✍ **Closed by 3-6 month** and shaped is **Triangular shaped**
✍ Smallest fontanelle

Notes :-

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- In Infant Bulging fontanelle [उठेको] is most significant sign of **Meningitis, Increase ICP**
- **Sunken / Depressed [धसेको] fontanelle is seen in Dehydration ,** Malnutrition
- **Enlargement condition of Fontanelle : -**
  - Down Syndrome [21 trisomy]
  - Hydrocephalus
  - IUGR, Premature birth

Common Neonatal Problem

- Common neonatal problems are
  - **A.** Infection/ Sepsis [Major] : - 36 %
  - **B.** Birth Asphyxia : - 27%
  - **C.** Pre-term/ premature birth
  - **D.** Hypothermia

Neonatal Sepsis

- Major **causes of Neonatal Death (36 %)**
- Neonatal sepsis is defined as the Systemic infection during the neonatal period, When infection is localized to Lungs, Meninges, Bone (28 दिन भित्रको बच्चामा कुनै system मा गएर bacterial infection हुनुलाई Neonatal Sepsis भनिन्छ Eg : - Meningitis, Pneumonia , Osteomyelitis)
- **Common Causes of Neonatal sepsis are**
  - Staphylococci [Community]
  - E. coli
- **2 Types** of Neonatal Sepsis
  1. **Early onset : -** Within 72 hour, E coli Commonly, High mortality
  2. **Late Onset : -** After 72 hours , Streptococcus aureus, Low mortality
- **Management of Neonatal sepsis**
  - For **Pneumonia & Septicemia** : - Ampicillin/ Cloxacillin/Amikacin
  - **For Meningitis & Osteomyelitis : -** Flucloxacilin + G/A
- **Duration of Drug : -**
  - ✓ Pneumonia/ sepsis - 7-10 days
  - ✓ Meningitis - 3 days
  - ✓ Osteomyelitis 6 weeks

Birth Asphyxia

- It is defined as a Newborn due to **lack of Oxygen / lack of Profusion to various organ**
- **2nd most common causes** of Neonatal death
- **Essential criteria for Birth Asphyxia : -**
  - APGAR Score **: - 0-3**
  - Prolonged metabolic/Mixed academia [PH<7]
  - Neurological Manifestation **: - Seizures, Coma**
  - Evidence of multi organ dysfunction
- **Management : -**
  - Stimuli the baby
  - Suction
  - Use AMBU Bag
  - NICU

Pre-term delivery

- **Pre term Delivery : -** < 37 weeks of Gestation [less than 259 days]
  - ✓ **Moderate Pre-term : -** 32-37 weeks
  - ✓ **Severe Pre-term : -** 28-32 weeks
  - ✓ **Extreme preterm : -** <28 weeks
- **Common problem of Pre-term baby : -** RDS, MAS, Hypothermia etc

Hypothermia

- Also called **Silent killer of Neonate**
- Decrease the body temperature **below the Normal range** [< 36.5^{C}]
- Normal Body Temperature of Neonate **$36.5-37.5^{C}$**
- **Grading of Hypothermia**
  - ✓ Mild Hypothermia : - $35.5-36.5^{0c}$
  - ✓ Moderate Hypothermia : - $32-35.5^{0c}$
  - ✓ Severe Hypothermia : - $<32^{0c}$
- **Causes : -** Increased body surface area relative to Mass
- **Heat loss process : -** 4 process
  - **A.** Radiation
  - **B.** Convection
  - **C.** Evaporation
  - **D.** Conduction
- **Prevention : -**
  - ✓ Warm delivery room [25-28 c]
  - ✓ Immediate drying
  - ✓ Apply KMC Method
  - ✓ Breast feeding
  - ✓ No bath

KMC [Kangaroo Mother Care]

- Also known as Skin to Skin care
- Kangaroo mother care is a special way of caring Low birth weight / Pre-term baby by skin to skin contact
- KMC Method was introduced & Popularized by **Dr Edger roy & Dr Hector in 1978**
- KMC Method can be done by Any family member who is free from **disease / Infection & Hemodynamically stable** (Normal Temperature)
- Each session should be **last at least One hours**

Components of KMC

- The **3 Major components** of KMC
  1. **Kangaroo position** (Mother Semi recline & Baby Upright or Frog like structure)
  2. **Kangaroo Nutrition** (Exclusive breast feeding)
  3. **Kangaroo Early discharge & Follow up** (Most important)
- **Main Purpose of KMC is** To prevent Hypothermia other propose
- Duration of KMC is Minimum **1 Hours & Maximum 24 Hours**
- **When the stop of KMC method**
  - When the baby weight about **reached 2.5 kg**

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- Normal baby temperature

Benefit/ Advantage of KMC method

- Improve physiological bounding **between mother & Children**
- Increase breast milk supply
- Improve Cardiac & Respiratory stability
- **Prevent Hypothermia**
- **Decrease the risk of** Infection

Neonatal Jaundice / Icterus

- Yellowish skin and mucous due to Increase bilirubin level **within 28 days of Baby**
- **Normal Bilirubin level : -**
  - **Adult : -** 0.2 - 1 mg /dl / 0.2-0.8 mg/ dl
  - **Child : -** < 5mg/dl
- **2 Types of Neonatal jaundice**
  1. Physiological
  2. Pathological Jaundice

Physiological Jaundice

- Most common **types of Jaundices**
- Jaundice Appear **after 24 hour** of Term baby & **48 Hours of Pre-term** baby birth to Before 14 days of Delivery
- Bilirubin increase **> 5mg/dl & < 15mg/ dl**
- Maximum Intensity or Peak level seen in **4-5 days at Term baby** & **7 days in Pre-term**
- It will be resolve or Disappear self within **14 days**
- **Palm** & **Soles are not** Involve in Physiological jaundice
- **Causes: -**
  - Decrease liver enzyme
  - Excess RBC Destruction

Pathological Jaundice

- Most **Severe or Danger types** of Jaundice
- Appear **within 24 hours of Birth or After 14 days** of Delivery
- Bilirubin level seen **more than 15gm/dl**
- **Palm & Soles** are involves in Pathological jaundice
- **Causes are : -**
  - R.H Incompatibility
  - Thalassemia
  - Sickle cell anemia
  - Increase Hemolysis

According to CB-IMNCI

1. **Jaundice : -** Palm and Soles not yellow , Jaundice appear after 1 day & and before 14 days
2. **Severe Jaundice : -** Palm & soles yellow , Jaundice appear before 1 days & after 14 days,

Sign & Symptom of Jaundice

- **Yellow discoloration** (Sclera, Skin & Mucous membrane) Here bilirubin level **5mg/ dl**
- Bilirubin seen in Neck than **10mg/ dl**
- Lower umbilical level **15mg/ dl**
- Up to Extremities **20mg/ dl**
- Dark color urine, Clay stool seen
- If bilirubin level **> 20mg/dl** than permanent damage of Brain (**Kernicterus**)
- **Diagnosis of jaundice** by Testing bilirubin level

Management of Jaundice

1. **Physiological jaundice**
   - Sunlight (**Most important**)
   - Counselling Breast feeding
   - KMC
2. **Pathological jaundice**
   - Phenobarbitone
   - Phototherapy
   - Carbohydrate diet high intake

Phototherapy

- Phototherapy uses in Jaundice that **Reduce & Excrete bilirubin level**
- During phototherapy **6 light** used they contain 4 Blue light & 2 White light
- 4 blue light help in **Excrete bilirubin** & 2 White light help in **Observation**
- Distance between Child & Phototherapy machine should be **45cm/18 inch**
- During phototherapy cover **Genital area & Eye & Every 2 hours change position**
- **Range of Light : - 550-600 nm (Nano meter)**
- 2 major principle of Phototherapy
  1. Structural isomerization
  2. Photo-oxidation
- **Complication of phototherapy : -**
  - Dehydration
  - Bronze baby syndrome

Notes : -

- **Kernicterus : -** Bilirubin present in Brain/ Damage of Brain cell due to Jaundice
- **Kramer's staging used in Jaundice**
- Unconjugated bilirubin also called **Indirect bilirubin**

Neonatal tetanus

- Neonatal tetanus is a major causes of mortality in developing
- Neonatal tetanus elimination from Nepal (**2005 AD**)
- Neonatal tetanus is caused by **Clostridium tetani**
- Neonatal tetanus generally seen in not immunized in pregnancy
- Infection results of unhygienic birth practices (Most common) and other Umbilical cord cut by Rusted instruments

Sign & Symptom

- Symptoms usually appear by the **3rd days** after birth
  - Excessive unexpected crying
  - Progressive feeding difficulty
  - Ophistomus
  - Lockjaw or Trismus
- **Treatment**
  - Supportive management

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- Airway clear
- Administering **TIG** (Human Tetanus immunoglobin)

Prevention :- Inj TD at pregnancy, Ensuring delivery clean

Common Child health problem

✍ **Common child health problem are**

1. ARI/ Pneumonia (Main causes of Death)
2. Diarrhea
3. Malnutrition
4. Malnutrition

ARI (Acute Respiratory Infection)

✍ Acute infection and inflammation of respiratory tract

✍ ARI Classify in to 2 types

1. **URTI** [Upper Respiratory Tract Infection] :- Nose , Pharynx, Larynx
2. **LRTI** [Lower Respiratory Tract Infection] :- Trachea, Bronchus, Lungs

Causes :-

✍ **Infant :-** Pneumococcus [Most common]

✍ **1 year to 5 yr :-** Herophilus influenza type B

✍ **Adult :-** Streptococcus pneumonia

ARI Classification

Clinical features	Diagnosis	Management
1. **General Danger Sign (GDS)** (Lethargic/unconscious Unable to Feed, Vomiting all & Convulsion/ Fit)	**Very severe disease**	Appropriate drug **Ampicillin 1** dose, If Convulsion **Diazepam 1** dose , Refer to Health Facilities
2. Stridor present	Severe Pneumonia	Amoxicillin & refer
3. Chest indrawing or Fast breathing	**Pneumonia**	Amoxy BD For 5 days , Wheeze present Bronchodilator/ Salbutamol 3 day later follow up
4. No sign & symptom Very severe disease or Pneumonia	**No Pneumonia**	Home ramedy therapy , If not improve than than follow up

Prevention :-

- ✍ Vaccination
- ✍ Avoidance from cold , Dust

Diarrhea

✍ Passes of watery Stool more than 3 times in a day is called Diarrhea

✍ Diarrhea is second major causes of Child Death

✍ Types of Diarrhea are

1. **Acute Diarrhea :-** Sudden change in Frequency & amount of stool, that occurs > 3 times & < 14 days
2. **Persistent diarrhea :-** An episode of diarrhea, which start actually but last > 14 days
3. **Chronic diarrhea :-** Insidious onset diarrhea greater or equal 14 days in Child & > 4 weeks in Adult

✍ **Common causes of Diarrhea**

A. Acute/ Viral/ Cold Diarrhea :- **Rota Virus (Most common)**

B. Chronic Diarrhea :- **E.coli, Giardiasis**

C. Adult diarrhea :- **Giardiasis**

Classification of Diarrhea

Clinical features	Diagnosis	Treatment
1. **Any two sign of Following** a. Lethargic/Unconscious b. Sunken eyes c. Unable to drink / Very slow drink d. Skin pinch go back > 2 sec	**Severe dehydration [fluid** loss 10-15 %]	**Plan C** Injection :- RL 100 ml / kg 3- 6 hour
2. **Any Two features** a. Very thirsty & Eagerly to drink [खुब तिर्खाएद्धे पिउन्] b. Irritable or Crying [छटपटिने र द्धिद्धिने] c. Sunken eyes d. Skin pinch go back < 2 sec	**Some Dehydration** [Fluid loss about 5-10 %]	**Plan B** ORS – 75ml/kg in 4 hour with < 2yr :- 50-100 ml add/ loose motion >2yr :- 100-200 ml add/loose motion
3. Not above feature seen only Diarrhea	**No Dehydration** Fluid loss 0-5 %	**Plan A** Home remedy Continue Breast feeding
4. Diarrhea > 14 days with Severe / some dehydration present	Severe Chronic/ Persistent Diarrhea	Treat Dehydration + Vitamin A single dose
5. Diarrhea >14 days But no sing of Dehydration	Chronic Diarrhea	Give Vitamin A capsule
6. Present blood in Stool [Bloody diarrhea/ Dysentery	**Dysentery**	Tablet Ciprofloxacin BS X 5 days

Some Notes of Diarrhea :-

✍ **Plan C [उपचार प्रणलि क] :-** Home remedy

✍ **Plan B [उपचार प्रणलि ख] :-** ORS

a. तैल थाहा छ भने :- **75 ml /kg/ body wt in 4 hr**

b. तैल थाहा छौन भने :-

- ✓ Up to 4 month :- 200-400ml
- ✓ 4 – 12 month :- 600-800 ml
- ✓ 12-24 month :- 800- 960 ml
- ✓ 25-36 month :- 960-1620 ml

❖ साथै प्रत्येक पटकको पातलो दिशा गरेपछि

- ✓ < 2yr :- 50-100 ml/ loose motion
- ✓ > 2yr :- 100-200 ml / loose motion

✍ **Plan A [उपचार प्रणलि ग]**

- ✓ Drug :- Injection RL iv fluid
- ✓ Dose :- 100ml/kg/body weight in 3-6 hour

Age	30ml/kg	70ml/kg	Total time duration
< 1yr	Within 1 hour	Within 5 hour	6 hours
>1yr	½ hours	2.5 hours	3 hours

Notes :-

✍ In the case of All types of Diarrhea **give Zinc**

✍ **Dose :-**

- ✓ **2-6 month :-** 10 mg / OD/ 10 Days
- ✓ **6 month – 5 years :-** 20 mg/OD/10 Days

✍ Zinc supply start from **Rautahat** & **Parwat district from 2062/63**

✍ Zinc supply **over all** country :- **2066/67**

✍ **Function of Zinc :-**

- ✓ Increase the immunity power
- ✓ To reduce frequency of Stool
- ✓ To make stool consistency
- ✓ To help in Wound Healing

Some special notes of Child Health

✍ At the age of **7 days Tear start** to appear

✍ Heart beat Start of Fetus **:- 21 days/ 3 weeks**

✍ Circulation of fetus Start :- 24-25 Days

✍ **Respiratory system develop** in fetus from **28 weeks** and **heart** start from **21 days**

✍ Fetus life मा कुन Hormone release हुन्छ :- **Cortisone [To maintain Basal metabolic rate and maturation**

✍ Edema of the head on New borne baby Indicate **:- Caput succedaneum [But normal condition because subside after 2- 3 days]**

✍ **Identical twins :-** Same sex and gene of twins baby

✍ **Fraternal Twins :-** Different sex and gene of twins baby

✍ **Heredity** character is transmission by **Gene**

✍ The fetus surrounding by **Amniotic fluid**

✍ **Brachydactylic :-** Shortness of Finger and Toes

✍ **World greatest Public tool :- Immunization**

✍ **MAS** [Meconium Aspiration Syndrome] commonly seen in **Post term baby**

✍ **RDS** (Respiratory Distress Syndrome) commonly seen in Pre term baby

✍ **New born baby Sleep About 80 %**

✍ Meningitis मा CSF analysis गरिन्छ ।

✍ **Mace wan sign** is associated with **Hydrocephalus**

✍ **Projectile vomiting** is initial sign of **Pyloric stenosis**

✍ Intussusception मा jelly like stool देखिन्छ ।

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