New Born Care
For Family Physicians

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Family Physician

- Provides primary health care
- First level of contact between the family and the health system
- Can deal majority of health problems
- Closest to the family
- Is suited to provide integrated management
Integrated Care Of New born

- Neonates must be ASSESSED for major symptoms, nutritional & immunization status, feeding problems and other problems
- Only a limited number of CLINICAL SIGNS are used for assessment
- All neonates must be examined for conditions which indicate IMMEDIATE REFERRAL
Principles of Integrated Care

- CLASSIFICATION (Vs Diagnosis):
  - A combination of signs (15) is used to classify illness (10), leading to SPECIFIC DECISIONS (3) rather than forming a Diagnosis.

- Decisions are:
  - Suggest referral,
  - Treatment & Observation in clinic
  - Advise Treatment at home
Principles of Integrated Care

- Addresses MOST COMMON (5) - not all- neonatal problems
- Protocols use a limited number of ESSENTIAL DRUGS
- Family ACTIVELY INVOLVED in the treatment
- Includes counseling family about HOME CARE including feeding, fluids & when to return to clinic
Integrated Case Management Process

- Step 1: Assess
- Step 2: Classify the illness
- Step 3: Identify treatment
- Step 4: Treat
- Step 5: Counsel the mother
- Step 6: Follow up care
Communicate with Mother

- **Good communication Skills**
  - **Ask** open ended Qn
  - **Listen** carefully
  - **Praise/appreciate** family efforts
  - **Advise**: Use words the mother understands
  - **Check** understanding of advice

- **Initial visit**: Classify and manage

- **Follow up visit**:
  - Did the treatment help
  - Is a change required
  - Is a referral required
<table>
<thead>
<tr>
<th>Assess Signs</th>
<th>Classify as</th>
<th>Treatment</th>
</tr>
</thead>
</table>
| 1. Convulsions                                                             | A. Possible serious bacterial infection | Give IM Ampicillin + Gentamicin  
Prevent low blood sugar  
Warm by skin to skin contact with mother  
Advise mother how to keep neonate warm  
Refer urgently to hospital |
| 2. Fast breathing >60/min  
Severe intercostal/ lower chest indrawing  
Nasal flaring  
Grunting                                                             |                                   |                                                                           |
| 3. Bulging AF                                                               |                                   |                                                                           |
| 4. 10/> skin pustules  
1 big boil                                                                           |                                   |                                                                           |
| 5. Temp>37.5 or<35.5  
Hot or cold to touch                                                            |                                   |                                                                           |
| 6. Lethargic or unconscious  
Less limb movements                                                           |                                   |                                                                           |
Prevent Low Blood Sugar

- If child able to breastfeed
  - Continue breastfeeding

- If child unable to breastfeed but able to swallow:
  - 20–50 mL expressed breastmilk/cow milk with added sugar, sugar water (20g sugar in 200mL)

- If child unable to swallow:
  - Give by nasogastric tube
Warming & Preventing Hypothermia

- Warm by Skin to Skin contact
- Breastfeed frequently
- Warm environment
- Clothe in 3 – 4 layers, cover head with cap and body with blanket / shawl
- Hold baby close to caregiver’s body
## Assess, Classify, Identify Treatment

<table>
<thead>
<tr>
<th>Signs</th>
<th>Classify</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Umbilicus red/draining pus</td>
<td>B. Local bacterial infection</td>
<td>Oral Amox X 5d Teach mother to treat local infection at home Follow up in 2d</td>
</tr>
<tr>
<td>Pus from ear</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;10 skin pustules</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Umbilicus
Skin pustules/boil
To Treat Skin Pustules or Umbilical Infection

- Apply gentian violet paint twice daily.
- The mother should:
  - Wash hands.
  - Gently wash off pus and crusts with soap and water.
  - Dry the area.
  - Paint with gentian violet 0.5%.
  - Wash hands
To Treat Thrush (ulcers or white patches in mouth)

- Tell the mother to do the treatment twice daily.

  The mother should:
  - Wash hands.
  - Wash mouth with clean soft cloth wrapped around the finger and wet with salt water.
  - Paint the mouth with gentian violet 0.25%.
  - Wash hands.
Dry the Ear by Wicking

- Dry the ear at least 3 times daily.
  - Roll clean absorbent cloth or soft, strong tissue paper into a wick.
  - Place the wick in the young infant’s ear.
  - Remove the wick when wet.
  - Replace the wick with a clean one and repeat these steps until the ear is dry.
Assessment Of Jaundice and Temperature

<table>
<thead>
<tr>
<th>SIGNS</th>
<th>CLASSIFY AS</th>
<th>IDENTIFY TREATMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palms and soles yellow or</td>
<td>C. SEVERE JAUNDICE</td>
<td>➢ Treat to prevent low blood sugar.</td>
</tr>
<tr>
<td>Age &lt;24 hours or</td>
<td></td>
<td>➢ Warm the young infant by Skin to Skin contact if temperature less than 36.5°C (or</td>
</tr>
<tr>
<td>Age 14 days or more</td>
<td></td>
<td>feels cold to touch) while arranging referral.</td>
</tr>
<tr>
<td>Palms and soles not yellow</td>
<td>D. JAUNDICE</td>
<td>➢ Advise mother how to keep the young infant warm on the way to the hospital.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>➢ Refer URGENTLY to hospital.</td>
</tr>
<tr>
<td>Temperature between</td>
<td>E. LOW BODY TEMPERATURE</td>
<td>➢ Warm the young infant using Skin to Skin contact for one hour and REASSESS.</td>
</tr>
<tr>
<td>35.5-36.4°C</td>
<td></td>
<td>➢ If no improvement, refer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>➢ Treat to prevent low blood sugar.</td>
</tr>
</tbody>
</table>
Jaundice
Prevention During Transport

- Prevent Hypoglycemia: By frequent breastfeeding

- Prevent Hypothermia: By skin to skin contact, cap, gloves and socks
If Diarrhoea Present

Ask:

For how long?
Is there any blood loss in the stool?

Look, Feel:

General condition: lethargic or unconscious. / Restless and irritable
Sunken eyes
Skin pinch: Goes back slowly / V. slowly (> 2 sec)
What is diarrhoea in a young infant?

If the stools have changed from usual pattern and are many and watery (more water than fecal matter). The normally frequent or loose stools of a breastfed baby are not diarrhoea.
Assessment Of Skin Pinch
## Classify Dehydration & Treat

**Two of the following signs:**
- Lethargic or unconscious
- Sunken eyes
- Skin pinch goes back very slowly

<table>
<thead>
<tr>
<th>F. SEVERE DEHYDRATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>➢ Give first dose of intramuscular ampicillin and gentamicin.</td>
</tr>
<tr>
<td>➢ If infant also has low weight or another severe classification:</td>
</tr>
<tr>
<td>- Refer URGENTLY to hospital with mother giving frequent sips of ORS on the way.</td>
</tr>
<tr>
<td>- Advise mother to continue breastfeeding.</td>
</tr>
</tbody>
</table>
|    - Advise mother how to keep the young infant warm on the way to the hospital.  
  OR |
|  ➢ If infant does not have low weight or any other severe classification: |
|    - Give fluid for severe dehydration (Plan C) and then refer to hospital after rehydration. |
Fluids for Rehydration

- **Plan C (for Severe Dehydration)**
  - **I/V access present:** RL / NS @ 100mL/kg over 6 hrs
    - 30mL/kg in 1st hour, 70mL/kg over next 5 hrs
  - **No I/V access:** ORS by tube @ 20mL/kg/hr for 6 hr
  - Give ORS 5mL/kg/hr as soon as infant can drink
  - Reassess regularly & shift to plan A or B
<table>
<thead>
<tr>
<th>Two of the following signs:</th>
<th>G. SOME DEHYDRATION</th>
<th>H. NO DEHYDRATION</th>
</tr>
</thead>
</table>
| Restless, irritable        | ✓ If infant also has low weight or another severe classification:  
| Sunken eyes                | - Give first dose of intramuscular ampicillin and gentamicin  
| Skin pinch goes back slowly| - Refer URGENTLY to hospital with mother giving frequent sips of ORS on the way.  
|                           | - Advise mother to continue breastfeeding.  
|                           | - Advise mother how to keep the young infant warm on the way to the hospital.  
|                           | ✓ If infant does not have low weight or another severe classification:  
|                           | - Give fluids for some dehydration (Plan B).  
|                           | - Advise mother when to return immediately.  
|                           | - Follow up in 2 days  
|                           | ✓ Give fluids to treat diarrhea at home (Plan A).  
|                           | ✓ Advise mother when to return immediately.  
|                           | ✓ Follow up in 5 days if not improving.  
|                           | • Not enough signs to classify as some or severe dehydration  
|                           | |
Fluids for Rehydration

- Plan B (for Some Dehydration)
  - ORS 200mL over 4 hrs
  - Continue breastfeeding

- Plan A (for No Dehydration)
  - Continue breastfeeding
  - Give extra fluids after each loose stool
### Classify Dehydration & Treat

<table>
<thead>
<tr>
<th>• Diarrhoea lasting 14 days or more</th>
<th>I. SEVERE PERSISTENT DIARRHOEA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>➢ Give first dose of intramuscular ampicillin and gentamicin if the young infant has low weight, dehydration or another severe classification.</td>
</tr>
<tr>
<td></td>
<td>➢ Treat to prevent low blood sugar.</td>
</tr>
<tr>
<td></td>
<td>➢ Advise how to keep infant warm on the way to the hospital.</td>
</tr>
<tr>
<td></td>
<td>➢ Refer to hospital.#</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>• Blood in the stool</th>
<th>J. SEVERE DYSENTERY</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>➢ Give first dose of intramuscular ampicillin and gentamicin if the young infant has low weight, dehydration or another severe classification.</td>
</tr>
<tr>
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<td>➢ Treat to prevent low blood sugar.</td>
</tr>
<tr>
<td></td>
<td>➢ Advise how to keep infant warm on the way to the hospital.</td>
</tr>
<tr>
<td></td>
<td>➢ Refer to hospital.#</td>
</tr>
</tbody>
</table>
Assessment Of Breastfeeding and Nutritional Status

Ask

Is infant breastfed
Is frequency < 8 times / day
Receiving artificial feeds
Being fed by bottle / cup – spoon

Assess breastfeeding for signs of good attachment.

Weight for age / weight gain
Weight-for-age GIRLS
Birth to 6 months (z-scores)
Signs of Good Attachment

- Chin touching the breast
- Mouth wide open
- Lower lip turned outwards
- More areola visible above than below mouth
Good Attachment
Bad Attachment

- Chin touching the breast?
- Mouth wide open?
- Lower lip turned outwards?
- More areola visible above than below mouth?
Treatment of Breastfeeding Problems

- Correct attachment
- Advise frequency (8 / 24 hrs)
- Stop artificial feeding
- Encourage breastfeeding
- Treat breast or nipple problems
- Follow up after 2 days
Check Immunization Status

- Birth
  - BCG, OPV, HBV
- 6 weeks
  - OPV, Pentavalent (DPT, HBV, Hib)
Ask Mother To Return If Following

- Not able to drink or breastfeed
- Becomes sicker
- Develops a fever
- Fast breathing
- Difficult breathing
- Blood in stool
- Drinking poorly
Cord care

- Check for:
  - Umbilical stump: clean, dry, tie tight, no bleeding
  - Nothing applied to the cord stump
Initiation of Breathing: At Birth

- Ask about number of fetus, risk factors in mother and check equipment for resuscitation
The Golden Minute

Birth

Term gestation? Breathing or crying? Good tone?

Yes, stay with mother

Routine care
- Provide warmth
- Clear airway if necessary
- Dry
- Ongoing evaluation

Warm, clear airway if necessary, dry, stimulate

No

HR below 100, gasping, or apnea?

No

Labored breathing or persistent cyanosis?

No

PPV, Spo$_2$ monitoring

Yes

Clear airway Spo$_2$ monitoring Consider CPAP

Yes

Targeted Preductal Spo$_2$ After Birth

<table>
<thead>
<tr>
<th>Time</th>
<th>Targeted Preductal Spo$_2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 min</td>
<td>60%-65%</td>
</tr>
<tr>
<td>2 min</td>
<td>65%-70%</td>
</tr>
<tr>
<td>3 min</td>
<td>70%-75%</td>
</tr>
<tr>
<td>4 min</td>
<td>75%-80%</td>
</tr>
<tr>
<td>5 min</td>
<td>80%-85%</td>
</tr>
<tr>
<td>10 min</td>
<td>85%-95%</td>
</tr>
</tbody>
</table>
Routine Care at Birth

- Provided over mother’s trunk: skin to skin contact
- Subsequently baby should not be kept separate from the mother
- Should be on the same bed
- No cribs / baby room / transfer to nursery in well babies
Breastfeeding: At birth

- Early and exclusive breast-feeding within first hour of birth
- No pre lacteal feeds or other fluids, no pacifiers
Why Are Newborns Prone To Hypothermia

- Can not adjust clothing (Heat preference behavior)
- Large surface area/Kg body weight
  - S.A. of Head 25% (Vs 10% in adults)
- Small mass: small heat sink
- Decreased subcutaneous insulation
- Reduced amount of brown fat
Axillary Temperature (°c)

37.5
Normal range

36.5
Cold stress - Cause for concern

36
Mod hypothermia - Danger: Rewarm

32
Severe hypothermia - Grave: Intensive care
Heat Loss

- Neonate risks getting cold at room temperature of 30 °C if there is draught.
- At delivery room temperature of 25 °C, neonate may cool at 0.3 °C/minute.
  In first 10-20 minutes body temperature falls by 3-4 °C.
- Wet and naked neonates cannot cope with temp < 32 °C.
## Tactile Assessment

<table>
<thead>
<tr>
<th>Condition</th>
<th>Trunk</th>
<th>Sole</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normothermic</td>
<td>Warm</td>
<td>Warm – pink</td>
</tr>
<tr>
<td>Cold Stress</td>
<td>Warm</td>
<td>Cold</td>
</tr>
<tr>
<td>Hypothermia</td>
<td>Cold</td>
<td>Cold</td>
</tr>
<tr>
<td>Hyperthermia</td>
<td>Warm</td>
<td>Warm</td>
</tr>
<tr>
<td>Febrile</td>
<td>Warm</td>
<td>Less warm</td>
</tr>
</tbody>
</table>
Breastfeeding Problems

- Engorged breast
- Not enough milk
- Sore nipple
- Retracted/flat nipple
- Breast abscess
Manual Expression Of Milk

- Must be taught to every mother

- Essential to maintain lactation when infant sick

/not able to suck
Manual Expression Of Milk

Press and release at areola
No squeezing through to the nipple
Not Enough Milk

Cause

Mother’s confidence is easily undermined even though baby is growing well on exclusive breastfeeding.
Not Enough Milk

Management

– Frequent suckling,
  Build confidence,

– All mothers can produce enough breastmilk for even two babies, provided the baby suckles frequently.

– Do not undermine confidence by prescribing top milk.
Low Birth Weight
Preterm

- Weigh baby, determine gestational age
- >1.8Kg, sucking, well - manage at home, monitor
LBW and Preterm

Danger signs

- Difficulty breathing
- Poor suckling
- Not pink
Physiological Peculiarities of Newborn

- Mongolian spots
- Vaginal bleed
- Breast swelling
- Toxic erythema
- Sub conjunctival Hemorrhage
- Umbilical hernia
Conclusion

- Family requires frequent support for
  - Breastfeeding
  - Thermoregulation
  - Interpretation of Jaundice, Stools, Breathing and physiological peculiarities
Neonatal Care & Family Physician

- Family makes 5-10 calls for care of a normal neonate
- Family Physician: indispensable in providing essential newborn care &
- Is suited to provide integrated management
THANK YOU