

Emergency Newborn Care for Merrygold Health Network

Participant's Guide
2008



Uttar Pradesh Social Franchising Project

A project supported by USAID & SIFPSA. Implemented by HLPFPT



Preface

HLFPPT is an organization committed to work with various partners pioneering innovations for bettering health outcomes for the poor. Merrygold Health Network is one of such innovations in the field of Social Franchising.

Merrygold Health Network, aims towards achieving an objective of improving Maternal and Child Health through increased access to low cost – high quality healthcare services, for rural and urban working poor in Uttar Pradesh. In U.P. Social Franchising Project (supported by USAID and SIFPSA), HLFPPT as an implementing agency, will be establishing 70 fully franchised Merrygold Hospitals at district level, 700 partially franchised Merrysilver Clinics at block level and will be working with more than 10,000 Tarang partners (ASHAs, Chemists, Fare price shop owners, Tarang health committee members, Opinion leaders, Anganwadi workers, Depot holders) and AYUSH practitioners at the village level by 2010. Two model hospitals are already established in Kanpur and Agra focusing on maternal and child health care.

In our endeavour to make this a successful model, it was felt that training of doctors, nurses and other team members will be a key component to improve the quality of service delivery and equip the staff with appropriate knowledge and skills.

This training manual on “*Emergency Newborn Care for Merrygold Health Network - 2008*” was designed by Dr. Siddarth Ramji (Professor and Head, Deptt. of Neonatology, Maulana Azad Medical Collage, New Delhi) and Dr. V. K. Anand (Neonatologist, Kalawati Saran Children’s Hospital, New Delhi) to meet the above objectives.

It has been pre-tested with Merrygold L0 hospital staff at Kanpur and Agra. The inputs and feedbacks from the hospital staff and comments of review committee members from SIFPSA and ITAP, has given this manual the present shape.

I am sure that this manual, when used by hospitals and clinics in the Social Franchising Project will act as an enabling tool towards excellent service delivery.

HLFPPT

Acknowledgement

Effective newborn care is a crucial challenge that is faced by every health care setting. I present this manual on “*Emergency Newborn Care for Merrygold Health Network - 2008*”, as the first step towards sensitizing the health care professionals and support staff, about this aspect of health care management. This manual is the result of sincere intent, aspirations and hard work of all those who are an integral part of the network.

I am grateful to Mr. G. Manoj, (CEO, HLPPT) who has shown faith in my entire team to undertake the task of preparing this manual.

My sincere thanks to Mr. Rajeev Kapoor I.A.S. (Executive Director - SIFPSA & Mission Director - NRHM), Mr. S. Krishnaswamy (General Manager Private Sector - SIFPSA), Dr. M. K. Sinha - General Manager Public Sector – SIFPSA and Ms. Savita Chauhan (Dy. General Manager Private Sector - SIFPSA), Dr. Lovleen Johari (Senior Reproductive Health Advisor, USAID), Ms. Shuvi Sharma (Manager - Social Marketing & Franchising, ITAP) for their support and encouragement for developing this manual.

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The manual has been pre tested by Dr. Ramji and Dr. Anand at both Merrygold L0 hospitals at Kanpur and Agra. Efforts made by Mr. Alok Tabelabux, Mr. B. K. Mishra from HLPPT, in organizing the trainings and involvement of entire Merrygold hospital staff in trainings was commendable.

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1. Triage of All Sick Newborn

TREAT:

EMERGENCY SIGNS: If any sign positive: give treatment(s), Call for help, insert I/V line, draw blood for emergency laboratory investigations (Glucose, Hb)

ASSESS FOR EMERGENCY SIGNS
(In all Cases)

AIRWAY AND BREATHING

- Not Breathing or Gaspings or
- Central cyanosis or
- Severe respiratory distress
 - Unable to drink
 - Respiratory rate ≥ 70 /min
 - Severe lower chest indrawing
 - Apnoeic spells
 - Grunting



ANY SIGN POSITIVE

- Manage airway (Chart 1)
- Provide basic life support
- Make sure baby is warm

CIRCULATION

- Cold hands with:
- Capillary refill longer than 3 seconds, and
 - Weak and fast pulse



IF POSITIVE

- Give oxygen (chart 2)
- Make sure baby is warm
- Insert IV and begin giving fluids rapidly (chart 3)
- Proceed immediately to full assessment and treatment

COMA CONVULSIONS

- Coma or
- Convulsion (now)



IF COMA OR CONVULSION

- Manage airway (chart 1)
- If convulsing, give phenobarbitone (if < 2 weeks) OR diazepam (if > 2 weeks) (chart 4)
- Give IV glucose (Chart 5)

IF THERE ARE NO EMERGENCY SIGNS LOOK FOR PRIORITY SIGNS:

These neonates need prompt assessment and treatment

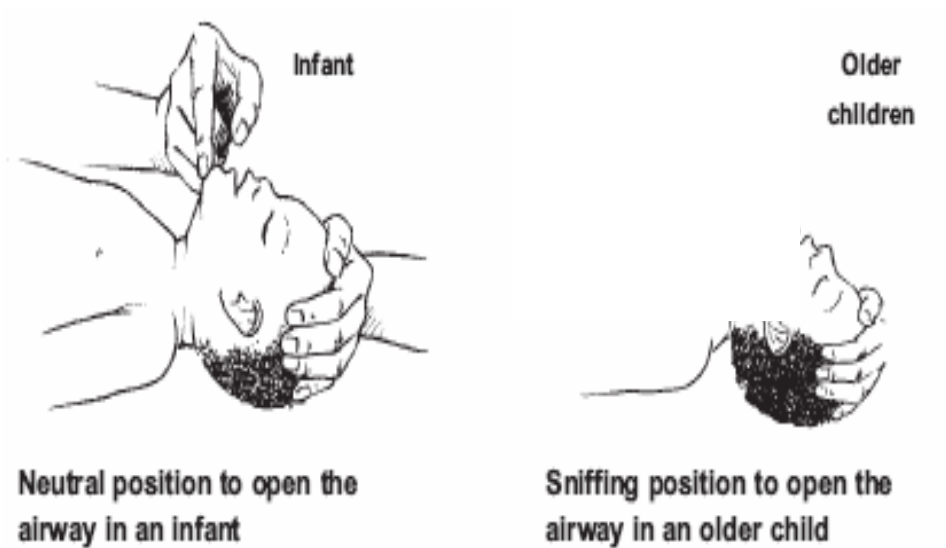
Priority Signs

- Respiratory distress (Respiratory rate ≥ 60 /min)
- Bulging anterior fontanelle
- Diarrhea
- Bleeding
- Hypothermia
- <1800 gm
- Abdominal distention
- Yellow palms and soles
- Vomiting
- Blood in stool
- Fever

NON-URGENT: Proceed with assessment and further treatment according to the priority

2. Managing airway in a newborn who has just stopped breathing

- Tilt the head as shown (nose up position)
- Clear secretions first from mouth and then from nose.
- Check the airway by looking for chest movements, listening for breath sounds and feeling for breath



3. Giving oxygen

3.1 Oxygen should be given to the babies who have:

- Central cyanosis, or are unable to drink (where this is due to respiratory distress).
- Severe lower chest wall indrawing
- Respiratory rate of 70/min or above
- Apnoeic spells
- Grunting with every breath

3.2 Give oxygen through:

Nasal Prongs

- Place the prongs just inside the nostrils and secure with tape

Nasal Catheter

- Use an 6 F size tube
- Measure the distance from the side of the nostril to the inner eyebrow margin with the catheter
- Insert the catheter to this depth
- Secure with tape

Start oxygen flow at 1-2 liters / minute

Head Box

- Place a head box over the baby's head.
- Ensure that the baby's head stays within the head box, even when the baby moves.
- Adjust the flow of oxygen to achieve the desired concentration.

Start oxygen flow at 3-5 liters / minute

Pulse oximeter: Maintain a saturation of 85-93%

4. Giving IV fluids rapidly for shock

- Insert an intravenous line (and draw blood for emergency laboratory investigations).
- Attach Ringer's lactate or normal saline – make sure the infusion is running well.
- Infuse 10 ml/kg in 30 minutes
- Correct hypoglycaemia.

Reassess newborn after appropriate volume has run in

Reassess after first infusion: If no improvement, repeat 10 ml/kg in 30 minutes.

Reassess after second infusion:

- If improvement with fluid bolus at any stage: Observe and continue maintenance fluids.
- If deterioration (features of fluid over load): Stop fluid bolus and observe.
- If no improvement with fluid boluses : Fluid refractory shock : Manage as septic shock
- Start dopamine infusion at 10mcg/Kg/min and titrate up to 20mcg/kg/min*
- Consider adding dobutamine infusion at 10mcg/kg/min*
- Add broad spectrum antibiotics.
- If no response : Dopamine resistant shock :
- If you suspect adrenal insufficiency, (please mention signs and symptoms of adrenal insufficiency) give IV Hydrocortisone 50 mg/kg initial dose.
- If no response: See standard inpatient guidelines or refer the patient.

* $6 \times$ body weight (kg) equals milligrams to add to sufficient diluent to create a total volume of 100 ml and 1 ml/hr delivers 1.0 μ g/kg per minute

5. Managing Convulsions

5.1 Up to 2 weeks of age

- Identify and characterize the seizure
- Secure airway and optimize breathing, circulation and temperature
- Start O₂ if seizures continue
- Secure IV access and take samples for baseline investigations including sugar, hematocrit, sepsis screen and calcium, electrolytes where feasible
- If blood sugar < 45 mg/dl, give 5 ml/kg 10% dextrose
- If seizures continue: IV phenobarbitone 20 mg/kg over 20 min
- If no control: Rpt phenobarbitone 10 mg/kg till a total of 40 mg/kg
- If seizures continue
- Give phenytoin 20 mg/kg over 20 min
- After control of seizures initiate maintenance doses of anti-epileptic drugs

5.2 Beyond 2 weeks of age: Give Diazepam rectally

- Draw up the dose from an ampoule of diazepam into a tuberculin (1 ml) syringe. Give 0.1 ml/kg of diazepam solution.. Then remove the needle.
- Insert a syringe into the rectum 4 to 5 cm and inject the diazepam solution.
- Hold buttocks together for a few minutes.
- **If convulsion continues after 10 minutes, give a second dose of diazepam rectally** [or give diazepam intravenously (0.05 ml/kg) if IV infusion is running]
- **If convulsion continues after another 10 minutes, give a third dose of diazepam or Phenobarbital IV or IM).**

Caution

Do not use Diazepam for control of convulsions in infants up to 2 weeks of age

Continue Supportive Care and Treat Underlying Cause e.g. Meningitis

6. Managing Hypoglycemia

- Insert IV line and draw blood rapidly for emergency laboratory investigations
- Check blood glucose, if low (<45 mg/dl) or if dextrostix is not available give 5 ml/kg of 10% glucose solution rapidly by IV injection.
- Start infusion of glucose at the daily maintenance volume according to the baby's age so as to provide 6 mg/kg/min of glucose in all cases of neonatal hypoglycemia
- **Recheck the blood glucose in 30 minutes. If it is still low, repeat the bolus of glucose (above) and increase concentration of glucose to 8 mg/kg/min in the infusion. Do not discontinue the glucose infusion abruptly to prevent rebound hypoglycemia.**

If hypoglycemia is persisting despite above management, give one dose of Hydrocortisone: 5 mg/kg and refer to a higher health facility for management of refractory / persistent hypoglycemia.

7. Management of Sick newborn

Indications for Admission
<ul style="list-style-type: none"> • Respiratory distress (Respiratory rate 60/min or more) • Diarrhea • Vomiting • Hypothermia • Fever • Weight 1500-1800 gm
General principles of management
<ul style="list-style-type: none"> • Make sure the baby is warm • Bag and mask ventilation if indicated • Give oxygen by nasal prongs or nasal catheter if the young infant is cyanosed or in severe respiratory distress • Give Phenobarbital if convulsing • Check blood glucose • Give ampicillin (or penicillin) and gentamicin. • Give vitamin K (if not given before). • Admit, or refer urgently if treatment is not available at your hospital • Monitor the baby frequently.

WEIGHT	Inj. Ampicillin. 50 mg/kg Add 2.1 ml sterile water to a vial of 500 mg to give 200 mg/1.0 ml	Inj. Gentamicin 5 mg/kg Vial 20 mg/2ml or add 6 ml water to 2 ml vial containing 80 mg
1 kg	0.25 ml	0.5 ml
2 kg	0.5 ml	1.0 ml
3 kg	0.75 ml	1.5 ml
4 kg	1.0 ml	2.0 ml
5 kg	1.25 ml	2.5 ml

References

1. WHO, Geneva, 2005, Pocket Book of Hospital Care of Sick Children: Guidelines for management of common illnesses with limited resources.