

Perinatal-Neonatal management of COVID-19 infection

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Information incorporated till 2nd April 2020. It will be updated once new information available

Neonatal exposure: Neonates are said to be exposed to COVID-19 if they are born to the mothers with manifestation of SARI/ history of COVID-19 infection diagnosed 14 days before delivery or 28 days after delivery, or if the neonate is directly exposed to close contacts with COVID-19 infection (including family members, caregivers, medical staff, and visitors). They should be managed as patients under investigation (PUI) irrespective of whether they are symptomatic or not.

Recommendations:

1. Separate delivery room and operation theaters are required for management of suspected or confirmed COVID-19 mothers. Both should have neonatal resuscitation corners located at least 2 m away from the delivery table. Resources required include space, equipment, supplies and trained healthcare providers for delivery, caesarean section and neonatal resuscitation.
2. **Recommendations for neonatal resuscitation:**
 - The resuscitation warmer should be physically separated from the mother's delivery area by a distance of at least 2 meters.
 - Minimum number of skilled personnel should attend (1 in low-risk cases and other person will remain standby, and join in cases extensive resuscitation required) and wear a full set of personal protective equipment including N95 mask and face protection by face shield or at least goggles.
 - Mother should perform hand hygiene and wear triple layer mask/ N95 mask.
 - The umbilical cord should be clamped promptly (NO DCC) and skin-to-skin contact avoided.
 - Delivery team member should bring over the neonate to the resuscitation area for assessment by the neonatal team.
 - Follow standard NRP guidelines. If positive-pressure ventilation is needed, self-inflating bag and mask may be preferred over T-piece resuscitator.

3. POST NATAL MANAGEMENT

OPTION 1: If resources for isolation of normal, suspected to be infected and infected mothers can be made available AND there is no evidence of community spread (current scenario)

1. After immediate cord clamping, the neonate should be isolated from the mother.
2. During isolation, healthy neonates should preferably be cared for by family member not in contact with mother or other suspected/proven case. Such care can be provided in usual postnatal wards taking care that persons with suspected/proven infection are not allowed in the area. If safe, while mother is in isolation early discharge to home with healthy family member followed by follow-up may be considered.
3. Mother can express milk after washing hands and breasts and while wearing mask. This expressed milk can be fed to her own baby without pasteurization.
4. Mother and baby can be roomed-in once mother has been tested and declared to be clear of infection.

To facilitate early rooming-in, viral testing in mothers with suspected infection should be conducted and reported on priority.

OPTION 2: Resources for isolation of normal, suspected to be infected and infected mothers not available OR healthcare facilities are overwhelmed because of large number of COVID-19 infections OR evidence of community spread is present:

1. Healthy neonate may be roomed-in with mother. The mother-baby dyad must be isolated from other suspected and infected cases and healthy uninfected mothers and neonates.
2. Direct breastfeeding can be given. Mother should practice respiratory hygiene during feeding, wearing mask, wash hands frequently, before and after touching the baby.
3. If direct breastfeeding is not feasible due to maternal or neonatal condition, expressed breast milk can be fed.
4. If safe, early discharge to home followed by follow-up may be considered.

Due to limited resources and lots of migration of people from other states to U.P., we will follow OPTION 2.

5. MANAGENT OF SYMPTOMATIC NEONATES:

- **Neonates** born to a mother with suspected or proven COVID-19 infection, if symptomatic (or there is indication for admission as per SNCU criteria), they should be managed in separate isolation facility (designated in old PICU AREA).
- Suspected COVID-19 cases and confirmed COVID-19 cases should ideally be managed in separate isolations. If not feasible, then they should be segregated by leaving enough space between the two cohorts, in old PICU AREA.
- Negative air borne isolation rooms are preferred for patients requiring aerosolization procedures (respiratory support, suction, nebulization). If not available, negative pressure could also be created by 2-4 exhaust fans driving air out of the room.
- Isolation rooms should have adequate ventilation. If room is air-conditioned, ensure 12 air changes/ hour and filtering of exhaust air. These areas should not be a part of the central air-conditioning. The doctors, nursing and other support staff working in these isolation rooms should be separate from the ones who are working in regular NICU/SNCU. The staff should be provided with adequate supplies of PPE. The staff also needs to be trained for safe use and disposal of PPE.
- Respiratory support for neonates with suspected/proven COVID-19 infection is guided by principles of lung protective strategy including use of non-invasive ventilation.
- NIPPV and High Flow Nasal cannulas should preferably be avoided.
- Healthcare providers should practice contact and droplet isolation and wear N95mask while providing care in the area where neonates with suspected/proven COVID-19 infection are being provided respiratory support.
- The area providing respiratory support should be a negative air pressure area.
- Antivirals or chloroquine/hydroxychloroquine –are NOT recommended in symptomatic neonates with confirmed or suspected COVID-19.
- Use of adjunctive therapy such as systemic corticosteroids and intravenous gamma globulin is NOT recommended in symptomatic neonates with confirmed or suspected COVID-19.

6. DISINFECTION OF SURFACES IN THE CHILD BIRTH/ NEONATAL CARE AREAS:

- This is not different from those for usual Labor room/OT/NICU/SNCU areas and include the following:
- Wear personal protective equipment before disinfecting. If equipment or surface is visibly soiled first clean with soap and water solution or soaked cloth as appropriate before applying the disinfectant.
- 0.5% sodium hypochlorite (equivalent to 5000 ppm) can be used to disinfect large surfaces like floors and walls at least once per shift and for cleaning after a patient is transferred out of the area.
- 70% ethyl alcohol can be used to disinfect small areas between uses, such as reusable dedicated equipment.
- Hydrogen peroxide (dilute 100 ml of H₂O₂ 10% v/v solution with 900 ml of distilled water) can be used for surface cleaning of incubators, open care systems, infusion pumps, weighing scales, standby equipment-ventilators, monitors, phototherapy units, and shelves. Use H₂O₂ only when equipment is not being used for the patient. Contact period of 1 hour is needed for efficacy of H₂O₂.

7. **Stable neonates exposed to COVID19 and being roomed-in with their mothers** may be discharged together at time of mothers' discharge with advice for follow-up till 3 weeks of age.
8. **Stable neonates in whom rooming-in is not possible** because of the sickness in the mother and are being cared by a trained family member may be discharged from the facility by 24-48 hours of age with advice for follow-up till 3 weeks of age.
9. Parents and families of the COVID-19 exposed, suspected and infected mothers and neonates should receive informed healthcare. They should be aware of and understand the isolation, monitoring, diagnostic and treatment plans of the mothers/babies and be given a periodic update about the health condition.
10. Visitors to both routine and COVID-19 specific childbirth/neonatal care areas should be screened for symptoms of COVID-19 infection.
11. Persons (including parents) with suspected or confirmed COVID-19 infection should not be allowed entry in the childbirth/neonatal care area where care to parturient women/sick neonates is being provided.

12. For neonates roomed in with mother with suspect/confirmed COVID-19 infection, one healthy family member following contact and droplet precautions should be allowed to stay with her to assist in baby care activities.
13. Healthcare professional working in any childbirth or neonatal area should report to their supervisor if they have respiratory or other symptoms suggestive of COVID-19 infection. Such healthcare professional should not be put on clinical duty and should be replaced by a healthy healthcare professional to maintain appropriate patient-provider ratio.
14. Healthcare professional directly involved in the care of patients with suspect/proven COVID-19 infection may consider taking hydroxychloroquine (HCQ) prophylaxis as advised by Government of India, on medical prescription. However, this advisory is based on low-quality evidence and may change in near future.
15. Follow routine immunization policy in healthy neonates born to mothers with suspected/proven COVID-19 infection.
16. In neonates with suspected/proven infection, vaccination should be completed before discharge from the hospital as per existing policy.

TESTING OF NEONATES (For detail, see annexure):

Time: around 24 hrs of birth, repeat after 48 hr of age/ whenever symptomatic. (Optional Sampling at 7th day in symptomatic if previous tests result are negative)

Specimen: Nasopharyngeal/ Oropharyngeal swab. We prefer oropharyngeal swab because of technical ease in neonate.

Resuscitation Team for delivery room: Team consist of 1 Resident 1 staff nurse shall remain available round the clock at QMH.

Supervising persons: Information about COVID19 suspected/ positive antenatal patients admitted at QMH/ LR must be shared with Dr S N Singh & Dr Shalini Tripathi

Test for COVID-19 in NEONATE:

Which neonates to test?

- Neonates born to mothers with COVID-19 infection within 14 days of delivery or up to 28 days after birth
- Symptomatic neonates exposed to close contacts with COVID-19 infection

When should the neonate be tested ?

If symptomatic, specimens should be collected as soon as possible

If asymptomatic and roomed-in, test only if and when mother's test comes positive.

If mother is COVID-19 positive and baby's initial sample is negative, another sample should be repeated after 48 hours.

What sample should be collected of the neonate?

Not mechanically ventilated - Upper respiratory nasopharyngeal swab (NP).

Collection of oropharyngeal swabs (OP) is a lower priority and if collected should be combined in the same tube as the NP.

Mechanically ventilated - Tracheal aspirate sample should be collected and tested as a lower respiratory tract specimen

How to collect?

Upper nasopharyngeal swab:

Use only synthetic fiber swabs with plastic shafts. Do not use calcium alginate swab or swabs with wooden shafts, as they may contain substances that inactivate some viruses and inhibit PCR testing.

- Insert a swab into nostril parallel to the palate. Swab should reach depth equal to distance from nostrils to outer opening of the ear. Leave swab in place for several seconds to absorb secretions. Slowly remove swab while rotating it.

- Place swabs immediately into sterile tubes containing 2-3 ml of viral transport media.

Oropharyngeal swab (e.g., throat swab):

Swab the posterior pharynx, avoiding the tongue. Nasopharyngeal wash/aspirate or nasal aspirate Collect 2-3 mL into a sterile, leak-proof, screw-cap sputum collection cup or sterile dry container.

Other samples: Currently not advised; stool, urine and blood specimens, since the isolation is less reliable than from respiratory specimens. Do not take these specimens for testing (based on current advisory

Breastfeeding and the COVID-19 infected mother:

Some viral infections such as cytomegalovirus and HIV are transmitted through breast milk. However, as present knowledge stands, there is no evidence that COVID-19 is secreted in breast milk. The CDC states that “we do not know whether mothers with COVID-19 can transmit the virus via breast milk”. It is reassuring that in six Chinese cases tested, breastmilk was negative for COVID-19; however, given the small number of cases, this evidence should be interpreted with caution. The main risk for infants of breastfeeding is the close contact with the mother, who is also likely to share infective airborne droplets.

As breast milk is the best source of nutrition and immunity for the infant, UNFPA encourages it. In the light of the benefits of breastfeeding outweigh any potential risks of transmission of the virus through breast milk. The risk and benefits of breastfeeding, including the risk of holding the baby in close proximity to the mother, should be discussed with her.

This guidance may change as time goes on and more studies and knowledge evolves. For women wishing to breastfeed, the following precautions should be taken to limit spread to the baby: ·

- Pregnant woman should wash her hands before and after touching her baby. ·
- Mother should practice respiratory hygiene by wearing a mask and not sneezing in front of a baby during breast feeding.
- All surfaces should be kept clean and disinfect she has touched.
- If a mother is confirmed with COVID-19 infection or who is symptomatic and wishes a manual or electric breast pump, the mother should wash her hands before touching any pump and bottle and should follow recommendations for proper pump cleaning after each use.
- Consider asking someone who is well to feed expressed milk to the baby.

Where mothers are expressing breast milk in hospital, a dedicated breast pump should be used. For women bottle feeding with formula or expressed milk, strict adherence to sterilisation guidelines is recommended. If she is too unwell to breastfeed her baby due to COVID-19 or its complications, she can be supported to safely provide breast milk to her baby in a way possible, and acceptable to her.

Sources:

#FOGSI, NNF, IAP: Perinatal-Neonatal management of COVID-19 infection

(Ver.1.0 26 March 2020)

#FOGSI GCPR: Pregnancy with COVID-19 Infection Version-1, 28 March 2020

#WHO: Q &A on COVID-19, Pregnancy, Childbirth and breastfeeding, 18 March 2020

#WHO-Clinical management of severe acute respiratory infection (SARI) when COVID-19 disease is suspected: Interim guidance-13Mar2020

Flow chart for management of Neonates born to COVID-19 +ve/ Suspected Mother

