Clinical Practice Guideline

Perinatal-Neonatal Management of COVID-19

SUMMARY

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Federation of Obstetric & Gynaecological Societies of India

National Neonatology Forum, India

Indian Academy of Pediatrics

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Annexure: **Evidence profiles ; Web-Table 1**

Disclaimer

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Perinatal-Neonatal Management of COVID-19

- **Pregnant women with exposure to COVID-19 or travel to a red zone / containment area during last 2 weeks should be isolated by using the guidelines for non-pregnant adults.**
- In the absence of community spread, isolation at the designated facility and in the presence of community spread, isolation by home quarantine may be preferred. For home quarantine, the guidelines issued by ICMR/MoHFW should be adhered to.

- Testing for pregnant women should be done as per ICMR testing strategy.
- ***In addition*, pregnant women residing in clusters/containment area or in large migration gatherings/evacuation centres from hotspot districts presenting in labor or likely to deliver in next 5 days should be tested even if asymptomatic.**

- **Pregnant women with confirmed COVID-19 should be managed with supportive care recommended for non-pregnant adults. Current guidelines by the Government of India do not recommend use of hydroxychloroquine, chloroquine or antiviral drugs in pregnant women.**
- Currently recommended management includes: - oxygen therapy/respiratory support for treatment of hypoxemic respiratory failure, fluid therapy, antibiotics and management of shock.

The choice of specific antiviral therapy and immunomodulatory agent is likely to change with rapidly emerging evidence and updated national guidance (available at the website of Ministry of Health and Family Welfare) should be consulted.

- **When providing healthcare to women in labor with suspected or confirmed COVID-19, follow the standard universal precautions to prevent contact with body fluids. In addition, use personal protective equipment (PPE) to prevent acquiring infection through respiratory droplets. The PPE should include masks such as N95 and face protection by a face shield or at least goggles.**
- Reception and triage should be in the same room that is to be used for admission in labor and delivery. Ideally, this should be a room with negative pressure.
- Keep the room free from any unnecessary items which could act as infected fomites later.
- There should be a restriction on the number of attendants and non-essential staff into the room.
- There should be facilities for health care providers to remove and safely discard PPE at the exit.

- **COVID care facilities should be identified in the public and private sector. These would be large multispecialty hospitals with adequate space, infrastructure and logistics. Referral pathways from non-COVID facilities should be well established.**
- **In such COVID care facilities, three demarcated zones (clean, potentially contaminated, contaminated), each housing all the needed equipment and services for women and neonates are required for management of non-COVID, suspected and confirmed COVID-19 mothers.**
- **The standards and facilities required for infection control in these areas should be same as that for other adults with suspected or confirmed COVID-19.**
- **Every pregnant woman should be triaged at entry and then allotted into one of the zones.**
- If a case who delivers in a non-COVID facility turns out to be Covid-19 positive, actions should be taken as per the MOHFW's 'Guidelines to be followed on detection of suspect/confirmed COVID-19 case in a non-COVID Health Facility'.

- **Mode of delivery in a pregnant woman with suspected or confirmed COVID-19 should be guided by her obstetric assessment and her physiological stability (cardiorespiratory status and oxygenation). COVID-19 itself is not an indication for induction of labor or cesarean section.**
- Continuous electronic fetal monitoring should be done during labor. If facilities for the continuous electronic fetal monitoring are not available, manual monitoring by frequent auscultation of fetal heart rate should be done during the labor as indicated for a high-risk delivery, but may be difficult with full PPE.
- Adequate equipment and trained healthcare providers should be available for intrapartum monitoring and obstetric interventions as indicated in the separate childbirth facilities for infected pregnant women.
- Oxygenation status of women during labor should be monitored by a pulse oximeter and oxygen therapy should be titrated to maintain oxygen saturation of more than 94%.

Recommendations for neonatal resuscitation:

- **If possible, resuscitation of neonate should be done in a physically separate adjacent room earmarked for this purpose. If not feasible, the resuscitation warmer should be physically separated from the mother's delivery area by a distance of at least 2 meters.**
- **Minimum number of personnel should attend and wear a full set of PPE including N95 mask.**
- Mother should perform hand hygiene and wear triple layer mask.
- Delayed cord clamping and skin-to-skin contact can be practiced.
- **Neonatal resuscitation should follow standard guidelines.**
- Endotracheal administration of medications should be avoided.
- **Indications for intubation shall not change** because of maternal COVID-19 status.
- Bathing is not recommended in view of risk of hypothermia and hospital acquired infections.

- **Stable neonates exposed to COVID-19 from mothers or other relatives should be roomed-in with their mothers and be exclusively breastfed.** For supporting lactation, nurses trained in essential newborn care and lactation management should be provided. A healthy asymptomatic willing family member who is not positive for COVID-19, and has not been in direct contact with suspected or confirmed COVID-19 person may be allowed to provide support for mother and neonate.
- **Mother should wash hands frequently including before breastfeeding and wear mask.**
- The mother-baby dyad must be isolated from other suspected and infected cases.
- **If rooming-in is not possible because of the sickness in the neonate or the mother, the neonate should be fed expressed breast milk of the mother by a nurse or a trained healthy family member.**
- If safe, early discharge to home followed by telephonic follow-up or home visit by a designated healthcare worker may be considered.

Neonates who are symptomatic/ sick and are born to a mother with suspected or confirmed COVID-19 should be managed in separate isolation facility, preferably in single closed rooms.

- **In case enough single rooms are not available, closed incubators (preferred) or radiant warmers could be placed in a common isolation ward for neonates, at a distance of at least 1 meter from each other.** Suspected and confirmed COVID-19 cases should ideally be managed in separate isolations. If it is not feasible, they should be segregated by leaving enough space between the two cohorts.
- Negative air borne isolation rooms are preferred for patients requiring aerosolization procedures.
- 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.**

Testing Strategy for neonates

1. **History of exposure to COVID-19 positive adult (irrespective of symptoms):**
   - Mother had COVID-19 infection within 14 days before birth, or
   - History of contact with COVID-19 positive persons (including mother, family members in the same household or direct healthcare provider) in the postnatal period

Timing of test: At birth (if mother had COVID-19) or at detection of the history of contact with COVID-19 positive person (postnatal exposure). If a sample is not obtained at birth due to logistic reasons, it should be obtained as soon as possible. Rooming-in should not be postponed if testing is delayed.

If the first test is negative, a repeat test should be done after 5-14 days of birth/exposure. However, the test should be done immediately, if new symptoms (respiratory distress, lethargy, seizures, apnea, refusal to feed, diarrhea) appear.

2. **Irrespective of history of exposure:**
   - Presenting with pneumonia or SARI that requires hospitalization, with onset at more than 48-72 h of age, unless there is another underlying illness that completely explains the respiratory signs and symptoms.

Features that suggest acute respiratory illness in a neonate are respiratory distress, with or without cough, with or without fever.

- **Respiratory support for neonates with suspected/confirmed COVID-19 is guided by principles of lung protective strategy including use of non-invasive ventilation.**
- CPAP should be preferred over NIPPV and High Flow Nasal cannulas.
- Healthcare providers should practice contact and droplet isolation and wear N95 mask while providing care in the area where neonates with suspected/confirmed COVID-19 are being provided respiratory support.
- **Intubation should be only for usual indications.**
- Consider use of pre-medication for non-emergent intubation and intubation should be performed by the most experienced person.
- Consider use of aerosol box during intubation and suction, in-line suction device, HEPA filters.
- **The area providing respiratory support should be a negative air pressure area.**

- **Specific anti-COVID-19 treatment is not recommended in symptomatic neonates.**
- **Use of adjunctive therapy such as systemic corticosteroids, intravenous gamma globulin and convalescent plasma is NOT recommended in symptomatic neonates with suspected or confirmed COVID-19.**

Disinfection of surfaces in the childbirth/neonatal care areas for patients with suspected or confirmed COVID-19 are not different from those for usual labor room/OT/NICU/SNCU areas and include the following:

- Wear PPE before disinfecting.
- If equipment or surface is visibly soiled first clean with soap and water solution or soaked cloth.
- 0.5% sodium hypochlorite 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 and equipment between uses.
- Hydrogen peroxide can be used for surface cleaning of incubators, open care systems, infusion pumps, weighing scales, standby equipment-ventilators, monitors, phototherapy units, and shelves. Use H_2O_2 only when equipment is not being used for the patient. For ensuring the efficacy of disinfection with H_2O_2 use the contact period recommended by manufacturer. Usually a contact period of 1 hour is required.

Minimal composition of PPE for the management of suspected or confirmed cases of COVID-19

Protection	Suggested PPE
Respiratory protection	Triple layered surgical mask N95 facemasks are needed when performing an aerosol-generating procedure or in an area where neonates are being provided respiratory support by CPAP device/ ventilator.
Eye protection	Goggles or face shield
Body protection	Full-sleeved water-resistant gown including head and complete shoe cover.
Hand protection	Well-fitting Gloves

- **Follow routine biomedical waste disposal handling, segregation, transport and final disposal guidelines as prescribed by the Government of India.**

- Families of suspected and confirmed COVID-19 mothers and neonates should receive informed healthcare.
- Visitors to routine childbirth/neonatal care areas should be screened for symptoms of COVID-19.
- Persons (including parents) with suspected or confirmed COVID-19 should not be allowed entry in the childbirth/neonatal care area.
- For neonates roomed-in with mother having suspect/confirmed COVID-19, one healthy family member following contact and droplet precautions should be allowed to stay with her to assist in baby care activities.
- COVID-19 mother may be allowed to visit her neonate admitted in NICU if she fulfills all of these:
  - Resolution of fever without the use of antipyretics for at least 72 hours AND
  - Improvement (but not full resolution) in respiratory symptoms AND
  - Negative results of a molecular assay for detection of SARS-CoV-2 in case of severe disease

Discharge Policy

Suspect neonates

- Stable neonates exposed to COVID19 and being roomed-in with their mothers may be discharged together at the same time.
- 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.

COVID-19 positive neonates

- Asymptomatic neonates or those with mild to moderate clinical course whose symptoms and need of oxygen abate within 3 days can be discharged from the hospital after 10 days without repeating RT-PCR test.
- In severe cases, a single negative RT-PCR should be demonstrated after resolution of symptoms, prior to discharge.

- 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.
- **Healthcare professional directly involved in the care of patients with suspect/confirmed COVID-19 infection may consider taking hydroxychloroquine (HCQ) prophylaxis as advised by Government of India, on medical prescription.**

- **Follow routine immunization policy in healthy neonates born to mothers with suspected/confirmed COVID-19.**
- **In neonates with suspected/confirmed infection, vaccination should be completed before discharge from the hospital as per existing policy.**

Developed jointly by

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Operational flow chart

*Suspect include

- Mother COVID-19 positive within 2 weeks prior to delivery
- Neonates born to a mother with suspected infection or to a mother from a containment area
- Postnatal exposure to infected mother or another person including a healthcare worker
- Presenting with respiratory distress with or without fever and cough, onset beyond 48-72 h of age and no other alternative explanation for the illness

Positive means RT-PCR is positive for COVID-19

COVID status*

- Neither suspect not positive → To be managed in usual care areas for neonates (not applicable if it is a exclusive COVID hospital)
- Suspect
- Positive

Sick or gestation <34 weeks

	No	Yes
Suspect	A	C
Positive	B	D

Classify at admission and periodic assessment during course of illness

A
COVID suspect stable neonate

B
COVID positive stable neonate

C
COVID suspect neonate with Gestation<34 weeks or sick

D
COVID positive neonate with Gestation<34 weeks or sick

Mother sick

No

Yes

Room-in with mother in **"COVID postnatal ward"** Allow breastfeeding with droplet and contact precautions.

Shift to **"Well-baby COVID ward"** Give EBM if can be given safely. Else give formula feed.

Shift to **"COVID suspect area" in SNCU/NICU**

Shift to **"COVID positive area" in SNCU/NICU**

If neonate in suspect area tests positive, shift to COVID positive ward/NICU
If neonate in neonatal ward becomes sick shift to SNCU/NICU

Keep suspect and positive neonates/mothers in separate areas/rooms
If not possible keep in separate corners in the same ward.
May create a temporary physical barrier to ensure separation.

Keep suspect and positive neonates in separate areas/rooms
If not possible refer to a nearby hospital with such facility (e.g. COVID hospital)

H

Area characteristics

Needs air isolation. If not possible install exhaust fans to create negative pressure.

Entry and exit separate from usual neonatal care areas
Donning and doffing areas to be earmarked

Healthcare provider

Nurse to assist in initiation of breastfeeding. Consider allowing a family member to stay with mother to provide support to mother

Nurse for feeding and other care of well baby.

Doctors, nurses, and other support staff.
If possible, a separate set of staff for exposed and infected neonates.

COVID-19 positive mother or family member not allowed to visit till declared to be cured as per national guidelines

Equipment needed

Crash-cart and resuscitation station, equipment for usual neonatal monitoring and care should be available

Equipment and disposables to safely prepare and administer expressed breast milk or formula feed

Crash-cart and resuscitation station, equipment for usual neonatal monitoring and care should be available

All equipment as per standard of care in SNCU or NICU

All equipment as per standard of care in SNCU or NICU

PPE

Health care providers to wear full set of PPE

Mother should wear mask perform hand hygiene before breastfeeding