

COVID-19

Vaccination of Newborns in the Context of the COVID-19 Pandemic

Version 1: 19 May 2020

Preliminary recommendations subject to revision as new evidence becomes available

Objective

- Provide guidance regarding vaccination of newborns with hepatitis B and BCG vaccines in the context of the COVID-19 pandemic, in order to maintain high vaccination coverage.

Key Considerations

- The COVID-19 pandemic is having a significant economic, social and health impact on the population, as well as placing a burden on health services. Based on currently available information, older adults and people of any age who have underlying medical conditions might be at higher risk for severe illness from COVID-19.
- Only few cases of COVID-19 have been reported among newborns. Currently, there is no evidence of vertical transmission of SARS-CoV-2 from infected pregnant women to their fetuses (1,2) and the virus has not been found in samples of breastmilk (2). However, screening studies of pregnant women who gave birth in two hospitals during the peak of the epidemic in New York City (United States), showed that between 15%-20% were infected with COVID-19, although more than two-thirds of these infected women had no symptoms (3,4). To avoid infected women from spreading COVID-19 to their newborns during the postpartum period, it is necessary to implement preventive measures, such as wearing a mask when breastfeeding (3–5).
- The case series of newborns with COVID-19 published to date show that most neonates were asymptomatic and a minority presented mild clinical symptoms (in very few cases moderate) and outcomes were favorable(6).
- These recommendations for vaccination of newborns in the context of the COVID-19 pandemic complement the guidance for immunization programs issued by PAHO (7) and WHO (8,9). They have been prepared by PAHO's Comprehensive Family Immunization Team in collaboration with PAHO's Latin American Center for Perinatology/Women's and Reproductive Health (CLAP/SMR) and PAHO's Incident Management System for COVID-19. Members of the Technical Advisory Group (TAG) on Vaccine-preventable Diseases and experts from PAHO collaborating centers were also consulted.

Recommendations

- Vaccination of newborns is considered an essential service. Given that institutional deliveries will continue to take place in the context of the COVID-19 pandemic, vaccination of newborns with hepatitis B vaccine and BCG vaccine (according to each country's national immunization schedule) should remain a priority.

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- There are no known medical contraindications to vaccinating suspected¹ or confirmed² cases of COVID-19 or to vaccinating contacts³ (9). This applies to vaccination of newborns. Table 1 describes four scenarios according to the status of the mother and the newborn in relation to COVID-19 infection, with specific vaccination recommendations for newborns delivered in a hospital setting and those delivered at home. In all scenarios, preventive measures for COVID-19 transmission should be implemented (for health personnel taking care of the newborn and administering the vaccine (10), for the nursing mother, and for the newborn).
- Hepatitis B vaccine is an inactivated vaccine. Its administration during the first 24 hours of life decreases the risk of vertical transmission of hepatitis B, which is especially important in the case of neonates born to a mother positive for the hepatitis B surface antigen (HBsAg)/ hepatitis B e antigen (HBeAg). If hepatitis B vaccine is administered after 24 hours but during the first week of life, a late birth dose has some effectiveness in preventing vertical transmission (although effectiveness declines progressively in the days after birth). If administered after first week of life, it can still be effective in preventing horizontal transmission of hepatitis B and therefore remains beneficial (11,12).
- BCG vaccine is a live attenuated vaccine to prevent tuberculosis. BCG administration is recommended at birth. If it cannot be given at birth, it should be given at the earliest opportunity thereafter. Pre-term infants with gestational age >31 weeks and low birth weight infants (<2500 g) who are healthy and clinically stable may receive BCG at birth, or at the latest, upon discharge (13).
- Co-administration of hepatitis B birth dose and BCG vaccine is safe and recommended by PAHO/WHO (11,13).
- The general vaccination recommendations indicate that presenting a mild acute illness, such as low-grade fever, upper respiratory infection, cold, otitis media or mild diarrhea, are not a contraindication to vaccination on schedule. Only in case of a moderate or severe acute illness, as a precaution, is it recommended to postpone vaccination, particularly with live attenuated vaccines such as BCG, until the patient has recovered from the illness (14).

¹ WHO definition of suspect case (16): a patient with acute respiratory illness (fever and at least one sign/symptom of respiratory disease, e.g.: cough, shortness of breath), AND a history of travel to or residence in a location reporting community transmission of COVID-19 disease during the 14 days prior to symptom onset; OR a patient with any acute respiratory illness, AND having been in contact with a confirmed or probable COVID-19 case in the last 14 days prior to symptom onset; OR a patient with severe acute respiratory illness, AND requiring hospitalization in the absence of an alternative diagnosis that fully explains the clinical presentation.

² WHO definition of confirmed case (16): a person with laboratory confirmation of COVID-19 infection, irrespective of clinical signs and symptoms.

³ WHO definition of contact (16): a person who has been exposed during the 2 days before and the 14 days after the onset of symptoms of a probable or confirmed case.

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Table 1. Recommendations for vaccination of newborns in the context of the COVID-19 pandemic

Scenario	Mother ⁴	Newborn	Institutional/hospital birth	Home birth
A	No clinical suspicion of COVID-19 infection	No clinical suspicion of COVID-19 infection	Considering the national vaccination schedule, the following is recommended: <ul style="list-style-type: none"> → Proceed to hepatitis B vaccination (within first 24 hours of life) → Proceed to BCG vaccination (at birth or as soon as possible) 	Considering the national vaccination schedule and the most appropriate vaccination delivery strategy ⁵ (15), the following is recommended: <ul style="list-style-type: none"> → Proceed to hepatitis B vaccination (within first 24 hours of life or as soon as possible) → Proceed to BCG vaccination (at birth or as soon as possible)
B	Clinical suspicion but without laboratory confirmation of COVID-19 infection	No clinical suspicion of COVID-19 infection ⁶		
C	With laboratory confirmation of COVID-19 infection (with or without clinical suspicion)	Without laboratory confirmation of COVID-19 infection (with or without clinical suspicion)	The newborn should be considered as a contact of a confirmed case (the mother), who could transmit COVID-19 to others. <p>C.1) If the newborn is asymptomatic:</p> <ul style="list-style-type: none"> → Proceed to hepatitis B vaccination (within first 24 hours of life) → Proceed to BCG vaccination (at birth or as soon as possible) <p>C.2) If newborn presents symptoms compatible with COVID-19:</p> <ul style="list-style-type: none"> → Proceed to hepatitis B vaccination (within first 24 hours of life) → Postpone BCG vaccination until discharge 	The newborn should be considered a contact of a confirmed case (the mother), who could transmit COVID-19 to others. <p>C.3) If the newborn is asymptomatic and the COVID-19 pandemic context allows, offer vaccination in the home:</p> <ul style="list-style-type: none"> → Proceed to hepatitis B vaccination (within first 24 hours of life or as soon as possible) → Proceed to BCG vaccination (at birth or as soon as possible) <p>C.4) If newborn presents symptoms compatible with COVID-19:</p> <ul style="list-style-type: none"> → If the COVID-19 pandemic contexts allows, offer vaccination in the home of hepatitis B (within first 24 hours of life or as soon as possible) → Postpone BCG vaccination until 14 days after resolution of symptoms⁷

⁴ Clinical suspicion and/or laboratory confirmation of a mother's COVID-19 infection refers to the immediate pre-partum and peri-partum period.

⁵ The following can be considered: vaccination in the health service, vaccination in the home, vaccination posts, brigades or mobile teams.

⁶ Newborns born to a mother with clinical suspicion of COVID-19 but without laboratory confirmation (pending results or unavailable tests) are not considered suspected cases (17).

⁷ Period to prevent risk of COVID-19 transmission to others (9).

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Table 1. Recommendations for vaccination of newborns in the context of the COVID-19 pandemic

Scenario	Mother ⁴	Newborn	Institutional/hospital birth	Home birth
D	With laboratory confirmation of COVID-19 infection (with or without clinical suspicion)	With laboratory confirmation of COVID-19 infection (with or without clinical suspicion)	<p>The newborn should be considered as a confirmed case, who can transmit COVID-19 to others.</p> <p>D.1) If the newborn with COVID-19 is asymptomatic or presents a mild clinical picture:</p> <ul style="list-style-type: none"> → Postpone hepatitis B vaccination until discharge, except <u>infants born to HBsAg/HBeAg-positive mother</u>, proceed with hepatitis B vaccination within first 24 hours or as soon as possible → Postpone BCG vaccination until discharge <p>D.2) If the newborn with COVID-19 presents a moderate or severe clinical picture:</p> <ul style="list-style-type: none"> → Postpone hepatitis B vaccination until discharge, except <u>infants born to HBsAg/HBeAg-positive mother</u>, in which, if the clinical situation allows, proceed to hepatitis B vaccination within first 24 hours or as soon as they are clinically stable → Postpone BCG vaccination until discharge 	<p>The newborn should be considered as a confirmed case, who can transmit COVID-19 to others.</p> <p>D.3) If the newborn with COVID-19 is asymptomatic or presents a mild clinical picture:</p> <ul style="list-style-type: none"> → Postpone hepatitis B and BCG vaccination until completing 14 days since diagnostic by laboratory confirmation⁸. In the case of <u>infants born to HBsAg/HBeAg-positive mother</u>, offer vaccination in the home with hepatitis B within first 24 hours or as soon as possible <p>D.4) If the newborn with COVID-19 presents a moderate or severe clinical picture:</p> <ul style="list-style-type: none"> → Refer to a health service and postpone vaccination according to “D.2” recommendations

⁸ Period to prevent risk of COVID-19 transmission to others (9).

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