PHILIPPINE PEDIATRIC SOCIETY (PPS)
PEDIATRIC INFECTIOUS DISEASE SOCIETY OF THE PHILIPPINES (PIDSP)

VACCINATION DURING THE COVID-19 PANDEMIC: PPS and PIDSP RECOMMENDATIONS

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INTRODUCTION

The COVID-19 pandemic is sweeping across the globe with extreme ferocity, leaving many countries grappling to contain its transmission and the healthcare system struggling to protect the yet uninfected. As this crisis intensifies, many health facilities are left with no choice but to identify which services to forego, delay, or re-schedule, and re-align infrastructure and resources to prepare for the surge in COVID-19 cases. A lot of basic care services such as immunization, thus, become neglected.

Having witnessed the surge of vaccine preventable diseases (VPD) locally in the past two years, namely measles and polio, the decision to continue immunization services remains important and should be maintained while observing proper infection control measures to prevent transmission of SARS COV-2.[1]

On a national scale, implementation of immunization services should be the responsibility and one of the top priorities of each local government unit. Decision-making would be largely dependent on the current situation of the community, availability of resources including infection control measures, logistics including but not limited to vaccine supply and manpower, and containment of community transmission.

Disruption in the provision of immunization services increases the number of susceptible individuals in the community. This can lead to outbreaks of VPDs as well as VPD-related deaths, and further burden the already exhausted healthcare resources due to the rise in COVID-19 cases.[1]

I. Guide for the pediatrician on scheduling vaccinations

While maintaining timely administration of vaccines is necessary especially during a pandemic, health providers should also keep in mind that protecting themselves and their patients is of utmost importance. Existing guidelines on the prevention of SARS COV-2 transmission during vaccination visits should be followed.

If a health facility is catering to COVID-19 cases, it is recommended for healthcare providers to direct their well child visits to another clinic where no COVID-19 or PUI admissions are entertained. Should the COVID-19 response measures in the health facility not allow safe implementation of vaccination and no alternative location is feasible, immunization providers may consider delaying vaccination and start identifying the cohorts of children who have missed their vaccine doses and develop an action plan for tailor-made catch-up immunization.[1]

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The PPS and PIDSP drafted the following guidelines on immunization of **well** pediatric patients during the COVID-19 pandemic. These guidelines do not cover vaccination of special groups (immunocompromised patients and those on immunosuppressive therapy).

1. Before scheduling a child for vaccination, ensure that the child is well and:
   - not suffering from fever, cough, colds, diarrhea, and influenza-like illness
   - has had no significant exposure to a positive or suspected COVID-19 case in the last 14 days
   - does not reside in an area with localized transmission or local community under enhanced quarantine. Check DOH updates to confirm if the child's community is classified as such. Note also if there is household clustering of influenza-like illnesses, or if the child resides in a community with sustained community transmission.
   - has no absolute contraindications to vaccination
2. Whenever possible, limit the child's companion to just 1-2 caregivers. Ensure that they are also free of COVID-19 symptoms (no respiratory illness and/or diarrhea).
3. Ensure that you, as the pediatrician, and your assistants, are also cleared from symptoms suggestive of COVID-19 before attending to the patient.
4. Follow the recommended schedule and administration of vaccines included in the Childhood Immunization Schedule.
5. Prioritize completion of primary immunization series and administration of vaccines against epidemic-prone diseases such measles, polio, diphtheria and influenza. Pneumococcal and rotavirus vaccinations are highly recommended as well.
   For missed vaccine doses, catch-up immunization is essential. *(Refer to tables 1 and 2).*
6. Schedule patient visits as much as possible to minimize crowding and exposure in your clinic.
7. Consider triaging through pre-clinic calls, scheduling well baby consults separately from sick consults.[4]
8. On scheduled consultation, allot time to emphasize the importance of keeping the child's vaccine schedule up to date, and reinforce the importance of adhering to frequent hand washing, cough etiquette, and physical distancing.
9. Observe strict infection control measures. Clinics should be adequately disinfected prior to receiving patients, and periodically done until the last patient has been attended to. Procedures on hand hygiene, use of personal protective equipment, prevention of needle-stick or sharps injury, waste management, cleaning and disinfection of equipment and environment, should be followed and adapted according to your local COVID-19 situation.[1]
10. Ideally, the location of vaccination room/area should be far from heavy foot traffic such as Emergency Rooms, and Triage Areas. Pediatricians are encouraged to dedicate specific/separate rooms for sick and well visits; or for those with multiple practice sites to consider using one office location to see all well visits.[5]

11. Vaccines routinely given at birth such as BCG and Hepatitis B should be continued as scheduled, preferably given within 24 hours after delivery and prior to the baby's discharge from the hospital.[6]
12. In special circumstances such as after potential exposure to rabies or tetanus, efforts must be made to avoid delay and provide the appropriate vaccine following routine recommended schedule.[6]
13. For HCWs who are taking part in the epidemic control and have had contact with suspected and/or confirmed COVID-19 cases, it is advised that they do not participate in immunization activities during the pandemic, and delegate immunization tasks to colleagues who are unexposed to cases.[6]

II. General principles for delayed vaccinations during COVID-19 pandemic

Routine immunization is an essential component of health services and thus should be maintained as long as COVID-19 response measures allow. Considerations for providing immunization should be guided by a detailed assessment of the risk of outbreaks of VPDs (such as measles and polio) and the epidemiologic situation of COVID-19 and containment measures in the community.[1] Should the risk of the current circumstances outweigh the benefits of immunization, temporarily delaying vaccination services may be considered, and a catch up plan put in place.[6]

For catch up vaccinations, the best approach is to ascertain the antigens required for their current age, subtract any already given, and then develop the individual's catch-up schedule. If the immunization status of a child is uncertain or unknown, plan the catch-up schedule assuming the vaccines have not been given.[2]

1. For vaccines not given on time, the due dose should be given at the earliest scheduled visit. It is not necessary to restart the series or add doses of any vaccine due to extended interval between doses.[3]
2. Vaccine doses should not be administered at intervals less than the recommended minimal intervals or earlier than the acceptable minimum age for a specific vaccine. However, doses administered up to 4 days before the minimum interval or age can be counted as valid (except for rabies vaccine due to its unique dosing schedule). Doses administered outside this "grace period" of 4 days should not be counted as valid doses and should be repeated as age appropriate. The repeat dose should generally be spaced after the invalid dose by an interval at least equal to the recommended minimum interval for the specific vaccine.[3]
3. Use combination vaccines as appropriate. This allows for optimizing the opportunity to provide protection to the child against multiple diseases during a single clinic visit.
4. Simultaneous administration of all vaccines for which a child is eligible increases the probability that a child will be fully immunized at the appropriate age, and is allowed.

However, in children with functional or anatomic asplenia, PCV13 and MCV4-D should be separated by at least 4 weeks, giving priority to the administration of PCV ahead of MCV4-D.[3] (Note: There are no studies on interference with simultaneous administration of PCV10 and MCV4-D.)

5. For non-simultaneous administration of different vaccines, live parenteral vaccines not given during the same visit should be spaced by at least 4 weeks.[3] Live vaccines administered per orem may be given at any time before or after each other. Live oral vaccines may be given at any time before or after live parenteral vaccines.[3]All other combinations of two inactivated vaccines, or live and inactivated vaccines, may be given at any time before or after each other.[3]
6. Physicians should be knowledgeable on the contraindications and precautions for vaccination.
7. Physicians must follow proper vaccine preparation and administration procedures.
8. Observe the patients closely after vaccine administration. All adverse reactions should be noted and addressed timely and appropriately (especially anaphylactic reactions). Due to ongoing COVID-19 transmission in the country, there may be an increased risk of coincidental AEs post vaccination. A system should be in place for reporting and investigation of causality assessment of these reactions, particularly SAEs.[1]
9. Physicians should maintain an accurate record of the child's vaccination.
10. Physicians must ensure proper storage of vaccines and maintain proper cold chain at all times.

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Table 1: Catch-up vaccination schedule - Children 4 months to 6 years old

Vaccine (minimum age for dose 1)	**Minimum interval between doses**			
	Dose 1 to dose 2	**Dose 2 to dose 3**	**Dose 3 to dose 4**	**Dose 4 to dose 5**
Hep B (birth)	**4 weeks**	**8 weeks and at least 16 weeks after first dose** Minimum age for the final dose is 24 weeks.	-	-
DTaP (6 weeks)	4 weeks	4 weeks	6 mos	6 mos
Hib (6 weeks)	No further doses needed if 1st dose was administered at age ≥15 mos. 4 weeks, if 1st dose was given before 1st birthday. 8 weeks (as final dose) if 1st dose was given at age 12-14 mos	No further doses needed if previous dose was given at age ≥15 mos. 4 weeks, if current age is <12 mos & 1st dose was given at <7 mos of age. 8 weeks, if current age is <12 mos and 1st dose was given at age 7-11 mos; OR if current age is 12-59 mos and 1st dose was given before 1st birthday, and 2nd dose given at < 15 mos old.	8 wks (as final dose) This dose is only necessary for those 12-29 mos of age who received 3 doses before the 1st birthday	-

IPV (6 weeks)	4 wks	4 wks	4 weeks if current age is < 4 years. 6 months (as final dose) if current age is 4 years or older.	6 months (minimum age 4 years for final dose)
Rotavirus (6 wks)	**4 weeks** •RV1: only 2 doses are recommended; last dose in the series is given not later than 24 weeks of age)	**4 weeks** •RV5, oral liquid formulation: last dose in the series should not be given beyond 32 weeks of age; •RV5, for oral freeze-dried formulation: last dose in the series should not be given beyond 12 months of age *Please refer to Rotavirus annotation in the PPS-PIDSP-PFV Childhood Immunization Schedule 2020		-
PCV (6 wks)	No further doses needed for healthy children if 1st dose was given at age 24 mos or older 4 wks – if 1st dose was given before 1st birthday 8 wks (as final dose for healthy children) – if 1st dose was given at ≥ 12 mos	No further doses needed for healthy children if previous dose was given at age 24 months or older. 4 weeks, if current age is younger than 12 mos and previous dose was administered at <7 mos old. 8 weeks (as final dose for healthy children) if previous dose was administered between 7–11 mos (wait until at least 12 months old); OR if current age is 12 months or older and at least 1 dose was given before age 12 months	8 weeks (as final dose) This dose only necessary for children age 12-59 months who received 3 doses before age 12 months or for children at high risk who received 3 doses at any age.	-

Measles (9 months; may be as early as age 6 mos in cases of outbreaks)	(See measles vaccine annotation in the PPS-PIDSP-PFV Childhood Immunization Schedule)			
MMR (12 mos)	4 weeks	-	-	-
	3 months	-	-	-
Inactivated Hep A (12 mos)	6 months	-	-	-
Live Hep A (18 mos)	Not applicable; given as single dose only			
Influenza (6 mos)	4 weeks, for those aged 6mos-8 yrs receiving influenza vaccine for the first time, then 1 dose yearly thereafter	-	-	-
JE (9 mos)	12-24 months	-	-	-
MCV4 (MCV4-D, 9 mos) (MCV4-TT, 6 wks) (MCV4-CRM, 2 yrs, single dose)	*Refer to annotation in the PIDPS-PPS-PFV 2020 immunization schedule			

-Adapted from the "Recommended Catch-up Immunization Schedule for Children and Adolescents Who Start Late or Who are More than 1 month Behind, US 2020" (https://www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf) and the *PIDSP-PPS-PFV childhood immunization schedule 2020.

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Table 2: Catch-up vaccination schedule - Children aged 7 years and older

VACCINE	Dose 1 to dose 2	Dose 2 to dose 3	Dose 3 to dose 4
Td/Tdap (Minimum age: 7 years)	4 weeks	4 weeks if first dose of DTaP/DTwP was given before 1st birthday 6 mos (as final dose) if 1st dose of DTaP/DTwP or Tdap/Td was given at or after 1st birthday	6 mos if first dose of DTaP/DTwP was given before 1st birthday *Refer to summary table on immunization of preadolescents and adolescents in the PPS-PIDSP-PFV childhood immunization schedule
Inactivated Hep A	6 mos	-	-
Live Hepatitis A (min age: 12 mos)	N/A; only 1 dose is given	-	-
Hep B	4 weeks	8 weeks and at least 16 weeks after first dose	-
IPV	4 weeks	A 4th dose is not necessary if 3rd dose was given at age 4 yrs or older and at least 6 mos after previous dose	4th dose is needed if all previous doses were given at <4 yrs of age or if the 3rd dose was given <6 mos after the 2nd dose
MMR	4 weeks	-	-
Varicella	3 mos, if current age is < 13 yrs old 4 weeks, if current age is 13 yrs or older	-	-
Influenza	4 weeks, for children <9yrs old and receiving the vaccine for the 1st time;		

	children ≥9 yrs of age are given 1 dose yearly		
JE	12-24 mos for those aged < 18 yrs old; single dose only for those ≥18 yrs old		
Meningococcal vaccine	*Refer to annotations in the PIDSP-PPS-PFV 2020 calendar		
HPV (min, age: 9 years)	*Refer to annotations in the PIDSP-PPS-PFV 2020 calendar		

-Adapted from the "Recommended Catch-up Immunization Schedule for Children and Adolescents Who Start Late or Who are More than 1 month Behind, US 2020" (https://www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf) and the *PIDSP-PPS-PFV childhood immunization schedule 2020.

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