Republic of the Philippines
Department of Education
REGION VIII - EASTERN VISAYAS

May 16, 2024

REGIONAL MEMORANDUM
No. 562 s. 2024

REITERATION ON INTERIM GUIDELINES ON THE PREVENTION, DETECTION, ISOLATION, TREATMENT, AND REINTEGRATION (PDITR) STRATEGY AND OUTBREAK RESPONSE FOR PERTUSSIS AND DIPHTHERIA

To: Schools Division Superintendents
Regional Office Division Chiefs
Public Elementary and Secondary School Heads
All Others Concerned

1. Attached is a Department Memorandum No. 2023-0284 from Maria Rosario Singh-Vergeire, Undersecretary of Health, Department of Health dated August 1, 2023, titled Interim Guidelines on the Prevention, Detection, Isolation, Treatment, and Reintegration (PDITR) Strategy and Outbreak Response for Pertussis and Diphtheria.

2. Immediate dissemination of and strict compliance with this Memorandum are desired.

EVELYN R. FETALVERO CESO IV
Regional Director

Enclosures: As stated
References: None
To be indicated in the Perpetual Index under the following subjects:

HEALTH UPDATES MEASLES PERTUSSIS

ESSD-SHNU-ALSL

DEPARTMENT OF EDUCATION
RECORDS SECTION, REGIONAL OFFICE NO. VIII
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By: Date: 5/17/24

Republic of the Philippines
Department of Health
OFFICE OF THE SECRETARY

August 01, 2023

DEPARTMENT MEMORANDUM
No. 2023 - 0284

FOR: **ALL UNDERSECRETARIES, ASSISTANT SECRETARIES, DIRECTORS OF BUREAUS, SERVICES, AND CENTERS FOR HEALTH DEVELOPMENT (CHD), MINISTER OF HEALTH - BANGSAMORO AUTONOMOUS REGION IN MUSLIM MINDANAO (MOH-BARMM), CHIEFS OF DOH HOSPITALS, ATTACHED AGENCIES, AND OTHERS CONCERNED**

SUBJECT: **Interim Guidelines on the Prevention, Detection, Isolation, Treatment, and Reintegration (PDITR) Strategy and Outbreak Response for Pertussis and Diphtheria**

I. BACKGROUND

Pertussis or "whooping cough" is a highly contagious respiratory infection caused by the bacterium *Bordetella pertussis* and, less frequently, by *Bordetella parapertussis* and *Bordetella holmesii*. Pertussis is transmitted from infected to susceptible individuals by droplets. Pertussis has three phases of symptoms: 1) the catarrhal stage which is highly contagious, with a secondary attack rate of 90% among non-immune household contacts; 2) the paroxysmal stage marked by more frequent spasmodic coughing followed by a whoop; and 3) the convalescent stage marked by less frequent and less severe coughing.

Diphtheria is similarly transmitted from person to person by droplet and direct contact. It is caused by *Corynebacterium* species, mostly by toxin-producing *Corynebacterium diphtheriae,* and rarely by toxin-producing strains of *C. ulcerans* and C. *pseudotuberculosis.* The most common type of diphtheria is classic respiratory diphtheria, whereby the exotoxin produced characteristically causes the formation of a pseudomembrane in the upper respiratory tract and damages other organs, usually the myocardium and peripheral nerves. Acute respiratory obstruction, acute systemic toxicity, myocarditis, and neurologic complications are the usual causes of death (WHO, 2018).

As of morbidity week (MW) 29 (01 January 2023 - 22 July 2023), total pertussis cases are at 179, with cases showing abrupt increase last May 28 (MW 22). For diphtheria, a total of 97 cases have been reported as of MW 29. Latest surveillance reports have noted clustering and increase in cases of Diphtheria and Pertussis in areas that previously had no report of cases, indicating pockets of local outbreaks. Pertussis and Diphtheria are both vaccine preventable diseases that are of importance given its high risk of mortality.

Given the potential public health risks and detrimental impact brought about by low vaccination uptake, all Centers for Health and Development (CHD), health facilities, and health workers are hereby provided this guidance on the Prevention, Detection, Isolation, Treatment, Reintegration (PDITR) Strategy and outbreak response for Pertussis and Diphtheria.

II. OBJECTIVES

A. To guide CHDs, health facilities, Local Government Units (LGUs) and health facilities on the prevention, detection, isolation, treatment, reintegration and outbreak response for cases of pertussis and diphtheria;

B. To contain and prevent further increase in the number of cases of diphtheria and pertussis;

C. To ensure early detection of cases and provide timely appropriate outbreak response and administration of corresponding clinical management; and

D. To ensure a high-quality outbreak response immunization in the affected and at-risk areas through effective coordination efforts between LGUs and other key offices.

III. GENERAL GUIDELINES

A. Health care facilities from the different levels of care, health care provider networks, LGUs, and private organizations/institutions including business establishments, schools, other public facilities, and formal and informal sectors shall familiarize themselves with the DOH Interim Guidelines on the Prevention, Detection, Isolation, Treatment, and Reintegration (PDITR) Strategy for Pertussis and Diphtheria and report/coordinate information on cases to the DOH through the Epidemiology Bureau (EB) and respective CHDs.

B. All individuals particularly those who are at high risk are advised to strictly adhere to standard precautions and additional transmission-based precautions to prevent and control the transmission of pertussis and/or diphtheria.

C. Healthcare workers shall ensure that individuals who are experiencing signs and symptoms of pertussis and/or diphtheria are assessed, collected samples for laboratory confirmation, reported to the epidemiology and surveillance network, monitored, managed, and properly referred, if applicable.

D. Areas with ongoing transmission/outbreak for pertussis and/or diphtheria shall be guided with the specified provisions to include but not limited to: Surveillance, Contact Management and Screening, Immunization Activities during Outbreak situations, administration of Post Exposure Prophylaxis (PEP) and Social Mobilization and Health Promotion Activities for outbreak response.

IV. SPECIFIC GUIDELINES

A. Prevention of Transmission

Transmission of both pertussis and respiratory diphtheria occurs from person to person through respiratory droplets (i.e., from coughing or sneezing), while transmission of cutaneous diphtheria can occur upon close physical contact with open sores or ulcers.

The preventive measures for pertussis and diphtheria include the following:

1. Observe the following respiratory hygiene especially when sneezing and coughing:

a. Cover mouth and nose with tissues or wipes.
b. Properly dispose of used tissues or wipes.
c. If tissue is not available, use one's upper sleeve or arm.
d. Avoid coughing into hands which can easily spread germs.
e. Wash hands after coughing or sneezing, or after contact with an infected person.

2. Individuals who are unvaccinated or have not completed their vaccination series or are at increased risk of severe illness should avoid or limit contact with individuals with known or probable pertussis or diphtheria.

3. **In household settings:** Practice standard precautionary measures such as mandatory hand washing with soap and water as well as hand hygiene using alcohol-based sanitizer, in all opportunities and occasions.

4. **Additional precaution for cutaneous diphtheria:** Avoid exposure or contact with secretions from suspected infection sites (e.g., mouth, skin) of the patient.

5. **In health facilities:** Health workers should strengthen infection prevention and control measures by observing standard precautions complemented by droplet precautions (for pertussis and respiratory diphtheria) or contact precautions (for cutaneous diphtheria) such as the following:

   a. Wear a medical mask before entering the patient room and remove it upon exit. Additional Personal Protective Equipment (PPEs) may be worn upon risk assessment such as gown and gloves for cases of cutaneous diphtheria.
   b. Perform hand hygiene before and after the use of PPEs, and caring for patients.
   c. Use disposable or dedicated patient-care equipment (e.g., stethoscopes) and regularly clean and disinfect equipment before and after use.
   d. Limit contact with patients and adequately space beds if possible.
   e. **If transport is necessary:** Instruct the patient to wear a mask and follow respiratory hygiene and cough etiquette while additional precautions such as covering of any wounds or lesions on the patient's body for cases of cutaneous diphtheria.

B. Detection and Reporting

1. The detection and reporting of diphtheria and pertussis cases shall be a shared responsibility among CHDs, LGUs, and health facilities. The Vaccine-Preventable Disease Surveillance Officers (VPDSOs) shall lead in intensifying the surveillance activities of the Regional and Local Epidemiology and Surveillance Units (ESUs) to enable early detection, reporting, and analysis of epidemiological data to guide response.

2. Diphtheria and pertussis are category II notifiable diseases under Republic Act (RA) No. 11332 (*Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act*) and its 2020 Implementing Rules and Regulations (IRR). As such, all public and private physicians, allied medical personnel, professional societies, hospitals, clinics, health facilities, laboratories, institutions, workplaces, schools, prisons, ports, airports, establishments, communities, other government agencies, and NGOs are required to accurately and immediately report notifiable diseases and health events of public health concern as issued by the DOH.

The conduct of surveillance for pertussis and diphtheria cases shall follow the guidelines stated in the Philippine Integrated Disease Surveillance and Response Manual of Operations 3rd edition.

3. Detection of diphtheria and pertussis cases shall start with passive surveillance from notifications of reporting units. Active case finding shall commence upon detection of confirmed cases or clustering of cases.

4. All cases are required to have a completely filled-out Case Investigation Form (CIF) **(refer to *Annex A*)**. The DSO or designated surveillance staff in the Epidemiology and Surveillance Units (ESUs) and Disease Reporting Units (DRUs) shall submit all CIFs and be in charge of notification to the appropriate ESU.

5. All DRUs shall conduct weekly reporting of all cases of Diphtheria and Pertussis through:

   a. encoding the case data in the online or offline Epidemic-prone Disease Case Surveillance - Information System (EDCS-IS) at all levels; or
   b. submitting of the properly-filled out paper CIF **(refer to *Annex A*)** to the next higher ESU level if there is no access to the EDCS IS.

6. The DRUs shall conduct zero reporting if no case was seen for the week.

7. Clusters of cases or outbreaks of diphtheria and pertussis should be reported within 24 hours of detection through the Event-based Surveillance System.

8. All confirmed cases, case clustering, and/or outbreaks should be immediately investigated by the ESU, and findings reported to the ESR System.

9. Contact tracing and management should be done for clusters of cases and confirmed cases, with close contacts defined as people who:

   a. had face-to-face exposure to a case, which includes household or family contacts,
   b. had stayed overnight in the same room with a case, and
   c. had direct contact with respiratory, oral or nasal secretions with a laboratory-confirmed case.

10. Samples for bacteriological testing shall be collected for all individuals meeting the probable case definition for diphtheria and clinical case definition for pertussis **(refer to *Annex B and C*)**. Specimen collection guidelines for diphtheria and pertussis can be found in ***Annexes D and E*** respectively.

C. Isolation

Table 1. Isolation of Probable and Confirmed Pertussis and Diphtheria Cases

	Pertussis	**Diphtheria**
Confirmed or probable case or any symptomatic close contact	Avoid contact with high risk individuals, especially the unimmunized, until at least five (5) days after the start of effective antimicrobial therapy. Untreated	Maintain isolation until elimination of the organism is demonstrated by negative cultures of two samples obtained at least

	Pertussis	Diphtheria
	cases should avoid contact with high-risk individuals for the full infectious period (21 days)*.	24 hours apart after completion of antimicrobial therapy.
Asymptomatic close contact	Implement daily monitoring for 21 days after the last exposure to a probable or confirmed case for development of signs and symptoms of pertussis.	Monitor close contacts for signs and symptoms for 10 days from the date of the last contact with a probable case.
Isolation	Place patient in a single room or consider the following alternatives when single-patient rooms are not available: • Prioritize any single-patient rooms for patients with excessive cough and sputum production. • Cohort patients with the same symptoms, probable diagnosis and confirmed diagnosis. • Physically separate patients by at least 1 meter (3 feet) and draw privacy curtains.	Place patient in separate, isolation area away from other patient care areas or consider the following alternatives when single-patient rooms are not available: • Prioritize any single-patient rooms for patients with excessive cough and sputum production. • Cohort patients with the same symptoms, probable diagnosis and confirmed diagnosis. • Physically separate patients by at least 1 meter (3 feet) and draw privacy curtains. **For cutaneous diphtheria:** • If a single room is not available, cohort patients with similar symptoms and diagnosis. • For cases of shared rooms, avoid having patients share toilets.

*People with pertussis are most contagious up to about 21 days after the cough begins.

D. Treatment

1. Post-exposure prophylaxis (PEP)

To prevent developing symptomatic infections, severe disease, serious complications and death due to pertussis and diphtheria, the use of PEP antibiotic is highly recommended for the following high risk individuals and close contacts:

a. Pertussis

i. All asymptomatic household close contacts are recommended to be given antimicrobial prophylaxis within 21 days of onset of cough in the index patient.

NOTE: Transmission requires close contact (exposure within 1 meter for more than 1 hour) but can be less for young infants.

ii. Individuals are considered **high risk** if they belong to the following groups and are exposed within 21 days to an infectious pertussis case:
   a. Infants under 12 months of age and women in their third trimester of pregnancy.
   b. Individuals with pre-existing health conditions (e.g., immunocompromised, with moderate to severe medically treated asthma, etc.) that may be exacerbated by a pertussis infection.
   c. Individuals who have high probability of having close contact with high-risk individuals.
   d. Individuals in high-risk settings that will have close contact with infants under 12 months of age or women in the third trimester of pregnancy (e.g., neonatal intensive care units, childcare settings, and maternity wards).

However, the administration of PEP is appropriate in limited closed settings. Health workers should monitor individuals exposed to pertussis for onset of signs and symptoms for 21 days.

For the Decision Matrix for the Provision of Post Exposure Prophylaxis (PEP) for Pertussis, see ***Annex F*** while for the Recommended Antibiotic Prophylaxis and Treatment for Pertussis for Pediatric and Adult, see ***Annex G***.

b. Diphtheria

PEP for diphtheria includes receipt of diphtheria vaccine and a single dose of intramuscular benzathine penicillin G or a 7- to 10-day course of oral Erythromycin is recommended for close contacts of someone with diphtheria. Please see ***Annex H*** for the Recommended Antibiotic Prophylaxis and Treatment for Diphtheria for Pediatric and Adult.

If available, close contacts should be swabbed prior to initiating antibiotic prophylaxis.

Table 2. Results of Swabbing for Close Contacts and corresponding PEP for Diphtheria

Results	Management
Positive for toxigenic Corynebacterium spp	Treat as a case with an antibiotic course for two weeks
Positive for non-toxigenic	Should complete the course of

Table 2. Results of Swabbing for Close Contacts and corresponding PEP for Diphtheria

Results	Management
Positive for toxigenic Corynebacterium spp	Treat as a case with an antibiotic course for two weeks
Positive for non-toxigenic Corynebacterium spp.*	Should complete the course of antibiotics and subject for retesting
Negative for Corynebacterium spp. (with symptoms)	Continue treatment until completion
Negative for Corynebacterium spp. (without symptoms)	Antibiotics and monitoring can be stopped

Not widely available
**Not classified as a laboratory-confirmed case*

Source: World Health Organization - Vaccine Preventable Diseases Surveillance Standards, Diphtheria (2018)

2. Post-exposure Vaccination

The following groups are recommended to be administered with pertussis-containing vaccines after being close contacts with clinically or laboratory-confirmed pertussis cases:

a. Unimmunized or incompletely immunized children less than 10 years old
b. All household contacts over 10 years of age who have not received a dose of pertussis-containing vaccine in the last 5 years and no Td-OPV vaccine in the preceding month
c. Pregnant women who are:
    i. in 32 weeks of gestation who who have not received a pertussis-containing vaccine in the last 5 years
    ii. exposed to pertussis at any stage of pregnancy if they are in contact with unimmunized infants less than two months of age, regardless of maternal vaccination status

3. Antibiotic treatment

The choice of antimicrobial for treatment should take into account effectiveness, safety (including the potential for adverse events and drug interactions), tolerability, ease of adherence to the regimen prescribed, and cost. Further, it is important to complete the course of treatment as prescribed to ensure that the bacteria are completely removed from the body.

a. Pertussis

Start treatment during the first one to two weeks before coughing paroxysms occur to reduce symptom severity. Antibiotics will not alter the course of the illness or prevent transmission if they are given later in the course of illness.

Further, persons 1 year of age and older should be treated within 3 weeks of cough onset. While infants younger than 1 year of age and pregnant women (especially if they are near term) should be treated within 6 weeks of cough onset.

The recommended antimicrobial agents for treatment or chemoprophylaxis of pertussis are the following:

i. Azithromycin
ii. Clarithromycin
iii. Erythromycin
iv. Co-trimoxazole

See ***Annex G*** for the Recommended Antibiotic Prophylaxis and Treatment for Pertussis for Pediatric and Adult.

b. Diphtheria

Antibiotic treatment for probable and confirmed cases: Antibiotics should be administered as soon as possible.

i. **For patients unable to swallow or are critically ill:** Use IV or IM preparations.
ii. **For severely ill patients unable to take oral therapy:** Initially use IV or IM formulation and shift to oral antimicrobials once condition improves clinically.
iii. **For less sick patients:** Oral therapy can be used at the onset.
iv. It is also essential to check for penicillin allergy (risk of anaphylaxis from penicillin is very rare) before initially administering.

See ***Annex H*** for the Recommended Antibiotic Prophylaxis and Treatment for Diphtheria for Pediatric and Adult

3. Diphtheria Antitoxin Treatment (DAT)

DAT is an equine serum product that is highly effective and the gold standard for the treatment of **respiratory diphtheria** but not routinely indicated for treatment of non-respiratory infections, unless cutaneous lesions are sufficiently large (more than 2 cm^2) and membranous. This should be administered without delay after disease onset to reduce complications and mortality to the following but not limited to (WHO, 2023):

a. All cases of respiratory diphtheria with laboratory-confirmed toxigenic *C. diphtheriae* or respiratory diphtheria-like cases with laboratory-confirmed toxigenic *C. ulcerans*.
b. Probable cases. Respiratory diphtheria should be strongly considered in a probable case-patient who is toxic in appearance and one or more of the following:
    i. Without another clearly established diagnosis
    ii. Has rapidly worsening illness
    iii. Has history of recent contact with dogs, cats, or dairy animals
    iv. Was never vaccinated or is not up-to-date with diphtheria toxoid vaccination

For cases with low probability for diphtheria, consider other diagnoses. However, the final decision to request and administer DAT to a patient is left to the assessment of the attending physician. When needed upon thorough medical assessment, DAT shall be requested to the Department of Health (DOH) through a formal communication. Issuance of DAT shall be subject to availability due to limited global production.

It is also important to note that due to the small risk of serious allergic reaction to the horse serum (0.6 % anaphylaxis), it is vital to obtain a detailed history on previous administration of equine-derived anti-toxin or immunoglobulins and regarding any known animal allergy, specifically equine allergy, and perform sensitization test (i.e., Besredka test) for all candidate patients before administering and to be given with caution for pregnant women or depending on the assessment of the attending physician. This should be given in a closely monitored setting with appropriate medical interventions available if needed in case of anaphylaxis.

Patients with positive sensitivity testing to DAT or with a previous history of adverse reaction to DAT should undergo desensitization (UKHSA, 2022).

The recommended DAT dose depends on the site, extent and duration of disease, varying from 20,000 to 100,000 units in a single IV or IM dose.

Table 3. Recommended Pediatric and Adult DAT Dose

Diphtheria clinical presentation	DAT dose* (units)	Tips
Pharyngeal or laryngeal disease of two days duration	20,000 – 40,000 IU (2-4 ampoules)	• If limited availability, then use a lower-dose range. • The same doses are recommended for children and adults. • Do not repeat dosing. • May be administered IV (preferred in severe cases) or IM (mild to moderate cases)
Nasopharyngeal disease	40,000 – 60,000 IU (4-6 ampoules)	
Extensive disease of three or more days duration, or any patient with diffuse swelling of neck	80,000 – 100,000 (8-10 ampoules)	
Skin lesions only (rare case where treatment is indicated above)	20,000 – 40,000 IU (2-4 ampoules)	

4. **Supportive treatment**

Aside from the provision of antibiotics and DAT, the following are some of the non-pharmacologic treatments to manage signs and symptoms of pertussis and prevent complications:

a. Remove possible sources of irritants that can trigger coughing, such as smoke, dust, and chemical fumes.
b. Loosen mucus and soothe the cough by using a clean, cool mist humidifier, if available.

c. Small frequent meals to avoid vomiting.
d. Prevent dehydration by increasing fluid intake such as water, juices, and soups. Consult a physician immediately if signs of dehydration are present.
e. Do not take cough medicine unless recommended by a physician. Cough medicine is often not advisable for children younger than 4 years old.
f. **In health facilities:** The following shall be administered in relieving the corresponding symptoms:
    i. **Airway management** - pulmonary suctioning of secretions
    ii. **Hypoxia or respiratory distress** - use supplemental oxygen with caution
    iii. **Dehydration** - intravenous fluids

E. Reintegration

1. Advise recovering individuals to continue practicing hand hygiene and respiratory etiquettes to prevent the possible transmission of pertussis and diphtheria.
2. After discharge, restrict contact with others until completion of antibiotic therapy (i.e., remain at home, do not attend school/ work or other face-to-face activities until treatment course is complete) or depending on the assessment and advice of the attending physician.
3. Everyone is advised to be up to date with vaccination against pertussis and diphtheria, especially the high-risk individuals.

F. Outbreak Response

1. Surveillance and Contact Management

Activity	Pertussis	Diphtheria
a. Surveillance	Active case finding should be done upon detection of a confirmed case, clustering of cases, or detection of an outbreak. Active surveillance may be done during outbreaks in settings such as schools, daycare centers and hospitals. Upon declaration of an outbreak, all cases should be reported within 24 hours of detection to EDCS-IS. Data shall be collected from all cases, ensuring that the required data fields in the CIF are filled out. Specimens for laboratory confirmation should be collected from all probable cases.	Active case finding should be done upon detection of a confirmed case, clustering of cases, or detection of an outbreak. Active surveillance may be done during outbreaks in settings such as schools, daycare centers and hospitals. Upon declaration of an outbreak, all cases should be reported within 24 hours of detection to EDCS-IS. Data shall be collected from all cases, ensuring that the required data fields in the CIF are filled out. Specimens for laboratory confirmation should be collected from all clinical and probable cases.

Activity	Pertussis	Diphtheria
b. **Contact Management**	Ensure contact tracing is done, but emphasize early treatment among infants < 6 months of age with signs of respiratory illness.	Ensure contact tracing is done.

2. During outbreaks in school settings, children who arrive at schools or learning centers with sore throat and fever should be discouraged from attending school and referred to the closest health center/ primary care unit for thorough evaluation and corresponding medical treatment:

   a. Assess the child for signs and symptoms before entering the school or learning center or, at least before the start of any learning activity;
   b. If pertussis or diphtheria is suspected in a child, inform and instruct the child and parent/caregiver to seek medical care as soon as possible;
   c. Refer to the closest health center for further management; and
   d. Follow-up on the referred child to ensure health services are sought and to monitor the outcome prior to returning to school or learning center

3. **Immunization Activities during Outbreak situations**

It is worth emphasizing that routine immunization for all antigens to reach the target coverage of 95% must be prioritized to prevent the infection and spread of diphtheria and pertussis and cause outbreaks. In the event of low immunization coverage and increasing or clustering of cases indicating localized outbreaks, Diphtheria and pertussis containing vaccines shall be used for 6 weeks-59 months. During outbreaks, vaccination efforts should focus on the un- or under-immunized. Non-selective vaccination activity or vaccination campaigns are not part of pertussis outbreak response. (WHO,2018) Contacts of a diphtheria or pertussis case should be monitored for development of disease, have specimens collected, treated with antibiotics and vaccinated. Vaccination strategy should be based on the epidemiology of the disease targeting the affected areas, and might need to include adult vaccination. Several vaccination strategies can be employed, such as door-to door vaccination, fixed vaccination posts and in-school vaccination.

a. Outbreak Response Immunization (ORI)

Outbreak Response Immunization (ORI) shall be carried out for all children 6 weeks-59 months, prioritizing areas with clustering and local outbreaks, and in areas with risk of spread through migration. In order to isolate cases, it is also recommended to prioritize catch-up vaccination to bordering or neighboring communities from the cases. Consider giving Tetanus-diphtheria-pertussis (Tdap) or Td for children and adolescents 5 years old and above as booster immunization. The following preparatory activities shall be done prior to ORI:

i. Create a micro-plan for vaccination activities. This should include prioritization of areas for catch-up immunization, a masterlist of target

individuals, total number of needed vaccines, estimated number of days for vaccination activity, and proposed mode of vaccination (house-to-house or fixed site).

ii. Review the status of all close contacts for both diphtheria and pertussis. Contacts under 5 years old who have not received Pentavalent doses or have not received a Pentavalent dose within 3 years should be given a dose soon after exposure.

iii. Coordinate with the Central office NIP for technical and logistical assistance and monitoring. During an epidemic, the Department of Health Central Office or the concerned Local Government Unit (LGU) shall procure the pertinent commodities such as Tdap.

b. Outbreak Response Immunization (ORI) Schedule

Target Age	Vaccine Type	Doses	Remarks
6 weeks to 12 months	Pentavalent	3 doses, 4 weeks apart	prioritize to complete the primary series for unimmunized or incompletely immunized
12-23 months	Pentavalent	1 dose	for completely immunized: give 1 dose for un- or incompletely immunized: complete the primary series
24 months – 59 months	Pentavalent	1 dose	regardless of immunization status during outbreak
>59 months	Tetanus diphtheria (Td)	1 dose	May be given to 5 years old and above*

i. Documentary evidence of immunization through immunization cards or through records from TCL must be checked prior to immunization.

ii. For 6 weeks -12 months old children who have documentary evidence that they have completed their primary series, it is not warranted to give an additional dose.

iii. For 6 weeks-12 months old children with incomplete immunization, vaccinate according to NIP immunization schedule: 3 doses of pentavalent vaccine with a minimum interval of 4 weeks between doses

iv. For 13-23 months old children who completed their primary series, 1 dose should be given, provided that the ORI dose and last dose is 4 weeks apart.

v. For 13-23 months old children with incomplete immunization, follow NIP immunization schedule as catch-up immunization: 3 doses of pentavalent vaccine with a minimum interval of 4 weeks between doses

vi. For 24-59 months old children, give 1 dose of pentavalent vaccine regardless of immunization status.

vii. For > 59 months pentavalent vaccine should not be given because of possible reactogenicity with the whole cell pertussis component in the pentavalent vaccine.

viii. In case of limited supply of vaccines or stock-outs during outbreaks, affected Centers for Health and Development (CHD) and LGUs may procure vaccines to augment supplies from the central office.

c. Reinforcement of routine immunization:

Person-to-person spread of Pertussis (whooping cough) and diphtheria is best prevented through timely vaccination. Transmission of these vaccine preventable diseases among high-risk individuals can be ensured through updated vaccination status as stipulated in the National Immunization Program Manual of Operations (https://tinyurl.com/NIP-MOP-Booklet3). The following steps should be taken to reinforce routine immunization:

i. Assess and address the reasons for children missing vaccination and update the micro-plan.

ii. Analyze NIP coverage data and dropout rate to identify issues with access and utilization of routine immunization services and design activities in response.

iii. Locate health centers conducting fixed immunization sessions that may need additional resources (vaccinators, vaccines, cold chain logistics).

iv. Track and vaccinate missed children using the defaulter tracking monitoring system by organizing corrective measures such as additional outreach services for mobile camps and communities with a high proportion of unreached children.

v. Conduct rapid coverage assessments for routine immunization in the affected and high-risk areas.

vi. Include other missing vaccines in areas for catch-up immunization, including pneumococcal vaccines to ensure complete protection from VPDs.

Please refer to **Annex I** for the Guidelines on the Immunization activity during outbreak and for catch-up of routine immunization.

3. Post Exposure Prophylaxis (PEP)

a. Pertussis

PEP with macrolides is provided to asymptomatic household contacts or other close contacts of pertussis cases at the highest risk of developing clinical illness, those at high risk of developing severe pertussis such as infants, and persons who will have close contact with those at high risk of developing severe pertussis as shown in ***Annexes F and G.***

With increasing incidence and widespread community transmission of pertussis, extensive contact tracing and broad scale use of PEP among contacts may not be an effective use of limited public health resources. While antibiotics may prevent pertussis disease if given prior to symptom onset, there is no data to indicate that widespread use of PEP among contacts

effectively controls or limits the scope of community-wide pertussis outbreaks.

b. Diphtheria

Prophylactic antibiotics are indicated for close contacts for seven to ten days while monitoring for development of any signs and symptoms.

Meanwhile, DAT is not recommended as post-exposure prophylaxis, as evidence is limited regarding its benefit and the risks of allergic reaction to horse serum.

4. Social Mobilization and Health Promotion Activities for Outbreak Response

In an outbreak situation, intensive communication and social mobilization is needed to raise awareness about the ongoing outbreak and the response which is immunization. It is important to strengthen the trust of the people on the safety and effectiveness of the vaccines and on the health workers who will be giving the vaccines.

Communication Package for Pertussis and Diphtheria can be downloaded from this link (https://bit.ly/PertussisandDiphtheriaCommPack) for additional reference. Please see ***Annex J*** for various health promotion strategies and activities recommended in an outbreak situation.

For dissemination and compliance.

By Authority of the Secretary of Health:

MARIA ROSARIO SINGH-VERGEIRE, MD, MPH, CESO II
Undersecretary of Health
Public Health Services Team

ANNEXES

A	Case Investigation Form for Diphtheria and Pertussis
B	Case and Contact Definition for Diphtheria
C	Case and Contact Definition for Pertussis
D	Specimen Collection Guidelines for Diphtheria
E	Specimen Collection Guidelines for Pertussis
F	Decision Matrix for the Provision of Post Exposure Prophylaxis for Pertussis
G	Recommended Antibiotic Prophylaxis and Treatment for Pertussis for Pediatric and Adult
H	Recommended Antibiotic Prophylaxis and Treatment for Diphtheria for Pediatric and Adult
I	National Immunization Program Routine Immunization Schedule (MOP, 2018)
J	Social Mobilization and Health Promotion Activities for Outbreak Response
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ANNEX A.
Case Investigation Form for Diphtheria and Pertussis

Philippine Integrated Disease Surveillance and Response

Case Investigation Form
Diphtheria
(ICD 10 Code: A36)

Version 2019

Name of DRU: DRU Complete Address:	Type: ☐RHU/CHO ☐Gov't Hospital ☐Private Hospital ☐Clinic ☐Gov't Laboratory ☐Private Laboratory ☐Airport/Seaport

A. PATIENT INFORMATION

Patient Number	EPI ID	Patient's First Name	Middle Name	Last Name

Current Address: Permanent Address:	Sex: ☐ Male ☐ Female Pregnant? ☐Y ☐N ☐U If Yes, weeks of pregnancy Civil Status:	Date of Birth: MM DD YYYY ___/___/___	Age: _____ ☐ Days ☐ Months ☐ Years
Occupation Phone	Patient admitted? ☐Y ☐N	Date Admitted/ Seen/Consult	MM DD YYYY
Name of parent/caregiver:	Contact Nos.:		
Date of Report: MM DD YYYY	Name of reporter:	Contact Nos.:	
Date of Investigation: MM DD YYYY	Name of investigator/s:	Contact Nos.:	

II. BACKGROUND INFORMATION

Diphtheria-containing vaccine doses: ☐ Yes ☐ No
If Yes, Number of total doses: ☐ Zero ☐ 1 ☐ 2 ☐ 3 ☐ Unknown
Date of last vaccination (MM/DD/YYYY) _____/_____/_____
Source of information ☐ Card ☐ recall ☐ TCL
Known Exposure to ☐ Confirmed case ☐ Probable case ☐ Carrier ☐ International traveler
Other means of exposure: _____
School name, if applicable:
Any travel within 14 days before onset of illness ☐ Yes ☐ No If yes where (in detail) _____

III. CLINICAL DETAILS

Date onset of fever and / or sore throat: (MM/DD/YYYY) _____/_____/_____
Check Signs/Symptoms which apply:
☐ Fever ☐ Sore throat/pharyngitis ☐ laryngitis ☐ Difficulty of swallowing
☐ Difficulty of breathing ☐ Cough ☐ adherent membranes on tonsils, pharynx, and/or nose
☐ Others, specify _____
Outcome at discharge ☐clinically well ☐ Death (Date died) (mm/dd/yyyy) _____
☐ Referred to_____
☐ Other, specify _____

IV. TREATMENT INFORMATION

Administered antibiotic therapy? ☐ Yes ☐ No ☐ Unknown if yes, Date _____
Administered Diphtheria Anti toxin (DAT) therapy: ☐ Yes ☐ No ☐ Unknown if yes, Date _____

V. SPECIMEN COLLECTION for *Corynebacterium diphtheriae*

Sample collected ☐ Yes ☐ No if yes type sample: ☐ throat swab ☐ nasal swab ☐ piece of membrane ☐ skin swab
Date of collection: (dd/mm/yyyy):____/____/____/ Date of sample send: _____/_____/_____/
Date of results:____/____/____/
Check what applies:
☐ Positive ☐ Negative ☐ Undetermined ☐ Not processed

If Positive
☐ Toxigenic ☐ Non—toxigenic

VI. FINAL CLASSIFICATION: ☐ Probable ☐ Epidemiologically-linked confirmed ☐ Laboratory-confirmed

To include linelist for close contacts

Deliberately providing false or misleading, personal information on the part of the patient, or the next of kin in case of patient's incapacity, may constitute non-cooperation punishable under the Republic Act No. 11332.

Philippine Integrated Disease Surveillance and Response

Case Investigation Form

Pertussis

(ICD 10 Code: A37)

Version 2019

Name of DRU:

DRU Complete Address:

Type: ☐RHU/CHO ☐Gov't Hospital ☐Private Hospital ☐Clinic ☐Gov't Laboratory ☐Private Laboratory ☐Airport/Seaport

A. PATIENT INFORMATION

Patient Number	EPI ID	Patient's First Name	Middle Name	Last Name

Current Address:

Permanent Address:

Sex: ☐ Male ☐ Female
☐ Pregnant? ☐Y ☐N ☐U
If Yes, weeks of pregnancy _____

Date of Birth: MM DD YYYY ___/___/____

Age: _____ ☐ Days ☐ Months ☐ Years

Occupation
Phone
Civil Status: _____

Patient admitted? ☐ Y ☐ N

Date Admitted/ Seen/Consult: MM DD YYYY

Name of parent/caregiver: Contact Nos.:

Date of Report: MM DD YYYY Name of reporter: Contact Nos.:

Date of investigation: MM DD YYYY Name of investigator/s: Contact Nos.:

II. BACKGROUND INFORMATION

Pertussis-containing vaccine doses: ☐ Yes ☐ No

If Yes, Number of total doses: ☐ Zero ☐ 1 ☐ 2 ☐ 3 ☐ Unknown

Date of last vaccination (MM/DD/YYYY) _____/_____/_____

Source of information ☐ Card ☐ recall ☐ TCL

Known Exposure to ☐ Confirmed case ☐ Probable case ☐ Carrier ☐ International traveler

Other means of exposure: _____

School name, if applicable: _____

Any travel within 14 days before onset of illness ☐ Yes ☐ No If yes where (in detail) _____

III. CLINICAL DETAILS

Date onset of fever and / or sore throat: (MM/DD/YYYY) _____/_____/_____

Check Signs/Symptoms which apply:

☐ Post-tussive vomiting ☐ Apnea (for infants) ☐ Paroxysms of coughing ☐ Inspiratory whooping

☐ Coughing lasting at least 2 weeks ☐ Others, specify _____

Outcome at discharge ☐clinically well ☐ Death (Date died) (mm/dd/yyyy) _____

☐ Referred to_____ ☐ Other, specify _____

IV. TREATMENT INFORMATION

Administered antibiotic therapy? ☐ Yes ☐ No ☐ Unknown if yes, Date

V. SPECIMEN COLLECTION for *Bordetella Pertussis*

Sample collected ☐ Yes ☐ No If yes type sample: ☐ throat swab ☐ nasal swab

Date of collection: (dd/mm/yyyy):____/____/____/ Date of sample send: _____/_____/_____/

Date of results:____/____/____/

Check what applies:

☐ Positive ☐ Negative ☐ Undetermined ☐ Not processed

VI. FINAL CLASSIFICATION: ☐ Clinically-confirmed ☐ Probable ☐ Laboratory-confirmed

To include linelist for close contacts

Deliberately providing false or misleading, personal information on the part of the patient, or the next of kin in case of patient's incapacity, may constitute non-cooperation punishable under the Republic Act No. 11332.

ANNEX B.
Case and Contact Definition for Diphtheria

Case Classification	Case Definition
Probable Case	A person with illness of upper respiratory tract characterized by laryngitis or pharyngitis or tonsillitis, and adherent membranes on tonsils, pharynx and/or nose.
Confirmed Case	A probable case that is laboratory confirmed or linked epidemiologically to a laboratory-confirmed case. Note: Persons with positive *Corynebacterium diphtheriae* cultures who do not meet the clinical description (i.e., asymptomatic carriers) should not be reported as probable or confirmed diphtheria cases. **Laboratory Confirmation:** • Isolation of *Corynebacterium diphtheriae* from a clinical specimen. Because diphtheria can progress rapidly, the initial diagnosis must be made on the basis of clinical presentation so that presumptive therapy can be started quickly. • Specimens for culture should be obtained as soon as diphtheria is suspected, even if treatment with antibiotics has already begun. Swabs should be taken from the nose and throat, with care to swab under the edge of the membrane, if present. • Refer to Annex D for the Specimen Collection Guidelines for Diphtheria. Note: A rise in serum antibody (fourfold or greater) is of interest only if both serum samples were obtained before administration of diphtheria toxoid or antitoxin. This is not usually the case in surveillance, where serological diagnosis of diphtheria is thus unlikely to be an issue.

Source: Philippine Integrated Disease Surveillance and Response (PIDSR) Manual of Procedures (MOP), 3rd Edition, 2014

ANNEX C.
Case and Contact Definition for Pertussis

Case Classification	Case Definition
Clinical case	A person with cough lasting at least two weeks with at least one of the following: 1. paroxysms (i.e., fits) of coughing 2. inspiratory "whooping" 3. post-tussive vomiting (i.e., vomiting immediately after coughing) 4. without other apparent cause
Clinically-confirmed case	A case that meets the clinical case definition but is not laboratory confirmed.
Probable case	Meets the clinical case definition, is not laboratory confirmed, and is not epidemiologically linked to a laboratory-confirmed case
Laboratory-confirmed case	• A case of acute cough illness of any duration with a positive culture for *B. pertussis;* OR • A case that meets the clinical case definition and is confirmed by PCR; OR • A case that meets the clinical definition and is epidemiology linked directly to a case confirmed by either culture or PCR. **Laboratory Confirmation:** • Isolation of *Bordetella pertussis* or detection of genomic sequences by polymerase chain reaction (PCR). Specimen: Nasopharyngeal swab using the Reagan-Lowe Kit. • Refer to Annex E for the Specimen Collection Guidelines for Pertussis.

Source: Philippine Integrated Disease Surveillance and Response (PIDSR) Manual of Procedures (MOP), 3rd Edition, 2014

ANNEX D.
Specimen Collection Guidelines for Diphtheria

LABORATORY PROCEDURE	SPECIMEN	VOLUME/ QUANTITY	SCHEDULE OF COLLECTION	COLLECTION/ STORAGE/HANDLING / TRANSPORT
Culture for Isolation of *Corynebacterium diphtheriae*	Pseudomembrane/ Throat swab/ Nasopharyngeal swab (NPS)/Cutaneous lesion *window period from onset is 2 days to 4 weeks	• Piece or swab from pseudomembrane/ cutaneous lesion • 1 swab	Prior to antimicrobial therapy	**Collection:** **A. Pseudomembrane** ○ Can be removed or swabbed beneath the membrane or the inner portion. ○ Place in physiological saline without formalin in a leak-proof plastic container or inoculate/rub the inner portion of the membrane onto Blood Agar plate **B. Throat swab** ○ Swab the tonsils, posterior pharynx and other inflamed areas. ○ Place swab in Amies Transport Medium **C. NPS** ○ Insert small swab (dacron/rayon) into the posterior nasopharynx via the nose. Rotate the swab for 5 sec. to absorb secretions. ○ Place swab in Amies Transport Medium **D. Cutaneous lesion swab** ○ Place in Amies Transport Medium **Storage:** • Swab: store within 30 minutes of collection refrigerated (2-8°C) until shipment. • Pseudomembrane: store within 30 minutes of collection refrigerated (2-8°C) until shipment. **Handling:** Observe Triple Packaging Guidelines **Transport:** • If without transport medium, must be transported immediately to the laboratory at at room temperature • If with transport medium, transport at room temperature for testing within 72 hours of collection

ANNEX E.
Specimen Collection Guidelines for Pertussis

LABORATORY PROCEDURE	SPECIMEN	VOLUME/ QUANTITY	SCHEDULE OF COLLECTION	COLLECTION/STORAGE/HANDLING /TRANSPORT
PCR for the detection of *Bordetella pertussis* Culture of *Bordetella pertussis*	Nasopharyngeal aspirate/swab *Do NOT collect throat and anterior nasal swabs *window period from onset is up to 4 weeks	≥ 1 ml (for aspirate) or 1-2 swabs	Prior to antimicrobial therapy; collected during the first 3 weeks of illness following cough onset, but PCR may provide accurate results on specimens collected up to 4 weeks	• **For Nasopharyngeal swab.** Insert a small swab (dacron/rayon) into the posterior nasopharynx via the nose. Rotate the swab for 5 sec. to absorb secretions. Specimens should be obtained using sterile polyester, rayon or nylon flocked swabs, NOT cotton swabs. • **For aspirate:** Collect in a sterile screw-capped container • **Recommended transport media:** o Swab: Regan-Lowe (PCR and culture)/Universal Transport Medium (for PCR only). Specimens for culture should be plated directly onto selective culture medium or placed in half-strength Regan-Lowe transport medium. Do NOT use Amies or universal transport media. Regan-Lowe agar or freshly prepared Bordet-Gengou medium is generally used for culture; half-strength Regan-Lowe is generally used as the transport medium o Aspirate: transport medium not required • **Storage:** o Swab (culture and PCR): collect from patient and immediately place in a Regan-Lowe semi-solid agar or Amies charcoal gel transport tube and store within 30 minutes of collection, refrigerated (2-8°C) until shipment. o Swab (PCR only): collect from patient and immediately place in a dry, sterile tube or in a tube of liquid universal transport medium (UTM) and store frozen (-20°C or lower) within 30 minutes of collection. o Aspirate: Store within 30 minutes of collection; refrigerate if it will be shipped within 72 hours of collection; otherwise, freeze aspirate within 30 minutes of collection • **Handling:** Observe Triple Packaging Guidelines • **Transport:** o Swab (culture and PCR): Ship overnight with refrigerated or frozen cold packs within 24-72 hours of collection. o Swab (PCR only): Ship frozen overnight with dry ice within 1 week of collection. Once frozen, do not allow the swab to thaw. o Aspirate (culture and PCR): If stored refrigerated, ship overnight with refrigerated or frozen cold

LABORATORY PROCEDURE	SPECIMEN	VOLUME/ QUANTITY	SCHEDULE OF COLLECTION	COLLECTION/STORAGE/HANDLING /TRANSPORT
				packs within 24-72 hours of collection. If stored frozen, ship frozen overnight with dry ice within 1 week of collection. Once frozen, do not allow the aspirate to thaw. • Despite its low sensitivity compared to that of PCR, culture is the gold standard for pertussis diagnosis. • Bordet-Gengou and Regan-Lowe agars are the media of choice for culture of clinical specimens to detect *B. pertussis*. • Incubation of agar plates at 35°C in a high-humidity environment with low levels (<4%) of CO2 • Culture is not currently available at the National Reference Laboratory for Emerging and Re-emerging Bacterial Diseases due to a very low positivity rate of detection because of issues in specimen integrity once the specimens arrive at the lab for testing. The NRL-ERB will be willing to train local labs to perform this, should they have the adequate and appropriate resources to do so.

ANNEX F.
Decision Matrix for the Provision of Post Exposure Prophylaxis (PEP) for Pertussis

To be given with antibiotics	Not to be given with antibiotics
Close contact with confirmed case of pertussis while the confirmed case is infectious (<21 days of cough and <5 days effective antibiotics) **AND**	Contact with confirmed case while no longer infectious (>21 days of cough and >5 days effective antibiotics) **OR**
First contact was within 14 days (or within 21 days for infants <6 months) **AND**	First contact was >14 days (or >21 days for infants <6 months)
Children: • Age <6 months **OR** • <3 doses pertussis vaccine **OR** • Household member age <6 months **OR** • Attend childcare in same room as infant <6 months **Adults** (regardless of immunization status) • Expectant parents in last month of pregnancy **OR** • Health care worker in maternity hospital or newborn nursery **OR** • Childcare worker in close contact with infants <6 months **OR** • Household member aged <6 months	Most school-aged children who are fully vaccinated and do not have symptoms do not require prophylaxis

**Management of outbreaks may differ from above*

ANNEX G.
Recommended Antibiotic Prophylaxis and Treatment for Pertussis for Pediatric and Adult Close Contacts

Recommended Antibiotic Prophylaxis for Pertussis for Pediatric and Adult

Agent *(any of the following)*	**Dosage**
Azithromycin	500 mg orally x 1 dose on day 1, then 250 mg every 24 hours on days 2-5
Erythromycin	500 mg orally 4 times a day x 14 days
Clarithromycin	500 mg orally 2 times a day x 7 days
Co-trimoxazole	160/800 mg orally 2 times a day x 4 days

Note: Antibiotic prophylaxis is recommended in pregnant women in their 32nd week of gestation or 3rd trimester of pregnancy due to the risk of transmission of pertussis to their newborn infant (CDC,2022).

Recommended Antibiotic Treatment for Pertussis for Pediatric and Adult

PEDIATRIC			**ADULT**	
Months	**Agent**	**Dosage**	**Agent**	**Dosage**
<1 month up to 6 months	Azithromycin or Erythromycin	10mg/kg/day every 24 hours for 5 days 40mg/kg/day in 4 divided doses x 14 days	Azithromycin or Erythromycin estolate* or Co-trimoxazole** or Clarithromycin	500mg PO on day 1 then 250 mg every 24 hours on days 2-5 500mg orally 4 times a day x 14 days 160/800 mg orally 2 times a day x 14 days 500mg orally 2 times a day x 7 days
>6 months	Azithromycin or Clarithromycin or Erythromycin estolate	10mg/kg/day orally on day 1 then 5mg/kg/day orally every 24 hours x 4 days 7.5mg/kg orally every 12 hours x 7 days (Max: 1g/day) 40mg/kg/day in 4 divided doses		

PEDIATRIC			ADULT	
Months	**Agent**	**Dosage**	**Agent**	**Dosage**
	or Erythromycin base or Co-trimoxazole**	40mg/kg/day divided every 6 hours x 7-14 days (Max: 1-2g/day) 8/40mg/kg/day in 2 divided doses x 14 days		

*Erythromycin can be administered for treatment earlier in pregnancy, this needs to be a clinical decision based on the likely clinical benefit for the woman. For women diagnosed with pertussis in the last month of pregnancy, erythromycin is recommended to prevent transmission to her infant.
**Co-trimoxazole may be used for individuals whose macrolides are contraindicated or not tolerated although this is not licensed for use in infants below 6 weeks of age.

Treatment may abort or eliminate pertussis in the catarrhal stage, but does not shorten the paroxysmal stage. Treatment is aimed at eradication of nasopharyngeal carriage. In the non-outbreak setting, the likelihood of pertussis is increased if post-tussive emesis or inspiratory whoop is present.

Source: Department of Health National Antibiotic Guidelines, 2018

Annex H.
Recommended Antibiotic Prophylaxis and Treatment for Diphtheria for Pediatric and Adult

Recommended Antibiotic Treatment of Carrier State (Prophylaxis)

Body Weight	Agent	Dosage
<30 kg	Benzathine Penicillin G	600,000 U IM x 1 dose
>30 kg	Benzathine Penicillin G Erythromycin	1.2 MU IM or oral 40-50mg/kg/day PO q6h x 10days

Recommended Antibiotic Treatment for Pediatric and Adult Diphtheria

	PEDIATRIC		ADULT	
	Agent	**Dosage**	**Agent**	**Dosage**
First line	Erythromycin*	30 to 50 mg/kg/day (Max: 2g/day) PO divided every 6 to 8 hours for 14 days	Erythromycin	500 mg orally every 6 hours daily for 14 days
	Penicillin G crystalline OR Procaine penicillin	100,000 to 150,000 U/kg/day IV every 6 hours 25,000 to 50,000 U/kg/day IM every 12 hours (Max 1.2MU)	Penicillin G crystalline	50,000 U/kg IV every 12 hours (Max: 1.2 MU)
Step down	Phenoxymethyl penicillin	25-50mg/kg/day orally every 6 hours x 14 days	Phenoxymethyl penicillin	250 mg orally every 6 hours x 14 days
Second line	Azithromycin (for 12 - 19 years old)**	500 mg orally once daily for 14 days OR 1mg once daily for one day, then 500 mg orally once daily for a total of	Azithromycin**	500 mg orally once daily for 14 days OR 1mg once daily for one day, then 500 mg orally once

	PEDIATRIC		ADULT	
	Agent	**Dosage**	**Agent**	**Dosage**
		7-10 days.		daily for a total of 7-10 days.
Second line	Erythromycin	40-50mg/kg/day (Max: 2g/day) IV divided every 6 hours	Erythromycin	500 mg every 6 hours IV x 14 days
Step down	Erythromycin ethylsuccinate	40-50mg/kg/day orally divided every 6 hours x 14 days (Max: 2g/day)	Erythromycin ethylsuccinate	500 mg orally every 6 hours x 7-10 days

Addendum:
Penicillin is superior to Erythromycin.
Eradication of the organism should be documented 24 hours after completing treatment by 2 consecutive negative cultures from pharyngeal specimens taken 24 hours apart.
If follow-up cultures are positive, Erythromycin should be given for an additional 10 days.
Step down management shall depend on the assessment of the attending physician.

Sources:

Department of Health National Antibiotic Guidelines, 2018

**WHO-WPRO Field Guide for Preparedness and Response to Diphtheria Outbreaks in the Western Pacific Region, 2023*

***UK Health Security Agency, Diphtheria: public health control and management in England, 2022*

ANNEX I.
National Immunization Program Routine Immunization Schedule (MOP, 2018)

Vaccine	Dose	Age	Route of Administration	No. of Doses	Interval
Bacille-Calmette Guerin (BCG)	0.05ml	newborn	intradermal	1 dose	
Hepatitis B	0.5ml	newborn	intramuscular	1 dose	
Pentavalent Vaccine (DPT-Hib-HepB)	0.5ml	6 weeks, 10 weeks, 14 weeks	Intramuscular	3 doses	4 weeks
Oral polio vaccine (OPV)	2 drops	6 weeks, 10 weeks, 14 weeks	Oral	3 doses	4 weeks
Inactivated Polio vaccine	0.5ml	14 weeks, 9 months	Intramuscular	2 doses	at least 4 weeks
Pneumococcal Conjugate (PCV)	0.5ml	6 weeks, 10 weeks, 14 weeks	Intramuscular	3 doses	4 weeks
Measles, Mumps, Rubella (MMR)	0.5ml	9 months, 12 months	Subcutaneous	2 doses	at least 4 weeks
Measles-Rubella (MR)	0.5ml	6-7 years (Grade 1) 12-13 years (Grade 7)	Subcutaneous	1 dose	
Tetanus-diphtheria (Td)	0.5ml	6-7 years (Grade 1) 12-13 years (Grade 7)	Intramuscular	1 dose	
Human Papillomavirus (HPV)	0.5ml	9-14 year (Grade 4)	Intramuscular	2 doses	6 months

ANNEX J.
Social Mobilization and Health Promotion Activities for Outbreak Response

People need to know:

- that there is an outbreak
- that their children are at risk; and
- that they need to have their children vaccinated

The following strategies and activities are recommended in an outbreak situation:

Intensive awareness raising though:

a. Above-the-line strategies which include, but are not limited to, the following:
   - Production of advertisements for traditional media platforms (television, radio,
   - print media)
   - Production and posting of social media materials such as explainer videos, social media cards and the like
   - Leveraging experts and influencers and their platforms as messengers
   - Use of online community groups and messaging platforms

b. Below-the-line strategies which include, but are not limited to, the following:
   - Production and distribution of IEC materials in the community
   - Conduct of recorida, use of public announcement system and community
   - activations
   - Empowerment of local communicators through capacity development in risk
   - communication, community engagement, and microplanning
   - Engaging LCEs and partners in the national, regional, and local level to multiply champions and provide support to immunization program
   - Activating the trained community champions

The aforementioned strategies may be adopted and made tailor-fit by local implementing agencies based on their community context.

ANNEX K.
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