



Meningococcal Disease Public Health Management Guideline

Issued by the Fiji Centre for Communicable Disease Control

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REVISION HISTORY		
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1	December 2014	Developed by the Clinical Management Technical Working Group of the NTCOPD (interim)
2	March 2018	Revised by the Meningococcal Taskforce and the Clinical Technical Working Group of the NTCOPD

Acknowledgement

The Fiji Centre for Communicable Disease Control thanks the members of the Meningococcal Taskforce and the Clinical Technical Working Group of the National Taskforce for Communicable Outbreak Prone Disease for their contributions to this guideline. The support and technical guidance of the World Health Organisation is also acknowledged. Special thanks also to the Fiji National University College of Medicine Nursing and Health Sciences, in particular to Dr Aneley Getahun. The full list of contributors to the formulation of this guideline is included in Annex 8.

Disclaimer

The information contained within these guidelines is not intended to be a substitute for advice from other relevant sources including, but not limited to, the advice from a health professional. While every effort has been made to ensure that the information contained in these guidelines is correct and in accordance with current evidence based clinical practice, the dynamic nature of medicine requires that users in all cases employ independent professional judgment when using these guidelines. The Fiji Centre for Communicable Disease Control, and members of the Meningococcal Taskforce, and Clinical Technical Working Group of the National Taskforce for Communicable Outbreak Prone Disease, do not warrant or assume any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, or process disclosed at the time of viewing by interested parties. The Ministry of Health and Medical Services expressly disclaims all and any liability to any person, in respect of anything and of the consequences of anything done or omitted to be done by any person in reliance, whether in whole or in part, upon the whole or any part of the contents of this publication.

Scope and Purpose

The Fiji Centre for Communicable Disease Control (FCCDC) has developed these guidelines in collaboration with the Meningococcal Taskforce, and the Clinical Management Technical Working Group of the National Taskforce for Communicable Outbreak Prone Diseases (NTCOPD), which includes members from the World Health Organisation (South Pacific) and Fiji National University College of Medicine Nursing and Health Sciences (CMNHS).

The guidelines capture the knowledge of experienced professionals, and provide advice on best practice based upon the best available evidence at the time of completion. The guidelines are based on international best practice guidelines for the management of meningococcal disease including: Invasive Meningococcal Disease Guidelines for Public Health Units (Australia)¹, Guidance for the public health management of meningococcal disease in the UK ², and Report on the Committee on Infectious Diseases Committee on Infectious Diseases -American Academy of Pediatrics.³

The purpose of the guideline is to provide standardised guidance to clinicians in, public or private health facilities outside a Divisional Hospital for the early diagnosis and management of suspected meningococcal disease patients, with emphasis on early referral to a Divisional Hospital. The guideline also provides standards to public health practitioners for public health response through notification, case investigation, contact tracing, and chemoprophylaxis for high-risk contacts.

Table of Contents

List of Tables and Figures	2
List of Abbreviations	3
Introduction	4
Local Epidemiology	4
Causative agent	4
Mode of Transmission.....	5
Reservoir	5
Clinical Diagnosis and Case Definition	6
Pre-Hospital Case Management.....	8
Pre-Hospital (early) antibiotic treatment.....	8
Clinical Management in Divisional Hospital (Please refer to relevant in-hospital guideline.)	11
Laboratory Diagnostics.....	11
Public Health Response.....	11
Notification	11
Case Investigation	12
Contact Tracing	12
Contact definition	12
Risk to contacts.....	12
Responsibility.....	14
Chemoprophylaxis (provision of antibiotics for contacts)	14
Vaccination.....	16

Outbreaks	17
Communication and education	18
Annex 1. National Notifiable Disease Surveillance Schedule.....	19
Annex 2. Meningococcal Disease Case Investigation Form	20
Annex 3. Meningococcal Disease Line list.....	23
Annex 4: Flow chart for the notification and surveillance of suspected meningococcal disease at health facilities outside Divisional Hospitals	24
Annex 5: Flowchart for notification & surveillance of suspected meningococcal disease at Divisional Hospital	25
Annex 6: Flow chart of the public health response to suspected meningococcal disease	26
Annex 7: Risk communications framework	27
Annex 8: List of contributors	29
References.....	32

List of Tables and Figures

Table 1: Meningococcal disease high-risk contacts	13
Table 2: Antibiotics for chemoprophylaxis	15
Figure 1 Epidemic curve of meningococcal disease in Fiji, 2007-January 2018.....	4
Figure 2: Epidemic curve of meningococcal disease in Fiji by available serogroup data, 2016- January 2018	5

Figure 3: Meningococcal disease case definitions	7
Figure 4: Pre-Divisional Hospital antibiotic treatment.....	9
Figure 5: Flow chart of the primary care management of suspected meningococcal disease	10

List of Abbreviations

CFR	Case fatality rate
DMO	Divisional Medical Officer
DORT	Divisional Outbreak Response Team
EBS	Event Based Surveillance
EWARS	Early Warning Alert and Response System
FCCDC	Fiji Centre for Communicable Disease Control
HCW	Health Care Worker
IPCO	Infection Prevention Control Officer
MO	Medical Officer
MS	Medical Superintendent
NACD	National Advisor Communicable Disease
NNDSS	National Notifiable Diseases Surveillance System
NTCOPD	National Taskforce for Communicable Outbreak Prone Disease
PatisPlus	Patient Information System
PSHMS	Permanent Secretary for Health and Medical Services
SDMO	Subdivisional Medical Officer
SORT	Subdivisional Outbreak Response Team
Taskforce	Meningococcal Disease Taskforce

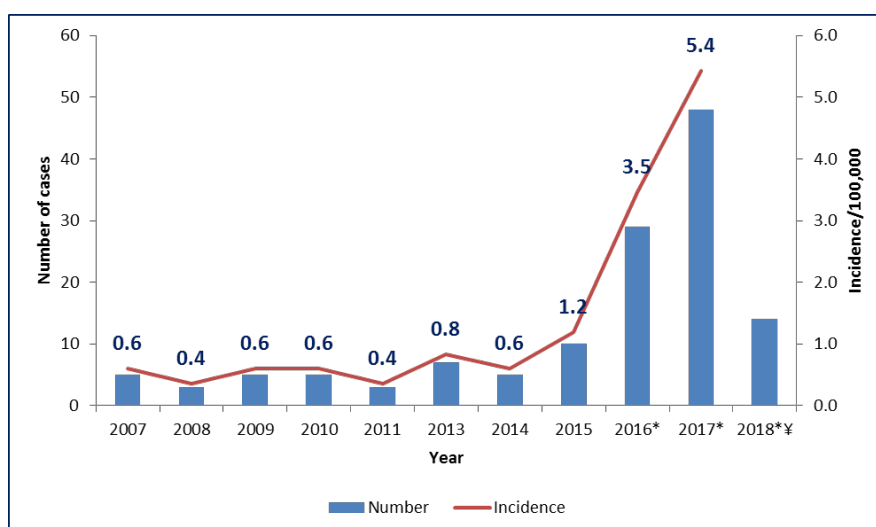
Introduction

Invasive meningococcal disease is a **medical and public health emergency** and a high-level public health priority. Most deaths occur in the first 24-48 hours after the onset symptoms.⁴ Early diagnosis and treatment reduces case fatality rate (CFR).⁵ Meningococcal disease is an urgent notifiable condition and requires an **immediate** public health response.

Local Epidemiology

The incidence of meningococcal disease has increased in Fiji and is a medical and public health emergency. There have been no reports of cases on the National Notifiable Disease Surveillance System (NNDSS) in the last 10 years, however cases have been reported through the PatisPlus systems (both mortality and morbidity) and based on this, a search of records from the years 2007-2017 was conducted. The national average from this search yielded 1.9 reported cases per year with a range of 0-7 cases per year. There has been a 9-fold increase in incidence from 2007 to 2017. In 2017 and 2018 the numbers of reported cases are in excess of what has been reported in the past (2007-2015). Current surveillance reports indicate ongoing meningococcal disease activity nationally. And for the years 2017 and 2018 the situation has reached epidemic proportions

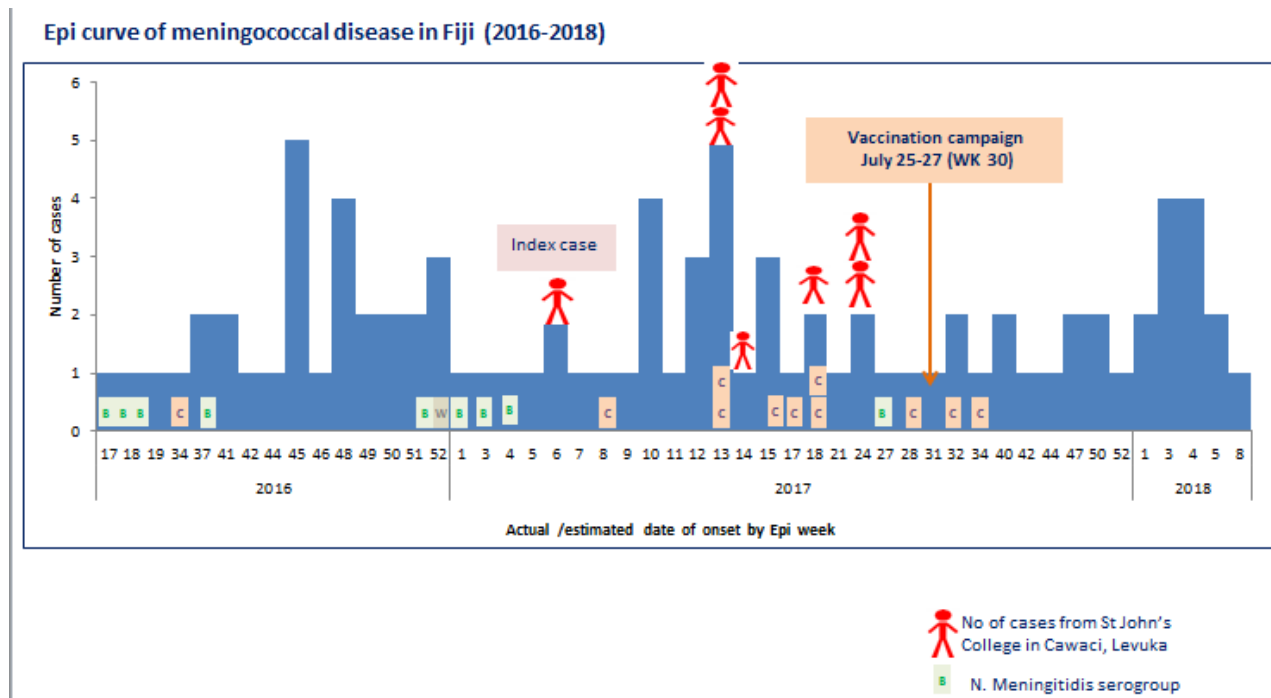
Figure 1 Epidemic curve of meningococcal disease in Fiji, 2007-January 2018



Causative agent

Invasive meningococcal disease is caused by 6 (A, B, C, W-135, X, and Y) of the 13 serogroups of the gram negative diplococcus *Neisseria meningitides*.¹ From 2007 – 2017 there was a change in the predominant serogroups in Fiji from serogroup B to serogroup C (Figure 2).

Figure 2: Epidemic curve of meningococcal disease in Fiji by available serogroup data, 2016- January 2018



Mode of Transmission

Transmission is through respiratory droplets from the nasopharynx and the incubation period is from 1 to 7 days, but can be up to 10 days. A patient with meningococcal disease is infectious from the onset of symptoms to 24 hours after commencing appropriate systemic antibiotic therapy. Some patients may present with pneumonia, septic arthritis, pericarditis, conjunctivitis, or urethritis. However invasive infections caused by *N. meningitidis* most commonly present as meningitis and/or septicaemia.¹

Reservoir

Humans are the only natural host for *N. meningitidis*, where there is a commensal relationship with the upper respiratory tract mucosa colonized by the bacteria. Mean duration of carriage has been estimated to almost 21 months, with carriage rates varying from 3-25% dependent on age. Some European and North American Studies, show carriage rates increasing sharply in teenagers and reaching a maximum in ages 20-24. Meningococcal carriage is associated with the male gender, coincident viral and respiratory

tract infections, low socioeconomic status, overcrowding, smoking, number and closeness of social contacts.

This guideline has been developed in response to the increase in number of cases seen over 2007-2017, and in recognition that the disease is an emerging infectious disease for Fiji, with a view to enhance surveillance, enhance early recognition, response and referrals to improve case outcomes and prevent future outbreaks and control transmission in public health facilities/settings.

Clinical Diagnosis and Case Definition

Clinical Diagnosis

The classic meningococcal disease presentation of sepsis, purpuric rash, and meningitis may not always occur together. Someone with a septic illness could still have the disease and a high index of suspicion must be maintained in the context of:

1. A meningococcal disease outbreak
2. A known contact of a confirmed/probable/suspected case of meningococcal disease
3. A rapid deterioration in the clinical condition.

Consider a clinical diagnosis of meningococcal disease if the patient has signs and symptoms of meningitis **and/or** septicaemia including:

- Fever, pallor, rigors, sweats
- Headache, neck stiffness, photophobia, backache
- Vomiting and/or nausea, diarrhoea
- Lethargy, drowsiness, irritability, confusion, agitation, seizures, or altered conscious state
- Moaning, unintelligible speech
- Painful or swollen joints, myalgia; difficulty walking
- Any haemorrhagic rash particularly of a pinprick, petechial or purpuric appearance.

The absence of rash does not rule out meningococcal disease.

Infants and young babies with floppiness, drowsiness or poor feeding should be presumed to have severe sepsis.

A sick child who presents with fever and a petechial rash (in the absence of a clear alternative explanation for the petechiae) should be presumed to have meningococemia until proven otherwise.

A clinical diagnosis of meningococcal disease should be considered in a sick child who presents with:

- Fever
- Chills
- Malaise
- Prostration
- A rash that initially may be urticarial, maculo-papular or petechial.

In fulminant cases, purpura, disseminated intravascular coagulation, shock, coma and death can ensue within several hours despite appropriate therapy.

Meningococcal Disease Case Definition

Figure 3: Meningococcal disease case definitions

Suspected case definition

Sudden fever ≥ 38 degree Celsius **AND**

One or more of the following symptoms: drowsiness, irritability or fussiness, intense headache, leg pain, vomiting, a stiff neck, sensitivity to bright lights and a reduced level of consciousness

OR

A skin rash that spreads rapidly and begins as reddish/purplish spots (petechial or purpuric rash) that does not fade when pressed under the bottom of a glass (the tumbler test).

Probable case definition

A clinically compatible illness AND close contact with a laboratory confirmed case within the previous 60 days.

Confirmed case definition

Culture of meningococcus from a normally sterile body site. This includes blood or cerebrospinal fluid (CSF) or less commonly, joint, pleural (around the lungs), or pericardial (around the heart) fluid, or fluid from the purpuric lesions of the rash. DNA detection by PCR from a sterile site also confirms infection but is not widely available

Pre-Hospital Case Management

Invasive meningococcal disease is a medical and public health emergency and that pre-hospital clinical case management can be lifesaving. Once meningococcal disease is suspected the case **must be referred to the nearest Divisional Hospital as soon as possible**. This is classified as a medical and public health emergency.

As these patients may present in an acutely ill state and deteriorate rapidly, close monitoring of vital signs and preparations for resuscitation and management of hypovolemic shock must be made. A child may often present in hypovolemic shock so aggressive fluid management is essential. Boluses of normal saline at 20ml/kg can be given and this child must not be left unattended. Immediate discussion with the paediatric on call team is warranted.

It is recommended to take blood sample for culture prior to administration of antibiotics **(but this should not delay treatment and referral)**.

Health staff should practice standard and droplet precautions until the suspected case has received 24 hours of appropriate systemic antibiotic therapy.

Pre-Hospital (early) antibiotic treatment

Empirical antibiotic therapy must commence as early as possible (within 30 minutes) once meningococcal disease is suspected, but this should not delay referral to hospital. Blood cultures should also be taken, preferably before the first dose, but must not delay early antibiotic treatment and referral. Antibiotic therapy should be given intravenously, but if not possible, give via intramuscular injection. Penicillin should only be withheld if a patient has a clear history of past allergic reaction after a dose of penicillin. A suspected case of meningococcal disease should be transported urgently to the nearest Divisional Hospital.

Figure 4: Pre-Divisional Hospital antibiotic treatment

(1) <1 month old:

***Ceftriaxone** 100mg/kg/d or **Cefotaxime** 50mg/kg 8hrly
Plus **Ampicillin** at 50mg/kg bd.

(2) >1 month old:

***Ceftriaxone** 100mg/kg/d or **Cefotaxime** 50mg/kg 6 hrly Empirically. If confirmed penicillin sensitive then Benzyl penicillin 300,000 u/kg/d divided 4-6 hrly (max 24MU/d)

(3) Children more than 40kg and adults:

(i) ***Ceftriaxone** 2g IV bd or **Cefotaxime** 2g IV Q4H

OR if not available

(ii) **Chloramphenicol** (12.5 mg/kg) 1g Q6H

OR if not available

(iii) **Penicillin** 4MU IV Q4H

It is recommended to take blood sample for culture prior to administration of antibiotics (but this should not delay treatment and referral).

If Penicillin allergic, use chloramphenicol at 100mg/kg/d divided 6hrly (max 4g/d) for children aged over 1 months old

Ceftriaxone is the first line recommended antibiotic, however if not available then increasing the dose of Penicillin G to 24 MU IMI per day in divided doses could be given prior to transfer. (2MU in the guidelines may not be adequate)

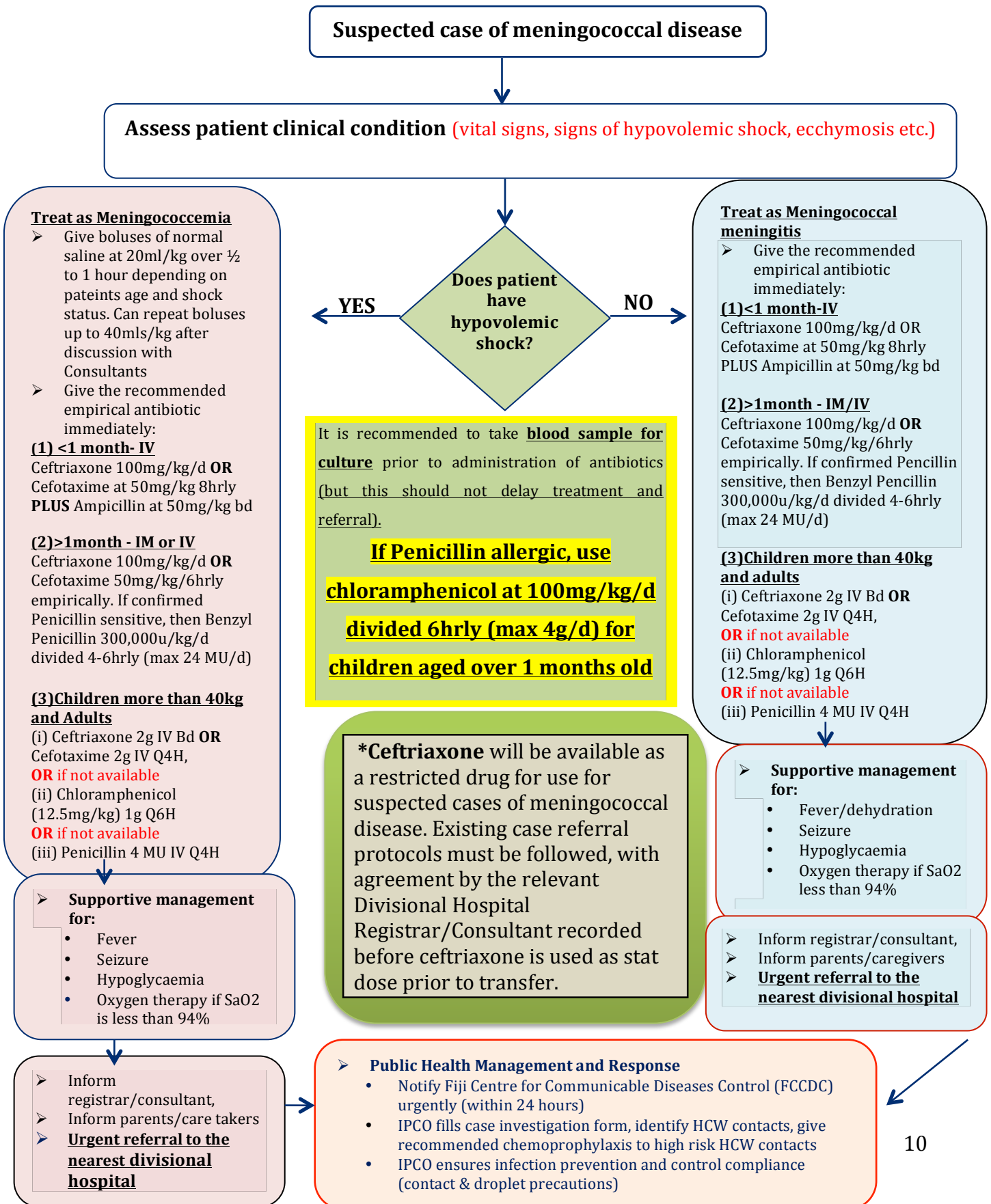
First line should be ceftriaxone or Cefotaxime at least until sensitivities are known

***Ceftriaxone** will be available as a restricted drug for use for suspected cases of meningococcal disease. Existing case referral protocols must be followed, with agreement by the relevant Divisional Hospital Registrar/Consultant recorded before ceftriaxone is used as stat dose prior to transfer.

Dexamethasone

Steroids do not change outcome in children with meningococemia without meningitis.

Figure 5: Flow chart of the primary care management of suspected meningococcal disease



Clinical Management in Divisional Hospital (Please refer to relevant in-hospital guideline.)

Laboratory Diagnostics

1. Culture from blood and/or CSF is the gold standard
2. Culture of petechial/purpuric lesion or any sterile body fluid
3. Gram stain of petechial/purpuric scraping, CSF, buffy coat of blood
4. PCR is helpful for patients who have received antimicrobial therapy before cultures done (subject to availability of testing in Fiji)
5. Direct Antigen Testing on CSF samples (subject to availability of test in Fiji)

Public Health Response

The objectives of public health responses are to:

1. Ensure both individual and public awareness on the disease to enable appropriate public and individual responses to the disease, including early presentation and adherence with clearance antibiotics and/or vaccination.
2. Ensure health care worker awareness to enable early detection and response
3. To identify contacts early to ensure appropriate screening, prophylaxis and public health interventions.

Flow charts for public health response and notification are included in Annex 4-6

Notification

Meningococcal disease is an urgent condition that requires **immediate** notification to the National Advisor Communicable Disease (NACD), Director Epidemiology, Subdivisional Medical Officer (SDMO), Head of Department (HOD), Divisional Medical Officer (DMO) and Hospital Medical Superintendent (MS).

The public health response will be driven by the Divisional Outbreak Response Team (DORT) with advice/assistance from the NACD.

Once an outbreak or unusual increase in cases has been established, all medical officers in the affected area must fill in a daily line list for all confirmed, probable, and suspected cases (*Annex 3*). This must be forwarded daily to the NACD and the respective DMO. Please note that all cases must be reported through the NNDSS mechanism (*Annex 1*) simultaneously and copies of line lists must be attached to the NNDSS form and sent over immediately to Health-Information@govnet.gov.fj. **Detail of the Notification flow chart in Annex 4-6*

Case Investigation

Case investigation is to begin immediately upon notification of a suspected case with interviews with the patient or close contacts, if patient is too ill, using the standard investigation form (*Annex 2*). Contact tracing will include administration of recommended clearance antibiotic to high-risk contacts. Awareness will also be conducted for contacts with information of signs and symptoms of meningococcal disease and whom to contact.

Contact Tracing

The objectives of tracing contacts are to:

- Determine their degree of contact with the case.
- Provide awareness and information about meningococcal disease, including their level of risk, and what to do if they develop symptoms.
- Recommend clearance antibiotics, and vaccination if indicated, for high risk contacts

Contact definition

- Contact tracing focuses on identifying the subset of 'higher-risk' contacts who require information and clearance antibiotics and vaccination in some instances. Other lower-risk contacts groups may be given information only.
- In establishing the timing and degree of contact with a case, the time period of interest is from 7 days prior to the onset of symptoms in the case to the time the case has completed 24 hours of appropriate antibiotic treatment.

Risk to contacts

The highest risk is to contacts living within the same household as the case. This includes a household-like living arrangement like dormitories. The risk is highest in the first 7 days

following the onset of symptoms of the case, then falls rapidly but remains elevated for 30 days if chemoprophylaxis is not given. After 30 days, the risk falls back to general population levels, however epidemiologically linked cases may still occur after this period.⁴

The other high-risk contacts are listed in Table 1:

Table 1: Meningococcal disease high-risk contacts

Household contacts	Including recent visitors who have stayed overnight in the 7 days before onset of the case's illness (or contacts in a household where the case has spent the night during that time). Includes roommates in dormitory style room.
Travel contacts	Passengers seated in the seat immediately adjacent to the case on any journey more than 8 hours duration in the days before onset of illness.
Sexual contacts	All sexual contacts, including intimate kissing partners.
Childcare/day-care contacts	Only children and staff at the child care/day care facility that were with the case in the same room group for 4 hours or longer in the 7 days before onset of illness.
School or university	Only school or university contacts who can also be defined as household contacts e.g. boarding schools, or university dormitories/halls of residence, or school friends who have stayed the night.
Healthcare worker contacts	Only medical personnel directly exposed to the case's nasopharyngeal secretions e.g. the person who intubated the case.

Responsibility

The units or officers responsible for contact tracing are as follows:

Divisional Hospital Contacts (Health care workers) - Infection Prevention Control Officer within the hospital

All other contacts (including household contacts and possible healthcare worker contacts in health centre/sub divisional hospital) - DORT

Chemoprophylaxis (provision of antibiotics for contacts)

Chemoprophylaxis may act in two ways:

- Eradicates carriage from established/ asymptomatic carriers who pose a risk of infection to others
- Eradicates carriage in those who have newly acquired the invasive strain and who may themselves be at risk of developing meningococcal disease

The objective of giving antibiotics is to eliminate nasopharyngeal carriage of *Neisseria meningitidis* from any carrier of a virulent strain from the close contacts of the case, thereby preventing further transmission and infection. Chemoprophylaxis should be given to all close contacts (refer to Table below) as soon as possible, ideally within 24 hours of identification of the index case.

The appropriate antibiotic prophylaxis is only recommended for high-risk contacts (Table 1) as soon as possible within 24 hours after last exposure. **It is strongly recommended that prophylaxis be given within 24 hours**, however if there are unavoidable delays, it may be given up to 30 days after the last exposure. Any delay in giving prophylaxis will increase the risk of the contact developing the disease. Every effort must be made to provide prophylaxis as soon as possible.

Once a high-risk contact has been identified the appropriate antibiotic should be recommended according to the following guide in Table 2:

Table 2: Antibiotics for chemoprophylaxis

Antibiotics for meningococcal disease prophylaxis:	Adults	Children
1. Rifampicin*	Adults 600mg orally twice daily for two days Rifampicin reduces the effect of the oral contraceptive pill and should not be used in pregnancy or severe liver disease.	Children <1 month of age 5mg/kg/dose twice daily for 2 days Children >1 month of age 10mg/kg/dose twice daily for 2 days Max 600mg per dose
2. Ceftriaxone	For pregnant women or if ciprofloxacin/rifampicin is otherwise contraindicated Adults 250 mg IM once only	Children <15 yrs: 125mg IMI single dose >15 yrs 250 mg IMI single dose (offer lignocaine with doses)
3. Ciprofloxacin**	Adults 500 mg orally once only Ciprofloxacin is contraindicated in pregnancy	Children: 20mg/kg max 500mg once only*

** Previously in Fiji, ciprofloxacin was the first line antibiotic for chemoprophylaxis. However, antibiotic susceptibility testing of isolates collected in 2017 and 2018 showed resistance or intermediate susceptibility to ciprofloxacin. Therefore, ciprofloxacin has been replaced by rifampicin as first choice for chemoprophylaxis, followed by ceftriaxone.*

***Ciprofloxacin is usually not recommended in children due to induced arthropathy in juvenile animals. However in studies, the risk of arthropathy due to ciprofloxacin was very low, arthralgia was transient and most were coincidental.³*

Vaccination

Background

Vaccination has been demonstrated to be one of the most effective and cost-effective public health interventions. Worldwide, it has been estimated that immunization programs prevent approximately 2.5 million deaths each year. Conjugate vaccines for meningococcal disease, are available in monovalent (A or C), quadrivalent (A, C, W135, Y), or combination (serogroup C and *Haemophilus influenzae* type b) formulations

WHO recommends that countries with high (>10 cases per 100,000 population/year) or intermediate (2-10 cases per 100,000 population/year) endemic rates and/or frequent epidemics of invasive meningococcal disease conduct appropriate large-scale meningococcal vaccination programs.⁶

In countries where the disease occurs less frequently (<2 cases per 100,000 population/year), meningococcal vaccination is recommended for defined risk groups.

Decision to vaccinate

Vaccination for high risk contacts, or as a preventative measure for defined high-risk groups, will be determined through deliberations by the Meningococcal Taskforce and the Clinical TWG of the NTCOPD, and with the endorsement of, and implementation by, the National Vaccine Preventable Disease Committee.

Mass Vaccination for meningococcal infection in outbreak situation will be considered based on:

1. Confirmation of the outbreak and the fulfilment of the WHO criteria as above
2. The outbreak occurs in a naturally confined population cohort e.g. schools, small islands etc.

3. Consideration for vaccination will be discussed and endorsed by the National Vaccine Preventable Disease committee before actual implementation.

Outbreaks

Outbreaks of meningococcal disease are a public health emergency as they cause a high degree of public concern and media interest, and result in significant morbidity and mortality. Once an outbreak is suspected or recognised the immediate initiation of a coordinated outbreak response is required.

The term 'outbreak' is taken to mean the occurrence of more cases than expected for the population under consideration. Timely and thorough outbreak investigations aim to interrupt transmission and prevent further cases. The following changes in epidemiology of meningococcal disease are suggestive of an outbreak: ^{1,6}

- An increased rate of disease. In small populations it may be more useful to focus on the number of cases rather than the rate;
- Clustering of cases in an age group or a shift in the age distribution of cases; and
- Phenotypic and/or genetic similarity among strains causing disease in the population.

Outbreaks can occur as:

- **Institutional-based outbreaks** – defined as two or more probable or confirmed cases with an onset in a four-week interval, among people who have a common institutional-based association (e.g. the same school, extended families/or social groups) but no close contact with each other, in a grouping that makes epidemiological sense.
- **Community outbreaks** – Three or more confirmed or probable cases where there is no direct epidemiological link between the cases, with an onset in a 3 month interval among persons residing in the same area and the primary attack rate is at least 10 per 100,000. This is not an absolute threshold and should be considered in the context of other factors e.g. completeness of case reporting, continuing occurrence of cases reported by MOs.

Suspected outbreaks should be reviewed by public health authorities (SORTS, DORTS, FCCDC) to identify the microbiological features of the cases and any epidemiological links between cases. Cases that occur closely in time and place, but are infected with different serogroups (or serotypes), should be managed as sporadic cases. Depending on the outbreak size and strain, vaccination of contacts may be an appropriate intervention strategy.

Communication and education

Strengthening awareness and educating communities, health workers, and high-risk groups about meningococcal disease is critical, as it will support increased alertness and identification of suspected cases and promotes at-risk communities to adopt preventative behaviours.

Education and awareness activities should occur as soon as an outbreak is suspected. It is important though to not unnecessarily raise anxiety within the broader community that is disproportionate to the risk. If there is a suspected outbreak, the medical personnel should conduct following activities, with support from the DORTs, and advice and support facilitated by the NACD. Annex 6 details the components of the Risk Communications Framework.

Annex 1. National Notifiable Disease Surveillance Schedule

Other names for Notifiable Diseases are Communicable Diseases, or infectious diseases.

The main objective of this form is to monitor the disease outbreaks and for this, surveillance needs to be carried out with the information provided by the facilities.

The form is filled in by the Medical Officers in all the Hospitals and Health Centres. Where there is no Medical Officer it should be filled in by the Nurse Practitioners.

All the above required fields to be filled and submit; the **white copy to HIU**, the **Pink copy to DMO**, **Yellow copy to SDMO**, and the **blue copy to be retained in the book**. If there are no cases notified, should be reported as NIL case. **PLEASE NOTE: Send-off weekly Notifications as soon as possible after noon on Saturdays.**

The Health information unit prepares the checklist of the facilities reporting and clarifies the queries. The feedbacks are submitted to facilities as quarterly reports.

NOTIFIABLE DISEASES

(Under Public Health Ordinance, Cap. 91, or by proclamation)

A. DISEASES TO BE NOTIFIED IMMEDIATELY (by telephone or telegram)

- Cholera
- Plague
- Food Poisoning (chemical or bacteriological)
- Smallpox
- Typhus (state type)
- Yellow Fever
- Acute Poliomyelitis [a] Paralytic
- [b] Non-paralytic
- Diphtheria
- Enteric Fever [a] Typhoid Fever
- [b] Paratyphoid Fever

C. DISEASES TO BE NOTIFIED WEEKLY BY NUMBERS, RACE, AND SEX ONLY

- Chicken Pox (Varicella)
- Dengue Fever
- German Measles (Rubella)
- Infective diarrhoea or enteritis under 2yrs (mild infections)
- Influenza
- Measles
- Trachoma
- Whooping Cough (Pertussis)

B. DISEASES TO BE NOTIFIED WEEKLY IN DETAIL (given names, addresses, ages, and races)

- Anthrax
- Brucellosis (including Undulant Fever)
- Dysentery [a] Amoebic
- [b] Bacillary
- Encephalitis
- Infective Diarrhoea or enteritis under 2yrs (severe or moderate infections)
- Infective Hepatitis
- Leprosy
- Leptospirosis (Weil's Disease)
- Malaria
- Meningitis (state type)
- Puerperal Pyrexia (including Puerperal Fever)
- Relapsing Fever
- Rheumatism (Acute)
- Tetanus
- Tetanus neonatorum
- Tuberculosis [a] Pulmonary
- [b] Other than pulmonary
- Venereal Diseases [a] Gonorrhoea
- [b] Granuloma Venereum
- [c] Ophthalmia neonatorum of gonococcal origin
- [d] Lymphogranuloma inguinale
- [e] Soft Chancre
- [f] Syphilis (state type)
- [g] Venereal Warts

Annex 2. Meningococcal Disease Case Investigation Form

Final Case Classification: Confirmed <input type="checkbox"/> Probable <input type="checkbox"/> Rejected (other diagnosis) <input type="checkbox"/>		Date of investigation:			
		Name and position of Investigator:			
		Primary person interviewed (if not case):			
Section A: Demographic Details					
Patient name					
Gender					
Age					
Ethnicity					
Occupation					
Current place of Residence					
Number of people in the Household					
Phone Contact					
Name/Address of Employer or School or Child Care Attended:					
Section B: CLINICAL DETAILS					
Onset date (first symptom)					
Incubation period (10 days before onset)					
Date of first presentation to health facility					
Date of Admission					
Admitting Health Facility					
Brief history of illness:					
Symptoms (if present indicate with √ or ×)					
Fever/Chills <input type="checkbox"/>	Headache <input type="checkbox"/>	Rash <input type="checkbox"/>	Photophobia (light sensitivity) <input type="checkbox"/>	Neck stiffness <input type="checkbox"/>	Muscle/Joint pain <input type="checkbox"/>
Abdominal pain <input type="checkbox"/>	Nausea/vomiting <input type="checkbox"/>	Drowsiness <input type="checkbox"/>	Fitting <input type="checkbox"/>	Confusion or Impaired consciousness <input type="checkbox"/>	Behaviour change <input type="checkbox"/>
Symptoms in	<i>Unresponsive</i> <input type="checkbox"/>	<i>Drowsy</i> <input type="checkbox"/>	<i>Floppy</i> <input type="checkbox"/>	<i>Poor feeding</i> <input type="checkbox"/>	<i>Behaviour</i>

infants and babies					<i>change</i> <input type="checkbox"/>
Other:					

Laboratory Results

Blood	WCC: Neutrophils:	Haemoglobin:	Platelets:	Culture: Growth <input type="checkbox"/> No growth <input type="checkbox"/>
CSF	Protein:	Glucose:	AST:	Culture: Growth <input type="checkbox"/> No Growth <input type="checkbox"/>

Section C: HISTORY OF CONTACT

1. Previous contact with anyone with similar illness (family member, friend, school contact, work colleague)? No <input type="checkbox"/> Yes <input type="checkbox"/> If yes, details:
2. Attended childcare in the 10 days prior to onset? No <input type="checkbox"/> Yes <input type="checkbox"/> N/A <input type="checkbox"/> If yes, details:
3. Attended any special functions/public gathering/party in the 10 days prior to onset? No <input type="checkbox"/> Yes <input type="checkbox"/> If yes, details:
4. Has the case travelled in the 10 days prior to onset? No <input type="checkbox"/> Yes <input type="checkbox"/> If yes, details:

Section D: CONTACT TRACING DETAILS

For single, sporadic cases, the recommended antibiotic should be given to high risk contacts as defined in the Public Health Management of Meningococcal Disease Guideline.

Relationship to case	Type of contact (household, childcare group etc.)	Name	Sex	Age	Date antibiotic administered	Clearance antibiotic given?	Type used:

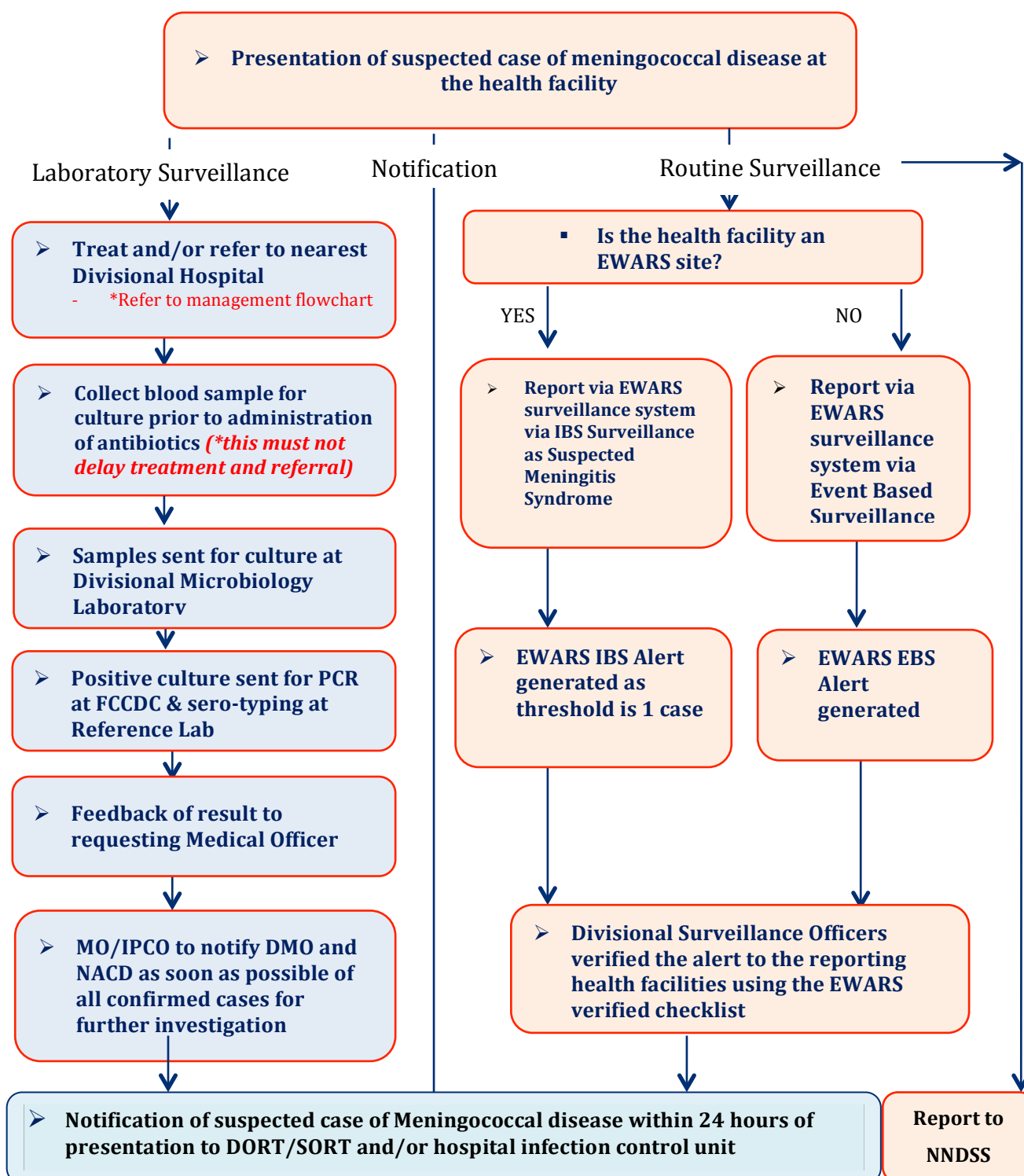
COMMENTS:		
Section E: PUBLIC HEALTH ACTION CHECKLIST		
	Yes	No
1. Contact tracing was done – with all the history of close contacts in the 7 days prior to case symptom onset and before 24 hours of completion of recommended treatment antibiotic	<input type="checkbox"/>	<input type="checkbox"/>
2. Number with name, ages, and sex were obtained for the procurement of drugs.	<input type="checkbox"/>	<input type="checkbox"/>
3. Awareness for close contacts was done.	<input type="checkbox"/>	<input type="checkbox"/>
4. Advised the close contacts on what to do should symptoms develop (fever, head ache, vomiting, feeling weak and unwell).	<input type="checkbox"/>	<input type="checkbox"/>
5. Contact of person at Ministry of Health given – e.g. Zone Nurse	<input type="checkbox"/>	<input type="checkbox"/>
6. Recommended antibiotic provided to all high risk contacts.	<input type="checkbox"/>	<input type="checkbox"/>
7. Vaccination provided to all high risk contacts where applicable	<input type="checkbox"/>	<input type="checkbox"/>
Section F: Recommendations, challenges, or plans for follow up if investigation not completed.		

Annex 3. Meningococcal Disease Line list

Meningococcal Diseases Line List

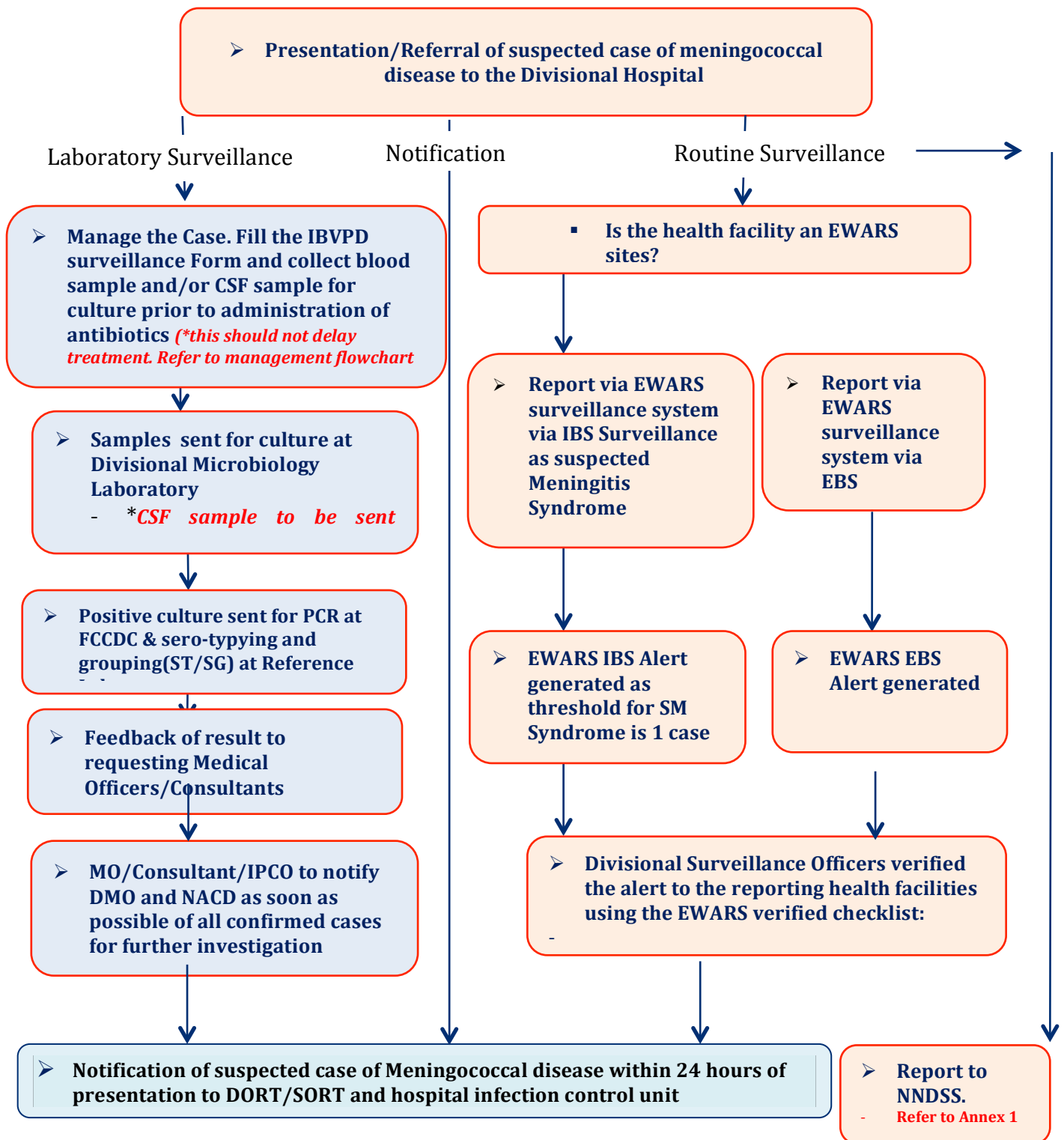
[illegible]

Annex 4: Flow chart for the notification and surveillance of suspected meningococcal disease at health facilities outside Divisional Hospitals



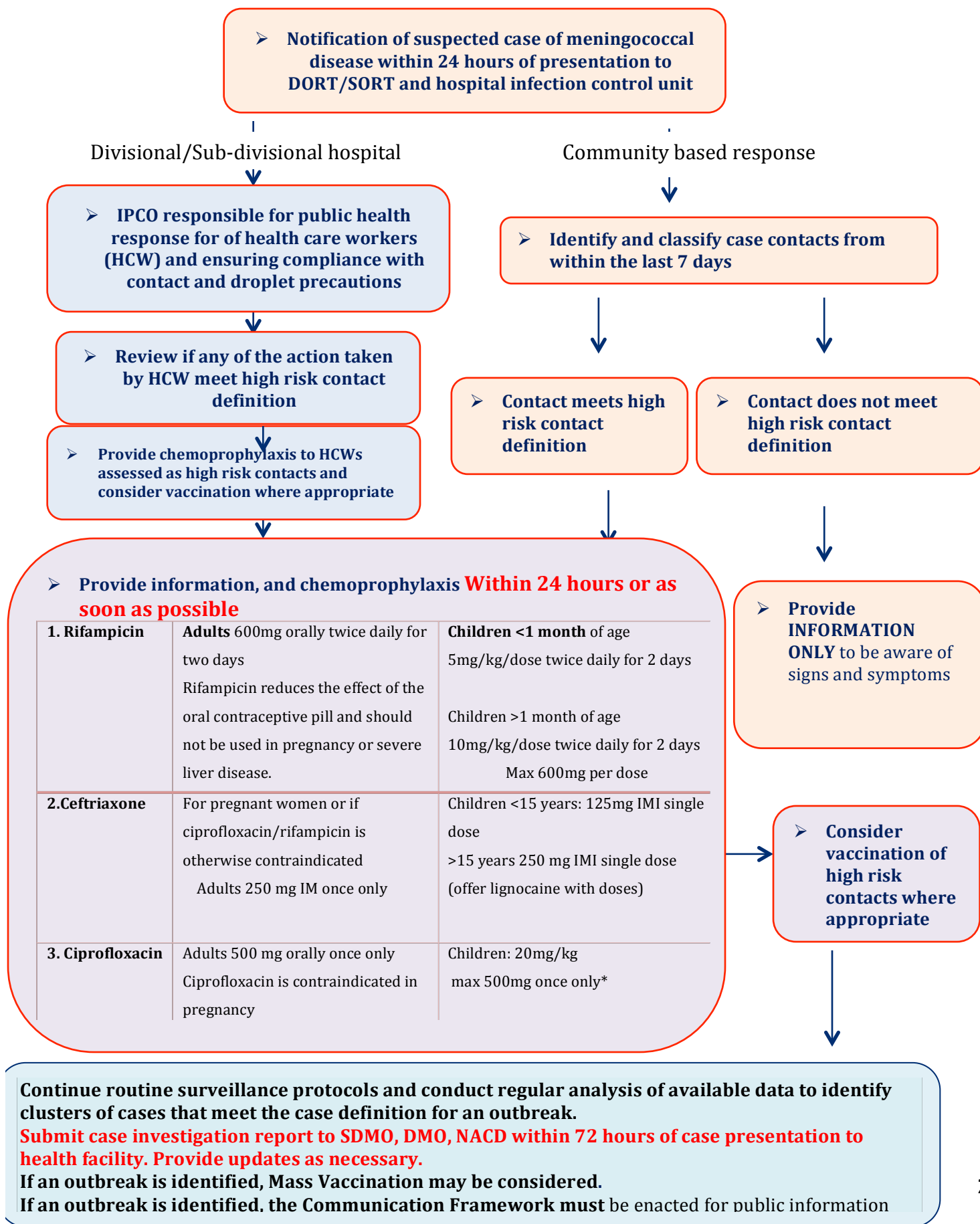
Key: FCCDC-Fiji Centre for Communicable Diseases Control (Mataika House), DORT-Divisional Outbreak Response Team, SORT-Sub-divisional Outbreak Response Team, IPCO-Infection & Prevention Control Officer, IBS-Indicator Based Surveillance, EBS-Event Based Surveillance

Annex 5: Flowchart for notification & surveillance of suspected meningococcal disease at Divisional Hospital



Key: FCCDC-Fiji Centre for Communicable Diseases Control (Mataika House), DORT-Divisional Outbreak Response Team, SORT-Sub-divisional Outbreak Response Team, IPCO-Infection & Prevention Control Officer, IBS-Indicator Based Surveillance, EBS-Event Based Surveillance

Annex 6: Flow chart of the public health response to suspected meningococcal disease



Annex 7: Risk communications framework

NB: Proposed activities will aid in supporting the early identification of cases and reduce confusion and anxiety within high-risk groups, parents, guardians and teachers.

Type	Recommended Activities	Topics
Institutional-based outbreak Responsibility: DORTs/SORTs, with advice and support facilitated by NACD.	For outbreaks in extended families/or social groups: 1. Provide written information to parents and guardians of children and young persons, affected families and social groups on identified topics.	Provide information on: <ul style="list-style-type: none"> • signs and symptoms • prevention and control behaviours • Importance of increased alertness • Types of contact definitions to inform clearance antibiotics • Information on clearance antibiotics • Information about vaccination (if this is to occur) MoH contact details for individuals seeking additional information.
	For outbreaks in education facilities or any other institutions: 1. Make immediate contact with the head of the facility, principal, head teacher or school-based health worker to conduct the following activities: <ol style="list-style-type: none"> a. Provide written information to all involved, students, parents and guardians of children. b. Provide briefing to the facility's staff on the recommended topics. 	Provide information on: <ul style="list-style-type: none"> • signs and symptoms • prevention and control behaviours • importance of increased alertness and immediate referral of suspected cases • Types of contact definitions to inform clearance antibiotics • Information on clearance antibiotics • Importance of adopting/enforcing preventative behaviours • Information about vaccination (if this is to occur) • Divisional/relevant contact details
Community outbreaks Responsibility: DORTs/SORTs, with advice and support facilitated by	1. Alert medical practitioners (including general practitioners) and health workers within affected communities	Provide information on: <ul style="list-style-type: none"> • Outbreak epidemiology • need for increased alertness and immediate referral of suspected cases • Types of contact definitions to inform clearance antibiotics • Information on clearance antibiotics • Information about vaccination (if this is to occur) • Divisional/relevant contact details
	2. Provide printed/written IEC materials to medical practitioners and health workers, for their dissemination to at-risk groups	Materials to include information on: <ul style="list-style-type: none"> • signs and symptoms

NACD.		<ul style="list-style-type: none"> • prevention and control behaviours • Importance of increased alertness • Information about vaccination (if this is to occur) • MoH contact details for individuals seeking additional information.
	<p>3. If appropriate, broader notification to the community via press conference or other communication means i.e. press release, bulletin etc. <i>Action to be determined by PSHMS in consultation with NACD.</i></p>	<p>Provide information on:</p> <ul style="list-style-type: none"> • signs and symptoms • prevention and control behaviours • Importance of increased alertness • Information about vaccination (if this is to occur) • Appropriate MoH contact details for individuals seeking additional information.

Annex 8: List of contributors

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