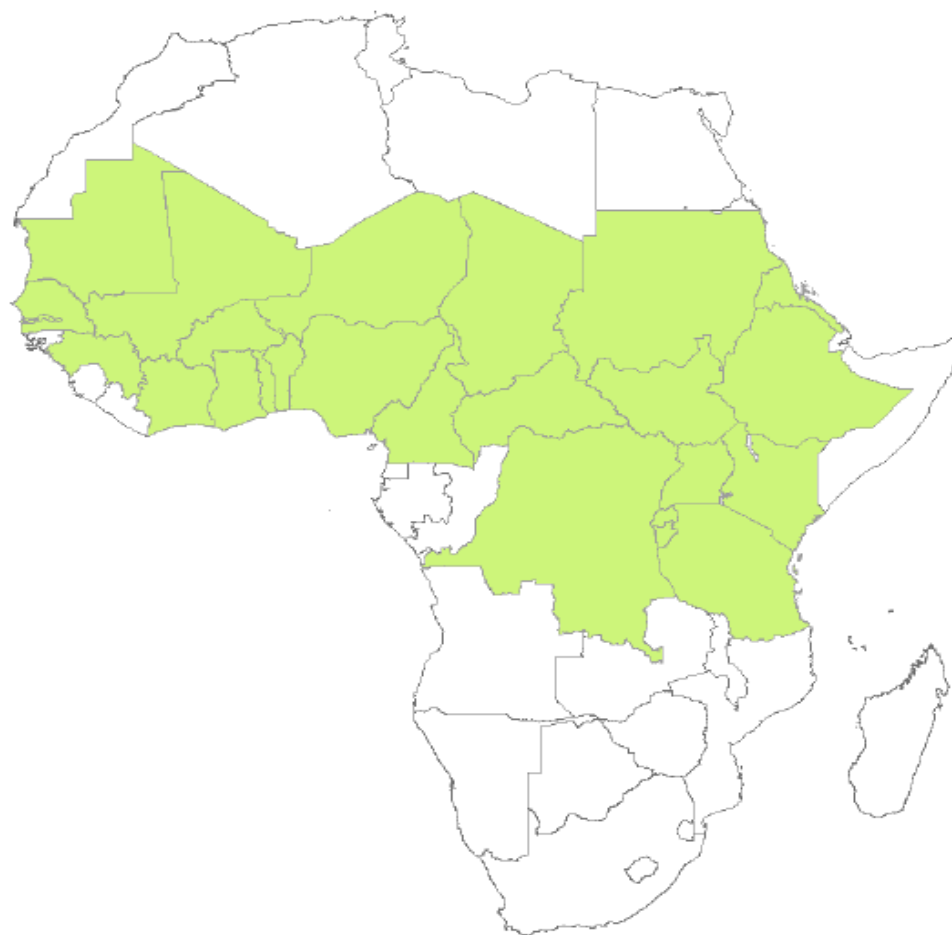




**World Health  
Organization**

REGIONAL OFFICE FOR **Africa**

**Standard operating procedures for surveillance  
of meningitis preparedness and response to  
epidemics in Africa**



October 2018

**Standard operating procedures for surveillance  
of meningitis preparedness and response to  
epidemics in Africa**

October 2018

**WORLD HEALTH ORGANIZATION  
REGIONAL OFFICE FOR AFRICA  
BRAZZAVILLE • 2019**

## Standard operating procedures for surveillance of meningitis preparedness and response to epidemics in Africa

ISBN 978-929023424-1

© WHO Regional Office for Africa 2019

Some rights reserved. This work is available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo>).

Under the terms of this licence, you may copy, redistribute and adapt the work for non-commercial purposes, provided the work is appropriately cited, as indicated below. In any use of this work, there should be no suggestion that WHO endorses any specific organization, products or services. The use of the WHO logo is not permitted. If you adapt the work, then you must license your work under the same or equivalent Creative Commons licence. If you create a translation of this work, you should add the following disclaimer along with the suggested citation: “This translation was not created by the World Health Organization (WHO). WHO is not responsible for the content or accuracy of this translation. The original English edition shall be the binding and authentic edition”.

Any mediation relating to disputes arising under the licence shall be conducted in accordance with the mediation rules of the World Intellectual Property Organization.

**Suggested citation.** Standard operating procedures for surveillance of meningitis preparedness and response to epidemics in Africa. WHO Regional Office for Africa, Brazzaville 2019. Licence: [CC BY-NC-SA 3.0 IGO](https://creativecommons.org/licenses/by-nc-sa/3.0/igo).

**Cataloguing-in-Publication (CIP) data.** CIP data are available at <http://apps.who.int/iris>.

**Sales, rights and licensing.** To purchase WHO publications, see <http://apps.who.int/bookorders>. To submit requests for commercial use and queries on rights and licensing, see <http://www.who.int/about/licensing>.

**Third-party materials.** If you wish to reuse material from this work that is attributed to a third party, such as tables, figures or images, it is your responsibility to determine whether permission is needed for that reuse and to obtain permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

**General disclaimers.** The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by WHO in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by WHO to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall WHO be liable for damages arising from its use.

Designed by TIP Unit, Brazzaville, Republic of Congo

## CONTENTS

FOREWORD .....	vii
ACRONMYS .....	viii
1. BACKGROUND .....	1
2. OBJECTIVES OF MENINGITIS SURVEILLANCE .....	2
2.1 General objective.....	2
2.2 Specific objectives .....	2
3. ENHANCED AND CASE-BASED SURVEILLANCE OF MENINGITIS .....	2
3.1 Enhanced Surveillance and its objectives .....	2
4. CASE-BASED SURVEILLANCE AND ITS OBJECTIVES .....	3
5. CHOICE OF TYPE OF SURVEILLANCE .....	3
6. DEFINITIONS .....	4
6.1 Case definitions for bacterial meningitis .....	4
7. EPIDEMIOLOGICAL THRESHOLDS .....	4
8. SURVEILLANCE, PREPAREDNESS AND RESPONSE .....	5
8.1 Pre-epidemic phase.....	6
8.2 Epidemic phase.....	7
8.3 Post-epidemic phase .....	8
8.4 Inter-epidemic phase .....	9
9. DATA MANAGEMENT .....	9
9.1 Aim and function.....	9
9.2 Data entry.....	10
9.3 Data transmission.....	11
9.4 Data storage and protection .....	12
9.5 Data analysis.....	12
10. SPECIMEN COLLECTION AND PROCESSING .....	13
10.1 Preparedness.....	13
10.2. Sample collection .....	13
10.3 Utilization of TI bottles (Annex 8).....	14
10.4 Transportation of CSF specimens.....	14
10.5 Specimen processing .....	14
10.6 Turn-around time of laboratory results .....	15
10.7 Laboratory .....	15

10.8	Organization of the National Laboratory Network.....	16
10.9	National Reference Laboratory .....	16
10.10	Quality control .....	17
10.11	Molecular surveillance.....	18
<b>11.</b>	<b>ROLES AND RESPONSIBILITIES .....</b>	<b>18</b>
11.1	Health centre.....	18
11.2	District .....	19
11.3	Region/province .....	20
11.4	Central level .....	21
11.5	WHO and partners .....	22
11.6	Other sectors (Army, private, denominational, NGOs, etc.) .....	22
11.7	Adapt to epidemics.....	22
<b>12.</b>	<b>PREPAREDNESS AND MENINGITIS EPIDEMIC RESPONSE PLAN.....</b>	<b>23</b>
<b>13.</b>	<b>REACTIVE IMMUNIZATION AND VACCINE SELECTION CRITERIA .....</b>	<b>24</b>
<b>14.</b>	<b>CASE AND CONTACT MANAGEMENT.....</b>	<b>25</b>
14.1	Case management .....	25
14.2	Contact Management .....	26
<b>15.</b>	<b>RISK COMMUNICATION .....</b>	<b>26</b>
<b>16.</b>	<b>OPERATIONAL RESEARCH AND DOCUMENTATION OF EPIDEMIC RESPONSE.....</b>	<b>28</b>
<b>17.</b>	<b>COORDINATION.....</b>	<b>28</b>
<b>18.</b>	<b>MONITORING AND SUPERVISION.....</b>	<b>29</b>
<b>19.</b>	<b>FEEDBACK .....</b>	<b>31</b>

## **ANNEXES**

1.	Case investigation form .....	33
2A	Performance indicator (ES).....	37
2B	Performance indicators (CBS) .....	38
3.	Preparing for ICG vaccine request.....	39
4.	Decisional tree for meningitis vaccine choice in a reactive vaccination campaign .....	40
5.	Investigation of <i>Neisseria meningitidis</i> serogroup A case in the meningitis belt	41
6.	WHO generic line list for reporting from health facility to district (during outbreak) .....	48

7. Standardized excel data collection tool for enhanced surveillance of meningitis.....	50
8. Checklist for using trans-isolate medium (T-I).....	51
9. Checklist for collection of specimens .....	53
10. Roles and responsibilities of the various levels in surveillance of meningitis .....	56
11. Standard data transmission circuit.....	57
12. Checklist for data management .....	58
13. Classification of bacterial meningitis cases according to laboratory results .....	61
14. Supervision of meningitis surveillance activities.....	62
15. List of co-authors .....	63

## FOREWORD

This second edition of the WHO-AFRO Standard Operating Procedures (SOPs) for Surveillance of Meningitis, Preparedness and Response to Meningitis Epidemics in Africa has incorporated the SOPs for Enhanced and Case-based Surveillance (both versions dated January 2017).

All countries in the African meningitis belt undertake enhanced surveillance (ES) for meningitis. Following the introduction in 2010 of MenAfriVac<sup>®</sup>, a serogroup A meningococcal conjugate vaccine, some countries or parts of countries (for example Burkina Faso, Mali, Niger, Togo, Chad) have also introduced Case-based surveillance (CBS). The principal aim of ES is to strengthen outbreak detection across the meningitis belt to initiate a rapid response to meningitis epidemics. The principal aim of CBS is to evaluate the effectiveness and impact of new vaccines against bacterial meningitis. Both monitor the epidemiology of meningitis due to meningococcal serogroups and other bacterial pathogens.

Separate SOPs were developed for the two surveillance strategies. However, since those countries and parts of countries implementing CBS must also continue ES, a request from countries was that the two SOPs should be merged into one document to facilitate implementation and training.

CBS was introduced in selected countries of the Belt to evaluate MenAfriVac<sup>®</sup> vaccine and should be continued where possible in countries with high surveillance performance if resources permit. This will also allow to evaluate future new vaccines. The main distinguishing feature of CBS is that epidemiological and microbiological data are collected and linked for each case of meningitis, with reporting and analysis at individual case level, whereas ES relies on timely reporting and analysis of aggregate data by week to prepare for and respond promptly to epidemics. CBS does not necessarily cover all districts in all countries and is not designed for timely detection of an epidemic or for launching a rapid response; therefore, it does not replace the need for universal ES. It is not intended that all countries should adopt CBS but that they should consider introduction into all or selected districts as and when resources allow this to happen.

The aim of these SOPs in Africa is to guide health personnel from various levels of the health system in the implementation of enhanced, and where relevant, case-based surveillance of meningitis.

Finally, we invite healthcare stakeholders at all levels to adopt this document for effective conduct of meningitis surveillance, epidemic preparedness and response activities.

## ACRONYMS

AFP	Acute flaccid paralysis
ATB	Antibiogram
CBS	Case-based surveillance
CC	Collaborating Centre
CMYP	Comprehensive multi-year plans
CSF	Cerebrospinal Fluid
DH	District Hospital
DHMT	District Health Management Team
DMO	District Medical Officer
DNA	Deoxyribonucleic acid
DPC	Disease Prevention and Control
EPI	Expanded Program on Immunization
EPR	Epidemic Preparedness and Response
ES	Enhanced Surveillance
GND	Gram negative diplococcus
GPB	Gram-Positive Bacillus
GPD	Gram positive diplococcus
HF	Health Facility
Hib	<i>Haemophilus influenzae</i> type b
ICG	International Coordinating Group
IDSR	Integrated Disease Surveillance and Response
IM	Intra-muscular
IST	Intercountry Support Team for West Africa, WHO
IV	Intravenous
LP	Lumbar Puncture
MenAfriVac <sup>®</sup>	Serogroup A meningococcal conjugate vaccine
MGG	May-Grümwald Giemsa

预览已结束，完整报告链接和二维码如下：

[https://www.yunbaogao.cn/report/index/report?reportId=5\\_25556](https://www.yunbaogao.cn/report/index/report?reportId=5_25556)

