A39 *Meningococcal disease*

(Meningococcal infection A39
Meningococcal meningitis A39.0
Meningococcemia A39.4)

RATIONALE FOR SURVEILLANCE

Meningococcal disease occurs sporadically and in epidemics of meningococcal meningitis; the majority of cases occur in children <5 years. Meningococcal meningitis is the only form of meningitis to cause epidemics. The case-fatality rate is between 5% and 15%. While sub-Saharan Africa is the most severely affected area, epidemic meningococcal disease can affect any country. Meningococcal bivalent A, C and quadrivalent A, C, Y, W135 vaccines are available; immunization of the entire population should be considered to halt epidemics due to A and C serogroup meningocci. In some countries, vaccine is used for close contacts of patients with meningococcal disease due to A, C, Y or W135 serogroups in order to prevent secondary cases. Immunization is also indicated for people travelling to endemic areas. Surveillance is needed to measure and detect epidemics and establish the impact of both epidemic and non-epidemic disease.

RECOMMENDED CASE DEFINITION

Clinical case definition

An illness with sudden onset of fever (>38.5°C rectal or >38.0°C axillary) **and one or more** of the following:

- neck stiffness
- altered consciousness
- other meningeal sign **or** petechial or purpural rash

In patients <1 year, suspect meningitis when fever accompanied by bulging fontanelle.

Laboratory criteria for diagnosis

- Positive CSF antigen detection **or**
- Positive culture

Case classification

Suspected: A case that meets the clinical case definition.

Probable: A suspected case as defined above **and:**
Turbid CSF (with or without positive Gram stain) **or**
ongoing epidemic and epidemiological link to a confirmed case

Confirmed: A suspected **or** probable case with laboratory confirmation.

RECOMMENDED TYPES OF SURVEILLANCE

At peripheral level, individual patient records should be maintained (particularly for contact tracing).

Immediate reporting of all suspected or probable cases from peripheral level to intermediate level.

All cases must be investigated.

Follow-up data on the organism identified and on patient outcome to be sought by the intermediate level.

Routine weekly / monthly reporting of aggregated or case-based data, from intermediate to central level.

A parallel surveillance using reference laboratories for meningococcal diseases may provide detailed microbiological data on serogroup and genotype on a central basis (useful for epidemiological analysis).

Note 1: In countries with limited surveillance infrastructure, 2 approaches to clinical surveillance can be integrated:

A limited amount of data reported from all health sites (e.g., new cases and deaths by week).

More extensive data reported from selected referral health centres.

Note 2: Surveillance of vaccine coverage may be undertaken in areas of mass vaccination or where vaccination for meningococcal disease is part of routine vaccination.

RECOMMENDED MINIMUM DATA ELEMENTS

CLINICAL SURVEILLANCE

Case-based data for individual patient records and for reporting

- Case classification (suspected / probable / confirmed), unique identifier, age, sex, geographical information, date of onset, date of consultation, vaccination status, treatment received, history of contact with a case, close contacts

Aggregated data for reporting

- By case classification (suspected / probable / confirmed), age group, week, geographical area, and outcome

LABORATORY SURVEILLANCE

Isolate-based data for reporting

- Unique identifier, age, sex, date of onset, date of specimen, specimen type, serogroup
- Genotype

Aggregated data for reporting:

- Cases by age group, specimen type, serogroup, genotype

RECOMMENDED DATA ANALYSES, PRESENTATION, REPORTS

- Incidence by week, month, geographical area and age group
- Use of incidence data to set epidemic thresholds by comparing weekly incidence rates during the same period in 3-5 previous non-epidemic years (flagging)
- Distribution by serogroup and genotype (if available)
- Vaccine coverage (if available)

PRINCIPAL USES OF DATA FOR DECISION-MAKING

- Detect and control epidemics of meningococcal disease as early as possible, especially in areas such as developing countries where epidemic meningitis raises particular difficulties
- Strengthen capacity for emergency response to epidemics of meningococcal disease
- Mobilize immunization activities
- Monitor immunization coverage by geographical area to monitor progress and identify areas of poor performance
- Monitor impact of vaccination on disease incidence and vaccine efficacy during epidemics

SPECIAL ASPECTS

Deciding when an epidemic is occurring or likely to occur (setting thresholds)

Hyperendemic areas: 15 cases per 100 000 per week averaged over 2 consecutive weeks. Once epidemic disease is detected in a given area, a lower value (say 5 cases/100 000 per week) may be used as a threshold in contiguous areas.

Other situations: 3 to 4-fold increase compared with corresponding time period in previous years, **or**

Doubling of cases from one week to the next over a period of 3 weeks.

CONTACT

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