

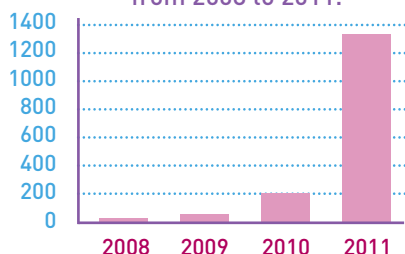
What action to take and general information

Measles

Measles epidemic: the exponential phase

A re-emergence of measles cases has been occurring in France since 2008 and the circulation of the virus has intensified since 2010. Currently, a very large unceasing wave of infection has hit in certain regions (see press conference DGS/INVS from 23/03/2011: http://www.invs.sante.fr/surveillance/rougeole/Point_rougeole_220311.pdf).

The average number of IgM positive measles cases detected each month at Biomnis from 2008 to 2011.



Geographical distribution

The virus circulates mainly in the southern half of the country, which corresponds to the zone with lower immunisation coverage. Half of all declared cases since January 2011 come from the Rhone-Alps region.

Affected population

The infection mainly arises in those aged under 30 (the older population would have naturally contracted the infection during childhood). This infection particularly affects the very young (under 1 years old) and the French Institute for Public Health Surveillance notes that the incidence increases in young adults (20-30 years old). The infection rate has increased 5 fold in comparison to previous years.

Measles is a potentially serious disease

Measles is a potentially serious disease and is not simply a

"benign childhood disease". It can provoke pulmonary complications (273 cases out of 5021 declared cases in 2010), neurological complications (8 cases out of 5021 in 2010) and can even cause death (5 cases since 2009). Neurological complications can lead to irreversible effects.

The average rate of hospitalisation corresponds to approximately 1 in 3 declared cases. However hospitalisation reaches a maximum level in these two populations: 38% in children under 1 years old and 46% in those over 20 years. However, one must consider that a more exhaustive declaration of a measles infection is made when the patient is hospitalised, this in turn maximises the estimation of the hospitalisation rate.

Impact monitoring

In order to monitor infection more efficiently and with the aim to eradicate infection before 2015, measles was declared a "disease that must be declared" in 2005. The diagnostic criteria are clinical / epidemiological and/or biological via pathology testing. Pathology confirmation testing is always advisable.

- As soon as epidemiological and clinical suspicions are raised or on detection of positive measles IgM the *alert* must be immediately raised by the Clinical Pathologist testing the sample and/or by the Regional Social Services Department Medical Inspector in their place of practice (by telephone or fax etc.).
- In addition, the Inspector and / or Clinical Pathologist must imperatively complete a *notification form* (http://www.invs.sante.fr/surveillance/mdo/fiche_rougeole.pdf), which is then faxed to the Regional Social Services Department as soon as possible.

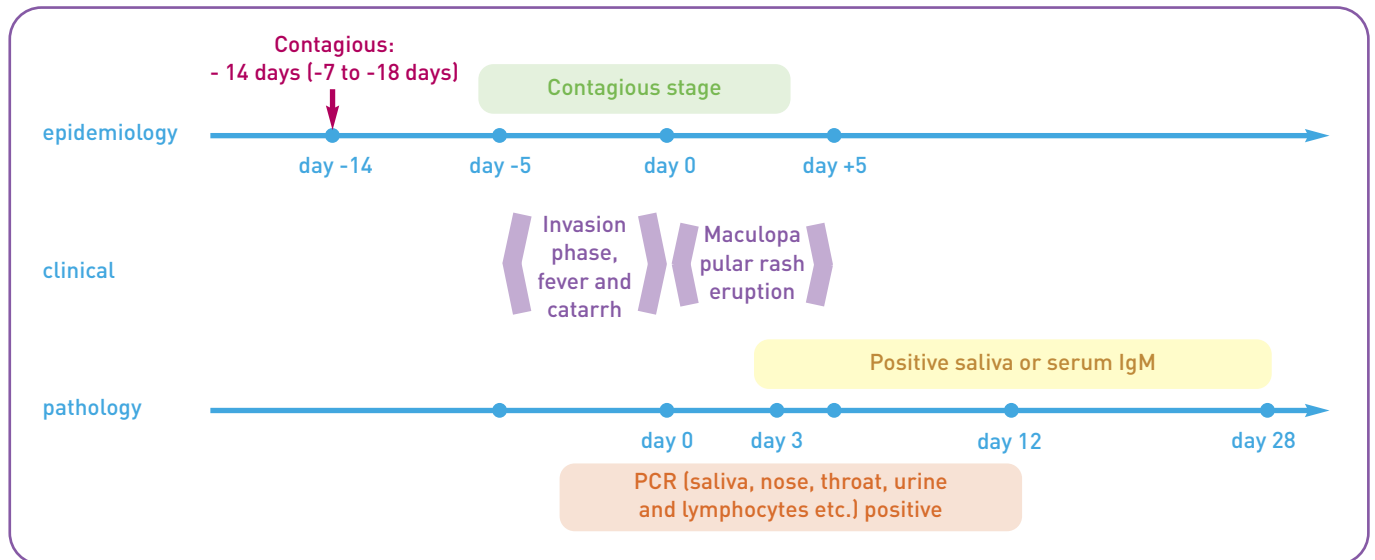
This double circuit ensures a more exhaustive collection of information for measles cases.

The epidemiological mechanism

This epidemic is due to insufficient immunisation coverage in France (although improvements have been seen these last few years). Coverage is 90% for an injection given at 2 years old whereas the recommendation is greater than 95%. A serum epidemiological investigation (2009-10) showed that over 1.3 million subjects were not immunised, despite the WHO objectives fixing a maximum of 600,000 for non-immunised subjects.

Pathology testing confirmation

Epidemiological, clinical and pathological details



Pathology testing confirmation is an important element of the monitoring procedure. Indeed, the French Institute for Public Health Surveillance estimates that only 50% of measles cases (i.e. 1 in 3 since the beginning of 2011) have been declared. Clinical diagnosis relies on the following:

- The detection of specific IgM antibodies in the blood (testing performed by private or public specialised medical pathology laboratories) or in saliva. Saliva kits can be ordered by the doctor from the French Institute for Public Health Surveillance and sent by post to the National Reference Centre for Measles and Paramyxoviridae, Caen. The IgM antibodies appear in the first 1-3 days following eruption and disappear after approximately 1 - 2 months. *(Please note that the National Reference Centre run RNA detection tests first and then, upon finding a negative result, perform IgM screening).*
- Detection of measles RNA can be performed in samples such as: rhino pharyngeal secretions, bronchial secretions, BAL, urine, blood lymphocytes and CSF. Detection is positive in the invasion phase before eruption and for up to 12 days after. Detection screening can be performed by specialised laboratories or by the National Reference Centre on saliva samples collected at the beginning of the eruption stage. The NRC then proceeds with genotyping of the viral strain. This detection screening is of particular interest in the case of a hospitalised patient (early detection), imported cases (genotyping of importation strains), following neurological complications (CSF) and in the case of measles in a patient previously vaccinated (incomplete vaccination) or vaccinated via contamination.

Circulation of strains

Between 2003 and 2007, the rare measles strains were identified due to genotyping of the varied importation strains. The re-emergence seen from 2008 shows a predominance of the genotype D5.

Actions to be taken following contamination

In the first 72 hours following the identification of contamination, it is recommended to administer a vaccine injection (see note from the French Directorate General of Health 2009: http://www.sante.gouv.fr/IMG/pdf/09_334t0pdf.pdf) on the basis of their anti measles immunity status in their vaccination record (vaccination or natural infection). Early vaccination can stop the infection from occurring.

The interest of administering polyvalent immunoglobulins following exposure of a clinically confirmed case is evaluated case by case in light of the context (pregnant mother, immunosuppressed patient, child under 6 months whose mother is infected with measles etc.) and can be performed up to 6 days after contamination.

The major factors in stopping a current infection

They consist of reinforcing the vaccination protection in young children and the booster vaccinations in adolescents and young adults under 30. The aim is to give two injections as data shows an insufficient sero conversion rate following only one injection (http://www.sante.gouv.fr/IMG/pdf/09_334t0pdf.pdf).

From a communication by Sylvie Gonzalo, Biomnis Lyon.

