CONSULTATIVE SIGNAL ASSESSMENT

PRIMARY RISK ASSESSMENT

EVIDENCE BASED RISK ASSESSMENT

PUBLIC HEALTH EVENT ASSESSMENT

CORYNEBACTERIUM DIPHTHERIAE INFECTION CASES AMONG ASYLUMSEEKERS IN EUROPE AND IN BELGIUM

Date of the signal	Date of the PRA	Signal provider	Experts consultation	Method
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Signal	
Signal	As of 16 September 2022, 67 cases of diphtheria among asylum seekers have been reported to ECDC for the year 2022 by 6 European countries, including Belgium. Most of these cases are presenting with cutaneous diphtheria caused by *C. diphtheriae*. Cases of respiratory diphtheria have also been reported, including one fatal case. The cases are mainly reported in males and frequently linked to reception centres for asylum seekers (and coming from Afghanistan). In Belgium, 4 cases of cutaneous diphtheria (*C. diphtheriae tox+*) have been identified up to now. One case occurred in March 2022 and 3 in September, in young adults coming from Afghanistan.

Description	
Cause known?	Diphtheria is a disease caused by bacteria *Corynebacterium diphtheriae* and *Corynebacterium ulcerans*. It can lead to difficulty breathing, heart rhythm problems, and even death. Transmission occurs through respiratory droplets, or contact with infected open sores or ulcers.
Unexpected/unusual	Unusual in Belgium. An increase in the number of *C. diphtheriae* cases has been reported at EU level since 2011, but cases in Belgium remained sporadic (0 to 3 cases per year between 2015 and 2021).The last reported death related to respiratory diphtheria occurred in 2016 in a 3-year-old girl. apart from the 4 cases among asylum seekers, 2 cases were detected: 1 *C.dipteriae* and 1 *C.ulcerans* both tox+ (all cutaneous diphtheria).
Severity	The case fatality rate of respiratory diphtheria in unvaccinated individuals can be high if no availability of diphtheria antitoxin (DAT), and in a context of lack of knowledge of the disease by health practitioners.
Dissemination Low/medium	**Low for general population**, in a context of a high vaccination coverage in Belgium (coverage >90% for DTP4 since >10 years). However, carriage (and thus transmission) of toxin producing stains of Corynebacteria is possible among both unvaccinated and vaccinated healthy individuals, as the vaccine protects against the toxin but not against the bacterium. Both cutaneous diphtheria cases and their contacts can develop respiratory diphtheria (if not complete vaccination). **Medium for the specific population** in migrant reception centres, including the staff, especially if immunosuppressed or without a completed vaccination scheme. In this setting, more cases can be expected in the coming weeks/months. The total number of cases will however remain limited.
Risk of (inter)national spread	Cases occurring now in Belgium are linked to importation in an international context.

Preparedness and response	
Preparedness	The Superior Health Council made guidelines about treatment and prophylaxis of contacts in 2019. Each laboratory of Clinical Biology should be able to cultivate *C. diphtheriae* and *C. ulcerans* and refer the strain for confirmation of toxigenicity and further characterization to the National Reference Centre (NRC). The 4 confirmed cases were diagnosed by culture in other laboratories. But many labs lack experience and prefer to refer the samples. It is very important that the prescribing physician informs the lab of a suspicion of diphtheria, as corynebacteria are often present in a mixed flora and will

	not always be detected without the use of selective media, or at least awareness of the technician. In a previous CSA in 2016 about toxigenic diphtheria cases in Belgium (updated in 2017), it was decided to rapidly buy DAT to have a strategic stock in Belgium, to find long-term solution for a joint purchase of DAT with other European countries, to create a procedure describing to procure DAT and to develop guidelines for practitioners. The procedure on how to procure the DAT in case of need exists but there is **no more Diphtheria Antitoxin – DAT available in Belgium.**
Specific control measures (surveillance, control, communication)	Fedasil has already been informed on the epidemiological situation, diagnosis and medical management of cases as well as the risk for the staff in medical centres receiving asylum seekers (they drafted a procedure for management when there is a (suspected) case). Information on diphtheria and vaccination has previously been given to general practitioners in a letter at the start of the crisis in Ukraine, and arrival of Ukrainian refugees.
Public health impact	
Public health impact in Belgium Low	The number of cases in Belgium is expected to remain limited, with a low risk for public health in Belgium. However, the disease is associated with a high case fatality rate while no curative product (DAT) is available in Belgium (N.B. the treatment of cutaneous diphtheria consists of antibiotic therapy; antitoxin is usually not necessary given the absence of pseudomembranes or cardiac involvement. However, the occurrence of respiratory diphtheria is possible). In addition to the absence of a stock in the country, there is also a lack of availability of the product on the European market and there is no legal context to import it. Overall, there is a global lack of awareness for health practitioners regarding rare infectious diseases (notification, case management, diagnostic and treatment).
Recommendations (surveillance, control, communication)	• Inform physicians on the risk of Diphtheria in asylum seekers. • A strategic stock of DAT should be made available, or an agreement should be made with a neighbouring country to allow quick access to DAT. • Vaccination of all immigrants (including displaced adults from Ukraine not passing through Fedasil reception centres) should be available free of charge in all regions. • Vigilance for skin lesions at the intake of asylum seekers.
Actions	• Follow-up on the decisions taken by the RMG in 2017: - *Need for a rapid solution to have stocks of medical products for treatment of rare infectious diseases (MPRI) (DAT, botulism antitoxin, tetanus, rabies immunoglobulins, …) in Belgium -> FPS Public Health* - *Long-term solution for a joint purchase of DAT (and of botulism antitoxin and rabies immunoglobulins) with other European countries (cf. Joint Procurement Action) -> FPS Public Health* • If issues with procurement of antitoxin would be encountered, options for European collaboration should be explored. • Communication on the current cases and the guidelines in Belgium to physicians through the Flash (planned beginning of October) -> Sciensano/regions.

Update 18/10/2022

Since the beginning of 2022 and as of 19 October, 97 cases of diphtheria among migrants have been reported in Europe, by six EU/EEA countries (Austria, France, Germany, Norway, Spain and Belgium), as well as Switzerland and the UK. Among these cases, the majority presented with the cutaneous form, but not all (Source: ECDC). According to the ECDC, the increase of cases reported among this group and the occurrence of similar outbreaks in multiple EU/EEA countries, is unusual and needs to be carefully monitored alongside the implementation of necessary public health measures to avoid further spread[1].

In Belgium, 5 more cases of cutaneous diphtheria have been reported on Wednesday 20th of October, in one adult and 3 non accompanied minors from Afghanistan, and one adult from Syria, bringing the total at 9 cases in 2022. Meanwhile, the reception situation for migrants in Belgium has particularly deteriorated in recent days. Many people do not have a place in a reception centre and sleep on the street. This concerns both registered asylum seekers for which no place is available in a reception centre, or those that have not yet been able to register due to long waiting times. Following this situation, the NGO Doctors without borders (MSF) opened a medical post in Brussels.
Following recommendations of the previous Risk Assessment, MSF physicians have been informed about the risk of diphtheria. So far, they are empirically treating suspected cases with antibiotics. Wound swabs have not been taken as there is both a lack of budget and no follow-up possible.

This situation leads to the following risks regarding diphtheria:

- Lack of laboratory diagnosis and possible underdiagnoses make it very complicated to monitor the situation from an epidemiological point of view.
- There is a risk of serious, possible lethal respiratory diphtheria in under-vaccinated and unvaccinated contacts of the cutaneous diphtheria cases:
    - The risk is highest for unvaccinated children. These are usually vaccinated by ONE/K&G or school medicine but the delays are often long (several months).
    - Adults receive a first dose of vaccine upon being admitted in an asylum centre. Currently, the registration time is very long, the centres are saturated and hence vaccination is delayed. MSF is not carrying out vaccination activities and has not planned a budget to provide vaccination.

Recommendations

- In order to monitor the situation from an epidemiological point of view, a wound smear should be performed for each suspected case of cutaneous diphtheria, even in unregistered persons that seek medical care at the first line primary health posts in Belgium. Costs for the laboratory analyses will be covered by Fedasil.
- Asylum seekers, especially children, need to be vaccinated as quickly as possible. As children are vaccinated through the existing system there are 2 options:
  (1) accelerate/prioritise the vaccination of children at ONE/K&G and CLB/PMS level or (2) vaccinate children at the registration point (with priority follow-up vaccination by the regional existing institutions). Access to vaccination could be done at the MSF medical post, if vaccines are made available by AZG/ONE (especially if there is a long delay before registration).
  It would be also necessary to register all vaccines in one system (as it is impossible now to ensure good follow-up of the vaccination).
- Vaccination of asylum seekers in reception centres must be accelerated.
- Raise awareness of emergency services/hospitals likely to receive asylum seekers.

[1] https://www.ecdc.europa.eu/en/publications-data/increase-reported-diphtheria-cases-among-migrants-europe-due-corynebacterium

Recommended vaccines

For a primary vaccination in adults, Boostrix/Triaxis is recommended, and Boostrix/Triaxis Polio if the person comes from a country where polio circulates.

For children and catch-up vaccination in adults, it is recommended to follow the CSS remedial schedule : https://www.health.belgium.be/fr/avis-9111-vaccination-de-rattrapage-fiche