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INSTITUT SCIENTIFIQUE
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Dienst Epidemiologie van Infectieziekten

Service Epidemiologie Maladies Infectieuses

Risk Assessment Group

PRIMARY RISK ASSESSMENT

Cases of tularaemia in Belgium

Date of the signal	Date of the RA	Signal provider	Experts consultation	Method
06/03/2013	**23/03/2015**	CHU UCL Dinant-Godinne	**Permanent experts:** Dr Sophie Quoilin, Dr Daniel Reynders, Dr. Valeska Laisnez, Dr Carole Schirvel, Mr Jean-Marie Trémérie, Dr Laurence Nick, Dr. Caroline Theugels, Mme M. Mendez. **Specific experts :** Bénédicte Delaere, CHU UCL Dinant-Godinne, David Fretin, Reference Laboratory (Coda-Cerva).	**Email consultation**
Date of update	**Closing date**			
03/06/2015				

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Signal	Between March 2012 and April 2015, four cases of ulcero-glandular tularemia have been reported by the CHU UCL Dinant-Godinne compared to 3 cases reported over a time period of more than 60 years previously (from 1950 to 2011). Two cases were hunters. The first one handled fresh wild boar meat with an injured finger. The second case reported a possible tick bite during hunting. The most recent cases are a trailer, running in the forest area around Maredsous, who didn't recall any bite or wound; a person with finger injury while working in his garden that had been turned over by boars in Wépion. Tularemia has a broad geographical distribution in Europe, and there is evidence which suggests local emergence of the disease in several European countries. In 2012, 1002 cases of tularemia in humans were reported in 26 EU/EEA countries (0.21/100 000 population), with an increase of 37% compared to 2011. Sweden (n=590) and Finland (n=233) account for the majority of cases. Since 2013, the Netherlands reported 4 human cases of tularemia (of which 2 were living in provinces bordering with Belgium) and 5 infections in hares. The disease is also reported in Eastern European countries, from where animals for hunting in Belgium are frequently imported.

Description		**Score**	**Description / arguments**
1	Cause known?	Yes	Tularaemia is a zoonotic disease caused by the intracellular bacterium *Francisella tularensis*. Two types of *F. tularensis* are recognised on the basis of cultural characteristics, epidemiology, and virulence in some hosts, and four subspecies have been identified. *F. tularensis* subsp. *tularensis* (Type A) is almost exclusively reported in North America. In Europe, *F. tularensis* subsp. *holarctica* (Type B) is the most common species, which is less virulent. The main animal reservoirs are rodents, rabbits and hares. Wild boar and foxes are accidental hosts. Transmission to humans occurs through contact with infected animals or contaminated environments, or through arthropod vectors. Depending on the site of infection, tularaemia has six characteristic clinical variants: ulceroglandular (the most common type representing 75% of all forms), glandular, oropharyngeal, pneumonic, oculoglandular, and typhoidal.
2	Unexpected/unusual	Unusual	Since 1950, 7 cases only have been reported in Belgium, including the four most recent cases in 2012, 2013 and 2015. In a study on a population of 135 persons at risk (veterinaries, livestock farmers and hunters) in Belgium in 2014, the seroprevalence of tularaemia was 2.2% (A. Robert, UCL, personal communication). In studies in Germany, the seroprevalence of tularaemia in the general population ranged between 0.2% and 2.3% and was 1.7% in hunters. In wildlife (foxes, raccoon dogs and wild boar), a seroprevalence of 7.5% was observed. In Austria 0.5% of

			military personnel were seropositive for *F. tularensis*.
3	Severity	Low	The lethality of the infection with biovar *holarctica* (type B) is less than 1% in the absence of treatment, but severe manifestations are described.
4	Dissemination (Low/Medium/High)	Low	People at risk are hunters, farmers, veterinarians, workers in forest area, laboratory staff and anyone handling meat of infected animals. However, in neighboring France, surveillance data from 2002 to 2012 identified exposure to dust aerosols during outdoor leisure activities to be a major source of contamination.
5	Risk of (inter)national spread	Low	

Preparedness and response			
6	Preparedness	High	Tularaemia is a mandatory notifiable disease in the 3 regions, but cases might be undiagnosed. Expertise for diagnosis exists at the reference laboratory (Coda-Cerva).
7	Specific control measures (surveillance, control, communication)		None so far.
Public health impact			
A	Public health impact in Belgium (Low/Medium/high)	Low	Very few cases, but potentially emerging disease.
B	Recommendations (surveillance, control, communication)		ECDC recommends people visiting to endemic areas to be informed about the disease and contamination risks.
C	Actions		- Information of the RMG; - Information of hunters in Belgium about the disease and contamination risks (especially handling of dead wild animals); - Seroprevalence study among Belgian hunters and in animal reservoirs (in areas with high tick density).

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