



Notifiable diseases

Follow up

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Legal instruments and competence

Laws

- Wallonia:

Royal Decree du 1th March 1971 about prevention of infectious diseases

- Brussels:

Decree of 19 juillet 2007 concerning preventive healthpolicy and decree of 23 april 2009 -> list of infectious diseases which have to be reported

- Flanders

Decree of 21 November 2003 concerning preventive healthpolicy -> list of infectious diseases which have to be reported. Latest decree defined new list from 1 January 2017 on.

Communities competence

- Notification depending on postal code (Vlaanderen, Fédération Wallonie Bruxelles or Bruxelles).
- Schools in Bruxelles: Vlaanderen or Fédération Wallonie Bruxelles



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List of notifiable diseases

- Anthrax;
- Botulism;
- Brucellosis;
- Cholera;
- Chikungunya;
- Dengue;
- Diphtheria;
- Enterohemorrhagic E. coli-infection; HUS
- Haemophilus influenzae type b invasive infection;
- MDRO
- Hepatitis A;
- Legionellosis;
- Leptospirosis
- Malaria autochthonous/European;
- Measles;
- Invasive meningococcal disease;
- Pertussis;
- Pest;
- Poliomyelitis (AFP);
- Psittacosis;
- Q-fever;
- Rabiës;
- Smallpox;
- SARS, MERS_CoV and new influenza;
- Tuberculosis;
- Tularemia;
- Viral hemorrhagic fever;
- Food intoxications (two or more cases);
- Typhoid fever or paratyphoid;
- Typhus fever;
- West Nile virus infection;
- Yellow fever;
- All other infectious problems with specific presentation



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Differences between communities/regions

Brussels

Gonorrhoea
Syphilis
Hepatitis B and C
Hantavirus
Cluster scabies
Shigellosis
Gas infection
Trichinella
Zikavirus infection

Flanders

Gonorrhoea
Syphilis
Hepatitis B (acute)
Cluster scabies
Shigellosis
Gas infection
Zikavirus infection

Wallonia

Congenital rubella
Congenital syphilis
Listeriosis



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Why notification?

- International health policy towards eradication **poliomyelitis (AFP), measles**
- To ensure public health workers that persons who are already ill receive appropriate treatment;
 - To trace contacts who need vaccines, treatment, quarantine, or education; **hepatitis A, tuberculosis**
 - To investigate and halt outbreaks; **HUS, measles, legionellosis**
 - To eliminate environmental hazards; **food intoxications, legionellosis**
 - and to close premises where spread has occurred.
- Surveillance of notifiable conditions helps public health authorities
 - To monitor the impact of notifiable conditions,
 - To measure disease trends, **pertussis, MDRO**
 - To assess the effectiveness of control and prevention measures, **tuberculosis**
 - To identify populations or geographic areas at high risk, **measles**
 - To allocate resources appropriately,
 - To formulate prevention strategies,
 - and to develop public health policies.
- Monitoring surveillance data enables public health authorities
 - To detect sudden changes in disease occurrence and distribution, (**specific problem like hantavirus**)
 - To identify changes in agents and host factors, **mumps**
 - To detect changes in health-care practices, **MDRO**
- To address fear and panic in the population **invasive meningococcal disease**



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Examples of interventions



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International health policy towards eradication: Poliomyelitis, measles and rubella

- WHO imposes eradication of the 3 diseases
- Poliomyelitis: still endemic in some countries of the world. The surveillance of Acute Flaccid Paralysis (AFP) has to be sustained in Belgium and is not good enough (only 7 AFP notified in 2015)

→ It should be 19

- Measles and rubella should have been eradicated by 2020 and congenital rubella <1 case/100000 of live births



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**To trace contacts who need vaccines,
treatment, quarantine, or education:**

Measles



Hot topic



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To eliminate environmental hazards

Norovirus

- May 2016: Sudden increasing of Gastro-intestinal disorders in camping in Wallonia → emergency plan (112)
- 6 hospitalisations, > 40 cases.
 - Vomiting, diarrhea, abdominal pains
 - Secondary cases including medical staff
 - One month ago, outbreak of gastroenritis among dutch people not notified



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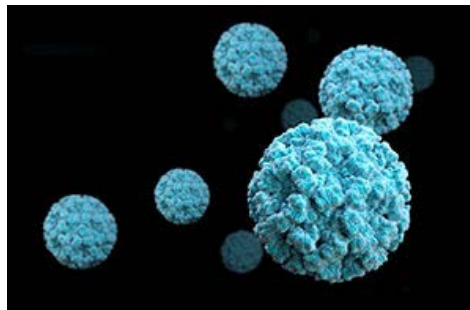
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Norovirus

- Environmental (resistance) – Food – person to person!
- Low infectious doses
- Well known as one of the major cause of gastroenteritis (sporadic or outbreak presentation in Schools, kindergarten, nursing home, summer camps(!))



Source: CDC



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Norovirus

Investigation in collaboration with AFSCA/FAVV, federal inspection, municipal authorities and NRC

- Investigation: no common dish.
- Sampling:
 - Human: **NOROVIRUS +**
 - Environment (water) sampling → **NOROVIRUS +**
(Spring water)
- Environmental measures (disinfection, availability of bottles water)
- Closure of the place decided by the Town council
- Notification to international public health authorities due to external tourists



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TWENTY DITACUATIONS AU
CAMP... se d'une

Dinant: le camping de Villatoile rouvre après 3 semaines de mise en quarantaine



Radio | .

ir le site

Insol



To investigate and halt outbreaks : HUS

- ≠ situations of EHEC O157 in kindergarten in Wallonia
- Sampling (children, nursery nurse, family if necessary)
- Eviction of asymptomatic holder, people with GI disorders and cases of active infection.(→ two negatives feces)
- Investigation:
 - Food origin? (AFSCA/FAVV)
 - Person to person transmission
- Collaboration WIV-ISP, NRC



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To investigate and halt outbreaks : legionellosis

- Notification of a legionellosis case :
 - Investigation : contaminated during holidays in Italy!
 - Notification of this imported case to national health authorities in Italy:
 - Specific Channel : **ELDSNET (European Legionnaires' Disease Surveillance Network)**
 - **Investigation done by local authorities**
- Other specific case:
 - Investigation: possible contamination in the nursery home → environmental sampling



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To measure disease trends

Tuberculosis

2013-2014

833 notifications of tuberculosis

of which 70% infectious pulmonary cases (=583)

In other words smear positive or aspirate positive
and/or culture positive

We listed all contacts of infectious cases

We tested the listed cases as far as possible



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To measure disease trends Tuberculosis

Classification rings

intensity	Extent of space where exposure took place *	Global extent of the space	Total duration of contact			
			longlasting		Less longlasting	
			Daily of >48 hours	weekly of 6-48 hours	incidental of 1-6 hours	sporadic of <1 hour
close	Car	<5 m3	Ring 1	Ring 1 en 2	Ring 2	Ring 1
	Room	10-30 m3	Ring 1	Ring 2	Ring 2	Ring 2 or 3
less close	Class/office space	100-200 m3	Ring 2	Ring 2 of 3	Ring 3	Ring 3
	Closed space, larger than a house**	>200 m3	Ring 2	Ring 3	Ring 3	geen

* Operationalisation of factors: extent of space, survival time of bacteria (airpurification and circulation) and ventilation

**in case the distance to the patient in this room is 1-2 meter, it should be considered as a contact in 'room'



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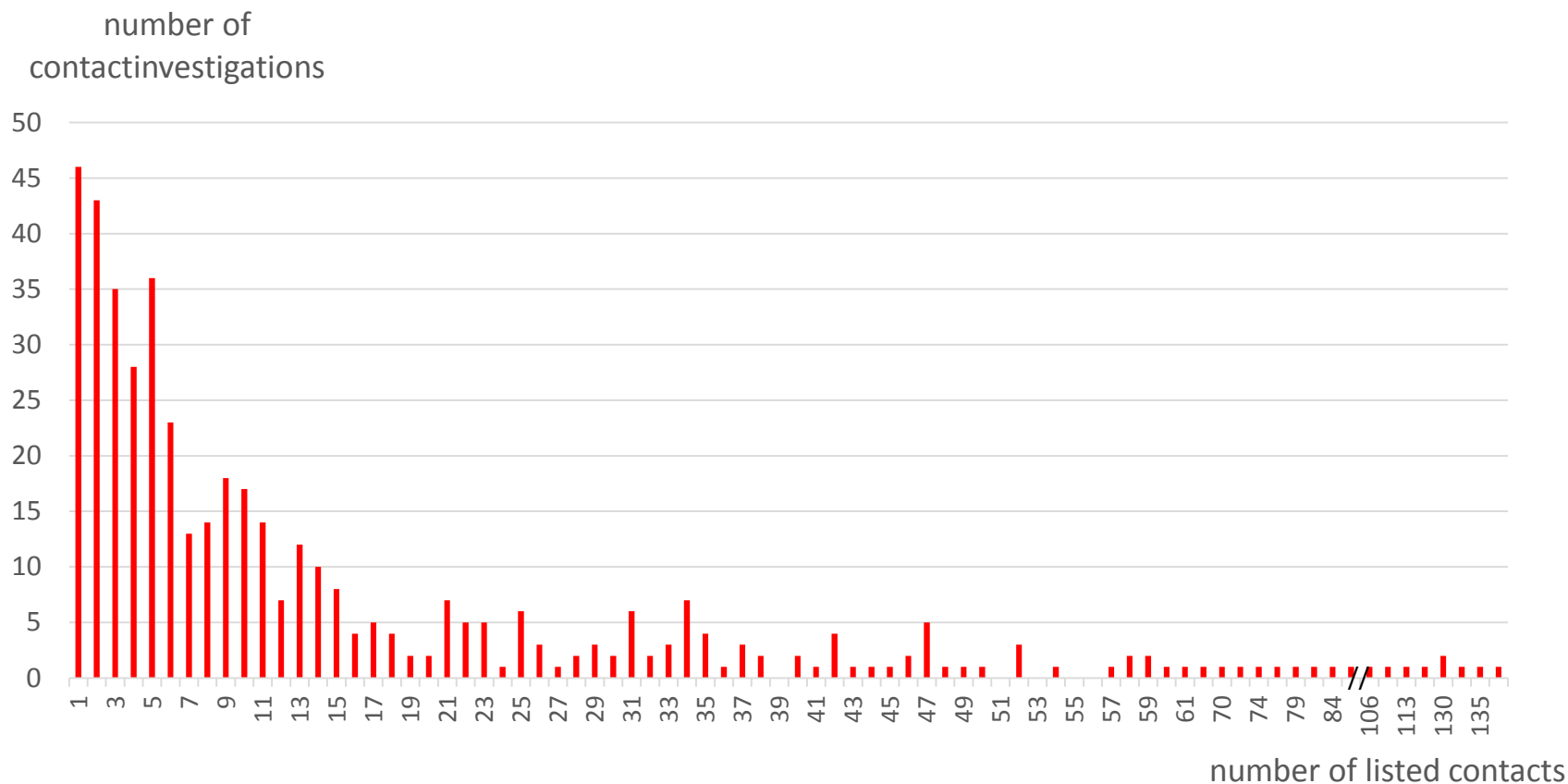
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Figuur 1 Histogram of number of casefinding investigations by listed contacts in Flanders in 2013 en 2014. The average number of contacts per infectious tuberculosis case is 17,7 and the median is 8. In 25% of cases the average number of contacts on the list is less than 4 contacts, in 75% of cases the list doesn't exceed 22 contacts.



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Tabel 1. Overview of cohorts of infectious tuberculosis cases with numbers of first and second skintests resulting in the number of active tuberculosis, number of tuberculin changes and skintestresults greater or equal to 18 mm.

Year	Number infectious tuberculosis cases	Number listed contacts	Number of read 1st skintests	Number of read 2nd skintests	Number X-ray taken	Number active TB	Number tuberculin e changes	Number of >= 18 mm (not tuberculine changes)	Contact results
2013	240	4173	2218	1858	1018	22	85	137	244
2014	219	3872	1636	1822	904	18	114	168	300
total	459	8045	3854	3680	1922	40	199	305	544



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Measure disease trends

Pertussis in well vaccinated school



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Pertussis in well vaccinated school

In a school in Zulte in 2014
many children did have a seriously long lasting cough

A few children were diagnosed as having pertussis.
In the town a higher incidence of pertussis was detected.

Could it be an outbreak of pertussis?

**Problem: expression of pertussis in vaccinated is mostly milder
taking bloodsamples in a school is not evident
consequences confirmed cases limited**



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Pertussis in well vaccinated school

Approach

Questionnaire with dummi case definition

Dummi case definition:

One of the three clinical signs

(severe cough, vomiting and cough longer lasting than 14 days)

Duration cough shorter than 8 days excluded

except for last week of investigation

Children known with a chronic lung disease excluded



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VRAGENLIJST HOESTEN

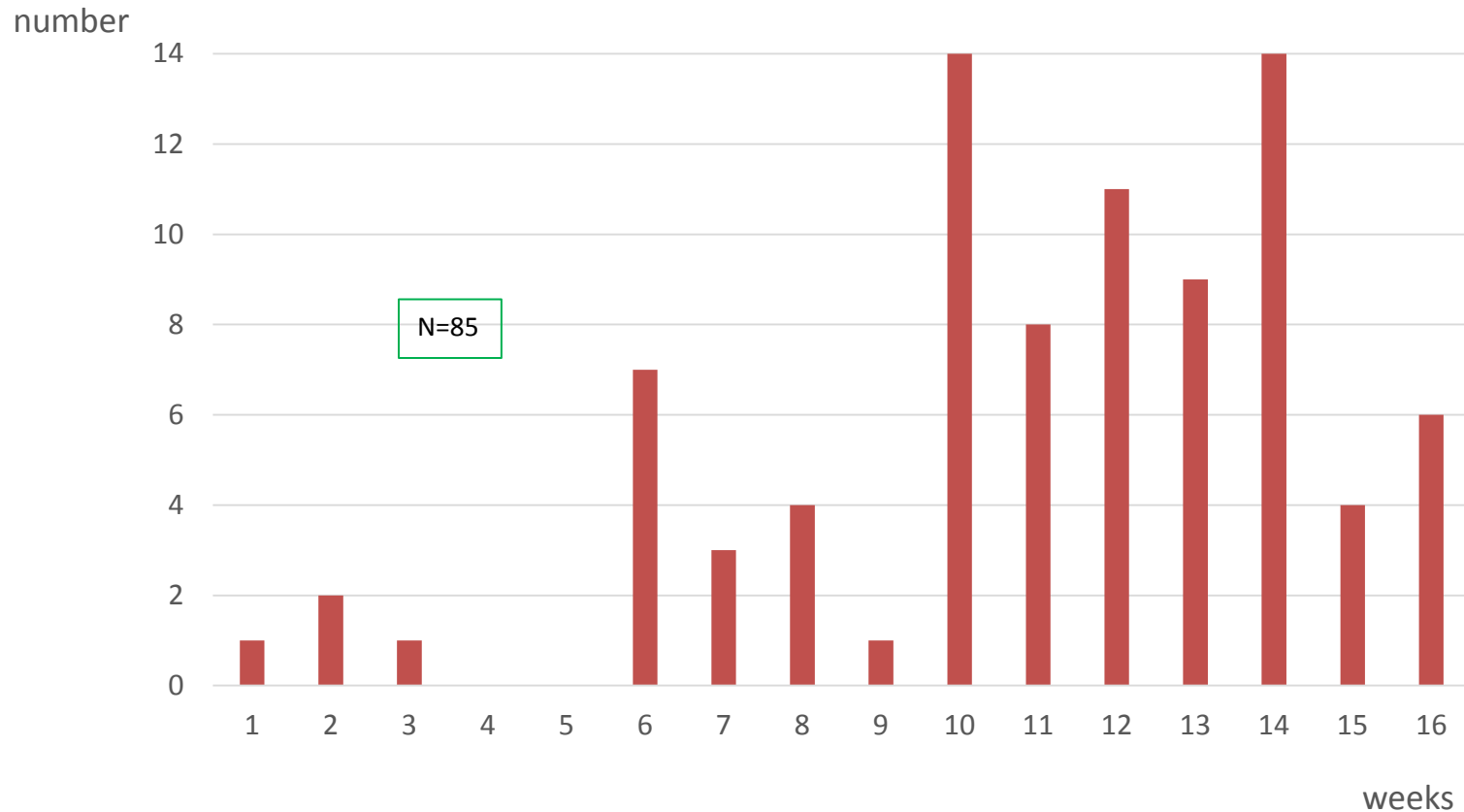
Naam kind:
Geslacht:
Geboortedatum: / /
Postcode:
Klas:
Datum van invullen vragenlijst: / /

Gelieve het antwoord te omcirkelen.

- | | | |
|--|----------------------|-----|
| 1. Heeft uw kind de laatste twee maanden gehoest?
Zo niet, dan vragen wij u alleen nog vraag 2 in te vullen
en kunt u het terugbezorgen aan de leerkracht. | Ja | Nee |
| 2. Heeft uw kind contact gehad met een kindje jonger dan 1 jaar
de laatste twee maanden? | Ja | Nee |
| 3. Is uw kind thuisgebleven vanwege deze hoest? | Ja | Nee |
| 4. Wanneer heeft uw kind voor het eerst gehoest? (ongeveer) | / / 2015 | |
| 5. Hoelang hoest uw kind of heeft uw kind gehoest? | dagen | |
| 6. Is er koorts bij geweest? | Ja | Nee |
| 7. Heeft uw kind gebraakt of heeft het braakneigingen
(gehad)tijdens het hoesten? | Ja | Nee |
| 8. Betrof het hevige aanvallen van hoesten of hoestbuien? | Ja | Nee |
| 9. Hoest(te) uw kind vooral 's nachts? | Ja | Nee |
| 10. Klaagt/klaagde uw kind over buikpijn? | Ja | Nee |
| 11. Klaagt/klaagde uw kind over spierpijn? | Ja | Nee |
| 12. Klaagt/klaagde uw kind over hoofdpijn? | Ja | Nee |
| 13. Heeft uw kind astma of een andere longaandoening (niet kinkhoest)? | Ja | Nee |
| 14. Is er iemand in zijn/haar naaste omgeving die ook hoest of gehoest heeft?
Zo ja, wie? | Ja | Nee |
| 15. Bent u met uw kind naar een arts geweest?
Zo ja, welke aandoening dacht hij/zij dat het was? | | |

Graag dit formulier ingevuld terugbezorgen aan de leerkracht op school **ten laatste tegen donderdag 29 oktober**. Alvast bedankt voor uw medewerking.

Epidemic curve outbreak dummy case definition pertussis



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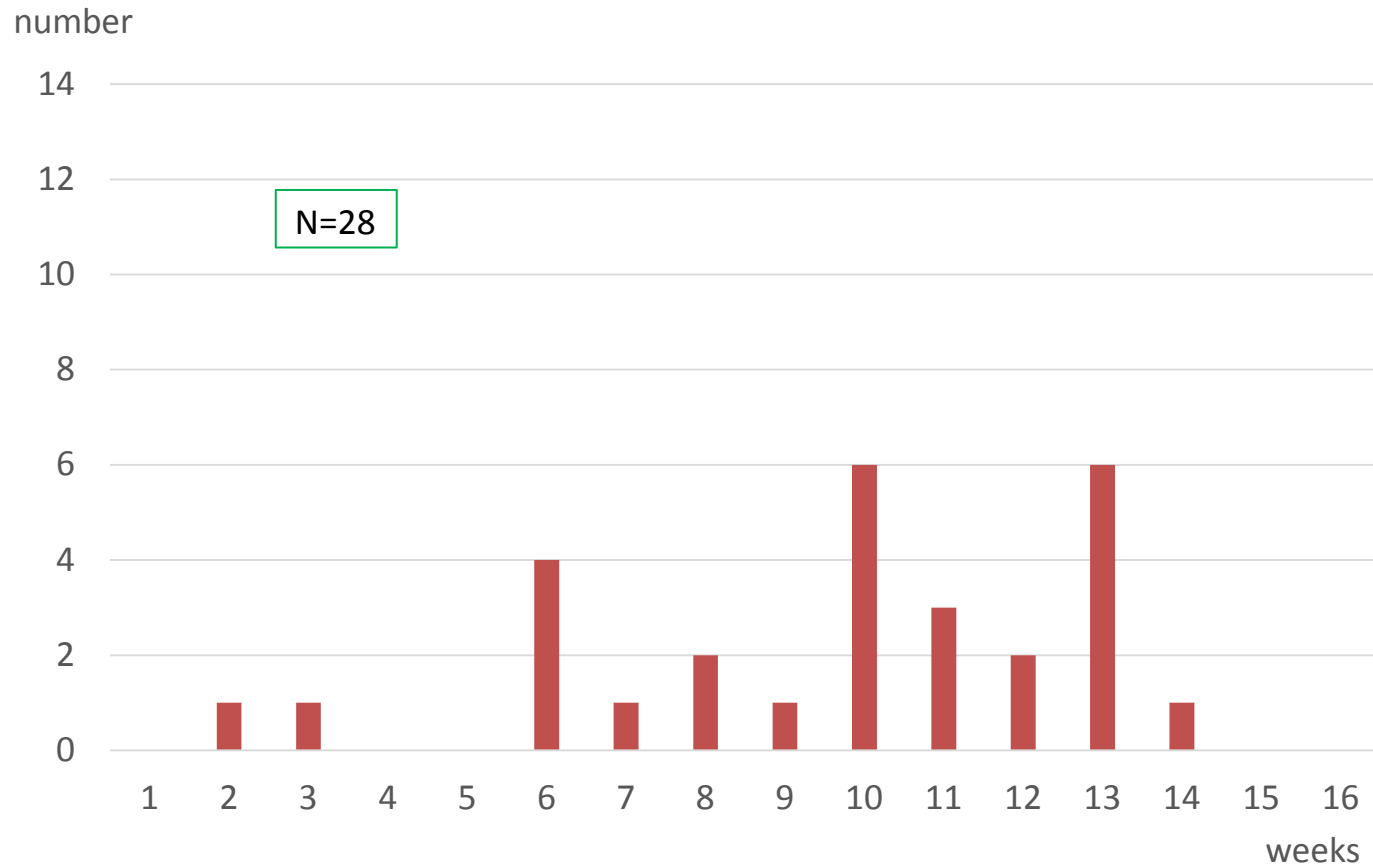
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ECDC clinical case definitions pertussis



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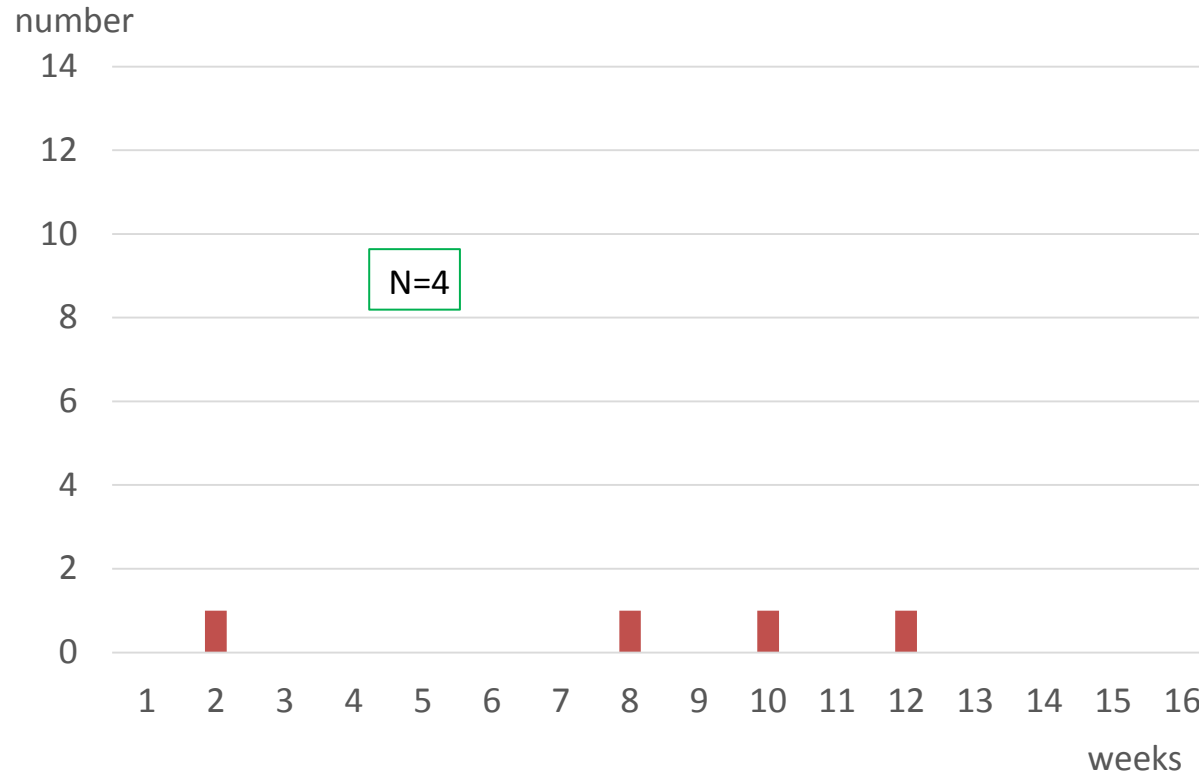
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Confirmed cases pertussis



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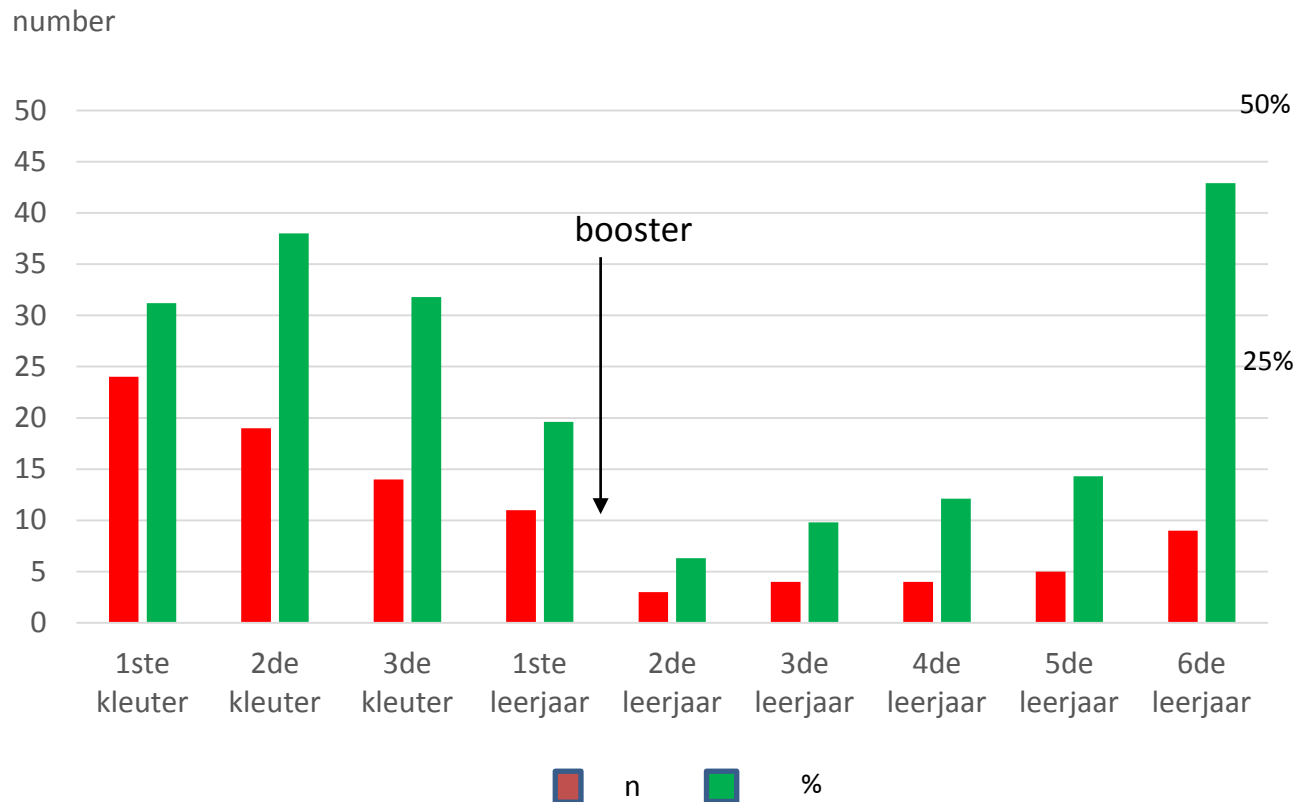
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Pertussis cases according to dummi case definition by school year



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To detect sudden changes
in disease occurrence and distribution
(specific problem like hantavirus)



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Hantavirose

AZ Klina notified four cases of the Puumalavirus infection
Possibly 2 more cases were in the proces of investigation

A plague of mice were mentioned

What do the guidelines tell about hantavirose

Literature research

How serious is the problem?



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Hantavirose

Hantavirose is a flu-like disease with in serious cases a renal insufficiency

Nephrologist advised to warn general practitioners!

Actions:

Collect E-mail addresses general practitioners in region
Letter for the GP's and having it read and adapted
by nephrologist AZ Klina

To inform municipality

To inform doctors in nearby hospitals, WIV, NRC

Risk factors

Use of list case-control study Wallonia



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Hantavirose

Interview patients

Have you seen mice

You had contact with mice

You have seen excrements of mice

You have caught mice

You have seen living mice in the house

You touched mice

You saw a litter of mice

You took a cottage into use

You chop wood

Other activities in the woods

fitness in the woods

smoking

male

heavy exercise



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Hantavirose

Results so far

- 15 cases of nephropathia epidemica
- Most of them had renal insufficiency
- Rather long period from first signs to diagnosis
- There are a lot of mice but not necessarily in the house. They were mostly not touched. Some people only report of being in the area without specific activities in the woods.



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Hantavirose

A good mastyear

- Many beechnuts lead consequently to more bank voles
- Little possibilities for prevention
- Wed cleaning mouse excrements
- Wearing mask
- Control bank voles by poison



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Channels of notification



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- Brussels:
 - Phone: 0478 77 77 08
 - Mail: notif-hyg@ccc.brussels
 - MATRABRU: website notification
<https://www.wiv-isp.be/matra/bru/connexion.aspx>
- Flanders:
 - Phone: (see <https://www.zorg-en-gezondheid.be/contact-infectieziektebestrijding-en-vaccinatie>)
 - Mail: infectieziekten@zorg-en-gezondheid.be
 - Meldingen: <https://www.zorg-en-gezondheid.be/een-meldingsplichtige-infectieziekte-aangeven>
- Wallonia:
 - Phone: 071 205 105
 - Mail: surveillance.sante@aviq.be
 - MATRA: website notification
<https://www.wiv-isp.be/matra/CF/connexion.aspx>



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*Thank you
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