Ongoing measles outbreak in Wallonia, Belgium
December 2016 - May 2017

Cellule de surveillance des maladies infectieuses
Nathalie Shodu
Collaboration

- **WIV-ISP:**
  Ms. Tine Grammens and Dr. Martine Sabbe

- **AViQ – Cellule de surveillance des maladies infectieuses:**
  Ms. Sylvie Leenen and Dr. Carole Schirvel
Summary:

1. Presentation of the disease
2. Start of the Outbreak
3. Epidemiology data
4. Conclusion
1. Presentation of the disease
1. Presentation of the disease

Symptoms:
- Cough
- Rhinitis, conjunctivitis, Koplik spots
- Maculopapular rash

Complications:
- Otitis Media - bronchiolitis (5-10%)
- Pneumonitis (2-7%)
- Keratitis
- Acute Encephalitis (1/1000)

Pregnancy:
- risk of miscarriage
- premature deliveries
- fetal mortality

Slide from presentation by Dr. Sabbe Martine, Pentalfa, KUL, 23 Mar 2017
Laboratory diagnosis:

<table>
<thead>
<tr>
<th>Sample type</th>
<th>Analysis</th>
<th>Time sampling</th>
<th>Shipment</th>
<th>Conservation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum</td>
<td>IgM and IgG</td>
<td>7-28 days after start rash</td>
<td>As soon as possible</td>
<td></td>
</tr>
<tr>
<td>Oral Fluid (OF)</td>
<td>IgM</td>
<td>7-28 days after start rash</td>
<td>As soon as possible</td>
<td>At 2-5°C until sending samples</td>
</tr>
<tr>
<td></td>
<td>PCR (virusdetection)</td>
<td>Max. 7 days after start rash</td>
<td>As soon as possible</td>
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<td></td>
<td>Genotyping</td>
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</tbody>
</table>

2. Start of the Outbreak
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- **Time?**
  Started on 20 December 2016
  ➔ cluster of 3 cases [index case = Belgian citizen who travelled to Romania]

- **Place?**
  4/5 Wallonian provinces except province Luxembourg

- **Person?**
  - Mainly central and eastern European origin
  ➔ unvaccinated/unknown vacc. Status/ transmission within families;
  - Spread all over Wallonian citizen (native Belgian, Italians, Marocco , etc...)
  ➔ ➔ ➔ Age of the cases : 0 month to 68 years old
3. Epidemiology data
3.1. Characteristics of the cases

Measles outbreak Wallonia

Measles cases per province (N=293)

Preliminary data from 20/12/2016 to 08/05/2017

AViQ - Cellule de surveillance des maladies infectieuses
Measles Outbreak December 2016 - May 2017

Preliminary data from 20/12/2016 to 08/05/2017
Measles outbreak Wallonia
Measles cases per week of notification and per province (N=293)

Preliminary data from 20/12/2016 to 08/05/2017

Preliminary data from 20/12/2016 to 08/05/2017
Measles outbreak Wallonia
Measles cases per age group and vaccination status (N=293)

Preliminary data from 20/12/2016 to 08/05/2017

Not vaccinated 31.1%
1 Dose 6.5%
2 Doses 2.0%
Unknown nb of Doses 2.7%
Unknown vacci status 57.7%

<5y: 28%
>=15y: 52%

+/- 12% of the cases are HCW
3.2. Clinical aspects

Measles outbreak Wallonia - Hospitalisations and complications

Complications in hospitalised patients Period 20/12/2016 – 12/03/2016 (N=177) *
Hospitalised: 76/177= 43%

<table>
<thead>
<tr>
<th>&lt; 5y</th>
<th>5-14y</th>
<th>&gt;= 15y</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dehydration: 6</td>
<td>Dehydration: 4</td>
<td>Dehydration: 6</td>
</tr>
<tr>
<td>Febrile convulsions: 1</td>
<td>Hepatic disorder: 1</td>
<td>Acute encephalitis: 1</td>
</tr>
<tr>
<td>Pneumonia: 3</td>
<td>Otitis media: 1</td>
<td>Hepatic disorder: 9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pneumonia: 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pancreatitis: 1</td>
</tr>
</tbody>
</table>

Update (08/05/2017): 39% hospitalised (115/293)

Complications:
• 2 acute encephalitis
• 5 pregnant women with hospitalisation (1 preterm delivery)


Available online: http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=22787
3.3. Laboratory confirmation

From December 2016 to May 2017:

- **169** cases were laboratory-confirmed *(58 %)* (the majority by the NRC for measles, mumps and rubella at the WIV-ISP)
- **82** were probable cases (= with an epidemiological link to a confirmed measles case)
- **42** were possible cases (= based on clinical symptoms)

Genotyping:

- Performed by the NRC
- Classified as B3 :
  - same strain as the one identified in the index case
  - same strain circulating in Romania / Italy/ Austria at the end of 2016
    [cfr. WHO MeaNS database]**

*Case definition ECDC 2012:*

http://www.hpa-bioinformatics.org.uk/Measles/Public/Web_Front/main.php

Preliminary data from 20/12/2016 to 08/05/2017
3.4. Control measures

Guidelines:

- Contact tracing + source investigation /for each case
- Isolation
- Vaccination proposed to all susceptible contacts [verified based on the vaccination status + date of birth (born< 1970* = considered immunized against measles)]
- Information letters sent to hospitals/ asylum centres/GP’s/Parents of the students attending school or nursery where measles cases had been reported / etc.

→→→ Aim: to raise awareness/ to inform/ to prevent by vaccination

Large scale communication methods: press release, public website, emails, newsflash, etc.

* CSS : « Vaccination de rattrapage, révision 2013. » Chapitre 3.2. Schémas de vaccination de rattrapage chez l’adulte. Available from :
4. Conclusion
4. Conclusion

- **Measles** is a highly contagious disease
- **Effectiveness of the vaccination as a preventive measure**
- **Affecting all age groups** [52% >15 years & 28% < 5 years old]
- **Specificity of this outbreak**: +/- 12% of the cases are HCW
- **Leads to non-negligible complications and hospitalisation in 39% of the cases**
- **Belgium = Endemic country**
- **Status of vaccination of the cases**: +/- 73% are unknown status or unvaccinated!!
Special thanks for your cooperation and support during this outbreak to:

- Service Epidemiology of Infectious Diseases, WIV-ISP
- NRC for measles, mumps and rubella
- CoCom
- PROVAC - ONE
- Private and hospital laboratories
- Hospital doctors and nursing hygienists
- General practitioners and clinical physicians
- Etc…