Current and future threats for Europe

Piotr Kramarz, Dominique Monnet, Herve Zeller, Kari Johansen, Massimo Ciotti, Denis Coulombier
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ECDC response activities to the Ebola outbreak in West Africa

- 14 rapid risk assessments
- Epidemiological updates (weekly and links to the CDTR)
- Updated factsheets
- ECDC assessed Ebola preparedness in Belgium, Portugal and Romania
- Media and social media activities
- Deployment in Guinea
Ebola research gaps

- **No antiviral drugs or vaccines** for treatment or prevention of Ebola authorised as of September 2016
- Why no vaccines licensed?
- No specific treatment (some use of convalescent sera)
- Operations research programmes **in resource-limited setting** (e.g. WGS to investigate transmission chains in real time)
- Presence of virus in sperm known but **role in sexual transmission** not recognized in previous emergences
- PPE performance / **ease of use**
- **Social science** / resistance of community (learn from vaccine hesitancy?)
Zika: *Aedes* mosquitoes in Europe

*Aedes* mosquitoes distribution as of January 2016

### Aedes aegypti

- **Established**
- **Introduced**
- **Absent**
- **No data/unknown**

### Aedes albopictus

- **Established**
- **Introduced**
- **Absent**
- **No data/unknown**

Map updates available from:
Zika research gaps

– **No antiviral drugs or vaccines** for treatment or prevention of Zika virus infections currently authorised and available

– **Criteria for interpreting of diagnostic tests** needed (serology: cross reactions, impact of vaccination – when available; PCR ≠ detecting replicating virus)

– Mosquito control: **effectiveness of different methods**

– **Point-of-care tests** for frontline providers for accurate diagnoses
West Nile Fever

Distribution of West Nile fever cases by affected areas, European region and Mediterranean basin
Transmission season 2016 and previous transmission seasons; latest data update 9 Jun 2016

- Current season
- Previous season
- Earlier seasons
- No reported cases
- Not included
MERS CoV: Distribution of confirmed cases by place of probable infection as of 13 October 2015 (n=1,616)

ECDC. Numbers in the map indicate the total number of local and imported MERS cases. Map produced on: 13 Oct 2015
MERS coronavirus in South Korea

Transmission chain of 59 confirmed MERS-CoV cases in South Korea, reported between 20 May and 10 June 2015
Research gaps

• Operations research for early stages of transmission: why nosocomial transmissions still occurs despite all measures and awareness?
Multidrug-resistant TB, EU/EEA, 2014

4.0% of TB cases with DST* results were multidrug-resistant (range 0–25.8%)


* DST – drug susceptibility results reported for at least isoniazid and rifampicin
Research gaps in TB

• MDR TB: Shorter and easier treatment. Tx for those in contact with MDR TB cases and are infected

• **Latent TB infection:**
  – tests to identify who will develop active TB
  – A short treatment for LTBI to prevent who will development of active TB

• Screening test: easy, non invasive with high sensitivity to identify those with active or latent TB

• A better vaccine

• Knowledge of interventions for vulnerable populations

• Bio markers: for screening/diagnosis and following Tx to see whether it is working if it can be shortened
Vaccine effectiveness 2014-2015 for seasonal influenza vaccines in EU/EEA*

No heterogeneity $I^2 \geq 50.0\%$ or $p<0.05$; based on crude country-specific VE.

* Data developed in multi-country study conducted by the I-MOVE network.
## Influenza vaccines: Pandemrix and narcolepsy

<table>
<thead>
<tr>
<th>Country</th>
<th>Age in years</th>
<th>Study design</th>
<th>Definition of onset</th>
<th>Follow-up period</th>
<th>Risk RR/OR</th>
<th>95% CI</th>
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<tbody>
<tr>
<td>Finland</td>
<td>4-19</td>
<td>Cohort</td>
<td>1st contact to HC</td>
<td>1 Jan 2009 – 15 Aug 2010</td>
<td>12.7</td>
<td>6.1 – 30.8</td>
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<td>France</td>
<td>&lt;19</td>
<td>Case-control</td>
<td>Date for referral to MSLT</td>
<td>1 April 2009 – 30 April, 2011</td>
<td>5.1</td>
<td>2.11 – 2.3</td>
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<td>≥19</td>
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<td></td>
<td>3.9</td>
<td>1.4 – 11.0</td>
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<td>Ireland</td>
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<td>Cohort</td>
<td>1st contact to HC</td>
<td>1 Apr 2009 - 31 Dec 2010</td>
<td>13.0</td>
<td>4.6 – 34.7</td>
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<td>Norway</td>
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<td>Cohort</td>
<td>Date of EDS recorded by patient/family</td>
<td>1 Oct 2009 – 30 June 2010</td>
<td>14.5*</td>
<td>Not reported</td>
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<td>Sweden</td>
<td>≤19</td>
<td>Cohort</td>
<td>Date of diagnosis G47.4</td>
<td>1 Oct 2009 – 31 Dec 2010</td>
<td>4.06</td>
<td>2.87 – 5.58</td>
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<td>21-30</td>
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<td>1 Oct 2009 – 31 Dec 2011</td>
<td>2.18</td>
<td>1.00-4.75</td>
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<td>31+</td>
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<td>1.58</td>
<td>0.68-3.44</td>
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<td>United Kingdom</td>
<td>4-19</td>
<td>Case-Control SCCS</td>
<td>Date of EDS recorded by GP</td>
<td>6 months post-vaccination</td>
<td>16.2</td>
<td>3.1 – 84.5</td>
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<td></td>
<td></td>
<td>9.9</td>
<td>2.1 – 47.9</td>
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</tbody>
</table>

*Reported as at least 10-fold increase in final scientific publication
AMR: Spread of carbapenemase-producing Enterobacteriaceae (CPE) in the EU/EEA: assessment by national experts

- No case reported
- Sporadic occurrence
- Single hospital outbreaks
- Sporadic hospital outbreaks
- Regional spread
- Interregional spread
- Endemic situation

AMR: Reporting of *mcr-1* gene (colistin resistance) in samples from animal, food, environmental and human origin (as of 13 June 2016)
AMR: Outbreak of pandrug-resistant VIM-1 *Providencia stuartii*, Sept.-Nov. 2011

Vaccine hesitancy: Vaccination policy in Europe is **not** achieving its public health goals of eliminating measles in Europe by 2010, 2015, 2020 (!?)

Source: TESSy data on measles cases reported 1 January – 30 April 2015; Measles vaccine coverage (two doses, 2012 – 2013)
Thank you for your kind attention