Measles Epidemiology in Europe

Vaccination Strategy Workshop
Luxembourg

13th-14th February 2008
EUVAC.NET’s Aim and Main Partners

To operate a Community surveillance network for vaccine-preventable infectious diseases (VPD) using epidemiological and laboratory surveillance methods.

Public health and surveillance institutions:
All 27 EU Member States + Croatia, Iceland, Norway, Switzerland and Turkey

Hub
Department of Epidemiology

World Health Organization Regional Office for Europe
Key strategies for measles and rubella elimination

- Achieve and sustain ≥95% coverage with two doses of measles through high-quality routine immunization services
- Provide a second opportunity for measles immunization to susceptible groups
- Provide rubella vaccination opportunities, to all susceptible children, adolescents and women of child bearing age
- **Strengthen surveillance systems**
- Improve the availability of information for health professionals and the public on the benefits and risks associated with immunization
Measles in 17 countries, 2001-2007*

Based on measles case-based data from 17 countries

No. of reported measles cases

Thousands

2001 2002 2003 2004 2005 2006 2007*

Ireland
Italy
Germany
Other

2007: 91% of monthly reports received.

* Provisional data 2007
Notification systems for measles surveillance, 2005-2007

Mandatory notification: 31 countries

Non-mandatory notification: Belgium
Countries reporting case-based data: 30 countries

Countries reporting aggregated data: 2 countries

Clinical, laboratory confirmed and epidemiological cases meeting requirements for national surveillance
Measles in Europe

Based on measles data from 17 countries 2001-2004 and from all 32 countries 2005-2007

N.B. 2006: Turkey reported lab confirmed cases only

2007: 91% of monthly reports received. No reports from Turkey.

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* Provisional data 2007
Reported incidence of indigenous measles per 100,000 inhabitants by country, 2006 (n=8,174)

<table>
<thead>
<tr>
<th>No. of countries</th>
<th>Germany: 2,282</th>
<th>Romania: 3,196</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;1</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>0.1-1.0</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>&lt;0.1</td>
<td>17</td>
<td></td>
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<tr>
<td>Zero cases</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>
Reported incidence of indigenous measles per 100,000 inhabitants by country, 2007 (n=3,449)*

No. of countries

- >1: 4
- 0.1-1.0: 7
- <0.1: 20
- Zero cases: 13
- No reports

Incomplete reporting:
- Austria 92%
- Greece 50%
- Italy 92%
- Estonia 83%
- United Kingdom 92%

* Provisional data 2007
Measles by diagnosis confirmation status, 2005-2007

N.B. 2007: 91% of monthly reports received. No reports from Turkey.

* Provisional data 2007
Measles morbidity and mortality 2005 - 2007

Measles-related deaths (n=18)

Death rate per 10,000 measles cases by country

<table>
<thead>
<tr>
<th>Country</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>Romania</td>
<td>19</td>
<td>9</td>
</tr>
<tr>
<td>Turkey</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>UK</td>
<td>-</td>
<td>13</td>
</tr>
</tbody>
</table>

> 10,000 cases were hospitalised
21 cases reported with acute encephalitis
Measles mortality and morbidity, 2005-2007*

Measles-related deaths (n=18)

- 10-14: 3 cases
- 5-9: 1 case
- <1: 8 cases
- 1-4: 6 cases

N.B. 2007: 91% of monthly reports received. No reports from Turkey.

* Provisional data 2007
Measles cases by age groups

Known ages: 2005 (n=13,308), 2006 (n=8,080), 2007* (n=2,883)

20+ age-group in 2006: 11% rise compared with 2005
20+ age-group in 2007: 13% rise compared with 2005

* 2007 first 3 quarters 2007
Measles vaccination status, 2005-2007*

N.B. 2007: 91% of monthly reports received. No reports from Turkey.

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* Provisional data 2007
Measles by country source of importation in EUVAC.NET countries, 2006 (n=126)

4% of cases with known importation status (70%)

Top 10 exporters

- Ukraine 17
- Thailand 13
- Italy 11
- Pakistan 8
- India 8
- Romania 6
- Spain 6
- Germany 5
- Morocco 4
- Ethiopia 4
Measles outbreaks in general population, 2006 and 2007

- **Import-related**

  - Pakistan
  - Thailand
  - India
Measles outbreaks in general population, 2006 and 2007

School

Kindergarten
Measles outbreaks in general population, 2006 and 2007

Hospital / health-care setting
Measles outbreaks in special groups, 2006 and 2007

- Roma/Sinti communities
- Travellers communities
- Ultra-orthodox Jewish communities
Who gets measles?

- Unvaccinated and inadequately vaccinated:
  - Eligible according to vaccination programme:
    - Uninformed
    - Misinformed
    - Socioeconomic reasons
    - Poor access to health-care facilities
    - Religious and philosophical reasons
    - Missed opportunity at the start of a vaccination programme (now mostly young adults)
  - Non-eligible according to vaccination programme:
    - Below recommended age for vaccination
    - Above recommended age for vaccination (now older adults)
- Ineffective vaccine: quality control, cold chain
- Non-seroconverters
Measles outbreaks settings

- Families and household contacts
- Schools, Kindergardens
- Social gatherings
- Travel to endemic areas
- Hospital/health-care settings
Despite overall decrease in reported cases measles is still a problem in many European countries

Numerous outbreaks
Identified susceptible population/groups:

- Unvaccinated and inadequately vaccinated
- "Hard-to-reach" communities
- Older age-groups
- Hospital staff
- Travellers
To increase and maintain vaccination coverage of 2 MMR doses to minimum 95%

To rapidly investigate suspected cases with laboratory tests

To improve data quality on variables: diagnosis confirmation, and status on vaccination, importation, hospitalisation

To focus also on special high risk groups
Rubella in some European countries*

Based on rubella data from 9 countries reporting though nationwide mandatory notification systems 2000-2006

- **Romania**: Rubella vaccination was introduced into national children vaccination schedule for girls aged 14-15 years.
- **Romania**: MMR 1 was introduced into national children vaccination schedule for children at 12-15 month of age.
- **Romania**: October, MMR 2 was introduced into national children vaccination schedule for children at 6-7 years of age.

* Provisional data
"National Plans of Action" on EUVAC.NET website

Measles

Measles and Rubella/congenital rubella
Thank you

MMR is safe
tell your friends

www.badscience.net


