Low measles vaccination coverage among the medical residents of Aix/Marseille University: Reasons for non-vaccination

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Limited information on vaccination coverage among medical residents

- Measles outbreaks 2008 – 2011 in Europe and France, particularly in the region of Marseille, Provence-Alpes-Côte d'Azur (Paca), in south-east of France
- In France, everyone born after 1980 should have got two doses of trivalent measles-mumps-rubella (MMR) vaccine
- Healthcare workers (HCWs) at higher risk of acquiring measles and can transmit the disease to patients

Rational
- VC among HCWs known to be low in France
- Limited information on VC of medical residents

Objectives
- Estimate measles VC among medical residents
- Identify factors associated with being vaccinated

Methods: Cross-sectional study among medical residents

Study population: Medical residents of Aix/Marseille University
Study design: Cross-sectional study
Data collection instrument: Self-administered questionnaire during a two-day union gathering (March 2013)
Data collected on: Occupational health visits, measles history, vaccination status, reasons for being vaccinated or not

Results: Vaccination coverage below recommendations

Participation: 61% (703/1152)
- Residents of first year and medical specialty over-represented
- Residents of fourth year, paediatrics and obstetrics-gynaecology under-represented

Measles vaccination coverage
- 1 dose: 93% (613/660, 95%CI [91 - 95])
- 2 doses: 76% (389/509, 95%CI [73 - 80])

Visited occupational health during residency: 38% (268/700)

Vaccinated by occupational health services: 3% (21/623)

Reported measles history: 14% (95/664)

Top 3 reported reasons for not being vaccinated among those not vaccinated with two doses (n=120)
- Lack of interest or forgetfulness: 42%
- Already had measles: 28%
- Opposed to vaccinations: 8%

Most frequently reported motivation for getting vaccinated
- Easy access: 69% (456/660) of all participants

Table 1: Factors associated with being vaccinated against measles with two doses, medical residents of Aix/Marseille University, France, March 2013.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Vaccinated</th>
<th>%</th>
<th>RR</th>
<th>95%CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of measles</td>
<td>Yes</td>
<td>26</td>
<td>36</td>
<td>0.43</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>350</td>
<td>83</td>
<td></td>
</tr>
<tr>
<td>Pertussis vaccination up-to-date</td>
<td>Yes</td>
<td>300</td>
<td>82</td>
<td>1.47</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>55</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>Vaccinated to protect patients</td>
<td>Yes</td>
<td>187</td>
<td>82</td>
<td>1.14</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>202</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>Vaccinated against influenza*</td>
<td>Yes</td>
<td>219</td>
<td>81</td>
<td>1.13</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>169</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>Easy access to vaccination</td>
<td>Yes</td>
<td>278</td>
<td>81</td>
<td>1.19</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>111</td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>Had a vaccination document</td>
<td>Yes</td>
<td>373</td>
<td>78</td>
<td>1.41</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>11</td>
<td>55</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Factors associated with being vaccinated against measles with two doses, medical residents of Aix/Marseille University, France, March 2013 (the final logistic regression model).

<table>
<thead>
<tr>
<th>Factor</th>
<th>Adjusted OR</th>
<th>95%CI</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of measles</td>
<td>0.13</td>
<td>0.07 – 0.23</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Pertussis vaccination up-to-date</td>
<td>3.12</td>
<td>1.80 – 5.41</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Vaccinated against influenza*</td>
<td>1.71</td>
<td>1.03 – 2.83</td>
<td>&lt;0.04</td>
</tr>
<tr>
<td>Vaccinated to protect patients</td>
<td>1.96</td>
<td>1.17 – 3.27</td>
<td>&lt;0.02</td>
</tr>
</tbody>
</table>

Recommendation: Easy access to vaccinations is key to improve VC

Main limitation of the study: Self-reported vaccination status

Conclusions
- Measles VC below recommendations
- Less than half had visited occupational health doctor
- Very few participants vaccinated by occupational health services
- Lack of interest major barrier to vaccination
- Easy access main motivation for vaccination
- Measles history, pertussis up-to-date and influenza vaccination and perception of protection of patients predictors of vaccination status

Recommendations to increase VC among residents
- Facilitate access to vaccination
  - Encourage co-operation between the union, occupational health services and hospitals in improving VC
  - Offer vaccinations during union gatherings
- Educate about the importance of preventing measles and other vaccine preventable diseases

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