Abstract:
AJ Nicholson, J Ramet
on behalf of the advocacy working group of the European Academy of Paediatrics
Immunisation is one of the most cost-effective measures for the prevention of infectious diseases. In the case of smallpox, it has lead to complete disease eradication and similar efforts have led to the elimination of polio in most regions of the world, including Europe. Despite the continuing circulation of the wild polio virus in a small number of countries (Nigeria, India, Pakistan and Afghanistan), the worldwide incidence has fallen by 99% over the past 20 years. It is an extraordinary success story by any standard. However because of its success the general public may not experience any of these illnesses first-hand and thus is increasingly difficult to convey the importance of high immunisation rates that promote herd immunity. Across Europe, there has been a recent focus on adverse events following immunisation and the perception of risk has shifted from the disease to the vaccine. In Europe, very often the biggest challenge is to provide effective communication to reassure the public about vaccine safety and effectiveness.

A recent survey of primary care paediatricians across Europe highlighted that the principal reason for refusal to vaccinate is parental fear of an adverse event and recommended the harmonisation of vaccination schedules across Europe. The Global Alliance for Vaccines and Immunisation (GAVI), UNICEF and the World Health Organization (WHO) stated their 2010 goals to be harmonisation of vaccination schedules across Europe. The Global Alliance for Vaccines and Immunisation (GAVI), UNICEF and the World Health Organization (WHO) stated their 2010 goals to be harmonisation of vaccination schedules across Europe.

Strategies to improve vaccination coverage

Immunisation has been compulsory in both Hungary and Italy apart from the Veneto region which recently decided to end compulsory immunisation. High uptake of vaccines can be achieved in many EU countries without compulsory vaccination. A number of countries (such as Germany and the UK) require that a child immunisation schedule is documented at school entry. In the UK, general practitioners who achieve uptake rates above 90% receive a significant financial reward.

In France, the introduction of HPV 16 and 18 vaccination at 11-12 years of age, coupled with the implementation of a triennial screening starting at 25 years of age, will decrease the lifetime risk of cervical cancer by 95% and, without question, is the most cost-effective strategy.

Improve Immunisation Uptake Across Europe

Table 1: Vaccination coverage in the EU and EEA/EFTA countries. Average of period 2003-07

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>EU countries coverage</th>
<th>EEA/EFTA countries coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMR</td>
<td>93.4%</td>
<td>96.2%</td>
</tr>
<tr>
<td>Polio</td>
<td>96.7%</td>
<td>99.0%</td>
</tr>
<tr>
<td>Tetanus</td>
<td>95.2%</td>
<td>95.6%</td>
</tr>
<tr>
<td>Diphtheria</td>
<td>96.8%</td>
<td>97.4%</td>
</tr>
<tr>
<td>Measles</td>
<td>94.8%</td>
<td>96.3%</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>96.0%</td>
<td>98.0%</td>
</tr>
<tr>
<td>Influenza</td>
<td>93.5%</td>
<td>95.0%</td>
</tr>
</tbody>
</table>

Regrettably there is no standardised system in the EU for collecting data on immunisation uptake with the World Health Organisation centralised system for infectious diseases (CISO) the only available consolidated source of data. Immunisation uptake for the DTP, polo and Hib vaccines is high across all the EU. Soviet countries report coverage of one-dose MMR of at least 95% (this does not include Ireland or the UK but only 10 have the same coverage for the second dose (see Table 1). The EU has been officially polio-free since 2002 with the last large polio outbreak in the Netherlands in 1992. In 2006 and 2007 there were 2 cases of measles. Mumps remains a vaccine-preventable disease with one of the highest notification rates in the EU but happily the trend in mumps notifications shows it to be at the lowest level since 1995.

Immunisation schedules vary considerably and are set exclusively at national level. Polo, DPT (diphtheria, tetanus and pertussis) and MMR (measles, mumps and rubella) are common to all scheduled. Hib vaccine is offered in all countries across the European Union, with the exception of Bulgaria and Romania. Herpes zoster vaccination is offered in most EU countries with the exception of the Scandinavian countries where high-risk groups are immunised. Pneumococcal (PCV) and human papilloma virus (HPV) vaccines are not offered in 15 countries across Europe. Very few countries recommend universal rotavirus or varicella vaccination.

New vaccines

The number of diseases now prevented by vaccination has markedly increased over the past 5 years with the advent of human papilloma virus (HPV), rotavirus and varicella vaccines. During the coming 5 years it might be expected that we will see a 4-valent conjugated meningococcal vaccine, intradernal inactivated trivalent influenza vaccine and many others. HPV types 16 and 18 are the most prevalent strains of the virus with HPV 16 accounting for more than 50% of all cervical cancers and HPV 18 accounting for more than 10%. These high risk types of HPV cause cervical cancer, cancer of the vulva or vagina and cancer of the penis or anus. Cervical cancer is the most important manifestation of genital HPV infection and is one of the leading causes of cancer mortality in women worldwide. The epidemiological link between HPV and cervical cancer is stronger than the link between cigarette smoking and lung cancer.

Cervical cytology screening can reduce significantly the incidence of cervical cancer and its mortality, and the prevention of cervical cancer in particular is best done through vaccination. Cervical cancer is one of the leading causes of cancer mortality in women worldwide. The epidemiological link between HPV and cervical cancer is stronger than the link between cigarette smoking and lung cancer.

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The heptavalent pneumococcal vaccine (PCV 7) was licensed in the USA in 2000 but use of this vaccine varies across Europe. In those with high PCV 7 uptake, cases of pneumococcal disease has dropped sharply. Only four EU countries have been measles-free for more than 5 years. A programme of HPV 16 and HPV 18 vaccination at 11-12 years of age, coupled with triennial screening starting at 25 years of age, will decrease the lifetime risk of cervical cancer by 95% and, without question, is the most cost-effective strategy.

The availability of the acellular pertussis vaccine across Europe has lead to a significant drop in reported cases of whooping cough. Ten EU countries (including Ireland) report immunisation coverage rates of above 90%. Pertussis B vaccine is very effective and in EU countries have either universal hepatitis B vaccination or vaccination of high risk groups. Invasive Hib disease in children under 5 years old varies greatly across the EU with no cases in Hungary and relatively high numbers in the Netherlands and Spain. A booster Hib dose added into the schedule leads to a reduced incidence of invasive Hib.

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For the future, we need to continue to strive to maintain uptake rates of above 95% and the further harmonisation of immunisation schedules across Europe would allow an EU-wide data collection system re vaccine-preventable infections, a system for monitoring any adverse events post vaccination, and we need to target migrating populations, in particular asylum seekers with limited access to healthcare. We must continue to publish high quality studies investigating vaccine safety, maintain and improve the Vaccine Adverse Events Monitoring system and, most importantly of all, educate health care professionals (particularly family doctors) and parents.

Accurate information concerning vaccination needs to be accessible to the public through various media. We must continue to counter misinformation issued by anti-vaccination lobby groups in individual countries. The absolutely clear evidence of the dangers of immunisation lies in the continued occurrence of脊髓灰质炎. It took the diligent scepticism of a dedicated journalist to finally show that Wakefield’s paper was indeed an elaborate fraud to MMR falsification of data should now finally close the door on the damaging vaccine scare pertaining by the anti-vaccination lobby groups in individual countries. The absolutely clear evidence of and, most importantly of all, educate health care professionals (especially family doctors) and parents. Accurate information concerning vaccination needs to be accessible to the public through various media. We must continue to counter misinformation issued by anti-vaccination lobby groups in individual countries. The absolutely clear evidence of the dangers of immunisation lies in the continued occurrence of脊髓灰质炎.
References


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15. WHO. Human papillomavirus vaccines against cervical cancer. (www.who.int/vaccines/en/olddocs/humanpapill.shtml)

Comments:

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