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How can European countries improve vaccination in the wake of the measles outbreak?

Europe's national science and medical academies call for tailor-made interventions, European vaccination card and registry

With the dramatic increase in measles in Europe – a four-fold increase from 2016 to 2017, according to a recent [report](#) by the World Health Organization – and the urgent need for vaccines protecting against infections for which no vaccines currently exist, the European Commission has drafted a [roadmap](#) for ‘Strengthened cooperation against vaccine preventable diseases’ and aims to adopt a proposal by mid-2018 for a Council Recommendation on Strengthened Cooperation against Vaccine Preventable Diseases. In a new commentary on the roadmap, The European Academies’ Science Advisory Council (EASAC), and The Federation of European Academies of Medicine (FEAM) both believe that vaccination is an issue that must be addressed urgently and hence offer recommendations for improving the roadmap. The EASAC / FEAM commentary addresses vaccine coverage; vaccine hesitancy; vaccine availability; and new vaccine development.

The European Commission roadmap document rightly views the recent outbreaks of measles in EU member states as a major sign that there is a serious problem with the vaccination coverage in the EU, especially since measles is a serious, potentially lethal childhood infection and there is an effective vaccine against the disease. Furthermore, it is clear that low vaccine coverage may endanger the protection of children (and adolescents and adults) against other vaccine-preventable diseases with great public-health significance (for example, poliomyelitis, diphtheria, rubella, pertussis, type B Haemophilus influenzae, pneumococcal and meningococcal infections).

It cannot be stressed enough that despite the availability of excellent vaccines, vaccine coverage of children varies greatly within EU member states. The reasons for these discrepant vaccine-uptake figures are not well established; they are clearly complex, heterogeneous and differ per member state. This means that possibilities to improve poor vaccine uptake, measures at the European level will need to identify specific problems related to individual countries. For this purpose, the

TIPS (Tailoring Immunization Programmes) instrument as designed by WHO should probably be used. Much effort should be put into the implementation of an EU vaccination card and registry.

The declining uptake of vaccination in young children in Europe and elsewhere in the world is in part due to growing numbers of individuals who choose not to vaccinate themselves or their children. The reasons for making that choice vary.

1. *Vaccine rejectors (VRj)*; these people are “unyieldingly entrenched in their refusal to consider vaccine information” and often think in terms of conspiracy.
2. *Vaccine resistant (VR)*; these people reject vaccination, but are willing to consider information. They are less inclined to believe in conspiracies.
3. *Vaccine hesitant (VH)* tend to have anxiety about vaccination, but are not committed to vaccine refusal.

The approach to these different categories varies. It is clear that efforts should primarily be directed towards people who are vaccine resistant or hesitant, although it is also important to appreciate that the extremist vaccine rejectors may elicit deleterious effects on the other two groups through the spread of misinformation.

The roadmap document states that there are challenges related to research and development for new and existing vaccines. Here the document is rather vague. Improvement of existing vaccines, where that is possible, and development of vaccines protecting against infections for which no vaccines exist is urgently needed.

“The four-fold increase in measles in Europe from 2016 to 2017 is alarming, and European policy-makers must take immediate action. While the current roadmap is a good starting point, we need to ensure that the reasons for low and decreasing vaccine uptake in EU member states are fully understood and that tailor-made approaches for each situation are developed. The WHO TIPS programme should be fully utilised. A one-size-fits-all solution for vaccines across the EU may lead to a continued increase in measles and other diseases that affect public health,” noted Professor Jos van der Meer, Past President of EASAC.

Professor George Griffin, President elect of FEAM, added, “In addition, a European vaccination card and registry needs to be implemented to better track the rate of vaccination across Europe as a whole. The declining uptake of vaccination in young children in Europe and elsewhere in the world is in part due to growing numbers of individuals who choose not to vaccinate themselves or their children. We need to guard against the spread of misinformation and extremist anti-vaccination groups who may influence those who are on the fence regarding vaccination, negatively affecting public health in the process.”

EASAC and FEAM make ten recommendations for improving vaccination in the European Union:

1. Investigate the reasons for low and decreasing vaccine uptake at the level of EU member states in order to develop tailor-made interventions. Make use of the WHO TIPS programme.
2. Develop and implement a European vaccination card and registry. Do not give normalisation of vaccine programmes (choice dose and timing) among different countries a high priority.

3. Recognize that not all vaccines in the vaccination programmes are of equal relevance for public health and individual protection. Make priorities within the programmes.
4. Recognize that it is important to continue the commitment to invest in research and innovation to provide future generations of safe and efficacious vaccines. (see recommendations 9 and 10).
5. To deal with the problem of vaccine rejection and hesitance, realise that the approach to vaccine hesitant, vaccine resistant, and vaccine rejecting groups is different. With the help of social scientists, develop strategies to enhance vaccine uptake in vaccine hesitant and vaccine resistant individuals.
6. Develop a monitoring system for vaccine shortage and stimulate vaccine production by industry at the European level, with continuation of robust European frameworks for ensuring quality and safety of manufacturing.
7. Reassess the issues for the BCG vaccination programmes in childhood: the vaccine does not induce long-lasting protection against tuberculosis, and there is a serious worldwide shortage of the vaccine.
8. Investigate and optimise vaccination schedules for those vaccines for which there is a shortage.
9. Develop a priority list of those vaccines that need improvement.
10. Develop a priority list of vaccines for which there is high need.

About The European Academies' Science Advisory Council (EASAC)

EASAC is formed by the national science academies of the EU Member States, Norway, and Switzerland, to collaborate in giving advice to European policy-makers. EASAC provides a means for the collective voice of European science to be heard. Through EASAC, the academies work together to provide independent, expert, evidence-based advice about the scientific aspects of European policies to those who make or influence policy within the European institutions.

About The Federation of European Academies of Medicine (FEAM)

FEAM's mission is to promote cooperation between national Academies of Medicine and Medical Sections of Academies of Sciences in Europe; to provide them with a platform to formulate their collective voice on matters concerning human and animal medicine, biomedical research, education, and health with a European dimension; and to extend to the European authorities the advisory role that they exercise in their own countries on those matters.

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