

Towards Measles Elimination

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Introduction

In many European countries measles is still a cause of great public health concern. Outbreaks of the disease are still occurring because the degree of vaccination coverage required to interrupt transmission has not yet been achieved. Many countries have started to implement measles elimination strategies. These are primarily based on attaining a very high coverage of measles vaccination and strengthening measles surveillance systems.

Current situation

Measles is an acute, highly contagious viral disease capable of producing epidemics. It remains the leading cause of vaccine-preventable deaths in children worldwide. Despite the availability of an effective measles vaccine for more than 30 years, measles has still not been controlled in many parts of the world. In many European countries it is still a cause of great public health concern¹⁻⁴. In 2002, several European countries have reported measles outbreaks. The largest one occurred in the Campania region in Southern Italy where measles vaccination coverage is poor. An estimated 24,000 children between 0-14 years of age suffered from measles between January to May 2002. In the same period, 368 persons were hospitalised with measles. Of these, 63 had pulmonary complications, 13 had encephalitis, and three died³. In the first five months of 2003, 1217 cases have been reported in a new epidemic in the southern Italian regions of Abruzzo, Calabria and Puglia⁵. In Switzerland, 387 cases were recorded in three separate outbreaks during February and March of this year⁶. The disease continues to spread because the degree of vaccination coverage required to interrupt transmission has not yet been achieved. The changing epidemiology of measles, therefore, presents challenges for the European region as outbreaks still occur where there is an accumulation of susceptible children and young adults.

Measles elimination initiatives

Following the successful interruption of wild poliovirus transmission in the European Region, many countries are eager to move towards targeting measles elimination. Many European countries are strengthening measles surveillance and have already started the implementation of elimination strategies, or set elimination goals. The World Health Organization Regional Office for Europe has developed a strategy to stop the indigenous transmission of measles in the European region by 2010 and to prevent congenital rubella infection^{7, 8}. WHO recommends a combination of the following activities for reaching these goals:

1. Achieving and sustaining very high coverage with two doses of measles vaccine through high-quality routine immunization services
2. Using the opportunity provided by measles immunization activities to target rubella-susceptible populations
3. Strengthening surveillance systems by vigorous case investigation and laboratory confirmation for measles, rubella and congenital rubella syndrome

Keywords

measles, immunization, surveillance, elimination

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4. Ensuring protection to women of childbearing age by providing high coverage with one dose of rubella vaccine
5. Improving the availability of high-quality information to health professionals and the public on the benefits and risks of immunization against measles and rubella.

Immunization

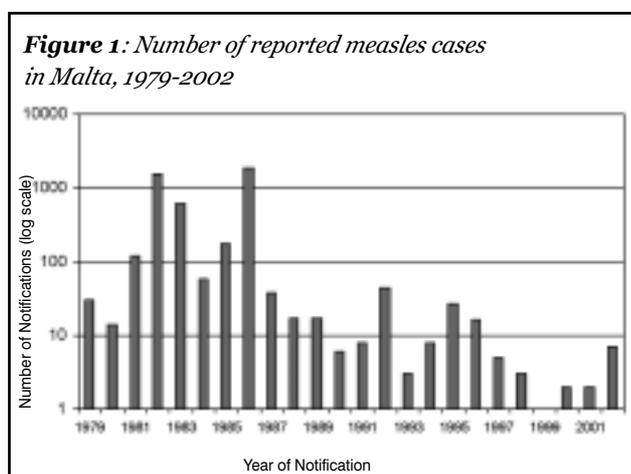
Immunization is the most effective way to prevent and control measles. For successful measles control, immunization of at least 95% of susceptible individuals with a two-dose schedule is required⁸. Efficacy of a single dose of measles vaccine exceeds 90%⁹. Following a second dose of measles vaccine, efficacy levels exceed 99%^{9,10}.

Following media publicity surrounding a report published in 1998 claiming a link between MMR (measles, mumps and rubella) vaccination and autism

¹¹, public confidence in some countries such as the UK has been undermined^{12,13}. Findings of subsequent epidemiological studies have shown no link between vaccination and autism¹⁴⁻¹⁶. No regulatory body in the world has changed its policy as a result of this hypothesized link.

Surveillance

An adequately functioning surveillance system depends on medical practitioners reporting all cases of measles to the regional or national surveillance institutions. Case-based surveillance data are transferred to the European surveillance of vaccine-preventable diseases network, EUVAC.NET, based at the Statens Serum Institut in Copenhagen¹⁷. The network involves surveillance institutions in the 15 European Union countries, plus Iceland, Norway, Switzerland and Malta. Another European network, CCEE-Baltic Network that is based at the National Institute of Hygiene in Warsaw, involves central and eastern European countries, the Baltic States and Turkey¹⁸. Measles surveillance data are collected and analysed for the purposes of describing the epidemiology of measles in the participating countries. The networks collaborate with the World Health Organization in its efforts to implement the strategies for measles elimination in the European Region.



Source: Disease Surveillance Unit

Measles in Malta

The measles vaccine was first made available in Malta in 1982, and as the combined MMR vaccine in 1987. It was initially incorporated in the National Childhood Immunization Schedule in 1982, and continued as MMR immunization from 1990 onwards. The local Advisory Committee for Immunization Policy currently recommends the first dose of MMR vaccine to be given at 15 months and the second dose at 5-7 years of age. Measles vaccination coverage for the first dose of MMR for children born in 2001 has reached 90%. In a recently started school catch-up MMR vaccination campaign for the second dose, 29% of children in their fifth year of school (aged 10 and 11 years) were vaccinated¹⁹. Although measles vaccination may be under-reported, it is believed that the vaccination coverage for the first measles dose is still under the 95% required for successful measles control.

Measles is a notifiable disease and medical practitioners are obliged to report all cases of measles to the Disease Surveillance Unit of the Department of Public Health. The Unit sends case-based reports of all notified measles on a monthly basis to the European surveillance network EUVAC.NET.

Following the introduction of the measles vaccine in Malta, there has been a marked reduction in the number of reported measles cases (Figure 1). In 2002, there were seven reported measles cases: three were in the 5-9 year age group, another three in the 1-4 year age group and one case was aged less than 1 year. None of the cases were however, laboratory confirmed. No complications from measles infection were reported.

Conclusion

Interrupting indigenous measles transmission and preventing congenital rubella infection in the European Region will require that each country strengthen its routine immunization and surveillance programs. The importance of strengthening surveillance systems by vigorous case investigation is critical to monitor progress toward measles elimination in the Region. Apart from the collection of additional data on measles cases reported under routine surveillance, enhanced surveillance also requires timely national case-based reporting on at least a monthly basis. In addition, as vaccination coverage increases and measles reaches a near-elimination phase in Europe, it becomes increasingly important to investigate even suspected cases. Hence, rapid laboratory confirmation is an essential tool of enhanced surveillance. Such high quality surveillance is crucial to monitor trends, identify the target population of vaccination programmes and determine whether coverage objectives are being reached. The maintenance of enhanced surveillance and optimal vaccination coverage are the cornerstones of the measles elimination plan for the European Region by 2010.

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