

Measles, Mumps, Rubella (MMR) Vaccine discussion pack

an information guide for health professionals and parents



The Health Boards Executive
Working Together for Health



The MMR discussion pack

an information guide for health professionals and parents

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- The MMR discussion pack produced by the Health Education Board for Scotland, Woodburn House, Canaan Lane, Edinburgh, EH10 4SG in collaboration with the Scottish Executive and the Scottish Centre for Infection and Environmental Health (SCIEH) 2001.
- The MMR Story: Mythbuster written by Dr Richard Roberts, Mr David Morgan, Dr Marko Petrovic and Ms Claire Williams and published by North Wales Health Authority, 1999.
- Measles, Mumps and Rubella Vaccine published by Health Promotion England, 2001.

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Further copies of the leaflet *MMR your questions answered* may be obtained from local health board health promotion departments. Further copies of the pack contents may be downloaded from the Health Boards Executive, Health Boards, or NDSC websites. Website addresses are given at the back of the pack.

This information pack has been endorsed by the following organisations:
Royal College of Physicians of Ireland, Irish College of General Practitioners, Department of Health and Children.



Introduction

Some parents may feel that the issues around immunisation, in general, and MMR in particular pose a real dilemma for them about what is best for their child. The sustained negative media coverage and high-profile public debates over the last few years have also left many health professionals asking searching questions about MMR. These concerns have contributed to a decrease in the uptake of MMR vaccine and the re-emergence of these diseases in our population.

The MMR discussion pack will help professionals and parents review the evidence around MMR and will help to provide the basis for informed decision-making. It sets out the facts about the most common concerns about MMR vaccine in a way that helps health professionals and parents to explore these concerns together.

Nine main questions are covered and each question outlines the basic facts plus *Key Notes* for parents, together with *Additional Notes* for health professionals, which are fully referenced. Whilst the *Additional Notes* are essentially for health professionals, the information is presented in such a way as to allow full discussion between health professionals and parents, on each issue.

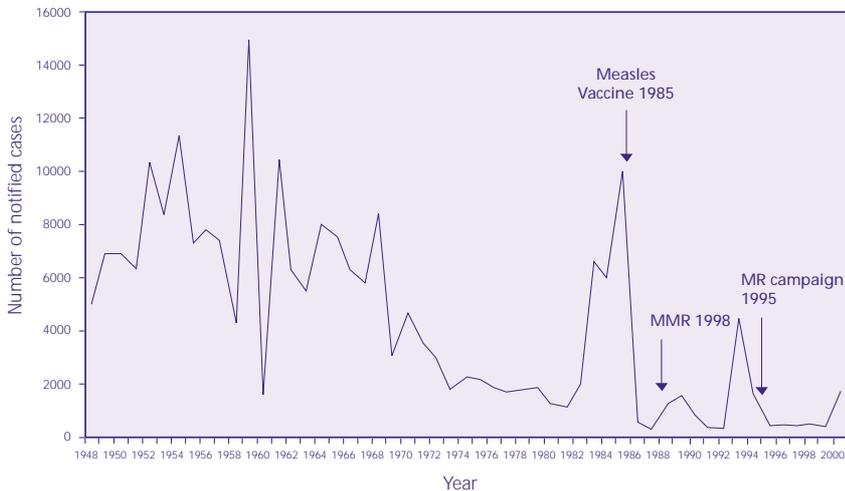
The format allows for exploration of all the issues in any order and as much, or as little, of the information can be photocopied to take away, as desired.

Has the MMR vaccine
made a difference?



Has the MMR vaccine made a difference?

Question 3

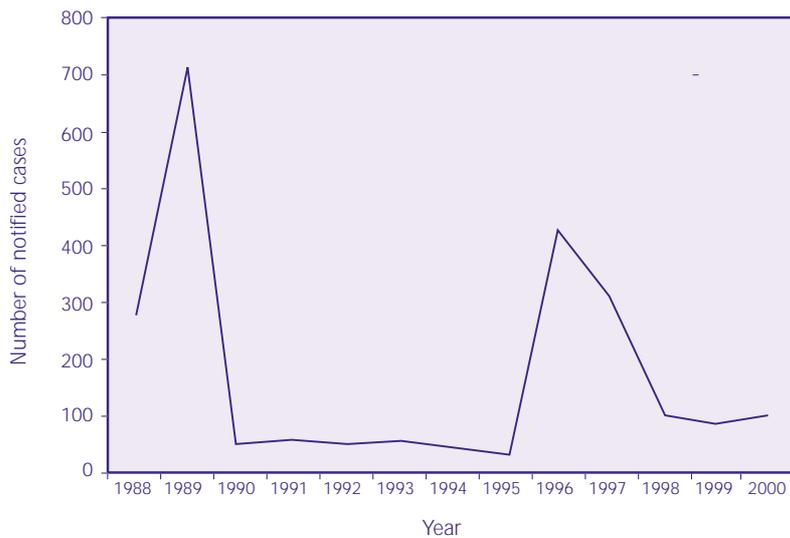


Graph 1:
Measles notifications and introduction of vaccine Ireland, 1948-2000

Measles vaccine was introduced in 1985. In 1988 the combined MMR vaccine was introduced.

In 1992, a second dose of MMR was recommended for both boys and girls aged 10-14 years. This replaced the previous selective rubella vaccination programme for prepubertal girls, which had been introduced in 1971. A measles and rubella (MR) vaccination campaign for primary school-age children was conducted in 1995. In 1999 the Immunisation Advisory Committee of the Royal College of Physicians of Ireland advised changing the age of the second dose of MMR to 4-5 years.

The introduction of measles vaccine and the MMR vaccine has led to a decrease in the number of measles notifications. However the uptake of MMR in Ireland is not high enough to prevent a build up of susceptible children with consequent outbreaks in 1993 and 2000.

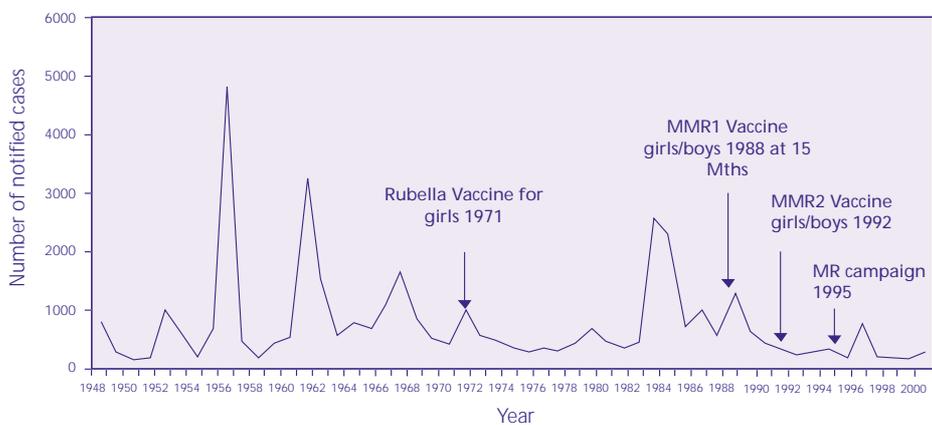


Graph 2:
Mumps notifications Ireland, 1988-2000

Protection against mumps was first offered in 1988, with the introduction of the MMR vaccine, the same year that mumps became a notifiable disease.

In 1992, a second dose of MMR was recommended for both boys and girls aged 10-14 years. In 1999 the age of the second dose was lowered to 4-5 years.

The MMR vaccine has led to a decrease in the number of cases of mumps but outbreaks will continue to occur if vaccine uptake rates do not improve.



Graph 3:
Rubella notifications Ireland, 1948-2000

Rubella vaccine for prepubertal girls was introduced in 1971. This policy allowed wild rubella virus to circulate among younger children and older boys. Because this policy did not totally prevent rubella in pregnant women, the policy was changed to vaccinate both boys and girls.

Rubella vaccine was first included in the infant immunisation programme with the introduction of the MMR vaccine in 1988. A measles and rubella (MR) vaccination campaign for primary school-age children was conducted in 1995. In 1992, a second dose of MMR was recommended at age 10-14 years.

Vaccination of both boys and girls against rubella at a young age has led to a decrease in rubella notifications.

Measles (see Graph 1)

- 1 Before immunisation became widely available thousands of children caught measles each year in Ireland.
- 2 The introduction of measles vaccine and the MMR vaccine has led to a decrease in the number of measles notifications. However the uptake of MMR in Ireland is not high enough to prevent a build up of susceptible children with consequent outbreaks in 1993 and 2000.
- 3 Over 1600 cases of measles were notified in Ireland in 2000. This compares with less than 100 in the United States in 2000, where measles is close to elimination due to good uptake of MMR vaccine. Measles has also been eliminated or is close to elimination in Finland, Spain and other European countries where there is good uptake of vaccines. However measles remains a problem where vaccination rates are low. In Ireland 8 deaths from measles were reported to the CSO between 1990 and 1999. In the outbreak in 2000 three children in Dublin died (two died from pneumonia complicating measles and a third child died from post-infectious encephalitis)

Mumps (see Graph 2)

Before the MMR vaccine introduction, mumps was a leading cause of viral meningitis in children.

Rubella (see Graph 3)

- ① Since the MMR vaccine introduction in 1988, the MR campaign in 1995 and the introduction of a second dose of MMR in 1992, notifications of rubella have decreased. There is a longer interval between outbreaks and the size of outbreaks is less than half the size of the outbreaks before the vaccine. In order to prevent these outbreaks we need to have 95% uptake of two doses of MMR vaccine.
- ② Both girls and boys must be vaccinated against rubella at a young age to stop rubella virus spreading in the community and infecting pregnant women.
- ③ MMR has decreased congenital rubella births by stopping children spreading rubella to pregnant women.

Congenital rubella cases in Ireland -

1975-1980: 76 cases of congenital rubella; an average of 13 cases per year.

1981-1990: 30 cases of congenital rubella; an average of 3 cases per year.

1991-2000: 2 cases of congenital rubella.

Measles

- 1 In the 1950s an average of 8,500 cases of measles were reported each year. In the 1970s an average of seven children died every year from measles in Ireland. Eight deaths from measles were reported to the CSO between 1990 and 1999. In the Dublin outbreak in 2000 three children died from complications of measles (two from pneumonia and a third from encephalitis).⁶
- 2 Measles vaccine was introduced in 1985 and MMR in 1988. The uptake of these vaccines however never reached the 95% target and outbreaks continued to occur in 1993, 1994 and again in 2000. Measles continued to claim the lives of eight people in Ireland in the 1990s.
- 3 When the MMR vaccine was introduced in 1988 in the United Kingdom, vaccination uptake quickly rose to above 90%. By 1992 there were less than 10,000 notifications and an average of one death each year in the UK. Following the MR campaign in 1994, and the introduction of the second MMR dose pre-school in 1996, measles became rare in the UK, mostly occurring as single cases or small outbreaks following importation of the disease from abroad.
- 4 Since the beginning of 1999 in Scotland, doctors notifying cases have been asked to collect a sample of saliva to check whether the individual genuinely has measles. Between 20 and 50% of all cases have been tested. In 1999 there were only two confirmed cases, and three in 2000.²¹ Measles has therefore almost been eliminated in Scotland due to high MMR vaccine uptake.
- 5 The incidence of measles in different countries correlates with the level of vaccine uptake. In countries and regions where uptake is high, the incidence of measles is low, and vice versa.²²
- 6 If MMR coverage drops, outbreaks of measles, mumps and rubella will occur. Low vaccine uptake has led to outbreaks of measles in Ireland ⁶ and The Netherlands,⁷ and also in some UK communities with low vaccine uptake.²³

Mumps

- 1 Protection against mumps was first offered in October 1988 with the introduction of the MMR vaccine. Mumps then also became a notifiable disease. In 1989 there were 709 mumps notifications. A decade later, in 1999, there were only 38 notifications. However, the vaccine uptake never reached the target of 95% resulting in outbreaks, in 1996 (422 cases) and 1997 (285 cases), occurring in primary school children.

Rubella

- 1 The incidence of rubella declined in the 1990s following the introduction of MMR vaccine in 1988 (8426 cases notified in the 1980s versus 1889 cases in the 1990s). An outbreak in 1996 occurred predominantly in teenage boys and young male adults who had never been vaccinated. In 1999 there were outbreaks at several British universities, including Aberdeen, and links with a concurrent outbreak in Greece have been proposed.²⁴ This reinforces the need to maintain high levels of vaccine uptake throughout the community, particularly in order to protect pregnant women and unborn children.
- 2 The main aim of rubella vaccination is to protect pregnant women against rubella, resultant congenital infection and fetal damage. This is why the rubella vaccine was introduced in 1971 for immunisation of schoolgirls and non-immune women of child-bearing age. However, this strategy had little impact on the circulation of rubella in the community. Therefore, both boys and girls were offered protection against rubella when the MMR vaccine was introduced in 1988.
- 3 In Ireland 106 cases of congenital rubella were recorded between 1975 and 1990. Seventy-six were reported from 1975-1980, compared with 30 from 1981-1990 ²⁵. There was a dramatic decrease in congenital rubella following the introduction of the MMR vaccine in 1988. In the interval 1991- 2000 only two cases were reported from Ireland to the British Paediatric Surveillance Unit (Provisional figures, personal communication).