



Feidhmeannacht na Seirbhíse Sláinte  
Health Service Executive

**Volume 6, Issue 1**

**March 2009**

**DEPARTMENT OF PUBLIC HEALTH, HSE SOUTH  
(CORK & KERRY)**

# IMMUNISATION FOCUS

## FREQUENTLY ASKED QUESTIONS

The Vaccine Education Centre at The Children's Hospital of Philadelphia have a very helpful website ([www.vaccine.chop.edu](http://www.vaccine.chop.edu)). The Centre aims to provide complete, up-to-date and reliable information about vaccines to parents and healthcare professionals. The questions and answers below are taken from one of their Q&A information sheets on "Too Many Vaccines? What you should know". Although the material refers to the US schedules, historical and current, these Q&As are still useful for addressing parents' concerns.

### **Q: Do children today encounter more immunological components from vaccines today than they did 30 years ago?**

**A:** Thirty years ago children received seven vaccines, which protected against measles, mumps, rubella, diphtheria, tetanus, pertussis and polio. The total number of bacterial and viral proteins contained in these seven vaccines was little more than 3,000. Today, children receive 14 different vaccines, but the total number of immunological components in these vaccines is only about 150. This dramatic reduction is the result of scientific advances that have allowed for purer, safer vaccines.

### **Q: How many vaccines can children effectively handle at one time?**

**A:** A lot more than they are getting now. The purpose of vaccines is to prompt a child's body to make antibodies, which work by preventing bacteria and viruses from reproducing themselves and causing disease. So, how many different antibodies can babies make? The best answer to this question came from the Nobel Prize-winning immunologist at the Massachusetts Institute of Technology named Susumu Tonegawa, who first figured out how people make antibodies. Tonegawa discovered that antibodies are made by rearranging and recombining many different genes, and found that people can make about 10 billion different antibodies. Given the number of antibody-producing cells in a child's bloodstream, and the number of immunological components contained in vaccines, it is reasonable to conclude that babies could effectively make antibodies to about 100,000 vaccines at one time. Although this number sounds overwhelming, remember that every day children are defending themselves against a far greater number of immunological challenges in their environment.

## COST OF RETURNED VACCINES

From January to December 2008, vaccines to the value of over €800,000 nationally have been returned to the Cold Chain for disposal.

In the HSE South, stocks to the value of €103,246 were returned (GP sites - €89,119 and HSE sites—€14,127).

Whilst some returns were due to fridge breakdown, most were due to out-of-date stock and others were returned in date. All these vaccines are destroyed and no credit is given for same.

As the vaccines for the new Primary Immunisation Schedule are very expensive, it is important to be efficient when placing orders and be mindful of overstocking, stock rotation, fridge monitoring etc.

**Editor:** Dr. Fiona Ryan, Consultant in Public Health Medicine

Department of Public Health, Health Service Executive (HSE) South (Cork & Kerry)

Sarsfield House, Sarsfield Rd., Wilton, Cork.

Telephone (021) 4927601 Facsimile (021) 4346063 [www.hse.ie](http://www.hse.ie)

**Contributors:** Ms. Cathy Falvey, Immunisation Co-Ordinator, HSE South (Cork & Kerry)

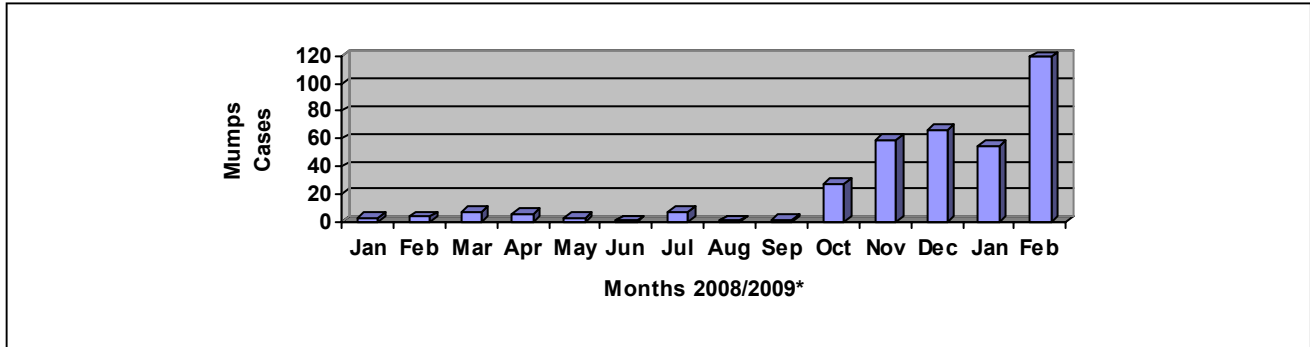
Ms. Mary MacSweeney, Infectious Disease Nurse, HSE South (Cork & Kerry)

Dr. Maire O'Neill, Specialist Registrar, HSE South (Cork & Kerry)

# MUMPS OUTBREAK CONTINUES

The outbreak of mumps which started last autumn is continuing in 2009. The increase in cases was first seen in the third level institutions in October last. Locally, University College Cork and Cork Institute of Technology were particularly affected. Since then we have seen a spill-over of cases into the general community. In February alone, we have had 119 cases of mumps notified in Cork and Kerry, see Figure 1. The last major outbreaks were in 2005.

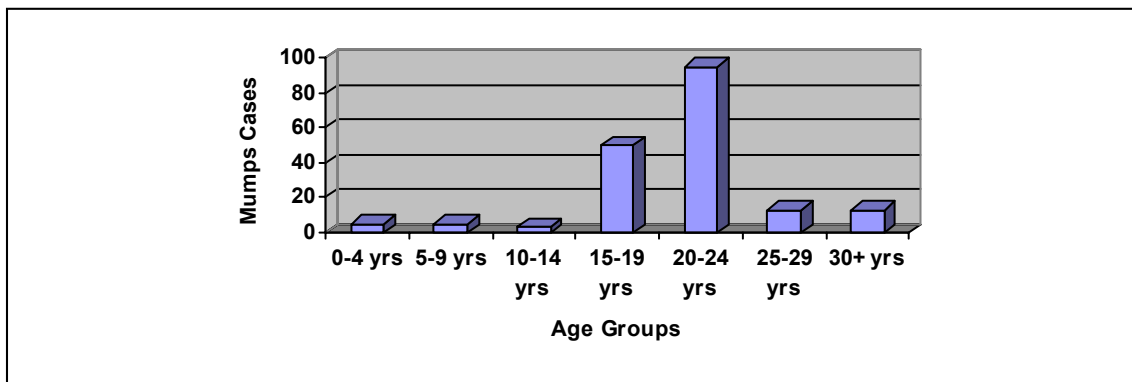
*Figure 1. Mumps Notifications, Cork & Kerry, 2008/2009*



\*up to end of February 2009

The majority (78%) of cases have been in the age group 15-24 years, see Figure 2. We are aware that many in the 15-24 year age group have received only one or no MMR vaccine. All students in colleges, universities and schools who have not had two doses of MMR should be advised to attend their GP or Student Health Service regarding vaccination. If unsure about their vaccination status they should get another dose to be on the safe side.

*Figure 2. Mumps cases by age, Cork & Kerry, 2008*



## Mumps Orchitis

We have received a number of reports of mumps orchitis in males. Orchitis is reported to occur in as many as 37% of postpubertal men who develop mumps. Although it can be bilateral in about 30% of those who develop orchitis, sterility is thought to occur only rarely. Nevertheless, oligospermia and hypofertility occur in 13% of men with bilateral orchitis.

## Mumps cases in vaccinated persons

We have received a small number of reports of confirmed mumps in people with a documented history of mumps vaccination. This is not unexpected. Mumps vaccine is not 100% effective. A UK study of a mumps outbreak in 2004/2005 recorded vaccine effectiveness of 88% for one dose and 95% for two doses. A small number of people, for a variety of reasons, will not respond to the mumps vaccine. This is called primary vaccine failure. In addition, a small number of cases will be due to secondary vaccine failure. This occurs when immunity wanes over time. The UK study concluded that waning immunity may contribute to mumps outbreaks in older vaccinated populations, although its contribution to their outbreak was small.

It is important to stress that the vast majority of our cases are occurring in those who are unvaccinated or incompletely vaccinated. Primary or secondary vaccine failures account for only a very small number of our cases.

**References:** Cohen C et al. Vaccine Effectiveness Estimates, 2004-2005 Mumps Outbreak, England. Emerging Infectious Diseases. 2007;13; 12-17.