

The National Immunisation Schedule

Update and Current issues

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National Immunisation Office



www.immunisation.ie

Objectives

- To outline immunisation schedules in Ireland
 - Primary childhood schedule
 - Vaccine uptake rates
 - School immunisation programme
 - Flu vaccination programme
- To highlight development of new vaccines



: Dates vaccines introduced into the Irish immunisation schedule

1937 - 1999	
Vaccine	Date introduced
1. BCG	1937
2. DT	1930s
3. DTP	1952
4. Oral Polio Vaccine (OPV)	1957
5. Rubella	1971
6. Measles	1985
7. MMR	1988
8. MMR2	1992
9. Hib	1992

2000 - 2016	
Vaccine	Date introduced
1. Men C	2000
2. DTaP-Hib-IPV (5 in1)	2001
3. Inactivated Polio (IPV)	2001
4. Hib Booster	2006
5. Hepatitis B (as part of 6 in 1)	2008
6. PCV7	2008
7. HPV	2010
8. PCV13	2010
9. Tdap	2012
10. Men C (adolescent booster)	2014



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Primary Childhood Immunisation (PCI) Schedule

2 months 6 in 1 + PCV

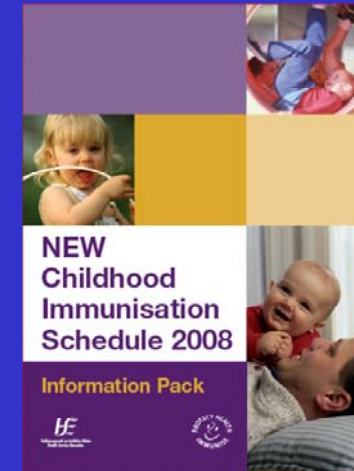
4 months 6 in 1 + Men C

6 months 6 in 1 + PCV (+MenC*)

12 months MMR + PCV

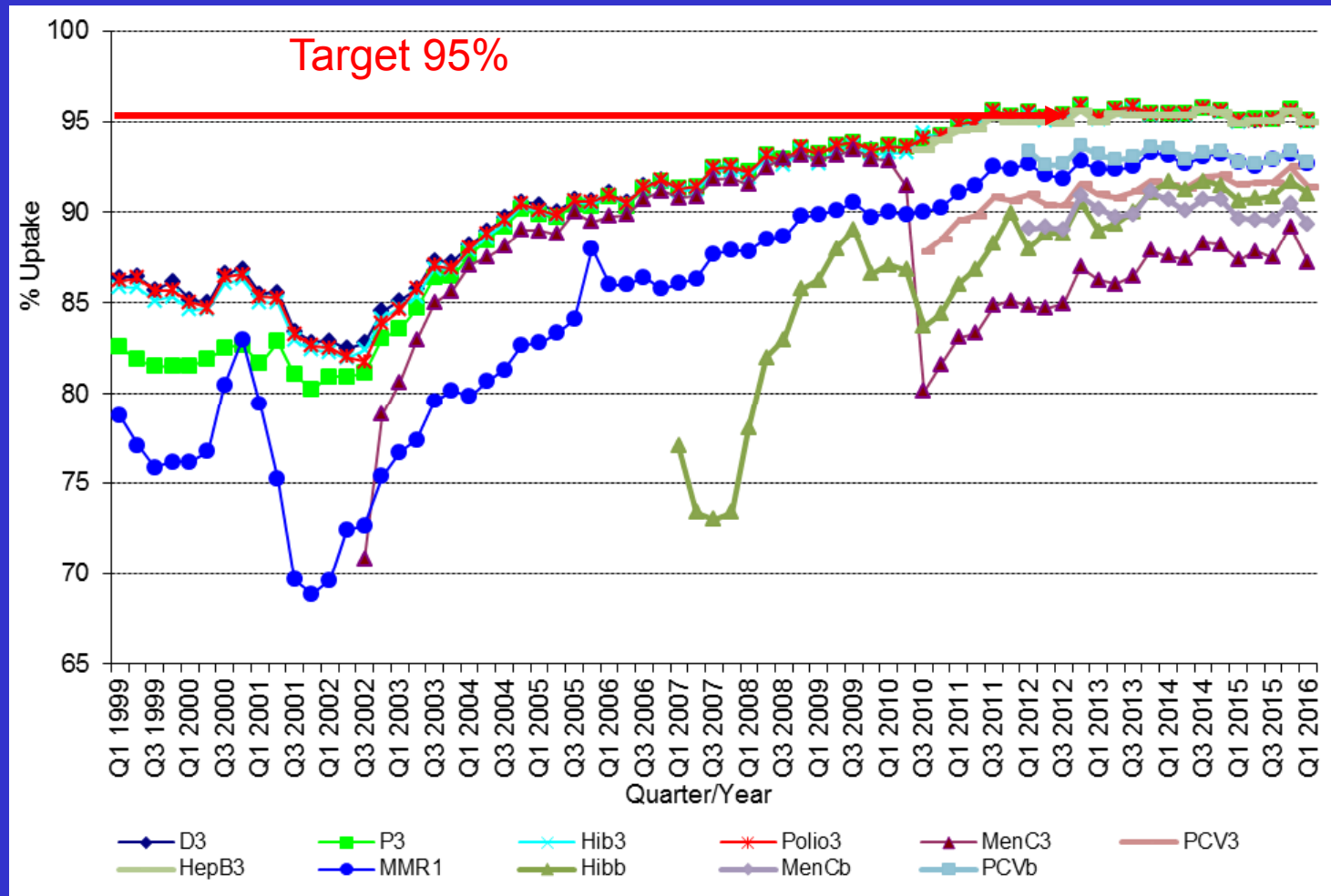
13 months Men C + Hib

* if born before July 1st 2015



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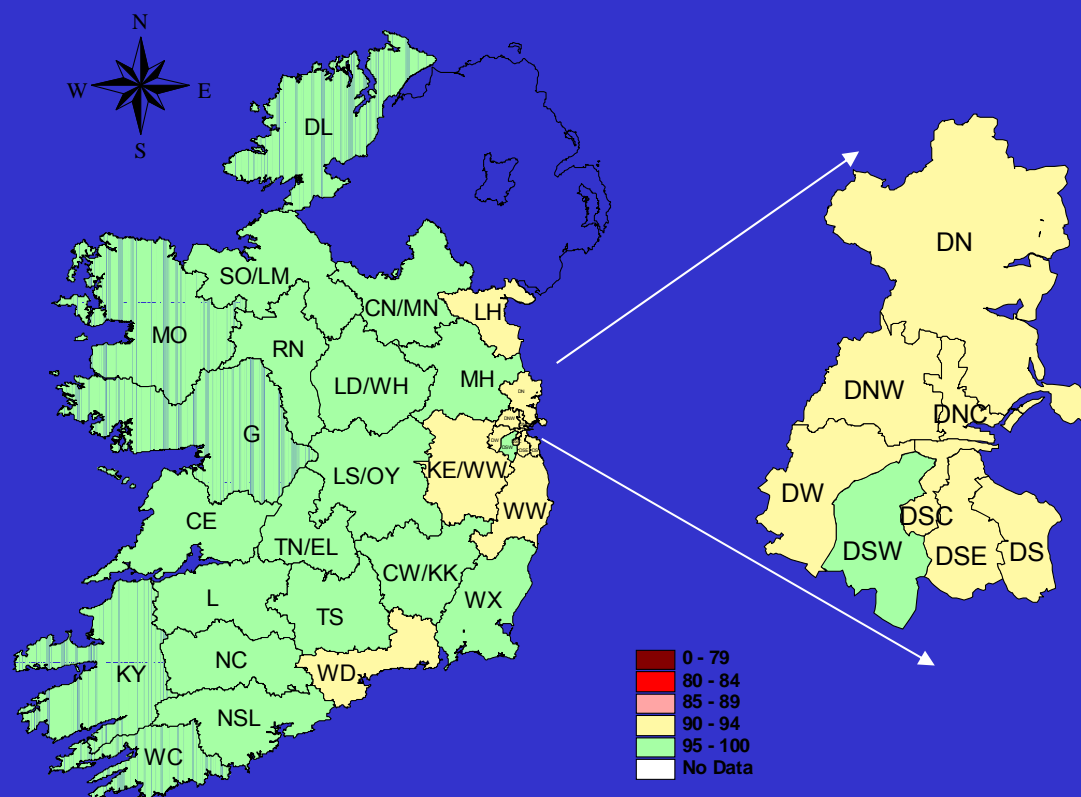
Vaccine uptake rate at 24 months 1999-2016



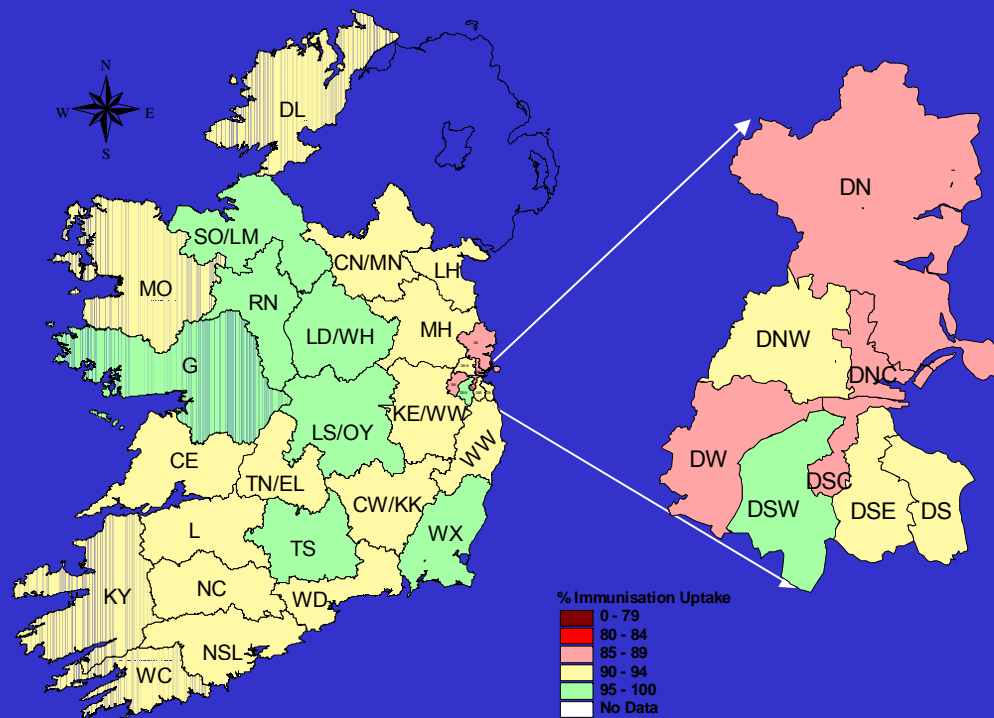
Source: HPSC



Quarter 1 2016 D3 immunisation uptake rates (%) by LHO, in those 24 months of age in Ireland and Dublin (source HPSC)



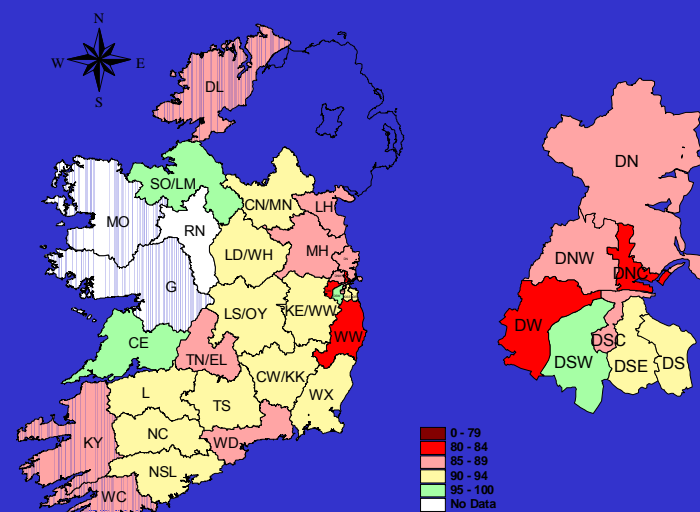
Quarter 1 2016 MMR immunisation uptake rates (%) by LHO, in those 24 months of age in Ireland and Dublin (source HPSC)



Decline in vaccine uptakes

MenC_b booster dose by LHO in those reaching 24 months Q1 2016

	Q1 2010	Q3 2010	Q1 2016
Men C ₃	93%	80%	89%
PCV ₃	-	88%	91%
Hib _b (booster dose)	89%	84%	91%



Source: HPSC



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Decline in vaccine uptakes

Actions

- Highlight 5 visits at every opportunity
- Give an appointment for next visit
- Send a text reminder before appointment
- Follow up defaulters as soon as possible
- Send vaccine returns on time
- Defaulters need appropriate vaccines even if they are over the recommended age

Immunisation Schedule

for children born on or after 1st July 2015

AGE	WHERE	VACCINATION
At birth	HSE clinic or maternity hospital	BCG 1 INJECTION
2 months	GP surgery Visit 1	6 in 1 + PCV 2 INJECTIONS
4 months	GP surgery Visit 2	6 in 1 + MenC 2 INJECTIONS
6 months	GP surgery Visit 3	6 in 1 + PCV 2 INJECTIONS
12 months	GP surgery Visit 4	MMR + PCV 2 INJECTIONS
13 months	GP surgery Visit 5	MenC + Hib 2 INJECTIONS

Have you made an appointment for your child's next visit?

REMEMBER
Your child needs 5 GP visits.
Bring your child's immunisation passport to each visit.
www.immunisation.ie

What common reactions can my child get after being vaccinated and what should I do?

Common reactions	What to do
Soreness, swelling and redness in the area where the injection was given	Give paracetamol or ibuprofen to relieve aches and pains. Make sure clothes are not too tight or rubbing against the area where the injection was given.
Fever (over 39.5°C)	Do not overdress your baby. Make sure their room isn't too hot. Give extra fluids to drink. Give paracetamol or ibuprofen to lower the fever.
Headache or irritability	Give paracetamol or ibuprofen to relieve aches and pains.

→ The dose of paracetamol or ibuprofen recommended for your child is written on the bottle according to the child's age.
→ Please ask your pharmacist for a sugar-free mixture of paracetamol or ibuprofen suitable for your child's age.
→ Using paracetamol or ibuprofen over a long period without advice from a doctor may be harmful.
If your child received the MMR vaccine today they may get a rash 6-10 days later (mini measles). This is not contagious.

Remember, if your child is very unwell after getting a vaccine, they may be sick for some other reason. If you are worried about your child, please contact your GP, practice nurse or public health nurse for further advice.

REMEMBER to bring your child's vaccine passport to each GP visit so that your child's vaccines are recorded and you have this information when they are older.

For further information

www.immunisation.ie

Remember, it takes 5 GP visits to fully vaccinate your baby.

2 months 4 months 6 months 12 months 13 months

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HE
Reidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Primary Childhood Immunisation (PCI) Schedule

CURRENT SCHEDULE	
Babies born on or after 1st July 2015	
Immunisations	Comment
6 in 1 + PCV	2 injections
6 in 1 + MenC	2 injections
6 in 1 + PCV	2 injections
MMR + PCV	2 injections
MenC + Hib	2 injections

6 in 1 Diphtheria, Tetanus, Pertussis, Polio, Hepatitis B, Haemophilus influenzae B
PCV Pneumococcal conjugate vaccine
MenC Meningococcal C vaccine
MMR Measles, Mumps Rubella
Hib Haemophilus influenzae B



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Primary school immunisation schedule 2016/2017

Age (years)	Vaccine
4 -5	Tdap/IPV MMR

Tdap/IPV low dose diphtheria
 Tetanus
 low dose pertussis
 Polio
 (IPV Boostrix)



MMR Measles, mumps and rubella



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Tdap/IPV adverse events

- More reactogenic
 - hot, swollen, red and tender arms from the shoulder to elbow
 - large, localised swelling (diameter > 50 mm) occurring around the injection site
- Begin within 48 hours of vaccination
- Resolve spontaneously
- Antibiotic treatment or anti-inflammatory not indicated
- Not usually associated with significant pain or limitation of movement
- Inform parents in advance

4 in 1 and MMR Booster School Vaccination Programme for Children in Junior Infants

Name: _____
Date: _____
Time of vaccination: _____

Your child was given the following vaccines today

4 in 1 ☐ **MMR** ☐

Common reactions expected after these vaccines may include

- mild fever
- soreness, swelling and redness where the injection was given. Sometimes this swelling can be from the shoulder to the elbow. This usually occurs within 2 days of the vaccination and gets better over 4 – 5 days. Antibiotics are not needed to treat this local reaction.

After MMR vaccine

- some children may get "mini measles" with a rash and fever 6 to 10 days after the injection
- on rare occasions, children may get "mini-mumps" with swelling in the jaw in the third week after vaccination

These are not contagious.

You can give your child paracetamol or ibuprofen to relieve aches and pains or to lower the fever.

If you are concerned about your child the school vaccination team can be contacted during office hours from Monday to Friday at

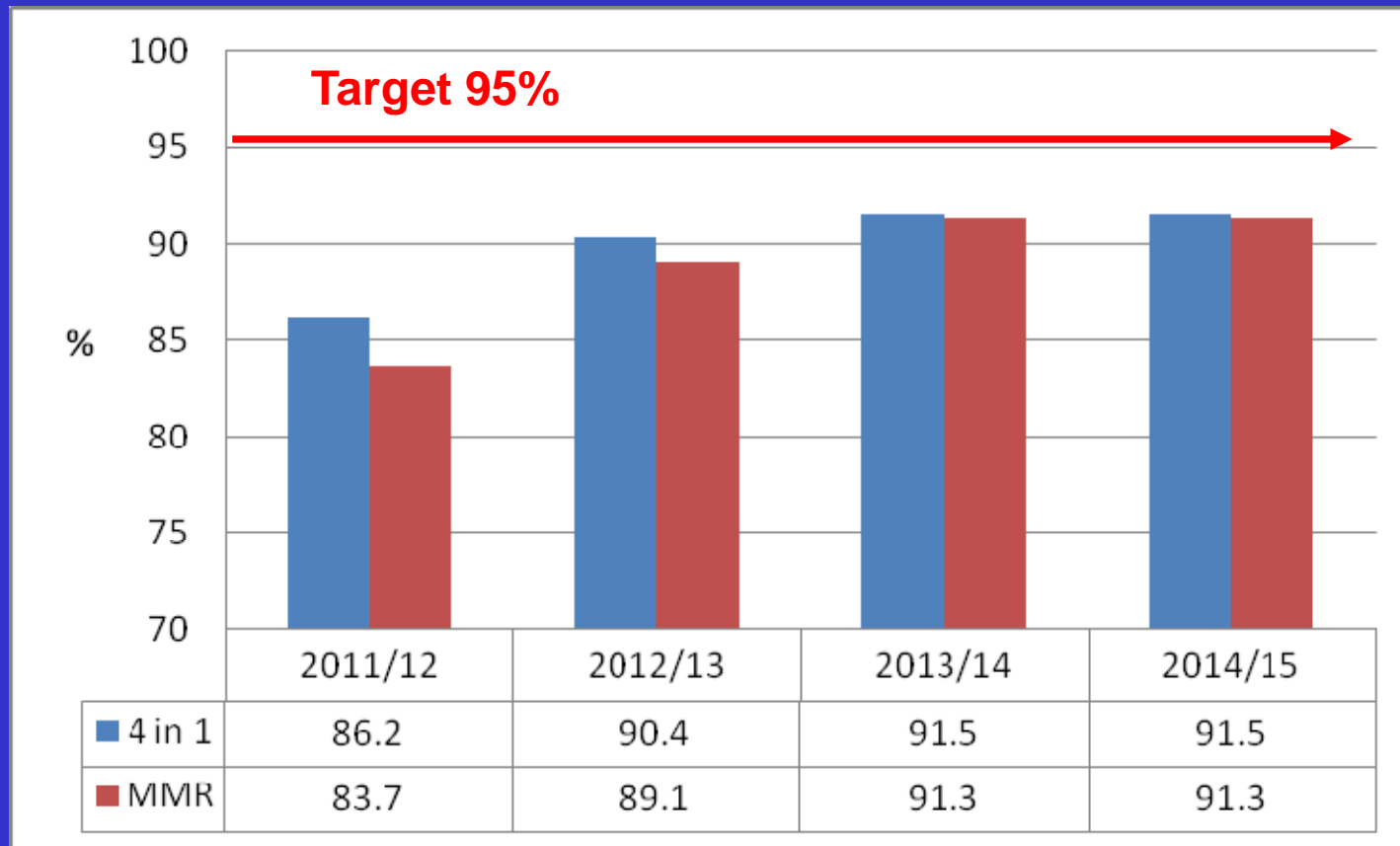
If you require medical advice after these hours please contact your family doctor.

For more information see www.immunisation.ie

09/14



Primary school immunisation uptake 2011/12 - 2014/15 (Target 95%)



CHO5 4in1 95% MMR 95.3%



Second level school immunisation schedule 2016/2017

Age (years)	Vaccine
12-13	Tdap MenC
12 – 13 (girls only)	HPV (2 dose schedule)

Tdap Tetanus, low dose diphtheria & pertussis
MenC Meningococcal C vaccine
HPV Human papillomavirus



Second level school vaccination programme

Name: _____

Date: _____

Time of vaccination: _____

Your child was given the following vaccines today

☐ HPV ☐ Tdap ☐ MenC

Common reactions expected after these vaccines may include

- soreness, swelling and redness where the injection was given (this usually passes after a day or two)
- dizziness
- headache

Occasionally your child may feel sick or have a mild fever. On rare occasions some children may have an itchy rash or hives.

You can give your child paracetamol or ibuprofen to relieve aches and pains or to lower the fever. If you are concerned about your child please seek medical advice.

The school vaccination team can be contacted during office hours from Monday to Friday at _____

If you require medical advice after these hours please contact your family doctor.

Before the next vaccine, you should write to the vaccination team if there has been

- a serious reaction to these vaccines
- any change to your child's medical history or your consent

You will get a record of your child's vaccinations when they have all been completed. **Please keep this safe.**

For more information see www.immunisation.ie



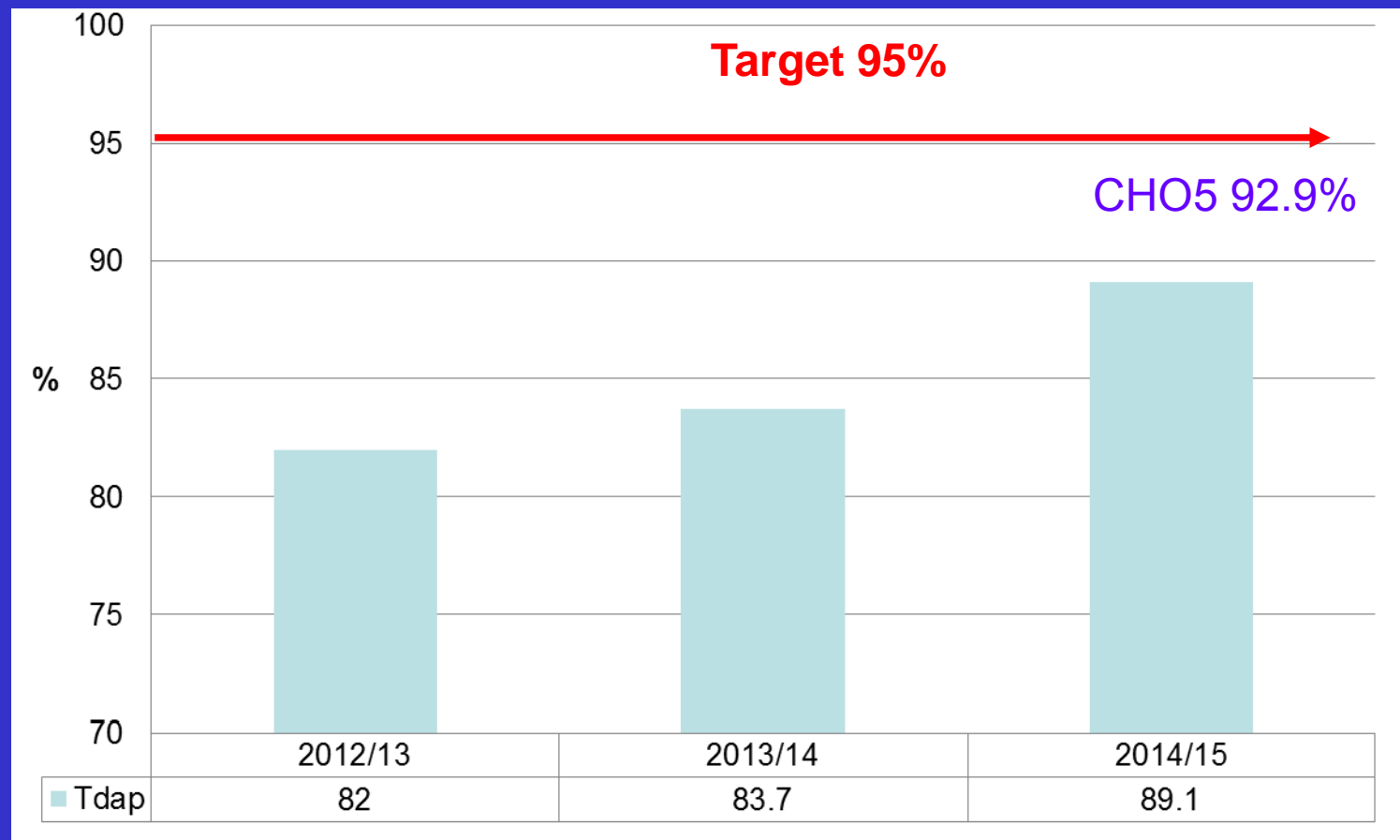
www.immunisation.ie

Adolescent MenC booster vaccine

- Peak rates in under 5 years and 15-19 years
- Concerns about waning immunity in adolescents
- Recent study
 - those vaccinated at <1 year, vaccine effectiveness decreased by 50% after 10 years
 - those vaccinated with one dose at 12–19 years showed no changes
 - vaccination at ≥ 12 years related to a low number of vaccine failures and a higher and longer protection over time
- MenACWY in UK since 2015/2016



Second level school immunisation uptake Tdap (Target 95%)

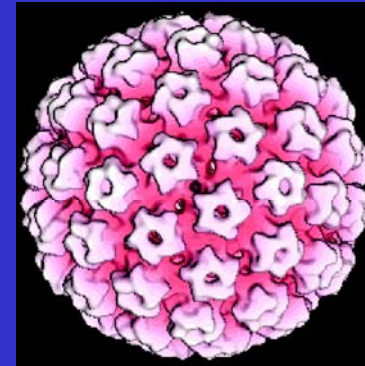


MenC uptake 87.9% CHO5 93.2%

HPV vaccination programme

Gardasil (Sanofi Pasteur)

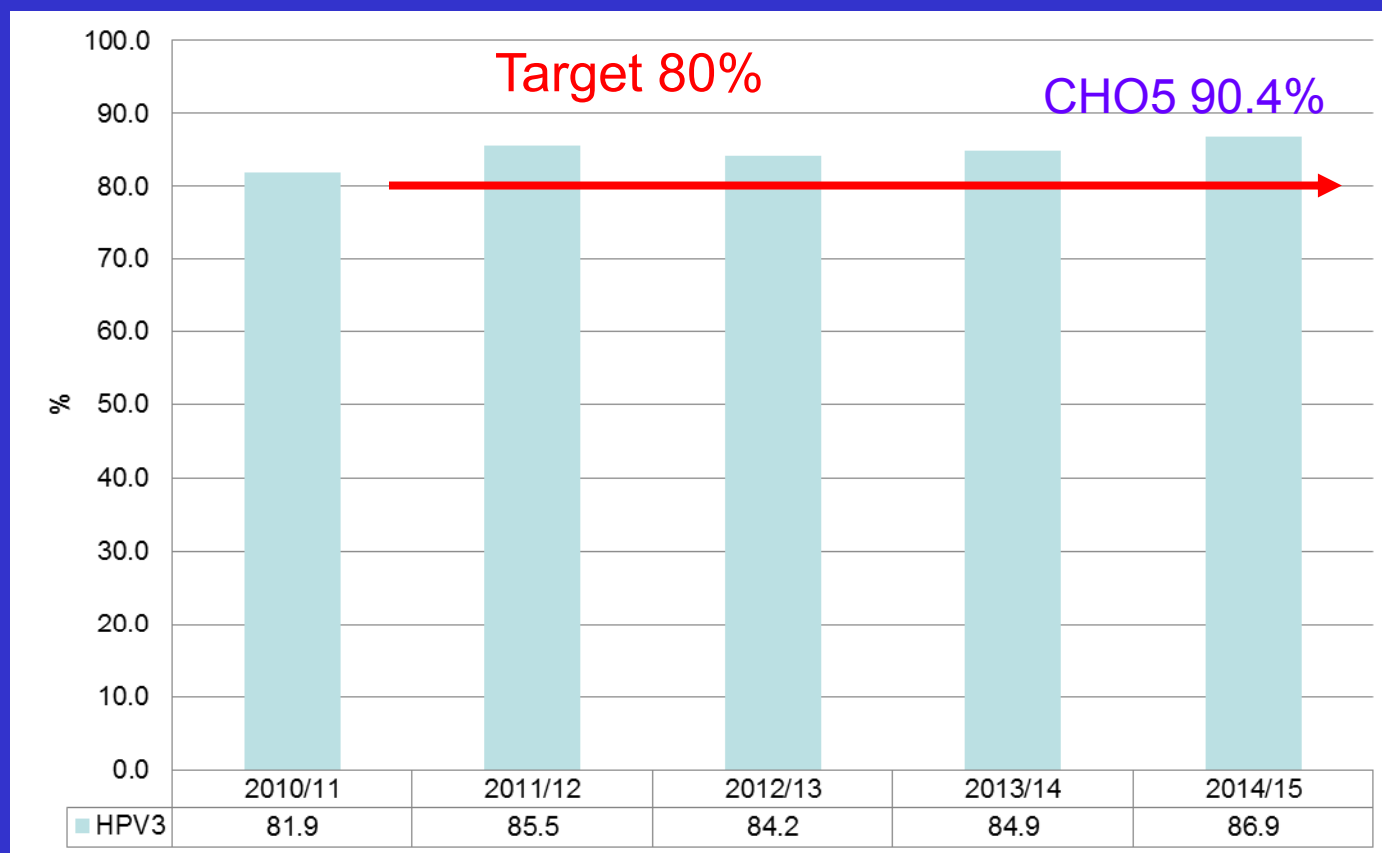
- protects against
 - HPV 16 and 18
(causes 70% cervical cancers)
- and
 - HPV 6 and 11
(causes 90% anogenital warts)



Computerised image of
the human papillomavirus
Courtesy of Dept of
Pathology, University of
Cambridge

HPV vaccine uptake 2010/2011 - 2014/2015

Routine programme First years

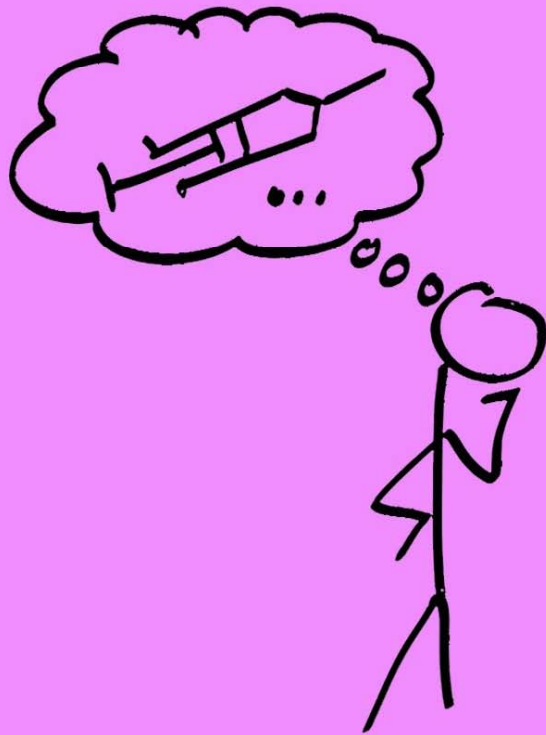


Highest uptake achieved for 3 dose schedule in 2014/15

Excellent cohort retention

>95% girls who started dose 1 completed dose 3





ARE HPV VACCINES SAFE?

Gardasil vaccine safety

- Over 200 million doses distributed worldwide
- Used in over 25 European countries, the US, Canada, Australia and New Zealand
- WHO, EMA, CDC repeatedly review safety data – no serious adverse events

Nov 2015 EMA review found no evidence the vaccine was linked to chronic fatigue like conditions

Dec 2015 WHO concluded that Gardasil continues to have an excellent safety profile.

Jan 2016 European Commission endorsed the conclusion of the EMA, no need to change the licensed documentation



HPV vaccine safety

May 2016

The UK Medicines and Healthcare Regulatory Agency reported :

“More than three million girls have been vaccinated so far in the UK with HPV vaccine, and tens of millions more have been vaccinated globally.

*As with all vaccines, safety remains under continual review, and HPV vaccine has a **very good safety record**’.*



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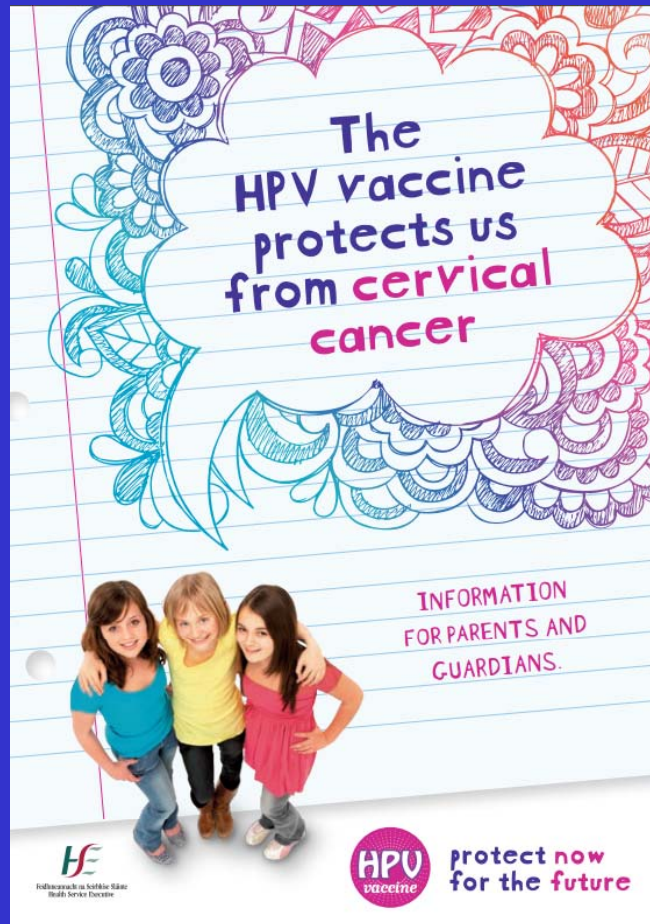
HPV vaccine safety

May 2016

- 1065 reports to HPRA
 - consistent with the expected pattern of adverse effects for the vaccines
 - syncope (faints), gastrointestinal symptoms, malaise, headache
 - 2 reports of POTS (medically confirmed)
 - 2 reports of CRPS
 - 13 reports of chronic fatigue syndrome
- 660,000 doses administered
- over 220,000 girls fully vaccinated



Known side effects of Gardasil



Very commonly (more than 1 in 10 patients):

- Pain, swelling and redness at injection site. Headache

Commonly (more than 1 in 100 patients):

- Bruising, itching at injection site, pain in extremity. Fever and nausea

Rarely (less than 1 in 1000 patients):

- Hives (urticaria)

Very rarely (less than 1 in 10,000 patients):

Syncope (vasovagal reaction), or fainting, Allergic reactions that may include difficulty breathing, wheezing (bronchospasm), hives and rash have been reported.

Patient Information Leaflet (PIL) at
<http://www.medicines.ie/medicine/11535/PIL/GARDASIL>

HPV vaccine safety UK

Dr. Philip Davies, Director General of the European Cervical Cancer Association stated in January 2016:

“30,000 women die from cervical cancer each year in Europe; many of these deaths are preventable. Through CervicalCheck and the HPV vaccination programme, Ireland has one of the best cervical cancer prevention programmes in Europe and it’s completely free.”



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CDC

CDC has carefully studied the risks of HPV vaccination. HPV vaccination is recommended because the benefits, such as prevention of cancer, far outweigh the risks of possible side effects.

Benefits

Cancer Prevention

Cervical, vaginal, and vulvar cancer in women

Anal cancer in men and women

Likely penile cancer in men

Likely oropharyngeal cancer in women and men

Potential Risks

Chance of fainting

Pain, redness, or swelling in the arm where the shot was given

<http://www.cdc.gov/vaccinesafety/pdf/data-summary-hpv-gardasil-vaccine-is-safe.pdf>



HPV vaccine impact in Australia

High Grade Cervical Lesions <18 years

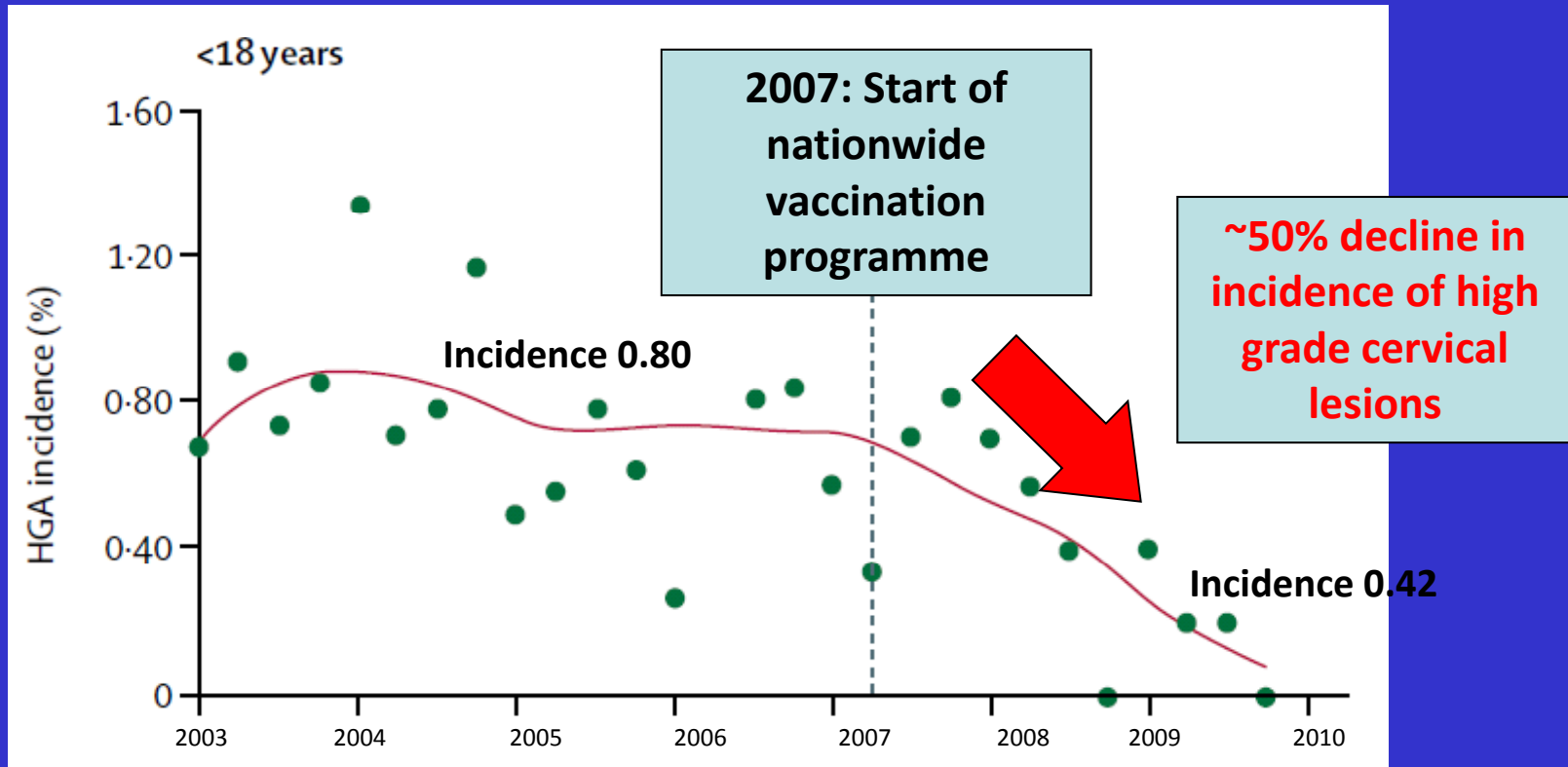


Figure 2: Incidence of high-grade cervical abnormalities, by age group

Incidence of high-grade cervical abnormalities (HGA; green dots) is the number of new diagnoses within a 3-month period per 100 women tested. Lowess smoothing trends are shown with red lines. The vertical lines, at the start of the second quarter in 2007, signify the introduction of human papillomavirus vaccination.

By 2013 reductions also seen in 20-24 year age group

Brotherton et al Lancet 2011; 377: 2085–92

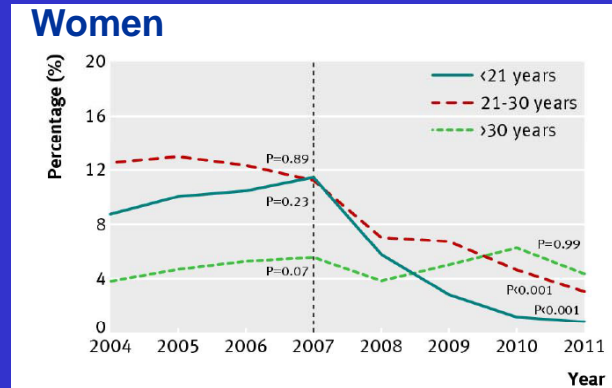


HPV vaccine effectiveness - Australia

Genital warts

- Women <21 years
 - HPV vaccine 83% 1st dose uptake
 - 2011
 - 93% decline in genital warts
 - no genital warts in vaccinated women
- Men
 - 82% decline in genital warts in heterosexual men
 - attributable to herd immunity

% Australian born diagnosed with genital warts by age group 2004 - 2011



Ali H et al BMJ 2013;346:f2032 doi: 10.1136/bmj.f2032 (Published 19 April 2013)



HPV vaccine information

HPV Vaccines and Cervical Cancer

Published by National Immunisation Office August 2016

Human papillomavirus (HPV)

- Human Papillomavirus (HPV) infection is spread by direct (usually sexual) contact with an infected person.
- About 80% of all women will have a HPV infection in their lifetime usually in their late teens and early 20s.
- Most HPV infections clear naturally but some caused by high risk HPV types can progress to cervical cancer.
- Two high risk HPV types (16 and 18) cause over 70% of cervical cancers.

Cervical cancer

- Ireland has one of the highest rates of cervical cancer in Western Europe.
- Each year in Ireland
 - over 90 women die from cervical cancer
 - over 280 (many young) women need treatment (surgery, chemotherapy and/or radiotherapy) for invasive cervical cancer
 - over 6,500 women need hospital treatment for a precancerous form of cervical cancer.

HPV vaccine

- There are three licensed HPV vaccines, HPV2, HPV4 and HPV9.
- HPV vaccine is recommended by the World Health Organization, the International Federation of Obstetricians and Gynaecologists and the expert immunisation body in Ireland.
- The HPV vaccine used in the HSE school HPV vaccination programme is HPV4 (Gardasil).
- Gardasil provides protection against
 - two high risk HPV types (HPV 16 and 18) that cause 70% of cancers and precancers
 - two HPV types that cause 90% genital warts.

- Gardasil has been licensed worldwide since 2006. Gardasil is currently used in over 25 European countries, the United States, Canada, Australia and New Zealand.
- By May 2016, over 220 million doses of Gardasil have been distributed worldwide, either as part of national immunisation programmes or by private doctors.
- In Ireland more than 660,000 doses of Gardasil have been distributed and more than 220,000 girls have received the full vaccine course as part of the HSE school HPV vaccination programme.

Are HPV vaccines safe?

- All vaccines must go through extensive safety testing before they are licensed.
- Once in use, vaccine safety is continually monitored to identify side effects caused by the vaccine.
- Data is also collected on health conditions that happen after vaccination but are not caused by it.
- The European Medicines Agency, the Centers for Disease Control and Prevention in the US and the World Health Organization continue to say HPV vaccines are safe with no known long term side effects.

What are the side effects?

The known side-effects are:

- About 1 girl in 10 will get pain, swelling and redness at the injection site and/or headache.
- About 1 girl in 100 will get nausea, pain in the vaccinated arm and mild fever.
- About 1 girl in 1000 to 1 girl in 10,000 will get an itchy rash or hives.
- Severe allergic reactions with difficulty breathing are very rare (about 1 in 1 million patients).
- Occasionally girls faint after getting an injection. The girls are advised to sit down for 15 minutes after the vaccination. This helps prevent fainting.

There is no scientific evidence of any long term side effects of HPV vaccines.

Do HPV vaccines work?

- HPV vaccines are more than 99% protective against infection with cancer causing HPV virus types.
- HPV vaccines are most effective when given at the age of 12 to 13 years and will provide protection throughout adulthood.
- Precancerous growths of the cervix have been reduced by more than 50% in countries such as Australia, Denmark and Scotland.

Why does the HSE request that only HSE information should be given to parents?

Parents should receive information that is

- scientifically accurate and endorsed by national and international expert and regulatory bodies
- in line with HIQA guidance "Communicating in Plain English" (July 2015).

The information in the HSE leaflet

- includes all the known scientifically proven side effects from HPV vaccine
- is prepared from the licensed documentation for the vaccine and provides links where parents can go to read further information
- is presented in clear simple language and approved by the National Adult Literacy Agency so that it can be easily understood
- provides link to further information on vaccine including the Patient Information Leaflet

The HSE strongly recommends HPV vaccination to prevent cervical cancer.

HPV Vaccine Key Facts

Published by National Immunisation Office August 2016

There is evidence that the recommendation of a known health professional leads to increased vaccine uptake. GPs and practice nurses provide a significant role in the promotion of all vaccines so please help to inform parents about the safety and effectiveness of HPV vaccine.

Human papillomavirus (HPV)

- Human Papillomavirus (HPV) infection is the most common sexually transmitted disease worldwide.
- Spread by direct (usually sexual) contact with an infected person.
- About 80% of all women will have a HPV infection in their lifetime usually in their late teens and early 20s.
- HPV infection rates are rising rapidly among women and men in high income countries.
- Most HPV infections clear naturally but some caused by high risk HPV types can progress to cervical cancer.
- Two high risk HPV types (16 and 18) cause over 70% of cervical cancers.

Other cancers

- HPV is responsible for
 - more than 90% anal cancers
 - almost 70% vaginal and vulvar cancers
 - more than 60% of penile cancers
 - over 70% oropharyngeal cancers.
- Male incidence of oropharyngeal cancer will overtake cervical cancer incidence by 2020.

HPV vaccine is recommended by the World Health Organization (WHO), the International Federation of Obstetricians and Gynaecologists (FIGO) and the American Society for Clinical Oncology to reduce the burden of cervical cancer in women.

Cervical cancer

- Ireland has one of the highest rates of cervical cancer in Western Europe.
- Each year in Ireland
 - over 90 women die from cervical cancer
 - over 280 (many young) women need treatment (surgery, chemotherapy and/or radiotherapy) for invasive cervical cancer
 - over 6,500 women are diagnosed with high grade cervical intraepithelial neoplasia (CIN) and require hospital treatment.

HPV Vaccine

- Should be administered before exposure to HPV at sexual contact.
- Recommended for all girls age 12-13 years.
- HPV vaccine is known to be most effective when given at this age.
- Two HPV vaccines (HPV2 and HPV 4) were licensed in 2006.
- HPV2 vaccine (Cervarix)
 - is licensed to prevent premalignant genital lesions and cervical cancer causally related to HPV types 16 and 18
 - is licensed for use in females from 9 years of age

- two dose schedule at 0 and 6 months for girls less than 15 years at first dose
- three dose schedule at 0, 1, 6 months for females age 15 to 26 years.

HPV4 vaccine (Gardasil)

- is used in the HSE HPV school vaccination programme
- is licensed to prevent premalignant genital and anal lesions, cervical and anal cancers causally related to HPV types 16 and 18
- provides protection against HPV types 6 and 11 that cause over 90% anogenital warts in men and women
- is licensed for use in females and males from 9 years of age
- two dose schedule at 0 and 6 months for those less than 15 years at first dose
- three dose schedule at 0, 2, 6 months aged 15 to 26 years.

HPV types 16 and 18 cause 70% cervical cancers.

HPV9 vaccine (Gardasil 9)

- was licensed in 2014
- provides protection against 9 HPV types 6, 11, 16, 18, 31, 33, 45, 52, and 58 (7 of which cause almost 90% of cervical cancers).



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Reidhmeannacht na Seirbhíse Sláinte
Health Service Executive

More information

National Immunisation News

The newsletter of the HSE National Immunisation Office

July 2016

Changes to the Primary Childhood Immunisation Programme
The National Immunisation Advisory Committee (NIAC) has recommended the addition of meningococcal B (MenB) and rotavirus vaccines to the primary childhood programme.

The new schedule outlined below will be introduced for **all babies born on or after October 1st 2016**.

CURRENT SCHEDULE				Babies born on or after 1st October 2016	
Age (months)	Vaccine	No of injections	Vaccine	No of injections	
2	6 in 1 + PCV	2	6 in 1 + PCV+ MenB		
4	6 in 1 + MenC	2	6 in 1 + MenB + Rot		
6	6 in 1 + PCV	2	6 in 1 + PCV + Men		
12	MMR + PCV	2	MMR + MenB		
13	MenC + Hib	2	Hib/MenC + PCV		

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- Students going to college
- Common Queries

6 in 1

PCV
MenB
Rotavirus
MenC
MMR
Hib/MenC

Measles

An outbreak in Ireland. See the areas most affected are: East, South, and Midwest. Most of these cases are under 30 years of age. Most of those who have been in Ireland have not had the vaccine. See [MainBody.1f](#)



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Health Service Executive
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online only



NATIONAL IMMUNISATION ADVISORY COMMITTEE

Immunisation Guidelines for Ireland

2013 Edition

- Who we are
- Public Information
- Healthcare Worker Information
- Information Materials
- Glossary
- Useful Websites



Welcome to the National Immunisation Office Website

We provide trusted, up-to-date information about HSE immunisation programmes for children, adults and healthcare professionals in Ireland.

HSE National Immunisation Office

Contact us using our Online Form Phone: 01 867 6108 Fax: 01 868 2943



Important News
MenB and Rotavirus Vaccines, BCG vaccine, HPV Safety and Flu



Check Vaccine Records
How to request a copy of your records



Patient Information
Leaflets and Vaccine Contents
Detailed information about vaccines



Baby and Childhood Immunisation
Immunisation is a simple, safe, effective way of protecting babies and children



School Programme
Information about the 4 in 1 and MMR, HPV, Tdap and MenC school vaccination programme



Vaccines and Pregnancy
Information about the vaccines recommended during and after pregnancy

How do I:

- [Check vaccine records](#)
- [Make an appointment](#)
- [Order information materials](#)
- [Contact the local office](#)
- [Ask a question](#)
- [Order HSE vaccines](#)

Further Information

- [Your Child's Immunisation - A Guide for Parents](#)
- [Translation of Immunisation Material](#)
- [Current Vaccination Schedule](#)
- [Previous Vaccination Schedule](#)

Useful Links

- [Immunisation Guidelines for Ireland](#)
- [Vaccination in General Practice](#)
- [Vaccine Preparation](#)
- [What is in Vaccines?](#)
- [Catchup Vaccines](#)

<http://www.immunisation.ie/en/HealthcareProfessionals/ImmunisationGuidelines/>



www.immunisation.ie

