Adult immunisation update training

August 2017

HSC Public Health Agency

Improving Your Health and Wellbeing

What we will cover

- Whooping cough vaccine in pregnant women
- Shingles vaccine update
- MMR for adults
- Hepatitis A and B shortages

Pertussis vaccine in pregnancy

- In Oct 2012, JCVI recommended pregnant women receive one dose of pertussis containing vaccine from 28-38w
- **Updated and from April 2016, vaccine now offered <u>from week 16</u> of pregnancy**

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Why vaccinate pregnant women?

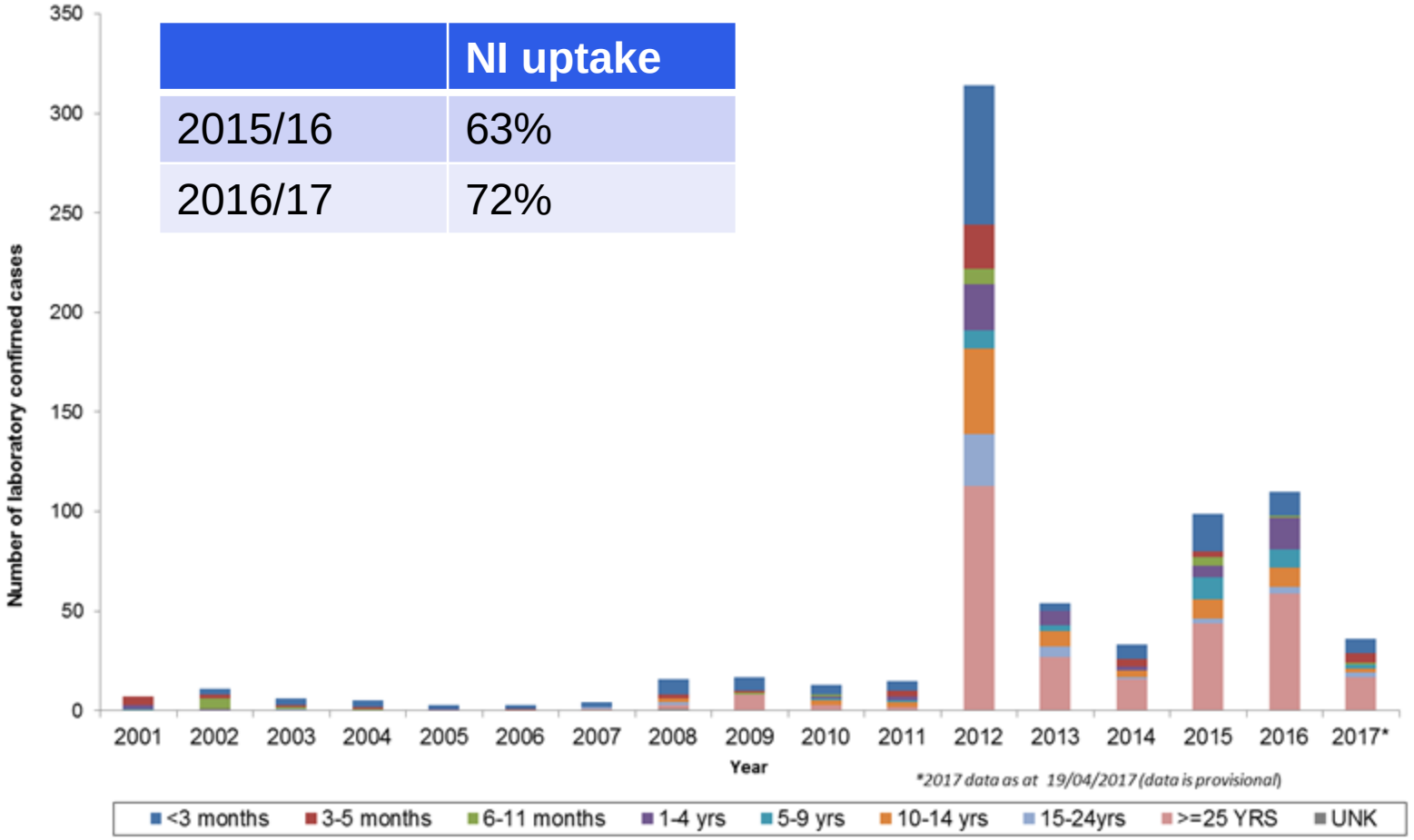
- 2012 largest pertussis outbreak for many years
- High attack rate in those < 3months of age
- Pertussis is a serious disease particularly in babies who can become seriously unwell– many admitted to hospital, including ICU, and deaths occurred
- Only strategy to reduce this morbidity and mortality is vaccination of pregnant women
- Evaluation of programme shows its highly effective in protecting infants in first 3 months of life

How?

- Boosts maternal pertussis antibodies in ~2 weeks
- Antibodies pass via placenta to baby **(passive protection)**
- Lasts weeks – months
- Baby must get routine scheduled vaccines from 2 months old
- Breast feeding does not provide sufficient antibodies
- Babies born to vaccinated mums have higher levels of antibodies than those born to unvaccinated mums

Laboratory confirmed cases of whooping cough (*bordetella pertussis*) in Northern Ireland, by age group, 2001 - 2017*

	NI uptake
2015/16	63%
2016/17	72%



Lab confirmed cases aged <3 months, 2013-2017* + vaccination status of mother

	< 3 months	Mother unvaccinated	Proportion of cases where mother wasn't vaccinated
2013	4	3	75%
2014	7	6	86%
2015	19	14	74%
2016	12	6	50%
2017*	7	3	43%
Total	49	17	66%

Pertussis vaccine in pregnancy

- **Recommended vaccine:** Boostrix-IPV ®
- Replaced Repevax® in1st July 2014
- **Generic**: Diptheria, Tetanus, Pertussis (acellular component), Polio adsorbed (dTaP/IPV)
- Inactivated, acellular, adjuvanted vaccine does not contain thiomersal)
- Boostrix-IPV® regardless of number of pregnancies

Vaccine safety

- Use of similar vaccines in US, Australia & New Zealand in pregnant women's programme
- MHRA have continually monitored the programme since introduction & have found no safety concerns relating to pertussis vaccination in pregnancy
- Pregnant women are excluded from vaccine trails, SPC states may be used where indicated
- JCVI and Department of Health advice should be followed and over-ride SPC guidance

Shingles vaccine update

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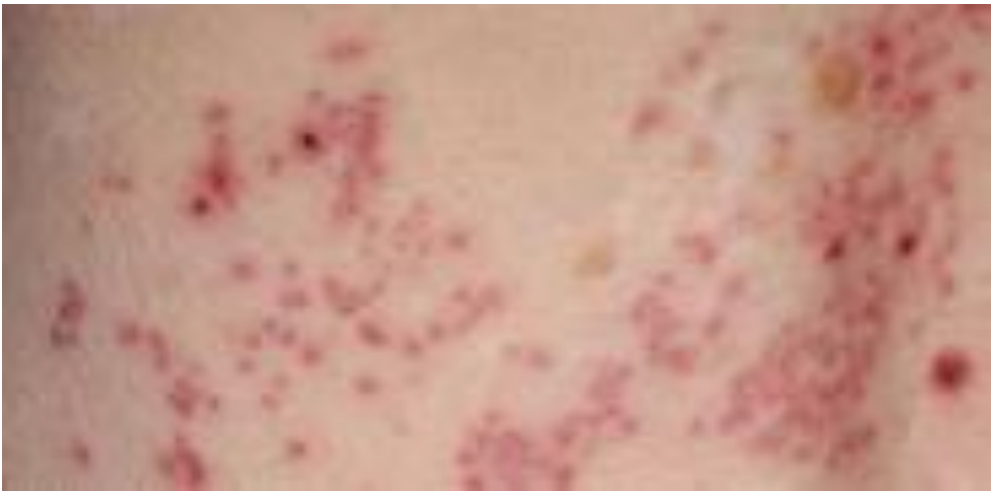
Shingles and its complications

- Reactivation of varicella (chickenpox) infection when immune system is weakened
- Viral infection of nerve cells and surrounding skin



- Complications more likely in adults aged over 50 years
- Severity increases with age

- **Most common** complications are:
  - Post herpetic neuralgia (PHN)
  - Secondary bacterial skin infections
- Less common complications:
  - Ophthalmic Zoster
  - Peripheral motor neuropathy
  - severe cases can lead to hospitalisation and death

Shingles Vaccination Programme

- JCVI recommends shingles vaccination for 70 -79 year olds
- Programme began on 1st September 2013

- **Routine cohort offered vaccine at 70 years** (defined as 70 on 1st September)
- Catch-up vaccination for people up to and including 79 years
- **Catch-up cohort offered vaccine at 78 years**

- Continue to offer to people who missed the vaccine during the year they were eligible until they are 80 years
- Those over 80 years of age are not eligible, even if in previous years

Why vaccinate older adults aged 70- 79 year olds against shingles?

Those over 70 years have an:	Estimated annual numbers in Northern Ireland
Increased risk of developing shingles	900-1000 cases
More likely to suffer a more severe form and develop complications	
Increased risk of PHN	250 cases
Increased risk of hospitalisation	2-3 cases
Death	1-2 (1 in 1000 deaths)

Analytical studies show that the most cost-effective age for offering vaccination to prevent and/ or reduce the disease burden is for those aged 70 to 79

From 1st September 2017 shingles vaccine should be offered to:

- **Routine**: Patients aged 70 years on 1st Sept 2017
- **Catch up:** Patients aged 78 years on 1st Sept 2017

- Patients eligible for immunisation during first 4 years of programme but not vaccinated:

  Patients aged 71-74 on 1st Sept 2017

  Patients aged 79 on 1st Sept 2017

Year	Cohort	Cohort definition	Born from date	Born to date
2017/18	Routine	Age 70 on 1 September 2017	02/09/1946	01/09/1947
2017/18	Catch-up	Age 78 on 1 September 2017	02/09/1938	01/09/1939

The recommended vaccine: Zostavax®

- Live attenuated vaccine
- **Only need one dose of vaccine**
- **Vaccine may be short dated so always check expiry date**

- Clinical trials in adults aged 70 years and over showed that the **vaccine** reduced the incidence of shingles by 38% and provided protection for a minimum of 7 years
- For those vaccinated but who later developed shingles, the vaccine
  - **significantly** reduced the burden of illness by **55%**
  - **significantly** reduced the incidence of PHN by **66.8%**

Administration of Zostavax®

- Can be administered the same time as inactivated vaccines - influenza and 23-valent PPV and other live vaccines **except Yellow Fever**
- Can be administered before or after other live vaccines, **except MMR**
- If MMR and Zostavax® are not administered at the same time, need a four week minimum interval
- a four-week interval should be left between administration of Yellow Fever vaccine and Zostavax®
- Should not be administered to patients on or within 48 hours after oral/i.v. antivirals
- now recommended to be given **IM** - PGD has been changed

Contraindications

- It is critically important to check that the recipient has no contraindications to receiving a live vaccine
- The decision to administer Zostavax® to immunosuppressed individuals is based on a clinical risk assessment
- Always check medical record
- Always check Green Book (on line)
- Do not give the vaccine if you don't have the complete medical history of an individual under highly specialist care until advice of the specialist or a local immunologist has been sought
- **If primary healthcare professionals administering Zostavax® have concerns about the degree of immunosuppression, they should contact the relevant specialist for advice**

Contraindications (cont'd)

Zostavax vaccine should not be given to a person who:

- is pregnant
- has had a confirmed anaphylactic reaction to a previous dose of varicella-containing vaccine
- has had a confirmed anaphylactic reaction to any component of the vaccine, including neomycin or gelatin
- is being treated with either oral or intravenous antivirals (such as acyclovir) until 48 hours after cessation of treatment

(the use of topical acyclovir is not a contraindication to vaccination)

Zostavax® is not recommended for the treatment of shingles or post herpetic neuralgia (PHN). Individuals who have shingles or PHN should wait until symptoms have ceased before being considered for shingles immunisation

Contraindications

The vaccine should NOT be given to a person who:

- has a primary or acquired immunodeficiency state
- is receiving immunosuppressive therapy (including high-dose corticosteroids)
- https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/503773/2905109_Green_Book_Chapter_28a_v3_0W.PDF

Conditions that cause a primary or acquired immunodeficiency state

- acute and chronic leukaemias, lymphoma (including Hodgkin's lymphoma)
- immunosuppression due to HIV/AIDS (see later)
- cellular immune deficiencies
- those remaining under follow up for a chronic lymphoproliferative disorder including haematological malignancies such as indolent lymphoma, chronic lymphoid leukaemia, myeloma and other plasma cell dyscrasias (N.B: this list not exhaustive)
- those who have received an allogenic stem cell transplant (cells from a donor) in the past 24 months and **only** then if they are demonstrated not to have ongoing immunosuppression or graft versus host disease(GVHD).
- those who have received an autologous (using their own stem cells) haematopoietic stem cell transplant in the past 24 months and **only** then if they are in remission

immunosuppressive or immunomodulating therapy

- those who are receiving or have received in the past 6 months immunosuppressive chemotherapy or radiotherapy for malignant disease or non-malignant disorders
- those who are receiving or have received in the past 6 months immunosuppressive therapy for a solid organ transplant (depending upon the type of transplant and the immune status of the patient).
- those who are receiving or have received in the past 12 months biological therapy (e.g. anti-TNF therapy such as alemtuzumab, ofatumumab and rituximab) unless otherwise directed by a specialist
- those who are receiving or have received in the past 3 months immunosuppressive therapy including
  - i) short term high-dose corticosteroids (>40mg prednisolone per day for more than 1 week);
  - ii) long term lower dose corticosteroids (>20mg prednisolone per day for more than 14 days)
  - iii) non-biological oral immune modulating drugs e.g. methotrexate >25mg per week, azathioprine >3.0mg/kg/day or 6-mercaptopurine >1.5mg/kg/day

s)

Individuals on low dose therapies

- Many adults with chronic inflammatory diseases are on stable long-term **low dose** corticosteroid therapy (either alone or in combination)
- Long-term stable low dose corticosteroid therapy +/- **low dose** non-biological oral immune modulating drugs **are not considered sufficiently immunosuppressive and patients can receive vaccine**
- Long-term low dose corticosteroid therapy is defined as ≤20mg prednisolone per day for more than 14 days
- low dose non-biological oral immune modulating drugs e.g. methotrexate ≤25mg per week, azathioprine ≤3.0mg/kg/ day or 6-mercaptopurine ≤1.5mg/kg/day
- specialist advice should be sought for other treatment regimes
- Zostavax® is **not** contraindicated for use in individuals who are receiving topical/inhaled corticosteroids or corticosteroid replacement therapy

Patients anticipating immunosuppressive therapy

- the risk and severity of shingles is considerably higher among immunosuppressed individuals
- therefore eligible individuals anticipating immunosuppressive therapy should ideally be assessed for vaccine eligibility **before** starting treatment that may contraindicate future vaccination
- eligible individuals who have not received Zostavax® should receive a single dose of vaccine at the earliest opportunity and at least 14 days **before** starting immunosuppressive therapy, although leaving one month would be preferable if a delay is possible

Precautions

- Acute illness - defer immunisation until recovered
- Immunosuppressed patients who require protection against shingles should seek advice from a specialist
- Transmission of vaccine virus may rarely occur between recently vaccinated individuals and susceptible contacts particularly if vaccinee develops a rash. As a precaution any person who develops a rash should avoid contact with a susceptible person.
- Oral antivirals such as acyclovir are likely to attenuate response. The use of topical acyclovir is not a contraindication to vaccination.

MMR for adults

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What is Measles?

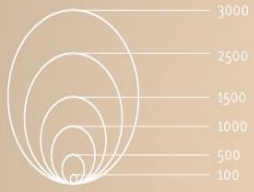
- Extremely contagious viral illness caused by Morbillivirus
- In pre-vaccine era was most common in 1-4 year olds
- Spread by contact with nose and throat secretions and in airborne droplets released when an infected person sneezes or coughs
- Transmission period is from the first onset of symptoms, to 4 days after the appearance of the rash
- Incubation period ranges from 7 to 18 days
- Complications occur in approximately 30% of reported cases

Measles affects all age groups

Measles is an acute, highly contagious disease capable of creating epidemics. It can be contracted at any age. Infants and children are often believed to be the only age groups affected by measles, but the disease also spreads among teenagers and adults. Vaccination is the best way to protect yourself and others against measles, regardless of age. Check your vaccination status.

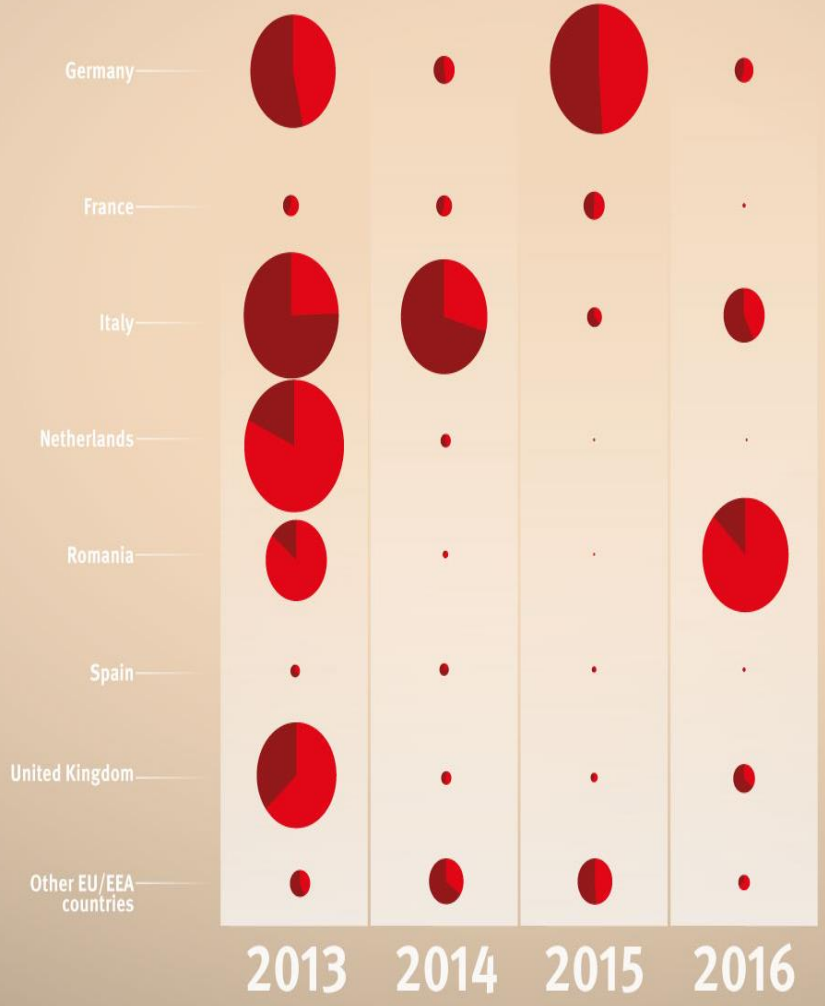
ecdc
EUROPEAN CENTRE FOR DISEASE PREVENTION AND CONTROL

Number of reported measles cases

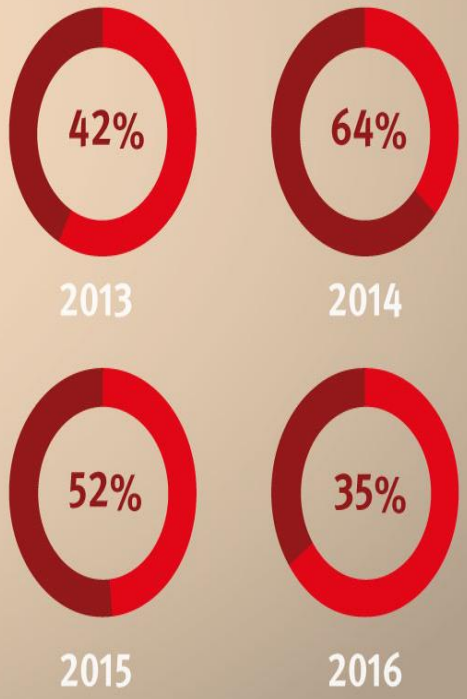


Age: 0–14 years
Age: above 14 years

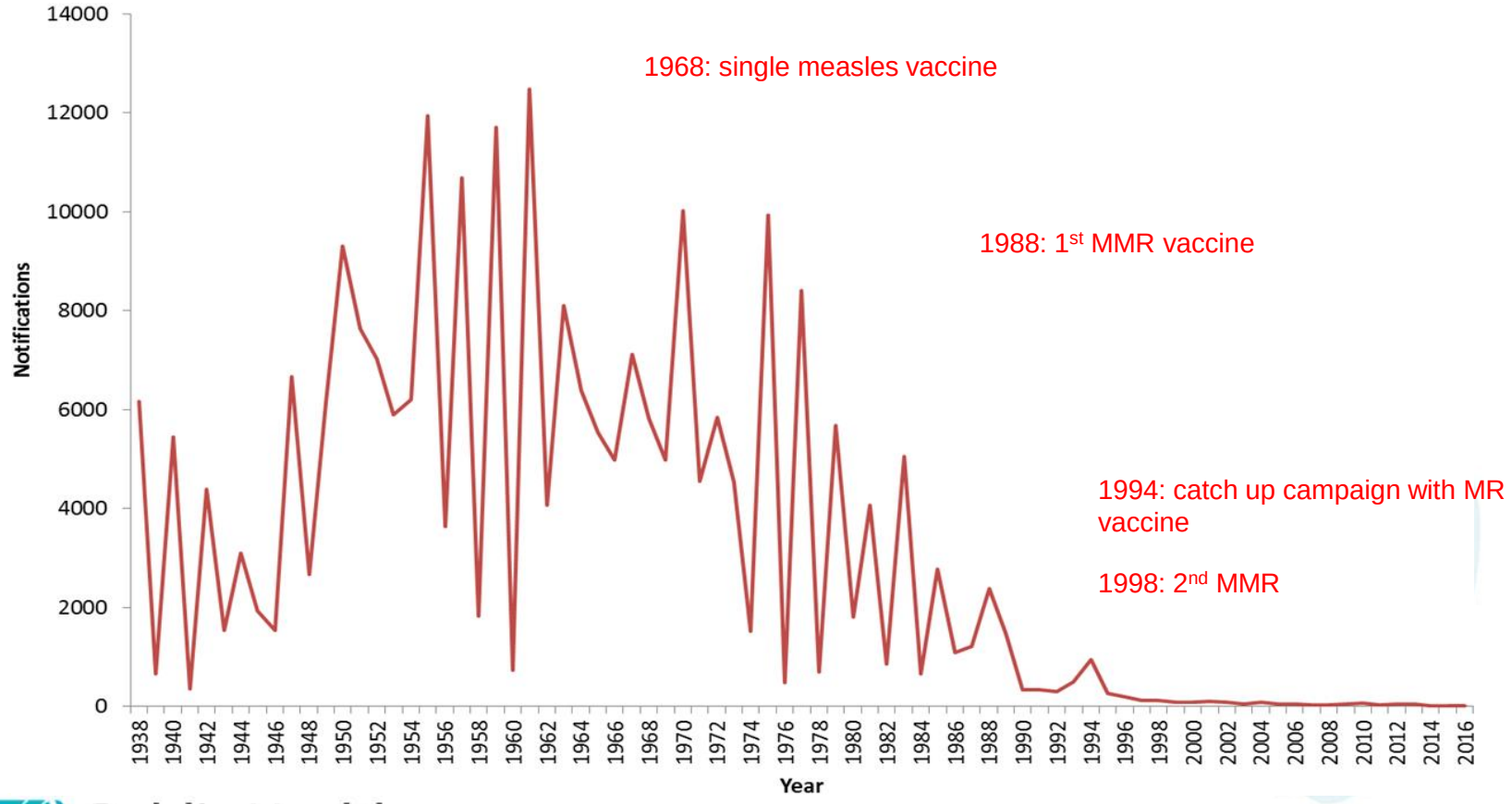
Data extracted from The European Surveillance System (TESSy), ECDC, Stockholm, 2017. Countries which are represented reported the majority of cases in the period 2013-2016.



Proportion of measles cases above 14 years of age, 2013-2016, EU/EEA countries



Notifications of Measles in Northern Ireland 1938-2016



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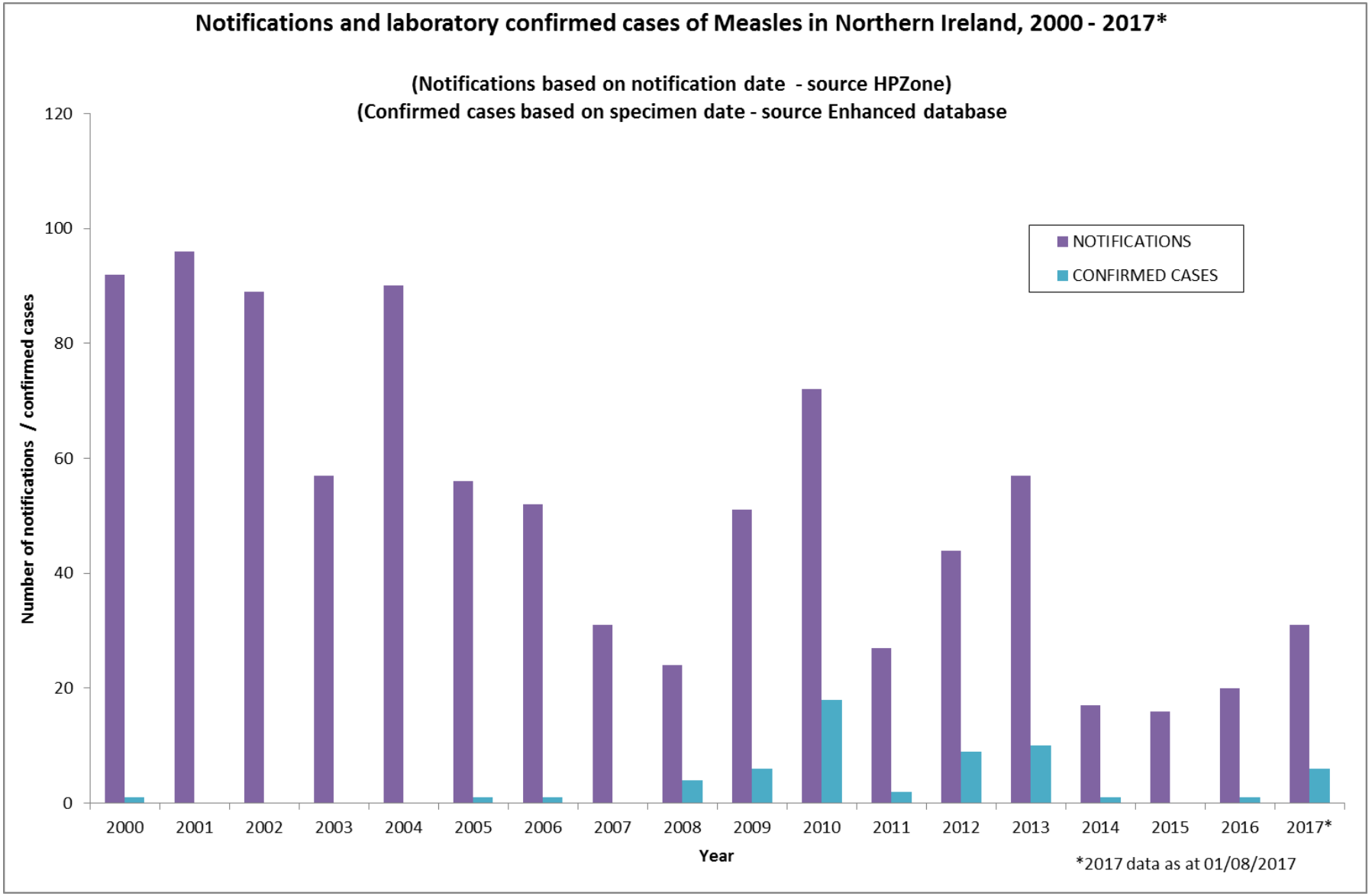
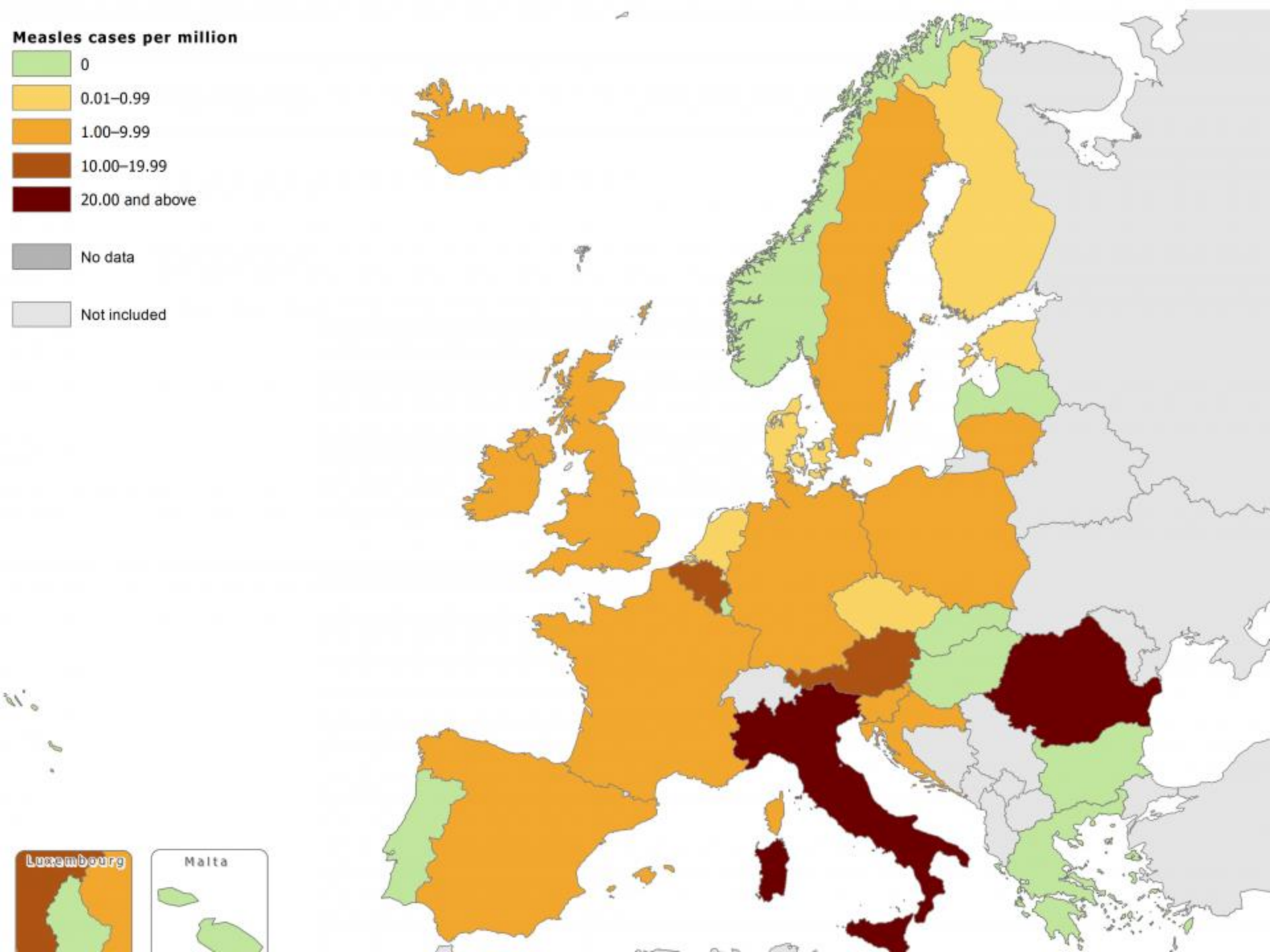
Notifications and Laboratory Confirmed Cases of Measles in Northern Ireland 2000-2016




Measles cases per million
0
0.01–0.99
1.00–9.99
10.00–19.99
20.00 and above
No data
Not included
Luxembourg
Malta

The number of cases of measles is rising across the United Kingdom and Europe, including Northern Ireland.

To be protected you need to be immunised with MMR vaccine.

Remember, it is never too late to get protected against measles, and you'll also be protecting yourself against two other diseases – mumps and rubella – that can be particularly serious in adults.

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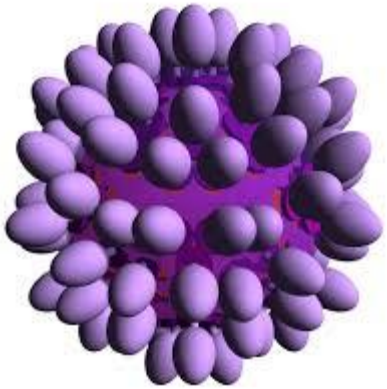
MEASLES

Protect yourself, protect others

MMR vaccination
It's not just for children

Rubella (German Measles)

- Made notifiable in 1988
- Transmitted through direct or droplet contact with NP secretions
- Incubation period is 14 – 21 days
- Infectivity period 1 week before until 5-7 days after the onset of rash
- Generally a mild viral illness, although can cause CRS in pregnancy
- Rubella immunization introduced in the UK in 1970 for pre-pubertal girls and non-immune women of childbearing age
- Universal MMR (1) in 1988, MMR (2) 1998
- Rubella now rare <1% of notifications tested confirmed

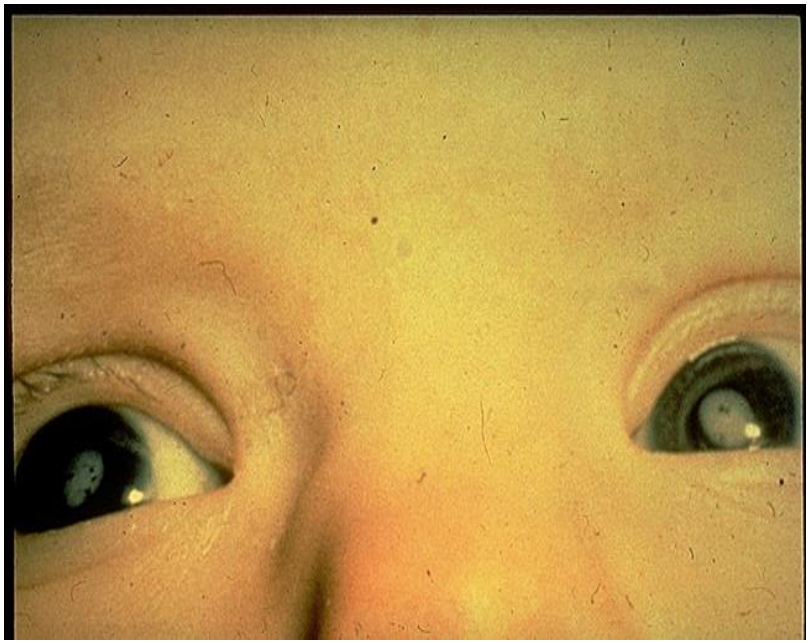


Complications of Rubella infection in pregnancy

Congenital Rubella syndrome (CRS)

- Risk of foetal damage is estimated at:
  - 90% in first 10 weeks
  - 10-20% by 16 weeks
  - Rare after 20 weeks

- Defects include cardiac, auditory, ophthalmic, neurological problems



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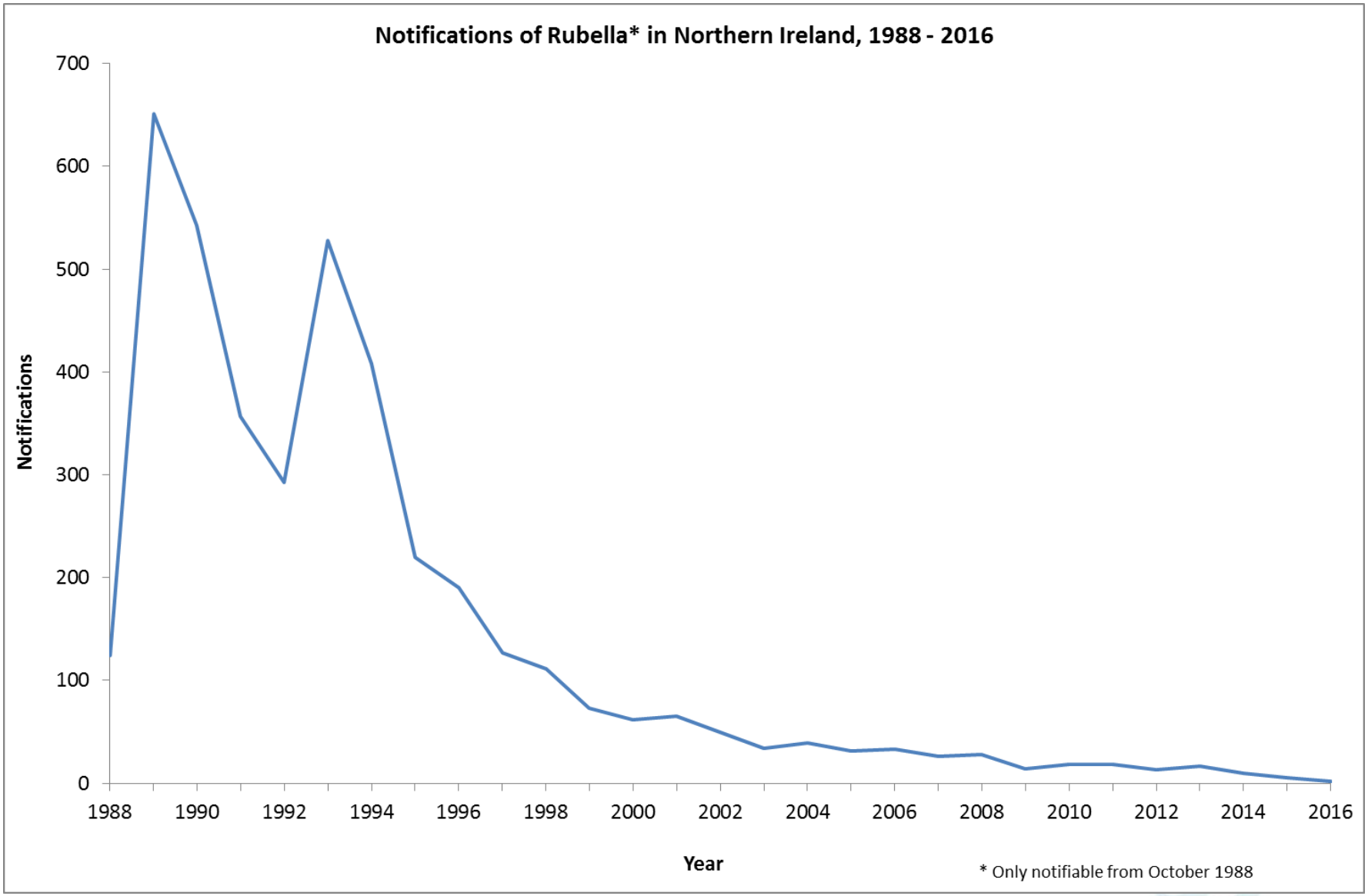

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Rubella screening in pregnancy

- Rubella susceptibility screening in pregnancy ended in England on 1st April 2016

- Review of evidence by National Screening Committee found:
  - Rubella in UK is defined as 'eliminated' by WHO
  - Rubella infection in pregnancy is very rare
  - Being fully immunised is protective (i.e. 2x MMR)
  - Screening may give inaccurate results and cause unnecessary stress
  - High uptake rates for MMR in children in England (>94%)
  - Screening does not protect the baby in that pregnancy

- N. Ireland position is to continue with review in 2019

Current issues for Rubella

- There is no specific treatment for rubella but the disease is preventable by vaccination
- Although rubella infection rare in UK, potential for re-introduction if immunisation levels drop
- Susceptibility and risk of infection greater in migrant women
- Susceptibility better addressed through proactive vaccination of those at risk

MMR Vaccine

- Contains live, attenuated (weakened) strains of measles, mumps and rubella viruses
- 2 vaccines available Priorix® and MMRVaxPRO®
- Should be stored at +2℃ to +8℃ & protected from light
- Can be given at same time as other vaccines and should ideally be given at the same time as other live vaccines
- If cannot be given at the same time as other live vaccines their should be a four week interval

MMR vaccine in teenagers and adults

- No upper age limit for vaccine, if indicated
- Give even if known to be immune to one antigen
- Decision on vaccinating adults takes into account the vac. history and risk of future exposure
- Use opportunities to assess vaccination history
- Consider travel, preconception, new entrants

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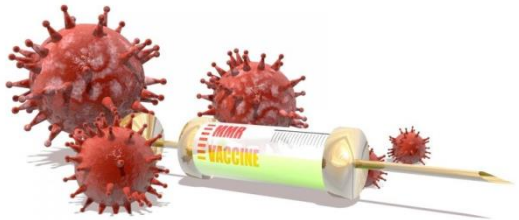

MMR for children over 10 years and adults

Born between:	Recommendations
1980 to 1990	• Likely to be vaccinated against measles/rubella • May not be protected against mumps • If one, recall for 2nd MMR • If none, two doses one month apart • Especially woman of child bearing age, migrants
1970 to 1979	• May have been vaccinated against measles • Many exposed to mumps/rubella in childhood • Still offer if feasible, especially if high risk of exposure • e.g. travel, preconception, health care workers • Two dose 1 month apart
Before 1970	• Likely to have had all 3 natural infections • Offer MMR on request or if considered to be at high risk of exposure

MMR Vaccine and healthcare workers

- All health care workers should be known to be immune to measles and rubella

- Satisfactory evidence of protection would be:
  - Having received 2 doses of MMR, or
  - Positive antibody tests for measles and rubella.
  - If not offer 2 x MMR vaccine

Contraindications

- There are very few individuals who cannot receive the MMR vaccine

- The vaccine should **not** be given to:

  - those who are immunosuppressed
  - those who have had a confirmed anaphylactic reaction to a previous dose of a measles, mumps or rubella containing vaccine
  - those who have had a confirmed anaphylactic reaction to neomycin or gelatin
  - pregnant women

Hepatitis A and B shortages

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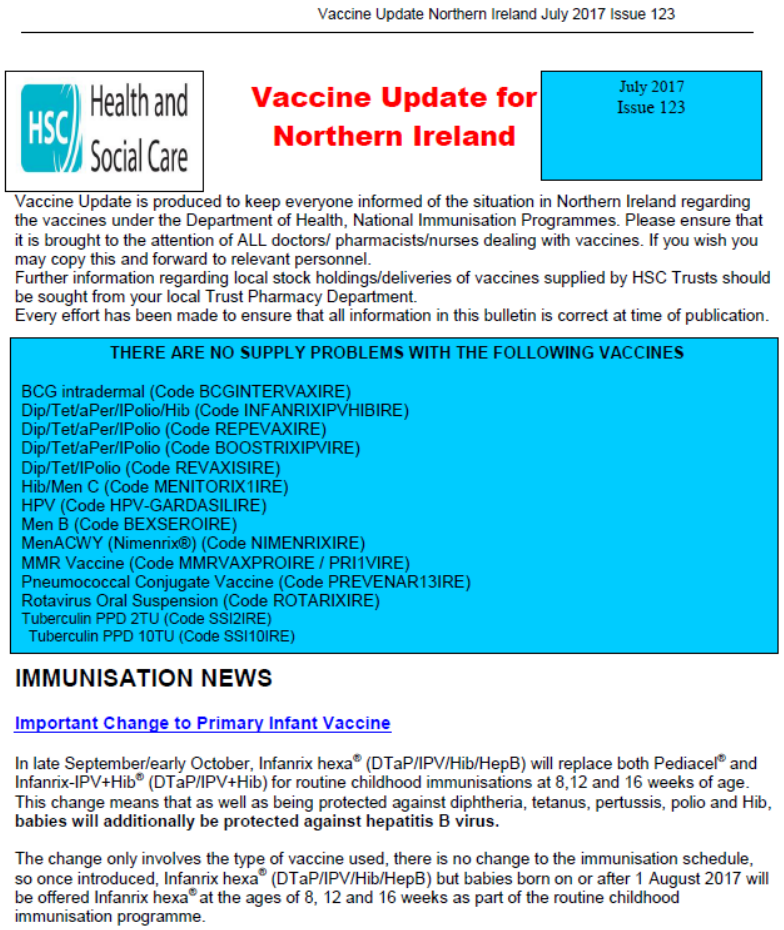
Global hepatitis A/B/combined vaccine shortage

- Worldwide shortage of hepatitis A, B and combined vaccines
- Hepatitis B particularly critical supplies in the UK
- Likely to last until end of 2017
- National temporary prioritisation recommendations have been published
- Ordering restrictions for Hepatitis B



Vaccine Update Northern Ireland July 2017 Issue 123

HSC Health and Social Care

Vaccine Update for Northern Ireland

July 2017
Issue 123

Vaccine Update is produced to keep everyone informed of the situation in Northern Ireland regarding the vaccines under the Department of Health, National Immunisation Programmes. Please ensure that it is brought to the attention of ALL doctors/ pharmacists/nurses dealing with vaccines. If you wish you may copy this and forward to relevant personnel.
Further information regarding local stock holdings/deliveries of vaccines supplied by HSC Trusts should be sought from your local Trust Pharmacy Department.
Every effort has been made to ensure that all information in this bulletin is correct at time of publication.

THERE ARE NO SUPPLY PROBLEMS WITH THE FOLLOWING VACCINES

BCG intradermal (Code BCGINTERVAXIRE)
Dip/Tet/aPer/IPolio/Hib (Code INFANRIXIPVHIBIRE)
Dip/Tet/aPer/IPolio (Code REPEVAXIRE)
Dip/Tet/aPer/IPolio (Code BOOSTRIXIPVIRE)
Dip/Tet/IPolio (Code REVAXISIRE)
Hib/Men C (Code MENITORIX1IRE)
HPV (Code HPV-GARDASILIRE)
Men B (Code BEXSEROIRE)
MenACWY (Nimenrix®) (Code NIMENRIXIRE)
MMR Vaccine (Code MMRVAXPROIRE / PRI1VIRE)
Pneumococcal Conjugate Vaccine (Code PREVENAR13IRE)
Rotavirus Oral Suspension (Code ROTARIXIRE)
Tuberculin PPD 2TU (Code SSI2IRE)
Tuberculin PPD 10TU (Code SSI10IRE)

IMMUNISATION NEWS

Important Change to Primary Infant Vaccine

In late September/early October, Infanrix hexa® (DTaP/IPV/Hib/HepB) will replace both Pediacel® and Infanrix-IPV+Hib® (DTaP/IPV+Hib) for routine childhood immunisations at 8,12 and 16 weeks of age. This change means that as well as being protected against diphtheria, tetanus, pertussis, polio and Hib, **babies will additionally be protected against hepatitis B virus.**

The change only involves the type of vaccine used, there is no change to the immunisation schedule, so once introduced, Infanrix hexa® (DTaP/IPV/Hib/HepB) but babies born on or after 1 August 2017 will be offered Infanrix hexa® at the ages of 8, 12 and 16 weeks as part of the routine childhood immunisation programme.

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Prioritisation guidance for HepA

www.health-ni.gov.uk/sites/default/files/publications/health/hss-md-12-2017.pdf

www.publichealth.hscni.net/directorate-public-health/health-protection/immunisationvaccine-preventable-diseases

Hepatitis B: temporary recommendations during supply constraints

Update on 23 August 2017

There is currently a global shortage of hepatitis B vaccine, which is impacting on the UK supply. Limitations on supply are likely to continue until early 2018.

The PHA and Department of Health are working with their equivalent organisations across the UK to ensure stock is available for those individuals at highest and most immediate risk of exposure to hepatitis B. The Chief Medical Officer HSS (MD) 12/2017 letter issued on 28 July, and updated on 18 August, details the temporary recommendations to support clinicians undertaking an individual risk assessment: www.health-ni.gov.uk/sites/default/files/publications/health/hss-md-15-2017.pdf

The situation is dynamic and likely to change frequently. On 22 August 2017, Public Health England updated the guidance referenced in the CMO letter to include information on:

- what to do if patients present with exposure incidents in sites where there is no vaccine
- advice to flag individuals in whom vaccination is deferred so they can be vaccinated at a later date.

www.gov.uk/government/publications/hepatitis-b-vaccine-recommendations-during-supply-constraints

Any future guidance published will be available here and will replace existing web links.