



Public Health
England



Shingles, influenza and pneumococcal immunisation programmes

2017



Learning objectives

- Describe the overall programme for shingles, influenza and pneumococcal vaccines
- Explain the aims of each of these programmes
- Classify the type of vaccine used in each programme
- List the vaccines recommended for pregnant women



On your tables please consider the questions for each of these diseases

Shingles, Influenza and Pneumococcus

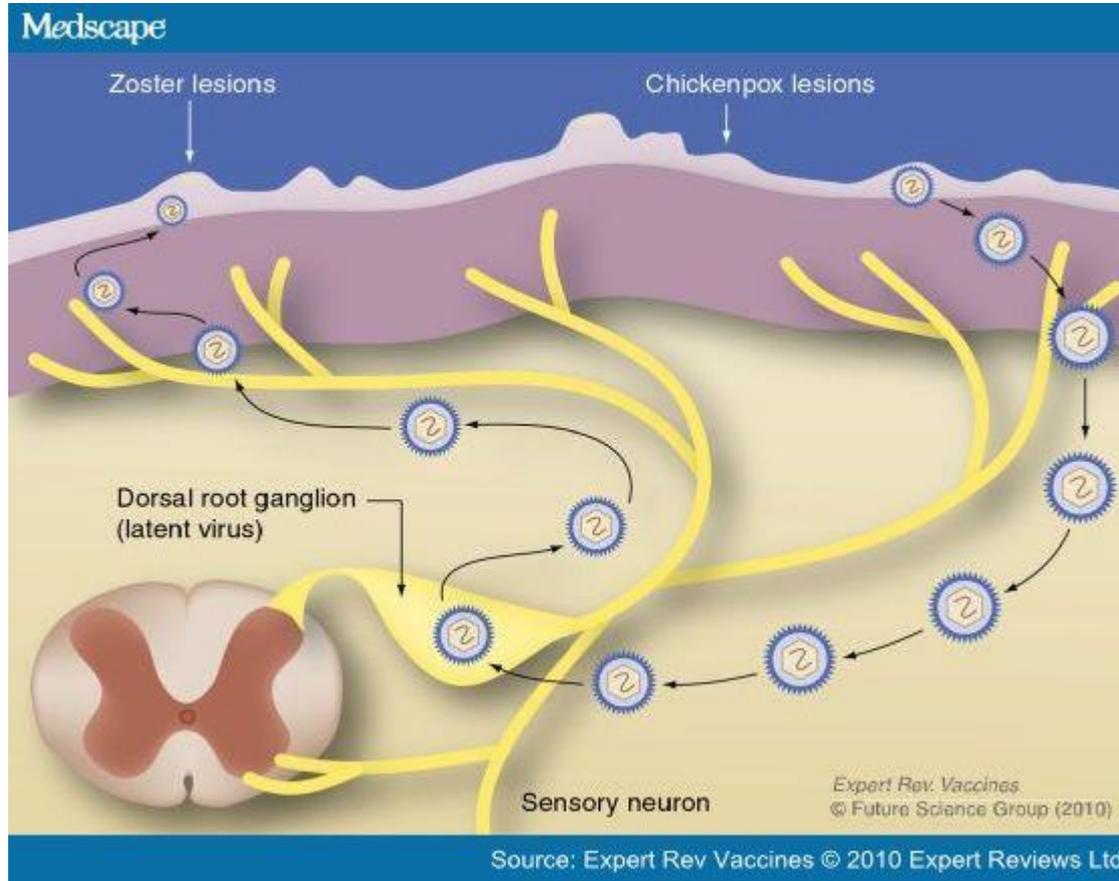
1. Selective or universal programme?
2. What are the aims of the programme?
3. What type of vaccine/s are used?



Public Health
England



Shingles (Herpes Zoster)



http://www.medscape.com/viewarticle/718534_2



Clinical presentation



<http://www.immunize.org/photos/zoster-photos.asp>



Possible complications of shingles

The **most common** complications are:

- Post herpetic neuralgia (PHN)
- Secondary bacterial skin infections

Other less common complications can include

- Ophthalmic Zoster
- Peripheral motor neuropathy
- In severe cases shingles can lead to hospitalisation and death



Post herpetic neuralgia (PHN)

- Defined as: a pain that persists for, or appears more than 90 days after the onset of the shingles rash
- In 50% persists for 3 to 6 months
- PHN is specifically focused in the area affected by shingles
- PHN is more likely to develop and is more severe in people over the age of 50, with one third of suffers over the age of 80 experiencing intense pain
- The pain may be a constant burning, itching, stabbing or aching pain which is extremely sensitive to touch and is not routinely relieved by common pain killers



Disease Burden

(pre vaccination programme)

- An estimated 50,000 cases of shingles occur in people aged 70 years and above each year in E&W
- Of these, 14,000 develop a very painful and long lasting condition called Post Herpetic Neuralgia (PHN)
- 1,400 cases of shingles result in hospitalisation



Disease Burden

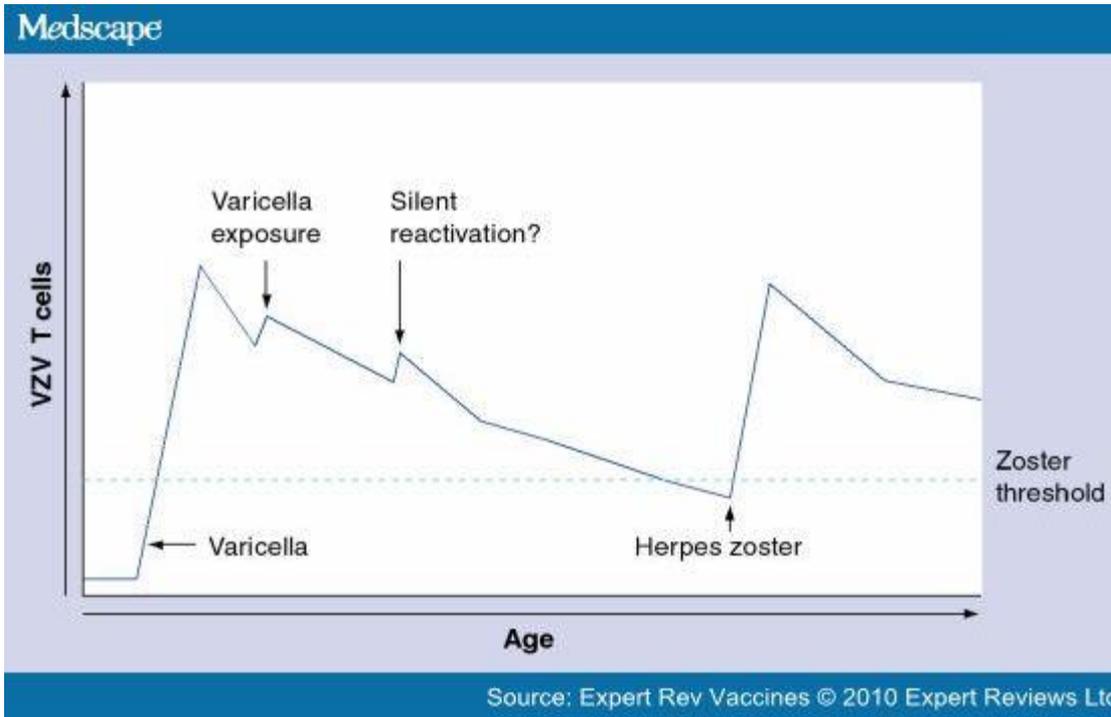


Age Group	Incidence per 100,000 per year (general)	Percentage developing post herpetic neuralgia after 90 days	Proportion hospitalised first diagnosis (first three diagnosis)	Mean number of days in hospital (median)
60-64	706	9%	0.8% (1.3%)	9 (4)
65-69	791	11%	1.0% (1.7%)	8 (5)
70-74	876	15%	1.5% (2.4%)	11 (5)
75-79	961	20%	2.2% (3.8%)	14 (7)
80-84	1046	27%	3.0% (5.2%)	17 (9)
85+	1216	52%	4.4% (8.1%)	22 (13)

Table 2. Estimated annual age-specific incidence, hospitalisation rate, length of inpatient stay, Burden of disease in the immunocompetent population England and Wales (population 2007). Data taken from van Hoek AJ, Gay N, Melegaro A *et al.* (2009) Estimating the cost-effectiveness of vaccination against herpes zoster in England and Wales.⁴

JCVI statement on varicella and herpes zoster vaccines, 29/03/2013:

http://webarchive.nationalarchives.gov.uk/20120907090205/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@ab/documents/digitalasset/dh_133599.pdf



http://www.medscape.com/viewarticle/718534_2



Vaccine efficacy

A one dose schedule of Zostavax® was assessed in clinical trials using 17,775 adults aged 70 years and over:

- 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%**



Impact & cost effectiveness of vaccination greatest in 70-79yrs of age

- Increase in burden of shingles disease with age
- Decrease in effectiveness of vaccine with age
- Duration of protection not demonstrated
- Lack of knowledge about necessity/efficacy of a 2nd dose



Aim of shingles vaccination programme

“ to lower the incidence and severity of shingles in older people”



Shingles programme 2016/17



Date of Birth	Age on 1 st September 2016	Eligible in 2016/17 (1 st September 2016-31 st August 2017)
02/09/45 to 01/09/46	70	Yes – routine cohort
02/09/44 to 01/09/45	71	Eligible in 2015/16, can be vaccinated *
02/09/43 to 01/09/44	72	Eligible in 2014/15, can be vaccinated *
02/09/42 to 01/09/43	73	Eligible in 2013/14, can be vaccinated *
02/09/41 to 01/09/42	74	no
02/09/40 to 01/09/41	75	no
02/09/39 to 01/09/40	76	no
02/09/38 to 01/09/39	77	no
02/09/37 to 01/09/38	78	Yes-catch up cohort
02/09/36 to 01/09/37	79	Eligible in 2015/16, can be vaccinated (only eligible before 80 th Birthday)*
02/09/35 to 01/09/36	80	Were eligible but are no longer

*no item of service fee claimable



Pub
Eng

Who's eligible for the 2016/17 **SHINGLES VACCINE?**



AGE: The age you will be on 1 September 2016

X NO!

69
or under
i.e. born on or after
2 September 1946

✓ YES!

70
i.e. born between
2 September 1945 and
1 September 1946*

✓ YES!

71
i.e. born between
2 September 1944 and
1 September 1945*

✓ YES!

72
i.e. born between
2 September 1943 and
1 September 1944*

✓ YES!

73
i.e. born between
2 September 1942 and
1 September 1943*

X NO!

**74
to
77**
i.e. born between
2 September 1938 and
1 September 1942*

✓ YES!

78
i.e. born between
2 September 1937 and
1 September 1938*

✓ YES!

79
i.e. born between
2 September 1936 and
1 September 1937*

X NO!

**80
or over**
i.e. born on or before
1 September 1936*

* Inclusive

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immunisation

The safest way to protect children and adults



NHS

Who's eligible in 2016/17 for a
**shingles
vaccination**

People aged 70, 78 and 79 on 1 September 2016 are eligible for a shingles vaccination.

Type your date of birth below and click OK to see your age on 1 September 2016 and if you are eligible for the shingles vaccination.

01/01/1930

<https://www.gov.uk/government/collections/immunisation>



Vaccine details



- **Live attenuated vaccine**
- Use within 30 minutes of reconstitution
- Can be administered with pneumococcal and influenza
- 4 week interval between Shingles vaccine and Yellow Fever Vaccine or MMR vaccine. No other restrictions for timing between Shingles and other live vaccines Reference:(Shingles chapter, page 6, Green Book, Feb 2016)

Question:

Live vaccines; can everyone receive these safely?



Contraindications (1)

- has had a confirmed anaphylactic reaction to a previous dose of varicella or zoster vaccine
- has had a confirmed anaphylactic reaction to any component of the vaccine, including neomycin or gelatin
- pregnancy



Contraindications (2)

1. Primary or acquired immunodeficiency state due to conditions such as:

- acute and chronic leukaemias
- lymphoma
- other conditions affecting the bone marrow or lymphatic system
- immunosuppression due to HIV/AIDS (see below)
- cellular immune deficiencies

2. Is receiving immunosuppressive therapy (including high-dose corticosteroids);

For detail of contraindications and precautions refer to online green book and Vaccination against shingles for adults 2015/16 – Information for health care professionals accessed from:

<https://www.gov.uk/government/collections/immunisation>

Shingles Vaccination PHE training slide set accessed at:

<https://www.gov.uk/government/publications/shingles-vaccination-training-slideset-for-healthcare-professionals>



Shingles vaccine coverage data: England



- following the successful introduction of shingles vaccination in September 2013 in England, **there has been a year on year decline in coverage** in both the routine (70-year-old) and catch-up (78-year-old) cohorts

	Year 1 (2013/14)	Year 2 (2014/15)	Year 3 (2015/16) [*]
Routine (70y)	50.5%	48.7%	46.0%
Catch-up (78y)	N/A [*]	48.1%	46.0%

- it is important that general practices consider how they can optimise the uptake of shingles vaccine in eligible patients in order to reduce the significant burden of disease associated with shingles among older adults



Shingles

1. Selective or universal programme?
2. What are the aims of the programme?
3. What type of vaccine is used?



Pneumococcal vaccination

Streptococcus pneumoniae





Pneumococcal Infection

- Causative agent – *streptococcus pneumoniae*
- 90 capsular types
- 8-10 capsular types cause 66% of serious infections in adults & 80% invasive infections in children
- Carried in nasopharynx asymptotically
- Can spread locally causing sinusitis & otitis media
- Invasive pneumococcal disease is a systemic infection causing bacteraemic pneumonia, bacteraemia and meningitis



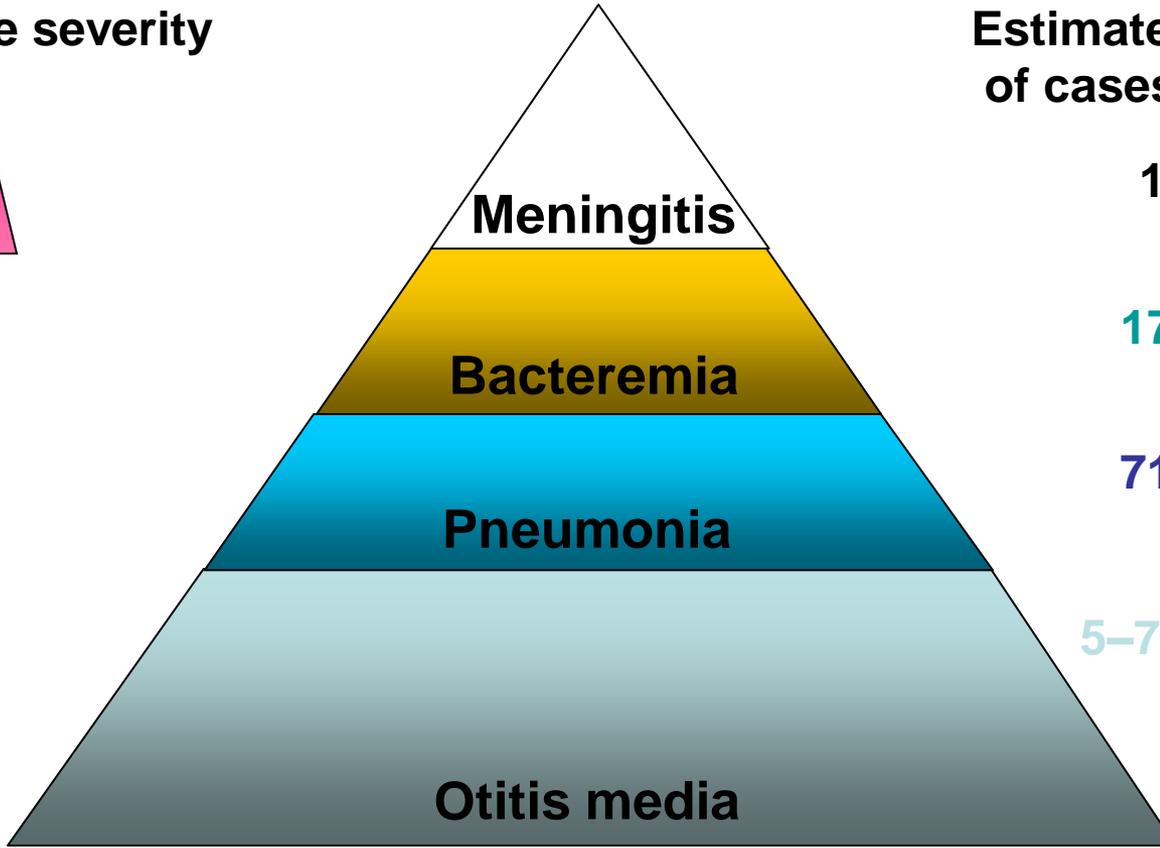
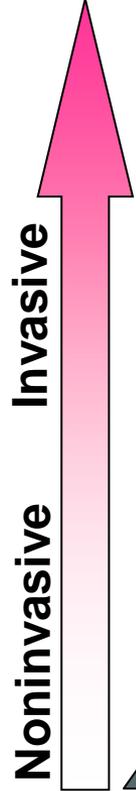
Epidemiology

- Between 5000-6000 cases of invasive pneumococcal disease (IPD) reported annually
- Peaks during winter months
- Very young
- Elderly
- Absent or non functioning spleen
- Others with impaired immunity



Streptococcus pneumoniae: Disease Burden in Children (US)

Disease severity



Estimated number
of cases per year

1,400

17,000

71,000

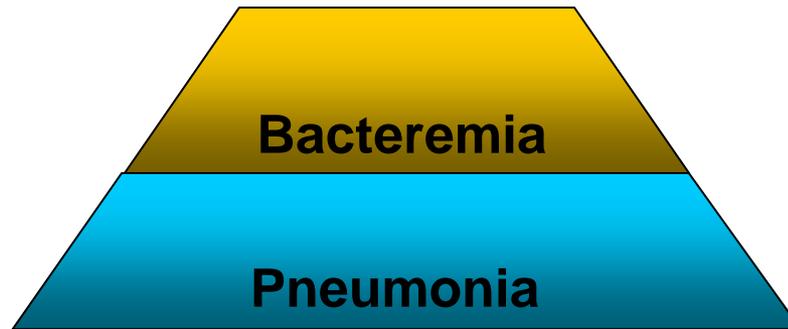
5-7 million

Increases

MMWR. 1997;46:1-24.



Streptococcus pneumoniae: Disease Burden in the elderly





Pneumococcal immunisation programme objectives

To protect all of those for whom pneumococcal infection is likely to be more common and/or serious, i.e.:

- infants as part of the routine childhood immunisation programme
- those aged 65 years or over
- those aged two months and above in clinical risk groups



Clinical Risk Groups

- Asplenia/splenic dysfunction
- Chronic respiratory disease
- Chronic heart disease
- Chronic kidney disease
- Chronic liver disease
- Diabetes
- Immunosuppression
- Individuals with cochlear implants or cerebrospinal fluid leaks



Full details on Online Green Book!



Table 25.1 Clinical risk groups who should receive the pneumococcal immunisation

Clinical risk group	Examples (decision based on clinical judgement)
Asplenia or dysfunction of the spleen	This also includes conditions such as homozygous sickle cell disease and coeliac syndrome that may lead to splenic dysfunction.
Chronic respiratory disease	This includes chronic obstructive pulmonary disease (COPD), including chronic bronchitis and emphysema; and such conditions as bronchiectasis, cystic fibrosis, interstitial lung fibrosis, pneumoconiosis and bronchopulmonary dysplasia (BPD). Children with respiratory conditions caused by aspiration, or a neurological disease (e.g. cerebral palsy) with a risk of aspiration. Asthma is not an indication, unless so severe as to require continuous or frequently repeated use of systemic steroids (as defined in Immunosuppression below).
Chronic heart disease	This includes those requiring regular medication and/or follow-up for ischaemic heart disease, congenital heart disease, hypertension with cardiac complications, and chronic heart failure.
Chronic kidney disease	Nephrotic syndrome, chronic kidney disease at stages 4 and 5 and those on kidney dialysis or with kidney transplantation.
Chronic liver disease	This includes cirrhosis, biliary atresia and chronic hepatitis.
Diabetes	Diabetes mellitus requiring insulin or oral hypoglycaemic drugs. This does not include diabetes that is diet controlled.
Immunosuppression	Due to disease or treatment, including patients undergoing chemotherapy leading to immunosuppression, bone marrow transplant, asplenia or splenic dysfunction, HIV infection at all stages, multiple myeloma or genetic disorders affecting the immune system (e.g. IRAK-4, NEMO, complement deficiency) Individuals on or likely to be on systemic steroids for more than a month at a dose equivalent to prednisolone at 20mg or more per day (any age), or for children under 20kg, a dose of 1mg or more per kg per day.
Individuals with cochlear implants	<i>It is important that immunisation does not delay the cochlear implantation.</i>
Individuals with cerebrospinal fluid leaks	This includes leakage of cerebrospinal fluid such as following trauma or major skull surgery.



2 pneumococcal vaccines



Pneumococcal CONJUGATE vaccine (PCV13)

- 13 capsular types

Used for:

- Routine infant schedule
- Unimmunised 2-5 yr olds in clinical risk groups
- Severely immunocompromised adults and children >5 years of age

Pneumococcal POLYSACCHARIDE Vaccine (PPV)

- 23 capsular types

Used for:

- All adults over 65 years of age
- Individuals in clinical risk groups >2 years of age
- Booster given 5 yearly to patients with no spleen, splenic dysfunction or chronic renal disease

Note: Not immunogenic in young children (<2yrs)





Pneumococcus

1. Selective or universal programme?
2. What are the aims of the programme?
3. What type of vaccine/s are used?



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Influenza

VACCSline



Influenza

- Acute viral infection of respiratory tract
- Three types: A, B and C

- Short incubation period 1-3 days
- Symptoms: fever, chills, headache, myalgia
- Gastrointestinal symptoms such as vomiting and diarrhoea may be seen

- Self-limiting for most in 2-7 days



Possible complications of flu

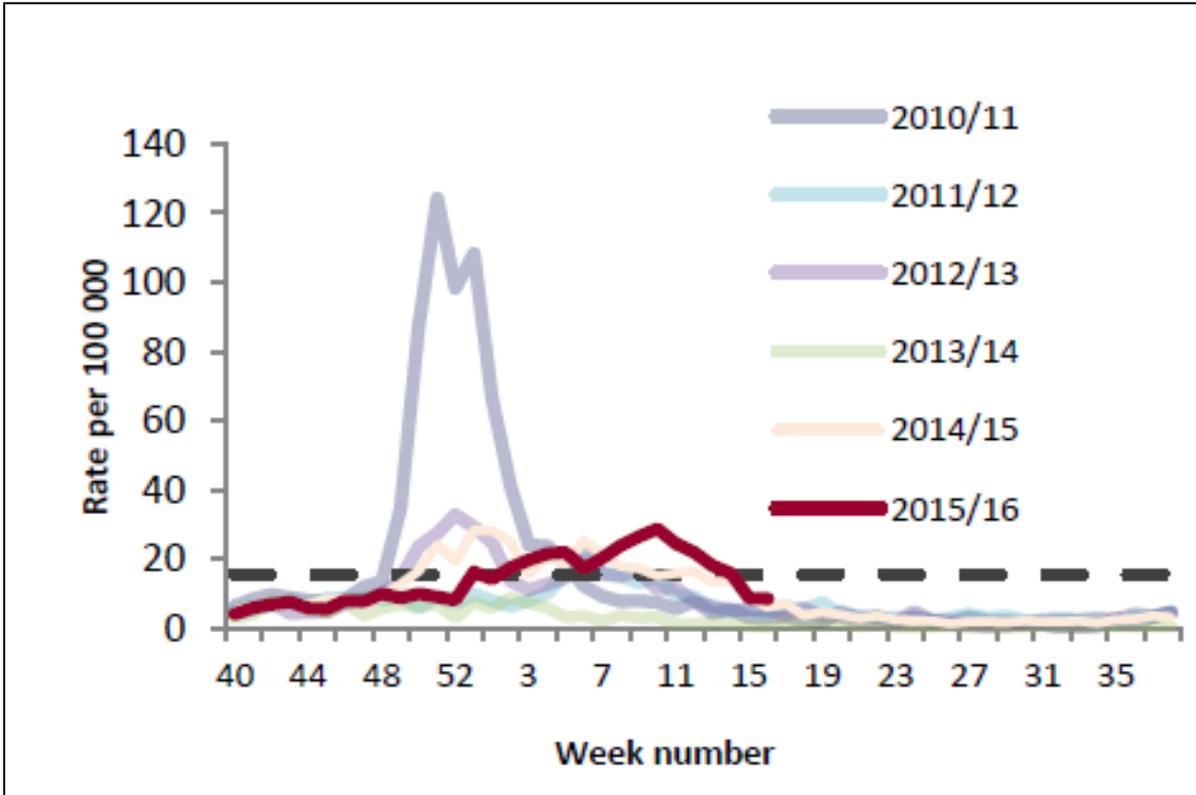


Common:

- Bronchitis
- Otitis media (children), sinusitis
- Secondary bacterial pneumonia
- **Less common:**
 - Meningitis, encephalitis, meningoencephalitis
 - Primary influenza pneumonia
- Risk of most serious illness higher in children under 6 months, pregnant women, older people and those with underlying health conditions such as respiratory disease, cardiac disease, chronic neurological conditions or immunosuppression
- Influenza during pregnancy may be associated with perinatal mortality, prematurity, smaller neonatal size and lower birth weight



Flu epidemiology



Weekly all age GP influenza-like illness rates for 2015 to 2016 and past seasons, England (RCGP)

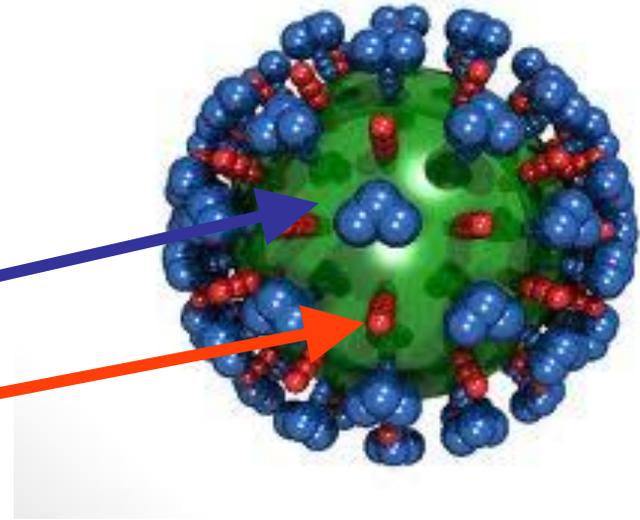
- flu activity usually between September to March (weeks 37 and 15)
- impact of flu varies from year to year
- moderate levels of influenza activity seen in 2015/16 season – long and late season
- biggest impact in young adults
- high number admissions to hospital and ICU/HDU admissions – higher than seen in the previous few seasons



Flu A virus

Two surface antigens:

- Haemagglutinin (H)
- Neuraminidase (N)



There are 16 different types of H
and 9 different types of N



Genetic changes in flu virus

Antigenic drift

Minor changes in the principal surface antigens occur progressively season to season

Antigenic shift

Major change resulting in emergence of a new subtype
Immunity from previous virus may not protect against new subtype thus leading to widespread epidemic or pandemic in a non-immune population

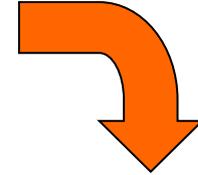
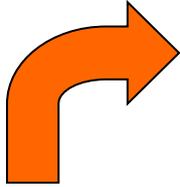


Annual cycle of the flu vaccine programme



January to March; Review & planning

- Review of circulating flu strains
- WHO announce vaccine strains
- Vaccine orders placed

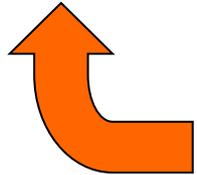


Sept to Feb; Implementation

- Vaccination starts
- From Oct, flu reports published

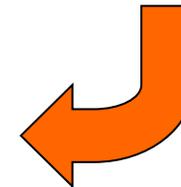
April to June; Assurance

- CMO letter published advising;
- groups to be vaccinated
 - available vaccines
 - data collection arrangements
 - GP practice checklist



July to September; Preparation

- DH imms director publishes final arrangements
- Supplies delivered
- Patients contacted





Flu vaccine composition 2016/17

- **Trivalent vaccines will contain the following three viruses:**
 - an A/California/7/2009 (H1N1)pdm09-like virus
 - an A/Hong Kong/4801/2014 (H3N2)-like virus
 - a B/Brisbane/60/2008-like virus
- **In addition to the above, the quadrivalent vaccine will also contain:**
 - B/Phuket/3073/2013-like virus
- None of the influenza vaccines for the 2016/17 season contain thiomersal as an added preservative.
- More detailed information on the characteristics of the available vaccines, including age indications can be found in the Influenza chapter of the Green Book (Immunisation against infectious disease) and the product SPCs.



The Telegraph(online) 6th Feb 2015

'Public Health England has admitted that the vaccine barely works and could bring the largest number of winter deaths in 15 years.'

'It raises serious questions about why millions of elderly Britons who took the flu jab over the winter were not warned that they remained unprotected to certain strains.'

'Ministers may have known almost a year ago there was a strain of influenza circulating which the flu vaccine would not protect against, the Prime Minister's official spokesman has suggested.'

<http://www.telegraph.co.uk/news/science/science-news/11395085/Flu-vaccine-health-officials-knew-of-dangerous-new-strain-last-March.html>



Flu vaccine effectiveness



- Efficacy calculated at between 50-60% for adults aged 18-65yrs,
 - Lower efficacy in elderly although immunisation shown to reduce incidence of severe disease including bronchopneumonia, hospital admissions and mortality
 - In 2014/15 the flu vaccine only provided limited protection against infection caused by one particular strain of flu A (H3N2)
 - Caused by a mismatch between the A(H3N2) strain selected for the vaccine and the main A(H3N2) strain that circulated
 - Throughout the last decade, there has generally been a good match between the strains of flu in the vaccine and those that subsequently circulated
- Flu vaccination remains the best way to protect people from flu**



Influenza immunisation programme





National flu programme

1. Aged 65 years and over
2. Aged 6 months or older in clinical risk category;
 - Chronic respiratory disease
 - Chronic heart disease
 - Chronic kidney disease
 - Chronic liver disease
 - Chronic neurological disease
 - Diabetes
 - Immunosuppression
 - Asplenia or dysfunction of the spleen
 - **Morbid Obesity - adult BMI $\geq 40\text{kg/m}^2$**
3. Pregnant women
4. People living in long stay residential or other long stay care homes
5. Carers
6. Health Care Workers



Rationale: Clinical Risk Groups/over 65's

- To offer protection to those who are at most risk of serious illness or death should they develop flu



Rationale: Pregnant women

- Flu vaccination reduces the risk of prematurity and the risk of low birth weight
- The vaccine provides passive immunity to the foetus, which can protect the infant for up to 6 months following delivery
- The vaccine reduces adverse maternal outcomes attributed to influenza infection
- Studies on safety of flu vaccine in pregnancy show that inactivated flu vaccine can be safely and effectively administered during any trimester of pregnancy
- No study to date has demonstrated an increased risk of either maternal complications or adverse fetal outcomes associated with inactivated flu vaccine





Other groups to vaccinate

- **Those living in long-stay residential care homes or other long-stay care facilities:** where rapid spread is likely to follow introduction of infection and cause high morbidity and mortality (this does not include prisons, young offender institutions, university halls of residence etc.)
- **Those who are in receipt of a carer's allowance, or those who are the main carer** of an elderly or disabled person whose welfare may be at risk if the carer falls ill
- **Health and social care staff** in direct contact with patients/service users (they should be vaccinated by their employer as part of an OH programme)



Rationale: Healthcare Workers

- Protects them & reduces risk of spreading flu to their patients, service users, colleagues and family members
- Significantly lowers rates of flu-like illness, hospitalisation and mortality in older people in healthcare settings
- Reduces transmission of flu to vulnerable patients, some of whom may have impaired immunity that may not respond well to immunisation
- Reduces sickness absences and contributes to keeping the NHS and care services running through winter pressures
- Frontline health and social care workers have a duty of care to protect their patients and service users from infection.



Types of flu vaccines

- **Two main types of vaccine available:**

- inactivated – by injection
- live attenuated – by nasal application
- **None of the flu vaccines can cause clinical influenza in those that can be vaccinated**
- **Trivalent:** flu vaccines contain two subtypes of Influenza A and one type B virus
- **Quadrivalent** vaccines contain two subtypes of Influenza A and both B virus types*

As quadrivalent vaccines contain both lineages of B viruses and therefore may provide better protection against the circulating B strain(s) than trivalent flu vaccines, **the live intranasal vaccine offered to children aged 2 years and over is a quadrivalent vaccine, as is the inactivated vaccine recommended for children aged 3 years and above who cannot receive live attenuated vaccine.**

- *Quadrivalent inactivated flu vaccine only authorised for children aged 3 years and older.



Flu vaccines

	TETRAvalent (4 in 1)	TRivalent (3 in1)	Age range
Live attenuated intranasal vaccine (LAIV)	YES (Fluenz Tetra)		2-17 years
Inactivated intramuscular vaccines	Only one product (Fluarix Tetra from 3 yrs of age)	Usually trivalent	Used from 6 mths of age. Not all IM products are licensed in this age group (some from 3 or 5 years). Must vaccinate in line with SPC.
Inactivated intradermal vaccines		YES	Different products for 18-59 yr olds and 60 years plus

National flu programme

Childhood flu programme



National flu programme

- A single dose of flu vaccine offered each year
- For children 2 – 17 yrs of age, LAIV is vaccine of choice
- If contraindicated, **tetavalent** IM should be given (from 3 yrs age)
- If <9 yrs of age and first year receiving flu vaccine, a 2nd dose is given at least 4 weeks later

CAUTION:
**Some children in clinical risk groups
will also be in the age groups in the
childhood flu programme**



Live attenuated influenza vaccine (LAIV)



- a live attenuated intranasal spray is the recommended vaccine for the childhood flu programme
- the live attenuated influenza vaccine (LAIV) has been shown to be more effective in children compared with inactivated influenza vaccines
- it may offer some protection against strains not contained in the vaccine as well as to those that are and has the potential to offer better protection against virus strains that have undergone antigenic drift
- since this vaccine is comprised of weakened whole live virus, it replicates natural infection which induces better immune memory (thereby offering better long-term protection to children than from the inactivated vaccines)
- in addition to being attenuated (weakened), the live viruses in LAIV have been adapted to cold so that they cannot replicate efficiently at body temperature
- LAIV has a good safety profile in children aged two years and older



Inactivated flu vaccines



- a number of different manufacturers produce flu vaccines. Those available for 2016/17 season are listed in 'The national flu immunisation programme 2016/17' letter available on PHE website
- most of the inactivated vaccines are administered by intramuscular injection, although one vaccine (Intanza®) is administered by the intradermal route
- all currently available flu vaccines are prepared from viruses grown in embryonated hens' eggs – details of ovalbumin content available in the product SPC
- some flu vaccines are restricted for use in particular age groups. **The SPC for individual products should always be referred to when ordering vaccines for particular patients**

Supplier	Name of product	Vaccine type	Age indications	Contact details
AstraZeneca UK Ltd	Fluenz Tetra ▼	Live attenuated, nasal	From 24 months to less than 18 years of age	0845 139 0000
GSK	Fluarix™ Tetra ▼	Split virion inactivated virus	From three years	0800 221 441
MASTA	Imuvac®	Surface antigen, inactivated virus	From six months	0113 238 7552
	Inactivated Influenza Vaccine (Split Virion) BP	Split virion, inactivated virus	From six months	
Mylan (BGP Products)	Influvac®	Surface antigen, inactivated virus	From six months	0800 358 7468
	Imuvac®	Surface antigen, inactivated virus	From six months	
	Influenza vaccine, surface antigen, inactivated	Surface antigen, inactivated virus	From six months	
Pfizer Vaccines	CSL Inactivated Influenza Vaccine	Split virion, inactivated virus	From five years	0800 089 4033
	Enzira®	Split virion Inactivated virus	From five years	
Sanofi Pasteur MSD	Inactivated Influenza Vaccine (Split Virion) BP	Split virion, inactivated virus	From six months	0800 085 5511
	Intanza®15 µg	Split virion, inactivated virus	60 years of age and over	
Seqirus Vaccines Ltd, formerly Novartis Vaccines	Agrippal®	Surface antigen, inactivated virus	From six months	08457 451 500



LAIV

- LAIV: more effective in children compared with inactivated influenza vaccines
- It may offer some protection against strains not contained in the vaccine as well as to those that are
- Since this vaccine is comprised of weakened whole live virus, it replicates natural infection which induces better immune memory (thereby offering better long-term protection to children than from the inactivated vaccines)



Inactivated flu vaccines

- A number of different manufacturers produce flu vaccines. Those available for 2015/16 season are listed in the June 2015 Vaccine Update
- Most of the inactivated vaccines are administered by intramuscular injection, although one vaccine (Intanza®) is administered by the intradermal route
- Most flu vaccines are prepared from viruses grown in embryonated hens eggs – details of ovalbumin content available in Vaccine Update June 2015 and product SPC
- Some flu vaccines are restricted for use in particular age groups. **The SPC for individual products should always be referred to when ordering vaccines for particular patients**

Vaccine update: Issue 230, June 2015

Influenza vaccines for the 2015/16 influenza season
(note the ovalbumin content is provided in units of µg/ml and µg/dose)

Supplier	Name of product	Vaccine type	Age indications	Ovalbumin content µg/ml (µg/dose)	Contact details
AstraZeneca UK Ltd	Fluenz Tetra ▼	Live attenuated, nasal	From 24 months to less than 18 years of age	≤1.2 (≤0.24/0.2ml dose)	Fluenz Tetra for use in the national children flu programme should be ordered through ImmForm** Otherwise: 0845 139 0000
GSK	Fluarix Tetra ▼	Split virion inactivated virus	From three years	≤0.1 (≤0.05/0.5ml dose)	0800 221 441
MASTA	Agrippal	Surface antigen, inactivated virus	From six months	≤0.4 (≤0.2/0.5ml, dose)	0113 238 7552
	Influvac	Surface antigen, inactivated virus	From six months	0.2 (0.1/0.5ml dose)	
	Imuvac	Surface antigen, inactivated virus	From six months	0.2 (0.1/0.5ml dose)	
	Inactivated Influenza Vaccine (Split Virion) BP	Split virion, inactivated virus	From six months	≤0.1 (≤0.05/0.5ml dose)	
Mylan, formerly Abbott Healthcare	Influvac	Surface antigen, inactivated virus	From six months	0.2 (0.1/0.5ml dose)	0800 358 7468
	Imuvac	Surface antigen, inactivated virus	From six months	0.2 (0.1/0.5ml dose)	
Novartis Vaccines	Agrippal	Surface antigen, inactivated virus	From six months	≤0.4 (≤0.2/0.5ml, dose)	08457 451 500
	Optaflu	Surface antigen, inactivated virus, prepared in cell cultures	From 18 years	No ovalbumin	
Pfizer Vaccines	bioCSL generic influenza vaccine	Split virion, inactivated virus	From five years	≤2 (≤1/0.5ml dose)	0800 089 4033
	Enzira	Split virion inactivated virus	From five years	≤2 (≤1/0.5ml dose)	
Sanofi Pasteur MSD	Inactivated influenza vaccine (split virion) BP	Split virion, inactivated virus	From six months	≤0.1 (≤0.05/0.5ml dose)	0800 085 5511
	Intanza 15 micrograms	Split virion, inactivated virus	60 years of age and over	≤0.24 (≤0.024/0.1ml dose)	

None of the influenza vaccines for the 2015/16 season contains thiomersal as an added preservative.
** In England, this vaccine should be ordered online via the ImmForm website (<https://portal.immform.dh.gov.uk/>)

Vaccine Update Issue 230
June 2015

Slide content from PHE training slide set: The national flu immunisation programme 2015/16



Key messages

- Flu immunisation is one of the most effective interventions immunisers can provide to reduce harm from flu and pressures on health and social care services during the winter
- Increasing flu vaccine uptake in clinical risk groups is important because of increased risk of death and serious illness if people in these groups catch flu
- For a number of years only around half of patients aged six months to under 65 years in clinical risk groups have been vaccinated
- Influenza during pregnancy may be associated with perinatal mortality, prematurity, smaller neonatal size, lower birth weight and increased risk of complications for the mother
- Vaccination of health and social care workers protects them & reduces risk of spreading flu to their patients, service users, colleagues and family members

SEVEN ELEMENTS TO RUNNING A SUCCESSFUL FLU CAMPAIGN

COMMUNICATION

- Tailor your strategy to your organisation
- Mix up your communications channels – Twitter, intranet, email
- Keep staff updated throughout your campaign

SUPPORT – ALL HANDS ON DECK

- Have a champion to provide leadership at a senior level
- Seek involvement from the board to the ward
- Get buy-in from management to lead by example

PEER VACCINATION

- Use peer vaccinators
- Train clinical directors to vaccinate staff
- Utilise staff on adapted working / light duties

REWARDS

- Use incentives in your campaign
- Incentives don't need to cost a lot – be creative
- A small treat can have a big impact

BALANCED FLU TEAM

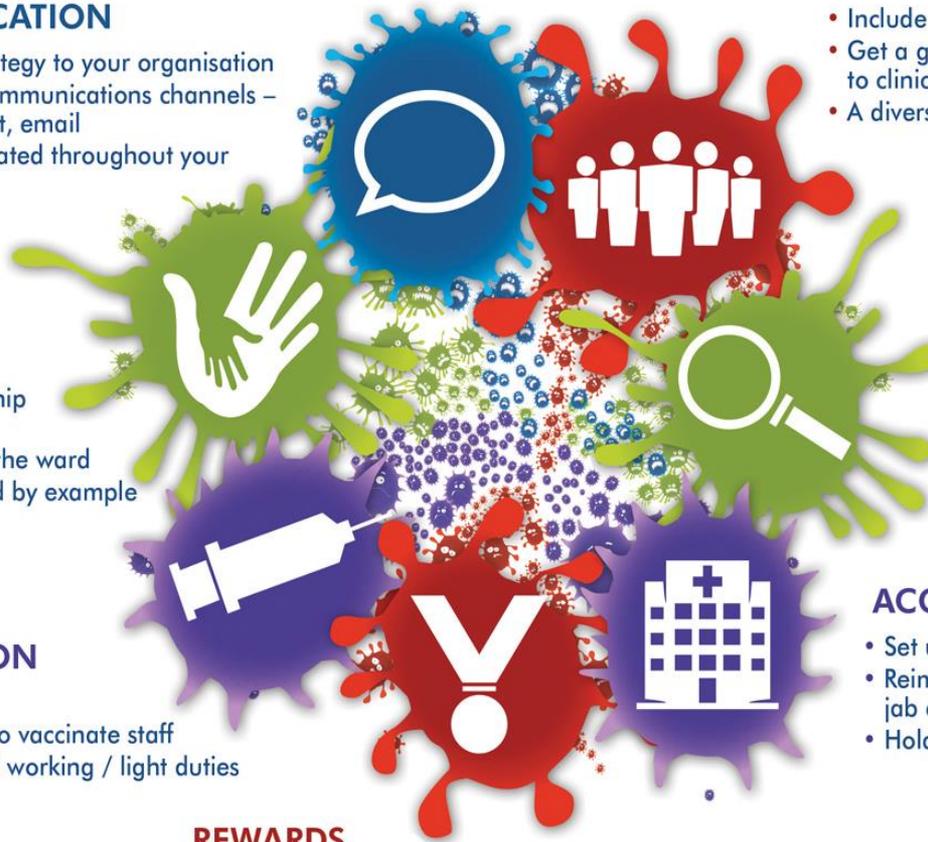
- Include staff from all parts of your organisation
- Get a good skills mix – think communications to clinical
- A diverse team will strengthen your campaign

MYTHBUSTING

- Include mythbusting in your communications
- Use clinical evidence for support
- Challenge misconceptions

ACCESSIBILITY

- Set up a mobile flu vaccination clinic
- Reimburse your staff if they buy their job externally
- Hold drop-in clinics at staff events





Resources



- **Flu Plan and Supporting Letter detailing 2016/17 flu programme**
Department of Health, Public Health England, NHS England. Published 26 May 2016. Available at: <https://www.gov.uk/government/publications/flu-plan-winter-2016-to-2017>
- **Green Book Influenza chapter** Available at: <https://www.gov.uk/government/collections/immunisation-against-infectious-disease-the-green-book>
- **Leaflets, posters, Q&As and other resources to support the annual flu programme** Available at: <https://www.gov.uk/government/collections/annual-flu-programme>
- **A video for health professionals on how to administer the LAIV vaccine** produced by NHS Education for Scotland is available at <http://www.nes.scot.nhs.uk/education-and-training/by-theme-initiative/public-health/health-protection/seasonal-flu.aspx>
- **Summary of Product Characteristics (SPC) for flu vaccines** are available at <http://www.medicines.org.uk/emc/>
- **PGD templates for flu vaccines** <https://www.gov.uk/government/collections/immunisation-patient-group-direction-pgd>
- Find out more about **antibiotic resistance**, other ways to reduce its rise and how you can help through www.antibioticguardian.com





Influenza

National flu
programme

1. Selective or universal programme?
2. What are the aims of the programme?
3. What type of vaccine/s are used?



Public Health
England



Pregnant Women

VACCSline



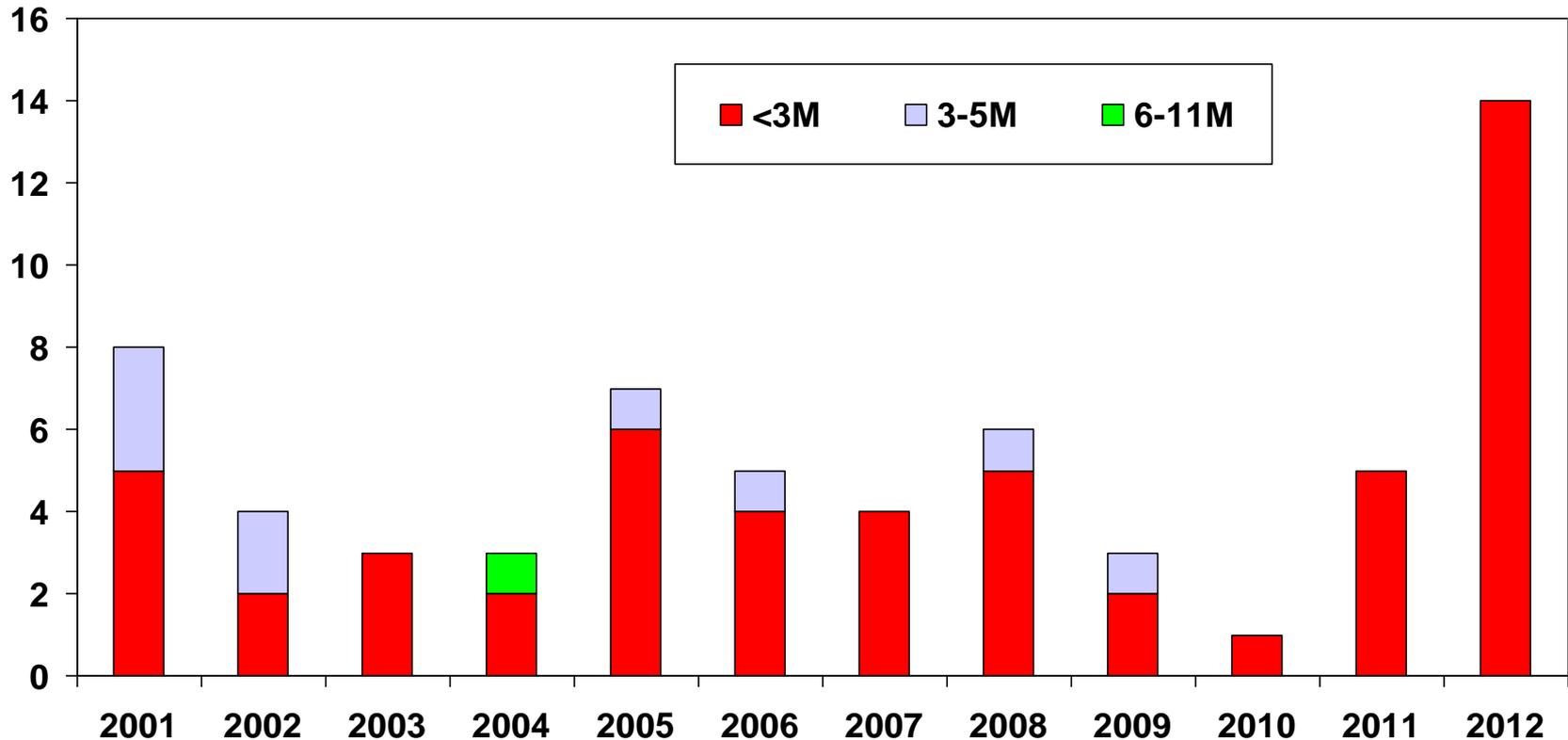
Vaccines for pregnant women

- Flu vaccine: given at any stage of pregnancy during the flu season
- Pertussis (whooping cough) vaccine: given from 16 weeks gestation ideally after their foetal anomaly scan (usually at around 20 weeks).

Question: when a pregnant woman is vaccinated is the baby protected through active or passive immunity?



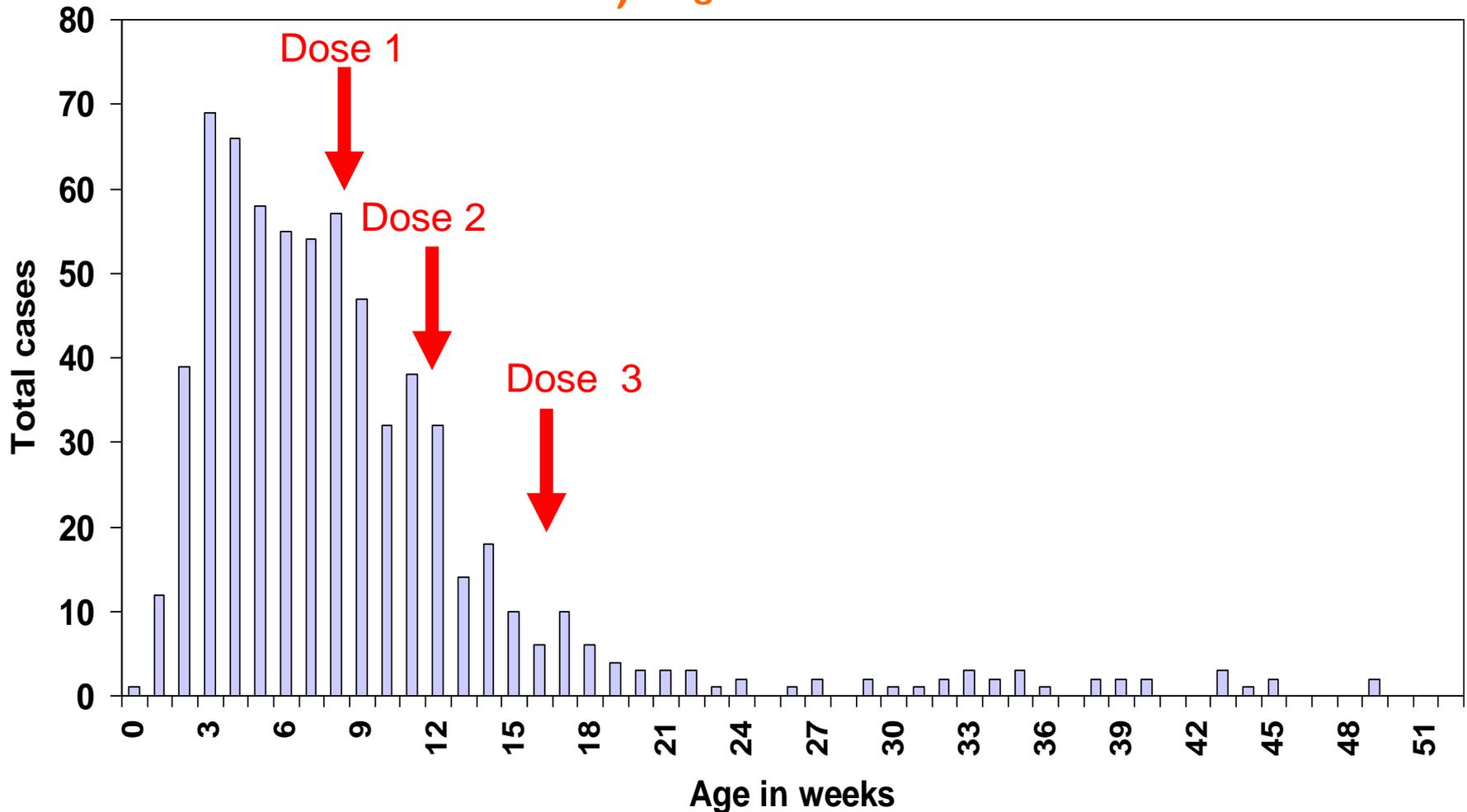
Reconciled deaths from pertussis in infants (England only)



Sources: lab confirmed cases, certified deaths, Hospital episode statistics, GP registration details



Confirmed cases in infants under 1 year, by week of age at onset* (2011-end August 2012) England and Wales



* Where provided; specimen date used when onset not available



Immunity against pertussis

- Vaccination against pertussis does ***not*** give life-long immunity
- Individuals who have previously had pertussis **can become re-infected** and spread infection to others
- This spread of infection is important, **particularly in children too young to be vaccinated**





Why vaccinate pregnant women?

The immunity acquired by vaccination will be passed **across the placenta** by **antibodies** and protect the baby in the **first few weeks of life**, when they are most at risk of **serious complications** if they become infected with pertussis



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Why vaccinate pregnant women against pertussis

Helps protect the baby

- Babies born to mothers vaccinated at the recommended time during pregnancy should have **higher levels of antibodies** than those born to unvaccinated mothers, which should help protect the infant until they start receiving their own immunisations

Helps protect the mother

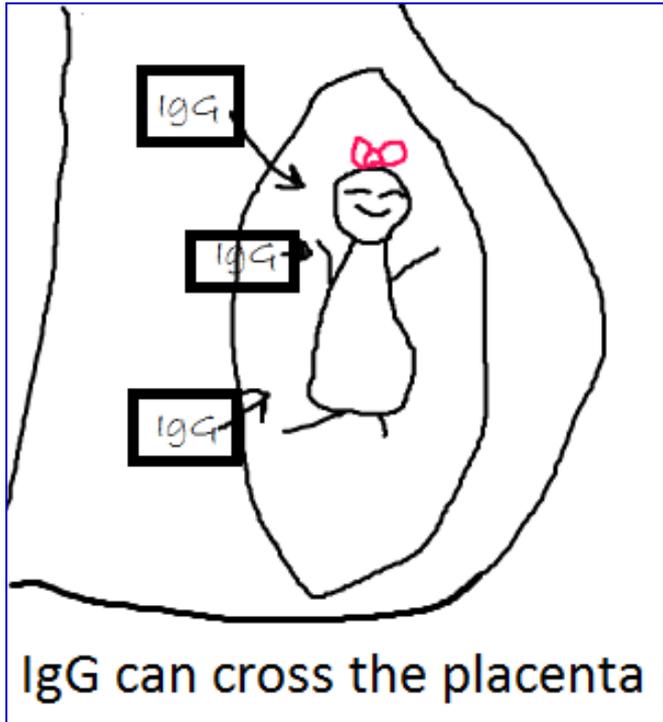
- Reduces the risk of the mother **catching pertussis** and passing it on to the young infant



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Pertussis vaccine



- Takes around 2 weeks for Mum to develop high levels of antibodies
- Give from 16 weeks of pregnancy ideally after their foetal anomaly scan (usually at around 20 weeks).
- Immunisation in the second trimester significantly increased neonatal antibodies compared to third trimester
- If second trimester has passed still give right up until baby is vaccinated themselves at 8 weeks of age
- Should be given in each pregnancy

All staff should be familiar with the **BOOSTRIX-IPV** packaging

Please ensure that you use the correct vaccine and that you accurately record the brand and batch number



Ensure that all those administering the vaccine are familiar with the product

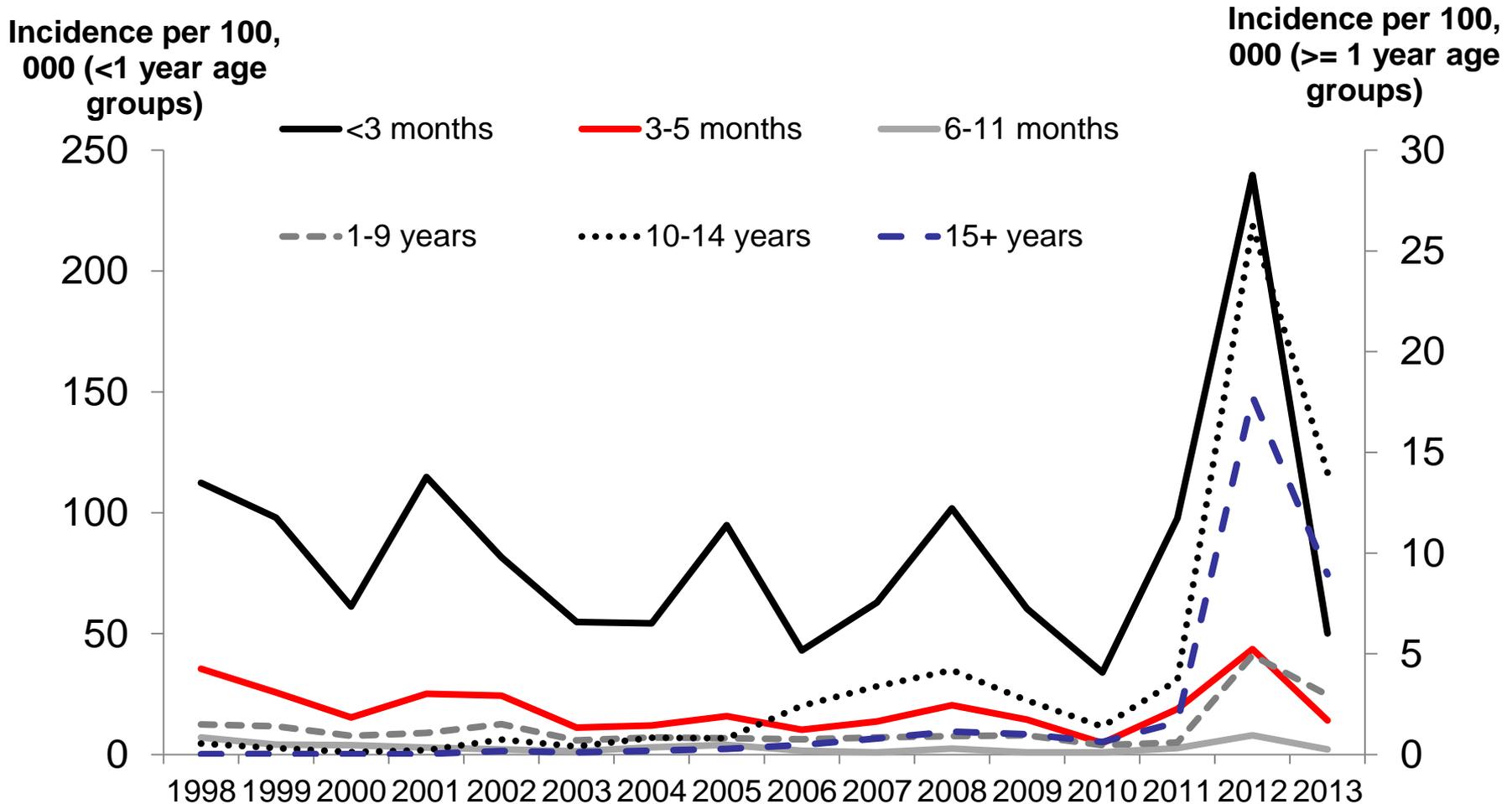


Is the programme working?

- In 2014, JCVI recommended that the temporary pertussis vaccination programme for pregnant women be continued for at least a further 5 years.
- Success of the vaccination programme in saving infant lives
- Continued increase in pertussis incidence.
- Babies born to vaccinated mothers are 90% less likely to get disease than babies whose mothers were unvaccinated.

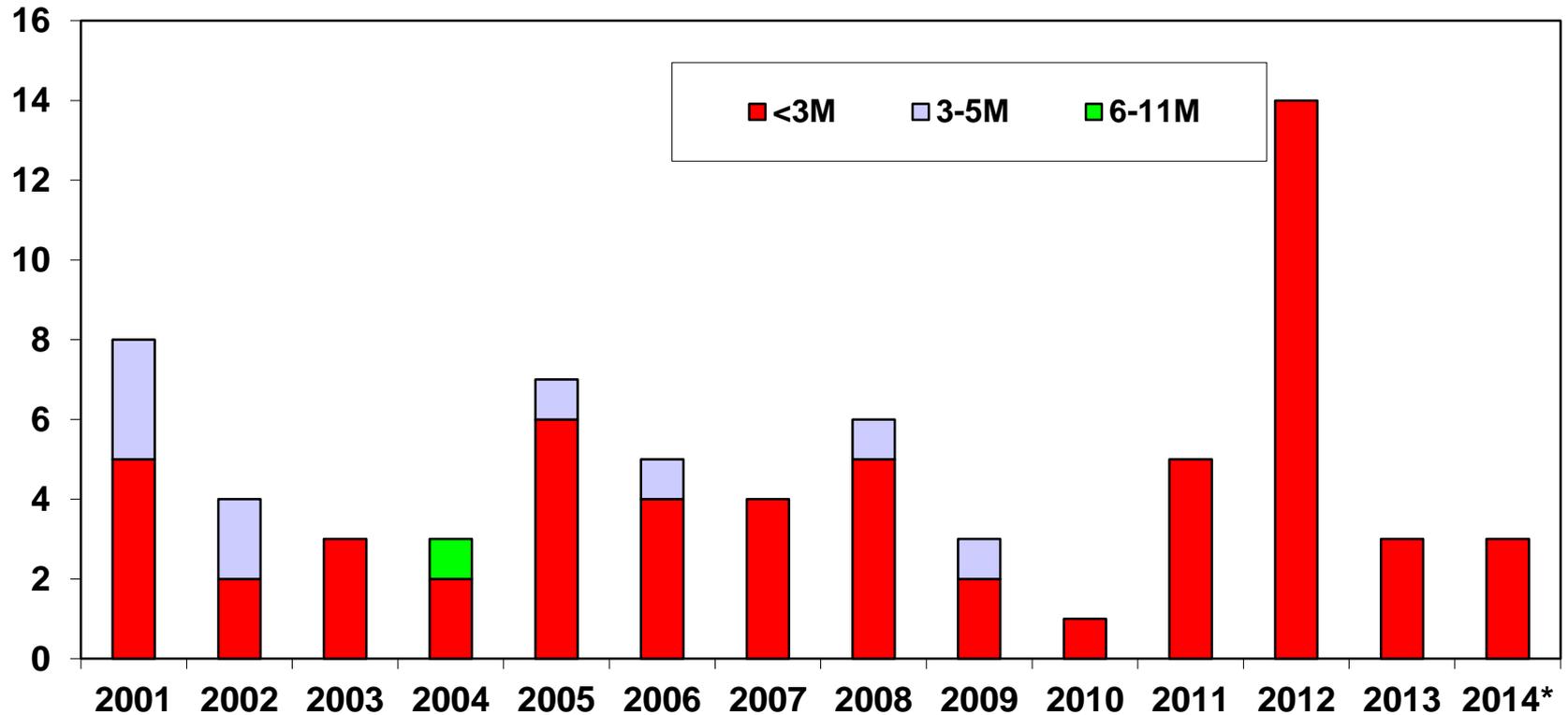


Annual age specific laboratory confirmed pertussis incidence rates 1998 – 2013: England





Reconciled deaths from pertussis in infants England only



Sources: lab confirmed cases, certified deaths, Hospital episode statistics, GP registration details

*to end April



The situation in 2016

- Numbers of deaths in babies born in the three and a half years since the maternal vaccination programme was introduced has fallen, in England, there have been a further 16 deaths in babies aged ten weeks or younger with confirmed pertussis during this time.
- Only two of these babies had mothers who were vaccinated during pregnancy and in both cases, vaccination was too close to delivery to confer optimal passive protection to the infant.

Vaccination against pertussis (Whooping cough) for pregnant women- 2016 Information for healthcare professionals

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/529956/FV_JUNE_2016_PHE_pertussis_in_pregnancy_information_for_HP_.pdf

