



**Mae Brechu yn achub bywydau**  
**Vaccination saves lives**



# Pregnancy vaccination webinar for healthcare workers

Vaccine Preventable Disease Programme  
Public Health Wales

# Objectives of the webinar:

## **For healthcare workers involved in the delivery and/of, or advising on vaccination of pregnant women to:**

- Understand the importance having positive conversations about vaccination with all pregnant women.
- To improve confidence in providing evidence-based information about vaccinations in pregnancy.
- To be able to discuss the important role of vaccination in pregnancy.
- To be aware of sources of information for HCW and pregnant women and know where to signpost to.

The information contained in these slides is accurate at the time of publication (21 September 2023). It is important that immunisers and/or those who are providing immunisation advice, should always ensure they are accessing the most up to date information and refer to the Green book and other authoritative sources when administering vaccines.



GIG  
CYMRU  
NHS  
WALES

Iechyd Cyhoeddus  
Cymru  
Public Health  
Wales

## Vaccine Preventable Disease Programme

Systems  
leadership  
with key  
partners  
(within and  
external to  
NHS)

Surveillance  
and  
Epidemiology

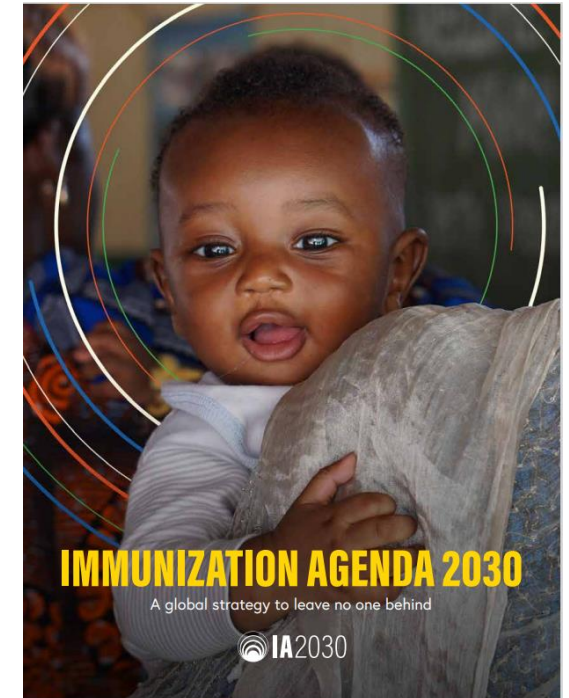
Health  
professional  
Engagement  
/ Specialist  
Clinical  
Support

Public /  
External  
Stakeholder  
Engagement

Evidence  
synthesis –  
support  
evidence-  
based  
practice and  
evaluation

# VPDP: wider strategic and policy context:

- **World Health Organisation Immunisation Agenda 2030**  
– global strategy to leave no one behind.
- **Welsh Vaccine Transformation Programme** – In 2022 Welsh Government embarked on the first stages of a vaccine transformation programme which sets a vision and formal framework in place for vaccination going forward.
- **The National Immunisation Framework (NIF) for Wales** was published in October 2022 which marked the start of the implementation phase of the Transformation Programme. The principals outlined in the NIF are closely related to those seen in the WHO Immunisation Agenda 2030.
- **Public Health Wales Long Term Strategy 2023-2035** – Working to achieve a healthier future for Wales.



# JCVI

The Joint Committee on Vaccination and Immunisation are an independent expert committee on vaccination and immunisation.

- They advise UK health departments on immunisation for the prevention of infections and/or disease.
- This advice is based on their consideration of the evidence on:
  - The burden of disease (e.g., deaths, life changing consequences).
  - Safety and effectiveness of the vaccine.
  - Impact that a vaccination programme would have.
  - Cost effectiveness.
- They identify where there are knowledge gaps relating to immunisation and immunisation programmes (e.g., where more research or surveillance is needed).
- They advise governments on vaccination policy but do not create policy themselves.

# Content of webinar:

Topic	Speaker	Time
<b>Introduction</b>	Clare Powell (Specialist Nurse- training VPDP) Juliet Norwood (Specialist Nurse, VPDP)	5 minutes
<b>Key messages</b>	Cara Moore (Lead midwife, Neonatal and Maternity Network, PHW)	5 minutes
<b>Key updates in pregnancy vaccination</b>	Christopher Johnson (Head of VPDP)	5 minutes
<b>Epidemiology overview</b>	Simon Cottrell (Senior Principal Epidemiologist, VPDP,PHW)	5 minutes
<b>Vaccine specific:</b> Pertussis, influenza, COVID-19. Hep B (at-risk infants), rubella (pre-conception)	Pertussis: Anne McGowan (Nurse Consultant, VPDP), Covid-19 and influenza: Hawys Youlden (Lead Nurse, VPDP) hepatitis B and rubella: Clare Powell (Specialist Nurse, VPDP).	20 minutes (4 mins each section)
<b>Resources / signposting</b>	Kate Lloyd (Nurse/Public Health Practitioner VPDP)	5 minutes
<b>Vaccinations for healthcare professionals</b>	Juliet Norwood (Specialist Nurse, VPDP)	2 minutes
<b>Vaccine equity and attitudinal studies</b>	Jasmin Chowdhury (Service Development and User Engagement Senior Practitioner, VPDP)	10 minutes
<b>Questions and answers</b>	All	30 minutes



**Mae Brechu yn achub bywydau**  
**Vaccination saves lives**

## **Pregnancy Vaccinations: key messages**

**Cara Moore: Lead midwife, Neonatal and Maternity Network,  
PHW.**



# Key messages:

**Vaccination is the safest and most effective way of protecting pregnant women and their babies against serious illnesses such as whooping cough, flu and COVID-19.**

**Risks to the mother and the unborn child include:**

- Increased risks of complications for the mother.
- Perinatal mortality, prematurity, low birth weight and increased risk of death in neonates too young to have their own vaccines.
- Congenital Rubella Syndrome for the unborn baby.
- Future risk of cirrhosis and liver cancer for the infant (Hep B).

Healthcare workers (midwives) are a **trusted voice** and an important source of information about vaccination in pregnancy. **Make every contact count.**





# Key messages:

## • Pertussis

- Cyclical pattern with peaks in cases every 3-4 years.
- Can be fatal in infants and young people. Almost all deaths occur in infants, with most occurring in those less than 3 months old.
- Wales Point of Delivery (POD) survey: pertussis vaccination uptake 2022/3: **69.9%** down from **83.3%** 2021/2022 and from **83.7%** 2020/2021. **Lowest since 2015/16.**

## • Influenza

- There were 29 deaths of pregnant women and women up to six weeks postpartum in association with influenza in the UK between 2009 and 2012 (MBRRACE).
- Risk of most serious illness is higher in those including children under 6 months, and pregnant women.
- The uptake of the influenza vaccine in the POD survey 2022/23 was **60%** down from **78.5%** in 2021/22 and **81.5%** 2020/21.



# Key messages: Cont.

- **COVID-19**

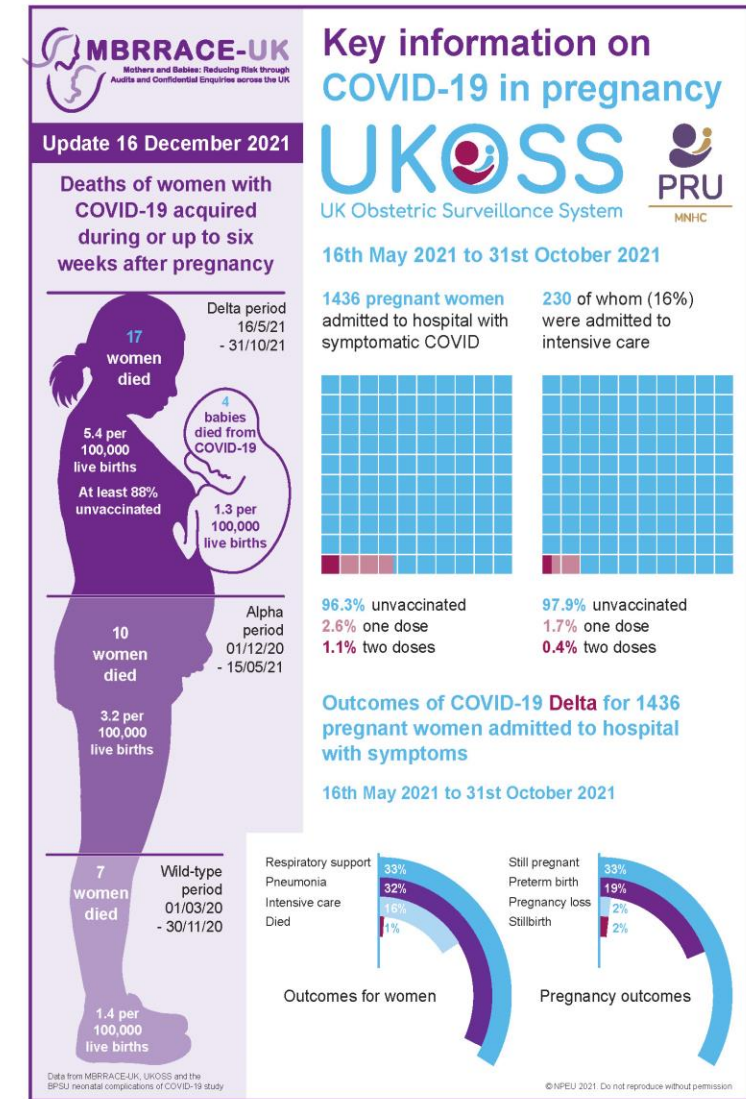
- Complications as a result of COVID-19 was the **leading cause of maternal death** in the UK between 2019 and 2021 during or up to 6 weeks after the end of pregnancy.
- It puts both the mother and unborn baby at risk of serious disease and premature birth.
- **MBRRACE perinatal report has just been published:**  
[State of the Nation Report | MBRRACE-UK \(le.ac.uk\)](#)

- **Hepatitis B infection**

- 90% of those who are infected immediately before or after birth develop chronic hepatitis B.

- **Rubella**

- Infection in the first 8-10 weeks of pregnancy results in damage of up to 90% of surviving infants.



[MBRRACE-UK: Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries across the UK | MBRRACE-UK | NPEU \(ox.ac.uk\)](#)



**Mae Brechu yn achub bywydau**  
**Vaccination saves lives**

**Pregnancy Vaccinations: key updates**

**Christopher Johnson: Head of VPDP**

# Key updates - pregnancy vaccinations

## Respiratory Syncytial Virus (RSV)

- Common virus which causes coughs and colds in winter (October-March).
- Transmitted by droplets and secretions from infected person
- Very young (<1y) and elderly at greatest risk. Infants < 6m develop the most severe disease e.g. bronchiolitis and pneumonia.
- Significant burden of RSV illness in UK and impact on NHS services [Green Book Chapter 27a Respiratory syncytial virus \(publishing.service.gov.uk\)](#)
- JCVI has been monitoring the latest evidence, and in June 2023 advised that an RSV programme that is cost effective should be developed for both infants and older adults aged 75 years and above. See: [Respiratory syncytial virus \(RSV\) immunisation programme: JCVI advice, 7 June 2023 - GOV.UK \(www.gov.uk\)](#) and a . A further full JCVI RSV statement (September 2023): [Respiratory syncytial virus \(RSV\) immunisation programme for infants and older adults: JCVI full statement, 11 September 2023 - GOV.UK \(www.gov.uk\)](#)
  - For infants: JCVI advised either
    - a universal maternal vaccination programme,
    - a passive immunisation programme should be implemented to protect infants from RSV
  - And a >75 programme

# Welsh Health Circular : Winter Respiratory Vaccination Programme: Autumn and Winter 2023 to 2024.

- Particular attention should be paid to the following groups:
  - ***Pregnant Women*** are being encouraged to get vaccinated to help protect themselves and their babies. Evidence shows pregnant women have a higher chance of developing complications if they get flu or COVID-19, particularly in the later stages of pregnancy. Where clinically appropriate, women should also be encouraged to receive the pertussis vaccine. Although this is a year-round vaccination programme, pertussis infection can pose a significant burden during winter months, especially in infants too young to have received their own primary vaccinations.

[Winter respiratory vaccination programme 2023 to 2024 \(WHC/2023/029\) | GOV.WALES](#)



**Mae Brechu yn achub bywydau**  
**Vaccination saves lives**

## **Pregnancy Vaccination: Epidemiology overview**

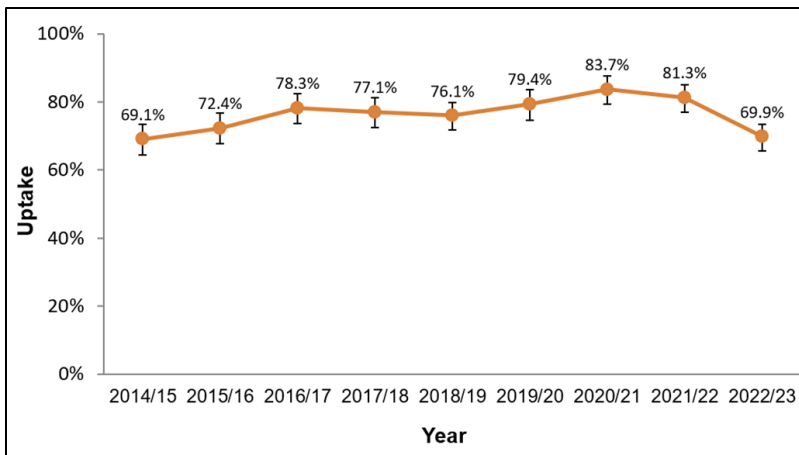


# Point of Delivery Survey

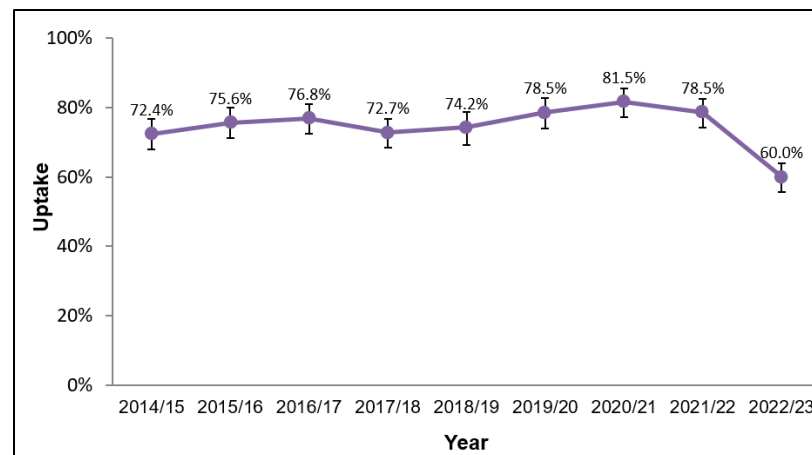
## A snapshot of maternal immunisation uptake

- Carried out in January each year
- Denominator is all those women delivering during a 5-day period
- All seven health boards in Wales participate
- Standard questionnaire asks about offer of vaccinations and receipt of vaccinations
- Timeliness of pertussis vaccination is also gathered
- Approximately 350-400 women take part in the survey each year

Uptake of pertussis vaccination in pregnant women participating in the 2014/15 to 2022/23 surveys<sup>1</sup>



Uptake of influenza vaccination in pregnant women participating in the 2014/15 to 2022/23 surveys<sup>1</sup>



<sup>1</sup>Bars indicate 95% confidence intervals.

[https://nhswales365.sharepoint.com/sites/PHW\\_VPDPCComms/SitePages/Immunisation-uptake-in-pregnancy.aspx](https://nhswales365.sharepoint.com/sites/PHW_VPDPCComms/SitePages/Immunisation-uptake-in-pregnancy.aspx)

Public Health Wales

## Maternal Immunisations in Wales 2023



In a survey of 345 women delivering in maternity units across Wales during January 2023:

### Whooping Cough (Pertussis)

**70%** vaccinated

**94%** recall being offered the whooping cough (pertussis) vaccine

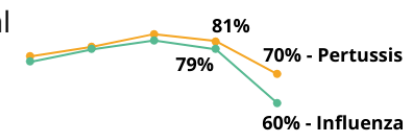
### Influenza

**60%** vaccinated

**93%** recall being offered the influenza vaccine



Uptake of maternal vaccinations have **decreased** in recent years.



## WHY IS VACCINATION IMPORTANT?



### Whooping Cough (Pertussis) Vaccination

Almost all deaths from pertussis occur in infants, with most occurring in those younger than 3 months of age.



### Influenza Vaccination

Flu in pregnancy can cause pre-term birth or have low birthweight and in severe cases can lead to stillbirth.



### COVID-19 Vaccination

Pregnant women with COVID-19 have twice the risk of stillbirth or pre-term birth.

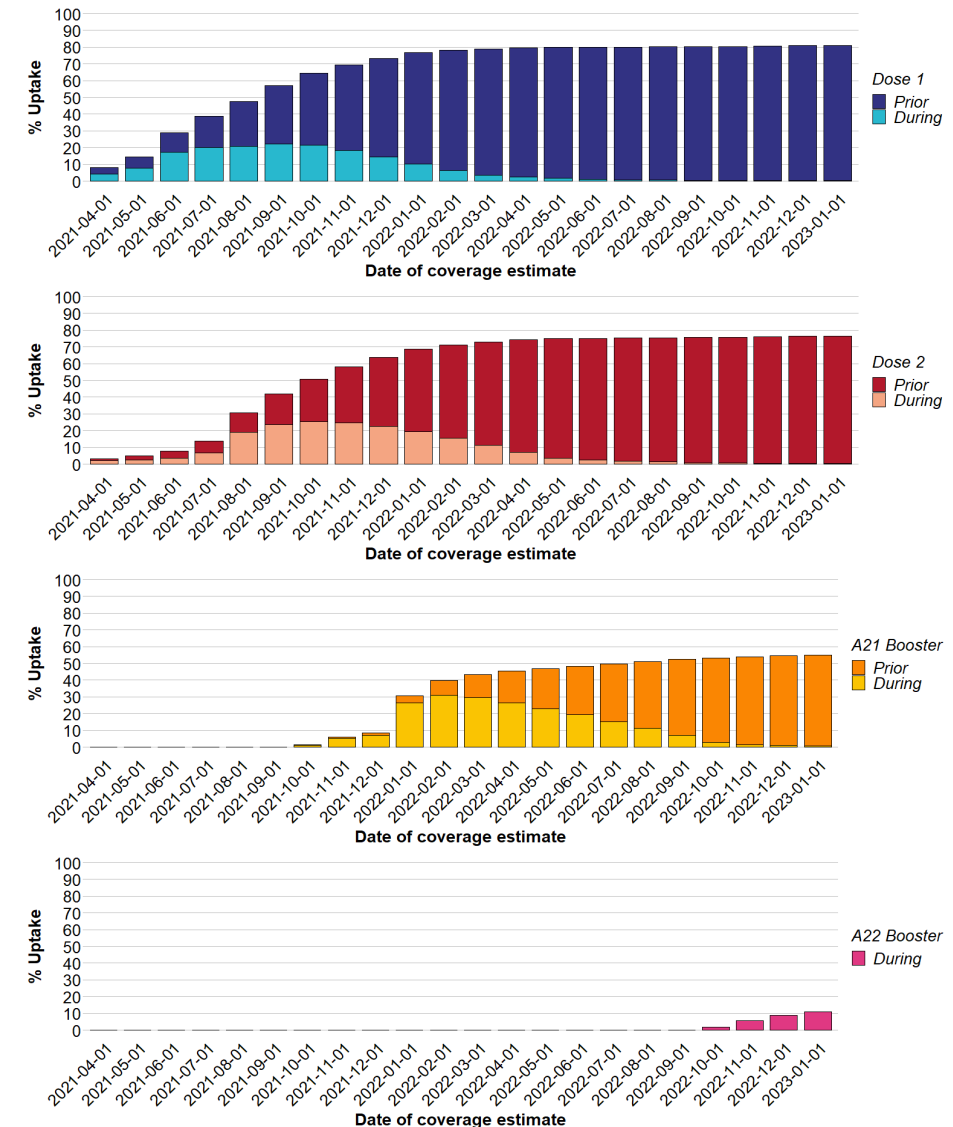




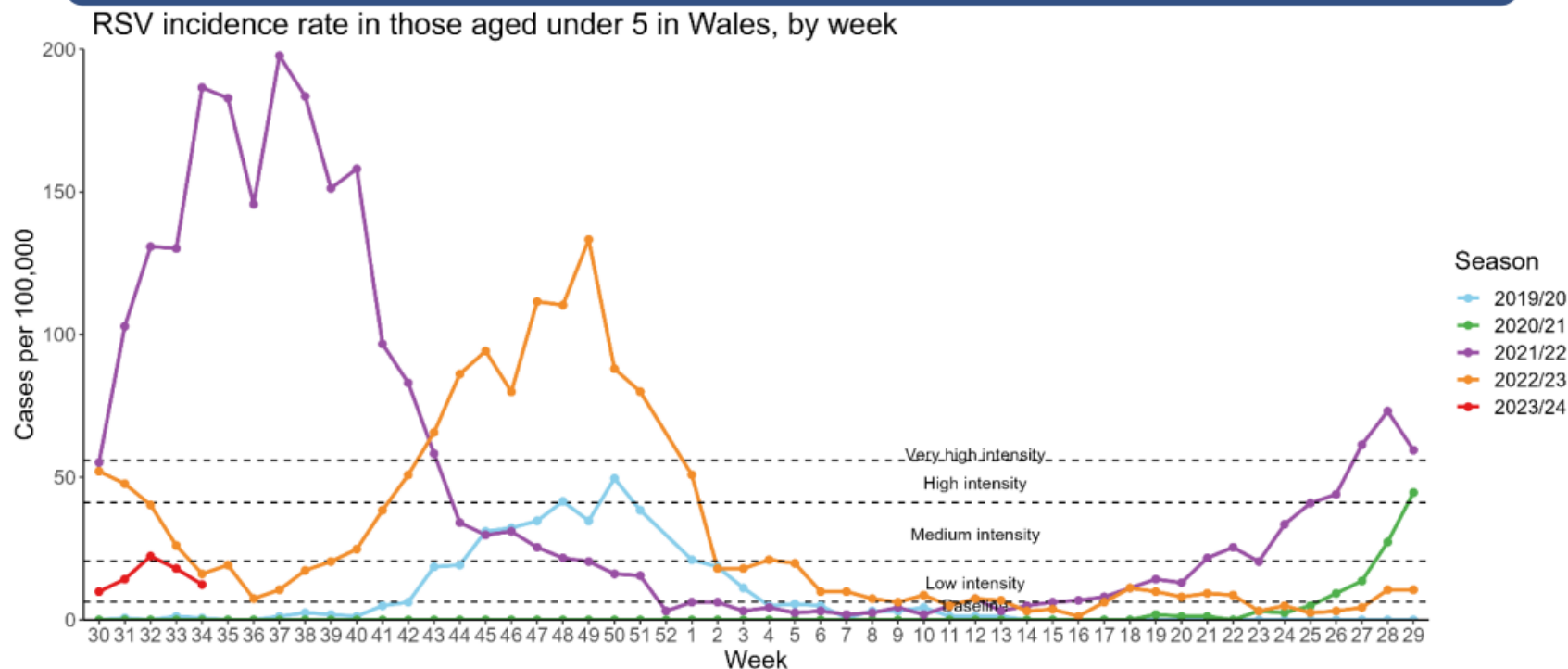
# COVID-19 vaccination

## Maternal immunisation uptake

- Links Wales maternity indicators initial assessment dataset to COVID-19 immunisation data recorded in the Welsh Immunisation System (WIS)
- For those pregnant as at 01/01/2023
- 81.0% (95% CI 80.4%–81.7%) for at least one dose
- 76.3% (95% CI 75.6%–77.1%) for at least two doses
- 54.9% (95% CI 54.1%–55.8%) for the autumn 2021 (A21) booster dose
- 11.0% (95% CI 10.5%–11.5%) for the autumn 2022 (A22) booster
- Women received COVID-19 vaccinations prior to pregnancy, however uptake of COVID-19 vaccination during pregnancy is low
- Pregnant women are eligible for the COVID-19 autumn boosters as evidence show they have a higher risk of developing complications if they get flu or COVID-19



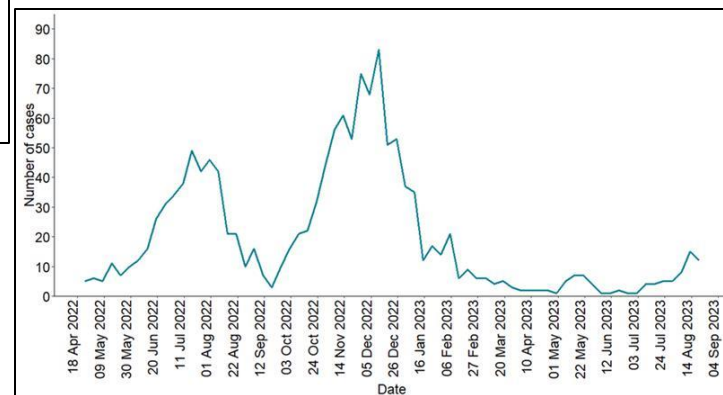
**Figure 9. RSV incidence rate per 100,000 population aged under five years, week 30 2019 to Week 34 2023.**



\*RSV seasons are monitored from W30 to W29, the most recent data is presented in red

[Weekly Influenza and Acute Respiratory Infection Report - Public Health Wales \(nhs.wales\)](https://www.nhs.uk/healthcare-infection-report/weekly-influenza-and-acute-respiratory-infection-report-public-health-wales/)

Weekly summary of community acquired cases of **RSV** in Wales admitted to hospital. Children in Wales under 5 years old



# Respiratory Syncytial Virus (RSV)

# Neonatal Hepatitis B

## Selective immunisation programmes

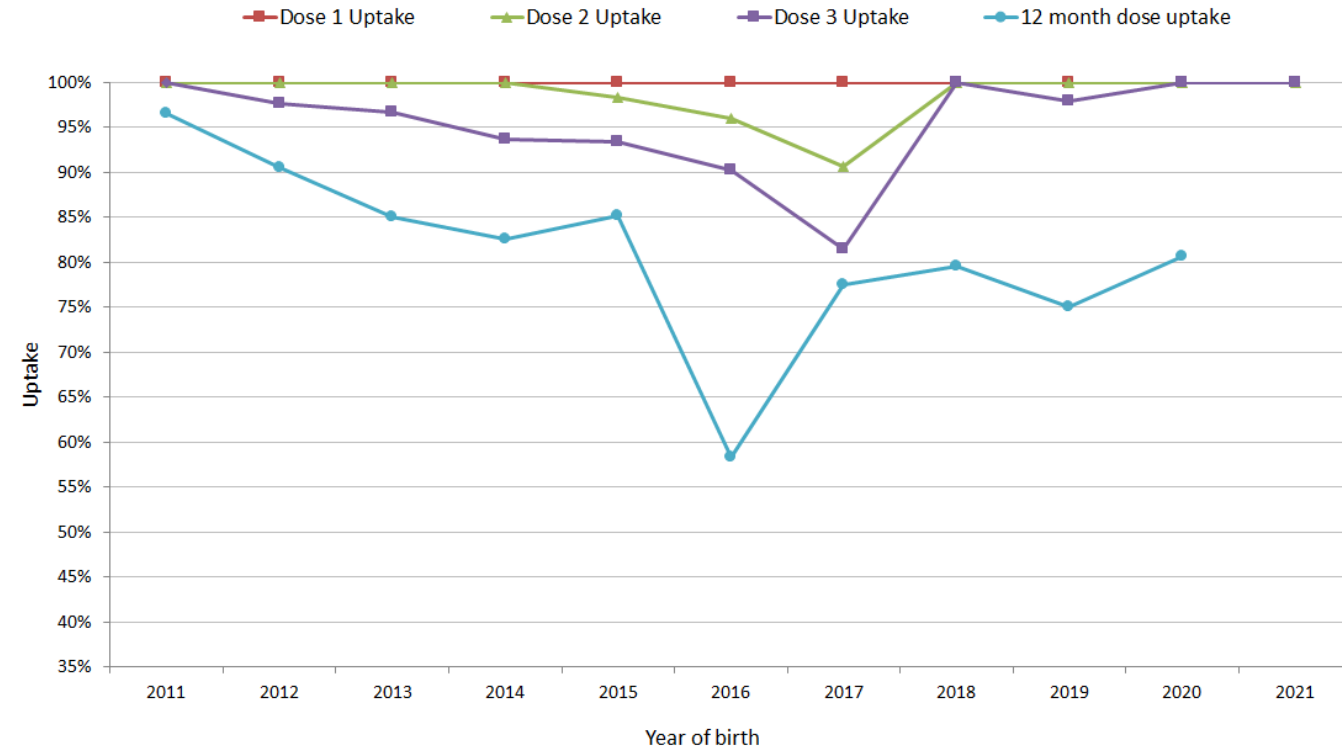
Target group	Age and schedule
Babies born to hepatitis B infected mothers	At birth and 1 month old. Boost at 12-13 months old <sup>1</sup>

HepB added to routine schedule (6in1 vaccine) in 2017

Diphtheria, tetanus, pertussis (whooping cough), polio, Haemophilus influenzae type b (Hib) **and hepatitis B**

- Given at 8, 12 and 16 weeks

- Monovalent dose at 2 months no longer provided following introduction of HepB into routine schedule



Received dose 1 - monovalent (%)	Received dose 2 - monovalent (%)	Received first hexavalent dose (%)	Received second hexavalent dose (%)	Received third hexavalent dose (%)
100	68	96	100	96



**Mae Brechu yn achub bywydau**  
**Vaccination saves lives**

## **Pregnancy Vaccinations: vaccines recommended for women in pregnancy**

- **Pertussis (whooping cough)**
- **Influenza (flu)**
- **COVID-19**



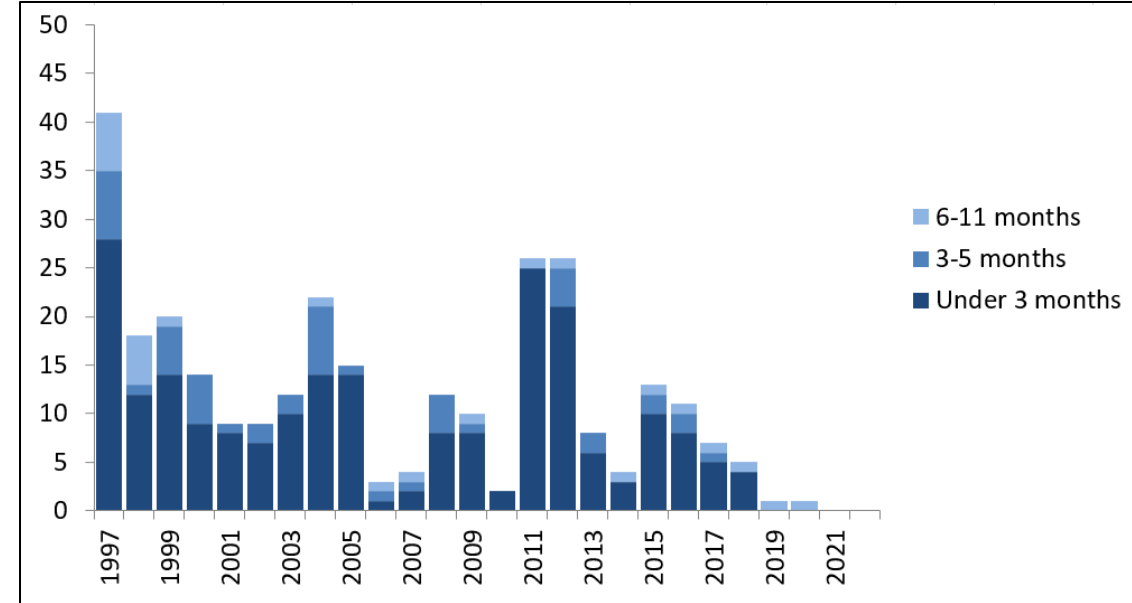
**Mae Brechu yn achub bywydau**  
**Vaccination saves lives**

**Pregnancy Vaccination: Pertussis (whooping cough)**

# Pertussis infection: overview

- Acute bacterial infection caused by *Bordetella pertussis*
- Highly contagious. Passed from person to person through droplets from nose and throat, when coughing and sneezing.
- Most vulnerable group are infants and young children – with highest rates of complications and mortality.
- Infants and young most severely affected – **can be fatal in infants and young people!**
- Laboratory confirmations of pertussis in infants < 1 year old have fallen steadily with the success of the vaccination programme BUT pertussis vaccination uptake has decreased.

Laboratory confirmations of pertussis in infants aged under one by year, Wales; 1997-2023



# Pertussis Vaccination

- Pertussis vaccination is part of the routine childhood schedule
- This does not give lifelong immunity.
- Immunity from vaccination or previous infection will wane leaving little or no protection to pass onto the unborn child.
- **Maternal vaccination: offered between 16 and 32 gestational weeks**
- **Maternal vaccination: may be offered after 32 weeks but this may not offer as high a level of passive protection to the baby**

Giving a vaccination from 16 weeks:

- **Helps protect the baby.** Until the babies start receiving their own immunisations.
- **Helps protect the mother.** Reduces the risk of the mother catching pertussis and passing on to the infant.



Mae Brechu yn achub bywydau  
Vaccination saves lives



## The complete routine immunisation schedule for Wales from May 2022

Age due	Diseases protected against	Vaccine and name	Usual site <sup>1</sup>
8 weeks old	Diphtheria, tetanus, pertussis (whooping cough), polio, <i>Haemophilus influenzae</i> type b (Hib) and hepatitis B	DTaP/IPV/Hib/HepB	Infanrix hexa or Vaxelis
	Meningococcal group B (MenB)	MenB	Bexsero
	Rotavirus gastroenteritis	Rotavirus	Rotarix
12 weeks old	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B	DTaP/IPV/Hib/HepB	Infanrix hexa or Vaxelis
	Pneumococcal (13 serotypes)	PCV	Prevenar 13
	Rotavirus gastroenteritis	Rotavirus	Rotarix
16 weeks old	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B	DTaP/IPV/Hib/HepB	Infanrix hexa or Vaxelis
	Meningococcal group B	MenB	Bexsero
12-13 months old	Hib / Meningococcal group C	Hib/MenC	Menitorix
	Pneumococcal	PCV booster	Prevenar 13
	Measles, mumps and rubella	MMR	MMRVaxPRO or Priorix
	Meningococcal group B	MenB booster	Bexsero
2 <sup>2</sup> and 3 years old and all school aged children	Influenza (annually from September)	Live attenuated influenza vaccine	Fluenz Tetra <sup>3</sup>
3 years 4 months old	Diphtheria, tetanus, pertussis and polio	dTaP/IPV	Boostrix-IPV
	Measles, mumps and rubella	MMR	MMRVaxPRO or Priorix
School years 8 and 9 (12 to 14 year olds)	Cervical cancer, some head and neck and ano-genital cancers, and genital warts caused by human papillomavirus (HPV)	HPV <sup>4</sup> (two doses 6-24 months apart)	Gardasil or Gardasil 9
School year 9 (13 and 14 year olds)	Tetanus, diphtheria and polio	Td/IPV (check MMR status)	Revaxis
	Meningococcal groups A, C, W and Y	MenACWY	Nimenrix or Menveo
50 years of age and older	Influenza (annually from September)	Inactivated influenza vaccine	Multiple
65 years of age and older	Pneumococcal (23 serotypes)	Pneumococcal polysaccharide vaccine (PPV)	Pneumovax 23
70 years old (but under 80)	Shingles	Shingles	Zostavax or Shingrix <sup>5</sup>

<sup>1</sup> Where two or more injections are required at once, these should ideally be given in different limbs. Where this is not possible, injections in the same limb should be given 2.5cm apart. For more details see Chapters 4 and 11 in the Green Book. All injected vaccines are given intramuscularly unless stated otherwise.

<sup>2</sup> Children must be 2 years old by 31 August to receive influenza vaccine in the routine programme in autumn/winter.

<sup>3</sup> If Fluenz Tetra is contraindicated, use a suitable inactivated flu vaccine.

<sup>4</sup> Check the relevant chapter of the Green Book for individuals requiring a 3 dose schedule.

<sup>5</sup> 2 doses are required for individuals who are eligible for shingles vaccine, but who are contra-indicated to the receipt of Zostavax.

[Green Book Chapter 24 v3\\_0 \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/106541/green-book-chapter-24-v3-0.pdf)



# Pertussis Vaccination:

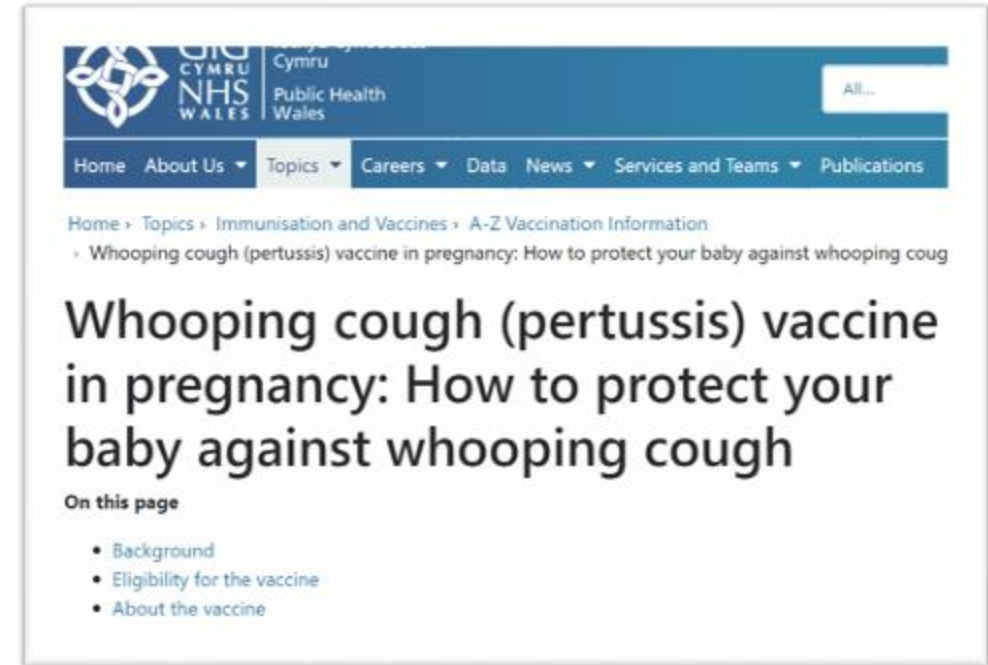
- Can be given at the same time as other pregnancy vaccines other vaccines (e.g. influenza and COVID-19).
- Influenza and COVID-19 immunisation should not be delayed until week 16 or after pregnancy in order to give the pertussis vaccine at the same visit.
- If a woman did not receive a pertussis vaccine in pregnancy, they can have it in the two months after birth – until the infant has their first pertussis containing vaccine.
- It is very important that parents ensure their infants start their immunisation schedule at 8 weeks to receive more long-lasting protection.
- The pertussis vaccination - no single (monovalent) vaccines licensed in UK. Only available as a combined product. **Boostrix®-IPV** protects against diphtheria, tetanus, pertussis (acellular) and polio (inactivated).
- A study of around 20,000 women vaccinated with the combined pertussis vaccine found no evidence of risk to pregnancies or babies (Donegan *et al*, 2014) [Safety of pertussis vaccination in pregnant women in UK: observational study | The BMJ.](#)
- There is no evidence of risk to women who are breast-feeding (Kroger *et al*, 2013).



# Signposting- further information

## VPDP PHW

- PHW VPDP public information on whooping cough vaccine in pregnancy [Whooping cough \(pertussis\) vaccine in pregnancy: How to protect your baby against whooping cough - Public Health Wales \(nhs.wales\)](#)
- PHW VPDP HCP information on pertussis in pregnancy [Pertussis \(whooping cough\) vaccination for pregnant women - Public Health Wales \(nhs.wales\)](#)
- Pertussis surveillance and epidemiology [Pertussis \(whooping cough\) surveillance and epidemiology - Public Health Wales \(nhs.wales\)](#)
- Training and e-learning [Immunisation eLearning - Public Health Wales \(nhs.wales\)](#)



# Signposting- further information

## External

- Green book on pertussis last updated April 2016 [Green Book Chapter 24 v3\\_0 \(publishing.service.gov.uk\)](#).
- UKHSA pertussis vaccination programme for pregnant women: information for HCP [Pertussis \(whooping cough\) vaccination programme for pregnant women: information for healthcare practitioners - GOV.UK \(www.gov.uk\)](#)
- SMPC Boostrix-IPV [Boostrix-IPV suspension for injection in pre-filled syringe - Summary of Product Characteristics \(SmPC\) - \(emc\) \(medicines.org.uk\)](#)



**Mae Brechu yn achub bywydau**  
**Vaccination saves lives**

## **Pregnancy Vaccination: Influenza (flu)**

# Influenza infection in pregnancy

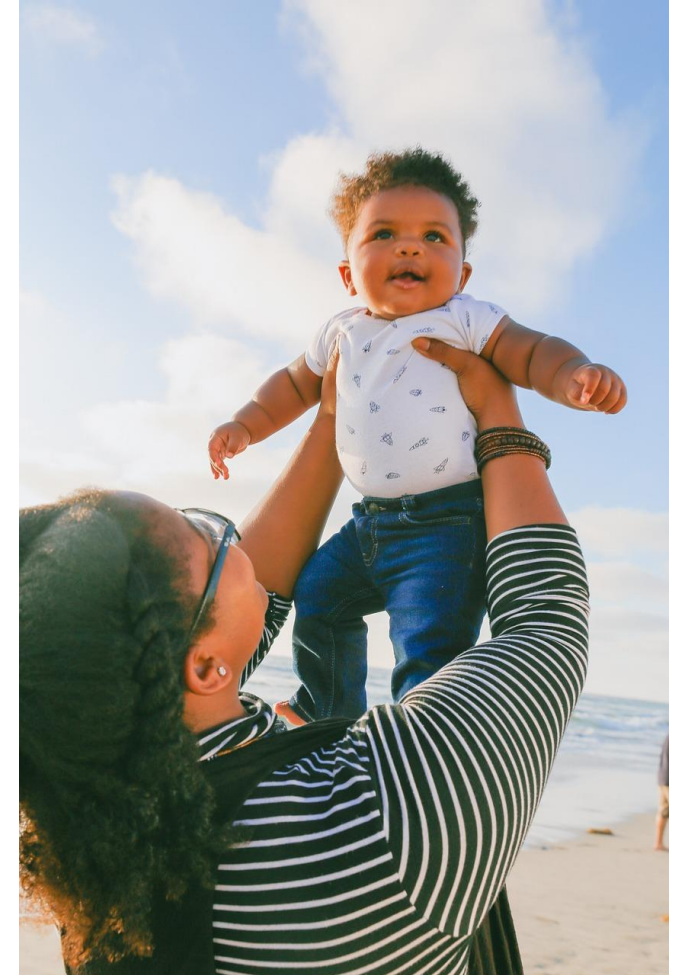
- Flu is more serious in pregnancy as the immune system is weakened to ensure the pregnancy is successful. Therefore, the pregnant woman is more prone to infections and complications of flu.
- Influenza presents significant risks to pregnant women and their babies. If a woman catches influenza during pregnancy, she is at increased risk of experiencing severe disease, admission to intensive care and perinatal mortality (Jamieson, 2009; Pierce, 2011).
- There were **29 deaths** of pregnant women and women up to six weeks postpartum in association with influenza in the UK between 2009 and 2012, representing one in eleven maternal deaths (MBRRACE-UK, 2014). [MBRRACE-UK: Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries across the UK | MBRRACE-UK | NPEU \(ox.ac.uk\)](#)
- The risks of flu can be serious to the unborn and new-born babies. It can lead to perinatal mortality, prematurity, smaller neonatal size, lower birth weight (Omer *et al.*, 2011).



- [Green Book Chapter 19 Influenza \(publishing.service.gov.uk\)\)](#).

# Influenza vaccination in pregnancy -

- **Influenza vaccination in pregnancy**
  - a) protects the mother
  - b) reduces the risk to the unborn child
  - c) protects the new-born baby
- Influenza vaccination during pregnancy gives passive immunity against influenza to new-borns.





# Flu vaccination in pregnancy

- Pregnant women should be offered flu vaccine for each pregnancy (seasonal).
- Inactivated influenza vaccines are preferred for women who are pregnant.
- The flu vaccine offered should be the one which is recommended for the flu season in which they are expected to deliver.





# Pregnant women: flu vaccination

- In the current 2023/24 season, JCVI advises the use of:
  - Quadrivalent influenza cell-culture vaccine (QIVc)
  - Quadrivalent Recombinant Influenza Vaccine (QIVr)

(QIVe is no longer on the approved vaccine list for reimbursement in 2023-24) [JCVI Statement on Influenza Vaccines 2023-24 final version.pdf](#) ([nitag-resource.org](https://nitag-resource.org))
- Studies on safety of flu vaccine in pregnancy show that inactivated flu vaccine can be safely and effectively administered during any trimester of pregnancy (Tamma et al., 2009)
- No study to date has demonstrated an increased risk of either maternal complications or adverse foetal outcomes associated with inactivated flu vaccine



**Mae Brechu yn achub bywydau**  
**Vaccination saves lives**

**Yn feichiog?**  
**Pregnant?**

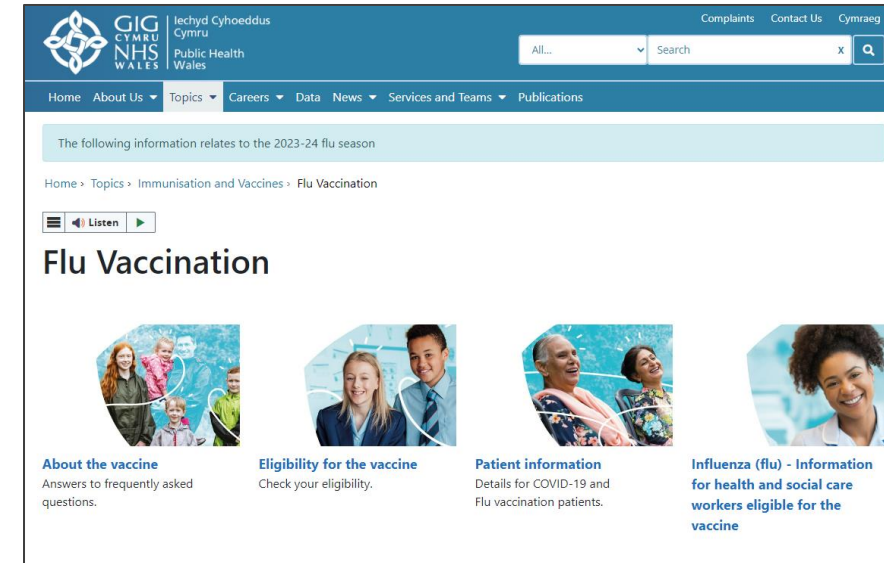
**Gall brechiadau'r pas, fflw a COVID-19 yn ystod beichiogrwydd helpu i'ch cadw chi a'ch babi'n ddiogel.**

**Whooping cough, flu and COVID-19 vaccinations in pregnancy can help keep you and your baby safe.**

# Signposting- further information

## VPDP PHW

- PHW VPDP public information on influenza [Flu Vaccination - Public Health Wales \(nhs.wales\)](#)
- PHW VPDP HCP information on influenza [Resources for health and social care professionals - Public Health Wales \(nhs.wales\)](#)
- Ordering of free information resources [Ffliw - Flu \(nhs.wales\)](#)
- Flu surveillance [Weekly Influenza and Acute Respiratory Infection Report - Public Health Wales \(nhs.wales\)](#)
- Training and e-learning [Immunisation eLearning - Public Health Wales \(nhs.wales\)](#)



# Signposting- further information

## External

- Green book on influenza. Last updated 16 September 2022 [Green Book Chapter 19 Influenza \(publishing.service.gov.uk\)](#).
- Welsh Health Circular. Winter Respiratory Vaccination Programme: Autumn and Winter 2023-2024 [Winter respiratory vaccination programme 2023 to 2024 \(WHC/2023/029\) | GOV.WALES](#)
- Flu vaccination programme 2023 to 2024: information for healthcare practitioners: [Flu vaccination programme 2023 to 2024: information for healthcare practitioners - GOV.UK \(www.gov.uk\)](#)
- Welsh Government Guidance: [Reimbursable vaccines and eligible cohorts for the 2023 to 2024 NHS seasonal influenza \(flu\) vaccination programme \(WHC/2022/031\) | GOV.WALES](#)

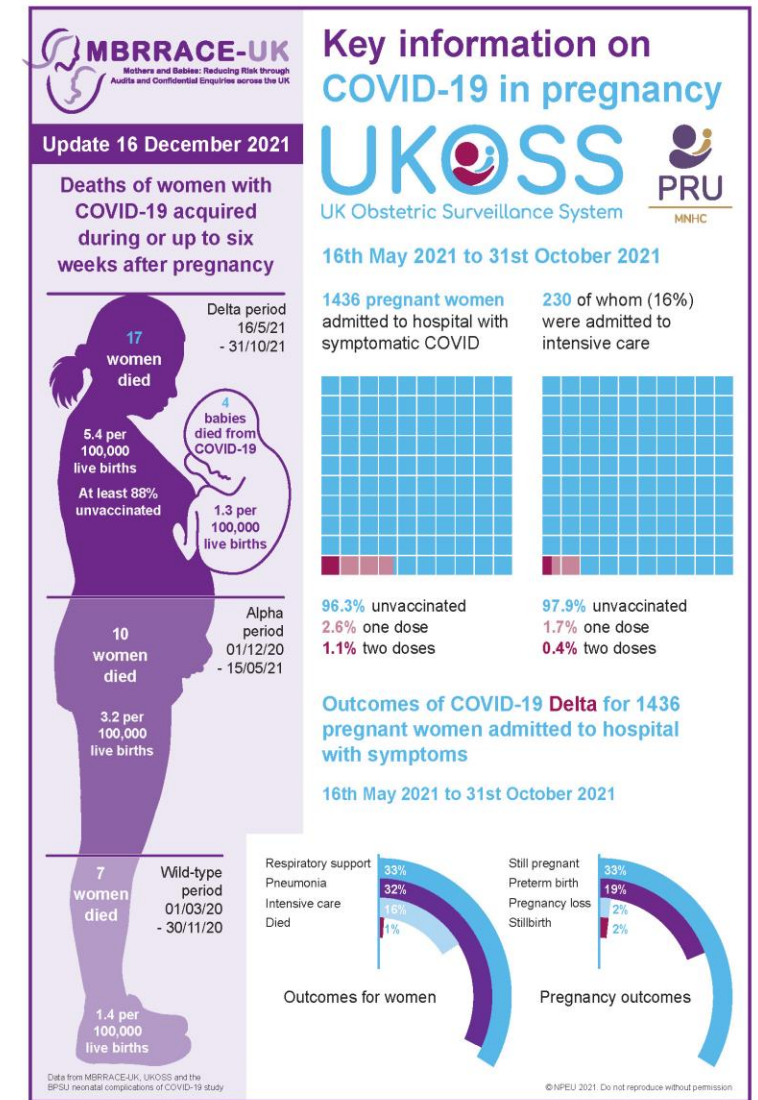


**Mae Brechu yn achub bywydau**  
**Vaccination saves lives**

## **Pregnancy Vaccinations: COVID-19**

# Epidemiology: COVID-19

- Pregnant women are more likely to require intensive care treatment as a result of COVID-19 disease than non-pregnant women of reproductive age [1].
- March 1, 2020 - October 31, 2021 - over **4,000** pregnant women were hospitalised with SARS-CoV2 infection in the UK, with **14%** of these women experiencing severe infection that required admission to intensive care, ventilation, or resulted in maternal death [2].
- COVID19 infection in the later stages of pregnancy puts both the mother and her unborn baby at increased risk of serious disease and premature birth [3].
- Complications as a result of COVID-19 was the leading cause of maternal death in the UK between 2019 and 2021 during or up to six weeks after the end of pregnancy [4].
- Complications in pregnant women as a result of COVID-19 were more likely to either be unvaccinated or not have received all of the recommended doses of a vaccination against COVID-19 [5].



[MBRRACE-UK: Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries across the UK | MBRRACE-UK | NPEU \(ox.ac.uk\)](#)

# The vaccine...

- **2023/2024 Winter Respiratory Campaign:** Maternal COVID-19 vaccination is a priority, to protect the mother and the unborn child from complications [Winter respiratory vaccination programme 2023 to 2024 \(WHC/2023/029\) | GOV.WALES](#)
  - During the seasonal campaign, a single vaccination dose (irrespective of prior vaccination status) is offered at least 3 months after any previous dose.
  - For vaccine products to be used in the Autumn 2023 COVID-19 vaccination programme see: <https://www.gov.wales/covid-19-vaccine-products-whc202333>
  - The COVID-19 can be given at the same time as other maternal vaccinations, although the influenza and COVID-19 immunisation should not be delayed until week 16 or after pregnancy in order to give the pertussis vaccine at the same visit. [COVID-19 greenbook chapter 14a \(publishing.service.gov.uk\)](#)



# Vaccine safety

- There is no known risk associated with giving inactivated, recombinant viral or bacterial vaccines or toxoids during pregnancy or whilst breastfeeding (Kroger et al, 2013). Since inactivated vaccines cannot replicate, they cannot cause infection in either the mother or the foetus. [COVID-19: the green book, chapter 14a - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/covid-19-the-green-book-chapter-14a)
- A large amount of observational data from women vaccinated in pregnancy in the USA have not shown an increase in adverse pregnancy outcomes. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/safety/vsafepregnancyregistry.html>
- Analysis of birth outcomes in women who had received at least one dose of the vaccine in England showed a similar or higher rate of good birth outcomes than in unvaccinated women. [COVID-19 vaccine quarterly surveillance reports \(September 2021 to June 2023\) - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/covid-19-vaccine-quarterly-surveillance-reports)

## Breastfeeding

- There is no known risk associated with being given a non-live vaccine whilst breastfeeding. JCVI advises that breastfeeding women should be offered any suitable COVID-19 vaccine. Emerging safety data is reassuring. mRNA was not detected in the breast milk of recently vaccinated women (Golan et al, 2021) and protective antibodies have been detected in breast milk (Gray et al, 2021).
- “The developmental and health benefits of breastfeeding are clear and should be discussed with the woman, along with her clinical need for immunisation against COVID-19.” [COVID-19 greenbook chapter 14a \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk/government/publications/covid-19-greenbook-chapter-14a)





# Signposting- further information

## VPDP PHW

- PHW VPDP public information on COVID-19 [COVID-19 vaccination information - Public Health Wales \(nhs.wales\)](#)
- PHW VPDP HCP information on COVID-19 [Resources for health and social care professionals - Public Health Wales \(nhs.wales\)](#)
- Ordering of free information resources [Coronafeirws/ Coronavirus \(COVID-19\)\(nhs.wales\)](#)
- COVID-19 surveillance [COVID-19 vaccination - Public | Tableau Public Immunisation surveillance - Public Health Wales \(nhs.wales\)](#)
- Training and e-learning [Immunisation eLearning - Public Health Wales \(nhs.wales\)](#)
- **External**
- Green book on COVID-19. [COVID-19 greenbook chapter 14a \(publishing.service.gov.uk\)](#)
- Welsh Health Circulars [Health circulars: 2021 to 2023 | GOV.WALES](#)
- Welsh Health Circular. Winter Respiratory Vaccination Programme: Autumn and Winter 2023-2024 [Winter respiratory vaccination programme 2023 to 2024 \(WHC/2023/029\) | GOV.WALES](#)
- JCVI [COVID-19 autumn 2023 vaccination programme: JCVI update, 7 July 2023 - GOV.UK \(www.gov.uk\)](#)

### COVID-19 vaccination information


Currently being updated for 2023-24

Due to the high level of immunity that has developed in Wales over the past two and a half years, and as we move from an emergency response towards our more usual approach, we will no longer offer the following vaccines.


- The initial two-dose **course** of vaccine, offered from December 2020 to everyone over the age of five, **will end on 30 June 2023.**
- The **booster** (third) dose, offered from autumn 2021 to everyone aged over five, **will end on 31 March 2023.**

This means that those aged five to 49 who have not had their two doses or their 2021 booster have until those dates to take up these offers.


People who develop a new health condition that places them in a clinical risk group, who haven't yet had their two-dose course or booster (or both), will still be able to be vaccinated during the next campaign (or sooner if a clinician advises them to).




**About the vaccine**  
Answers to frequently asked questions.



**Eligibility for the vaccine**  
Check your eligibility for the COVID-19 vaccination.



**Patient information**  
Details for COVID-19 and Flu vaccination patients.



**Resources for health and social care professionals**



**Mae Brechu yn achub bywydau**  
**Vaccination saves lives**

## **Pregnancy Vaccinations: other vaccinations**

- **Hepatitis B: vaccination for at-risk infants**

# Hepatitis B infection

- Infection of the liver caused by hepatitis B virus (HBV).
- Is spread by blood-to-blood contact, sexual contact, perinatal transmission from mother to child and rarely from bites from an infected person.
- Incubation period is 40-160 days.
- Hepatitis B can become chronic (when hepatitis B surface antigen (HBsAg) persists in the serum for 6 months or longer).
- Babies born to mothers who are chronically infected with HBV, or who have had acute hepatitis B during pregnancy, are at risk of becoming infected with HBV.
- **90% of those who are infected immediately before or after birth develop chronic hepatitis B.**
- 20-25 % of those with chronic hepatitis B can develop **progressive liver disease**, which may lead to **cirrhosis**, and are at increased risk of developing **hepatocellular carcinoma**.

[The Green Book on Immunisation - Chapter 18 Hepatitis B \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/67181/green-book-chapter-18-hepatitis-b.pdf)

# Hepatitis B Vaccination for at-risk infants

- During pregnancy **all** women are offered screening for hepatitis B.
- Two classes of products available for immunisation against Hepatitis B: a vaccine and a specific immunoglobulin (passive immunity).
- In addition to the **routine (hexavalent)** hepatitis B vaccinations, babies born to mothers infected with hepatitis B need to be given **extra doses** of the hepatitis B **(monovalent)** vaccine at **birth, 4 weeks and 1 year of age**.
- All babies born to mothers infected with hepatitis B should have a blood test at **12 months** of age to check if they have become infected with hepatitis B.
- Some mothers infected with Hepatitis B are considered especially high-risk, because they are highly infectious. Babies born to these high-risk mothers should receive an injection of **Hepatitis B immunoglobulin (HBIG)** at birth.
- They will also need a Hepatitis B vaccination to give them the longer-term protection.

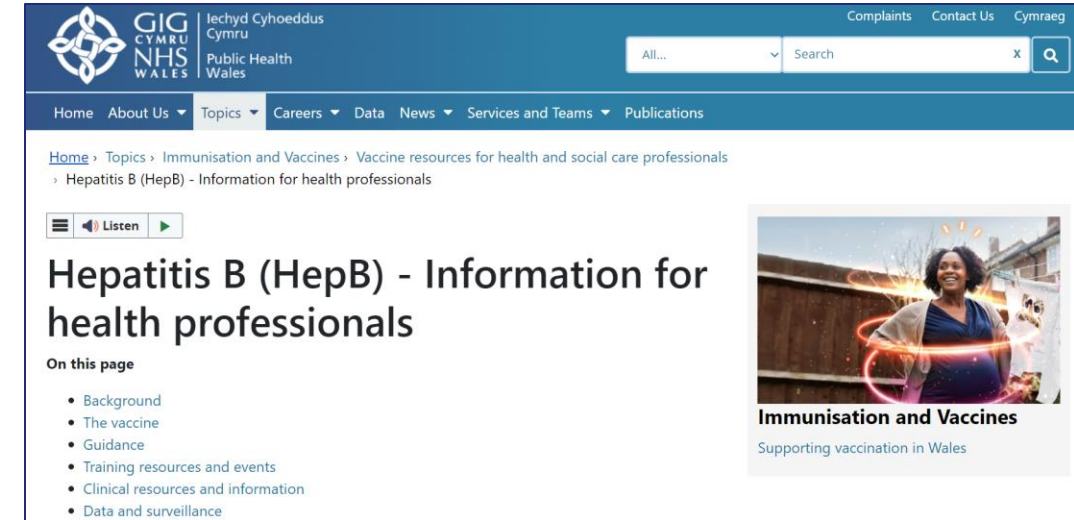
Sgrinio Cyn Geni **Cymru**  
Antenatal Screening **Wales**

# Safety

- There is no evidence of risk from vaccinating pregnant women or those who are breast-feeding with inactivated viral or bacterial vaccines or toxoids (Kroger *et al.*, 2013)
- Since hepatitis B is an inactivated vaccine, the risks to the foetus are likely to be negligible, and it should be given where there is a definite risk of infection [The Green Book on Immunisation - Chapter 18 Hepatitis B](#) ([publishing.service.gov.uk](http://publishing.service.gov.uk))

# Sources of information

- PHW Hepatitis B vaccination - public: [Hepatitis B vaccine - Public Health Wales \(nhs.wales\)](https://www.nhs.uk/public-health-wales/)
- PHW Hepatitis B vaccination - HCP: [Hepatitis B \(HepB\) - Information for health professionals - Public Health Wales \(nhs.wales\)](https://www.nhs.uk/public-health-wales/)
- PHW Antenatal screening Hep B: [Hepatitis B - Public Health Wales \(nhs.wales\)](https://www.nhs.uk/public-health-wales/)
- PHW Antenatal Screening. Infections and rashes in Pregnancy: A Guide for Health Professionals. (May 2023) [Screening Information for Professionals - V8- Infections and Rashes in Pregnancy.pdf - All Documents \(sharepoint.com\)](https://www.sharepoint.com/~/PublicHealthWales/Forms/AllDocuments.aspx?d=62626262-6262-6262-6262-626262626262&id=62626262-6262-6262-6262-626262626262)
- PHW Neonatal Hepatitis B immunisation surveillance: [Neonatal Hepatitis B Immunisation - Public Health Wales \(nhs.wales\)](https://www.nhs.uk/public-health-wales/)
- Green book Hepatitis B (external): [The Green Book on Immunisation - Chapter 18 Hepatitis B \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/115555/green-book-hepatitis-b-chapter-18.pdf)







**Mae Brechu yn achub bywydau**  
**Vaccination saves lives**

- **Pre-conception: Rubella**



**MMR vaccination**

Protecting against  
measles, mumps and  
rubella infection



**GIG**  
CYMRU  
**NHS**  
WALES

Iechyd Cyhoeddus  
Cymru  
Public Health  
Wales

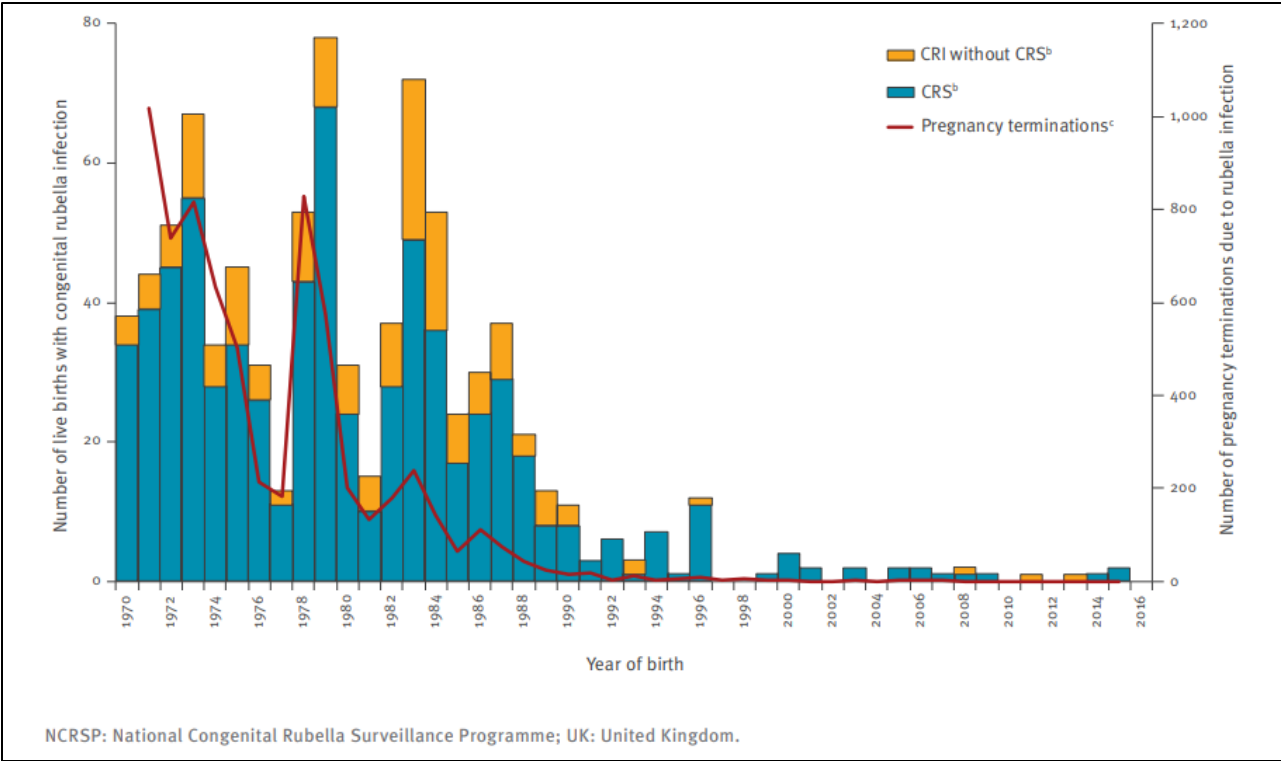
# Rubella infection – German Measles

- Caused by a togavirus. Spread by droplet transmission.
- Incubation period: 14-21 days with majority of individuals developing a rash 14-17 days after exposure.
- Infectious from 1 week before symptoms appear to 4 days after onset of rash.
- Usually, a mild illness BUT **maternal rubella infection in pregnancy may result in losing the baby or congenital rubella syndrome (CRS).**
- **CRS** presents with one or more of the following:
  - Cataracts and other eye defects,
  - deafness,
  - cardiac abnormalities,
  - microcephaly,
  - retardation of intra-uterine growth,
  - inflammatory lesions of brain, liver, lungs and bone marrow. [Green-Book-Chapter-28-v2\\_0.pdf\(publishing.service.gov.uk\)](#)
- **Infection in first 8-10 weeks of pregnancy results in damage of up to 90% of surviving infants.** The risk of damage does lessen later in the pregnancy (Miller et al, 1982)
- Cases of congenital rubella mainly occur in women who did not grow up in the UK and have missed MMR immunisation. Since 1991 1/3 CRS infants born to UK women who acquired the infection in the UK. 2/3 born to women who were born overseas.

# Epidemiology of vaccine preventable diseases

## Rubella

Infants with congenital rubella infection and those diagnosed with congenital rubella syndrome(a)(live births) and pregnancy terminations due to rubella infection during pregnancy, United Kingdom; 1970-2016



Between 2003-2016 in the UK

- 7 babies with congenital rubella infection(CRI) were identified after delivery
- 31 rubella infections identified in pregnancy (mean age of 32y old)
- 5/31 were reinfections and 26 were primary infections
- 26/31 infections were in women born abroad (mean age 27y old)
- 5 of pregnancies ended in infants with CRI and CRS
- Of 26 pregnancies:
  - 4 ended in termination
  - 5 ended in miscarriage or stillbirth
  - 8 resulted in healthy infants with no CRI
  - 3 resulted in CRI but no CRS
- In total 12 babies with CRS were born (7 infections identified after delivery and 5 during pregnancy)

MMR uptake in 16-year-old girls living in Wales

Year	MMR1	MMR2
2023	95.3	92.1
2022	95.3	91.8
2021	95.4	91.9

# Measles Mumps Rubella (MMR) vaccine:

- **Childhood Schedule:** The MMR vaccine is given as part of the routine childhood schedule. The first dose is given at 12-13 months, and the second dose is given pre-school at 3 years and 4 months.
- **Both doses of the MMR vaccine are needed to get the best possible protection.**
- **Cases of rubella infection are rare, but it is important that women should ensure they have had 2 doses of MMR prior to conception.**
- **The MMR vaccine should not be given to women who are pregnant, and they should avoid getting pregnant for 1 month after having the vaccine.**
- Breast-feeding is not a contraindication. MMR can be given to breast-feeding mothers without risk to their baby. [Green-Book-Chapter-28-v2\\_0.pdf \(publishing.service.gov.uk\)](#)

# Healthcare worker role:

- Using the MECC approach, discuss with:
  - any women planning to become pregnant. Ensure they have had two MMR vaccines prior to conception.
  - postnatal women at health visitor assessments.
  - postnatal women at their at 6-week maternal check (practice nurse/GP/health visitor).

.... all other touchpoints with pre-conception, pregnant and postnatal women.

- For HCWs to thoroughly investigate any rash a woman may have in pregnancy [Screening Information for Professionals - V8- Infections and Rashes in Pregnancy.pdf - All Documents \(sharepoint.com\)](#)
- Ensure HCWs have had two MMRs to protect themselves and reduce the risk of infecting patients, colleagues and family members.



[Making Every Contact Count - Public Health Wales \(nhs.wales\)](#)

# Sources of information

## PHW

- PHW MMR vaccination - public: [phw.nhs.wales/topics/immunisation-and-vaccines/vaccination-information1/vaccine-leaflets/mmr-vaccinations-protecting-against-measles-mumps-and-rubella-infection-english/](https://phw.nhs.wales/topics/immunisation-and-vaccines/vaccination-information1/vaccine-leaflets/mmr-vaccinations-protecting-against-measles-mumps-and-rubella-infection-english/)
- PHW Hepatitis B vaccination - HCP: [Measles, Mumps and Rubella \(MMR\) - Information for health professionals - Public Health Wales \(nhs.wales\)](#)
- PHW Rubella surveillance and epidemiology: [Rubella surveillance and epidemiology - Public Health Wales \(nhs.wales\)](#)
- PHW Antenatal Screening. Infections and rashes in Pregnancy: A Guide for Health Professionals. (May 2023) [Screening Information for Professionals - V8- Infections and Rashes in Pregnancy.pdf - All Documents \(sharepoint.com\)](#)

## External

- UKHSA Rubella: confirmed cases [Rubella: confirmed cases - GOV.UK \(www.gov.uk\)](https://www.gov.uk/rubella-confirmed-cases)
- Green Book, Rubella: <https://www.gov.uk/government/publications/rubella-the-green-book-chapter-28>



## MMR vaccination

Protecting against  
measles, mumps and  
rubella infection





**Mae Brechu yn achub bywydau**  
**Vaccination saves lives**

**Pregnancy Vaccinations: vaccinations for healthcare workers**

# Health and social care workers

- Vaccination of health and social care workers protects them and reduces risk of infecting patients, service users, colleagues and family members.
- Frontline health and social care workers have a duty of care to protect their patients and service users from infection.
- Vaccination of frontline workers also helps reduce sickness absences and contributes to keeping the NHS and care services running through winter pressures.
- NHS and social care bodies have a responsibility to ensure, as far as is reasonably practicable, that health and social care workers are free of, and are protected from exposure to infections that can be caught at work (Health and Social Care Act 2008, Code of Practice on the prevention and control of infections).

# Health and social care workers (2)

All new employees should undergo a pre-employment health assessment, which should include a review of immunisations needed. *Staff who have regular clinical contact with patients and who are directly involved in patient care* should be protected for the following:

## Routine vaccinations

- **Diphtheria / Tetanus / Polio** – 5 dose schedule
- **MMR** – 2 dose schedule

## Selective occupational vaccinations

- **Pertussis:** WHC 2019. HCW who have not received a pertussis-containing vaccine in the last 5 years and who have regular contact with pregnant women and/or young infants should receive a pertussis containing vaccine as part of their occupational health care. [pertussis-occupational-vaccination-of-healthcare-workers\\_0.pdf \(gov.wales\)](#)
- **BCG:** "It is particularly important to test and immunise staff working in maternity and paediatric departments and departments in which the patients are likely to be immunocompromised" "[Green Book: Chapter 12 Immunisation of healthcare and laboratory staff \(publishing.service.gov.uk\)](#) (One per lifetime)
- **Hepatitis B:** Recommended for HCW who may have direct contact with patients' blood or blood-stained body fluids (3 initial doses and one booster around 5 years later - subject to serological testing)
- **Influenza:** Recommended annually for HCW directly involved in patient care
- **COVID-19:** As per national campaign guidelines
- **Varicella (chicken pox):** Recommended for susceptible HCW who have direct patient contact. Those with definitive history of chickenpox or herpes zoster can be considered protected.

[Green Book: Chapter 12 Immunisation of healthcare and laboratory staff \(publishing.service.gov.uk\)](#)



**Mae Brechu yn achub bywydau**  
**Vaccination saves lives**

## **Pregnancy Vaccinations: Resources/signposting**

# Resources/signposting

## Public Health Wales Resources

- New pregnancy landing page: [Immunisation and Vaccines - Public Health Wales \(nhs.wales\)](https://nhs.uk/immunisation-and-vaccines/public-health-wales)

Home > Topics > Immunisation and Vaccines > Information about vaccinations in pregnancy

### Information about vaccinations in pregnancy



Vaccine resources for health and social care professionals

#### How to protect you and your baby

During pregnancy, your immune system is naturally weaker than usual. This means you are more likely to have certain infections and illnesses that can be harmful to you and your developing baby.

Vaccination is the safest and most effective way of protecting pregnant women and their babies against serious diseases such as whooping cough, flu and coronavirus.

#### Which vaccines are recommended in pregnancy?

The pertussis vaccine (which protects against whooping cough) and flu and COVID-19 vaccinations are recommended in pregnancy to help keep you and your baby safe.



Whooping cough (pertussis) vaccine



Flu vaccination




Covid-19 vaccination

Vaccine information in accessible resources:  
[Information about vaccinations in pregnancy - Public Health Wales \(nhs.wales\)](https://nhs.uk/immunisation-and-vaccines/public-health-wales)

Leaflet ordering: [Health Information Resources - Public Health Wales \(nhs.wales\)](https://nhs.uk/immunisation-and-vaccines/public-health-wales)

Training resources:  
[Immunisation training resources and events - Public Health Wales \(nhs.wales\)](https://nhs.uk/immunisation-and-vaccines/public-health-wales)

Mae Brechu yn achub bywydau  
Vaccination saves lives



How to protect you and your baby

Information about vaccinations in pregnancy

GIG CYMRU NHS WALES | Iechyd Cyhoeddus Cymru Public Health Wales

# Resources/signposting - external

- You can find out more information about these vaccines, including their contents and possible side effects, at [www.medicines.org.uk/emc](http://www.medicines.org.uk/emc). You will need to enter the name of the vaccine in the search box.
- Royal College of Obstetricians and Gynaecologists: [www.rcog.org.uk/covid-vaccine](http://www.rcog.org.uk/covid-vaccine)
- UKHSA: [Pregnancy: how to help protect you and your baby - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/collections/pregnancy-how-to-help-protect-you-and-your-baby)
- The Green Book: [Immunisation against infectious disease - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/collections/immunisation-against-infectious-disease)
- Oxford Vaccine Group: [Homepage — Oxford Vaccine Group](http://www.oxfordvaccine.com)
- PHW Antenatal Screening. Infections and rashes in Pregnancy: A Guide for Health Professionals. (May 2023) [Screening Information for Professionals - V8-Infections and Rashes in Pregnancy.pdf - All Documents \(sharepoint.com\)](https://www.sharepoint.com/:document?d=1573092880000)



# Optimising Vaccine Uptake: Using motivational interviewing for better conversations

- The approach and style of a vaccine conversation can make a real difference in understanding individual hesitancy, addressing barriers, and influencing vaccine uptake.
- There is an eLearning module available called Optimising Vaccine Uptake: Using motivational interviewing for better conversations which aims to support staff with having positive conversations about immunisations.
- The module aims to provide health professionals the skills and knowledge required to implement motivational interviewing techniques when having vaccine-related conversations
- Further information about the module and how to access it is available here: [Immunisation eLearning - Public Health Wales \(nhs.wales\)](https://www.nhs.uk/elearning/immunisation/)





**Mae Brechu yn achub bywydau**  
**Vaccination saves lives**

## **Pregnancy Vaccinations: Attitudes towards pregnancy vaccination and vaccine equity**

**Jasmin Chowdhury: Service Development and User Engagement Senior Practitioner**

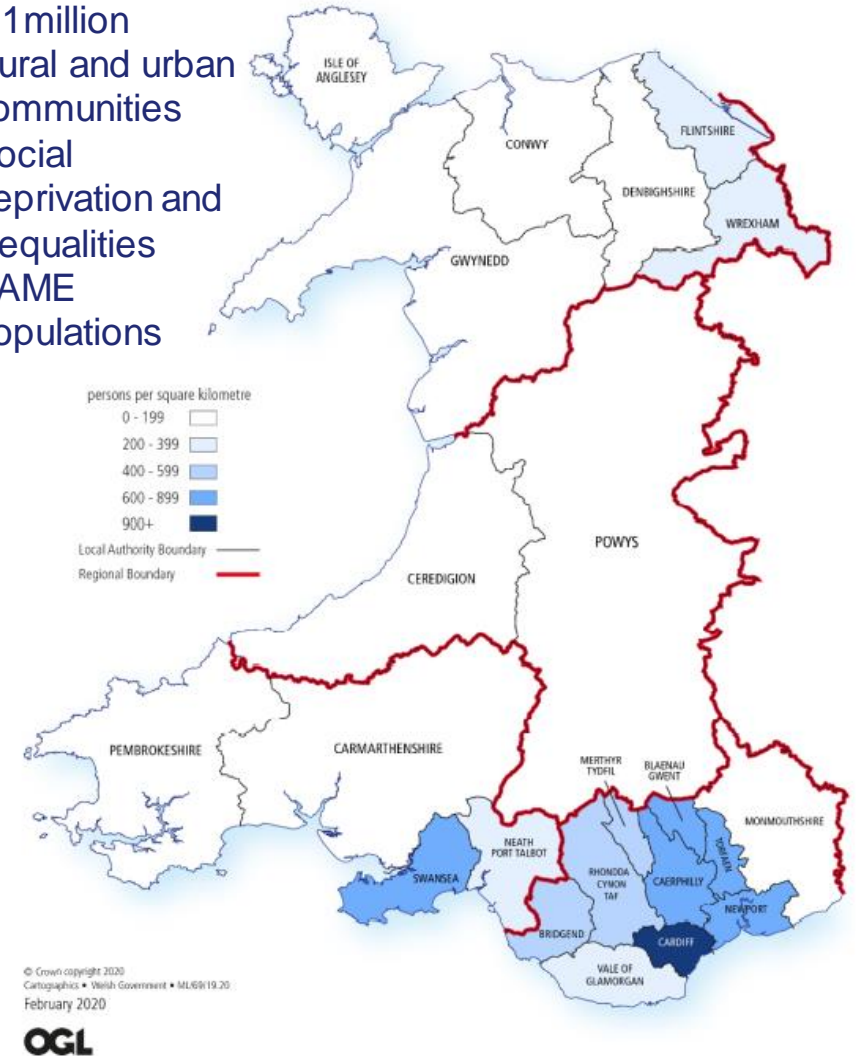
# Vaccine Equity

- Allocation of vaccines across the country based on needs and regardless of status.
- Based on the principles grounded in the right of every human to have access and enjoy the highest attainable standard of health without distinction of race, religion, political belief, economic, class, gender or any other social condition..
- While globally we would think of vaccine equity in the context of vaccine distribution which is often shaped by challenging political, economic, social, diplomatic, and health-related matters – we are concerned.

## Inequality and Inequity

Inequalities in health are gaps in health status between different groups, for example those who live in different areas, or of different ethnicity or socioeconomic status; such differences can be caused by a variety of factors, not all of which are possible to change e.g. inherited characteristics or geographical location. However, health inequity is a difference in health that is unnecessary, avoidable or unjust; such difference are amenable to action.

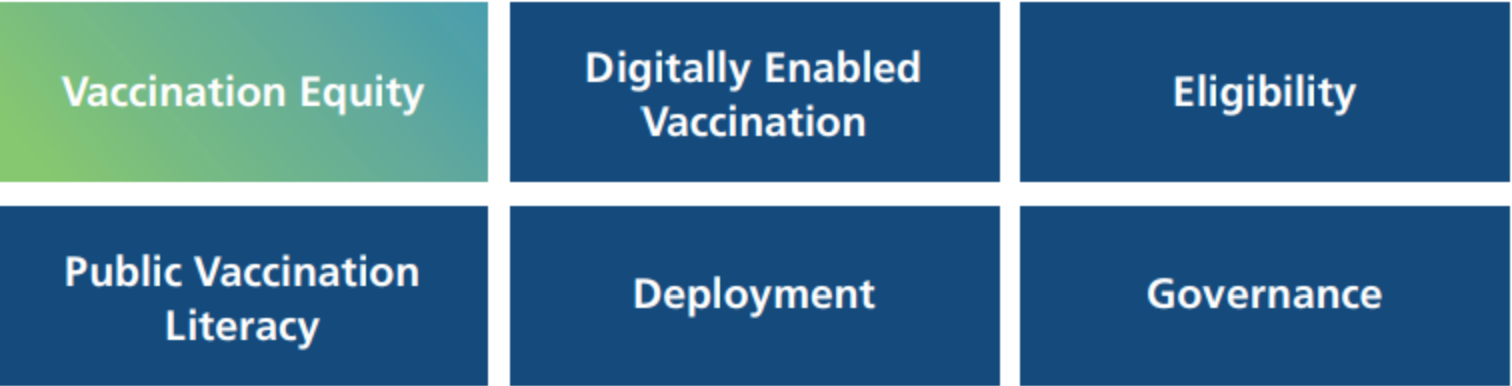
- Population  
3.1million
- Rural and urban communities
- Social deprivation and inequalities
- BAME populations



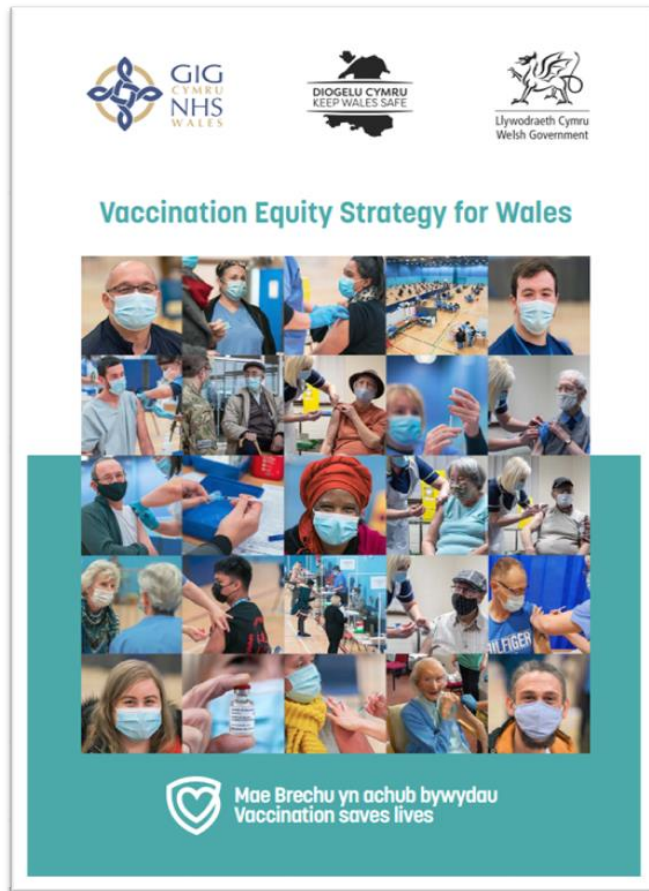
# Wales: Vaccine Equity

## The National Immunisation Framework for Wales:

Six areas of focus to ensure design is fit for purpose in the future, equity is at the core of the framework shaping Wales’s approach to vaccination

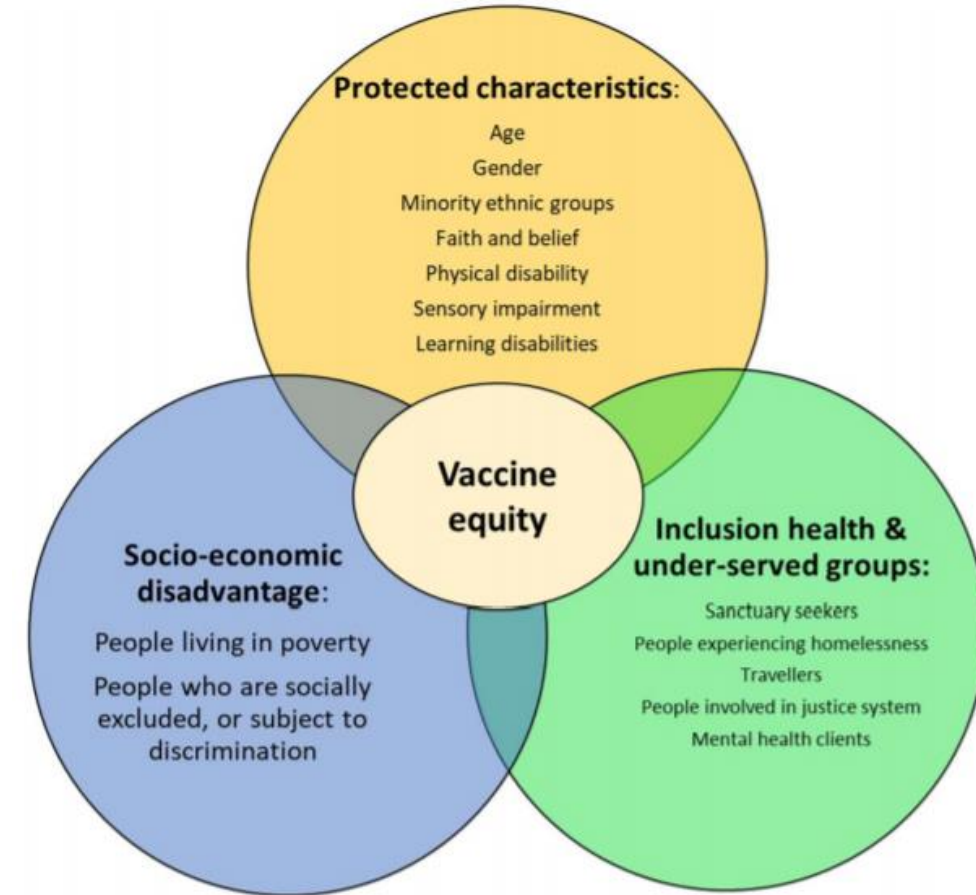


# Wales: Vaccine Equity



Strategic principles for health boards to take into consideration:

- Provision for identifying groups with low vaccination uptake
- Provision for determining barriers to uptake
- Partnership working & meaningful engagement
- Co-production of tailored intervention
- Evaluation of actions and interventions



# Attitudes to Vaccination During Pregnancy

## Barriers

- Low awareness about maternal vaccination, with many reporting not having received a recommendation to vaccinate from their doctors.
- Vaccination decision-making in pregnancy was described in the context of a highly emotional period, generating anxiety and fears around the safety of vaccines.
- Concerns about harm to baby and not having enough information regarding safety were cited as main reasons for declining or vaccine hesitancy during pregnancy.
- Ethnic minority women were twice as likely to reject a COVID-19 vaccine for themselves when not pregnant, pregnant and for their babies compared to women from White ethnic groups ( $p < 0.005$ ).
- Women from lower-income households, aged under 25-years, and from some geographic regions were more likely to reject a COVID-19 vaccine when not pregnant, pregnant and for their babies.

## Facilitator

- Strong trust in health professionals indicate that strengthened recommendations could improve vaccination uptake.
- Midwives, obstetricians and GPs are the professionals women want to speak to about the risks & benefits of vaccination.
- Wanting to protect themselves/their baby cited as the main reason for accepting vaccination during pregnancy.

### References:

<https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/s12884-021-04321-3>

'My primary purpose is to protect the unborn child': Understanding pregnant women's perceptions of maternal vaccination and vaccine trials in Europe - E Karafillakis 1, P Paterson 2, H J Larson; Copyright © 2021. Published by Elsevier Ltd.

Survey of pregnant women on COVID-19 vaccination intention – Royal College of Obstetricians & Gynaecologists.





**Mae Brechu yn achub bywydau**  
**Vaccination saves lives**

## **Pregnancy Vaccinations: Summary**



## Covered in this webinar:

- Horizon scanning for new potential pregnancy vaccinations
- Importance of data and surveillance.
- Routine vaccinations in pregnancy.
- Vaccinations for at-risk infants..
- Importance of vaccinations for HCWs
- Resources and signposting for further information.
- Vaccine equity and attitudinal studies.

“Healthcare workers are trusted voices. We as HCWs can make every contact count in talking confidently to pregnant women and their partners about the importance of vaccination in pregnancy. We can work together to improve vaccine uptake and reduce mortality and morbidity from vaccine preventable diseases. We can do this equitably. We can also confidently signpost pregnant women and their partners for further information.”

# Vaccination in pregnancy -

WHAT	WHO	WHEN	WHAT	NOTES
<b>Vaccinations in pregnancy</b>				
<b>Pertussis</b>	<b>Pregnant women,</b> every pregnancy	<b>Between 16 and 32</b> gestational weeks.  May be offered after 32 weeks but may not offer as high level of passive protection to baby.	Combined product at present.  <b>Boostrix-IPV</b>  protects against diphtheria, tetanus, pertussis (acellular) and polio (inactivated).  No monovalent vaccines licensed in UK.	Can be given at same time as COVID-19 and flu vaccinations- but do not delay COVID-19 and flu vaccines to give pertussis vaccine at same visit.
<b>Flu</b>	<b>Pregnant women,</b> every pregnancy	<b>September – March</b>  Seasonal	<b>Inactivated influenza vaccinations</b>  Offer the flu vaccine recommended for the season	See JCVI and Welsh Health circulars for seasonal eligibility and product.
<b>COVID-19</b>	<b>Pregnant women</b> following JCVI seasonal advice and eligibility.	<b>September to March</b>  Seasonal	<b>COVID-19 vaccination</b>  Offer the COVID-19 vaccine recommended for the season	See JCVI and Welsh Health circulars for seasonal eligibility and product.

# Hep B vaccination for at-risk infants and rubella vaccination prior to conception

WHAT	WHO	WHEN	WHAT	NOTES
<b>At-risk infants</b>				
<b>Hepatitis B</b>	<p><b>Pregnant women</b> are offered Hep B screening.</p> <p><b>Babies born to mothers infected with Hep B</b> are offered Hep B vaccination.</p>	<p><b>Babies born to mothers infected with Hep B:</b> extra doses of Hep B monovalent at:</p> <ul style="list-style-type: none"> <li>• birth</li> <li>• 4 weeks</li> <li>• 1 year of age</li> </ul>	<p><b>Hep B monovalent vaccine</b> in addition to routine childhood immunisations (hexavalent vaccines).</p>	<p>Babies born to mothers with Hep B to have blood test at 12 months of age.</p> <p>For especially high-risk babies: Hepatitis B immunoglobulin (HBIG) at birth – as well as Hep B vaccination.</p>
<b>Prior to conception</b>				
<b>Rubella</b>	<p><b>Women prior to conception</b></p>	<p><b>Women prior to conception</b></p>	<p><b>Ensure women have had 2 doses of measles, mumps and rubella (MMR) vaccine prior to pregnancy</b></p>	<p>The vaccine should not be given to women who are pregnant, and they should avoid getting pregnant for 1 month after having the vaccine.</p>



**Mae Brechu yn achub bywydau**  
**Vaccination saves lives**

## **Pregnancy Vaccinations: Q and A**