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Plan for the Future
Healthier Together
2022 - 2028

NHS Grampian

Vaccination
Annual Report
2023-24

Contents

Abbreviations

ADP	Annual Delivery Plan
AMR	Antimicrobial resistance
CMO	Chief Medical Officer (for Scotland)
DPH	Director of Public Health
FVCV	Flu Vaccine and Covid-19 Vaccine
GBMSM	Gay, Bisexual and Men who have sex with Men
GREC	Grampian Regional Equality Council
GVIP	Grampian Vaccination and Immunisation Programme
HSCP	Health and Social Care Partnership
HV	Health Visitor
IJB	Integrated Joint Board
JCVI	Joint Committee on Vaccinations and Immunisation
MSM	Men who have Sex with Men
NHSG	NHS Grampian
PAG	Preliminary Assessment Group
PHS	Public Health Scotland
SG	Scottish Government
SIMD	Scottish Index of Multiple Deprivation
SIRS	Scottish Immunisation & Recall System
SLWG	Short Life Working Group
SVIP	Scottish Vaccination and Immunisation Programme
VMT	Vaccination Management Tool
VTP	Vaccination Transformation Programme
WHO	World Health Organisation

Vaccine and disease abbreviations

BCG	Bacillus Calmette-Guerin
DTP	Diphtheria, tetanus, polio
FVCV	Influenza vaccine (Flu) and COVID-19 Vaccine
Hep A	Hepatitis A
Hep B	Hepatitis B
Hib	Haemophilus influenzae type B
HPV	Human Papilloma Virus
IPD	Invasive pneumococcal disease
IPV	Inactivated Polio Virus
MenACWY	Meningococcal groups A, C, W and Y
MenC	Meningitis C
MMR	Measles, Mumps and Rubella
MMRV	Measles, Mumps, Rubella and Varicella
Mpox	Mpox (Previously Monkeypox)
PPV	Pneumococcal Polysaccharide Vaccine
RSV	Respiratory Syncytial Virus
TB	Tuberculosis
Td	Tetanus and Diphtheria vaccine

1. EXECUTIVE SUMMARY

1.1. This is the second Annual Vaccination and Immunisation Report for NHS Grampian. The purpose of the report is to provide an annual monitoring report of vaccine preventable disease surveillance data, along with uptake data for each vaccine. A commentary is provided to give context for greater understanding of the data and the challenges and quality improvement measures associated with the programme. A section on horizon scanning is also included.

1.2. Vaccination offers excellent value for money. It provides protection against a range of infections across the life course, enabling our population to live longer, healthier lives, reducing inequalities, and releasing health service capacity. It also makes a vital contribution to reducing unnecessary antibiotic usage and antimicrobial resistance. Vaccination can prevent or reduce the severity of disease, minimise disability and save lives, often in many of the most disadvantaged people in society. The European Region of WHO recommend coverage of 95% in a population is required to control or eliminate disease.

1.3. Since 2022, operational delivery of vaccination has been the responsibility of our three Health and Social Care Partnerships (HSCPs) in Aberdeen City, Aberdeenshire, and Moray. Programme coordination lies with NHS Grampian and the Director of Public Health is the Senior Responsible Officer for vaccinations.

1.4. Although we are post pandemic, the vaccination services have still not reached a stable state nationally or locally with national changes to programmes, local delivery evolution and a national vaccination strategy and standards to implement with a focus on health inequity.

1.5. 2023-24 have seen the vaccination service respond to outbreaks of whooping cough, measles and Mpox as partners in outbreak response.

1.6. Grampian continues to offer a good vaccination service which outperforms the Scottish average for most programmes. However, the national picture is one of modest declines in vaccination uptake across programmes with more sharp declines in seasonal vaccinations.

1.7. The one area where Grampian consistently underperforms against national comparators is health equity. Those in the most socio-economically deprived quintiles and some ethnic minorities have consistently lower vaccination uptakes compared with the Scottish average. This will be tackled as part of our quality improvement work next year as we finalise and implement our equity plan.

1.8. Grampian has maintained uptake for childhood vaccinations at close to the WHO recommended 95% except for rotavirus, meningitis B- and the second dose of MMR. There are geographical variations to tackle.

1.9. Uptake for school aged vaccinations is varied. HPV uptake is broadly similar to last year with a welcome increase in uptake for boys after S2. Teenage boosters show a fall of 3-5% from last year for both Grampian and Scotland.

1.10. The change to a 2 dose Shingles programme has generally had a good uptake, with almost 80% of those taking a first dose going on to complete the course with a second. Grampian outperforms the Scottish average for all cohorts and by 12.6% overall.

1.11. Young children, the elderly and people in a clinical risk group are most at risk of severe pneumococcal disease, and so all these groups are currently offered a pneumococcal immunisation. Trend data showed Grampian's uptake was consistently under the Scottish average, however since 2020-21 there has been a sharp and consistent increase in uptake so for 2023-24 we now exceed the Scottish average for most cohorts.

1.12. Uptake of seasonal flu and COVID-19 vaccinations in Winter 2023/24 was similar in Grampian to the Scotland average and highest in the oldest age groups. Uptake shows a socioeconomic gradient with highest uptake amongst least deprived. Overall uptake for these seasonal vaccinations has decreased significantly in all cohorts except for older age groups since the last report.

1.13. Non routine vaccinations cover a range of situations where citizens require vaccination out with the usual population vaccination schedules. We have developed digital processes to assist clinicians to refer a citizen for vaccinations that are required out with normal vaccination schedules.

1.14. Travel risk assessments, advice, and vaccinations (if required) are provided to reduce the risk of transmission of diseases amongst patients travelling to countries where these diseases are still prevalent. The travel health service in Grampian has been delivered by community pharmacy since October 2021. A new “Once for Grampian” integrated model will commence in early 2025 in response to budgetary requirements.

1.15. Priorities for improvement will be brought together under the GVIP Strategic Framework mirroring the national document. Some of the areas which will feature in our local plan are included for reference.

1.16. **Conclusion:** We continue to deliver the vaccination programme and seek to maximise vaccination uptake within a sustainable vaccination system.

2. INTRODUCTION

2.1. This is the second Annual Vaccination and Immunisation Report for NHS Grampian. The purpose of the report is to provide an annual monitoring report of vaccine preventable disease surveillance data, along with uptake data for each vaccine. A commentary is provided to give context for greater understanding of the data and the challenges and quality improvement measures associated with the programme.

2.2. Although we are post pandemic, the vaccination services have still not reached a stable state nationally or locally. Changes we have implemented since the previous report include a move from separate call centres into a Once for Grampian single call centre to utilise economies of scale with resultant financial savings, establishment of a new RSV programme to protect infants, establishment of a new RSV programme to protect older people, a change in vaccine for the Pertussis in Pregnancy programme, changes to eligibility for Spring and Autumn COVID programmes, changes to eligibility for flu programme and the rolling programme changes to Shingles discussed in our previous report continue to roll out. We continue to transition from the large vaccination hub model of delivery to a smaller service, more fitted to "business as usual" activity whilst retaining the ability to flex as needed. At the time of writing in November 2024, we are developing a Once for Grampian Travel Health Service to replace the existing service – a change forced by financial circumstances. Next year will see changes to the preschool programme to bring in earlier MMR vaccination with the addition of a vaccine against varicella (chickenpox)

2.3. Since the last report we have also seen vaccination services respond to a resurgence of whooping cough in Grampian, community transmission of measles in several parts of England and preparations made for Mpox cases in the wake of Clade 1b spread across Africa. Tuberculosis notifications have increased and there have been reports of bird flu in dairy cattle in the US- the consequences of which are under national and international review. Vaccine preventable diseases are in the news again.

2.4. Local vaccination services have worked across the Grampian system on wider health improvement initiatives such as a pilot project for stroke prevention through atrial fibrillation and high blood pressure detection in Aberdeenshire as well as a number of events through the health hub at Bon Accord Vaccination and Wellbeing Hub described in Aberdeen City's spotlight section.

2.5. Scottish Vaccination and Immunisation Programme (SVIP) have developed a 5-year strategic framework. This requires equity to be a priority throughout our programmes. However, as this work has to be absorbed in current budgets at a time of financial pressure for NHS Grampian, careful consideration has to be given to what work will result in the best outcomes. National standards are also in development and have been incorporated into the Annual Delivery Plan (ADP) which we submit to the Scottish Government. We await the details of the performance indicators to guide future work.

2.6. In response to the SVIP Strategic Framework, we have developed our own GVIP Strategic Framework to bring together ongoing work, work we are already committed to and the opportunity to look at gaps and over the next 5 years to scope out what work can be done to fill some of those gaps.

2.7. Work is ongoing to finalise an equity plan for vaccination which will intersect with work in the Public Health Directorate, especially screening, the SVIP[1] and GVIP Strategic frameworks and local outcome and improvement plans.

2.8. Data systems remain an issue, and we are playing our part in national work to develop a single system which will manage cohorts, appointments, reporting and allow for seamless communication with current systems such as the VMT and GPIT systems. Although such digital developments are in the 5-year SVIP Strategic Framework as enabling functions, it will be some years before we see the benefit of change. In the meantime, we work locally on quality improvements to modify the risks caused by our reliance on resource hungry workarounds such as manual manipulation of Excel spreadsheets to keep the programmes moving.

2.9. In the summer of 2025, we expect the new electronic Child Health Record to come online. This is a replacement for the SIRS system through which childhood vaccinations are managed. Our vaccination needs assessment for children under 6 identified how inflexible the current system for appointing is through SIRS. We look forward to any changes in the new system.

2.10. In addition, we are at the start of the process of "greening" vaccination services and what can be done to make our services more sustainable. NHSG staff are working nationally and locally on this.

2.11. Finances remain a risk. All areas of NHSG have been asked to identify efficiencies. For vaccination this is complex as funding for the programme comes from different budgets and there continues to be an introduction of new programmes. The vast majority of funding comes from Scottish Government (SG) via SVIP with other funding coming from the Primary care improvement fund (PCIF) to cover the functions transferred from primary care as part of the implementation of the vaccination transformation programme which is now complete.

2.12. Local teams have the chance to highlight their achievements in the report this year.

2.13. The most recently published data has been used throughout the report. Variation in data release timings and reporting intervals mean that the period covered in this report varies by programme.

2.14. The routine childhood and adult schedules in the UK (appendix 1) are based on advice from the independent Joint Committee on Vaccination and Immunisation (JCVI) and provides protection against the following vaccine preventable infections:

COVID-19	Pertussis (whooping cough)
Diphtheria	Pneumococcal disease
Haemophilus influenza type b (Hib)	Polio
Hepatitis B	Respiratory syncytial virus
Human Papilloma Virus (HPV)	Rotavirus
Influenza	Rubella
Measles	Shingles
Meningococcal disease	Tetanus
Mumps	Tuberculosis

[1] Scotland's 5-year Vaccination and Immunisation Framework and Delivery Plan - Publications - Public Health Scotland

3. WHY VACCINATION IS IMPORTANT AS PART OF POPULATION HEALTH

3.1. The World Health Organisation (WHO) describes vaccines as one of the two public health interventions that have the greatest impact on the world's health, the other being clean water. It is also considered as one of the most impactful and cost-effective public health interventions available to communities and populations across the world. Vaccination can prevent or reduce the severity of disease, minimise disability and save lives, often in many of the most disadvantaged people in society. It offers excellent value for money by reducing current and future public expenditure on health and social care provision. The European Region of WHO recommend coverage of 95% in a population is required to control or eliminate disease.

3.2. Effective control of vaccine preventable disease requires action across the whole health and care system, and this aligns with the drive to improve outcomes and reduce inequalities. Vaccination has for the first time become included in the annual delivery plan (ADP) process for health boards.

3.3. Surveillance data demonstrate low incidence rates of vaccine preventable disease during 2022 in Grampian. Many of the vaccine preventable diseases are also notifiable diseases because of their potential to cause harm to public health. The information in Table 1 was taken from disease notifications to Public Health Protection Team in 2023.

3.4. Antimicrobial resistance (AMR) has been highlighted as a global threat to health as pathogens evolve and become more successful at evading antibiotics causing morbidity and mortality. As vaccines are used prophylactically, they decrease the number of infectious disease cases and reduce antibiotic use and the emergence and spread of AMR.[2]It is expected that the new RSV programme will have a significant effect on antibiotic prescribing.

Table 1: Notifiable organism/ disease controllable by vaccination in Grampian 2023

Notifiable Organism / Diseases Controlled by Vaccination in Grampian (2023)	
Infectious disease	**Number Reported**
Bordetella pertussis (Whooping Cough)	19
Mumps	≤5
Rubella	0
Measles	0
Meningococcal disease	≤5
Hepatitis B (chronic + acute)	58
Tuberculosis (active)	28
C. diphtheria	0
Hepatitis A	≤5

Source: HP Zone – 04/10/24

Micoli, F., Bagnoli, F., Rappuoli, R. *et al.* The role of vaccines in combatting antimicrobial resistance. *Nat Rev Microbiol* **19**, 287–302 (2021). https://doi.org/10.1038/s41579-020-00506-3

[2] The role of vaccines in combatting antimicrobial resistance | Nature Reviews Microbiology accessed 15/10/2024

3.5. Hepatitis B and Tuberculosis (TB) have numerically the highest number of notified cases and there has been a slight increase in reported cases in 2023.Tuberculosis vaccination is a targeted, risk-based programme, not a population-based vaccination programme. Infection rates are low regionally in comparison to international incidence. Hepatitis B became a population-based programme in October 2017 as part of the childhood programme and we would predict these numbers to fall as the children grow to adulthood. More information on both programmes is given below.

4. NATIONAL AND LOCAL CONTEXT - Immunisation Programmes

National

4.1. Immunisation policy in Scotland is set by the Scottish Government Health Directorate who take advice from the UK Joint Committee on Vaccinations and Immunisation (JCVI). JCVI provide advice on immunisations for the prevention of infections and/or disease following consideration of evidence on the burden of disease, vaccine safety and efficacy and on the impact and cost effectiveness of immunisation strategies[3] . The UK immunisation schedule is continually reviewed and updated[4] *Immunisation against infectious disease (*commonly known as the *Green Book)*[5] reflects the current policies and procedures as advised by the JCVI and provides essential guidance on vaccines and vaccination procedures for all vaccine preventable diseases that may occur in the UK.

4.2. The Vaccination Transformation Programme (VTP) is complete. VTP was created following the 2018 Scottish General Medical Services (GMS) Contract[6]. The Contract aims to improve access for patients in General Practice (GP) with the expansion of multi-disciplinary teams to share the delivery of care and ease workload pressures.

4.3. Two CMO letters in 2024 state the ongoing important role of General Practice staff in promoting and advising on vaccinations; responding to vaccination status enquiries; and signposting and referring to Immunisation Teams in Health Boards for vaccine delivery.[7] [8]

Local

4.4. The Director for Public Health has the accountability and governance oversight for vaccination and immunisation at NHS Grampian Board Level and undertakes the role of executive lead.

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[3] Joint Committee on Vaccination and Immunisation Code of Practice, June

[4] Complete schedule (children & adults) available here: https://www.gov.uk/government/publications/the-complete-routine-immunisation-schedule

[5] Immunisation Against Infectious Disease, *Immunisation against infectious disease - GOV.UK (www.gov.uk)*

[6] GMS contract: 2018 - gov.scot (www.gov.scot)

[7] Non-routine vaccination update SGHD/CMO(2024)13 4th July 2024
Non-routine vaccination update

[8] Averting the resurgence of measles in Scotland SGHD/CMO(2023)13 , 2023 16th August 2023
Averting the resurgence of measles in Scotland 2023

4.5. Since 2022, NHS Grampian has been responsible for coordination of vaccination programmes with operational delivery being the responsibility of our three Health and Social Care Partnerships (HSCPs) in Aberdeen City, Aberdeenshire, and Moray. This has meant local changes in how members of the public access services. In Grampian, vaccinations are administered in a range of settings.

4.6. The operational delivery of vaccination is through the 3 HSCPs with the Chief Officers being accountable to their respective Integrated Joint Boards (IJBs).

4.7. The Grampian Vaccination and Immunisation (GVIP) Programme Board is chaired by the Director of Public Health with the 3 HSCP Chief Officers, Finance, Primary Care, Nursing, Pharmacy and property and asset colleagues as members. The Programme Board has oversight of the whole vaccination programme, oversees progress, and ensures the nationally agreed outcomes are delivered within Grampian, taking decisions on a Grampian wide basis on complex issues that are common to Grampian or issues which are escalated.

4.8. Reporting into the GVIP Programme Board, the GVIP Clinical and Care Governance Group meets monthly to be assured that all appropriate governance arrangements are in place, to identify actions where required and to provide support and advice and share learning across NHS Grampian. This group reviews quality of service delivery, complaints and feedback, adverse events along with the review of the vaccination programme risk register.

4.9. It is recognised that some functions are better organised once on the bigger NHSG footprint rather than three times on the smaller HSCP footprints. This Once for Grampian approach can be seen in the successful move to a single call centre model.

4.10. Alongside local governance structures we are also a partner in the Scottish Vaccination and Immunisation Programme (SVIP) structure. SVIP incorporates a public health and clinically led, person-centred approach to the programme based on strong collaboration across the system. SVIP builds on the learning and experience developed from the previous PHS-led Scottish Immunisation Programme (SIP), the previous SG-led Flu and Covid-19 (FVCV Programme) and the Vaccination Transformation Programme (VTP).

Finance

4.11. The funding arrangements for service delivery and vaccine supply are complex. The funding to support the delivery currently comes from a number of sources including PCIF, SVIP and board baseline budgets. The programme has had to absorb a number of programme changes over the past year within current SVIP funding. The SVIP allocation is the only current source of dedicated funding to support the introduction of any programme changes.

4.12. Scottish Government is undertaking an extensive review process of current funding arrangements with the aim of future streamlining the funding approach across immunisation programmes. It is anticipated that this move will help facilitate the flexibilities available and will ease the reporting burden across funding streams. It will consider any opportunities to baseline funding as part of a wider review exercise and will continue to engage with Boards via Directors of Finance, Directors of Public Health and Immunisation Coordinators over the course of this financial year to support the transition to greater baselining of funding.

5. VACCINE PREVENTABLE DISEASES

5.1. Data for vaccine preventable diseases are summarised at both a national and Grampian level where data are available.

5.2. The following section contains background information about the agents, diseases, and vaccinations for reference.

5.3. Graphs showing Scottish data aim to illustrate the effect of vaccination on vaccine preventable diseases

COVID-19

5.4. COVID-19 is an acute respiratory viral infection caused by SARS-Cov-2 and spread primarily through respiratory droplets and aerosol. The 2020 COVID-19 pandemic resulted in a significant increase in mortality both worldwide and in the United Kingdom, particularly in people aged over 75, and led to several lockdowns and accelerated vaccine development. Mortality has subsequently fallen, believed to be due to increased natural and vaccine-mediated immunity, but rapid emergence of new strains has led to concerns regarding immune escape and adaptations to vaccines by their manufacturers.

5.5. Initial national programmes in the UK aimed to offer primary vaccination prioritised by risk category as capacity allowed. The lowest risk group, children aged 5 to 11 years, were offered vaccination by late 2021. As COVID moves to more of a business-as-usual state and more becomes known about the disease and the protection that the vaccines give, previously eligible groups are reassessed and removed from the programme as cost and clinical effectiveness evidence indicates the benefits of vaccination (especially in preventing transmission) are reduced. For the 2024 autumn winter period, seasonal booster programmes are now only offered to certain groups including those aged over 65; clinically at-risk individuals; residents and staff of care homes for older adults, and frontline healthcare staff.

5.6. For 2024 JCVI does not advise COVID 19 vaccination for health and social care workers or care home staff, however they suggested an occupational offer for these groups, which the Scottish Government accepted[9].

Diphtheria

5.7. Diphtheria is caused by *Corynebacterium diphtheriae* and closely related bacteria and classically presents with swollen neck glands and a pseudo membrane in the throat which obstructs the airways or sore throat or pharyngitis in unimmunised or partially immunised individuals. It is now rare in Scotland following the vaccination programme which began in 1941/2. In 1940 there were nearly 16,000 cases in Scotland with 675 deaths.

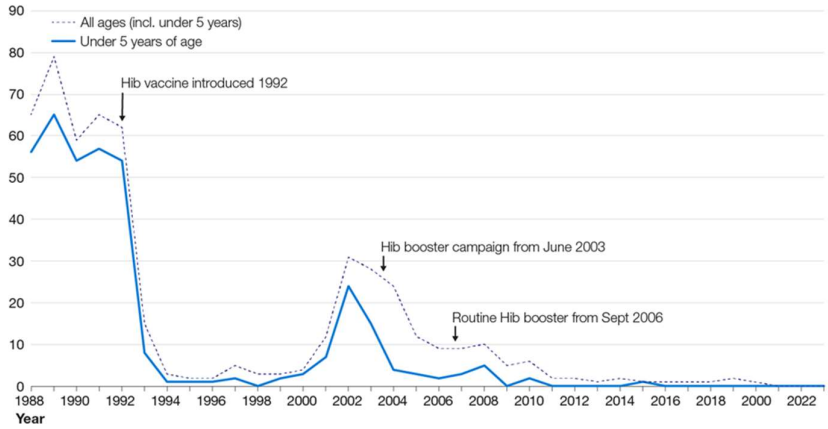
Haemophilus influenza type b (Hib)

5.8. *Haemophilus influenzae* can cause serious invasive disease, especially in young children. There are six subtypes but prior to vaccination Type B was the dominant subtype. The usual presentation of invasive disease was meningitis with around 10% of children having long term complications of the disease. Cases from Hib

[9] JCVI statement on the COVID-19 vaccination programme for autumn 2024, 8 April 2024 - GOV.UK

have fallen dramatically since the introduction of vaccination. Protection is achieved from 4 doses given in multivalent preparations as part of the childhood programme. (A multivalent preparation is one which provides protection against multiple strains of a disease, or protection against multiple diseases in the same vaccine preparation.)

Figure 1: Laboratory reports of invasive Haemophilus influenzae type b disease in Scotland, 1988 to 2023 (week 13) - Source: PHS



Hepatitis A

5.9. Hepatitis A is caused by the Hepatitis A virus and spread through the faecal-oral route. Hepatitis A infection tends to be mild and does not result in chronic infection or liver impairment, though can lead to significant morbidity or mortality in older people and those with hepatic co-morbidities. Given its faecal-oral spread, Hepatitis A is comparatively rare in high-income countries with adequate standards of sanitation and vaccination. At-risk categories include individuals travelling to Hepatitis A-endemic areas; patients with chronic liver disease; patients with haemophilia; men who have sex with men (MSM); people who inject drugs, and individuals with occupational exposure. Several Hepatitis A vaccinations are available – both monovalent and combined with Hepatitis B or Typhoid vaccinations – and these are given either IM or subcutaneously (in the case of haemophilic patients) in two or three doses.

Hepatitis B

5.10. Hepatitis B is caused by the Hepatitis B virus and spread through exposure to infected blood or bodily fluids. Hepatitis B causes an acute flu-like illness with jaundice and may sometimes lead to complete liver failure. While infection resolves in most patients following the acute illness, chronic infection persists in a proportion of cases. Risk of chronic infection is increased in young people and immunocompromised individuals, and chronic infection can lead to cirrhosis and hepatocellular carcinoma.

5.11. Hepatitis B vaccination is included in the routine childhood immunisation programme - 3 doses in 1st year (with extra doses at 4 weeks and 1 year to babies at risk) as well as selective pre- and post-exposure vaccination programmes for at-risk individuals. At risk categories include neonates with maternal Hepatitis B exposure; travellers to endemic countries; people who inject drugs; MSM; sex

workers; close family contacts of individuals with chronic Hepatitis B infection; individuals living in custodial institutions or residential accommodation; individuals with certain renal or hepatic comorbidities, and those at risk of occupational exposure.

Table 2: Hepatitis B cases in Grampian 2011-2023

Hepatitis B cases (acute and chronic) in Grampian 2011-2023												
2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
75	49	58	59	50	39	22	39	29	14	23	48	58

Source: HP Zone 2023

Human Papilloma Virus (HPV)

5.12. Vaccination against HPV is part of WHO's global Cervical Cancer Elimination Initiative. There is a causal pathway from infection with particular high risk HPV subtypes and development of squamous cell carcinomas of the cervix, anus, vulva, vagina, penis and head and neck cancers. By vaccinating young people and older people at higher risk, this pathway can be disrupted.

5.13. A joint paper[10] from PHS and the Universities of Strathclyde and Edinburgh published online in January 2024 showed that following vaccination, reductions in incidence of cervical cancer are seen for those aged under 18 at the time of vaccination. A great success is that no cervical cancer cases have been detected in fully vaccinated women following HPV immunisation at age 12 and 13 since the programme started in Scotland in 2008.

5.14. From 1 January 2023, following a review of evidence by JCVI showing one dose conferred similar levels of immunity to two doses, the HPV vaccine moved to a one-dose schedule for immunocompetent individuals before their 25th birthday. 2 doses are required for citizens aged 25 – 45 years in the MSM programme and 3 doses for those who are immunosuppressed or known to be HIV positive.

Influenza

5.15. Influenza is an acute viral respiratory infection caused by influenza A, B or C – symptoms include fever, myalgia, malaise, headache and coryzal (common cold) symptoms. Influenza is normally self-limiting in otherwise healthy patients but can lead to significant morbidity in young children, older people, immunocompromised individuals, those with respiratory or cardiac co-morbidities and pregnant women. Influenza is highly seasonal, and a vaccination programme has been in place in the United Kingdom since the late 1960s. Periodic antigenic drift in the virus means that individuals frequently lose immunity between influenza seasons, necessitating at-risk individuals being re-vaccinated each year against likely dominant strains.

5.16. The nasal flu vaccine is used in the children's programme because of its superior effectiveness in children leading to reduced cases in children and the community when compared to injectable vaccines.

5.17. Bird flu or Avian Influenza is an infectious type of influenza that spreads between birds and occasionally infects humans who have directly handled infected birds alive or dead. It isn't spread easily from human to human. There is a risk that a new strain of flu could be created if an individual is infected with both a strain of bird flu and human flu at the same time and elements from each combine to produce a new strain. If this resulted in a new, more infectious and harmful type of flu there

[10] Invasive cervical cancer incidence following bivalent human papillomavirus vaccination: a population-based observational study of age at immunization, dose, and deprivation - PubMed

could be an increase in morbidity and mortality. For this reason, poultry workers are advised to be vaccinated against human flu as they are the most likely to be at risk in this circumstance. In a further development, evidence of infection with avian influenza has been found in dairy cattle in the US. The impact of this on bovine (cattle) and human health is under investigation nationally and internationally.

Measles

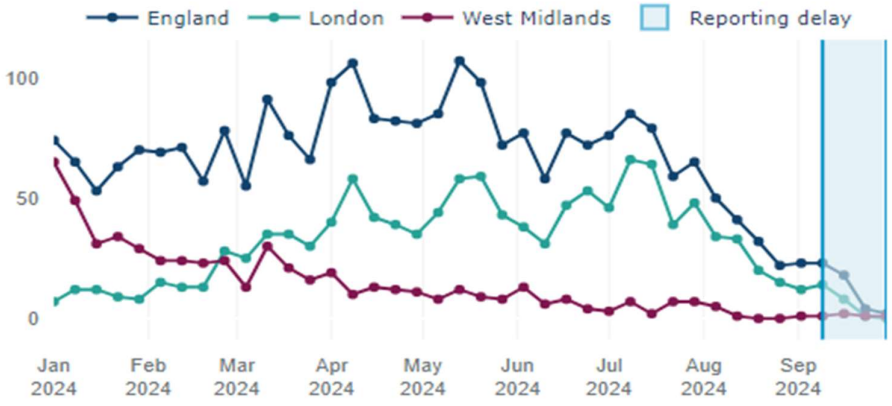
5.18. Measles is one of the most transmissible infectious diseases. It can lead to serious and potentially life-threatening complications even years after the original infection. Catching measles when pregnant can result in complications for baby. However, the MMR vaccine, which also provides protection against mumps and rubella, is highly effective - after two doses around 99% of people will be protected against measles.

5.19. In 2023, WHO estimates there were 10.3 million cases of measles worldwide and 107,500 people died.[11]

5.20. There is a current measles outbreak in England related to areas with lower MMR uptake rates centred on London and Birmingham. In the year to 30th September 2024 there have been 2563 cases of laboratory confirmed measles cases in England. 48% of these have been in London, 22% have been in the West Midlands and 7% in the East of England. This outbreak appears to be subsiding at the time of writing.

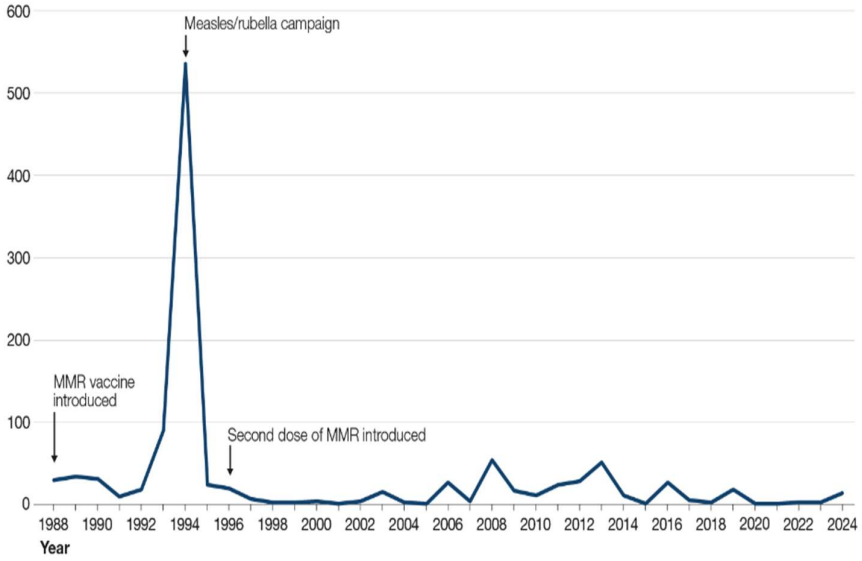
5.21. Nearly 12 % of cases are in the under 1s who are not eligible for vaccination in the UK schedules. Approximately 25% are in the 1-4 years group and the 5-10 years group.

Figure 3: Laboratory-confirmed cases of measles in England in 2024 to end of September 2024 – Source: UKHSA Measles dashboard



[11] Measles

Figure 4: Number of laboratory-confirmed cases of measles in Scotland by year, 1988 to end of June 2024 – source PHS quarterly report



5.22. In the first half of the year to end of Jun 2024 there have been 14 cases of measles in Scotland – none in Grampian. Of the 14 cases, 10 were thought to be imported from outside the UK and a further 2 were cases possibly linked to imported cases. Two had no travel history or known links to imported cases, perhaps representing community transmission.

5.23. The resurgence of measles is also seen across Europe. In the most recent 12 months to May 2024 there were a total of 6,742 cases of measles reported to the European Centre for Disease Prevention and Control. The EU/EEA countries with highest reported rates of cases for this time period were Romania, Liechtenstein, Austria and Belgium.

5.24. Measles is therefore a travel related disease in Scotland. The protection conferred on unvaccinated people because of our high uptake rates for MMR cannot be relied upon in other countries

Meningococcal disease (Men B)

5.25. Men B vaccination is given as 3 doses in the first year of life with Men C also currently given at 1 year as part of the childhood programme. The Meningococcal groups A,C,W and Y (Men ACWY) vaccine protects against meningococcal disease caused by four groups of meningococcal bacteria A, C,W and Y. The Men ACWY vaccine is offered to all young people in S3 at school. Young people in S4 to S6 who missed the opportunity to be immunised the previous year are offered vaccination at subsequent visits.

5.26. Due to the success of the adolescent MenACWY vaccination programme in controlling meningococcal disease across the population, from 2025 a dose of meningococcal C containing vaccine will no longer be recommended at 12 months. (This would have been delivered via the Hib/MenC vaccination at this time.)

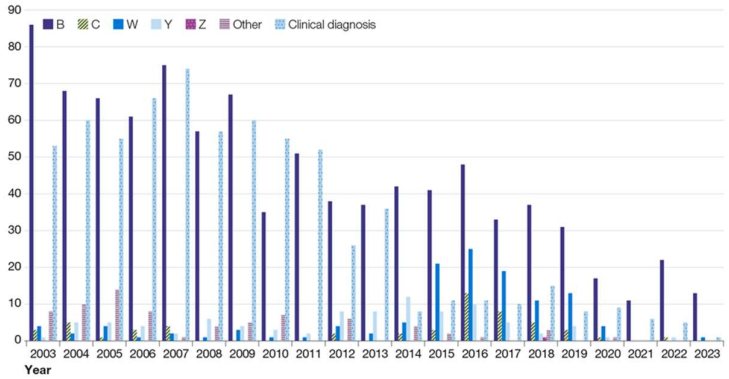
5.27. The number of notifiable cases of meningococcal disease in Grampian over the past ten years is detailed below:

Table 3: Meningococcal cases in Grampian 2011 – 2023

Meningococcal cases in Grampian 2011-2022											
2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
5	7	6	11	11	7	8	5	<5	0	<5	<5

Source: HPZone

Figure 5: Meningococcal disease cases reported to MIDAS by serogroup, 2003 to 2022 (week 13) - Source: PHS



Mpox

5.28. Mpox (previously known as Monkeypox) is a rare viral infection related to Smallpox. It is usually associated with travel to West Africa and has only, until recently, rarely been reported out with this region. Two forms of Mpox are found Clade I (Central African) and Clade II (West African). Clade I is currently considered a more serious infection than Clade II and is treated as a High Consequence Infectious Disease.

5.29. The Mpox virus is similar to the smallpox virus and the smallpox vaccine gives effective protection against Mpox. The vaccine is given in two doses a minimum of 28 days apart.

5.30. The 2022–2023 Mpox outbreak represents the first incidence of widespread community transmission outside of Africa. Clade II was responsible. This was initially identified in the United Kingdom in May 2022, with subsequent cases confirmed in 111 countries as of May 2023. During this outbreak, all those in NHS Grampian (NHSG) who were considered at high risk of Mpox were offered vaccination in line with national guidance via sexual health clinics.

5.31. In 2024 cases related to Clade I have begun to be seen in countries outside its traditional boundaries and England has seen a cluster of 4 cases at the beginning of November 2024.

5.32. Grampian has continued to offer opportunistic Mpox vaccination to eligible individuals as part of a holistic approach for those attending sexual health services. Eligible healthcare workers have been offered vaccination.

Mumps

5.33. Mumps, caused by paramyxovirus, is spread by airborne or droplet transmission and classically causes bilateral parotid swelling, fever, and myalgia. In addition, mumps can cause a variety of significant complications such as meningitis, encephalitis, orchiditis, oophoritis and pancreatitis. These complications, if developed, may be associated with sensorineural hearing loss and subfertility. Vaccination against mumps in the United Kingdom commenced with the introduction of the MMR vaccine in 1988, leading to a significant decrease in the

prevalence of mumps in the years following due to high levels of uptake. Subsequent decreases in uptake, as well as supply issues with the MMR in certain years, have led to increasing cases since the late 1990s.

Pertussis (Whooping cough)

5.34. Pertussis, or whooping cough, is a highly, infectious bacterial disease affecting the respiratory system. Infants and young children are particularly at risk of severe disease and/or death. The number of notifiable cases in Grampian over the past 10 years is detailed below:

Table 4: Pertussis cases in Grampian 2011- 23

Pertussis cases in Grampian 2011-2023											
2012	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
219	193	47	146	143	80	98	143	11	0	0	19

Source: HPZone

5.35. In 2024 there has been a huge surge in pertussis cases in Grampian, Scotland and the UK as a whole. Grampian has seen 1052 cases notified in 2024 in the year to the 1st October.

5.36. Protection against disease is conferred via vaccination in childhood. From October 2012, pregnant women in Scotland have been offered a pertussis vaccine typically between 16- and 32-weeks' gestation. This is to protect infants in their first eight weeks of life who are too young to receive their routine immunisations and are most at risk of complications from the infection.

5.37. In addition, the existing occupational health offer which was largely paused because of vaccine supply issues was restarted. A booster is offered to workers whose main focus of work is with pregnant women and young infants.

Pneumococcal disease

5.38. Pneumococcal disease can present as non-invasive or invasive infections caused by the bacterium *Streptococcus pneumoniae* (also called pneumococcus). Non-invasive disease includes middle ear infections (otitis media), sinusitis and bronchitis, whilst invasive pneumococcal disease includes septicaemia, pneumonia, and meningitis.

5.39. Young children, the elderly and people in a clinical risk group are most at risk of severe pneumococcal disease, and so all these groups are currently offered a pneumococcal immunisation.

5.40. People aged 65 or over only need a single dose of the vaccine. However, those with certain underlying health conditions require additional doses every 5 years. Children with health conditions may require additional doses.

Polio

5.41. Poliomyelitis is now rare in the UK following national vaccination programmes. It is an acute illness caused by the poliovirus entering the body through the gut and giving rise to a range of symptoms from gastrointestinal disturbance, fever and paralysis. During UK epidemics in the 1950s up to 8000 notifications of paralytic polio were received in a year. 4 doses via the 6 in 1 vaccine are offered during the childhood programme, with a booster dose delivered at age 14 (S3).

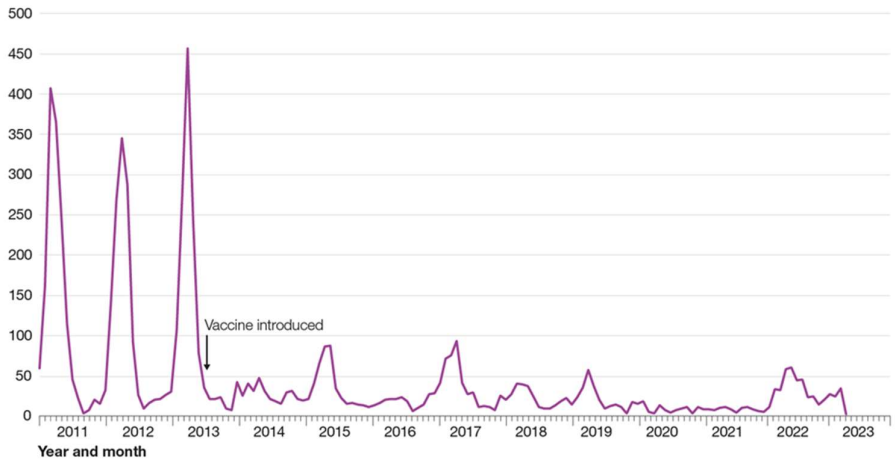
Respiratory Syncytial Virus (RSV)

5.42. RSV is a common cause of respiratory tract infections in the autumn into winter. For most, symptoms are mild but infants aged under 6 months and elderly people are at greater risk of pneumonia and bronchiolitis leading to hospitalisation and death in some cases.
In August 2024 a new national vaccination programme was introduced in Grampian with two aims: to give passive immunity to infants via a maternal vaccination from 28 weeks' gestation and to protect older people as they turn 75. There is a catch up vaccination programme for those 75-80 years of age. Currently there are no plans for boosters. The maternal vaccination will be offered in each pregnancy to protect each infant.

Rotavirus

5.43. Rotavirus is an extremely infectious cause of gastroenteritis through both the faecal-oral and occasionally respiratory route and can require hospitalisation in severe cases due to dehydration. Incidence follows a seasonal pattern, with the majority of cases in winter and early spring, and most symptomatic cases are in young children. A national infant rotavirus vaccination programme was commenced in Scotland in 2013, leading to a significant reduction in both overall cases and peak incidence in winter. Rotarix, the licensed vaccine for rotavirus, is given orally in two doses at 8 and 12 weeks.

Figure 9: Laboratory reports of rotavirus in Scotland from 2011 to end of March 2023 – Source: PHS

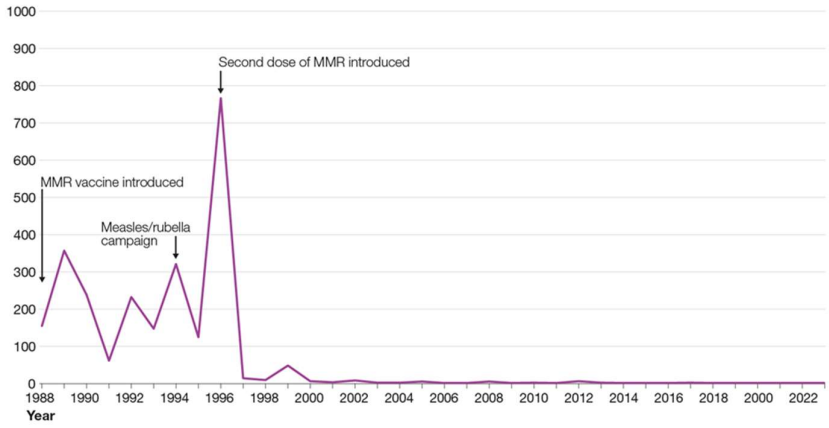


Rubella

5.44. Rubella is a viral illness caused by togavirus and spread by droplet transmission. The symptoms of acute rubella infection tend to be mild and include fever, coryzal symptoms, malaise and rash – though it may be associated with more serious complications such as post-infectious encephalitis and thrombocytopenia. The primary concern regarding rubella is the potential for foetal loss and birth defects in cases of maternal infection in pregnancy. Up to 90% of infants exposed to rubella at 8 to 10 weeks' gestation will develop congenital rubella syndrome. As such, the

primary aim of vaccination programmes is to reduce exposure of pregnant women to rubella. Targeted vaccination began in the UK in 1970, and universal vaccination began in 1988 with the introduction of MMR leading to significant decreases in rates of rubella. This is delivered during the childhood programme via the MMR vaccine.

Figure 10: Number of laboratory-confirmed cases of rubella in Scotland by year, 1988 to end of March 2023 – Source: PHS



Shingles

5.45. Shingles (*Herpes zoster*) is caused by the reactivation of a latent varicella zoster virus infection, sometimes decades after initial infection. Shingles can occur at any age, with the highest incidence seen in older people. The severity of shingles generally increases with age and can lead to Post Herpetic Neuralgia that may require hospitalisation.

5.46. The shingles vaccine programme for older adults was introduced in Scotland in September 2013 following recommendation by JCVI in 2009 and SG policy. The JCVI recently recommended changes to the shingles programme and these were implemented from 1st September 2023. The vaccine offered has changed from Zostavax to the non-live vaccine Shingrix requiring a switch from a 1-dose to a 2-dose schedule.

5.47. The eligible age for immunocompetent individuals will change from 70 to 60 years of age for the routine cohort in a phased implementation over a 10-year period. In addition, from 1st September 2023, eligibility expanded to all those who are severely immunosuppressed aged 50 years and over, with no upper age limit.

Tetanus

5.48. Tetanus is caused by the release of tetanus toxin during infection with *Clostridium tetani*. It causes symptoms such as fever, muscle spasms, lockjaw, difficulty breathing and swallowing problems. Bacterial spores are commonly present in the environment, including soil. This vaccine is given at 8, 12 and 16 weeks via the 6-1 vaccine and at 3 years 4 months via the 4-1 vaccine.

Tuberculosis

5.49. BCG immunisation programme was introduced into the UK in 1953 to protect against Tuberculosis (TB), a serious bacterial disease which affects the lungs and other parts of the body including brain, bones, kidneys, and joints. The programme has undergone changes in response to changing trends in TB epidemiology. Following a continued decline in TB incidence in the UK-born population, the universal school-based programme for adolescents was stopped in 2005. The BCG immunisation programme is now risk-based; the key part being a neonatal programme targeted at those children most at risk of exposure to TB, to protect them from the more serious childhood forms of the disease. Babies are offered the vaccine if they or their parents or others close to the baby have lived in an area with high levels of tuberculosis.

5.50. In 2023 increases in TB notifications were seen in most boards. Grampian saw 28 TB notifications in 2023 which was an increase from the relatively stable mean of 18 seen since throughout 2019-2022.

Figure 11: Tuberculosis incidence per 100,000 population and case numbers by NHS board, 2023 – Source: PHS

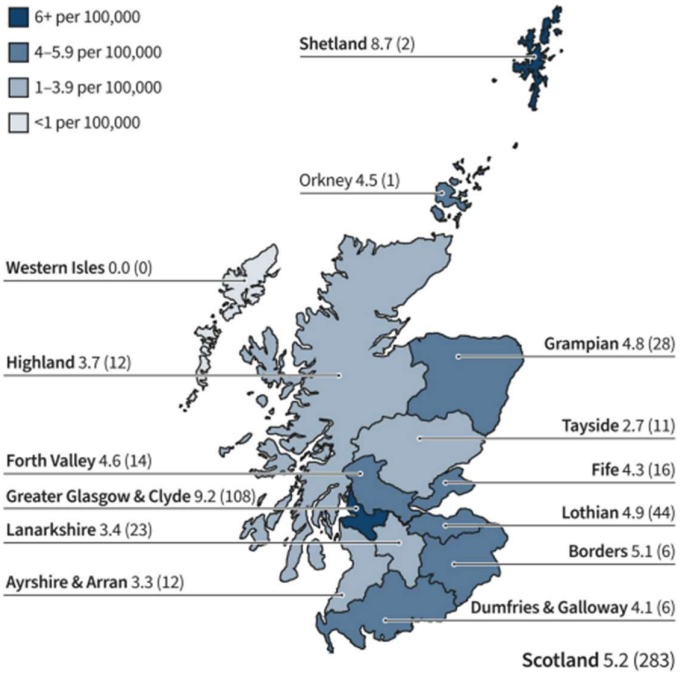
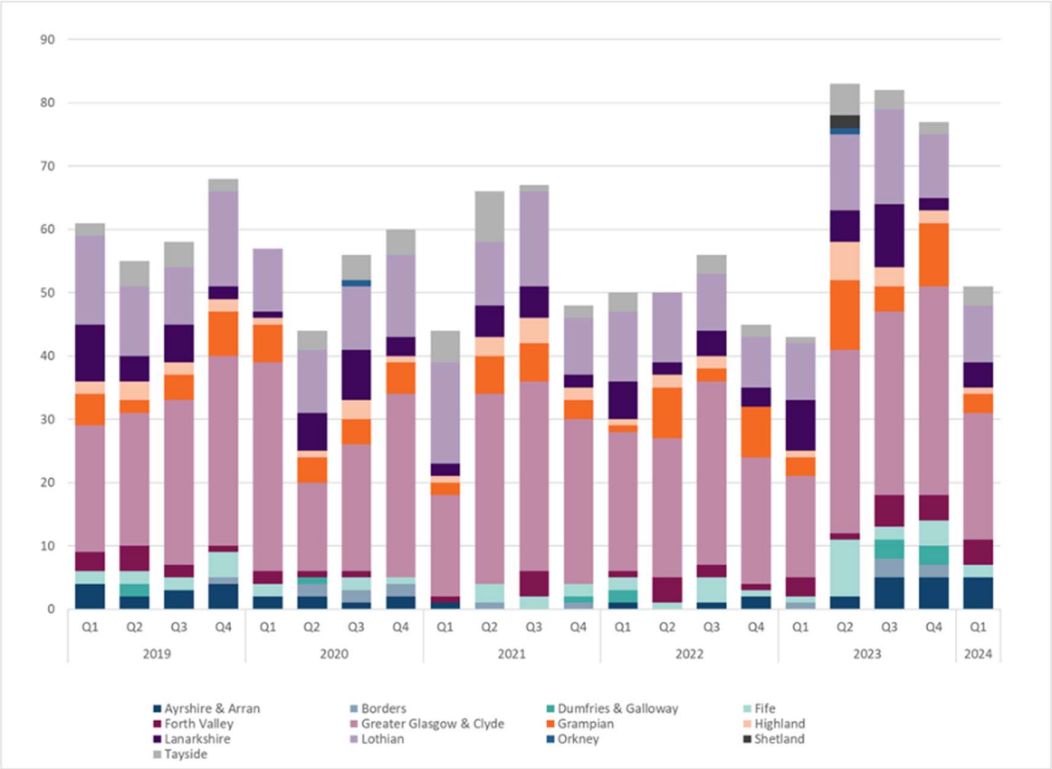


Figure 12: Number of tuberculosis notifications in Scotland by NHS board by quarter, January 2019 to quarter 1, 2024 (PHS[12])



Typhoid

5.51. Typhoid fever is caused by *Salmonella enterica typh*i and is spread through the faecal-oral route. Typhoid fever varies significantly in severity from isolated gastrointestinal symptoms and fever to multi-organ failure and has a mortality rate of up to 20% if untreated. Given its faecal-oral spread, typhoid fever is comparatively rare in high-income countries with adequate standards of sanitation - the United Kingdom averaged 393 cases of typhoid fever a year between 2008 and 2017 and 93% of cases were determined to have been contracted abroad. As such, vaccination against typhoid fever is typically only carried out on individuals travelling to endemic areas. Increasing antibiotic resistance noted in typhoid-endemic countries increases the importance of vaccination of at-risk travellers. There are currently two typhoid vaccines licensed in the United Kingdom - a polysaccharide vaccine given in one oral dose, and a live attenuated vaccine given in three oral doses.

[12] National quarterly report of tuberculosis in Scotland: quarter 1, 2024 - National quarterly report of tuberculosis in Scotland - Publications - Public Health Scotland

6. VACCINE UPTAKE

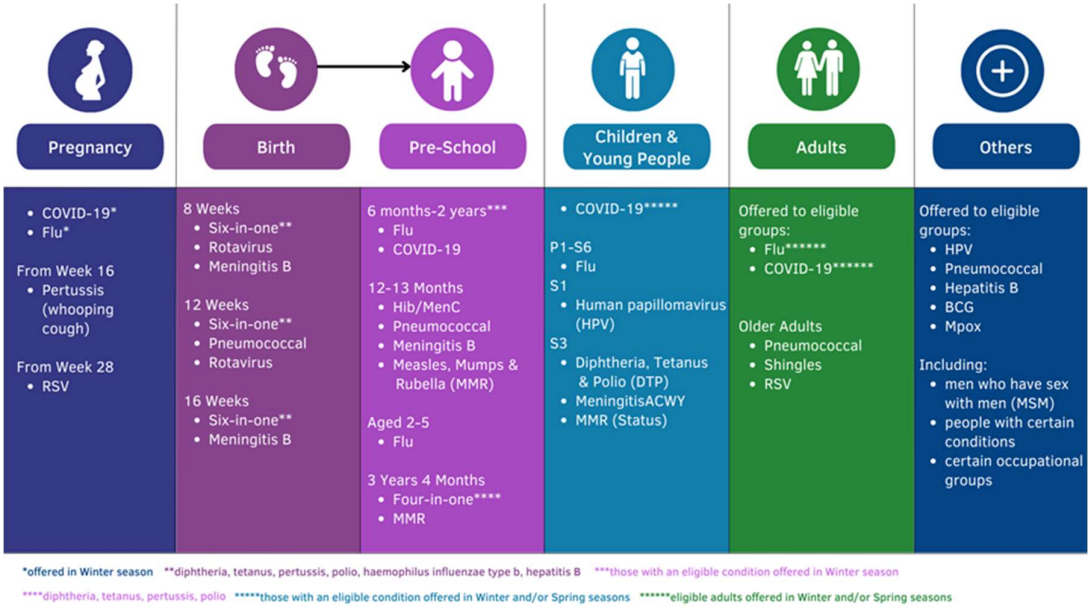
6.1. Vaccination coverage is the percentage of people from the target population who have received a specific vaccine. The risk to public health increases if immunisation rates fall below herd immunity levels as this makes the possibility of communicable disease transmission more likely.

6.2. The Grampian Vaccination and Immunisation Programme is organised into the following work streams, largely mirroring the structure in figure 13 below. Reporting in this chapter follows the order below in Table 5.

Table 5: Reporting Periods

Cohort	Reporting Period
Pregnancy Routine	April 2023 – March 2024
Childhood Routine	July 2023 – June 2024
Teenage Routine	School year 2022 – 23 (2023 - 24 will be released during November 2024)
Adult Routine	April 2023 – March 2024 & September 2023 – August 2024
Flu and Covid-19	September 2023 – March 2024
Travel health	September 2023 – August 2024

Figure 13: Vaccination and Immunisation Work streams



Pregnancy

Pertussis

6.3. Across Grampian the pertussis vaccine in pregnancy programme is delivered from 16 weeks' gestation. Midwives have an important role in promoting the vaccine, ensuring pregnant women are informed and administering the vaccine.

6.4. During 2023/24, coverage in Grampian from locally held data was 73.3% shown in Table 6. The data is reported according to NHS Board of delivery and therefore excludes those who choose to receive their maternity care in other Board areas.

6.5. Because of different approaches to recording data across Scotland it is difficult to make a direct comparison with the rest of Scotland.

Table 6: Whooping Cough in Pregnancy Uptake Rates in NHS Grampian between April 2023 – March 2024

Whooping Cough Pregnant Uptake Rates During Financial Year 2023-2024			
Population	**Vaccinated**	**Vaccination at Any Point in the 36 Weeks Prior to Delivery**	**% Vaccination at any point in the 36 weeks prior to delivery**
4,822	3,536	3,532	73.3

Source: Badgernet - 20th May 2024

Flu and COVID-19 Programme

6.6. Pregnant women are eligible for Flu and COVID-19 vaccinations, but uptake remains low. In 2023/24, 606 (13%) COVID-19 vaccinations were administered which represents a slight reduction in uptake of 1.8% compared to 2022/23. This decrease occurred despite the number of pregnant women decreasing by 745 during 2023/24. It is not possible to calculate an accurate uptake rate for Flu (2023/24) because the vaccination records are stored in multiple systems (VMT, BadgerNet, and TRAK) with restricted access which has limited data availability.

6.7. In NHS Grampian, flu and COVID-19 vaccines in pregnancy are given by the vaccination service, not by community midwives as part of antenatal care. These vaccines are part of a seasonal programme and there is insufficient capacity to deliver in maternity services. Pregnant women are given a fast-track pass to drop in to vaccination services as a priority for flu and COVID-19 vaccination

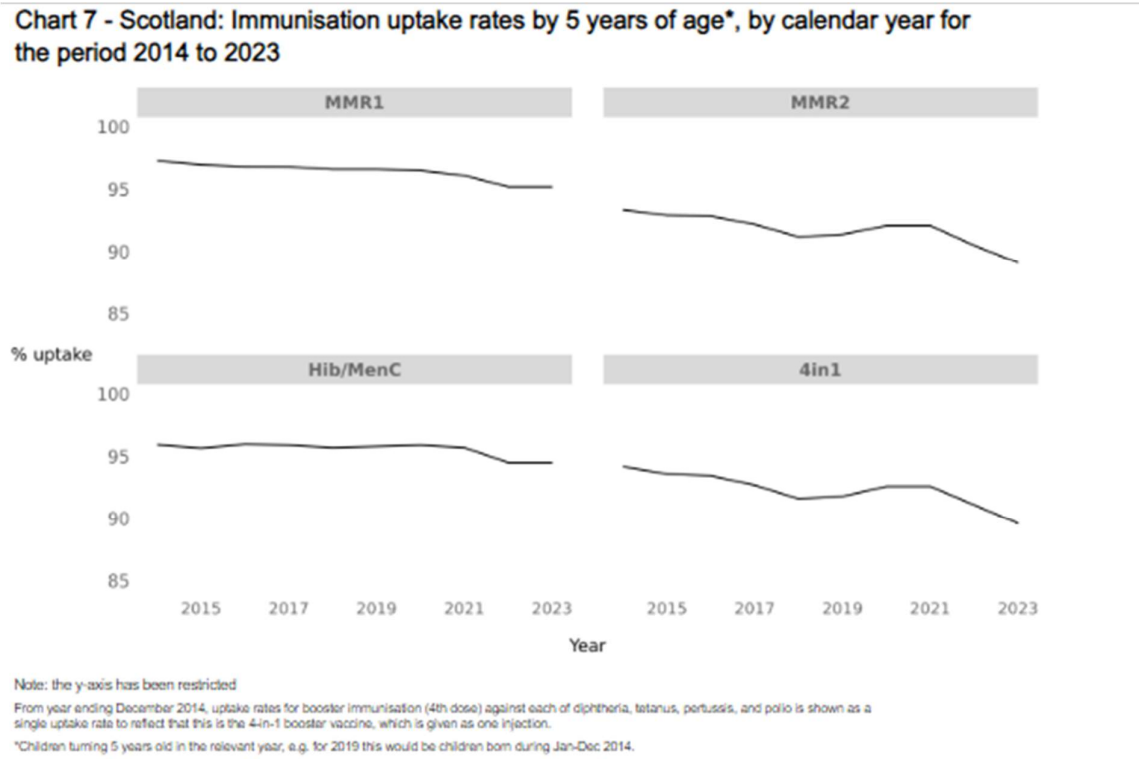
6.8. During the summer of 2023, a study was undertaken in Grampian to understand vaccine hesitancy in pregnant women. A number of recommendations were identified and implemented including better access to vaccination information for both patients and staff and a fast-track pass to vaccination hubs. Feedback shows midwives feel more supported in their vaccination roles and some barriers to vaccination were reduced. Feedback about the fast track pass has resulted in changes to the pass itself to make it look more "official".

6.9. In 2024, we are working with midwifery colleagues and a behavioural scientist from University of Aberdeen to try to boost autumn and winter vaccination rates among maternity staff and pregnant women. More information can be seen in the Spotlight.

Childhood Routine Immunisations

6.10. Over the past 10 years, there has been a gradual decline in the uptake of childhood immunisations across the UK and globally. While Scotland's uptake has continued to perform well by comparison with the other UK nations, this trend is observed in Grampian also.

Figure 14: Scotland's Immunisation uptake rates by 5 years of age 2014-2023



Source: Childhood Immunisations (child_imms_scot_qtr224.xlsx) - 20th November 2024

6.11. The reporting ages for childhood vaccine completion rates in the UK are 12 months, 24 months, five years and six years of age. The data presented is based on the published data from PHS and relates to year end to March 2024.

6.12. There are time lags between when a vaccination is first offered within the routine childhood schedule and when uptake is evaluated, for example MMR2 appointments are scheduled from 3 years 4 months but uptake is evaluated based on the cohort of children who reach 5 years. Therefore, uptake data in a particular reporting year reflect delivery practices over a longer period.

Vaccinations up to 12 Months of Age

6.13. The 95% target is met on a Grampian basis for all vaccinations up to 12 months of age except Rotavirus and Men B as seen in Table 7. The Rotavirus course requires two vaccinations in a narrow time window (8 and 12 weeks) and must be completed before 24 weeks. The consequence of this schedule is if the first dose is missed or delayed for some reason it may not be possible to have the second dose within this time window.

6.14. Although Aberdeen City coverage remains under the 95% threshold for all vaccinations, rates have increased in each completed primary course with Rotavirus and Men B improved to above 90%.

Table 7: Completed Primary Immunisations by 12 Months of Age, Local Authority, NHS Grampian and Scotland between April 2023 – March 2024

Local Authority	Cohort Size	% Completed Primary Course By 12 Months							
		6-in-1		PCV		Rotavirus		MenB	
		No.	%	No.	%	No.	%	No.	%
Aberdeen City	2,119	1,995	94.1	1,989	93.9	1,936	91.4	1,926	90.9
Aberdeenshire	2,045	1,965	96.1	1,972	96.4	1,927	94.2	1,965	96.1
Moray	717	694	96.8	692	96.5	666	92.9	690	96.2
Grampian	4,912	4,676	95.2	4,675	95.2	4,551	92.7	4,603	93.7
Scotland	47,000	44,574	94.8	44,669	95.0	43,501	92.6	44,020	93.7

Source: SIRS - 13th May 2024

Immunisations up to 24 Months of Age

6.15. The second year of life introduces the vaccines for Men C, Hib, Men B booster and MMR. In common with Scotland as a whole NHS Grampian achieves the 95% mark for 6 in 1 only (Table 8). Aberdeenshire exceeds the target for all these vaccines. Again, there are improvements for Aberdeen City which has increased uptake for all vaccines except for 6 in 1. This is in contrast to generally static or slight falls in rates for Grampian and Scottish averages.

Table 8: Completed Primary Immunisations by 24 Months of Age, Local Authority, NHS Grampian and Scotland between April 2023 – March 2024

Local Authority	Cohort Size	% Completed Primary and Booster Course by 24 Months									
		6-in-1		MMR1		Hib/MenC		PCVB		MenB (Booster)	
		No.	%	No.	%	No.	%	No.	%	No.	%
Aberdeen City	2,323	2,208	95.0	2,095	90.2	2,078	89.5	2,030	87.4	2,051	88.3
Aberdeenshire	2,303	2,251	97.7	2,198	95.4	2,200	95.5	2,198	95.4	2,197	95.4
Moray	885	855	96.6	834	94.2	836	94.5	832	94.0	828	93.6
Grampian	5,523	5,322	96.4	5,134	93.0	5,121	92.7	5,068	91.8	5,084	92.1
Scotland	50,533	48,595	96.2	46,909	92.8	46,901	92.8	46,850	92.7	46,563	92.1

Source: SIRS - 13th May 2024

Immunisations up to Five Years of Age

6.16. Grampian's uptake of vaccinations up to five years of age are all below 95% except for the 6 in 1 and are all slightly below those seen for the Scotland average (Table 9). There is variation in uptake across the HSCPs which lead to quality improvement work discussed in later sections.

Table 9: Completed Primary Immunisations and Boosters by 5 Years of Age, Local Authority, NHS Grampian and Scotland between April 2023 – March 2024

Local Authority	Cohort Size	% Completed Primary and Booster Course by 5 Years									
		6-in-1		MMR1		Hib/MenC		4-in-1		MMR2	
		No.	%	No.	%	No.	%	No.	%	No.	%
Aberdeen City	2,622	2,493	95.1	2,422	92.4	2,391	91.2	2,211	84.3	2,173	82.9
Aberdeenshire	2,699	2,649	98.1	2,620	97.1	2,614	96.9	2,546	94.3	2,527	93.6
Moray	887	861	97.1	846	95.4	846	95.4	801	90.3	796	89.7
Grampian	6,226	6,017	96.6	5,901	94.8	5,865	94.2	5,572	89.5	5,509	88.5
Scotland	54,057	52,266	96.7	51,606	95.5	51,253	94.8	48,454	89.6	48,195	89.2

Source: SIRS - 13th May 2024

Immunisations up to Six Years of Age

6.17. By the age of 6, first MMR, MMR2 and 4 in 1 remain lower than the Scottish average and below the 95% coverage mark. (Table 10). Despite a few initiatives uptake is similar to last year. This is of concern as MMR requires two doses for protection and 95% coverage for population protection. Measles is a particular concern because it is highly infectious, and the disease can have significant short- and long-term health complications.

6.18. We would expect to see improved rates in Aberdeen City over time as the younger cohorts showing increased uptakes begin to move through the programme.

Table 10: Completed Primary Immunisations and Boosters by 6 Years of Age, Local Authority, NHS Grampian and Scotland between April 2023 – March 2024

Local Authority	Cohort Size	% Completed Primary and Booster Course by 6 Years					
		MMR1		4-in-1		MMR2	
		No.	%	No.	%	No.	%
Aberdeen City	2,530	2,291	90.6	2,156	85.2	2,117	83.7
Aberdeenshire	2,827	2,723	96.3	2,675	94.6	2,651	93.8
Moray	904	853	94.4	833	92.1	822	90.9
Grampian	6,300	5,892	93.5	5,688	90.3	5,614	89.1
Scotland	55,870	52,760	94.4	50,877	91.1	50,496	90.4

Source: SIRS - 13th May 2024

Uptake and Coverage of School-based Immunisation Programmes

Human Papilloma Virus (HPV)

6.19. Uptake has decreased across S1 and S2 in Grampian and in Scotland.

6.20. Coverage remains higher in girls than boys (Table 11). This may be a legacy of the programme starting as a female only programme.

6.21. Coverage consistently improves with each school year showing the importance of offering vaccination catch up opportunities each year.

6.22. A process has been developed to ensure any child who has left school without the opportunity to receive routine vaccinations is contacted with the offer of vaccination.

Table 11: HPV Immunisation Uptake Rates of Dose 1, the End of the School Year 2022/23 at S1 and S2 by Local Authority Area, NHS Grampian and Scotland

HPV Immunisations Dose 1 Coverage Rates During 2022/23				
Local Authority	S1 Coverage (%) Dose 1		S2 Coverage (%) Dose 1	
	Female	Male	Female	Male
Aberdeen City	75.7	67.7	80.4	72.1
Aberdeenshire	83.7	76.6	87.9	80.5
Moray	81.8	72.2	90.8	78.8
Grampian	80.8	72.7	85.9	77.5
Scotland	76.3	69.7	82.9	76.2

Source: CHSP School/SIRS - 28th November 2023

Vaccination with Td, IPV and Men ACWY

6.23. Grampian's uptake is lower than last year, however, still exceeds the Scottish average. Rates continue to improve in S4 compared to S3 (Table 12).

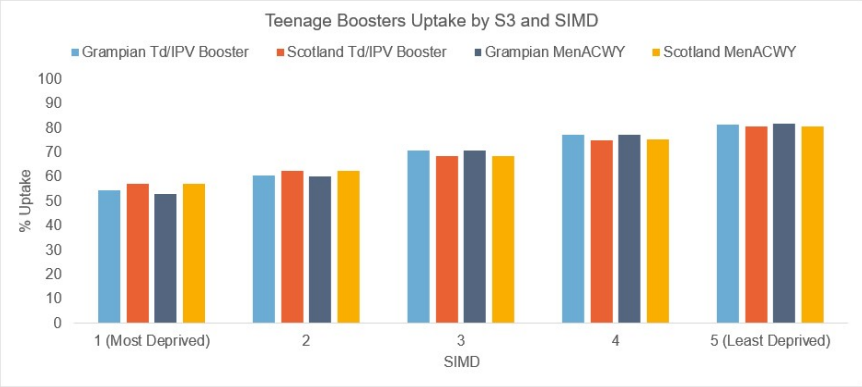
Table 12: Td/IPV and MenACWY Uptake Rates, the End of the School Year 2022/23 at S3 and S4 by Local Authority Area, NHS Grampian and Scotland

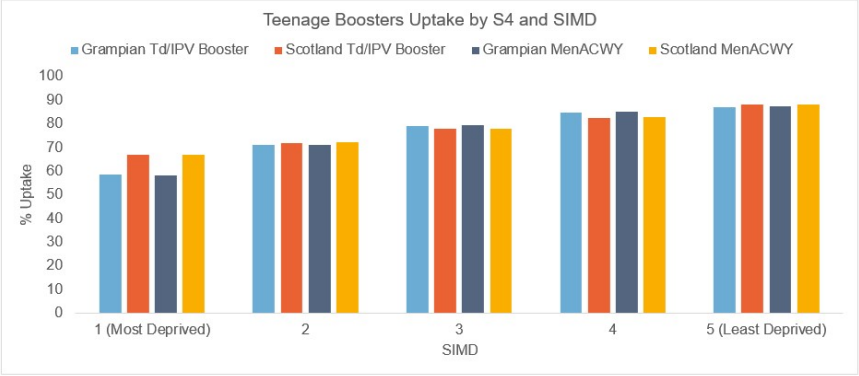
Local Authority	% Completed Teenage Boosters by S3					% Completed Teenage Boosters by S4				
	Cohort	Td/IPV booster		MenACWY		Cohort	Td/IPV booster		MenACWY	
	Size	No.	%	No.	%	Size	No.	%	No.	%
Aberdeen City	2,059	1,411	68.5	1,418	68.9	2,071	1,576	76.1	1,576	76.1
Aberdeenshire	3,220	2,455	76.2	2,451	76.1	3,109	2,578	82.9	2,580	83.0
Moray	1,101	827	75.1	824	74.8	1,123	951	84.7	954	85.0
Grampian	6,384	4,696	73.6	4,696	73.6	6,317	5,115	81.0	5,120	81.1
Scotland	61,576	42,234	68.6	42,296	68.7	60,861	47,058	77.3	47,135	77.4

Source: CHSP School/SIRS - 1st September 2024

6.24. When coverage is analysed by Scottish Index of Multiple Deprivation (SIMD) there is a disparity between those in the most deprived and least deprived quintiles. Coverage among the least deprived is as much as 30% higher (Figure 15). Where increases in uptake from last year are seen, they are mostly from the least deprived groups. Grampian's uptake for those in the most deprived groups are consistently lower than the Scottish average.

Figure 15: Td/IPV and MenACWY Uptake Rates, the End of the School Year 2022/23 at S3 and S4 by SIMD, NHS Grampian and Scotland Source: CHSP School/SIRS - 1st September 2024





Uptake and Coverage in Adult Immunisation Programmes

Shingles

6.25. During 2023/24 the shingles programme moved to the 2-dose Shingrix schedule, and an offer was made to the eligible groups at the start of 2024. The new eligible routine groups were those who are aged 50 years old and over with a severely weakened immune system and individuals aged 65 and 70 (predefined age eligibility cut offs). A catch-up offer was also made to individuals aged between 71-79 years.

6.26. In 2023/24, 24,096 shingles vaccines were administered covering the routine and catch-up cohorts as displayed in Table 14. This led to an uptake rate of 53.9% which is 12.6% higher than the Scottish average of 41.3%. The highest uptake was observed within the new cohorts (Age 65 and Age 70).

6.27. There was a 19.3% difference between dose 2 uptake and dose 1 (Figure 16). This suggests that individuals who start the vaccine course are likely to finish it.

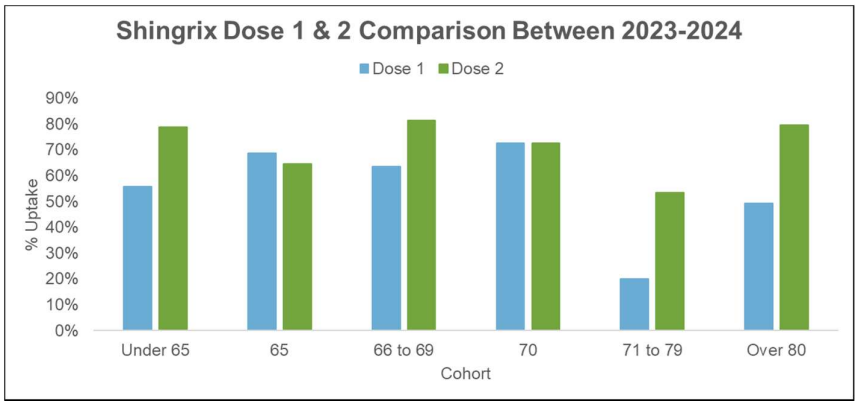
6.28. Uptake of adult vaccination programmes experience seasonal fluctuations as a result of the alignment in delivery models.

Table 14: Shingles Shingrix Vaccination Coverage amongst Eligible Routine and Catch-Up Cohorts by NHS Grampian and Scotland between 1 September 2023 to 31 May 2024

Cohort	Grampian			Scotland			%
	Population	Vaccinated	%	Population	Vaccinated	%	Difference
Under 65	3,593	2,302	64.1	36,505	19,260	52.8	11.3
65	12,776	8,556	67.0	112,497	52,992	47.1	19.9
66 to 69	1,410	995	70.5	13,701	8,255	60.3	10.3
70	10,654	7,730	72.6	85,121	51,878	60.9	11.6
71 to 79	15,587	4,114	26.4	135,678	25,852	19.1	7.3
Over 80	668	399	59.7	6,922	3,166	45.7	14.0
Total	44,688	24,096	53.9	390,423	161,403	41.3	12.6

Source: PHS vaccination surveillance dashboard - 25th June 2024

Figure 16: Shingles Shingrix Dose 1 & 2 Comparison between 2023/24



Source: PHS vaccination surveillance dashboard - 25th June 2024

Pneumococcal

6.29. Pneumococcal is a one-off vaccine for those aged 65 years and over and those under 65 with underlying conditions, that protects against 23 serotypes of pneumococcal disease. A small cohort require repeat vaccination every 5 years.

6.30. During 2023/24, 7,265 pneumococcal vaccines were administered to citizens turning 65 as well as those in the 2 – 64 at risk cohort and good progress has been made to offer the vaccine to eligible groups.

6.31. There are a number of codes used to record pneumococcal vaccinations in historical GP records which sometimes makes it difficult to identify those who require additional vaccinations. Work is ongoing to mitigate these data issues.

6.32. According to trend data available from PHS we can see that Grampian used to be consistently under the Scotland average however, during 2023/24 Grampian has surpassed the national average for uptake Table 15 & Figure 17 Please note that data from 2021-2022 is missing because of COVID-19 and work is currently ongoing by PHS to acquire trend data for 2022-2023.

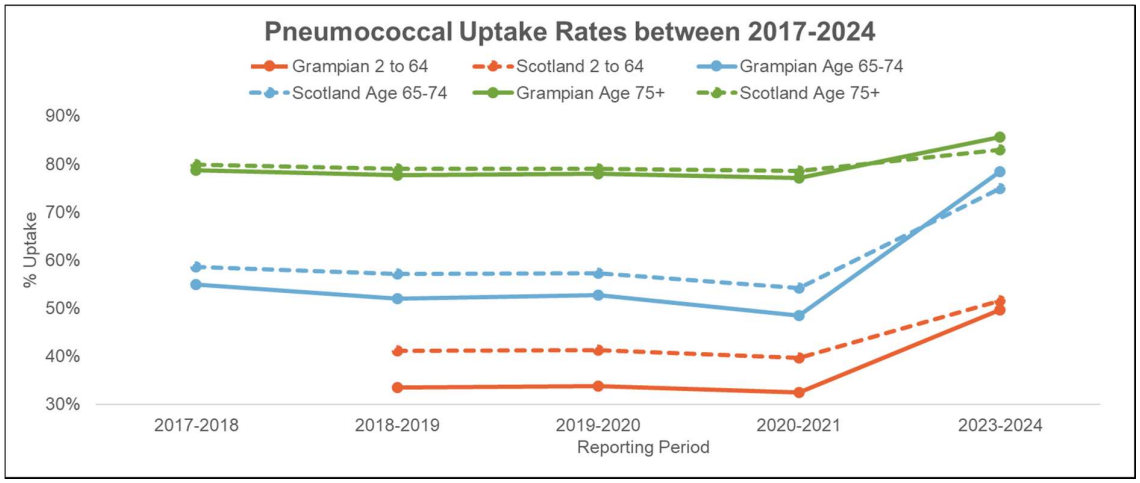
Table 15: Annual Pneumococcal Vaccination Coverage amongst Individuals Aged 65+ and 2-64 at Risk for Grampian and Scotland between 1 April 2017 – 31st March 2024

Reporting Period	NHS Grampian			Scotland			
	Population	Vaccinated	%	Population	Vaccinated	%	Difference
2017-2018	105,242	68,716	65.3	999,126	678,345	67.9	-2.6
2018-2019	130,606	74,223	56.8	1,303,275	789,391	60.6	-3.7
2019-2020	139,622	80,024	57.3	1,354,453	822,029	60.7	-3.4
2020-2021	142,557	78,157	54.8	1,355,146	797,616	58.9	-4.0
2023-2024	145,610	108,331	74.4	1,426,278	1,022,641	71.7	2.7

* Please Note 2021-2022 was missing due to the COVID-19 outbreak and 2022-2023 is currently being worked on by PHS.

Source: PHS vaccination surveillance dashboard - 25th June 2024

Figure 17: Pneumococcal Uptake Trend for Grampian and Scotland Between 2017-2024



Source: PHS vaccination surveillance dashboard - 25th June 2024

Uptake and Coverage in Seasonal Immunisation Programmes

Influenza

6.33. For the 2023/24 flu season adults aged 50 and over, health and social care workers and individuals at risk aged 18 years or over were eligible to receive the flu vaccine. The programme ran from the 5th of September 2023 until the 31st of March 2024 and there were 308,731 eligible citizens. Citizens were invited to attend clinics with most vaccines being co-administered with the COVID-19 winter booster vaccine.

6.34. Grampian delivered 168,954 flu vaccines and outperformed the Scottish average for total flu vaccinations as seen in Table 16 where Grampian is approximately 1% higher than the Scottish average.

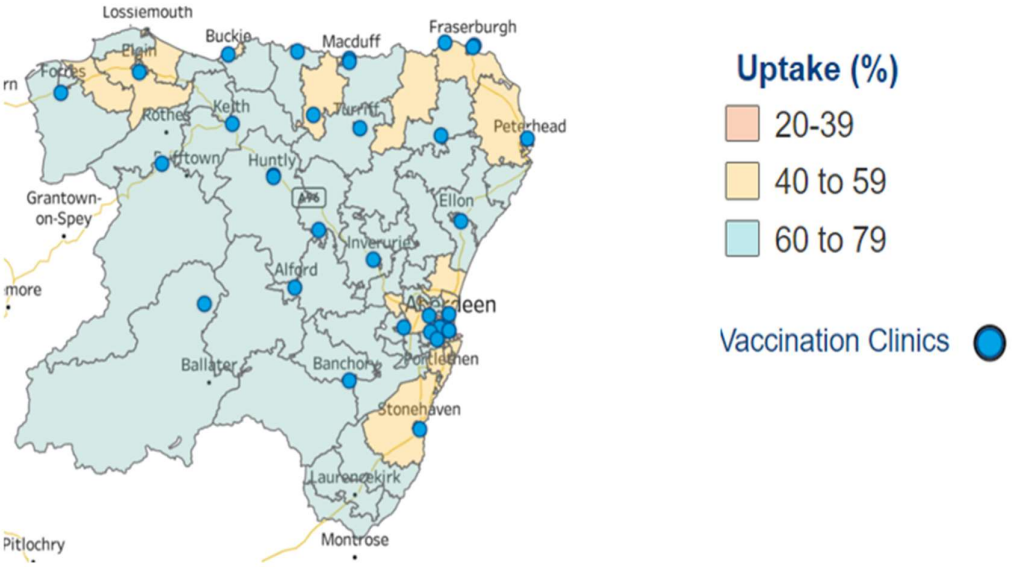
6.35. Uptake of flu vaccinations for 18-64 at risk and 50-64 years were lower for both Scotland and Grampian (consistently 16% and 20% lower respectively for these age groups) than the previous year. Uptake remained strong in the 65 and over age group.

Table 16: % Uptake Seasonal Flu Vaccine adults 2023/24

Cohort	Grampian	Scotland	% Difference
	%	%	
Age 18 - 64 At Risk	41.3	40.7	0.6
Age 50 - 64	36.0	35.0	1.0
Age 65 and Over	85.1	84.6	0.5
Total	54.7	53.7	1.0

Source: PHS Discovery Dashboard – 7th April 2024

Figure 18: Cold Spot Map of Influenza Autumn Winter '23 Vaccination Uptake for All Cohorts
Source: PHS Discovery Dashboard – 7th April 2024



COVID-19

6.36. As with the seasonal flu vaccine the COVID-19 winter booster programme ran from the 5th of September 2023 to the 31st of March 2024. Eligible groups for the 2023/24 COVID-19 winter booster programme included adults aged 65 years or over, frontline health and social care workers, and at-risk individuals aged 6 months and over.

6.37. A total of 113,334 vaccines were administered during the programme, 58.5% uptake among the total eligible cohort, which is around 2% higher than the uptake reported for the rest of Scotland (Table 17). Uptake for the total cohort was reduced by approximately 15% compared with the previous year for both Grampian and Scotland.

6.38. During the 2023/24 season overall the uptake rates in Grampian were higher than for the rest of Scotland for all cohorts.

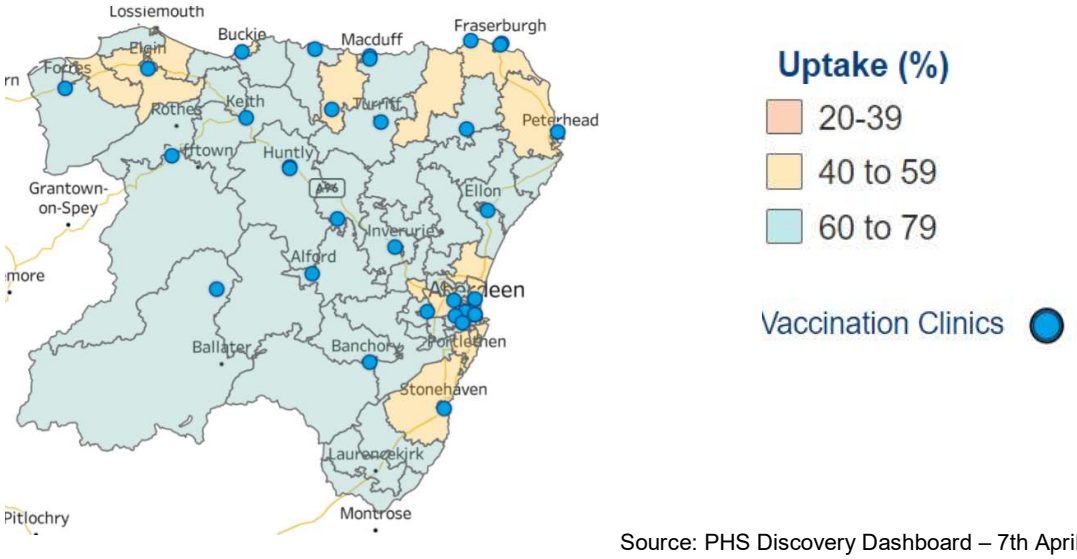
6.39. Uptake is lower in areas which are most deprived (Table 18). Uptake is also lower in some ethnic minority groups, specifically the Polish and African communities.

Table 17: % Uptake COVID-19 Booster Vaccine 2023-24

Cohort	Grampian	Scotland	% Difference
	%	%	
Older People Care Home	86.0	85.6	0.4
Age 75 and Over	84.8	84.0	0.8
Age 65 - 74	76.9	74.3	2.6
Age 6m - 64 At Risk	33.6	33.6	0.0
Weakened Immune System	61.2	59.4	1.8
Total	58.5	56.6	1.9

Source: PHS Discovery Dashboard – 7th April 2024

Figure 19: Cold Spot Map of COVID-19 Autumn Winter '23 Vaccination Uptake for All Cohorts



Source: PHS Discovery Dashboard – 7th April 2024

Table 18: Uptake of COVID-19 Winter Booster Vaccine by SIMD Quintile for Eligible Groups 2023/24 Programme

SIMD	Grampian		
	Population	Vaccinations	% Uptake
1 (Most Deprived)	12,505	4,993	39.9
2	34,815	17,254	49.6
3	48,732	28,055	57.6
4	67,104	41,606	62.0
5 (Least Deprived)	60,772	39,575	65.1

Source: PHS Discovery Dashboard – 7th April 2024

Uptake and delivery of other selective and non- routine vaccines

6.40. Non routine vaccinations cover a range of situations where citizens require vaccination out with the usual population vaccination schedules. These include those identified as at clinical risk under the Green Book, individuals recently treated for cancer or who have had a stem cell transplant and require their full course of vaccinations again; bat handlers or travellers who have been scratched or bitten by rabid animals; new residents in Scotland requiring catch up vaccinations

6.41. Non routine does not include occupational, sexual health risk-based vaccinations or travel vaccinations.

6.42. With no national scheduling, call or recall system for non-routine vaccinations, Boards have been working to put in place processes which support the delivery of these vaccines. NHSG has processes by which services may refer a citizen for vaccinations that are required out with normal vaccination schedules. There remain outstanding operational and clinical questions to be worked through and we are collaborating with specialist services on a local and national level to achieve clarity and strong clinical governance in this most flexible of programmes. A local working group has been established to improve and further develop a system- wide approach to non-routine vaccinations in NHSG with the aim to protect the health of the local population and reduce inequalities.

6.43. A CMO letter clarifying the place of non-routine vaccinations was issued in July 2024.

6.44. A digital referral pathway has successfully been established in NHS Grampian for primary care using SCI gateway and a second for secondary care is awaiting implementation.

Post Exposure treatment of infectious disease

6.45. Health protection investigations regularly identify persons who have been exposed to infectious disease. Post-exposure treatment with vaccines is recommended in some cases including Diphtheria, Hepatitis A and B, Measles, Meningococcus, MPox and Pertussis. Immunoglobulin may also be indicated for some infections. Health and Social Care Partnerships (HSCP) arrange and administer vaccinations, with referrals made in line with the non-routine vaccine pathway. Out of hours arrangements are under local discussion as vaccination is not funded for an out of hours service. This service gap has come under national discussion in response to discussions about MPox preparedness.

Babies born to mothers with Hepatitis B

6.46. The risk of developing chronic hepatitis B (Hep B) infection depends on the age at which infection is acquired. Chronic infection occurs in 90% of those infected perinatally but is less frequent in those infected as children (e.g. 20 to 50% in children between one and five years of age). Post-exposure immunisation is provided to infants born to Hep B infected mothers, identified through antenatal screening, to prevent mother to child transmission at or around the time of birth.

6.47. Immunisation of the infant starts as soon as possible after birth, and no later than 24 hours, and is followed by additional doses at four weeks and one year. These doses are in addition to the routine schedule at 8, 12 and 16 weeks.

6.48. During 2023/24, a total of <10 babies were born to mothers' resident in Grampian infected with Hep B (Table 19). Because of the small numbers involved the breakdown of these data is not given.

6.49. Ongoing audit and analysis of vaccinations is discussed at the appropriate Grampian Newborn Screening overview meetings.

Table 19: Hepatitis B Screening Status of All Mothers Delivering in Grampian during the Period April 2023 – March 2024

Hepatitis B Screening Status of All Mothers Delivering in Grampian During The Period April 2023 - March 2024				
Health Board	**Screening Result: Negative**	**Screening Result: Positive**	**No Screening Results**	**Total**
Grampian*	4,737	< 10	83	4,827

* Total registerable births in NHS Grampian during the timeframe was 4,754

Source: Badgernet – 17th October 2024

BCG for Newborns at Risk of Tuberculosis

6.50. In 2023, 887 babies in Grampian were identified as meeting the national eligibility criteria for BCG vaccination. Of these 766 (86.4%) received the vaccine within the first 12 months of life.

6.51. The BCG uptake levels in at risk infants in Grampian exceeds the 2018 Scottish TB Framework Key Performance Indicator level (set at 85% uptake level) [3]

Table 20: Uptake Levels of BCG for Eligible Infants During the Period 2017 – 2023

Year Turning 12 Months	Cohort Size	At Risk		Immunised		
		n	% of Cohort	n	% of SIRS Cohort	% of At Risk
2017	6,254	952	15.2	696	11.1	73.1
2018	5,922	852	14.4	645	10.9	75.7
2019	5,846	811	13.9	598	10.2	73.7
2020	5,467	707	12.9	541	9.9	76.5
2021	5,165	710	13.7	561	10.9	79.0
2022	5,374	846	15.7	658	12.2	77.8
2023	5,024	887	17.7	766	15.2	86.4

Source: PHS - August 2024

Vaccinations delivered in Sexual Health Clinics

6.52. A small number of vaccinations are carried out in sexual health clinics as part of their specialist assessment and treatment.

6.53. Since the Mpox outbreak in 2022/23 NHS Grampian sexual health clinics vaccinated 631 individuals, with all those eligible having been offered an appointment to attend for 1st and 2nd doses. Opportunistic vaccination continues.

6.54. A further breakdown is detailed below in Table 21.

Table 21: Vaccinations Delivered Within Sexual Health Clinics

Vaccinations Delivered in Sexual Health Clinics					
Financial Year	**HPV**	**Hep A**	**Hep B**	**Hep A & B**	**Prevenar**
2021-22	362	84	97	271	14
2022-23	376	57	118	335	29
2023-24	284	48	128	250	35

Source: NaSH – 22nd October 2024

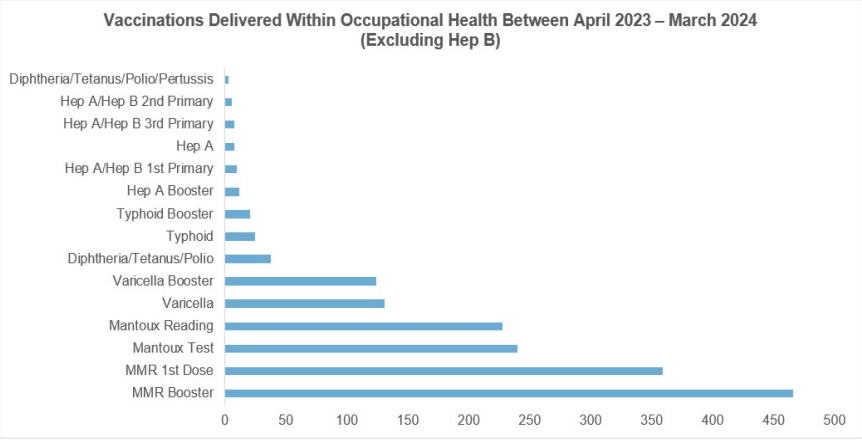
Vaccinations delivered in Occupational Health Services

6.55. Occupational Health Services (OHS) provides professional, confidential and impartial specialist advice to support employees in the workplace about their health.

6.56. The OHS runs clinics for staff in the Aberdeen and Elgin sites offering Hep A, Hep B, DTP, DtaP, Typhoid, MMR, Pertussis and Varicella vaccines. The team also offer Mantoux testing and Mpox vaccine to eligible staff. External clinics at RGU support the student cohorts as well as maternity staff. The staff Immunisation Policy is currently under review.

6.57. Between April 2023 and March 2024, a total of 6,863 vaccinations were administered within the occupational health services. 5,184 (75.5%) of these vaccines were Hep B vaccinations. A breakdown of the remaining 1,679 vaccinations is displayed in the below Figure 18.

Figure 20: Vaccinations Delivered Within Occupational Health Services Between April 2023 – March 2024 (Excluding Hep B) Source: NHSG OHS – November 2024



Travel health

6.58. At the time of writing in December 2024, the travel health service is undergoing redevelopment. The travel health service in Grampian has been delivered by community pharmacy since October 2021. However, static budgets and rising costs mean that the service will be taken in house from February 2025.

6.59. Residents will commence their assessment by visiting the Travel Health Pro website and using the information to decide what they need to travel safely. Residents may need to check routine vaccinations are up to date, or may require non-NHS vaccinations, travel medication, NHS vaccination, and travel advice for an existing long-term condition where their regular clinician may not be able to offer advice.

6.60. Assessments will be offered on-line and vaccination appointments will be available at 2-3 sites in Grampian.

6.61. Materials to support school groups travelling abroad are under development.

6.62. Only the following four travel vaccines are part of the NHS travel service: Hepatitis A (Hep A), Typhoid, Cholera, and polio / diphtheria / tetanus. All other travel vaccination or medication are not available via this service and as under current arrangements, residents will need to consult a private travel health clinic for these.

Table 22: Number of NHS travel vaccines administered by Local authority and Health board. September 2023 - August 2024

Travel Vaccinations Administered Betweeen September 2023 - August 2024					
HSCP	**Cholera**	**Polio, Diphtheria/ Tetanus**	**Typhoid Fever**	**Hepatitis A**	**Grand Total**
Aberdeen City	34	877	1,059	1,082	3,052
Aberdeenshire	42	1,143	1,156	1,236	3,577
Moray	57	284	331	323	995
Grampian	133	2,304	2,546	2,641	7,624

Source: Seer vaccination dashboard – 22nd October 2024

7. Equity in Grampian

7.1. “Health inequalities are the unjust and avoidable differences in people’s health across the population and between specific population groups. Health inequalities go against the principles of social justice because they are avoidable. They do not occur randomly or by chance. They are socially determined by circumstances largely beyond an individual’s control. These circumstances disadvantage people and limit their chance to live longer, healthier and fulfilled lives. The existence of health inequalities in Scotland means that the right of everyone to the highest attainable standard of physical and mental health is not being enjoyed equally across the population.”

7.2. The above statement is taken from the NHS Grampian Health Inequalities Action Plan. We know from the information we have that those suffering socioeconomic deprivation, and some ethnic groups are less likely to come forward for preventative healthcare. SVIP have created a 5-year strategic framework for vaccination with inequalities one of the main priorities. To complement this, PHS are developing more data products for vaccination which include SIMD and ethnicity.

7.3. As part of our work, GVIP have held an inequalities workshop where our data was presented ((Figure 19 and Figure 20), and our priorities agreed as those in SIMD areas 1 and 2 as well as populations from Poland, Africa and parts of Asia due to the lower uptake demonstrated in Table 23. Currently, uptake rates for these populations are one of the few areas Grampian perform less well than the Scottish average.

7.4. These figures demonstrate Grampian’s uptake is lower than that of Scotland in many ethnic groups. The difference is under 5% for most groups, apart from Other Caribbean or Black and Other African populations and less well-defined groups such as “White other”. The first two are relatively small cohorts of just over 200 combined and targeted small-scale work may be successful. The White Other is a larger group of 5,000 and may be more difficult to specifically identify and target and may need to be included in a more general approach.

7.5. Last year we undertook a Needs Assessment focussing on families with children under six years of age. Amongst other work to collate what engagement activities are ongoing, we asked about families’ concerns and beliefs about vaccination and the practical barriers to accessing vaccination. As part of this work, we reached ethnic communities through the support of HSCP and GREC (Grampian Regional Equality Council). (See Needs Assessment Spotlight).

7.6. Although many respondents reported that vaccines were important and staff were a trusted source of information, reports of concerns around vaccine side effects, safety and post-COVID lack of confidence were also seen. There were reports of barriers including inflexibility in appointments and transport.

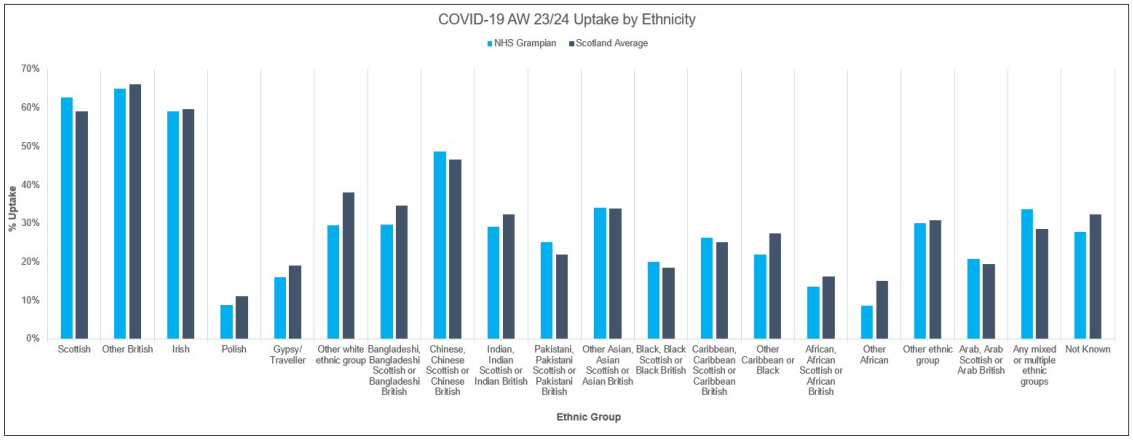
7.7. Table 18 (Covid-19 Winter booster) and Figure 14 (Teenage boosters) show breakdown in uptake by SIMD. There is a 25%-30% difference in uptake between those from areas with most socio-economic deprivation in Grampian and the least.

7.8. Using all this information we are creating an equity plan for to sit as part of the NHS Grampian Health Inequalities plan.

7.9. Pathways for vaccination have been created for the asylum seeker population.

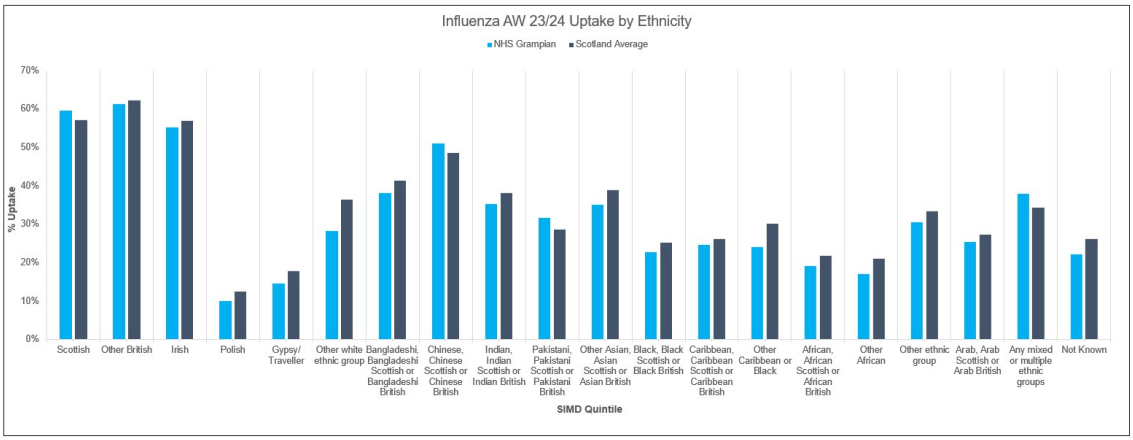
7.10. Further information about outreach work is available in the HSCP Spotlight.

Figure 19: Autumn Winter 2023/24 COVID-19 Vaccination Uptake Rates by Ethnicity



Source: PHS Discovery Dashboard – 7th April 2024

Figure 20: Autumn Winter 2023/24 Influenza Vaccination Uptake Rates by Ethnicity



Source: PHS Discovery Dashboard – 7th April 2024

Table 23: Autumn Winter 2023/24 Vaccination Uptake by Ethnicity

Season		Autumn Winter 2023/24 COVID-19							Autumn Winter 2023/24 Flu						
Health Board / Scotland		NHS Grampian			Scotland Average			% Difference	NHS Grampian			Scotland Average			% Difference
Ethnic Group	Ethnicity	Population	Vaccinated	Uptake %	Population	Vaccinated	Uptake %		Population	Vaccinated	Uptake %	Population	Vaccinated	Uptake %	
White	Scottish	154,896	97,202	62.8%	1,658,802	982,532	59.2%	3.5%	207,554	123,739	59.6%	2,176,429	1,241,990	57.1%	2.6%
White	Other British	40,565	26,376	65.0%	271,394	179,604	66.2%	-1.2%	54,821	33,614	61.3%	364,241	226,695	62.2%	-0.9%
White	Irish	857	507	59.2%	10,336	6,175	59.7%	-0.6%	1,279	707	55.3%	14,512	8,273	57.0%	-1.7%
White	Polish	1,738	153	8.8%	9,508	1,057	11.1%	-2.3%	2,549	258	10.1%	13,035	1,629	12.5%	-2.4%
White	Gypsy/ Traveller	168	27	16.1%	1,189	227	19.1%	-3.0%	327	48	14.7%	2,086	370	17.7%	-3.1%
White	Other white ethnic group	5,175	1,533	29.6%	43,576	16,604	38.1%	-8.5%	8,398	2,369	28.2%	66,264	24,162	36.5%	-8.3%
Asian (inc. Scottish/British)	Bangladeshi, Bangladeshi Scottish or Bangladeshi British	245	73	29.8%	1,571	545	34.7%	-4.9%	317	121	38.2%	1,922	794	41.3%	-3.1%
Asian (inc. Scottish/British)	Chinese, Chinese Scottish or Chinese British	635	310	48.8%	6,959	3,251	46.7%	2.1%	984	502	51.0%	10,722	5,208	48.6%	2.4%
Asian (inc. Scottish/British)	Indian, Indian Scottish or Indian British	1,221	357	29.2%	11,601	3,756	32.4%	-3.1%	1,602	566	35.3%	14,354	5,462	38.1%	-2.7%
Asian (inc. Scottish/British)	Pakistani, Pakistani Scottish or Pakistani British	430	108	25.1%	17,762	3,897	21.9%	3.2%	534	169	31.6%	22,060	6,313	28.6%	3.0%
Asian (inc. Scottish/British)	Other Asian, Asian Scottish or Asian British	995	339	34.1%	7,209	2,445	33.9%	0.2%	1,526	535	35.1%	10,249	3,980	38.8%	-3.8%
Caribbean or Black	Black, Black Scottish or Black British	129	26	20.2%	959	178	18.6%	1.6%	136	31	22.8%	1,025	259	25.3%	-2.5%
Caribbean or Black	Caribbean, Caribbean Scottish or Caribbean British	140	37	26.4%	831	210	25.3%	1.2%	182	45	24.7%	1,124	295	26.2%	-1.5%
Caribbean or Black	Other Caribbean or Black	118	26	22.0%	1,219	336	27.6%	-5.5%	162	39	24.1%	1,545	465	30.1%	-6.0%
African	African, African Scottish or African British	1,778	242	13.6%	10,873	1,771	16.3%	-2.7%	2,062	395	19.2%	12,638	2,768	21.9%	-2.7%
African	Other African	104	9	8.7%	1,120	169	15.1%	-6.4%	105	18	17.1%	1,249	262	21.0%	-3.8%
Other	Other ethnic group	1,067	322	30.2%	7,873	2,439	31.0%	-0.8%	1,507	461	30.6%	10,794	3,595	33.3%	-2.7%
Other	Arab, Arab Scottish or Arab British	254	53	20.9%	2,144	419	19.5%	1.3%	315	80	25.4%	2,656	723	27.2%	-1.8%
Mixed/Multiple	Any mixed or multiple ethnic groups	769	259	33.7%	8,628	2,463	28.5%	5.1%	952	362	38.0%	10,747	3,697	34.4%	3.6%
Not Known	Not Known	12,644	3,524	27.9%	141,785	45,884	32.4%	-4.5%	22,992	5,080	22.1%	242,648	63,525	26.2%	-4.1%

Source: PHS Discovery Dashboard – 7th April 2024

Spotlight

On Grampian Childhood Vaccination Needs' Assessment

We received 404 responses to our survey, we had 10 responses from our telephone survey of parents whose children "were not brought" for vaccination and ran 3 focus group discussions. Generally, our findings were in keeping with similar work in the literature.

Our survey found that many participants consider vaccines important and trust information provided by healthcare workers. This creates an opportunity for health workers, even those not in vaccination centres, to discuss the benefits of vaccination with their client groups. Faith communities are broadly in favour of children's vaccination, suggesting an opportunity for targeted engagement.

Participants commended the quality of vaccination services in Grampian, emphasising knowledgeable and caring staff. However, concerns and challenges affecting vaccination services include safety apprehensions, uncertainties about side effects, and the post-COVID-19 negative impact on childhood vaccine acceptance. Some complaints about physical barriers to access such as parking, transport etc were also highlighted.

The "was not brought cohort" telephone survey (n=10) identified factors such as forgetfulness, difficulties attending vaccination centres, and parental refusal as contributors to missed appointments. Vaccine refusal reasons include concerns about multiple vaccines, worries about post-vaccination illness, lack of trust in vaccine safety, and a preference for natural immunity.

Recommendations to address childhood vaccination uptake include clear information with increased signposting to more detailed information for those who wish it, implementing flexible appointment and reminder systems, correcting misinformation, highlighting community immunity, addressing access barriers, the use of personal stories, community engagement, policy interventions, and monitoring of vaccine confidence.
Some of these have already been implemented in local delivery.

In conclusion, a multifaceted and tailored approach, considering cultural, social, and individual factors, is essential to address decreasing childhood vaccination uptake. Services need to be flexible and sustainable and decision makers need to be aware that a more tailored approach is likely to require more resource.

Spotlight

On Behavioural science approach to improving uptake for Covid and Flu vaccination in maternity services

Work was done last year to upskill the workforce and remove some barriers to vaccination for pregnant women with some/limited success. To try to maximise uptake in this population a different approach was tried. A health psychologist uses theory and evidence to change health behaviours, improve health and reduce inequalities. We identified vaccination behaviour in pregnancy as one of the public health priorities that could benefit from theory- and evidence-based health communication.

We took a 3-armed approach- to improve Covid 19 and flu vaccination in pregnancy. This looks at pregnant women, midwives who interact with the women, and the interaction between these two groups, as a form of shared-decision making and patient-provider interaction. We discussed the opportunity for behavioural spillover, the idea that if midwives are vaccinated it might be easier to discuss vaccination with pregnant women and their advice to be vaccinated might be more convincing. Therefore, we first developed a message to midwives based on health psychology principles.

First, we identified drivers for the behaviour (or reasons midwives do not get vaccinated). These theory-based mechanisms of action were translated to intervention messages containing behaviour change techniques that influence these mechanisms of action, and therefore the resulting behaviour. The resulting message read: "Getting vaccinated can prevent you and those in your care from becoming seriously ill. NHS Grampian are following the advice from Public Health Scotland and the RCM to promote staff to access vaccinations. We appreciate this can be time consuming and some people may experience mild side effects, however there is undoubtedly a benefit to your own health and those around you." Behaviour change techniques incorporated include a credible source, information about the health and social consequences of the behaviour, and pros and cons. This message was shared with the team leaders across Grampian.

This was followed by an audit, where we explored whether midwives discussed vaccination in their appointments, and whether there was a difference between midwives who were or were not vaccinated themselves. This audit will give more information on the interaction between provider and receiver of information, where normally these populations are targeted separately. This work is currently in progress. Following this, an intervention aimed at pregnant women or the interaction between women and midwives could further address vaccination behaviour to promote health and reduce inequalities in vaccination uptake.

8. Quality improvement and Safety in Vaccination

8.1. The overall aim of the GVIP is to provide high-quality care to individuals and support the health of our population. Quality Improvement supports making healthcare safe, effective, patient-centred, efficient and equitable for those receiving and delivering care. In NHS Grampian we take a coordinated approach to reviewing processes and delivery mechanism to ensure we can provide the best possible care.

8.2. Issues and learning are identified through adverse event reporting, feedback, Problem Assessment Groups (PAG) and quality improvement activity. This is discussed at the GVIP Clinical and Care Governance Group, where programmes, adverse events, feedback and risks are discussed and reviewed. Staff participate in shared learning events across the programme at least 2 times per year, along with relevant short life working groups convened to develop improved processes. The Clinical and Care Governance Group reports into Programme Board under standing agenda items.

8.3. In addition, we are required to report incidents to PHS under the Vaccination Adverse Event Management Protocol. We are asked to report audit and quality improvement initiatives to the SVIP Clinical Governance Group. PHS reports twice yearly to SG as part of their assurance processes.

8.4. The updated Measles Elimination Plan for Grampian was implemented. We reviewed current MMR status of citizens aged 3 years 8 months to 17 years and contacted all those with no or one vaccine dose administered. Citizens with incomplete status were invited to attend. Work is ongoing to ensure the available data in electronic systems are updated and interrogated to provide accurate information to target messaging and resources to maximise uptake

8.5. Design and implementation of digital referral process utilising SCI gateway and trak to support primary and secondary care colleagues and improve our reporting.

Priorities for improvement

- We will implement the Vaccination and Immunisation Strategic Framework for Grampian to draw together work on areas of improvement and facilitate planned work on priorities and a reduction in reactive activities. Alongside this work and as part of the strategy we will finalise and implement the equity plan for vaccination. The Strategic Framework, with underlying action plan, will go to a GVIP Programme Board workshop in January 2025, and the equity plan has already been outlined at GVIP Programme Board in October 2024 and will be finalised in early 2025.
- A selection of current quality improvement and development activities that will sit under the Strategic Framework are:
    - Finalising post-exposure prophylaxis pathway
    - Implementation of digital improvements to non-routine vaccination pathway
    - Detailed risk assessment and mitigations of local manual appointing systems
    - Finalise vaccination pathway for home schooled children
    - Work with e-health colleagues to scope digital consent
    - Focus on improving uptake of school age vaccinations
    - Implementation of a new Travel Health Service for Grampian
    - Behavioural science approach to improving uptake for COVID and flu vaccination in maternity services.

9. Spotlight on the HSCPs

9.1. Spotlight on Aberdeen City 2024

Spotlight

On Aberdeen City – a hub for vaccination and wellbeing

Challenges

- **SIRS IT Appointment System** – The system is outdated and inflexible. It can only allocate residents in a GP Practice to one clinic location, therefore often creating capacity issues.
- **SIRS IT Reporting System** – Information cannot be extracted by postcode area which does not allow easy identification of low uptake areas by GP Practice / Postcode.
- **New to Area** – Aberdeen City has seen a continued rise in families and children new to area which has an impact on the childhood immunisation programme. Once registered with a GP, they will enter the SIRS system, but there may be a delay in obtaining vaccination history to commence scheduling.
- **Opt Outs and non resident families included in Denominator** – SIRS data to identify % Uptake include in their denominator those families that have notified the service they do not wish to take up the vaccine or that have left the area, but are still registered with a City GP Practice.
- **Children not brought** – During and following the COVID-19 pandemic, the service have seen an increase in "children not brought" to appointments. Some feedback reported from parents highlight vaccine fatigue and misinformation, which fits with the national picture across Scotland.

Areas of Good Practice

- **Joint Working -** The immunisation Team & Community Treatment & Care (CTAC) teams work jointly to help ensure services are working to capacity outwith the Winter Vaccination programme. The Vaccination Team currently provide support with the delivery of Vitamin B12 Injections and a CTAC Blood & Chronic Disease Management Clinic run from the Vaccination & Wellbeing Hub. The team have also commenced undertaking Learning Disability Health Checks

- **The Vaccination & Wellbeing Hub** has developed over the past year to bring health, social care, third sector and voluntary organisations together under one roof to support "Putting People First" and "Getting it Right for everyone" principles. This allows staff to "Make Every Opportunity Count" and help to signpost & support people with what matters to them – whether this is their health, housing, cost of living, carers support & social isolation. The hub has also hosted larger health & wellbeing events for example – Learning Disabilities Week, Family Health & Wellbeing Day, and Come Network Day. The hub will also be used for future Community Appointment Days which are being developed with the Chronic Pain Management Team as a test of change.

Outreach activity

During 2023 and 2024, the Aberdeen City Vaccination Team undertook various initiatives to promote the increase of childhood immunisation uptake. This included:

- **Health Promotion** – The team attended various community events throughout the year to promote childhood immunisations at Community Centres, pre-school nurseries, library events and community summer fayres.

- **Increased Community Clinics** – Additional clinics in Tillydrone Community Campus and Bucksburn Medical Practice to provide more local clinics to reduce barriers to attend.

- **Drop In Clinics** – The Aberdeen Vaccination & Wellbeing Hub are open to pre-school drop ins on Tuesdays, Thursdays and Saturdays to support people new to area to drop in, check their vaccine history and commence their vaccine schedule.

Family Health & Wellbeing Day

In July 2024, the Aberdeen City Team held a Free Family Health & Wellbeing Day. **548** people attended the event – 67% children and 33% Adults. This day was aimed at bringing together health, social care, third sector and voluntary organisations under one roof to provide health & wellbeing support to children & families. This included:

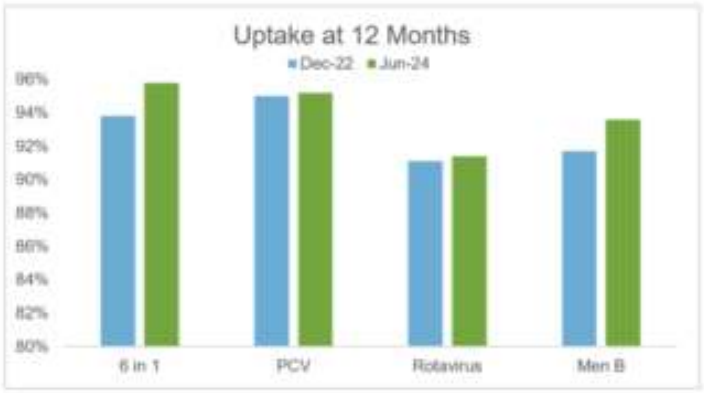
- Childsmile promoting Oral Care with puppet demonstrations.
- Healthy Eating and active lifestyles promoted by Home Start, PEEP, Aberdeen Football Club Community Trust, Sport Aberdeen and Aberdeen Sports Village.
- Health Visitors were providing information and children's heights and weights.
- Aberdeen City Libraries were promoting their services and taster bookbug sessions,
- Early Years Education and the School Nursing Teams promoting services.
- WeToo attended to promote their Inclusive "What's on Guide"
- Public Health & Anchor Unit provided an NHS Screening promotion stall.
- The vaccination team were promoting immunisations & the Vaccination & Wellbeing Hub
- Home Energy Scotland were providing cost of living advice and the CFINE Safe Team supporting around benefits and access to food.
- Aberdeen in Recovery promoted recovery peer support and Naloxone Training.
- Entertainment was provided by "Your Love Rara" with face painting and glitter tattoos and dancing performances and Mascots from AFCCT and our very own Ninja Turtle and Pickachu.

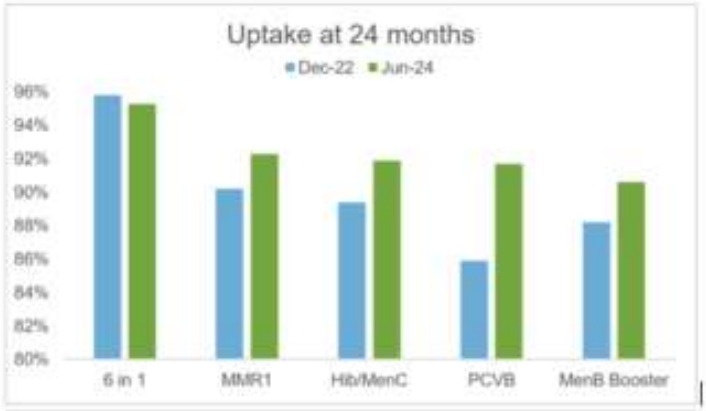
Teddy Bear Hospital

At this event, the Childhood Immunisation Team ran a "Teddy Bear Hospital" where the team arranged a fun education and dress up session about protecting their teddies against "Bearsles" (Teddy Bear Measles) before being offered to head through to the vaccination pod for a conversation & possible vaccination. Children who are regularly "not brought" or on the "Queue list" were invited to attend. A total of 14 children were vaccinated with a total of 27 vaccines administered between them. The families were from AB24 and AB16 postcodes of Aberdeen City covering Old Aberdeen, Kittybrewster, Hilton, Tillydrone, Sheddocksly and Woodside. Of these children, many had been not brought for over 3 previous appointments and one family had been not brought on over 20 occasions which was seen as the biggest success of the day.

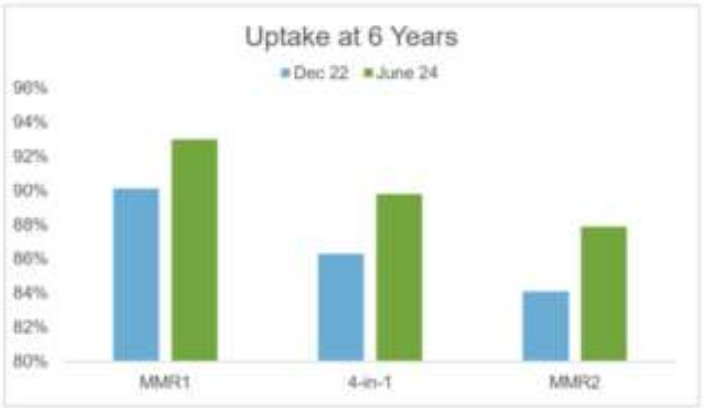
Outcomes

Overall since December 2022 when concerns were raised about uptake rates for Childhood Immunisations within Aberdeen City, uptake rates have increased overall across the board. The impact of the family health & wellbeing day will not be seen until the December 2024 report. The service continues to see lower uptake rates of between 88% - 90% for 4 in 1 and MMR 2nd dose vaccinations (albeit there have been increases in uptake). Further actions will focus on these areas going forward as a priority.


Uptake at 12 Months
Dec-22
Jun-24
96%
94%
92%
90%
88%
86%
84%
82%
80%
6 in 1
PCV
Rotavirus
Men B


Uptake at 24 months
Dec-22
Jun-24
96%
94%
92%
90%
88%
86%
84%
82%
80%
6 in 1
MMR1
Hib/MenC
PCVB
MenB Booster


Uptake at 5 Years
Dec 22
June 24
96%
94%
92%
90%
88%
86%
84%
82%
80%
6 in 1
MMR1
Hib/MenC
4-in-1
MMR2


Uptake at 6 Years
Dec 22
June 24
96%
94%
92%
90%
88%
86%
84%
82%
80%
MMR1
4-in-1
MMR2

9.2. Spotlight on Moray 2023-24

Spotlight

On Moray: A patient centred approach with inequalities a part of everything we do

After a successful time in the Fiona Elcock Vaccination Centre, 2024 saw vaccination services move into a new home at the Moray Vaccination Centre at Southfield Drive, Elgin. However, as a rural part of Grampian, the Moray team adapt delivery to bring vaccination to as many as possible.

The team has an everyday, integrated approach to inequalities and barriers to vaccination.

Those who do not attend for pre-school appointments are contacted by staff who try to identify difficulties citizens have encountered bringing their children to appointments. Deprivation has been highlighted as a barrier to attendance with costs and accessibility of transport a common factor.

Moray review areas with poor uptake for programmes and arrange outreach clinics in these areas. There is currently a lack of suitable locations for outreach clinics. The venues they used in the Covid pandemic are now in regular use for community activities so availability is limited.

One solution to this is using the mobile bus which functions as a temporary vaccination clinic. Often, the areas with poor uptake are those with more socio-economic deprivation. The bus is popular and citizens do attend for vaccination. Colleagues in the Scottish Ambulance Service (SAS) support with clinics in more remote areas.

The team opens up outreach clinics for over 75s when there are residents needing vaccination and unable to travel. Those who are housebound are visited at home.

Children's clinics are in GP surgeries wherever possible and if residents can't come to clinics the children's team will make arrangements for home vaccinations, if possible.

Phone calls are made to non attenders for non-routine vaccinations and for parents of school aged children when consent forms are not returned (although not for the flu campaigns). Feedback has shown that Muslim residents prefer not to attend during Ramadan so appointments are rescheduled at request. The same is true for vaccinations given in schools when staff will return to school after Ramadan to vaccinate children who missed their vaccinations for any reason..

Challenges

- Change from a mostly mass vaccination pandemic model to a business as usual more person and community centred model
- Overall reduction in resources
- Staff whose short term contracts are ending are not being replaced
- Increasing demand for those who require home visits

10. **Planned changes and Horizon Scanning for Programme**

10.1. Implementation of SVIP Strategic Framework and GVIP Strategic Framework

10.2. Development of national business case for new digital system to handle vaccination business from appointing to reporting.

10.3. The below table provides a summary of forthcoming planned and proposed schedule changes which will require teams to adapt delivery models.

Programme	Changes (proposed/approved)
Childhood	• The JCVI advised that the following changes should come into effect nationally once the current supply of the Hib/MenC vaccine has been used: a. An additional dose of Hib-containing multivalent vaccine such as the 6in1 will be given at 18 months (to replace the Hib dose at 12-13 months). The 18-month appointment will be an additional vaccination appointment in the national schedule. b. From 2025, JCVI are recommending the second dose of MMR vaccine be brought forward from 3 years 4 months to 18 months of age. The rationale for delivering the vaccine earlier is to complete the course at an earlier age and therefore further reduce the likelihood of measles outbreaks. c. In addition, the JCVI issued a statement recommending the introduction of a universal varicella vaccination to the routine schedule. It is advised this will be a 2-dose programme offered at 12 and 18 moths of age using the combined MMRV (measles, mumps, rubella and varicella) vaccine. A catch-up programme will also be initiated to prevent a gap in immunity. d. Due to the success of the adolescent MenACWY programme in controlling meningococcal C disease across the population a dose of meningococcal C containing vaccine is no longer recommended at 12 months.
	• A SLWG has been established to inform effective planning, and timely delivery of the schedule changes within the childhood programme.
	• Implementation date for the new Child Health System to replace Scottish Immunisation Recall Systems (SIRS) is now June 2025.
Adult	• JCVI advice is that the Shingrix programme for Shingles should be expanded further to include all severely immunosuppressed adults over the age of 18 and to older people 80 and over. They also advise this would be offered to people who have already been eligible for of completed vaccination with Zostavax
Seasonal	• COVID 19 programmes for Summer and Winter are reaching a steady state. We await final JCVI advice for Autumn Winter 2025 and Spring 2026. It is anticipated that the eligible groups will be reduced, however, this is dependent on cost effectiveness analysis once the current vaccine supply arrangements have ceased.

	• Pregnant women are not included in JCVI advice for future population covid-19 vaccine programmes from Autumn Winter 2025 nor are health and social care workers • Poultry workers are again eligible for influenza vaccination in the Autumn Winter programme for 2024/25 as a response to Avian Influenza. This offer will likely be greater than last year as SGs new register for kept birds will be used to identify poultry workers at risk. Asylum seekers are included in the flu offer for the first time in 2024. • RSV is our new programme for 2024. Currently it is a once only dose for adults and is repeated in every pregnancy to give passive immunity to infants. Once this programme has been evaluated for effectiveness and safety, it is possible that changes will be made to the schedule and eligibility groups.
Epidemic planning	• 2023/4 has seen an uptick in Whooping Cough, tuberculosis, measles and MPox. Vaccination services need to be able to flex in the event of an unexpected large outbreak or epidemic.

11. Conclusions

11.1. This report has highlighted the findings from the surveillance data on vaccine preventable disease in Grampian, as well as vaccine uptakes across childhood, school age and adult programmes in Grampian. The data within the report demonstrates low incidence rates of most vaccine preventable diseases in Scotland and Grampian.

11.2. We continue to achieve good coverage in our vaccination programmes, however there is a growing concern in relation to a decline in uptake trends.

11.3. We will work on maximising uptake especially among populations facing health inequalities.

11.4. We will implement the new Strategic Frameworks, Standards and Equity plan over the next 12 months.

12. Acknowledgements

The NHS Grampian public health directorate would like to thank everyone who works so hard across the Grampian system to ensure that the population is protected against vaccine preventable diseases by working to ensure that we maintain a high vaccine coverage.

13. Feedback

As this is our second annual report, we would welcome feedback on the content of this report so that we can make improvements for future reporting. Please contact us directly with any feedback at: gram.vaccineenquiries@nhs.scot

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10. Invasive cervical cancer incidence following bivalent human papillomavirus vaccination: a population-based observational study of age at immunization, dose, and deprivation - PubMed
11. Measles https://www.who.int/news-room/fact-sheets/detail/measles
12. National quarterly report of tuberculosis in Scotland: quarter 1, 2024 - National quarterly report of tuberculosis in Scotland - Publications - Public Health Scotland

15. Appendices

15.1 Appendix 1: Routine childhood and adult immunisation schedule

The complete routine immunisation schedule — **From September 2023**

Age due	Diseases protected against	Vaccine given and trade name		Usual site[1]
Eight weeks old	Diphtheria, tetanus, pertussis (whooping cough), polio, *Haemophilus influenzae* type b (Hib) and hepatitis B	DTaP/IPV/Hib/HepB	Infanrix hexa or Vaxelis	Thigh
	Meningococcal group B (MenB)	MenB	Bexsero	Left thigh
	Rotavirus gastroenteritis	Rotavirus[2]	Rotarix[2]	By mouth
Twelve weeks old	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B	DTaP/IPV/Hib/HepB	Infanrix hexa or Vaxelis	Thigh
	Pneumococcal (13 serotypes)	Pneumococcal conjugate vaccine (PCV)	Prevenar 13	Thigh
	Rotavirus	Rotavirus[2]	Rotarix[2]	By mouth
Sixteen weeks old	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B	DTaP/IPV/Hib/HepB	Infanrix hexa or Vaxelis	Thigh
	MenB	MenB	Bexsero	Left thigh
One year old (on or after the child's first birthday)	Hib and MenC	Hib/MenC	Menitorix	Upper arm/thigh
	Pneumococcal	PCV booster	Prevenar 13	Upper arm/thigh
	Measles, mumps and rubella (German measles)	MMR	MMRvaxPro[3] or Priorix	Upper arm/thigh
	MenB	MenB booster	Bexsero	Left thigh
Eligible paediatric age groups[4]	Influenza (each year from September)	Live attenuated influenza vaccine LAIV[3,6]	Fluenz Tetra[3,6]	Both nostrils
Three years four months old or soon after	Diphtheria, tetanus, pertussis and polio	dTaP/IPV	Boostrix-IPV	Upper arm
	Measles, mumps and rubella	MMR (check first dose given)	MMRvaxPro[3] or Priorix	Upper arm
Boys and girls aged twelve to thirteen years	Cancers and genital warts caused by specific human papillomavirus (HPV) types	HPV[5]	Gardasil 9	Upper arm
Fourteen years old (school Year 9)	Tetanus, diphtheria and polio	Td/IPV (check MMR status)	Revaxis	Upper arm
	Meningococcal groups A, C, W and Y	MenACWY	Nimenrix	Upper arm
65 years old	Pneumococcal (23 serotypes)	Pneumococcal Polysaccharide Vaccine (PPV23)	Pneumovax 23	Upper arm
65 years of age and older	Influenza (each year from September)	Inactivated influenza vaccine	Multiple	Upper arm
65 from September 2023[7]	Shingles	Shingles vaccine	Shingrix	Upper arm
70 to 79 years of age (plus eligible age groups and severely immunosuppressed)[7]	Shingles	Shingles vaccine	Zostavax[3,7] (or Shingrix if Zostavax contraindicated)	Upper arm

Source: The complete routine immunisation schedule from September 2023 (publishing.service.gov.uk)

Selective immunisation programmes			
Target group	**Age and schedule**	**Disease**	**Vaccines required**
Babies born to hepatitis B infected mothers	At birth, four weeks and 12 months old[1,2]	Hepatitis B	Hepatitis B (Engerix B/HBvaxPRO)
Infants in areas of the country with TB incidence >= 40/100,000	Around 28 days old[4]	Tuberculosis	BCG
Infants with a parent or grandparent born in a high incidence country[3]	Around 28 days old[4]	Tuberculosis	BCG
Children in a clinical risk group	From 6 months to 17 years of age	Influenza	LAIV or inactivated flu vaccine if contraindicated to LAIV or under 2 years of age
Pregnant women	At any stage of pregnancy during flu season	Influenza	Inactivated flu vaccine
	From 16 weeks gestation[5]	Pertussis	dTaP/IPV (Boostrix-IPV)

Additional vaccines for individuals with underlying medical conditions		
Medical condition	**Diseases protected against**	**Vaccines required[1]**
Asplenia or splenic dysfunction (including due to sickle cell and coeliac disease)	Meningococcal groups A, B, C, W and Y Pneumococcal Influenza	MenACWY MenB PCV13 (up to 10 years of age)[2] PPV23 (from 2 years of age) Annual flu vaccine
Cochlear implants	Pneumococcal	PCV13 (up to 10 years of age)[2] PPV23 (from 2 years of age)
Chronic respiratory and heart conditions (such as severe asthma, chronic pulmonary disease, and heart failure)	Pneumococcal Influenza	PCV13 (up to 10 years of age)[2] PPV23 (from 2 years of age) Annual flu vaccine
Chronic neurological conditions (such as Parkinson's or motor neurone disease, or learning disability)	Pneumococcal Influenza	PCV13 (up to 10 years of age)[2] PPV23 (from 2 years of age) Annual flu vaccine
Diabetes	Pneumococcal Influenza	PCV13 (up to 10 years of age)[2] PPV23 (from 2 years of age) Annual flu vaccine
Chronic kidney disease (CKD) (including haemodialysis)	Pneumococcal (stage 4 and 5 CKD) Influenza (stage 3, 4 and 5 CKD) Hepatitis B (stage 4 and 5 CKD)	PCV13 (up to 10 years of age)[2] PPV23 (from 2 years of age) Annual flu vaccine Hepatitis B
Chronic liver conditions	Pneumococcal Influenza Hepatitis A Hepatitis B	PCV13 (up to 10 years of age)[2] PPV23 (from 2 years of age) Annual flu vaccine Hepatitis A Hepatitis B
Haemophilia	Hepatitis A Hepatitis B	Hepatitis A Hepatitis B
Immunosuppression due to disease or treatment[4]	Pneumococcal Shingles vaccine Influenza	PCV13 (up to 10 years of age)[2,3] PPV23 (from 2 years of age) Shingrix – over 50 years of age[5] Annual flu vaccine
Complement disorders (including those receiving complement inhibitor therapy)	Meningococcal groups A, B, C, W and Y Pneumococcal Influenza	MenACWY MenB PCV13 (up to 10 years of age)[2] PPV23 (from 2 years of age) Annual flu vaccine