

Scotland's 5-year Vaccination and Immunisation Strategy and Delivery Plan

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Scottish Vaccination and Immunisation Programme



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Foreword

We are delighted to announce the publication of Scotland's 5-year Vaccination and Immunisation Strategy, providing clear direction on our collective mission, vision, goals, and priority areas. We are mindful that this strategy is produced following the Covid-19 pandemic challenging times, and in the middle of the current cost of living crisis, and an upsurge in pertussis/whooping cough cases in 2024, and all these have significant impacts on our NHS, our partners, and most importantly the community we serve.

Immunisation is our largest co-ordinated public health programme, and as a public health intervention, it is globally recognised as being second only to clean water in terms of its transformative impact. Furthermore, immunisation enables us to save lives, prevent illness, reduce inequalities, and relieve health and social care pressures, and given its wide-ranging impacts on health outcomes, immunisation should be a central consideration in any population health programme.

Scotland has a strong track record in immunisation, achieving high coverage, and we must continue to do all we can to ensure the public health benefits of vaccination are realised. We want to deliver a world-class, person-centred and public health led programme. This five-year strategy-sets out the goals, principles and priorities that will enable us to deliver this vision to meet the needs of everyone in Scotland focussing our efforts to maximise the health benefits of vaccination and reduce health inequalities. This document and associated work, play a vital role in contributing to Scottish Government-led reform of health and social care, delivered through the Population Health plan.

The strategy is for five years and is being published now in line with the launch of the Scottish Vaccination and Immunisation Programme. The strategy aims to deliver a successful vaccination and immunisation programme against our four priority areas outlined below, by:

1. *Ensuring everyone has equitable access* to the vaccines they are entitled to receive and that all reasonable steps are taken to meet the needs of all our communities.
2. *Making every contact and interaction count* and optimise patient / public experience and engagement.
3. *Strengthening capacity and capability* of the multi-disciplinary vaccination workforce and ensure that resources can be used flexibly to meet changing requirements.
4. *Adapting system-wide approach* to achieving NHS Scotland and Public Health Scotland quality ambitions of being safe, effective, sustainable, and patient centred immunisation services across all settings.

The above priorities of the strategy are focussed on people and meeting their needs, with a particular emphasis on ensuring equitable access and uptake, for there are groups in our society who remain unvaccinated or under vaccinated and at higher risk of vaccine preventable disease. We must strive for inclusion, as this is not a choice but a necessity for population health. Achieving this also requires efficient use of resources and strong system enablers including within leadership, communication, governance, and digital systems.

This strategy has been developed in a participative and collaborative process involving all relevant stakeholders. Immunisation is at the centre of our national mission as it makes a significant contribution to population health by protecting people from harm which is one of the three key national priorities. So, this strategy is for everyone working within immunisation and for the people of Scotland to know what they can expect from us, and to understand that their contribution matters.

The strategy contains an outline of the delivery plan which is focused on the outcomes of increasing vaccination uptake, tackling inequality, and improving population health. There is a committed immunisation community across Scotland, who work hard to protect the people of Scotland.

The dynamic nature of vaccination and immunisation programme entails a steady introduction of new vaccines into the programme such as vaccines against Respiratory Syncytial Virus (RSV), varicella, and gonococcal infection for at risk individuals. All these bring about their own challenges not least programme delivery and financial challenges, however, their added value to enhancing population health by reducing morbidity and mortality from infectious diseases, reducing health inequalities, reducing NHS pressures and long-term saving on precious NHS resources cannot be overemphasised.

We all need to work together to continue to make an even bigger and real difference, as every vaccination administered is a potential illness averted or life saved, and this strategy provides us with the opportunity and focus to do so at a larger scale.

We would like to thank to all of those who contributed to the development of strategy, particularly NHS Board Immunisation Coordinators, PHS Vaccination and Immunisation staff, Scottish Government colleagues, and all those who contributed to the strategy task and finish groups. We would also like to extend our thanks to members of SVIP Vaccine Strategy and Planning Group for their helpful comments, and to Alan Gray for his invaluable input in reframing the structure of the strategy.

We look forward to working with you all over the coming months and years as we work together to prevent illness and improve health outcomes of the people of Scotland.

Christine McLaughlin, Co-Director of Population Health, Scottish Government

Dr Nick Phin, Director of Public Health Science, Public Health Scotland

Scottish Vaccination and Immunisation Programme, Strategy and Planning Group, Joint Chairs

1. Background

Vaccination is one of the most effective public health interventions and ranks second only to clean water as the most effective public health intervention to prevent disease.

Our vaccination programme of life course and seasonal vaccination programmes prevent diseases that were previously common and now seldom occur. Scotland's Vaccination and Immunisation Programme (SVIP) performs well in delivering a comprehensive range of vaccinations which have and continue to transform outcomes for our population from childhood through to our later years, preventing serious illnesses, disability, and deaths from deadly infectious diseases.

An overview of the comprehensive programme of childhood, young persons, and adult vaccination and immunisation programme is set out in Appendix C. In recent years developments in the programme have seen:

- The rollout of population wide **COVID-19 vaccination programme** in response to the global pandemic and this has averted over 27,000 deaths in its first year in Scotland
- **Meningitis vaccines** continue to prevent high consequence meningococcal meningitis that are now rare infections
- **Rotavirus vaccine** continues to reduce NHS system pressures at every level – hospitalisations, accident and emergency attendances, GP consultations, NHS 24 calls, medical prescriptions with excellent cost impact
- **HPV immunisation** programme continues to prevent invasive cervical cancer for women immunised at 12/13 years of age
- Extension of effective **vaccination programme against shingles and post-herpetic neuralgia (PHN)** to all adults turning 65, those aged 70 to 79 and those aged 50 and over with a severely weakened immune system

With new vaccines in the pipeline, there are imminent introductions of further changes to the programme with inclusion of vaccines for Respiratory syncytial virus (RSV) and chickenpox. The delivery of the vaccine programme is based on building and retaining a trained and skilled workforce, investing in the infrastructure to support the programme and an effective and trusted partnership with the people of Scotland.

For Scotland's 5-year Vaccination and Immunisation to achieve its goals (improving vaccine uptake, reducing inequalities and averting illnesses), we need to:

- **optimise levels of uptake** and take appropriate steps to **achieve equity of access** where uptake is lower than expected, particularly where there is a significant variation across different communities that reflect wider health inequalities;
- continue to **integrate all the elements of the vaccination programme** and ensure that this is underpinned by the appropriate workforce resources and data, evidence and technology infrastructure that meets our clinical governance and vaccination record needs; and
- continue to **be flexible to respond to future challenges and introduction of new vaccines**, recognising the nature of diseases vaccines can prevent.

The Delivery Plan is focused on the outcomes of increasing **vaccination uptake and coverage**, as well as improving population health, every vaccination administered is a **potential illness averted or life saved**.

2. Scotland's 5-year vaccination and immunisation strategy

2.1 Mission and vision

- Our **mission** is to deliver a world-class, person-centred and public-health led vaccination and immunisation service.
- Our **vision** is to develop immunisation services that are designed and delivered in ways that meet the needs of all groups in society, maximising the health benefits and reducing health inequalities.

2.2 Goals

Our goals are to:

- **Improve vaccination uptake rates** to reach population protection thresholds across all age groups, in all communities (including communities from deprived areas/underserved populations).
- Ensure availability of a range of **flexible, responsive, and good quality immunisation services** that meet the needs of all communities.
- **Reduce, and eventually eliminate the inequalities** in vaccination and immunisation outcomes across key population groups.
- **Reduce morbidity and mortality from vaccine preventable diseases** (VPDs) in the most vulnerable members of our communities.
- Reduce the proportion unvaccinated or partially vaccinated individuals in all communities consistently, resulting a significant **reduction and/or elimination of VPDs in Scotland**.

Details of how we achieve our vaccination and immunisation strategic goals and realise our vision and mission for Scotland are outlined next in sections 3 (Delivery Plan: - aim, outcomes and governance), section 4 (Delivery Plan: strategic links and priorities), appendix A (delivering priorities), and appendix C (enabling actions).

3. Delivery Plan – aim, outcomes, and governance

3.1 Introduction

The values and benefits of vaccination as one of the most impactful public health interventions is evidence based and well-documented.^{1,2}

Vaccine preventable diseases cause significant morbidity [severe illness, hospitalisation, and long-term illness (including cancer) and mortality].³ The most prominent impact of vaccination in reducing or preventing severe illness, hospitalisation and death was demonstrated during the pandemic by COVID-19 vaccines which continue to make a significant contribution in preventing the spread, and control of SARS-CoV-2 outbreaks and epidemics.^{4,5,6} The other significant benefit of vaccination that is less publicised is its impact on antimicrobial resistance (AMR).^{7,8}

Outcomes	Target
Uptake	Improvement in vaccination uptake rates to reach population protection threshold across all age groups, in all communities (including communities from deprived areas and underserved populations)
Inequalities	Reduce vaccine and health inequalities through designing and delivering immunisation services that meet the needs of those who are eligible no matter where they live or who they are (including those with protected characteristics under the Equality Act 2010).
Illness averted	An overall reduction in the rates of all vaccine preventable diseases in Scotland and reduction in morbidity and mortality from vaccine preventable diseases in the most vulnerable groups in Scotland

Improving vaccination uptake rates, therefore, will prevent the spread of diseases in populations, especially in those that are most vulnerable due to their age (the very young/old), other co-morbidities, and other factors that make them vulnerable to infection and serious illnesses. Further extended benefits of vaccination include reducing school and workplace sickness absences, reducing NHS pressures, and saving precious NHS and other statutory and non-statutory agencies resources.

3.2 Aim and outcomes

This Delivery Plan for the provision of safe and effective, sustainable immunisation services across Scotland aims to support delivery of our national priorities. It will help optimise the contribution of the Scottish Government, NHS Boards, and other stakeholders to achieve the objectives of the vaccination programme and to make a lasting contribution to the overall long-term public health plan for Scotland. It sits in the context of the wider reform of health and social care being undertaken by the Scottish Government and partners through the Population Health Plan. Furthermore, the Delivery Plan aims to meet the ambitions of the NHS Scotland Climate Emergency and Sustainability Strategy⁹ – contributing to the reduction of greenhouse gas emissions and reducing the negative impact on the environment, adapt to climate change and contribute to the United Nation sustainable development goals. The Plan also supports our shared aspiration to tackle the recent decline in vaccination uptake rates, mitigate existing health inequalities and improve coverage, and ensure the following key outcomes of the Scotland's Vaccination Transformation Programme are realised:

Achievement of these outcomes will be monitored collectively by NHS Boards and Public Health Scotland and supported by the key delivery priorities and enabling actions set out within this plan.

3.3 Governance and responsibility

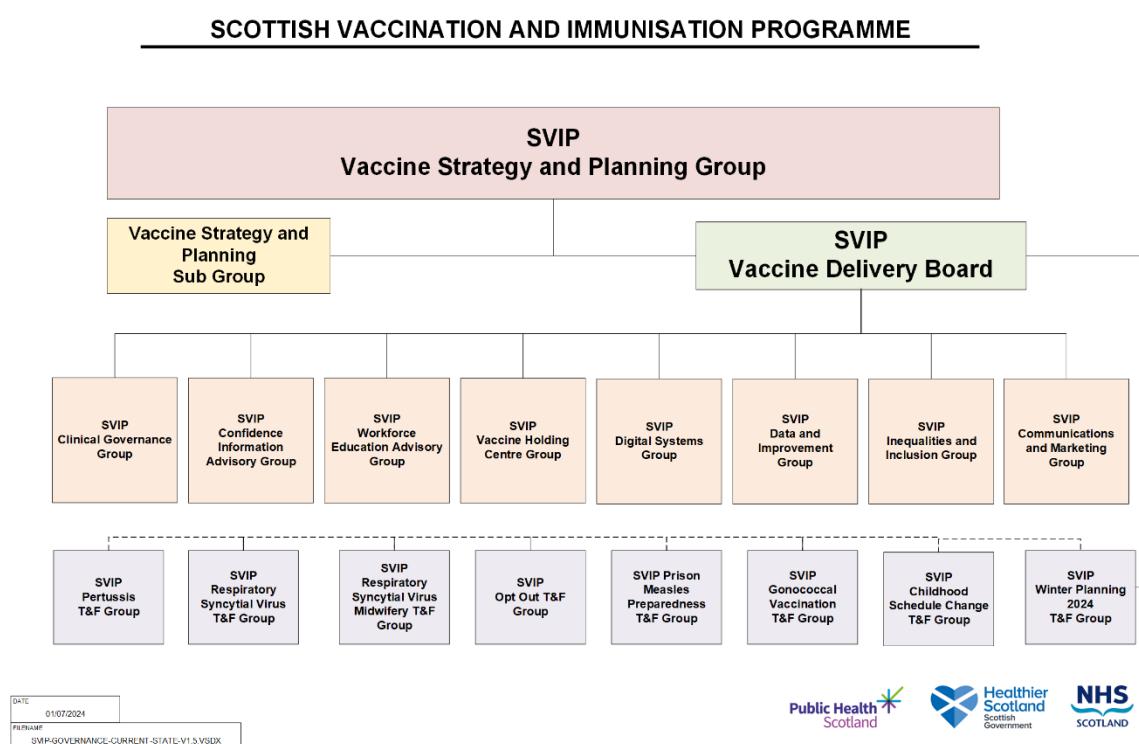
3.3.1 Policy

Immunisation policy in Scotland is set by the Scottish Government Health Directorates on the advice of the Joint Committee of Vaccinations and Immunisations (JCVI) and other appropriate bodies. The JCVI:

- assesses evidence and makes recommendations for all immunisation programmes
- advises the UK Government and the NHS in the 4 UK nations about all aspects of immunisation
- supports implementation of all immunisation programmes

3.3.2 Oversight

The Scottish Vaccination and Immunisation Programme will be overseen by the SVIP Vaccine Strategy and Planning Group which is jointly chaired by Scottish Government and Public Health Scotland and includes representation from across professionals and agencies supporting delivery. The Group is sponsored by the Scottish Government Director of Population Health. An overview of the oversight arrangements are set out below:



3.4 Lead responsibility

Public Health Scotland Vaccination and Immunisation Division has lead responsibility for Scotland's world class, public health led and person-centred vaccination and immunisation programme and facilitating the sharing of knowledge and best practice on vaccination delivery across Scotland.

Public Health Scotland work closely with national health protection specialists and local NHS Board Immunisation coordinators to support the public with information about vaccines offered in the Scottish Immunisation Programme.

3.5 Operational delivery

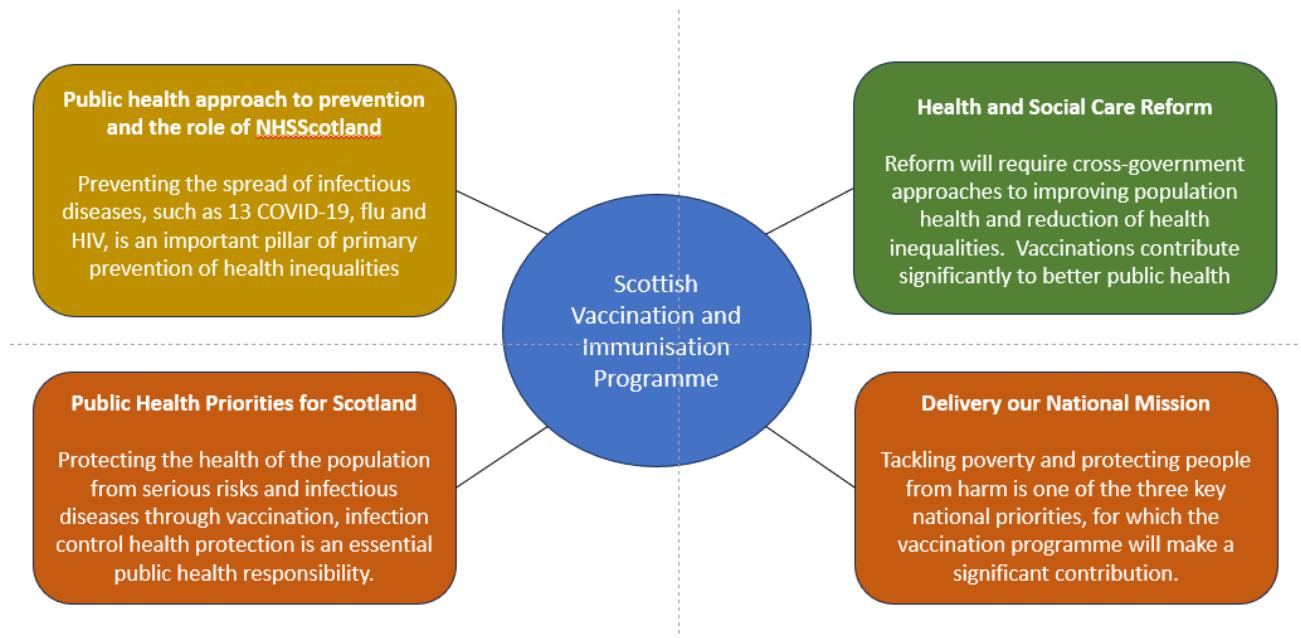
The programme is delivered in partnership with NHS Boards, Integration Joint Partnerships, and the Scottish Government all of whom have been engaged in developing this Delivery Plan.

4. Delivery Plan – strategic links and priorities

4.1 Strategic links

The vaccination and immunisation programme is central to the delivery of key outcomes set out within wider NHS Scotland strategies.

In fulfilling the outcomes and priorities set out within this delivery plan, the programme will be making a significant contribution as summarised below:



The population of Scotland benefits from vaccination services that are safe, effective, and sustainable, preventing deaths from infectious diseases and reducing hospital admissions. The routine vaccination and immunisation programme, as well as targeted NHS vaccination immunisation programmes, now protect against diseases that were once responsible for significant morbidity and mortality.

In these respects, the programme is one of the most effective preventative interventions we have and it is important that we have a robust delivery plan, agreed priorities and actions to continue to protect the population and ensure that we optimise the benefits to be delivered from vaccines available and approved for use.

4.2 Key delivery priorities

To achieve the outcomes set out within this delivery plan the actions that we will be taking will be based on the following priorities:

- **Priority One:** We aim to ensure that **everyone has equitable access** to the vaccines they are entitled to receive and that all reasonable steps are taken to reflect the needs of different communities and individuals.
- **Priority Two:** We aim to make **every contact and interaction count** and optimise patient / public experience and engagement.
- **Priority Three:** We aim to **strengthen capacity and capability** of the multi-disciplinary vaccination workforce and ensure that resources can be used flexibly to meet changing requirements and introduction of new vaccines.

- **Priority Four:** We aim to have a **system-wide approach** to achieving PHS and NHS Scotland quality ambitions of being safe, effective, sustainable, and patient centred immunisation services across all settings.

The actions contributing to these priorities are set out in detail in Appendix A.

4.3 Enabling actions

In support of the above priorities, we will implement the following enabling steps:

- We aim to develop an **end-to-end digital solution** that provides a single, accessible vaccination record for Scottish citizens and healthcare professionals.
- We aim to develop an **effective communication strategy** with clear marketing and engagement approaches.
- We will aim to **use available resources more efficiently** to continue to deliver a sustainable vaccination and immunisation service; improve NHS Boards' ability to plan and use resources flexibly; and improve the interaction between different health programmes and systems.
- We aim to establish systems and processes within SVIP governance arrangements that **support consistent, transparent, and inclusive decision-making process**.
- We aim to establish a **strong system leadership** across all vaccination and immunisation programmes by developing a framework for clarifying roles and responsibilities of the different partner organisations.

The actions contributing to these enabling steps are set out in detail in Appendix B.

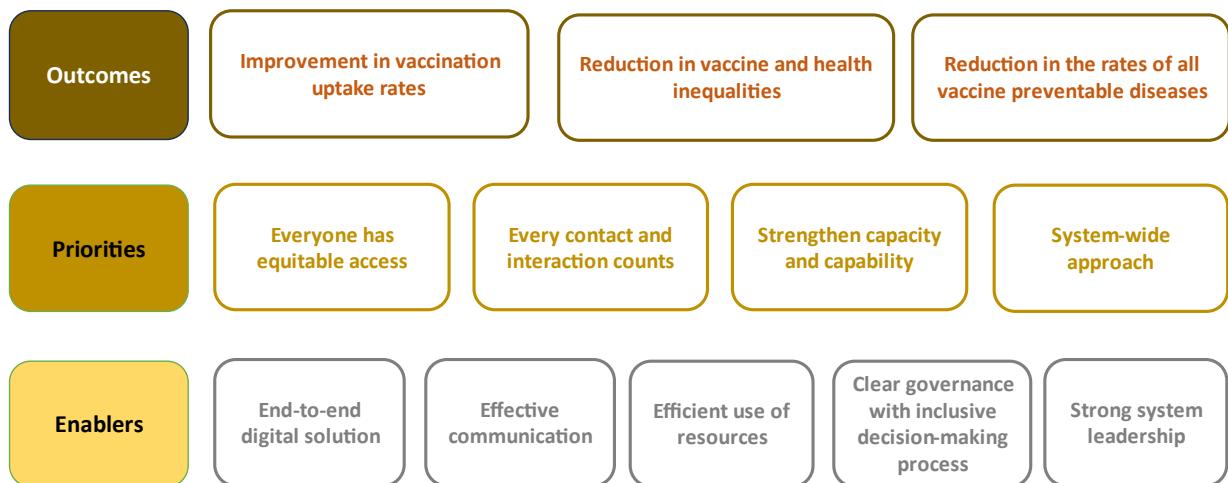
5. Summary

The outcome, priorities and enabling actions that this Delivery Plan is founded builds on the significant work that has been undertaken across health and social care to deliver at scale an effective vaccination and immunisation programme.

The comprehensive programme of vaccinations and immunisation that we provide are central to our ambition to improve population health and eliminate or significantly reduce the impact of those diseases which the programme can offer protection against. These vaccination and immunisation programmes save lives and are delivered in partnership with our skilled and dedicated teams and the population coming forward to benefit from the vaccinations they are entitled to receive.

Through working together, we can support the delivery of an increasing set of prevention services as new vaccines are developed and be prepared for future threats of vaccine preventable diseases and pandemics.

The delivery plan as summarised below is aimed at providing equitable access to the programme and its benefits and to tackle persistent and unacceptable health inequalities.



6. Next Steps

Week commencing 8 July 2024

- Draft to be shared with SVIP Strategy and Planning Group for final comments
- Draft for wider circulation to Delivery Board, sub groups and wider consultation across all key stakeholders with 6 week consultation period (deadline for comments 23 August 2024).

Week commencing 9 September 2024

- Final Delivery Plan prepared for publication and will go for final approval with SVIP Strategy and Planning Group.

Publication of the final delivery plan

- End of September 2024.

Implementation timescale

In 2024/25 we will begin to implement some of the actions in this strategy. These include:

- Wider engagement with relevant partners in developing an implementation action plan at national (PHS VAID) and local (NHS Boards) levels
- PHS VAID developing details on the governance and leadership aspects to clarify roles and responsibilities of PHS and key partners
- PHS VAID facilitating active engagement of relevant partners around the digital business case

Monitoring and Implementation of the delivery plan

To support the appropriate allocation of resource and alignment of Scottish Government, Public Health Scotland, and NHS Boards public health priorities, PHS Vaccination and Immunisation Division will undertake an annual review of this Strategy against the following criteria:

- SG public health policy and strategic priorities
- PHS Vaccination and Immunisation Delivery plan and priorities
- NHS Boards Vaccination and Immunisation local strategies, priorities, and action plan and/or objectives identified within their respective integrated public health strategies / business plans
- Health and Social Care Partnerships delivery achievements in service quality improvement, improvements in uptake and outcomes, particularly in underserved populations
- Outputs contribute explicitly to resolution/mitigation of known SG, PHS and NHS Boards risks and issues
- Outputs likely to contribute to improvements (for example efficiency, quality, health output, health inequalities)

The annual review will support the prioritisation of programme area activities and resources.

Providing feedback

We would welcome general feedback on the overall contents of the draft strategy and delivery plan. Please send comments to phs.vaccination@phs.scot marked for attention of Linda Moan.

Appendix A: Delivering our priorities in collaboration - actions

Priority One: We aim to ensure that everyone has equitable access to the vaccines they are entitled to receive and that all reasonable steps are taken to reflect the needs of different communities and individuals.	
Commitment	How we will deliver (and by whom)
We will have an immunisation service which supports timely, equitable and high vaccine uptake to protect our population from vaccine preventable diseases.	<ul style="list-style-type: none"> ○ We will ensure that protected characteristics and wider drivers of low uptake (such as poverty) are at the heart of immunisation programme design and delivery (NHS Boards and Integrated Joint Boards [IJBs]). ○ We will ensure a universal service is available as well as tailored services for under vaccinated groups to achieve equitable uptake (e.g. employ different strategies for those who regularly 'Do Not Attend' appointments). (NHS Boards and IJBs). ○ We will write inclusive national and local strategy and service plans, ensuring an appropriate level of resource is committed to inclusion activity to address the Inverse Care Law. (Scottish Government) ○ We will undertake Health Impact Assessments for all vaccine programmes and use these to inform service design and improvements to support equitable uptake (Public Health Scotland).
We will integrate people-centred research and behavioural insights into immunisation programme planning and policy.	<ul style="list-style-type: none"> ○ We will use research and behavioural insights to develop appropriate (targeted and tailored) services for groups with lower vaccine uptake (Public Health Scotland). ○ We will ensure relevant stakeholders, including community and voluntary sector, are involved in all stages of this process (NHS Boards and IJBs). ○ We will adopt the World Health Organization's Tailoring Immunisation Programme approach (Public Health Scotland).
We will monitor inequalities trends in vaccine uptake currently and over time using the best available data, and gather insights from local, national and international evidence to understand and address inequities, e.g. protected characteristics and clinically at-risk groups. We will monitor and evaluate the impact of strategies to support maximal and equitable uptake.	<ul style="list-style-type: none"> ○ We will set realistic targets and standards for 2024-2029 (Scottish Government). ○ We will evaluate the impact of the Vaccination Transformation Programme on inequalities (Public Health Scotland). ○ We will develop a suite of outcomes to help us measure different factors affecting uptake over time for different vaccines and population groups (including attitudes towards vaccinations and practical enablers/barriers to uptake) (Public Health Scotland).
We will facilitate a research, evaluation, and insights collaborative to support timely sharing of best practice and evidence about how we better understand and then address inequities to inform service improvements.	<ul style="list-style-type: none"> ○ We will share learning across local and national stakeholders about how services can be tailored to meet the needs of patients/the public (Public Health Scotland). ○ We will distil key points and share these via the collaborative with service planners across Scotland to facilitate transferable learning and reduce duplication of effort (Public Health Scotland). ○ We will establish a historical record / national research repository (Public Health Scotland). ○ We will link with experts from across UK, Europe and internationally, to drive forward research, harnessing behavioural / marketing insights from different sectors (e.g. public, private and academia) (Public Health Scotland).

<p>We will collaborate with relevant stakeholders within and out with the health service (including Getting It Right For Everyone stakeholders) to address the social determinants of health via interaction with vaccination services and deliver services in a meaningful way that yields direct and indirect benefits.</p>	<ul style="list-style-type: none"> ○ Transport poverty, e.g. identifying best locations for delivery, advocate for transport subsidies or vouchers for individuals who need help getting to vaccination clinics (NHS Boards and IJBs). ○ Healthy eating, e.g. collaborate with food banks or 'community fridges' (NHS Boards and IJBs). ○ Housing, e.g. collaborate with housing authorities, homelessness shelters, and housing advocacy groups to reach individuals experiencing housing instability or homelessness (Scottish Government). ○ Education, e.g. Partner with schools, universities, and educational organizations to integrate vaccination services into school health programs and educational outreach efforts; offer clinics at colleges/universities to reach students and staff; provide educational materials/presentations on the importance of vaccination as a preventive health measure (Public Health Scotland). ○ Workplace and Job Centres, e.g. collaborate with anchor institutions, employers and trade unions as a mechanism to share messaging, and support employees with time off work to attend vaccine appointments or offer workplace clinics (NHS Boards and IJBs).
<p>We will educate trusted voices (vaccination champions) for different communities with appropriate information about vaccine programmes to help them to support two-way dialogue with the public to make informed decisions about immunisation.</p>	<ul style="list-style-type: none"> ○ We will work with different communities including grassroots, faith / community leaders, peer workers, health and social care professionals, etc. (NHS Boards and IJBs). ○ We will consider social marketing interventions for specific groups/communities (Public Health Scotland). ○ We will upskill the general workforce on the benefits of immunisation and build their confidence to have conversations with patients about vaccination (NHS Boards and IJBs).
<p>We will advocate for recurrent, sustained finance, resource, and governance to enable flexible and tailored approaches to reaching under-vaccinated populations, e.g. opportunistic vaccination and outreach.</p>	<ul style="list-style-type: none"> ○ Health Boards will build up local infrastructure to effectively leverage resources, expertise, and build community networks and assets to reach under-vaccinated populations (NHS Boards and IJBs). ○ Health Boards will work collaboratively with HSCPs / local authorities to allocate resources strategically to support vaccination efforts, e.g. streaming / pooling of resources, ensuring the Immunisation coordinator function is adequately resourced (NHS Boards and IJBs). ○ Vaccines will be delivered in convenient local places, with targeted outreach to support uptake in underserved populations, e.g. homelessness hubs, sexual health clinics, A&E depts, midwifery services, prison health, single-handed practices in remote and rural areas, health visitors in home, asylum, and immigration centres. ○ Bespoke outreach services should be tailored to communities that are un- or under-vaccinated, building trust and confidence (NHS Boards and IJBs).
<p>We will support and inform Scottish Government policy directives and incentives to enable/embed equitable programme delivery.</p>	<ul style="list-style-type: none"> ○ We will require annual delivery plan commitments around healthcare inequalities (i.e. to apply to both screening and immunisation) (Scottish Government). ○ We will establish dedicated inequalities champions for primary care and secondary care in each Health Board (NHS Boards and Public Health Scotland). ○ We will analyse the cost-benefit of investment in preventative spend to support budget discussions at both local and national levels. Analysis will be used to assess the benefit of allocating a greater percentage of resource to under-vaccinated groups. We will consider PHS guidance

	<ul style="list-style-type: none"> on how to apply a 'proportionate universalism' approach in practice (Public Health Scotland). We will inform SG policy by sharing evidence of how vaccines are best delivered to seldom-heard communities. Local planning groups will determine how baseline funding is best utilised to deliver equitable vaccine services (Public Health Scotland).
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<p>Priority Two: We aim to make every contact and interaction count and optimise patient / public experience and engagement</p>	
Commitment	How we will deliver (and by whom)
<p>Every contact with health and care services is an opportunity for professionals to have confident conversations about vaccines with patients and members of the public.</p>	<ul style="list-style-type: none"> We will develop standardised protocols and guidelines for discussing vaccines with patients outlining best practice for initiating vaccine conversations, addressing common concerns, myth-busting and providing evidence-based information (NHS Boards and Public Health Scotland). We will ensure these protocols are easily accessible, tailored to the roles of different professions and their patient/clients, and can be integrated into routine practice workflows in a range of settings, e.g. prisons, substance misuse services, pharmacies, social care services, care homes, primary care, in-patient, and out-patient services etc. (NHS Boards and Public Health Scotland). We will develop a system to record that an intervention has taken place, identifying themes to ensure our immunisation services are person-centred (NHS Boards and Public Health Scotland). We will educate our workforce about cultural competency and sensitivity to meet the diverse needs of people (NHS Boards and IJBs). We will explore policy levers to achieve this, e.g. higher education/ professional training requirements, workforce contracts, digital front door, etc (Public Health Scotland).
<p>People in Scotland (patients, public, staff) are empowered to actively participate in how immunisation services are designed and delivered to meet their individual needs.</p>	<ul style="list-style-type: none"> We will produce a stakeholder map for the Scottish Vaccination and Immunisation Programme and work with these stakeholders to agree acceptable and appropriate ways to engage with them/ the people they represent (Public Health Scotland). NHS Boards/Health and Social Care Partnerships (HSCPs) will enable the public (including those who are 'missing' from services) to make an informed contribution to service design and improvement activities by providing sufficient information and utilising tailored communication methods that are co-produced, where possible, with members of the public and other agencies (NHS Boards and IJBs). NHS Health Boards/HSCPs will actively engage with community leaders, faith-based organisations, schools and other stakeholders on an ongoing basis to disseminate accurate information about vaccines and address concerns within different communities (NHS Boards and IJBs). Community and voluntary sector agencies will be invited to participate in service design and improvement activities as intermediaries for their communities (NHS Boards and IJBs).
<p>At each stage of the immunisation programme, there will be an opportunity for</p>	<ul style="list-style-type: none"> We will prioritise seeking feedback from those who are missing from or have not engaged with our services and work with trusted community stakeholders to collect insights about attitudinal and

<p>stakeholders (patients/the public, their carers/advocates, community and voluntary sector, workforce, etc.) to provide feedback about their own / other people's experience in a range of accessible ways.</p>	<p>practical barriers to immunisation and what would help address these (Public Health Scotland).</p> <ul style="list-style-type: none"> ○ We will establish formal methods to routinely collect feedback about all vaccine programmes, such as research, polling, evaluation, telephone surveys (Public Health Scotland). ○ We will build digital tools to collect feedback to improve patient/public experience and provide alternative methods of engagement for those who are digitally excluded or have a preference for other feedback routes (NHS 24 Public Health Scotland). ○ We will gather feedback from a range of informal methods such as at vaccine clinics and via phone call (Public Health Scotland). ○ We will collate themes from all feedback received via multiple sources (e.g. vaccine confidence, location of clinics, transport links, communication of eligibility, etc.) and we will tell people how we will use their feedback (Public Health Scotland).
<p>We will ensure all relevant feedback is shared with appropriate local and national stakeholders in a timely manner to continually evaluate and improve our immunisation services.</p>	<ul style="list-style-type: none"> ○ We will establish mechanisms to share feedback nationally with all local and national vaccination service planners (Public Health Scotland). ○ We will develop a national set of standard questions to enable consistent comparisons, including those who haven't engaged with immunisation services (Public Health Scotland).
<p>We will ensure appropriate and consistent data capture of public/patient experience across Scotland to allow us to monitor the impact of any service changes in real time and over time to help us inform continual service improvements and identify and address any unintended consequences in a timely manner.</p>	<ul style="list-style-type: none"> ○ We will tailor data capture systems to reflect the objectives of each vaccine programme, including enhanced inequalities variables (Public Health Scotland). ○ We will develop a standard on patient/public experience that can be robustly monitored on a regular basis (Public Health Scotland).

<p>Priority Three: We aim to strengthen capacity and capability of vaccination workforce that is flexible and multidisciplinary by developing a comprehensive vaccination workforce plan.</p>	
Commitment	How we will deliver (and by whom)
Workforce Planning	<ul style="list-style-type: none"> ○ Development of workforce planning models to support the development of a proficient, safe, effective, and sustainable workforce (NES, NHS Board and IJBs).
Workforce education materials	<ul style="list-style-type: none"> ○ We will support the Scottish Vaccination and Immunisation Programme and Scottish Government policy objectives in helping to ensure the safest and most effective delivery of the vaccination programme, through the development and ongoing revision of national workforce education resources and educational opportunities, including vaccine specific and generic vaccination materials (NHS National Education for Scotland and Public Health Scotland). ○ This will inform and enhance local delivery and SMART objectives. This includes consideration of the wider workforce and third sector staff supporting the vaccination effort in Scotland (NHS National Education for Scotland and Public Health Scotland).
Health Care Support Workers (HCSW)	<ul style="list-style-type: none"> ○ Further development of the vaccinator HCSW role and associated educational materials as required, including new staff groups such as vets and veterinary nurses (NHS National Education for Scotland).

Priority Four: We aim to have a **system-wide approach to achieving PHS and NHS Scotland quality ambitions** of being safe, effective, and patient centred immunisation services across all settings..

Commitment	How we will deliver (and by whom)
<p>Embed a comprehensive and robust 'quality management system' within SVIP organisational practice, culture and leadership, encompassing and supporting a learning system, to continue improving the quality and outcomes of our work in a measurable way.</p>	<ul style="list-style-type: none"> ○ Develop and apply quality planning framework. ○ Implement quality control measures (understanding and monitoring performance against agreed standards for both national and local settings). ○ Plan and implement quality improvement framework (methods, templates & tools to continuously improve outcomes) (NHS Board and IJBs).
<p>Develop, implement and monitor evidence-based national immunisation service standards that enable local needs to be met whilst providing assurance and opportunities for benchmarking, including quality and efficiency standards relating to:</p> <ul style="list-style-type: none"> ○ Venues where immunisations are delivered ○ Infection prevention & control measures within immunisation venues ○ Staff skill-mix ○ Efficient delivery, taking consideration of scheduling, co-administration, and call-recall ○ Patient experience feedback ○ Staff feedback ○ Medicines governance 	<ul style="list-style-type: none"> ○ Ensure that cost-effective and timely procurement and efficient supply of vaccine that provides best value for Scotland is maintained for SVIP (NHS National Services Scotland). ○ Ensure the relevant infrastructure is in place to provide adequate capacity for safe and cost-effective transport and storage of vaccines to support efficient delivery of immunisation programmes across Scotland and ensure that the infrastructure is scalable and future-proofed to absorb new programmes (NHS Board and IJBs). ○ Implement and monitor compliance with national protocols for minimising avoidable vaccine wastage and cold-chain incidents (Public Health Scotland / NHS Board and IJBs). ○ Develop a framework for the introduction of new vaccines and significant changes to the vaccine programme, drawing on the existing international evidence base and experience in Scotland, to enable a consistent approach for planning and implementation (Public Health Scotland). ○ Establish a whole-system approach to evaluating and assessing the impact of the introduction of new vaccines and significant vaccine schedule changes on the existing programme and prioritisation of resources (Public Health Scotland). ○ Establish a collaborative grouping of NHS and academic partners across Scotland who work together on a coordinated programme of diverse research and evaluation across all aspects of immunisation and vaccine preventable disease that serves the articulated priorities and needs of current and future immunisation programmes in Scotland (Public Health Scotland). ○ Work with partners outwith SVIP to ensure the immunisation programme in Scotland is aligned with the 'NHS Scotland climate emergency and sustainability strategy: 2022-2026' to minimise the environmental impact associated with vaccination provision through a whole-systems approach (Public Health Scotland / Scottish Government).

Appendix B: Key enabling and supporting actions

<p>We aim to develop an end-to-end digital solution that provides a single, accessible vaccination record for Scottish citizens and healthcare professionals.</p>	
Commitment	How we will deliver (and by whom)
End-to-End Digital Solution	<ul style="list-style-type: none"> ○ We will work towards a once for Scotland, end-to-end digital solution that caters to each phase of the vaccination journey (e.g. cohort creation, scheduling, consent, vaccination event recording, clinic management etc) provides a single, accessible vaccination record for Scottish citizens and healthcare professions (PHS and NSS). ○ End-to-end digital solution will improve the efficiency, effectiveness, accessibility and sustainability of all vaccination and immunisation services and be interoperable with other relevant clinical systems (e.g. child health system, TRAK, ORION etc). This solution must be flexible and scalable to adjust to programme changes (PHS and NSS).
Data ecosystem, capture, and management	<ul style="list-style-type: none"> ○ We will work to develop a data ecosystem, enabled by appropriate human, digital and financial resource, that allows efficient data capture, management and curation to support primary and secondary data needs across whole vaccination programme. To that end, data standards will be developed (PHS and NSS).
Data use	<ul style="list-style-type: none"> ○ SVIP will use high quality, standardised data across all components of the programme, supporting primary and secondary needs, providing the best available evidence for action, and ingraining high professional and public trust in the programme. These data will support clinical management and programme delivery, disease and vaccine surveillance, operational research, programme evaluation, monitoring of metrics against defined standards for quality management and improvements, provision of local intelligence, and bolstering the wider vaccination programme (PHS and NSS).
Vaccination cohort creation and accessibility of cohort data	<ul style="list-style-type: none"> ○ We will aim for healthcare staff and patients to have access to information that details the reason for vaccination eligibility. There should be transparency around the methods for cohort creation and ongoing refinement of this. There should be mechanisms to rectify inaccurate cohort data (PHS and NSS).
Tackling inequalities	<ul style="list-style-type: none"> ○ There will be a requirement for access to consistent and robust inequalities data across all SVIP to highlight areas for service improvement and public health actions. This includes data on special characteristics and demographics, flags to identify groups of special interest and linkage to other data outwith vaccination to understand wider determinants of health (PHS and NSS).
Data publication	<ul style="list-style-type: none"> ○ There should be a consistent approach to public-facing national reporting of vaccination data across the programme. ○ SVIP will support and provide guidance for PHS, NHS Boards and relevant local vaccination and immunisation service providers to regularly provide and publish clear, robust, accurate and timely information on the quality and performance of immunisation services (PHS, NSS and NHS Boards).
Business as usual	<ul style="list-style-type: none"> ○ Sufficient support will be provided to business as usual data and digital systems, to ensure their continued effectiveness, efficiency, and safety, including resourcing of necessary development work, and BAU and future developments do not need to compete for the same resource (PHS and NSS).

We aim to develop an **effective communication strategy** with clear marketing & engagement approaches.

Commitment	How we will deliver (and by whom)
<p>To raise awareness of the need for and benefits of immunisations, delivering maximum impact within available budget</p>	<ul style="list-style-type: none"> ○ We will take a proportionate universalism approach to activity where there is a focus on targeting those audiences who are experiencing inequalities and have lower vaccine uptake. ○ We will maximise the effectiveness of communications by using NHS/PHS healthcare professionals as media spokespeople and collaborating with Scottish Government communications and policy colleagues to identify opportunities to communicate with target audiences. ○ We will create timely media opportunities and ensure media are informed about vaccine effectiveness and kept up to date on the SVIP. ○ We will use official NHS communication mechanisms such as invitation letters and texts/emails to reach audiences that respond well to this approach – e.g. over 65-year-olds. ○ We will drive online traffic to NHS inform for public information and publichealthscotland.scot for professional information. ○ We will ensure user insight informs our creative approach and messaging. ○ We will measure the impact of campaign activity through pre- and post-campaign evaluation and implement lessons learned to improve our communications approach on an iterative basis. ○ We will work closely with surveillance so we can be flexible and respond to uptake across the whole immunisation life-course, ensuring budget and resources are targeted where they are needed most. <p>(Public Health Scotland in collaboration with NHS Boards)</p>
<p>To adopt an audience-first approach to all vaccine communications, understanding and helping overcome barriers to uptake within specific groups of society.</p>	<ul style="list-style-type: none"> ○ We will use clear, accessible language and a non-patronising tone. ○ We will clearly set out the risk of the disease vs benefit and side-effects of each vaccine so that people are able to make an informed choice. ○ Where possible, we will use statistics to support statements to build credibility with our audiences. ○ We will work in partnership with representative groups and use trusted community voices such as healthcare professionals, third sector organisations representing clinical conditions or carers, religious leaders, and those with lived experience to help deliver our messages to specific groups where uptake is lower, helping to address vaccine hesitancy and build trust in vaccines. ○ We will create engaging content using video and animation to communicate complex issues, debunk myths or where further explanation is required, for example what to expect when getting your vaccine, explaining changes to an existing programme or the rationale behind the introduction of any new vaccines. ○ We will provide national and local partners and stakeholders with tools and resources to maximise the awareness, reach and impact of all activity (for example, social media toolkits and template content to be used on their channels). ○ We will ensure we gather evidence of what is working and what is not, in order that we can continually improve our communications. <p>(Public Health Scotland in collaboration with NHS Boards)</p>
<p>To ensure the right channel is used for each audience, adopting a 'digital first' approach where possible whilst ensuring information is</p>	<ul style="list-style-type: none"> ○ We will maximise the impact of vaccine invitations (letters, email, and text messages), ensuring all messaging needed to make an informed choice is included. ○ We will drive online traffic to NHS inform and ensure it contains factually accurate and engaging content, creating campaign landing

<p>also available for those without digital access.</p>	<p>pages where appropriate in order that citizens can find the information they need quickly and easily.</p> <ul style="list-style-type: none"> ○ We will work with NHS 24 to develop YouTube videos featuring healthcare experts and individuals with lived experience to maximise accessibility of our messaging – and maximise SEO of national content. ○ We will make best use of budget available by ensuring the content of printed leaflets is kept to a minimum and ensure we print what is needed, avoiding stock wastage as a priority. ○ We will use QR codes to signpost citizens to supporting information such as videos and online content to facilitate informed decision making ○ We will work in partnership with NHS 24 to gather intelligence available to enable us to understand what is working and what can be improved. <p>(Public Health Scotland in collaboration with NHS Boards)</p>
<p>To provide information in other formats and languages, including video, animation, BSL, easy read, large print, and audio.</p>	<ul style="list-style-type: none"> ○ We will maximise opportunities for audiences to see messages in their own languages through the use of video and animation. ○ We will create specific videos for audiences featuring community leaders. ○ We will monitor usage of videos and translated versions of leaflets and alternative formats and keep these relevant while ensuring value for money. ○ We will ensure alternative formats and languages are available at the same time as national messaging, or as soon as possible afterwards. <p>(Public Health Scotland in collaboration with NHS Boards)</p>
<p>To facilitate stakeholder engagement, making recommendations and providing channels to ensure key stakeholders are kept up to date with key developments about vaccines.</p>	<ul style="list-style-type: none"> ○ We will collaborate with local health board colleagues (specifically through the Public Health Communicators Forum and the SVIP Vaccine Delivery Board) to ensure national activity and information supports local communication and delivery activity. ○ We will maximise professional understanding of the SVIP programme and development by working with content owners to ensure publichealthscotland.scot content is engaging and informative. ○ To maximise the effectiveness of the vital role that healthcare professionals play, as advocates for the vaccination programme, we will ensure healthcare professionals remain informed about the programme. <p>(Public Health Scotland in collaboration with NHS Boards)</p>

We will aim to **use available resources more efficiently** to continue to deliver an effective vaccination and immunisation service; improve NHS Boards' ability to plan and use resources flexibly; and improve the interaction between different health programmes and systems.

Commitment	How we will deliver (and by whom)
Effective and efficiency use of resources	<ul style="list-style-type: none"> ○ Over the 5-year term, we will work to simplify vaccine funding streams by baselining all vaccination funding into annual Board budgets, increasing flexibility and improving ability to plan across financial years. This should include improving interaction and financial governance between vaccination funding and other Health budgets (e.g. VTP funds and PCIP funding). ○ We will work to improve strategic planning to support the most efficient use of Board resources, including staff and finance. This should be coupled with advocating for increased public health spending, emphasising the value of vaccination programmes in disease prevention and healthcare cost reduction. ○ We will work to align the development of national vaccination standards with the objectives included within the NHS Scotland annual planning and delivery cycle and strengthen the alignment of performance management and funding at local Health Board level, through the development of a Vaccination Performance Framework, with targets for individual Boards. ○ We will work collaboratively to improve Scottish cost-effectiveness modelling and rationale developed to support the JCVI recommendations on the introduction of new vaccination programmes, with limited approaches taken beyond JCVI recommendations where required. ○ All new immunisation programme being introduced, or step changes to the vaccination system in Scotland, are carefully assessed as to the feasibility, clinical impact and financial implication for Health Boards, with the potential for any additional funding considered to support this activity. ○ We will work to ensure involvement, as early as possible, of Boards [DoF/DPH/ICs] in planning financial allocations intended for vaccination. ○ We will work to ensure timely development of a national digital end-to-end vaccination system, to support maximising efficiency of delivery at local health board level. ○ Across SVIP, we will strive to ensure good financial governance is explicit in all decision making and delivery; and for decisions outside of the SVIP structures i.e. interfaces with wider Scottish Government structures; ensure these are well developed and effective. (Scottish Government in collaboration with PHS, NHS Scotland, other national agencies, and NHS Boards)

We aim to establish systems and processes within SVIP governance arrangements that **support consistent, transparent, and inclusive decision-making process.**

Commitment	How we will deliver (and by whom)
Consistent, transparent, and inclusive decision-making processes	<ul style="list-style-type: none"> ○ SVIP will collaborate with all partners and stakeholders to establish and strengthen the structures and processes of governance to ensure the quality of vaccination and immunisation services are continually monitored and improved, through regular reviews of existing SVIP and other vaccination and immunisation governance structures. ○ SVIP will ensure PHS, and other national stakeholders such as National Services Scotland [NSS] and NHS Education for Scotland [NES], will establish clear systems, pathways, and processes to support NHS Boards and their vaccination and immunisation staff to monitor and continuously improve the quality and safety of vaccination and immunisation services they provide, through audit, evaluation, service review, and appropriate evidence-based practice. ○ SVIP will collaborate with Public Health Scotland [PHS], NHS Boards, Scottish Government [SG], NSS, NES and other relevant partners and stakeholders to safeguard high-standard vaccination and immunisation services across Scotland through promoting planned and strategic approaches to learning, innovation, and development; and encourage effective and open engagement with staff on the design, delivery, monitoring, and improvement of the quality of vaccination and immunisation services. ○ SVIP will support and provide guidance for PHS, NHS Boards and relevant local vaccination and immunisation service providers to regularly provide and publish clear, robust, accurate and timely information on the quality and performance of immunisation services. ○ SVIP will provide support and guidance to all collaborating partners to have clarity on their organisational governance arrangements for vaccination and immunisation programmes, including awareness of their own roles and responsibilities within the structures. ○ SVIP will ensure PHS, SG and NHS Boards will work collaboratively to design and implement one overarching risk management system that complements existing complaints, feedback, and adverse events/incident management processes of the relevant national and local agencies, to ensure that these focus on learning, assurance, and improvement. ○ SVIP will ensure that in planning and delivering vaccination and immunisation programmes, all partners take account of and apply the principles embedded in relevant NHS, governmental and legal policies, and standards, including "<i>The Charter of Patient Rights and Responsibilities, Supporting children and young people with healthcare needs in schools' guidance, and the United Nations Convention on the Rights of the Child.</i>"

We aim to establish a **strong system leadership** across all vaccination and immunisation programmes by developing a framework for clarifying roles and responsibilities of the different partner organisations.

Commitment	How we will deliver (and by whom)
Framework for clarifying roles and responsibilities	<ul style="list-style-type: none"> ○ SVIP will provide support and guidance for PHS to work in collaboration with SG, NHS Boards, NSS, NES and other relevant partners to provide clear and robust system leadership across all vaccination and immunisation programmes by developing a framework for clarifying roles and responsibilities of the different partner organisations. ○ SVIP will expect PHS in collaboration with relevant national bodies including NSS, NES, Scottish Health Protection Network [SHPN] and other partners to produce timely and up to date evidence-based guidelines on prevention and control of relevant vaccine preventable diseases, governance, surveillance, and vaccination and immunisation functions across the health system. ○ SVIP will collaborate with SG and PHS in providing support and guidance for NHS Boards to work in partnership with local stakeholders to develop strong and sustainable local public health leadership and expertise (which includes training/education and succession planning) for vaccination and immunisation, through appointment of an Immunisation Coordinator with sufficient time and appropriate team support for the functions they deliver on, as well as clearly defined and appropriately resourced professional nursing, service and programme management, and other professional leads. ○ SVIP will provide support and guidance for NHS Boards in partnership with local stakeholders to establish leadership and governance structures to undertake strategic planning, coordination, workforce development, and the delivery of safe and effective vaccination and immunisation services that meet the needs of local populations and deliver clearly defined outcomes. ○ SVIP and all collaborating partners will put equality, diversity, and inclusion at the centre of what they do, and local partners, particularly NHS Boards, will provide public health leadership for local vaccination strategy and partnership working across NHS, local government, and other key partners, such as Health and Social Care Partnerships [HSCPs]. ○ SVIP will promote and encourage PHS, NHS Boards and other relevant stakeholders to establish a coordinated and joined-up leadership to facilitate a seamless vaccination and immunisation programme by creating mechanisms for system partners to discuss and collaborate on all vaccination and immunisation programmes. ○ SVIP and SG will provide guidance and support for PHS, NHS Boards, and other national and local organisations to ensure that they are prepared to respond effectively to existing and new vaccine preventable disease threats, as well as clarify the roles and responsibilities (including funding, overall coordination, and leadership) of the different professionals and organisations in the delivery of vaccinations that are offered in response to an incident. ○ SVIP and SG will provide guidance and support for PHS, NHS Boards, and other national and local organisations to ensure that they are prepared to implement programmes to provide new vaccines as they are developed, considered appropriate and cost-effective by JCVI, and agreed by SG. ○ SVIP and its Groups and Sub-Groups will collaborate with all partners and stakeholders to advocate in a shared endeavour to reduce health inequality impacts by promoting all vaccination and immunisation programmes across all community groups e.g., taking into account individuals and groups with protected characteristics, those from deprived areas, travelling communities, migrants, asylum seekers, injecting drug users, the homeless, and those not registered with healthcare providers.

Appendix C: Vaccination Programme overview

Immunisation is our largest co-ordinated Public Health Programme offered across the life course

Pregnancy	Birth	Pre-School	Children & Young People	Adults	Others
<ul style="list-style-type: none"> Flu <p>From Week 16</p> <ul style="list-style-type: none"> Pertussis* <p>*whooping cough</p>	<p>8 Weeks</p> <ul style="list-style-type: none"> Six-in-one** Rotavirus Meningitis B <p>12 Weeks</p> <ul style="list-style-type: none"> Six-in-one** Pneumococcal Rotavirus <p>16 Weeks</p> <ul style="list-style-type: none"> Six-in-one** Meningitis B <p>**diphtheria, tetanus, pertussis, polio, haemophilus influenzae type b, hepatitis B</p>	<p>12-13 Months</p> <ul style="list-style-type: none"> Hib/MenC*** Pneumococcal Meningitis B Measles, Mumps & Rubella (MMR) <p>Aged 2-5</p> <ul style="list-style-type: none"> Flu <p>3 Years 4 Months</p> <ul style="list-style-type: none"> Four-in-one**** MMR <p>***haemophilus influenzae type b, meningitis c</p> <p>****diphtheria, tetanus, pertussis, polio</p>	<p>P1-S6</p> <ul style="list-style-type: none"> Flu <p>S1</p> <ul style="list-style-type: none"> Human papillomavirus (HPV) <p>S3</p> <ul style="list-style-type: none"> Tetanus, Diphtheria & Polio (Td/IPV) Meningitis ACWY MMR (Status) 	<p>Offered to eligible groups:</p> <ul style="list-style-type: none"> Flu <p>Older Adults</p> <ul style="list-style-type: none"> Pneumococcal Shingles 	<p>Offered to eligible groups:</p> <ul style="list-style-type: none"> HPV Pneumococcal Hepatitis B BCG***** <p>Including:</p> <ul style="list-style-type: none"> people with certain health conditions people who work in health and social care people travelling abroad refugees men who have sex with men (MSM) <p>*****bacillus calmette–guérin</p>

Pregnancy and baby immunisations

Immunisation is the safest and most effective way of protecting pregnant women and their babies against serious diseases. Immunisation during pregnancy can help prevent disease, or make illness less serious, as antibodies developed are passed to the unborn baby helping to protect them in their first few weeks of life.

Key facts

- In the 1940s, before the vaccine was introduced in the UK, diphtheria was common and caused lots of deaths. Since the introduction of the vaccine, cases are now extremely rare.
- Before 2013, when the rotavirus vaccine was introduced, around 1200 babies in Scotland had to go to hospital every year with rotavirus. Since then, the number of cases in babies is much smaller, and fewer have to go to hospital.

Pregnant women are offered the flu vaccine (every time they are pregnant from October to March) and whooping cough vaccine (from 16 weeks of pregnancy onwards every time they are pregnant).

When babies reach 8 weeks of age they can start the routine immunisation schedule at the recommended times. These will help protect them through early childhood against diseases

such as diphtheria, tetanus, whooping cough, polio, measles, mumps, rubella, and some of the main causes of meningitis and septicaemia. The immunisations offered are as follows:

At 8 weeks	DTaP/IPV/Hib/HepB, Rotavirus and MenB
At 12 weeks	DTaP/IPV/Hib/HepB, Pneumococcal and Rotavirus
At 16 weeks	DTaP/IPV/Hib/HepB and MenB
Between 12 & 13 months	Hib/MenC, MMR, Pneumococcal and

Child and teenager immunisations

As children develop and grow, they are exposed to many risks, one of these risks being infections. Most of these will cause mild illnesses. However, infection can still cause severe illness, disability and, at times, death.

Before vaccines were available, many children in the UK died from diseases such as whooping cough, measles and polio. The development of effective vaccines has led to a huge decrease in childhood deaths.

The benefit of immunisation is that children and teenagers have the best possible protection against dangerous diseases.

- Every year, the flu vaccine is offered to children 2 years of age until the end of primary school.
- Children 3 years and 4 months of age are offered the DTaP/IPV and MMR vaccines which are often called pre-school boosters.
- The HPV vaccine is offered to all boys and girls in S1, (11 years of age), at secondary school.
- Teenagers are offered the Td/IPV booster and the MenACWY vaccines at school.
- Teenagers who have not had two doses of the MMR vaccine may be offered the second dose at school.
- For children and teenagers with a health condition the flu and pneumococcal vaccines are recommended.

Adult immunisations

Adults with a health condition, anyone aged 55 years and over, and healthcare workers are offered vaccines as part of the Scottish Immunisation Programme.

Key fact

- Every year in Scotland, around 400 people aged 70 and over will be hospitalised due to shingles and related complications.

The following vaccinations help protect against serious diseases such as flu, pneumococcal, HPV and shingles.

- The annual flu vaccination is offered to persons aged 55 years or over, anyone with a health condition, household members of individuals advised to shield from coronavirus,

unpaid and young carers, all pregnant women at any stage of pregnancy, healthcare workers, and social care workers who provide direct personal care.

- The HPV vaccine is offered to men who have sex with men, up to the age of 45 years, at sexual health and HIV clinics.
- The pneumococcal vaccine is offered to anyone with a health condition and people aged 65 years or over as a one-off vaccine.
- Shingles immunisation is offered to people 70 to 79 years as a one-off vaccine.

COVID vaccination

Provided in line with JCVI advice, currently targeted at people in the highest risk groups, including those who are aged 70 years and over, people in older adult care homes, those who are on the Highest Risk List and frontline health and social care workers.

Other

In addition to the above the programme will include:

- All travel vaccines available under the NHS
- All catch-up campaigns alongside the introduction of new vaccines
- All vaccines considered appropriate for vaccine-preventable disease (VPD) health protection response

But exclude:

- Vaccines delivered under occupational health services, apart from seasonal flu and COVID-19 vaccinations for Frontline Health and Social Care Workers
- Therapeutic vaccines in development including those for cancer and personalised care vaccines currently deployed / used in a private market
- Vaccines and vaccination at a scale in preparation for pandemics

Appendix D: Environment, Sustainability, and Immunisation

Climate informed and sustainable immunisation strategy

The health of humans depends on the health of the planet and the environment.¹ The fact that many of the changes to climate are man-made, as well as the scale of the threat to human health from the changing climate have now been unrefutably evidenced.^{2,3} Addressing climate change and environmental sustainability are therefore important considerations for any health and care services.

The NHS Climate Emergency and Sustainability Strategy provide a framework guiding the NHS to meet its ambitions to attain net-zero emissions by 2040 and establish an environmentally and socially sustainable healthcare service and contribute to delivering on the United Nation's Sustainable Development Goals.⁴

Immunisation programmes play an important role in sustainable health services, reducing burden of disease and demand on health services through prevention of vaccine preventable diseases. Vaccine programmes, therefore, can contribute to a reduction of greenhouse gasses and achieving of the net zero ambitions and towards sustainable health systems.⁵

While successful vaccination programmes can contribute to more sustainable health services through prevention of illness, the delivery of vaccination programmes have a range of negative impacts on the environment, through, for example, greenhouse gas emissions, use of resources and waste generation.^{6,7} In developing the vaccination strategy, considerations need to be taken how to minimise negative impacts on the environment without negatively impacting on delivery of vaccinations.⁸

Considerations of reducing the negative impact of vaccination programmes on the environment should not conflict with accessibility to services or quality of care. Rather, environmental sustainability should be considered as a dimension of quality for services.⁹

A transformation to more environmentally sustainable vaccination programmes is required. Given the complexity of vaccination programmes, this transformation will take some time, but developing a route map for this transformation will help to achieve this.

Climate change impact on vaccination

Climate change is leading to change in infectious disease patterns, including the spread of new or re-emergent pathogens¹⁰, and in the future vaccination programmes will be needed to

¹ Human health and the health of Planet Earth go together (wiley.com)

² Climate change crisis goes critical - The Lancet Respiratory Medicine

³ Climate change: health effects in the UK - GOV.UK (www.gov.uk)

⁴ Our approach to Net-Zero - NHS Scotland climate emergency and sustainability strategy: 2022-2026 - gov.scot (www.gov.scot)

⁵ Vaccines for a sustainable planet | Science Translational Medicine

⁶ Eco-friendly vaccination: Tackling an unforeseen adverse effect - ScienceDirect

⁷ The environmental impact of mass coronavirus vaccinations: A point of view on huge COVID-19 vaccine waste across the globe during ongoing vaccine campaigns - PMC (nih.gov)

⁸ The environmental impact of mass coronavirus vaccinations: A point of view on huge COVID-19 vaccine waste across the globe during ongoing vaccine campaigns - PMC (nih.gov)

⁹ Putnis N, Neilson M. Environmental sustainability, and quality care: Not one without the other. Int J Qual Health Care. 2022 Aug 31;34(3):mzac066. doi: 10.1093/intqhc/mzac066. PMID: 36018042.

¹⁰ Can the One Health Approach Save Us from the Emergence and Reemergence of Infectious Pathogens in the Era of Climate Change: Implications for Antimicrobial Resistance? - PMC (nih.gov)

prevent the population from these diseases or occurrence of disease in new geographical areas.^{11,12,13}

The triple crisis of Climate Change and degradation of the environment and loss of biodiversity is driving increasing Antimicrobial Resistance (AMR) and there are calls to take a systematic approach to planetary health, like the One Health approach.¹⁴ Vaccination can play a role in reducing global antimicrobial resistance.¹⁵

Impacts of climate change locally (disruption of road or transport impairing local delivery routes and access to services), as well as globally (impacting on global supply schemes), can have an impact on the delivery of immunisation and vaccination programmes, as well as access to other health and care services. Important that vaccination programmes consider these impacts to ensure they are resilient to the future.

Climate change will be impacting on human health but will not affect everyone's health equally, and will increase existing inequalities in health, as well as lead to further health inequalities. The long-term aim needs to be, creating a fairer society and meeting everyone's needs within the planetary boundaries.¹⁶

¹¹ Mitigating the effects of climate change on human health with vaccines and vaccinations - PMC (nih.gov)

¹² The Impact of Climate Change on Vaccine-Preventable Diseases: Insights From Current Research and New Directions - PMC (nih.gov)

¹³ How climate change is changing vaccination planning | The BMJ

¹⁴ How Antimicrobial Resistance Is Linked to Climate Change: An Overview of Two Intertwined Global Challenges - PMC (nih.gov)

¹⁵ Vaccines for a sustainable planet | Science Translational Medicine

¹⁶ Safe and just Earth system boundaries | Nature

Appendix E: Health Inequalities Impact Assessment

The Health Inequalities Impact Assessment is currently being undertaken.

References and further resources and links

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