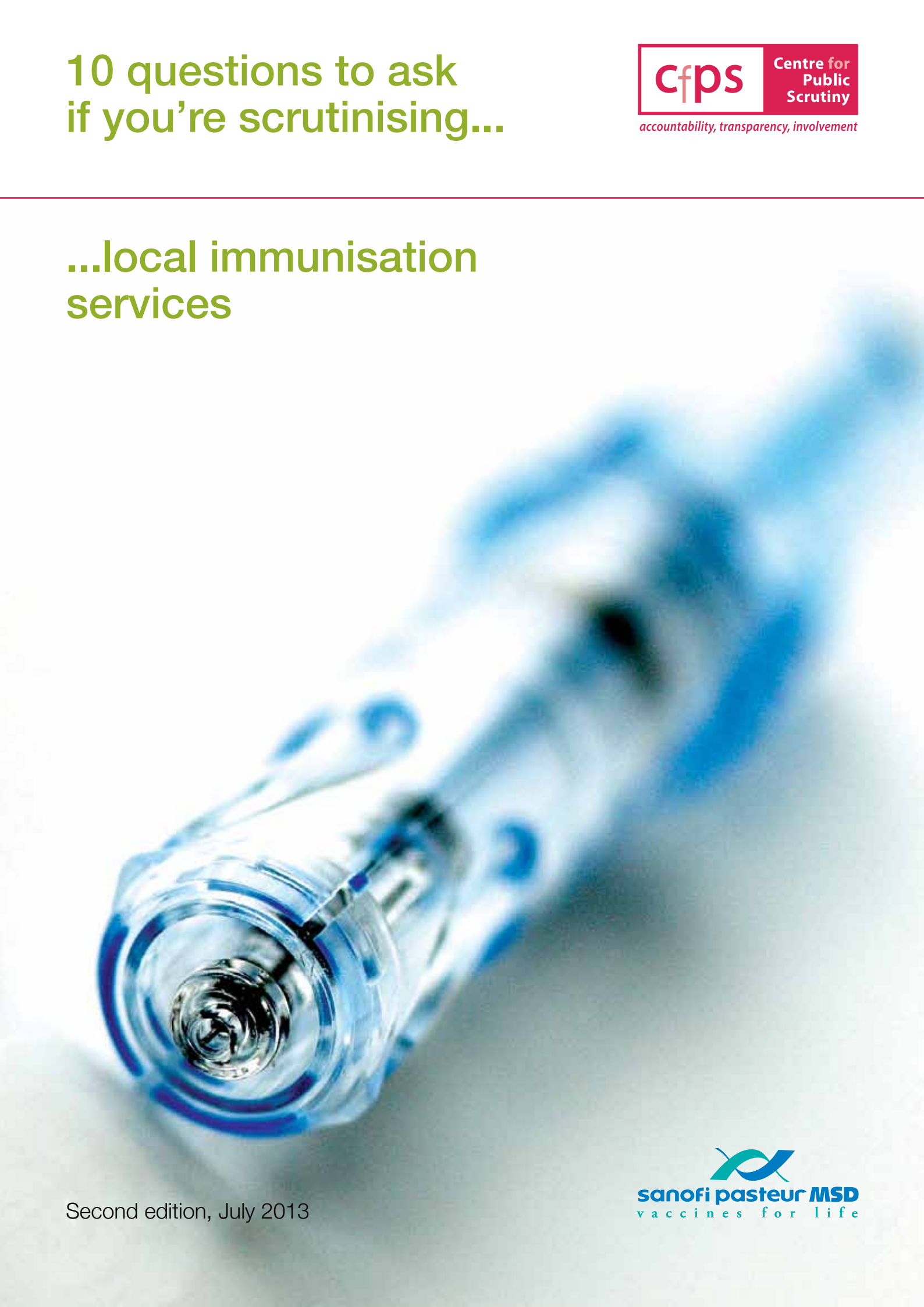
10 questions to ask if you're scrutinising...

cfps Centre for Public Scrutiny

accountability, transparency, involvement

...local immunisation services



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vaccines for life

The Centre for Public Scrutiny

The Centre for Public Scrutiny (CfPS), an independent charity, is the leading national organisation for ideas, thinking and the application of policy and practice to promote transparent, inclusive and accountable public services. We support individuals, organisations and communities to put our principles into practice in the design, delivery and monitoring of public services in ways that build knowledge, skills and trust so that effective solutions are identified together by decision-makers, practitioners and service users.

This guide on the scrutiny of immunisation provision is one of a series by CfPS designed to help health Overview and Scrutiny Committees (HOSCs) carry out their scrutiny work around various health, healthcare and social care topics.

The guide identifies ten key question areas and their detailed questions, which can be used by the HOSC to scope out a wide review or to concentrate on an area of particular interest or bearing; this is important if local needs are to be identified and areas are to provide an effective response.

Other guides in the series include:

- Child and Adolescent Mental Health Services
- Services for people with dementia
- Adult social care
- Reducing unintentional injury in the under 15s
- Preventing cardiovascular disease

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Introduction

How to use this guide

This guide is intended to be used as a tool to provide councillors and others with useful background information about immunisation and a series of questions that may be helpful to consider when scrutinising the effectiveness of local services.

The organisation of the NHS has radically changed; as of 1st April 2013, Public Health functions transferred to Local Government and the new Public Health England (PHE) and NHS England (formerly known as the NHS Commissioning Board). Immunisation services are to be commissioned primarily through NHS England although there will be input from the other areas. The Director of Public Health (DPH) within the Local Authority will have an oversight, assurance and challenge responsibility for immunisation services for their local population. This document is intended to support the work of local health Overview and Scrutiny Committees (HOSC) and Health and Wellbeing Boards (HWB).

A glossary of technical and medical terms can be found at the end of the document along with a Useful Links section to provide you with further resources should you wish to know more.

Why immunisation is important

Nowhere has public health achieved more success than in the protection against infectious disease. Over the centuries improved living standards, sanitation, hygiene and nutrition have all been contributory factors. After clean water, vaccination is the most effective public health intervention in the world for saving lives and promoting good health. It is now seen as the most cost-effective of activities undertaken by healthcare professionals and is a recognised critical element of preventive care around the world.[1]

Immunisation policy

The NHS Constitution sets out the legal rights of everyone who uses the NHS. One of the rights enshrined in the Constitution is, 'You have the right to receive the vaccinations that the Joint Committee on Vaccination and Immunisation (JCVI)[2] recommends that you should receive under an NHS-provided national immunisation programme'.[3] The vaccines for an NHS-provided programme are provided free of charge.

The primary aim of vaccination is to protect the individual. Vaccinated individuals are also less likely to be a source of infection to others. This reduces the risk of individuals who are not protected by vaccination, being exposed to infection, a concept which is known as 'herd immunity' (or 'community immunity'). The effect of herd immunity is that those groups of

individuals who cannot be effectively vaccinated may still benefit from the routine vaccination of others. These groups often include the more vulnerable individuals (for example, infants who are too young to be immunised) who are unable to be immunised because of underlying disease or impaired immune systems, the elderly and marginalised groups who find access to preventive services difficult.

It is also important to note that not all diseases can be eradicated. Infections such as diphtheria and tetanus can only be kept at bay by protection of the individual. High immunisation uptake of diphtheria must be maintained in order to prevent the resurgence of disease which could follow the introduction of cases or carriers of toxigenic strains from overseas. Similarly, because tetanus spores are present in soil or manure and can be introduced into the body through a puncture wound, burn or scratch, protection against tetanus is individual – herd immunity cannot apply to this vaccine.

The childhood immunisation programme in the United Kingdom (UK) protects young people against a wide number of infectious diseases, such as measles, polio, diphtheria and pertussis (whooping cough). What has been forgotten is how, in the past, large numbers of children either died or were left with permanent damage to their health and wellbeing because of these infections and their complications. The success of the immunisation programme can reduce the perception of the severity of these diseases both with the public and amongst health professionals.

An effective immunisation programme should encompass key 'Quality Criteria' as identified by the Health Protection Agency (HPA)[4] in 2012 - these include:

- **Vaccine accessibility** – vaccination should be available easily and actively offered to those who need it.
- **Assessment prior to immunisation** – every opportunity should be taken to make sure those eligible are assessed and vaccination is not refused inappropriately.
- **Effective communication about vaccination** – accurate advice and information is available from informed and reputable sources.
- **Transport storage and handling of vaccines** – so that vaccines given are of optimum quality.
- **Effective documentation and record keeping** – to ensure accurate information is available on population coverage and that the individual has a lifelong record.
- **Adverse event and incident reporting** – where problems arise these need to be effectively handled and reported.
- **Training for staff** – this should be available for anyone involved in immunisation and that these staff know where and how to access support.

- **Coordination** – so that all the elements of the immunisation programme are appropriately aligned and accountable.

These areas serve as a useful guide for the management and scrutiny of services provided.

Systematic review of vaccination uptake has been a key requirement for many years, to enable close analysis of pockets of poor uptake in order to support prediction of potential problems and implementation of early measures to mitigate these. The Public Health Outcomes Framework (PHOF) document, '**Improving outcomes and supporting transparency**'[5] includes immunisation coverage rates as a continued outcome measure for reporting with the addition of the requirement to report on the uptake for targeted vaccinations, and those given to teenagers and adults in a similar way to routine childhood vaccinations.

The PHOF Data Tool (under Indicator 3.03) enables an individual Local Authority to 'compare and contrast' data, across a spectrum of immunisation indicators, against neighbouring Authorities within the region and against an England average.[6]

The current schedule

The Department of Health (DH) publication '**Immunisation against infectious disease**', popularly referred to as '**The Green Book**', sets out the detail on the principles, practices and procedures of immunisation in the UK.[7]

The Green Book is regularly updated and available on line at:

https://www.gov.uk/government/organisations/public-health-england/series/immunisation-against-infectious-disease-the-green-book

The schedule constantly evolves as research identifies better use of the vaccines currently available or as new vaccines become available. The schedule is developed to ensure that the most cost-effective programme is in place to protect the public from vaccine-preventable illness. Some vaccines are recommended for everyone whereas others are recommended for those at greatest risk of developing severe disease or at particular risk of infection.

The table below lists the vaccines currently recommended (1st July 2013) for children from two months of age through to adulthood and older age.

Recommended routine immunisation schedule (accurate as at 1st July 2013)

When to immunise	Immunisation (vaccine given)	How it is given
Two months old	Diphtheria, tetanus, pertussis (whooping cough), polio and Haemophilus influenzae type b [Hib] (DTaP/IPV/Hib)	One injection
	Pneumococcal conjugate vaccine (PCV)	One injection
	Rotavirus	One oral dose
Three months old	Diphtheria, tetanus, pertussis, polio and Hib (DTaP/IPV/Hib)	One injection
	Meningococcal C (MenC)	One injection
	Rotavirus	One oral dose
Four months old	Diphtheria, tetanus, pertussis, polio and Hib (DTaP/IPV/Hib)	One injection
	Pneumococcal conjugate vaccine (PCV)	One injection
Between 12 and 13 months of age (i.e. within a month of the first birthday)	Hib/MenC	One injection
	Pneumococcal conjugate vaccine (PCV)	One injection
	Measles, mumps and rubella (MMR)	One injection

When to immunise	Immunisation (vaccine given)	How it is given
Three years four months to five years old	Diphtheria, tetanus, pertussis and polio (DTaP/IPV or dTaP/IPV) Measles, mumps and rubella (MMR)	One injection One injection
Thirteen to 18 years old	Tetanus, diphtheria and polio (Td/IPV) Meningococcal C (MenC)* [To be introduced from September 2013]	One injection One injection

* Significant changes to the routine schedule were announced in April 2013 (see section below)

NB A routine influenza vaccine programme will be introduced gradually for all children from 2-17 years from 2013, starting with 2 and 3 year olds from September 2013.

Planned changes to the national immunisation programme in 2013–14

On 30th April 2013, an announcement was made as to a number of important changes to be made to the national immunisation programme in 2013–14; this information can be found in a tripartite (DH, PHE and NHS England) letter at:

https://www.gov.uk/government/publications/national-immunisation-programme-planned-changes-for-2013-to-2014

In summary, these planned changes are as follows:

Meningitis C: The second priming dose, previously given at four months, is to be replaced by a booster dose given in adolescence; this is to be the introduced through schools in the 2013/14 academic year.

Rotavirus: From July 2013, the introduction into the childhood immunisation schedule of a vaccine to protect babies against rotavirus (an infection that leads to severe diarrhoea and vomiting).

Childhood influenza: The existing flu immunisation programme will be extended over a number of years to include all children aged two to 16 inclusive. From September 2013, immunisation will initially be offered to a limited age range of pre-school aged children.

Further details can be found in the annual flu immunisation letter:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/207008/130613_Flu_Letter_v_29_Gateway_GW_signed.pdf

Shingles: From September 2013, the introduction of a shingles vaccine for people aged 70 years (routine cohort) and 79 years (catch-up cohort) to protect against herpes zoster.

Recommended targeted immunisation schedule for those at particular risk of infection (accurate as at 1st July 2013)

The rationale for giving these vaccines is complex; detail and explanation on the evidence can be found in the Green Book.[7]

The following provides a brief summary:

Who to immunise	Immunisation (vaccine given)	How it is given
Babies and children under 16 at particular risk of tuberculosis	BCG	One injection, preferably in the first year of life, or to those under 16 at particular risk
Those at particular risk of acquiring hepatitis B infection	Hepatitis B	3 doses with a booster normally given after 12 months
Girls aged 12-13 years old	Quadrivalent human papillomavirus (HPV)	Three injections
Children aged six months to under 65 years in clinical risk groups** Those aged 65 years and over All children from 2-17, gradual introduction from September 2013***	Seasonal influenza	One injection * One injection Nasal spray
Those aged two years and over in the clinical risk groups** Those aged 65 years and over	Pneumococcal Polysaccharide vaccine (PPV)	One injection

* Children from 6 months to under 9 years of age in clinical risk groups receiving influenza vaccine for the first time require two injections 4-6 weeks apart and thereafter one injection annually

** For clinical risk groups, please see relevant sections in the Green Book[7]

*** From September 2013, gradual introduction of seasonal influenza vaccine for all children aged 2-17, starting with 2 and 3 year olds

In addition to the above, it is recommended that those in very specific risk groups (immunosupressed, asplenia or with splenic dysfunction) should receive additional and supplementary vaccination with the pneumococcal conjugate vaccine (PCV), the Haemophilis influenzae type b vaccine (HiB), meningococcal C vaccine (MenC) as well as the meningococcal ACW135Y vaccine (generally only recommended for certain travellers at the present time). Varicella vaccine - protecting against chickenpox – is also recommended for those at particular risk and for their families. These vaccinations are not currently recorded as a specific outcome measure in the PHOF, however, it is important that local areas ensure that they are available to those who need them. It is also worth noting that their use will change and develop over time. The Green Book provides detail on when and how many doses of the vaccine should be given.[7]

The schedule will continue to change and develop as new vaccines become available and this is discussed further in the Background Information section, to follow.

Immunisation in the context of scrutiny and partnership

In April 2013 there were substantial shifts in responsibility for health and wellbeing alongside the evolution of new structures for oversight, commissioning and partnership in health services, including immunisation.

Responsibility for immunisation commissioning lies predominantly with NHS England but the pathways involve general practitioners (GP), community health service providers, child health record systems, health improvement functions and a wide range of community partners and organisations.

Health and Wellbeing Boards have been established as statutory executive partnership committees led by Local Authorities, with oversight of health and social care commissioning across the local partnership and a statutory duty to improve the health of the population and reduce health inequalities. The membership and sub-structures of these Boards varies between areas but there is a requirement to have a health protection sub-group which focuses on immunisation, screening and emergency planning in the local area.

Clinical Commissioning Groups (CCG) evolved from the Primary Care Trusts (PCT) as the local NHS organisation led by GPs with the responsibility for commissioning the majority of community and hospital based services,

including maternity and mental health services. CCGs are responsible for practice development and improvement and have a pivotal role in ensuring the data collection and reporting pathways for immunisation are robust. They are also responsible for training and professional development for practice nurses, GPs and other health care professionals in primary care; this includes ensuring appropriate immunisation training and clinical governance.

Public Health specialist teams moved from the PCTs into Local Government, led by the DPH with statutory responsibilities to improve health and wellbeing and chief officer status. The DPH has a defined role to review and challenge the delivery of local immunisation services.

Local Government, through a ring-fenced public health grant, became responsible for commissioning a range of public health services, including sexual and reproductive health services and the child health programme for children and adolescents aged 5-19 years old.

NHS England (previously known as the NHS Commissioning Board) was established with a network of regional hubs to lead the commissioning of a range of NHS services, including immunisation delivery and primary care services, through Area Teams at a local level.

Public Health England (PHE) was created to bring together a range of national public health national functions into a central expert body with regional spokes. They included the HPA, the National Treatment Agency, the Cancer Registry, National Screening Programmes and the Public Health Observatory Network. PHE has a national leadership role on key issues, including immunisation and provides support for Local Authorities and DsPH as well as NHS England.

These changes create a new context for the discussion of immunisation at a local level that will require a high level of partnership and constructive discussion and challenge. The DPH will be key to these discussions and will have a pivotal role connecting with PHE to provide assurance for, or raise questions regarding, local screening and immunisation services.

Different organisations have different governance and commissioning responsibilities and there is overlap between client groups and operating locations, for example Local Government is responsible for commissioning school nursing services, while NHS England is responsible for commissioning the HPV immunisation programme of school-aged children. This creates new opportunities for innovation and creative collaboration.

The new approach also requires greater transparency between commissioners around performance data, as there will be significant interdependency between differently commissioned services to deliver immunisation outcomes.

Relationships between HOSC and HWB are being developed and many of the questions proposed in this document could be asked in the context of

partnership or commissioning challenge at the HWB or in the more formal context of a scrutiny review.

Increasingly the discussion about immunisation has expanded to recognise that immunisation is not only important in reducing preventable illness but also chronic conditions as a result or complication of the infection. For example, seasonal flu immunisation prevents not only excess winter deaths but reduces both hospitalisation and winter pressures on accident emergency and may, in turn, reduce nursing costs and residential home placement.

Immunisation should not always be a subject of scrutiny in isolation. When HOSCs are considering other topics, immunisation pathways should be included in the review. For example, a scrutiny of local maternity services could include a review of the provision of the hepatitis B immunisation of at-risk neonates and, similarly, a review of support for older or vulnerable adults with long term conditions could consider how well they are protected through seasonal flu immunisation programmes.

Understanding the challenges

The changed relationships have provided a new opportunity to reflect on immunisation pathways and understand some of the challenges in achieving the WHO threshold of 95% immunisation coverage to protect the whole community.

Data Challenges

Data is key to understanding how successful local immunisation programmes are in protecting local people from preventable diseases through vaccination.

The pathway for data collection includes the identification of the cohort of individuals due for immunisation, contacting them to arrange appointments, monitoring attendance and when they attend recording the immunisation in local records, then extracting this information for transfer to the central database or national reporting system.

The identification of cohorts of individuals for immunisation can involve different data sources, some based on general practice datasets and others such as neonatal hepatitis B or teenage HPV vaccination require other providers to share data such as the school register.

Different immunisations are reported through different data collection pathways, most of which involve an element of time delay between the immunisation being administered and recorded at a local level and the immunisation being reflected in borough statistics.

Immunisation data for seasonal flu is the timeliest. For routine childhood immunisations reported through the COVER (Cover of Vaccine Evaluated Rapidly) system,[8] the delay can be up to 18 months as the data is extracted based on the age of the child, not the chronology of the immunisation – so, for example, a child who is immunised in January 2013 at 14 months old

will not be reflected in the statistics until the child reaches 24 months to be included in the 2 year old data cohort in November 2013.

Scrutiny Committees may wish to look at these elements of the immunisation system to understand potential opportunities for improvement in local systems.

Why scrutinise immunisation?

HOSCs are fundamental to the democratic process, allowing councillors who are not on the Council Executive to influence the decisions of the Council and other strategic partners, and to ensure that the needs of local people are taken into account. The responsibilities for Local Government Scrutiny were set out in a range of Acts, including the Local Government and Public Involvement in Health Act 2007,[9] the Health and Social Care Act 2001[10] and the Localism Act 2011[11] which consolidated a range of previous Acts and amendments.

Overview and Scrutiny has powers to hold decision-makers to account, challenge and improve performance, support the achievement of value for money and influence decision-makers with evidence based recommendations, bringing in the views and evidence of stakeholders, users and local residents.

Successful scrutiny drives improvement; scrutiny is successful when it works as a 'critical friend' to the Executive and external agencies and reflects the concerns of the public and the community through leadership and a focus on outcomes and impact.

Scrutiny may be useful in the following circumstances:

- Where immunisation performance is significantly below thresholds for community protection.
- Where there are concerns over a potential outbreak, as seen with measles, mumps, pertussis and rubella.
- Where there have been significant clinical incidents or issues raised about immunisation by members of the public, the DPH or other key stakeholders.
- Where there is an influx of travellers/immigrants or in areas with a highly transient population.
- Where a new vaccine is introduced to the national immunisation schedule.
- Where immunisation is considered as part of another scrutiny review, for example, the health of looked-after children, gay men or older people.
- Where the economic burden of an infectious disease is significant and impacts heavily on costs to the local health and social care economy.

Health improvement and community engagement

The public confidence in immunisation is an important factor in uptake, as demonstrated by the impact of the fraudulent research into the MMR vaccine in the 1990s. The responsibility for health improvement relating to immunisation is shared across a range of agencies, including PHE, and therefore there is potential for intervention to be missed.

Publicity campaigns can be useful in raising awareness but there is also a need to ensure that professionals receive appropriate training to promote immunisation and support children, parents and adults taking up the offer to protect themselves. HOSCs may wish to explore how communities are being engaged through health improvement activity at a local and national level.

Inequalities in immunisation

Why reducing inequalities is important

There are inevitably variations in uptake rates of immunisation. If these were spread evenly across the population this would remain a matter for concern, but not necessarily an issue for scrutiny, since no health care intervention can reach all its possible beneficiaries. Of more concern, are systematic and unjustifiable differences in immunisation between population groups. There are three reasons to be concerned about:

Immunisation provides clear protection for the health of the individual; systematic and unjustified differences in immunisation rates between population groups uptake are therefore an avoidable inequality in health.

Some immunisation confers herd immunity, reducing inequalities in uptake therefore also improves the overall effectiveness of immunisation and its health benefits.

There is a moral justification for reaching out to as many of those who can benefit from immunisation as possible. If some groups are systematically 'not reached' then services need to work hard to ensure that their offer is set out, or tailored, in the right way, so that the benefits of immunisation are clearly expressed and understood by the intended recipient groups.

Inequalities need to be assessed on a case-by-case basis

These issues needs to be handled and scrutinised tactfully and understood clearly. Some systematic variations in geography may be due to strongly held beliefs, for instance in the case of some religious groups, although this is not always the case.[12]

There are well known inequalities in take-up of immunisations, although these differ significantly by topic and each needs to be understood on a case-by-case basis. For example:-

Whilst flu vaccination rates have been rising across all risk groups, they have been found to be lower in males, patients from deprived areas and with a higher proportion of non-white residents.[13] A recent systematic review[14] has summarised the evidence on inequalities in seasonal flu vaccination in the population of people over 65.

A study in three PCTs showed that school-based HPV vaccination uptake was high and did not vary markedly by social deprivation. However, there were associations with ethnicity and substantially lower uptake in non-mainstream educational settings.[15] The role of school nurses is particularly important in narrowing inequalities in uptake in HPV vaccination.[16]

Local Joint Strategic Needs Assessments (JSNA) include case studies of inequalities in vaccinations and immunisations in local areas, and the links to relevant evidence. For example, see Kent and Medway,[17] Islington[18] and Central Bedfordshire.[19]

Reducing inequalities in vaccination and immunisations

In its study of inequalities in immunisation in children ('**PH21 – Reducing differences in the uptake of immunisations: guide to resources**'),[20] NICE presented the evidence that the following groups were more likely to be at risk of not being fully immunised:

- Those who have missed previous vaccinations (whether as a result of parental choice or otherwise)
- looked-after children
- those with physical or learning disabilities
- children of teenage or lone parents
- those not registered with a GP
- younger children from large families
- children who are hospitalised or have a chronic illness
- those from some minority ethnic groups
- those from non-English speaking families
- vulnerable children, such as those whose families are travellers, asylum seekers or are homeless

NICE reported evidence that MMR vaccinations were less likely to be received by parents with higher levels of education (particularly if mothers are educated to degree level), and that while children of more affluent parents were generally either vaccinated with MMR on time or not at all, more disadvantaged children were more likely to have MMR, but late.[20] NICE's economic analysis showed that improving uptake of measles vaccines was cost-effective in groups with both high and low existing coverage, but more so in the higher than in the lower and contributed to reducing inequalities.

Even the most costly method of home visits would be a cost-effective use of resources.[20]

Patient reminders and recall systems have been found to be effective in developed countries such as the UK in increasing population coverage,[21] although most of the studies do not distinguish effectiveness between different groups. Some evidence from Scotland[22] also suggests that the Quality Outcomes Framework (QOF) in its early years was effective in reducing inequalities in uptake between practices and for patients under 65 with chronic disease, but less so in reducing inequalities in uptake between people of different socio-economic groups.

The importance of Overview and Scrutiny Committees

HOSCs have experience of assessing and reporting on inequalities in vaccination uptake.[23, 24] However, whilst population level coverage is presented in the PHOF national benchmarking tool,[6] area statistics are not broken down by important inequalities groups. It is therefore paramount that HOSCs should focus on inequalities in their investigation of relative population coverage of vaccinations compared to their Local Authority peers.

Background information

Why and when to immunise

Childhood immunisation

The immunisation programme is an essential part of protecting children's health. Low vaccine uptake puts children at risk, particularly in view of recent outbreaks of measles, mumps and pertussis and high rates of migration from countries that are experiencing a resurgence of certain diseases (for example, polio has started to re-emerge in Nigeria and diphtheria is increasing in Eastern Europe).

It is worth considering that:

- Before the introduction of MMR vaccine in 1988, approximately 1,200 people across England and Wales were admitted to hospital each year because of mumps.[25]
- Since 2000, the MenC vaccination programme has prevented over 9,000 cases of serious disease and more than 1,000 deaths. There have been only 2 deaths in children and young people under 20 in the last 5 years, compared to 78 deaths the year before the vaccine was introduced.[26]
- Before the introduction of the haemophilus influenzae type b (Hib) vaccination in 1997, one in every 600 children developed Hib meningitis or other serious forms of disease before their fifth birthday. Today, there are only a handful of cases in young children.[27]

The overall aim of the routine childhood immunisation programme is to protect all children against the following preventable childhood infections:

- diphtheria
- tetanus
- pertussis (whooping cough)
- Haemophilus influenzae type b (Hib)
- polio
- meningococcal serogroup C (MenC)
- measles
- mumps
- rotavirus
- rubella
- pneumococcal

The UK routine childhood immunisation programme continues to expand and evolve with the development of new vaccines and with the evidence provided by ongoing surveillance of disease incidence. In the 1960s, children in the UK were routinely offered protection against six vaccine-preventable diseases: smallpox, diphtheria, pertussis (whooping cough), tetanus, polio and tuberculosis (BCG). In 1968 universal immunisation against measles was introduced and in 1970 selective immunisation against rubella for school girls and seronegative women of childbearing age. In 1988, measles, mumps and rubella vaccination (MMR) replaced single measles vaccine and in 1996 a second dose of MMR was introduced and at the same time the schoolgirl rubella programme ceased. Routine smallpox vaccination ended in the 1970s prior to eradication of the disease in 1979 and the routine schools-based BCG programme ended in 2005 following changes observed in the disease incidence. In 1992 the first of the conjugate vaccines was introduced for Haemophilus influenza type b (Hib) disease, the meningococcal C vaccine followed in 1999 and the vaccine for pneumococcal disease, pneumococcal conjugate vaccine (PCV) in 2006. In 2008 the human papillomavirus (HPV) programme was introduced for all girls aged 12-13 years old in school year 8, to protect against the HPV infection; the quadrivalent vaccine used in the current programme helps protect against four types of HPV that can cause cervical cancer, pre-cancerous lesions and genital warts.

From July 2013, children currently born in the UK are scheduled to receive vaccinations to protect them against 11 diseases – during the first year of life, vaccines against rotavirus, diphtheria, tetanus, pertussis, polio, Haemophilus influenzae type b (Hib), pneumococcal disease (pneumococcal conjugate vaccine – PCV) and meningococcal group C disease (meningococcal conjugate vaccine – MCV) are given. In the second year of life, the first dose of MMR vaccine, to protect against measles, mumps and rubella is given. The schedule is complex as shown in the previous section, with boosters and repeat doses recommended during the child's life to complete the programme and maximise protection. Where children are born in other countries they should be offered relevant vaccination to bring them in line with the UK schedule as quickly as possible. Wherever possible the vaccines should be given together to minimise the number of appointments the child needs to attend. Guidance on this is clearly detailed in the Green Book.[7]

The childhood schedule will continue to develop over time – see section above as to important changes to the national programme in 2013–14. Other countries routinely vaccinate against chickenpox and hepatitis A and/or B; if it becomes cost effective, it is possible that the UK will also add these to the routine schedule. The schedule is also likely to change to make sure individuals are protected against infections for as long as possible, for example, introducing a booster of pertussis (whopping cough) vaccine to teenagers and changing the schedule for meningococcal vaccination. HPV vaccination for boys may be recommended if it can be shown to be cost

effective. There are also new vaccines becoming available such as the newly licensed vaccine to protect against meningococcal B disease and this may well be introduced to the schedule again depending on the cost effectiveness. Additional vaccinations for adults will also be introduced – see under Adult Immunisation section of this guide.

Other countries worldwide admire the NHS delivery of childhood immunisation programmes and uptake rates in the UK are among the highest in the European Union (EU). The key reasons for this are:

- A right to be immunised, free of charge, under The NHS Constitution.[3]
- The COVER programme; since 1987 this programme has improved coverage by providing rapid feedback of clear, accurate and relevant information and to enable changes in vaccine coverage to be detected quickly.[8]
- Ongoing surveillance of all immunisation programmes to ensure maximum benefit to the individual as well as safety and cost-effectiveness through the JCVI.
- There is a continued high priority given by the DH to the national childhood immunisation programme and there is a commitment within the structures, following the restructures, for screening and immunisation leads, coordinators and mangers to be available, alongside:
    - Regular updates and information via tripartite (DH, PHE and NHS England) letters.
    - Requirements for training and updates at a local level.
    - The regular updating of 'Immunisation against infectious disease' (The Green Book).[7]
    - Publicity and information materials to support the programmes, including leaflets and factsheets.

WHO (World Health Organization) Europe has a regional goal to eliminate measles and rubella disease by 2015 and to achieve this there is the recommendation of 95% coverage of two doses of measles-containing vaccine.[28]

Immunisation data for 2011/12[29] shows that the uptake rates for MMR vaccination for children aged two years reached 91.2% – this is the highest level for 13 years. It is however, still below the DH target for 95% uptake of vaccines scheduled to be given before the age of 2.

Despite various initiatives over the years there continues to be a wide variation of uptake to the routine childhood immunisation programme across the country. Every effort should be made to ensure that all children are immunised, even if they are older than the recommended age range; no opportunity to immunise should be missed.

Adult immunisation

In 2000, the proportion of the UK population over 50 years of age was 33%, and is estimated to reach close to 50% in 2050.[30] Evidence demonstrates that older people are at greater risk of morbidity and mortality from vaccine-preventable diseases.[31] Research from the University of Birmingham has identified several reasons why vaccination is increasingly important within older age groups:[32]

- Older people may be at increased risk of serious illness or death resulting from certain common infections.
- Immune function decreases with age, leading to increased susceptibility to more severe and frequent infections.
- Older people may have not have received immunisations in younger years and newer vaccines may not have been available to them when they were children.
- Boosters may be recommended for immunity that decreases with age.

As well as the increase of co-morbidities, increasing frailty and moving to institutional living, where infections are more easily transmitted in a closed congregate setting, may also be a contributing factor.

Adults require protection against vaccine-preventable disease when travelling – this increasingly includes those 'visiting friends and relatives' (VFR) as well as trips for business or holiday. While many of the vaccines recommended for travel are not covered by the NHS, it does provide an opportunity to make sure adults are up to date with the routine scheduled vaccinations.

The UK British Geriatric Society has produced, as part of their Best Practice Guide series, the document 'Vaccination programmes in older people';[33] a further document entitled 'Life Course Immunisation; Improving adult immunisation to support healthy ageing' was produced by the International Longevity Centre UK in August 2011.[34]

There is similar recognition from the EU that the older population is not properly protected from vaccine-preventable disease.[35] The WHO recommends that where national flu vaccination policies exist, strategies should be established and implemented to increase vaccination coverage of all people at high risk, including the elderly and persons with underlying diseases, with the goal of attaining vaccination coverage of the elderly population of at least 75% by 2010.[36] In 2009 the EU adopted a Council recommendation to achieve vaccination uptake of at least 75% in people aged 65 years and older, in those under 65 years of age with clinical risks and for pregnant women and to also encourage healthcare workers to take up the vaccination.[37]

Vaccinations for adults:

Seasonal Influenza

Influenza is a highly infectious, acute viral infection of the respiratory tract. Serious illness and mortality can result from influenza and are highest amongst the very young, older people, those with underlying disease and those who are immunosuppressed.

In Europe, estimates suggest that there are between 40,000 and 220,000 deaths attributable to influenza per year, dependent on the virulence of the circulating virus strain.[38] In the UK seasonal flu vaccination is recommended for all individuals aged 65 years and over, frontline healthcare workers and younger individuals (aged 6 months to under 65 years of age) in clinical risk groups.

Based on existing advice from the JCVI on those at increased risk from influenza, the groups eligible to receive seasonal flu vaccine for winter 2013/14 are:

- People aged 65 years and over
- All those aged 6 months or over in a clinical risk group
- All pregnant women
- People living in long-stay residential care homes or other long-stay care facilities where there is a risk of high morbidity and mortality
- Those who are in receipt of a carer's allowance, or those who are the main carer, or the carer of an elderly or disabled person whose welfare may be at risk if the carer falls ill
- Frontline health and social care workers

The existing flu immunisation programme is to be extended over a number of years to include all children aged two to 16 inclusive, starting with two and three year olds from Autumn 2013. Further information on the seasonal flu programme for 2013/14 can be found in the tripartite letter at:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/205433/130605_Flu_Letter_FINAL.pdf

Whilst the UK is well ahead of most countries of the EU, with uptake of seasonal flu vaccination for the over 65 year olds in 2011/2012 at 74%,[39] it still falls short of WHO guidance and uptake remains inadequate in the following groups;

- **Frontline healthcare workers (HCW)**

Frontline health and social care staff were first recommended to have seasonal flu immunisation in 2000. Uptake has remained consistently low, with an uptake of just 44.6% in the 2011/2012 winter season.[39]

- **Carers in receipt of an allowance**

Uptake has remained consistently low, with an uptake of just 45.2% in the 2011/2012 winter season.[39]

Carers per se are not 'at risk' of influenza unless they themselves fall into a clinical risk group, but should be considered for vaccination to protect those most at risk should their carer fall ill (i.e. resulting in the loss of an amount of care likely to prove detrimental to their welfare).

- **Pregnant women**

Since 2010 the recommendation has been that all pregnant women regardless of the stage of pregnancy should be immunised, because pregnancy is recognised as an important clinical risk group, but uptake in this group is still low at 27.4% in the 2011/2012 winter season.[39] Vaccination in pregnancy improves pregnancy outcomes and reduces the risk to the baby in the first months of life; failure to protect this vulnerable group not only puts the woman herself at risk but also her unborn baby.

- **Other individuals in clinical risk groups**

Uptake for this group was 51.6% in the 2011/2012 winter season,[39] meaning that too many of these vulnerable individuals remain at risk of preventable morbidity and mortality – see the Green Book for clinical risk groups.[7]

Pneumococcal

Invasive pneumococcal disease (IPD) is a major cause of morbidity and mortality, particularly amongst the very young, the elderly, and in groups at higher risk because of clinical risks (see the Green Book). Since 1992, a vaccine has been recommended in England for individuals at higher risk of invasive pneumococcal infection over the age of 2 years. From 2003, the DH phased in an extended programme to include all individuals 65 years and over with the aim of reducing the burden of IPD in the older population as set out in the Green Book.[7]

Pertussis (whooping cough)

There has been an increasing incidence of pertussis since 2011. The greatest number of cases is seen in adolescents and young adults but the highest rates of infection is in infants less than three months of age and these are also at highest risk of complications and death as they are too young to be protected through routine vaccination. The deaths seen have all been in infants below the age of vaccination.

The DH launched a temporary campaign in October 2012 to offer pertussis-containing vaccine to all pregnant women in the later stages of pregnancy. This is to protect the baby for the first couple of months until old enough to receive vaccination. The programme will continue through 2013/2014 until further DH notice, pending further advice from the JCVI.

Herpes zoster (shingles)

Shingles (Herpes zoster) is a reactivation of the Herpes varicella zoster virus infection. After causing chickenpox, the virus can lie dormant or hidden in part of the nervous system for many years. Herpes zoster tends to be more prevalent in adults, particularly with increasing age.[40]

From September 2013, a national shingles immunisation programme is to be introduced for people aged 70 years (routine cohort) and 79 years (catch-up cohort) to protect against herpes zoster. The programme may be extended in-year, to patients aged 78 years, subject to vaccine supply and advice from Public Health England. Information can be found in a tripartite (DH, PHE and NHS England) letter at:

https://www.gov.uk/government/publications/national-immunisation-programme-planned-changes-for-2013-to-2014

The ten questions

1. What are the local arrangements, structures and responsibilities for immunisation?

There are concerns that reforms to the NHS may lead to the fragmentation of immunisation services. At a local level, are clearly-defined structures being developed to ensure that immunisation provision is optimised in the future?

Why is it important to ask this question?

The current framework for the provision of vaccination services is through a 'plurality of providers', although the majority of these services will be provided by mainstream NHS services (primary care teams, school nursing services, secondary care settings). However, General Practice can opt out of basic immunisation provision and some services (e.g. many travel vaccines, occupational vaccination of staff working in private care homes, etc.) are not 'core' NHS responsibilities in that additional fees are payable for their provision. Given the complexity of provision, it is essential that all aspects of these services are effectively overseen and monitored (although the principal focus should be on the core NHS provision).

Specific further questions could be asked:

- What structure is in place to achieve oversight, monitoring and coordination of services (e.g. a local strategy and/or implementation committee)? Are the responsibilities of those involved clearly defined?
- Given the recent major changes in commissioning and provision of healthcare, are local immunisation providers aware of new structures, sources of expertise and key contacts?
- What arrangements are in place to provide appropriate, regular reports to the Local Authority, CCG, Children's Trust Board, HWBs etc. about providers' performance?
- Has the immunisation programme been adapted to accommodate changes in the local population, especially increases in young children or older adults?
- With the increase in the number of academies and free schools, are structures in place to ensure that children attending them, are offered appropriate immunisations?
- If local school nursing services are not providing vaccinations (e.g. the 'school leavers' booster, missing vaccinations or HPV for girls aged 12-13), is there alternative provision and is this provider achieving satisfactory results?
- Is there, or has consideration been given to, supplementing primary care and routine school nursing provision with outreach activities performed by a dedicated team?

2. How is the local area performing against national standards for childhood immunisation?

What activities are in place to ensure that as many young children as possible are fully immunised? Is enough being done to ensure that local children are leaving school with complete immunisation histories in line with national recommendations?

Why is it important to ask this question?

In 1999, the World Health Organization European Region publication 'Health 21: The health for all policy framework for the WHO European Region' included recommendations for immunisation,[41] namely;

- '…by 2000, each Member State should have achieved 95% coverage with the first dose of measles vaccine'
- '…immunization of at least 95% of infants and young children'

If the recipient becomes immunised, developing protective antibodies against the particular disease covered by the vaccine, that child gains personal protection against the disease. Unfortunately there are some children who have medical conditions that mean they cannot be given certain vaccines. However, those unvaccinated children, who would be at risk if exposed to the disease, can gain a degree of indirect protection through the mechanism of herd immunity; high levels of vaccine uptake are required to ensure that unvaccinated children will benefit from herd immunity.

From July 2013, by the age of 18, girls should have received 18 vaccinations and boys, 15 vaccinations - see Background Information section for comprehensive details of the childhood immunisation schedule.

PHE monitors the uptake of the routine, universal vaccinations that are scheduled to be given by the age of 5 years - see the Useful Links section.

Overall, the targets are not being met in England, though many localities have achieved the appropriate targets for some or many of the vaccinations. Even in areas where uptake is above the relevant target, efforts to get the uptake even higher and then maintained at the highest level possible need to continue.

Oversight, monitoring and support therefore remain necessary in all areas, and additionally, there needs to be clear arrangements for intervention and support if service providers are failing to achieve and maintain high uptake.

Specific further questions could be asked:

With regard to routine childhood immunisations, how well is the area performing both in absolute terms and in comparison to neighbouring/ national rates?

The PHOF Data Tool[6] (under Indicator 3.03) enables an individual authority to 'compare and contrast' data, across a spectrum of immunisation indicators, against their neighbouring authorities within the region and against an England average.

This tool can be found at: http://www.phoutcomes.info/public-health-outcomes-framework#gid/1000043/par/E12000004

Benchmark comparisons at age:

- 12 months – Primary Immunisation
- 2 years – Child Immunisation course
- 5 years – Completed Primary Immunisations and boosters

- What activities are in place to ensure these figures are increased to meet WHO 'aspirational' targets?
- Assuming monitoring procedures identify concerns about an individual provider's performance, what arrangements are in place to correct any problems (e.g. providing advice and support to such 'less well performing' providers, contract review and modification, alternative provision of services etc.)?
- What arrangements are there to identify patients who are resident within the area but are not registered with primary care providers?
- Given the importance of repeated failure to attend immunisation appointments as a warning sign in several high profile child protection cases, how does the local immunisation programme integrate its safeguarding responsibilities around children who repeatedly do not attend immunisation appointments?
- How are local GPs being encouraged and/or incentivised to achieve higher coverage?
- Given the new health 'landscape', are local GP surgeries fully aware of Area Team structures/personnel and contact points?
- If the Area Teams are not 'borough-facing', exactly how are the local GP practices being monitored and supported to ensure that 'early years' immunisations are optimised and standards don't slip during the period of transition?

- Is advice about vaccinations available and/or promoted at pharmacies, libraries, community centres, retail outlets, etc. (i.e. places other than those where vaccinations are given)?
- Are current arrangements robust enough to ensure that local children leave school having completed all vaccinations in line with national recommendations?
- Is enough being done to engage with religious communities and faith schools to promote public health messages and ensure that childhood immunisation uptake amongst these groups is optimised to provide protection against vaccine-preventable diseases?
- With the increase in the number of academies and free schools, are structures in place to ensure that children attending them, are offered appropriate immunisations? If these school children are not being offered vaccinations within the school setting are alternative arrangements in place?
- Are 'hard to reach' children being properly served in respect of ensuring full immunisation? Has consideration been given to engaging more with children's charities to ensure that immunisation messages and provision are explored?
- Are efficient 'invitation/recall' systems in place within the locality and schools to increase awareness of the 'school leavers' booster and to ensure good uptake at school vaccination clinics?
- Is there a satisfactory protocol in place to deal with issues of consent and have all service providers agreed to follow this (e.g. if teenagers attend sessions and a consent form cannot be found – see section under Glossary)?
- Does the local JSNA truly reflect the importance of good childhood immunisation uptake?

3. What measures are in place to ensure that the focus for immunisation is not just on children and that adults are protected too?

With immunisation so often seen as the domain of children, what measures are in place to ensure that immunisation locally is fully regarded as an intervention across all stages of life, as part of a life course approach?

Why is it important to ask this question?

Core NHS provision includes routine universal vaccination for older people (those 65 years and over) against influenza and pneumococcal disease with other vaccines (for example, shingles vaccination) likely to be introduced.

Seasonal flu vaccination is recommended for those aged 6 months to 65 years who have an underlying medical condition that makes them more vulnerable to influenza and for all frontline health and social care workers. Uptake for both people with underlying medical conditions and health and social care workers is patchy; in particular, there are different reported uptake rates for people with different medical conditions.

Specific further questions could be asked:

- With respect to seasonal flu vaccination of those over 65 years of age, how well is the area performing both in absolute terms and in comparison to neighbouring and/or similar areas?
- With respect to seasonal flu vaccination of the at-risk groups, how well is the area performing both in absolute terms and in comparison to neighbouring and/or similar areas?
- With respect to seasonal flu vaccination of pregnant women, how well is the area performing both in absolute terms and in comparison to neighbouring and/or similar areas?
- The DH recommends that every employer has ambitious flu immunisation programmes for frontline health and social care workers to significantly improve upon their uptake; what is the % coverage rate for front line HCW staff in local primary and secondary care settings, and what activities are in place to ensure that this figure is increased?
- For those 'carers in receipt of an allowance', what is the % coverage rate for the area, and what activities are in place to ensure that this figure is maintained and/or increased?
- Are there any local mechanisms or initiatives in place to ensure that GP practices are aware of who these 'carers in receipt of an allowance' are, and likewise how is this particular risk group being made aware that they are entitled to be vaccinated?
- With regard to pneumococcal vaccination of people over the age of 65, how well is the area performing both in absolute terms and in comparison to neighbouring and/or similar areas, and what is being done to improve uptake of pneumococcal?
- Does the area monitor the vaccination of staff and people living in long-stay residential care homes or other long-stay care facilities? If yes, is the uptake satisfactory or are there plans in place to enable uptake to be increased?
- Are there local initiatives in place to encourage pharmacists to offer vaccinations to those in at-risk groups who might not otherwise avail themselves of flu vaccination at their GP's surgery?
- What specific measures are in place to ensure that those older

people in congregate settings, such as long-stay residential care homes, are suitably immunised?

- How are local services delivering seasonal flu immunisation around the needs of patient groups, e.g. are midwives providing opportunities for immunisation at ante-natal clinics?
- At a local level, how are commissioners working together to integrate immunisation programmes into other clinical services? For example, are chronic disease services required to promote, monitor and administer seasonal flu immunisation in outpatient clinics?
- How is patient engagement supporting immunisation uptake and programme development?
- Does the local JSNA reflect the importance of maximising immunisation uptake for adults and is it regularly updated to ensure that new vaccines added into the national programme are accounted for, e.g. forthcoming shingles vaccine programme?

4. Is there good local provision to ensure that health and social care workers receive all the vaccines they should be eligible for and what are levels of uptake?

Vaccinating the healthcare worker (HCW) not only protects the individual receiving it, but can also protect their patients from infection. Historically the uptake rate for HCWs receiving seasonal flu vaccination has been low – how do local rates compare to other rates achieved across the country and more importantly, are 'stretch' targets in place to improve uptake rates in frontline HCWs across all care settings within the area? Is there adequate, and freely available, Occupational Health provision to ensure that HCWs are fully vaccinated against other vaccine-preventable diseases?

Why is it important to ask this question?

Occupational Health providers should be ensuring that staff are immunised against vaccine-preventable diseases, both to ensure personal protection for the HCW or social care provider and for their patients. Hepatitis B vaccination is mandatory for doctors and nurses, unless testing has shown this to be unnecessary or inappropriate. BCG vaccination (to protect against TB) is recommended for defined staff groups, as are MMR and varicella zoster vaccines (to protect against measles, mumps and rubella; and against chickenpox).

Seasonal flu vaccination is also recommended for frontline health and social care staff. In the 2011/12 season, there was an appreciable improvement in vaccine uptake over the previous year at 44.6%. Despite these improvements, the data still indicate that over half

of HCWs (approximately 570,000), did not receive flu vaccine in the 2011/12 season. UK studies have shown that the seasonal flu vaccination lowers the risk of influenza infection and, when healthcare workers are vaccinated, lowers rates of influenza-like illness, hospitalisation, and mortality in vulnerable patients in long-term healthcare settings.

Specific further questions could be asked:

- What initiatives are in place to ensure high coverage of HCW flu vaccination uptake?
- Is there any local data relating to seasonal flu vaccination of frontline social care staff? If yes, how well is the area performing? If not, are there any plans to gather this important data in future?
- What systems are in place to immunise frontline social care staff, as well as frontline healthcare staff?
- Are initiatives in place to immunise student nurses?
- Are there suitable and freely available opportunities that make it easy for health and social care workers to easily access immunisation services?
- Do all local Trusts and care homes contract with an Occupational Health service to advise on and/or supply vaccination and monitoring of staff with respect to influenza, hepatitis B, MMR, varicella and BCG?
- Are trade unions and staff groups being involved in the staff vaccination programme?

5. Are local immunisation information processes robust enough?

Do you have protocols and policies in place to ensure that information between different providers is shared appropriately?

Why is it important to ask this question?

Information between GP surgeries (and other providers) and the child health information system needs to be shared appropriately as to ensure that the community services have a full picture of the immunisation history of a child.

Specific further questions could be asked:

- Do you have an information sharing agreement between the different providers
- What information can be shared?
- What information cannot be shared?
- What mechanisms are in place to ensure that the agreement is adhered to and patient data is kept safe?

- How is data about vaccinations collected, collated and reported both within the organisation and to national reporting/recording/monitoring systems? Who has responsibility for these arrangements? Is there an agreed mechanism for flagging up any concerns about an individual provider's performance, if necessary?
- What has been done to try to ensure that recording and reporting systems, at primary care centres and at Child Health Information level, are regularly reviewed to ensure they are as accurate as possible (new patients added and records updated and patients who have moved away removed, as swiftly as possible)?
- How is information on vaccinations given outside the GP surgery, such as those given in schools or community centres, transferred to the GP system?
- How is information on vaccinations given at the GP surgery transferred to the Child Health Information System?
- Are GP surgeries being made aware if their local schools (Faith schools or academies, for instance) are opting out of providing immunisation services, so that they are able to provide the relevant vaccinations for these school children (e.g. the 'school leaver' booster or HPV vaccines)?
- Are there any identified problems with data sharing between independent schools and the child health system? If so, what problems have been expressed and how is this mitigated?

6. What policies are in place locally to ensure that all those considered 'at-risk' and eligible for vaccination, are being targeted?

Why is it important to ask this question?

Certain vaccines are recommended for those groups of people who may be at increased risk because of their lifestyle, occupation or other factors. They include hepatitis B (HBV), hepatitis A, tetanus and BCG (against TB), and varicella (chickenpox). There is also guidance for the management of at-risk individuals following significant exposure to chickenpox or herpes zoster, the management of immunosuppressed patients, the management of neonates and the management of pregnant women; information can be found in the relevant chapters of the Green Book.[7]

For protection against certain diseases, UK policy calls for the identification of those at increased risk of acquiring the disease. There may be increased risk because a family member in the household is a known carrier (e.g. children born to mothers who are carriers of hepatitis B, or where another family member is infected with hepatitis B). NICE guidance, 'PH21; Reducing differences in the uptake of

immunisations',[20] gives advice as to addressing differences in the uptake of immunisation, including uptake of neonatal hepatitis B (see Useful Links section).

Hepatitis B vaccination should be started soon after birth when the mother has been identified as a carrier as a result of routine ante-natal testing. If one member of a household is found to have acute or chronic hepatitis B, vaccination should be offered to all other household members as soon as possible; in addition, sexual partners of someone diagnosed with acute hepatitis B may need to be offered antibodies extracted from blood transfusions (immunoglobulin) in an attempt to prevent infection.

Hepatitis B vaccination of children born to carrier mothers is monitored by the PHE and reported along with routine childhood vaccination statistics. However, there are technical difficulties with the recording and reporting of these vaccinations in primary care IT systems, reflected in the patchy reporting of uptake. In many areas, the numbers of mothers identified each year as hepatitis B carriers, and hence numbers of children requiring vaccination soon after birth, are very small. Ensuring that these children are identified, are vaccinated at birth in hospital and then receive the other doses of the course (and have the outcome of the vaccinations monitored) require careful arrangements with clearly defined roles and responsibility for staff involved.

In the instance of BCG vaccination for protection against TB, the person may have an increased likelihood of being exposed to the disease because one or more family members has, or has had, the disease. Neonatal BCG vaccination is recommended if there are ethnic and cultural links with countries where the disease is more common, or if the child is born in an area with a background rate of TB incidence above a defined rate irrespective of ethnicity or country links. This approach requires clear service specifications to ensure children who should be offered BCG are identified and there are adequate, flexible arrangements for them to receive the vaccination. Provision of childhood BCG vaccination is reported annually via the immunisation statistics published by the NHS Information Centre (see Useful Links section).

Vaccination may also be indicated for contacts, both household and in a wider community, in the event of a single case or an outbreak of certain diseases, such as influenza, measles, hepatitis A, hepatitis B, meningococcal group C disease or pertussis (whooping cough). The context of each case/outbreak needs to be carefully assessed: this is usually done by PHE in conjunction with NHS England and the acute

trust. Vaccination may occasionally be required for a large number of individuals, which will require sufficient resources to be mobilised.

Specific further questions could be asked:

- Has a local hepatitis B immunisation pathway been agreed to ensure that all affected babies are followed up appropriately and receive timely vaccination?
- What arrangements are in place to provide a full course of hepatitis B vaccination to children born to carrier mothers? If children are not receiving a complete course of four vaccinations, what monitoring and failsafe arrangements are in place to identify them and ensure they are offered vaccination?
- What is the uptake of the neonatal BCG programme in the area? Are there arrangements for call and recall to centres where the vaccinations are delivered?
- Is there a need for a review of local BCG immunisation provision as part of a detailed Health Needs Assessment for Tuberculosis?
- Have the necessary links been made between secondary care services (maternity, paediatric etc.) locality data collection and monitoring services and primary care providers to ensure the appropriate children are identified and vaccinations are provided and recorded/reported? Are all parties working to agreed protocols?
- How are commissioners working together to ensure that women and babies identified at risk during pregnancy are entering vaccination pathways for hepatitis B?
- How are sexual health service commissioners monitoring uptake of hepatitis B vaccination amongst men who have sex with men attending sexual health services?
- What arrangements/agreements are in place for dealing with single cases or outbreaks of communicable disease for which vaccination of contacts may be required? Does any agreement/plan identify resources that can be mobilised, as required?

7. The incidence of vaccine-preventable diseases is often higher in the more deprived sections of the population. Is enough being done to ensure these deprived communities are being engaged and fully able to access immunisation services?

Infectious diseases contribute to health inequalities. The burden of disease falls disproportionately on disadvantaged groups such as older people, the homeless and the chronically ill.[42] These vulnerable groups are also those most likely to be at risk of not being fully immunised. With regards to immunisation, what structural/policy measures are in place to address inequalities?

Why is it important to ask this question?

Although most people are registered with primary care providers, identifiable groups are known to fail to engage with services, including vaccination services. Those groups include the homeless, drug and alcohol abuse clients, asylum seekers (either through fear of detection if staying illegally or through ignorance/lack of information about access to health services), traveller communities, those with learning difficulties, looked-after children, children excluded from school and young offenders.

Specific further questions could be asked:

- Can the Scrutiny Committee be reassured (a) that providers of health services regularly review their arrangements to assess who is at increased risk of vaccine-preventable diseases such as hepatitis A and B, measles, TB etc. and (b) that providers are making efforts to offer appropriate advice and services to those groups?
- Has the locality considered whether adequate provision already exists or whether additional measures/services should be commissioned/provided?
- Has an equity audit been undertaken to understand different uptake of immunisation in different population groups?
- How many services provide translated materials or translator access for immunisation appointments?
- Are 'hard to reach' children being properly served in respect of ensuring full immunisation? Has consideration been given to engaging more with children's charities to ensure that immunisation messages and provision are explored?
- If there are homeless hostels or gypsy and traveller sites in the area, how is the immunisation programme making specific outreach and engagement efforts to provide services in these locations?

8. Can more be done to ensure that unvaccinated patients are able to access immunisation services, across a wide variety of settings?

The national immunisation programme is delivered in a variety of settings, by a large number of professionals from different disciplines, to individuals of all ages. The programme involves the co-ordination of multiple organisations at national, sub-national and local level. Therefore, it is important to set out the key criteria to be used when delivering and assessing an immunisation programme that aims to maximise vaccine uptake and thereby protect the population from vaccine-preventable diseases.

How is vaccination considered at every stage of routine clinical care pathways e.g. A&E, Outpatients, Developmental Assessments and Child Health Reviews, so that every opportunity is taken to identify unprotected individuals and offer opportunities for vaccination?

Why is it important to ask this question?

Many people – for many different reasons – miss their vaccination appointments. While some people remain unvaccinated because they choose not to be vaccinated, many more remain so despite a willingness to be vaccinated.

In order to ensure protection of individuals, and wider protection through herd immunity, no opportunity to vaccinate a patient who is due or overdue a vaccine and willing to be vaccinated, should be missed.

Opportunistic vaccination is particularly important for 'hard to reach' groups who are less likely to attend vaccination clinics.

The system has failed if, for example, patients in a risk group attend a hospital or clinic for the condition that puts them in the risk group, and they leave unvaccinated; for instance, a patient is admitted with or attends a clinic for severe asthma and leaves without having had a seasonal flu vaccination.

Providing opportunistic vaccination requires systems that are flexible enough to allow vaccinations to be given in all appropriate settings, and information systems that allow staff in these settings to know if a patient is due to receive a vaccine.

Specific further questions could be asked:

- What arrangements are in place to vaccinate patients in all NHS settings including hospital wards, clinics, walk-in-centres, accident and emergency departments, and prison health centres?
- What arrangements are in place to ensure that staff are alerted to the fact that a patient is due a vaccine? And if staff are not proactively alerted, can they quickly and easily find out if patients need vaccinating?
- Are there staff in all NHS settings who are trained to vaccinate? What proportion of the time that the setting is open is there somebody available who can undertake vaccination?
- Is appropriate equipment available to manage complications of vaccination in all NHS settings?
- Is enough being done to improve access to immunisation services, for instance, non-GP provision, Saturday clinics and/or opportunistic services?
- Are there mechanisms in place to offer the delivery of immunisation at home (domiciliary visits) for harder to engage families?
- How do systems ensure that the immunisation status is assessed at every opportunity and that vaccines offered when appropriate?

9. Are stringent protocols in place to ensure that opportunities to immunise immigrants from developing countries are optimised, especially for those with an unknown vaccination history or likely to have incomplete schedules?

Why is it important to ask this question?

Migration to the UK from countries that have higher rates of vaccine-preventable diseases and less comprehensive health service delivery has been at a high level and future in-migration may continue at these levels. Identification of incomplete vaccination compared with the UK schedule would enable any missing vaccinations to be offered. Review of vaccination history can be complicated, because of incomplete records, an unfamiliar language and/or vaccine names. Registration of new immigrants provides an opportunity to conduct a comprehensive review of health status, including immunisation history, and identification of gaps and requirements for additional service provision. The possibility of chronic disease carriage, and screening to identify carriers, can also be assessed at the same time.

Every year, many patients change their primary care provider each year: this is a particularly common occurrence in inner city areas. Registration with a new provider is an opportunity to review vaccination history, particularly of children, to identify incompletely

vaccinated individuals and attempt to persuade/provide catch-up vaccinations.

Specific further questions could be asked:

- Are arrangements in place with local providers to provide reviews of health care needs, including vaccinations, of people newly registering (whether this is first registration after immigration or registration after moving from another provider in the UK)?
- Are local providers assessed with respect to services they provide to, and assessments they make for, individuals registering with them?
- Has the HPA chart 'Vaccination of Individuals with Uncertain or Incomplete Vaccination Status' been recommended or supplied to providers of immunisation services, especially primary care providers?

10. Are sufficient measures being taken to ensure that local people are adequately protected from vaccine-preventable illnesses whilst abroad 'Visiting Friends and Relatives' (VFR)?

Why is it important to ask this question?

Travel, whether for leisure or business purposes or in order to 'visit friends and relatives'(VFR), has steadily increased from the 1980s until now. Provision of travel vaccines as part of NHS core responsibilities is limited to hepatitis A, typhoid and polio. Most vaccinations will entail payment and not all primary care providers will wish to provide services.

There are instances of mandatory vaccination for travellers. For example, Saudi Arabian authorities require those undertaking pilgrimage to Mecca have certain vaccinations and vaccination against Yellow Fever (YF) is still required for travellers to many YF endemic countries or for entry into other countries for travellers arriving from YF endemic countries. General information on immunisation, travel advice and health risks when travelling overseas, can be found at the NaTHNaC (National Travel Health Network and Centre) website:

http://www.nathnac.org/travel/

Few of the health hazards associated with travel outside the UK are preventable by vaccination, however, those that can be prevented by vaccination can be very serious and potentially fatal. Diseases are either never or rarely reported in those who have been vaccinated; vaccination remains the best protection against them.

Attendance for vaccination also offers the opportunity for the practitioner to offer additional travel health advice, particularly around malaria, HIV and other sexually transmitted diseases.

Specific further questions could be asked:

- Have there been any initiatives to make information available to members of ethnic minority communities about the need to seek health protection advice and services for those VFR travellers?
- Do all practices actively promote travel advice and vaccination in their surgeries?
- What means are taken to ensure that comprehensive education and awareness information is made available for those VFR, in order to promote correct messaging and encourage immunisation?
- Do local pharmacies offer advice on preserving health when travelling abroad?
- From a wider perspective, how much engagement takes place with religious community leaders to ensure that health protection messages around the benefits of immunisation are properly communicated and in turn cascaded out to their communities?

Useful links

Inside Government – Gov.uk website
The Green Book ('Immunisation against infectious disease') has the latest information on vaccines and vaccination procedures for all the vaccine-preventable infectious diseases that may occur in the UK and can be found at:

https://www.gov.uk/government/organisations/public-health-england/series/immunisation-against-infectious-disease-the-green-book

Joint Strategic Needs Assessment (JSNA) Immunisation Template
A good practice template for the immunisation component of the JSNA can be found at:

http://www.spmsd.co.uk/doc.asp?catid=442&docid=846

PHE website
Vaccine coverage and COVER (Cover of Vaccination Evaluated Rapidly) data can be found at:

http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/VaccineCoverageAndCOVER/

NHS IC website
NHS Information Centre (for Health and Social Care) publishes uptake statistics on an annual basis which looks at the number of children who are immunised against childhood diseases by their first, second and fifth birthdays, those people over the age of 65 immunised against influenza and immunisation against tuberculosis (BCG):

http://www.ic.nhs.uk/statistics-and-data-collections/health-and-lifestyles/immunisation

Department of Health
The DH publishes reports summarising the HPV vaccination programme – the most recent annual uptake report and provisional uptake data can be found at:

http://webarchive.nationalarchives.gov.uk/20130123170526/

http://immunisation.dh.gov.uk/ann-hpv-vac-cover-england-201112/

http://webarchive.nationalarchives.gov.uk/20130123170526/http:/immunisation.dh.gov.uk/tag/hpv-vaccine-uptake/

Public Health Outcomes Framework
In January 2012, the DH Published its Public Health Outcomes Framework, Healthy lives, healthy people: Improving outcomes and supporting transparency which sets out a vision for public health, desired outcomes and the indicators that will help us understand how well public health is being improved and protected.

The plans are outlined in three documents, the second of which specifies the technical details for the public health indicators; under domain 3 – Health Protection – there is an indicator for 'population vaccination coverage' which covers all vaccination programmes across the life course. Full details of the technical specifications of this indicator can be found on pages 58 - 61 of the document.

Additionally, the Public Health Outcomes Framework Data Tool, under Indicator 3.03, enables an individual Local Authority to 'compare and contrast' (across a spectrum of immunisation indicators) their performance against their neighbouring Authorities within the region and against an England average:

http://www.phoutcomes.info/

http://www.phoutcomes.info/public-health-outcomes-framework#gid/1000043/par/E12000004

Annual report of the Chief Medical Officer Volume 2, 2011
This report published in March 2013 sets out the response of the Chief Medical Officer, Professor Dame Sally Davis, to the challenges and opportunities faced in the prevention, diagnosis and management of infectious diseases, and includes a series of recommendations:

https://www.gov.uk/government/publications/chief-medical-officer-annual-report-volume-2

NHS Choices
A useful section on childhood vaccines timeline; information on which vaccinations are offered to all children on the NHS and at what age, and the optional vaccinations for those children considered at-risk:

http://www.nhs.uk/conditions/vaccinations/Pages/childhood-vaccination-schedule.aspx

NICE
PH21; reducing differences in the uptake of immunisations (issued September 2009, reviewed March 2013).

Guidance on differences in the uptake of immunisations (including targeted vaccines) in people younger than 19 years. The guidance aims to increase immunisation uptake among those aged under 19 years from groups where uptake is low. It also aims to ensure babies born to mothers infected with hepatitis B are immunised:

http://www.nice.org.uk/PH21

Recommendations 1-5 apply to all childhood vaccinations. Recommendation 6 focuses on the neonatal hepatitis B vaccination programme:

- Focus of the recommendations
- Parental responsibility
- Recommendation 1: immunisation programmes
- Recommendation 2: information systems
- Recommendation 3: training
- Recommendation 4: contribution of nurseries, schools, colleges of further education
- Recommendation 5: targeting groups at risk of not being fully immunised
- Recommendation 6: hepatitis B immunisation for infants

These include advice to:

- Improve access to immunisation services, for example, by extending clinic times and making sure clinics are 'child friendly'
- Provide parents and young people with tailored information and support
- Check children and young people's immunisation status during health appointments and other opportunities
- Ensure that babies born to hepatitis B-positive mothers are given the complete course of vaccine and on time, a blood check to test for infection and, where appropriate hepatitis B immunoglobulin

Glossary

Consent – Gillick Competence: Gillick Competence is a term used in medical law to decide whether a child, of 16 years or younger, is able to consent to his or her own medical treatment, without the need for parental permission or knowledge.

Diphtheria: Diphtheria is an upper respiratory tract illness caused by the bacterium Corynebacterium diphtheriae. It is a contagious disease spread by direct physical contact or breathing the aerosolised secretions of infected individuals (The Green Book, section 15).

The Green Book: 'The Green Book' is the popular name for 'Immunisation against infectious disease' which is a publicly available document on the principles, practices and procedures of immunisation in the UK, with particular emphasis on those immunisations that comprise the routine immunisation programme from birth through to adulthood. The Green Book can be accessed at;

https://www.gov.uk/government/organisations/public-health-england/series/immunisation-against-infectious-disease-the-green-book

See sections 13-35 for key disease areas

Hepatitis A: Hepatitis A is an acute infectious disease of the liver caused by the hepatitis A virus, usually spread through the faecal-oral route; transmitted person-to-person by ingestion of contaminated food or water or through direct contact with an infectious person (The Green Book, section 17).

Hepatitis B: Hepatitis B is an infectious inflammatory illness of the liver caused by the hepatitis B virus (HBV); the virus can be transmitted by exposure to infectious blood or body fluids such as semen and vaginal fluids, and also from mother to child around the time of birth (The Green Book, section 18).

Herd immunity: Herd or community immunity describes a form of immunity that occurs when the immunisation of a significant portion of a population provides a measure of protection for individuals who have not been vaccinated or developed immunity.

Human papillomavirus (HPV): While the majority of the nearly 200 known types of human papillomavirus (HPV) cause no symptoms in most people, some types can cause warts, while others can – in a minority of cases – lead to cancers of the cervix, vulva, vagina, and anus in women or cancers of the anus and penis in men. The virus can also cause head and neck cancers (The Green Book, section 18a).

Immunisation: Immunisation is the process by which an individual's immune system becomes fortified against an agent (known as the immunogen).

Immunocompromised: A term used to describe the state in which a person's immune system is weakened or absent. This can be as a result of underlying disease or condition (e.g. HIV/AIDS, pregnancy) or as a result of treatment (e.g. chemotherapy, radiotherapy).

Influenza: Commonly known as flu, a viral infection that affects mainly the nose, throat, airways and, occasionally, the lungs. The influenza virus is transmitted easily from person to person via droplets and small particles produced when infected people cough or sneeze. Influenza tends to spread rapidly in seasonal epidemics (The Green Book, section 19).

Joint Committee on Vaccination and Immunisation (JCVI): The Joint Committee on Vaccination and Immunisation (JCVI) is an independent expert advisory committee that advises Ministers on matters relating to the provision of vaccination and immunisation services. JCVI gives advice to Ministers based on the best evidence reflecting current good practice and/or expert opinion. The process involves a robust, transparent, and systematic appraisal of all the available evidence from a wide range of sources. Members of the committee are appointed on merit by the Appointments Commission.

Measles: Measles (sometimes known as English Measles) is a highly contagious infection of the respiratory system caused by a virus, and spread though contact with fluids from an infected person's nose and mouth, either directly or through aerosol transmission (The Green Book, section 21).

Meningococcal disease: Caused by the bacterium, Neisseria meningitidis, also known as meningococcus. Many people 'carry' meningicocci without suffering any harm, but meningococcal disease is uncommon. When it occurs, however, it is very serious and can cause meningitis and/or septicaemia. Even with the best treatment about 10% of cases will die; and a high proportion of the survivors will have long-term damage (The Green Book, section 22).

Mumps: A viral disease caused by the mumps virus. Before vaccination, it was a common childhood disease worldwide. Painful swelling of the salivary glands (classically the parotid gland) is the most typical presentation. Painful testicular swelling (orchitis) and rash may also occur. The symptoms are generally self-limiting and not severe in children but can lead to complications in teenagers and adults (The Green Book, section 23).

Pertussis (whooping cough): A highly contagious bacterial disease caused by Bordetella pertussis. Symptoms are initially mild, and then develop into severe coughing fits, which produce the characteristic high-pitched "whoop" sound in infected babies and children when they inhale air after coughing. The coughing stage lasts for approximately six weeks before subsiding (The Green Book, section 24).

Poliomyelitis: Often referred to as polio or infantile paralysis, is an acute viral, infectious disease spread from person to person, primarily via the faecal-oral route (The Green Book, section 26).

Rubella: A disease caused by the rubella virus, and often referred to as 'German measles'. Usually mild symptoms and attacks can pass unnoticed or last one to three days. Children recover more quickly than adults; infection of the mother by rubella virus during the first 16 weeks of her pregnancy can be serious. This is because the rubella virus can disrupt the development of the baby and cause a wide range of health problems (The Green Book, section 28).

Seronegative: The term refers to the absence of specific antibodies that are being tested for.

Shingles (Herpes zoster): Shingles is caused by the reactivation of the virus that causes chickenpox. Once a person has had chickenpox, the varicella zoster virus (VZV) lies dormant in the nerves and can re-emerge at a later stage as shingles.

Shingles, characterized by a rash of blisters, can be very painful but is seldom life-threatening. However, some people who develop shingles also develop a debilitating and distressing condition called postherpetic neuralgia (PHN), which causes the skin to remain painful even after the rash is gone. Shingles is most common in people over age 60 or in those with a weak immune system (The Green Book, section 34).

Tetanus: Caused by the Clostridium tetani bacteria and often referred to as 'lockjaw', tetanus infection generally occurs through wound contamination and often involves a cut or deep puncture wound. As the infection progresses, muscle spasms develop in the jaw (hence the name "lockjaw") and elsewhere in the body (The Green Book, section 30).

Tuberculosis: Tuberculosis (TB) is a contagious bacterial infection which usually attacks the lungs but can also affect other parts of the body. It is spread through the air when people who have an active TB infection cough, sneeze, or otherwise transmit their saliva through the air (The Green Book, section 32).

Typhoid: A highly contagious bacterial disease transmitted by the ingestion of food or water contaminated with the faeces of an infected person, which contain the bacterium, Salmonella typhii (The Green Book, section 33).

Varicella (chickenpox): A highly contagious illness caused by primary infection with varicella zoster virus (VZV). It usually starts with a skin rash mainly on the torso and head and becomes itchy, raw pockmarks, which mostly heal without scarring. Chickenpox is an airborne disease spread easily through coughing or sneezing of ill individuals or through direct contact with secretions from the rash (The Green Book, section 34).

Visiting Friends and Relatives (VFR):'Visiting Friends and Relatives' or 'VFR' travel is travel involving a visit whereby either (or both) the purpose of the trip or the type of accommodation involves visiting friends and/or relatives.

World Health Organisation, (WHO): The World Health Organisation (WHO) is the directing and coordinating authority for health within the United Nations system. It is responsible for providing leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence-based policy options, providing technical support to countries and monitoring and assessing health trends. In the 21st century, health is a shared responsibility, involving equitable access to essential care and collective defence against transnational threats.

Yellow fever: Yellow fever is an acute viral hemorrhagic disease; the virus is transmitted by the bite of female mosquitoes (the yellow fever mosquito, Aedes aegypti, and other species) and is found in tropical and subtropical areas in South America and Africa, but not in Asia. The only known hosts of the virus are primates and several species of mosquito (The Green Book, section 35).

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