NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Health and social care directorate

Quality standards and indicators

Briefing paper

Quality standard topic: Vaccine uptake in under 19s

Output: Prioritised quality improvement areas for development.

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Contents

1 Introduction

This briefing paper presents a structured overview of potential quality improvement areas for vaccine uptake in under 19s. It provides the Committee with a basis for discussing and prioritising quality improvement areas for development into draft quality statements and measures for public consultation.

1.1 Structure

This briefing paper includes a brief description of the topic, a summary of each of the suggested quality improvement areas and supporting information.

If relevant, recommendations selected from the key development source below are included to help the Committee in considering potential statements and measures.

1.2 Development source

The key development source(s) referenced in this briefing paper is:

- Immunisations: reducing differences in uptake in under 19s. (2009) NICE guidelines PH21.

2 Overview

2.1 *Focus of quality standard*

This quality standard will cover increasing immunisation uptake among children and young people under 19 in groups and settings that have low immunisation coverage.

Review decision made in 2012 not to update the guideline.

2.2 Background

Vaccines have a huge impact in preventing illness and death. The World Health Organisation stated that “the two public health interventions that have had the greatest impact on the world’s health are clean water and vaccines.”

The primary aim of vaccination is to protect the individual who receives the vaccine. Vaccinated individuals are also less likely to be a source of infection to others. This

reduces the risk of unvaccinated individuals being exposed to infection. This means that individuals who cannot be vaccinated will still benefit from the routine vaccination programme. This concept is called population (or 'herd') immunity. For example, babies below the age of two months, who are too young to be immunised, are at greatest risk of dying if they catch whooping cough. Such babies are protected from whooping cough because older siblings and other children have been routinely immunised as part of the childhood programme.

When vaccine coverage is high enough to induce high levels of population immunity, infections may even be eliminated from the country, e.g. diphtheria. But if high vaccination coverage were not maintained, it would be possible for the disease to return. Vaccination against smallpox enabled the infection to be declared eradicated from the world in 1980.

2.3 Policy context

The government is committed to an effective childhood immunisation programme to reduce the incidence of childhood infections such as meningitis C and measles. This commitment is emphasised in the government strategy for children and young people's health[1] and the 'National service framework for children, young people and maternity services'[2].

The national childhood immunisation programme is offered routinely through primary care and other health services (see Appendix 2). However, differences in uptake persist and are associated with a range of social, demographic, maternal- and infant-related factors[3].

NHS England, Public Health England and local government work together to commission and provide screening and immunisation services. Each of the partners has its own responsibilities.

[1] Department of Health (2009) Healthy lives, brighter futures: the strategy for children and young people's health. London: Department of Health
[2] Department of Health (2004) National service framework for children, young people and maternity services. London: Department of Health
[3] Peckham C, Bedford H, Seturia Y et al. (1989) The Peckham report – national immunisation study: factors influencing immunisation uptake in childhood. London: Action Research for the Crippled Child

2.4 Public health need

Immunisation coverage varies within and between regions. In most regions except London, overall uptake of diphtheria, tetanus, pertussis, polio, haemophilus influenzae type B, meningitis C and pneumococcal vaccines was above 90% in 2014/15[4]. Coverage of the first dose of the MMR vaccine (MMR1) in England for children reaching their second birthday fell to 92 per cent in October to December 2015 compared to 92.1 per cent in the previous quarter[5]. Despite increases reported year on year up until 2013-14, MMR coverage in England is still below the WHO target of 'at least 95 per cent' coverage. The coverage of Diphtheria, Tetanus, Pertussis and Polio (DTaP/IPV) remains below the World Health Organization (WHO) target of 'at least 95 per cent', at a local level, 81 LAs (out of 149) had coverage levels of 95 per cent and above[6].

Evidence has shown that the following groups of children and young people are 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

[4] HSCIC, NHS Immunisation statistics, England 2014-15.
[5] Public Health England, Quarterly vaccination coverage statistics for children aged up to five years in the UK (COVER programme): October to December 2015
[6] HSCIC, NHS Immunisation statistics, England 2014-15

- vulnerable children, such as those whose families are travellers, asylum seekers or are homeless. [7][8][9][10]

In addition, some groups are less likely to have received certain vaccines. There is some evidence that uptake of MMR has declined at a greater rate among children of more highly educated parents and among those living in more affluent areas[11] . Maternal education to degree level was a risk factor for not receiving the MMR triple vaccine[12]. A study of over a million children born in Scotland between 1987 and 2004 found that children of more affluent parents were generally either vaccinated with MMR on time or not at all. In contrast, late MMR vaccination was associated with socioeconomic disadvantage[13].

An estimated 3 million children aged 18 months to 18 years may have missed either their first or their second MMR vaccination[14]. The potential exposure of so many children and young people to the measles virus means that there is a risk of a large outbreak. As measles can lead to serious complications – and can even be fatal.

2.5 National Outcome Frameworks

Tables 1–3 show the outcomes, overarching indicators and improvement areas from the frameworks that the quality standard could contribute to achieving.

[7] Department of Health (2005) Vaccination services: reducing inequalities in uptake. London: Department of Health

[8] Hill CM, Mather M, Goddard J (2003) Cross sectional survey of meningococcal C immunisation in children looked after by local authorities and those living at home. BMJ 326: 364–5

[9] Peckham C, Bedford H, Seturia Y et al. (1989) The Peckham report – national immunisation study: factors influencing immunisation uptake in childhood. London: Action Research for the Crippled Child

[10] Samad L, Tate AR, Dezateux C et al. (2006) Differences in risk factors for partial and no immunisation in the first year of life: prospective cohort study. BMJ 332: 1312–3

[11] Wright JA, Polack C (2005) Understanding variation in measles-mumps-rubella immunization coverage: a population-based study. European Journal of Public Health 16: 137–42

[12] Pearce A, Law C, Elliman D et al. (2008) Factors associated with uptake of measles, mumps and rubella vaccine (MMR) and use of single antigen vaccines in a contemporary UK cohort: prospective cohort study. BMJ 336: 754–7

[13] Friederichs V, Cameron J, Robertson C (2006) Impact of adverse publicity on MMR vaccine uptake: a population based analysis of vaccine uptake records for one million children born 1987–2004. Archives of Diseases in Childhood 91: 456–8

[14] Department of Health (2008b) National MMR vaccine catch-up campaign launched.

Table 1 Public health outcomes framework for England, 2016–2019

Domain	Objectives and indicators
3 Health protection	***Objective*** The population's health is protected from major incidents and other threats, whilst reducing health inequalities ***Indicators*** 3.3 Population vaccination coverage
4 Healthcare public health and preventing premature mortality	***Objective*** Reduced numbers of people living with preventable ill health and people dying prematurely, whilst reducing the gap between communities ***Indicators*** 4.1 Infant mortality* 4.3 Mortality rate from causes considered preventable** 4.8 Mortality rate from a range of communicable diseases, including influenza
Alignment with Adult Social Care Outcomes Framework and/or NHS Outcomes Framework * Indicator is shared ** Indicator is complementary	

Table 2 NHS Outcomes Framework 2016–17

Domain	Overarching indicators and improvement areas
1 Preventing people from dying prematurely	***Overarching indicators*** 1a Potential Years of Life Lost (PYLL) from causes considered amenable to healthcare i Adults ii Children and young people 1c Neonatal mortality and stillbirths ***Improvement areas*** **Reducing mortality in children** 1.6 i Infant mortality* ii Neonatal mortality and stillbirths
5 Treating and caring for people in a safe environment and protecting them from avoidable harm	***Overarching indicators*** *5a Deaths attributable to problems in healthcare* *5b Severe harm attributable to problems in healthcare* ***Improvement areas*** **Improving the safety of maternity services** 5.5 Admission of full-term babies to neonatal care **Improving the culture of safety reporting** 5.6 Patient safety incidents reported
Alignment with Adult Social Care Outcomes Framework and/or Public Health Outcomes Framework * Indicator is shared Indicators in italics in development	

3 Summary of suggestions

3.1 Responses

In total 10 stakeholders and 7 specialist committee members responded to the 2-week engagement exercise 4/5/2016 – 18/5/2016.

Stakeholders were asked to suggest up to 5 areas for quality improvement. Specialist committee members were also invited to provide suggestions. The responses have been merged and summarised in table 4 for further consideration by the Committee.

Full details of all the suggestions provided are given in appendix 3 for information.

Table 3 Summary of suggested quality improvement areas

Suggested area for improvement	Stakeholders
Vaccinations with low uptake MMR Men ACWY Flu Immunisation before and during pregnancy	SCM, MN, AZ, PHE
Immunisation appointments Access to immunisations Vaccine information	SCM, IHV
Information systems	SCM, IHV, NHSE
Contribution of educational settings	SCM
Targeting groups at risk of low uptake	SCM, FPH, NHSE
Other areas Presence of midwife/nurse at birth Parental responsibility in looked after children Staff training Research questions	SCM, FPH, NHSE

AZ, AstraZeneca
FPH, Faculty of Public Health
IHV, Institute of Health Visiting
MN, Meningitis Now
NHSE, NHS England
PHE, Public Health England
SCM, Specialist Committee Member

3.2 Identification of current practice evidence

Bibliographic databases were searched to identify examples of current practice in UK health and social care settings; 854 papers were identified for vaccine uptake in

under 19s. In addition, 17 papers were suggested by stakeholders at topic and 67 papers internally at project scoping.

Of these papers, 15 have been included in this report and are included in the current practice sections where relevant. Appendix 1 outlines the search process.

4 Suggested improvement areas

4.1 Vaccinations with low uptake

4.1.1 Summary of suggestions

Measles Mumps Rubella vaccine (MMR)

Stakeholders highlighted that the MMR vaccine uptake in England remains below the target for full protection set by the World Health Organisation (WHO). A stakeholder highlighted that a 3.5% increase in MMR uptake rates is all that is needed in England to close the immunisation gap and reach the World Health Organisation's 95% uptake target for 2 year olds. They commented that increasing uptake among this cohort will increase the community's resilience to measles (and mumps and rubella) and may prevent localised outbreaks as have been seen in recent years in London and South Wales.

A stakeholder said that some parents are still concerned about the alleged links of MMR with autism. Those concerns can affect the uptake of the MMR vaccine and therefore there is a need to inform the public that no link with autism has been found to change public perception.

A stakeholder suggested to focus on the immunisation of 12-19 year olds as this cohort may have not been vaccinated in the 1990s, or may have only received one dose.

Meningococcal group A, C W-135 and Y conjugate vaccine (Men ACWY)

Stakeholders suggested there is a need to increase public awareness about the Men ACWY vaccine. This should then lead to increased uptake in order to achieve population level protection against meningococcal groups A, C, W and Y.

A stakeholder specifically highlighted that the catch-up programme for Men ACWY that targets school year 13 needs to improve as the coverage rates through GPs are low.

Influenza vaccine (Flu)

Stakeholders suggested better uptake in the childhood flu vaccination programme to protect children and reduce the transmission within the wider population. Stakeholders report the vaccine uptake in well children is 35%. The 2015/16 Flu Plan for England aimed to achieve childhood vaccination rates between 40-60% across all localities and sectors of the population.

Stakeholders also commented that the annual uptake of flu vaccine in children and young people with at risk conditions is less than 50%, the comment that their needs to be a greater awareness of the importance of vaccinating this population.

Immunisation before and during pregnancy

Stakeholders suggested full MMR immunisation before pregnancy to ensure immunity to rubella. Commenting that postnatal checks should be done to ensure that mothers have had 2 doses of MMR to protect future pregnancies.

Stakeholders highlighted that the uptake of influenza and pertussis in pregnancy is sub optimal, they suggest this is due to knowledge regarding the importance of the vaccination. They comment that immunisation can reduces the risk of still birth, prematurity, low birth weight and serious maternal complications of influenza such as pneumonia. Immunisation against pertussis (whooping cough) in pregnancy is offered from 20 weeks gestation with the aim of providing the neonate with passive protection against pertussis until active immunity starts with the routine immunisation programme at 8 weeks of age. The vaccine is over 90% effective and safe in pregnancy.

4.1.2 Selected recommendations from development source

Table 5 below highlights recommendations that have been provisionally selected from the development sources that may support potential statement development. These are presented in full after table 5 to help inform the Committee's discussion.

Table 5 Specific areas for quality improvement

Suggested quality improvement area	Suggested source guidance recommendations
MMR	Not directly covered in PH21, and no recommendations are presented
Men ACWY	Not directly covered in PH21, and no recommendations are presented
Flu	**Diabetes (type 1 and type 2) in children and young people: diagnosis and management** NG18 Recommendation 1.2.16
Immunisation before and during pregnancy	**Antenatal care for uncomplicated pregnancies** CG62 Recommendations 1.3.14.1 and 1.8.8.1 **Vaccinations after pregnancy** CG37 Recommendations 1.2.60 -1.2.63

Flu

NG18 Recommendation 1.2.16: Immunisation

Explain to children and young people with type 1 diabetes and their family members or carers (as appropriate) that the Department of Health's Green Book recommends annual immunisation against influenza for children and young people with diabetes over the age of 6 months. [2004].

Immunisation before and during pregnancy

CG62 Recommendation 1.8.8.1: Rubella

Rubella susceptibility screening should be offered early in antenatal care to identify women at risk of contracting rubella infection and to enable vaccination in the postnatal period for the protection of future pregnancies.

CG37 Recommendations 1.2.61 & 1.2.63 Immunisation

Women found to be sero-negative on antenatal screening for rubella should be offered an MMR (measles, mumps, rubella) vaccination following birth and before discharge from the maternity unit if they are in hospital. [2006]

Women should be advised that pregnancy should be avoided for 1 month after receiving MMR, but that breastfeeding may continue. [2006]

4.1.3 Current UK practice

MMR

Data from Public Health England for the third quarterly report 2015/16 shows that MMR coverage in England at 2 years is at 91.4%[15] which is below the WHO target of 95%. According to the same report, at 5 years the coverage is 94.5% which still falls short of the WHO target.

Men ACWY

Data from Public Health England which is a preliminary estimate of vaccine coverage for the first cohort offered Men ACWY vaccine, evaluated at the end of January 2016, was 33.7%[16]. This was part of an urgent catch-up programme from August 2015 (for people born between 1 September 1996 and 31 August 1997).

Flu

The September 2015 to January 2016 data[17] for 2-4 year olds shows the following variance in uptake levels:

- A mean of 34% of 2-4 year olds were vaccinated per CCG in NHS England.
- The maximum percentage of 2-4 year olds vaccinated in any CCG in NHS England was 54%.
- The minimum percentage of 2-4 year olds vaccinated in any CCG in NHS England was 15%.
- In addition, available data shows that 25% of CCGs in NHS England vaccinated fewer than 30% of 2-4 year olds against flu in the 2015/16 flu season.
- For comparison, the uptake for adults 65 years and over is 71%.

Immunisation before and during pregnancy

Provisional monthly data from Public Health England for the third quarter of 2015/16 shows that the Influenza vaccination uptake in pregnant women is 42.3%[18].

[15] Public Health England, Health protection report, vol 10 No 12, 24/3/2016
[16] Public Health England, Health protection report, vol 10, No 9, 4/3/2016
[17] Public Health England, Seasonal influenza vaccine uptake amongst GP patients in England, provisional monthly data for 1 Sept 2015 to 31 Jan 2016

Public Health England also published the prenatal pertussis immunisation programme results for 2014/15. The vaccine coverage was 56.4%[19].

A cross sectional survey[20] of 200 pregnant women accessing antenatal care in Imperial Healthcare NHS Trust has shown that awareness of the Pertussis vaccination program was 63% with the actual uptake of the vaccine at 26%. The main reasons for the low uptake was that women felt uninformed, there was a lack of professional encouragement and they were uncertain of risk and benefit of the vaccine.

4.1.4 Resource impact assessment

No significant resource impact was identified for any of the underlying recommendations in this area during the production of resource impact tools for the guidelines.

[18] Public Health England, Seasonal influenza vaccine uptake amongst GP patients in England, provisional monthly data for 1 Sept 2015 to 31 Jan 2016
[19] Public Health England, Prenatal pertussis immunisation programme 2014/15, Annual vaccine coverage report for England
[20] What determines uptake of pertussis vaccine in pregnancy? Vaccine, 2015 Oct 26;33(43):5822-8

4.2 Immunisation appointments

4.2.1 Summary of suggestions

Access to immunisations

Stakeholders highlighted the importance of having a sufficient number of appointments available for vaccination and the absence of waiting lists. Stakeholders suggested that GP practices should perform a demand and capacity exercise annually to identify if there is a shortage of appointments, as in recent years the number of immunisations being offered has increased. It is therefore important for the local child health registers and GP records to be accurate both in terms of catchment population and in terms of vaccination status.

In addition, stakeholders suggest an improvement is needed in the production and supply of vaccines to provide full coverage to those at risk of infection. They comment there is currently a low supply of Bacillus Calmette-Guerin (BCG) and meningococcal B (MEN B) vaccines.

Stakeholders suggested that an efficient call-recall system has a positive effect on improving uptake on immunisations, yet not all providers have such a system.

Stakeholders highlighted the importance of not limiting checking and immunisation at prescribed time slots. They would like to see this happen at every appropriate health opportunity.

Vaccine information

Stakeholders suggested that parents should be given information about the purpose of vaccines before an invitation for a vaccine is sent. Without this information parents may not give informed consent for the vaccination of a child.

4.2.2 Selected recommendations from development source

Table 6 below highlights recommendations that have been provisionally selected from the development source that may support potential statement development. These are presented in full after table 6 to help inform the Committee's discussion.

Table 6 Specific areas for quality improvement

Suggested quality improvement area	Suggested source guidance recommendations
Access to immunisations	**Immunisations: reducing differences in uptake in under 19s** NICE PH21 recommendation 1 **Immunisations: reducing differences in uptake in under 19s** NICE PH21 recommendation 2
Vaccine information	**Immunisations: reducing differences in uptake in under 19s** NICE PH21 recommendation 1

Access to immunisations

NICE PH21 recommendation 1: Immunisation programmes

- Adopt a multifaceted, coordinated programme across different settings to increase timely immunisation among groups with low or partial uptake. The programme should form part of the local child health strategy and should include the following actions:
    - Improve access to immunisation services. This could be achieved by extending clinic times, ensuring children and young people are seen promptly and by making sure clinics are child- and family-friendly.
    - Ensure enough immunisation appointments are available so that all local children and young people can receive the recommended vaccinations on time.
    - Ensure young people and their parents know how to access immunisation services.
    - Send tailored invitations for immunisation. When a child or young person does not attend appointments, send tailored reminders and recall invitations and follow them up by telephone or text message.
    - Ensure young people and their parents know how to access immunisation services.
    - Consider home visits to discuss immunisation with parents who have not responded to reminders, recall invitations or appointments. Offer to give their children vaccinations there and then (or arrange a convenient time in the future). Such visits could include groups that may not use primary care services, for example, travellers or asylum seekers.

- Monitor vaccination status as part of a wider assessment of children and young people's health.
- Check the immunisation status of children and young people at every appropriate opportunity. Checks should take place during appointments in primary care (for example, as part of a child health review), hospital in- or outpatient and accident and emergency departments, walk-in centres or minor injuries units. Use the personal child health record (PCHR, also known as the 'Red book') as appropriate. If any vaccinations are outstanding:
  - discuss them with the parent and, where appropriate, the young person. Where they have expressed concerns about immunisation and this is documented, these appointments should be used as an opportunity to have a further discussion
  - offer vaccinations by trained staff before they leave the premises, if appropriate. In such cases, notify the child or young person's GP, health visitor or local child health information department so that records can be updated
  - and, if immediate vaccination is not possible, refer them to services where they can receive any outstanding immunisations.

NICE PH21 recommendation 2: Information systems

- Monitor the age composition of the practice population so that there is enough capacity to provide timely immunisations. Waiting lists are unacceptable.

Vaccine information

NICE PH21 recommendation 1: Immunisation programmes

- Adopt a multifaceted, coordinated programme across different settings to increase timely immunisation among groups with low or partial uptake. The programme should form part of the local child health strategy and should include the following actions:
  - Provide parents and young people with tailored information, advice and support to ensure they know about the recommended routine childhood vaccinations and the benefits and risks. This should include details on the infections they prevent. Information should be provided in different formats, for example, for those whose first language is not English.
  - Ensure parents and young people have an opportunity to discuss any concerns they might have about immunisation. This could either be in

person or by telephone and could involve a GP, community paediatrician, health visitor, school nurse or practice nurse.

- Ensure young people fully understand what is involved in immunisation so that those who are aged under 16, but considered sufficiently capable, can give their consent to vaccinations, as advised in the 'Green book'.

- Ensure young people and their parents know how to access immunisation services.

4.2.3 Current UK practice

Access to immunisations

There are currently low supplies on Bacillus Calmette-Guérin (BCG) and MEN B vaccine. The World Health Organisation (WHO) has issued guidance[21] on how to prioritise globally constrained BCG vaccine supply. However, the impact for the UK is low due to the low incidence of tuberculosis in this country (13/100,000).

There are no published studies on practices having sufficient numbers of appointments and checking immunization status at every appropriate opportunity. These areas are based on stakeholder knowledge and experience.

A systematic review[22] of 28 controlled studies on parental interventions to improve early childhood (0-5 years) vaccine uptake found that postal and telephone reminders are the most effective reminder-based intervention.

Vaccine information

A study[23] of 23 girls and 6 key informants aged 12 to 13 years in a school setting in South west England was carried out between October 2012 and July 2013. It examined the barriers to uptake of the school-based HPV vaccination programme. The results have shown that one of the barriers to the uptake of this vaccine was the lack of accessible information for the girls and their parents. However, this is a small study for one vaccination programme. No other current practice was found.

[21] Guidance on how to prioritize globally contrained BCG vaccine supply to counties, 22 July 2015
[22] Harvey et al, Parental reminder, recall and educational interventions to improve early childhood immunisation uptake: A systematic review and meta-analysis. Vaccine. 2015 June 9; 33(25):2862-80
[23] Barriers and facilitators to uptake of the school-based HPV vaccination programme in an ethically diverse group of women, Journal of public health (2015), June 7 pp1-9

4.2.4 Resource impact assessment

No significant resource impact was identified in guidance as immunisation programmes are already funded by the government. Some costs may arise locally in eliminating backlogs.

4.3 Information systems

4.3.1 Summary of suggestions

Stakeholders suggested that vaccines given should be uploaded to both Child Health Information Systems (CHIS) and GP practice system within a timely manner in accordance with chapter 4 of the Green Book. This is important because there is an increased choice of vaccine providers and any delay in uploading the information may mean that a vaccine is not recorded or given twice. Accurate information can support the operation of an efficient call recall system.

A stakeholder also suggested the use of immunisation applications and eRedbook.

4.3.2 Selected recommendations from development source

Table 7 below highlights recommendations that have been provisionally selected from the development source that may support potential statement development. These are presented in full after table 7 to help inform the Committee's discussion.

Table 7 Specific areas for quality improvement

Suggested quality improvement area	Selected source guidance recommendations
Information systems	**Immunisations: reducing differences in uptake in under 19s** NICE PH21 recommendation 2

Information systems

NICE PH21 recommendation 2 Information systems

- Ensure PCTs and GP practices have a structured, systematic method for recording, maintaining and transferring accurate information on the vaccination status of all children and young people. Vaccination information should be recorded in patient records, the personal child health record and the child health information system. The same data should be used when reporting vaccinations to the child health department and when submitting returns to the PCT for GP and practice payments. This will ensure records in both systems are reconciled and consistent.

- Encourage and enable private providers to give the relevant GP practice or PCT details of all vaccinations administered to children and young people, so they can be recorded in the appropriate information system.
- Record any factors which may make it less likely that a child or young person will be up-to-date with vaccinations in their patient records and the personal child health record. For example, note if children and young people are looked after, have special needs or have any contraindications to vaccination. Also note if the parents or young person have expressed concerns about vaccination.
- Regularly update and maintain the databases for recording children and young people's immunisation status. For example, ensure records are transferred when a child or young person moves out of the area, ensure information is not duplicated and follow up on any missing data.
- Ensure up-to-date information on vaccination coverage is available and disseminated to all those responsible for the immunisation of children and young people. This includes those who are delivering the vaccinations.
- Use recorded information on immunisation, together with surveillance data on the incidence of infection, to inform local and joint strategic needs assessments and health equity audits. These data should also be used to support delivery of an immunisation programme for children and young people.

4.3.3 Current UK practice

The Outbreak of measles in Wales report of the agencies that responded to the 2012/3 measles outbreak highlighted the need for improvement in data sharing and maintaining accurate vaccination records. It also recommended better linkage of GP vaccination records to the Child Health System.

4.3.4 Resource impact assessment

No significant resource impact was identified in guidance as immunisation programmes are already funded by the government. Some costs may arise locally in eliminating backlogs such as extending clinic times so that more vaccines can be administered, however organisations are encouraged to assess this locally.

4.4 Contribution of education settings

4.4.1 Summary of suggestions

Stakeholders highlighted that children's immunisation status should be checked at key stages. Stages can include school entry, transition and prior to leaving school.

Stakeholders also suggested that there should be a commonly agreed minimum standard for the delivery and administration of immunisation services for school aged children. NHS directed school immunisation teams or nurses employed by educational establishments working alongside a local general practice can play a key role in delivering immunisation to school age children.

Stakeholders suggested that offering vaccination as a school based programme to those at school age is more likely to achieve higher uptake rates. In addition, a stakeholder suggested that full vaccination should be compulsory for school and nursery entry.

4.4.2 Selected recommendations from development source

Table 8 below highlights recommendations that have been provisionally selected from the development source that may support potential statement development. These are presented in full after table 8 to help inform the Committee's discussion.

Table 8 Specific areas for quality improvement

Suggested quality improvement area	Selected source guidance recommendations
Contribution of education settings	**Contribution of schools** NICE PH21 recommendation 4

Contribution of education settings

<u>NICE PH21 recommendation 4 Contribution of nurseries, schools, colleges of further education</u>

- The Healthy Child team, led by a health visitor working with other practitioners, should check the immunisation record (including the personal child health record) of each child aged up to 5 years. They should carry out

this check when the child joins a day nursery, nursery school, playgroup, Sure Start children's centre or when they start primary school. The check should be carried out in conjunction with childcare or education staff and the parents.

- School nursing teams, working with GP practices and schools, should check the vaccination status of children and young people when they transfer to a new school or college. Working with the PCT, they should also advise young people and their parents about the vaccinations recommended at secondary school age.

- If children and young people are not up-to-date with their vaccinations, school nursing teams, in conjunction with nurseries and schools, should explain to parents why immunisation is important. Information should be provided in an appropriate format (for example, as part of a question and answer session). School nursing teams should offer vaccinations to help them catch up, or refer them to other immunisation services.

- Head teachers, school governors, managers of children's services and PCT immunisation coordinators should work with parents to encourage schools to become venues for vaccinating local children. This would form part of the extended school role.

4.4.3 Current UK practice

No published studies on current practice were highlighted for checking vaccination status at key stages. This suggested area for quality improvement is based on stakeholder's knowledge and experience.

The Royal College of Nursing has issued guidance for nurse-led immunisation of school-aged children. It covers areas such as patient group directions, consent and recording details of the vaccinations.

A national audit[24] undertaken in Wales in 2012 on factors affecting uptake. Routinely published quarterly and annual COVER report uptake data for each Health Board was used to compare system effectiveness. The audit identified a higher uptake of the teenage booster vaccine where the vaccinations were offered in school (76-81% in comparison to primary care programmes (5-74%). The audit found that when the option was available, most parents chose for their child to be vaccinated in school.

[24] Teenage booster vaccine:factors affecting uptake, Journal of public health, (2012) 34 (4): 498-504

4.4.4 Resource impact assessment

Assumed minimal costs as this is part of the child health strategy and health visitors and school nurses will take the lead.

4.5 Targeting groups at risk of low uptake

4.5.1 Summary of suggestions

Stakeholders suggested to focus on groups where vaccination uptake is likely to be poor. This may include people living in deprived areas, people who are socially isolated, less educated, people from ethnic minorities, the Gypsy Traveller community or people with a language barrier. It was also highlighted that urban areas have a lower vaccination uptake.

A stakeholder highlighted that school age vaccination uptake varies by the provider delivering the vaccination programme. The stakeholder said that vaccination rates vary by school as much as by population group.

4.5.2 Selected recommendations from development source

Table 9 below highlights recommendations that have been provisionally selected from the development source that may support potential statement development. These are presented in full after table 9 to help inform the Committee's discussion.

Table 9 Specific areas for quality improvement

Suggested quality improvement area	Selected source guidance recommendations
Targeting groups at risk of low uptake	**Targeting groups at risk of not being fully immunised** NICE PH21 recommendation 5

Targeting groups at risk of low uptake

<u>NICE PH21 recommendation 5 Targeting groups at risk of not being fully immunised</u>

- Improve access to immunisation services for those with transport, language or communication difficulties, and those with physical or learning disabilities. For example, provide longer appointment times, walk-in vaccination clinics, services offering extended hours and mobile or outreach services. The latter might include home visits or vaccinations at children's centres.
- Provide accurate, up-to-date information in a variety of formats on the benefits of immunisation against vaccine-preventable infections. This should be tailored for different communities and groups, according to local

circumstances. For example, offer translation services and provide information in multiple languages.

- Consider using pharmacies, retail outlets, libraries and local community venues to promote and disseminate accurate, up-to-date information on childhood immunisation.
- Health professionals should check the immunisation history of new migrants, including asylum seekers, when they arrive in the country. They should discuss outstanding vaccinations with them and, if appropriate, their parents, and offer the necessary vaccinations administered by trained staff.
- Prison health services should check the immunisation history of young offenders. They should discuss any outstanding vaccinations with the young person and, if appropriate, their parents, and offer appropriate vaccines administered by trained staff.
- Check the immunisation status of looked after children during their initial health assessment, the annual review health assessment and statutory reviews. Ensure outstanding immunisations are addressed as part of the child's health plan. Offer opportunities to have any missed vaccinations, as appropriate, in discussion with the child or young person and those with parental responsibility for them.

4.5.3 Current UK practice

The COVER Annual report (2015) shows that the uptake for a number of vaccinations (pneumococcal conjugate, rotavirus, MMR, Pneumococcal Conjugate, Hib/MenC) is lower in Cardiff than other parts of Wales.

A similar picture can be seen in England where the Cover October – December 2015 report shows London having a lower uptake than other parts of the UK. This can be seen in the table below:

	DTaP/IPV/Hib3	MenC%	PCV2%	Rota2%
London	89.6	90.6	89.7	86.3
Yorkshire & Humber	95.4	96.9	95.5	92

North Midlands	96	97.4	95.7	91.9
South West	94.6	96.8	94.9	88.6

The Health Protection Agency conducted a survey[25] in Primary Care Trusts in 2013 to ascertain what is known about local Gypsy Traveller populations, estimate immunisations rates and describe current services to increase immunisation and to address wider health issues. 135 PCTs responded to the survey. The results showed that despite improvements in the service provision, there is still poor knowledge of population numbers, service provision is not based on need and uptake of immunisation is low and in some cases not known. In particular 18 PCTs reported no Gypsy Traveller population which the study highlights as unlikely to be true.

4.5.4 Resource impact assessment

No significant costs anticipated although may be some costs due to translating resources into additional languages or outreach programmes e.g. to traveller communities at a local level.

[25] Mapping the gypsy traveller community in England: what we know about their health service provision and childhood immunisation uptake, Journal of public health, 2013 Sep;35(3):404-12

4.6 Additional areas

Summary of suggestions

The improvement areas below were suggested as part of the stakeholder engagement exercise. However they were felt to be either unsuitable for development as quality statements, outside the remit of this particular quality standard referral or require further discussion by the Committee to establish potential for statement development.

There will be an opportunity for the QSAC to discuss these areas at the end of the session on 29 June 2016.

Presence of midwife/nurse at birth

A stakeholder felt that vaccination rates are higher for children born with the presence of a midwife or nurse compared to those born with the presence of a doctor. This area is not contained within the development source (NICE PH21).

Parental responsibility in looked after children

A stakeholder highlighted that looked after children may miss out on the opportunity to be fully immunised if parents retain parental responsibility and object to vaccination programmes. This area is not contained within the development source (NICE PH21).

Staff training

Some stakeholders suggested there is a need for immunisers to be up to date with their immunisation training. This can increase competence in giving vaccinations but also confidence in discussing vaccinations with parents. Stakeholders said that this can reduce vaccine incidents and increase the likelihood of parents getting their children vaccinated.

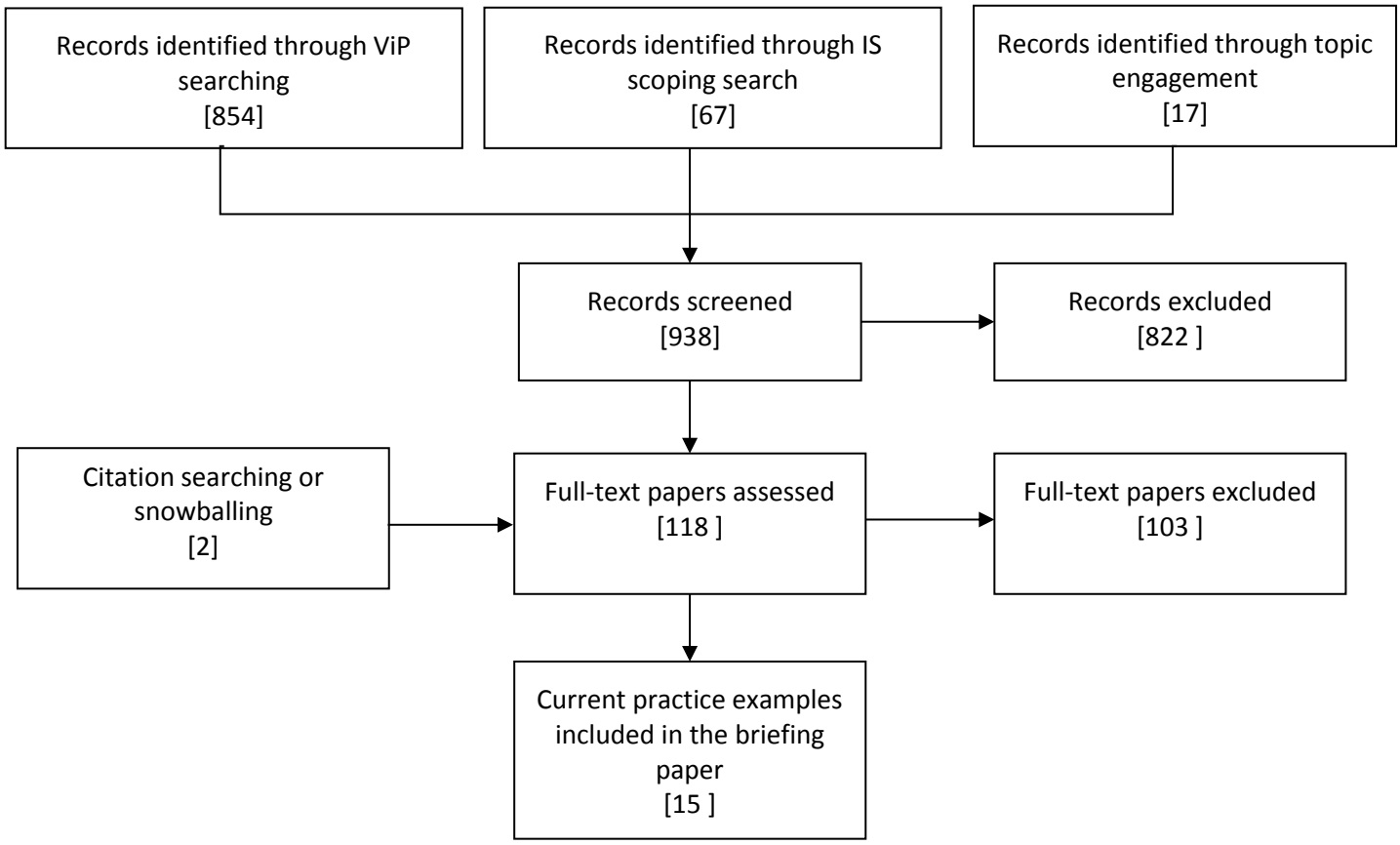
Stakeholders highlighted that there is a lack of national guidance on and availability of immunisation training which can lead to an inconsistent delivery model. However, the Health Protection Agency has published ‘National minimum standards for immunisation training’. In addition, Public Health England has issued national minimum standards for ‘Immunisation training of healthcare support workers’. Staff

training is an implicit element of quality standards and consequently we do not draft statements on staff training.

Research questions

A stakeholder highlighted the recommendations for research from the source guidance.

Appendix 1: Review flowchart



Appendix 2: The routine immunisation schedule (Summer 2016)

The routine immunisation schedule from Summer 2016

Age due	Diseases protected against	Vaccine given and trade name		Usual site[1]
Eight weeks old	Diphtheria, tetanus, pertussis (whooping cough), polio and *Haemophilus influenzae* type b (Hib)	DTaP/IPV/Hib	Pediacel or Infanrix IPV Hib	Thigh
	Pneumococcal (13 serotypes)	Pneumococcal conjugate vaccine (PCV)	Prevenar 13	Thigh
	Meningococcal group B (MenB)[2]	MenB[2]	Bexsero	Left thigh
	Rotavirus gastroenteritis	Rotavirus	Rotarix	By mouth
Twelve weeks	Diphtheria, tetanus, pertussis, polio and Hib	DTaP/IPV/Hib	Pediacel or Infanrix IPV Hib	Thigh
	Rotavirus	Rotavirus	Rotarix	By mouth
Sixteen weeks old	Diphtheria, tetanus, pertussis, polio and Hib	DTaP/IPV/Hib	Pediacel or Infanrix IPV Hib	Thigh
	MenB[2]	MenB[2]	Bexsero	Left thigh
	Pneumococcal (13 serotypes)	PCV	Prevenar 13	Thigh
One year old	Hib and MenC	Hib/MenC booster	Menitorix	Upper arm/thigh
	Pneumococcal (13 serotypes)	PCV booster	Prevenar 13	Upper arm/thigh
	Measles, mumps and rubella (German measles)	MMR	MMR VaxPRO[3] or Priorix	Upper arm/thigh
	MenB[2]	MenB booster[2]	Bexsero	Left thigh
Two to six years old (including children in school years 1 and 2)	Influenza (each year from September)	Live attenuated influenza vaccine LAIV[4]	Fluenz Tetra[3]	Both nostrils
Three years four months old	Diphtheria, tetanus, pertussis and polio	DTaP/IPV	Infanrix IPV or Repevax	Upper arm
	Measles, mumps and rubella	MMR (check first dose given)	MMR VaxPRO[3] or Priorix	Upper arm
Girls aged 12 to 13 years	Cervical cancer caused by human papillomavirus (HPV) types 16 and 18 (and genital warts caused by types 6 and 11)	HPV (two doses 6-24 months apart)	Gardasil	Upper arm
Fourteen years old (school year 9)	Tetanus, diphtheria and polio	Td/IPV (check MMR status)	Revaxis	Upper arm
	Meningococcal groups A, C, W and Y disease	MenACWY	Nimenrix or Menveo	Upper arm
65 years old	Pneumococcal (23 serotypes)	Pneumococcal polysaccharide vaccine (PPV)	Pneumovax II	Upper arm
65 years of age and older	Influenza (each year from September)	Inactivated influenza vaccine	Multiple	Upper arm
70 years old	Shingles	Shingles	Zostavax[3]	Upper arm (subcutaneous)

[1] Where two or more injections are required at once, these should ideally be given in different limbs. Where this is not possible, injections in the same limb should be given 2.5cm apart. For more details see Chapters 4 and 11 in the Green Book. All injected vaccines are given intramuscularly unless stated otherwise.
[2] Only for infants born on or after 1 May 2015
[3] Contains porcine gelatine
[4] If LAIV (live attenuated influenza vaccine) is contraindicated and child is in a clinical risk group, use inactivated flu vaccine

Available as a pdf only. Published by Public Health England 2016.

Selective immunisation programmes

Target group	Age and schedule	Disease	Vaccines required
Babies born to hepatitis B infected mothers	At birth, four weeks, eight weeks and at one year[1]	Hepatitis B	Hepatitis B vaccine (Engerix B / HBvaxPRO)
Infants in areas of the country with TB incidence >= 40/100,000	At birth	Tuberculosis	BCG
Infants with a parent or grandparent born in a high incidence country[2]	At birth	Tuberculosis	BCG
Pregnant women	During flu season At any stage of pregnancy	Influenza	Inactivated flu vaccine
Pregnant women	From 20 weeks gestation[3]	Pertussis	dTaP/IPV (Boostrix-IPV or Repevax)

Take blood for HBsAg to exclude infection
Where the annual incidence of TB is >= 40/100,000
www.gov.uk/government/uploads/system/uploads/attachment_data/file/393840/Worldwide_TB_Surveillance_2013_Data_High_and_Low_Incidence_Tables_____2_.pdf
Usually after the foetal anomaly scan

Additional vaccines for individuals with underlying medical conditions

Medical condition	Diseases protected against	Vaccines required[1]
Asplenia or splenic dysfunction (including sickle cell and coeliac disease)[2]	Meningococcal groups A, B, C, W and Y Pneumococcal Haemophilus influenzae type b (Hib) Influenza	Hib/MenC MenACWY MenB PCV13 (up to five years of age) PPV (from two years of age) Annual flu vaccine
Cochlear implants	Pneumococcal	PCV13 (up to five years of age) PPV (from two years of age)
Chronic respiratory and heart conditions[2] (such as severe asthma, chronic pulmonary disease, and heart failure)	Pneumococcal Influenza	PCV13 (up to five years of age) PPV (from two years of age) Annual flu vaccine
Chronic neurological conditions[2] (such as Parkinson's or motor neurone disease, or learning disability)	Pneumococcal Influenza	PCV13 (up to five years of age) PPV (from two years of age) Annual flu vaccine
Diabetes[2]	Pneumococcal Influenza	PCV13 (up to five years of age) PPV (from two years of age) Annual flu vaccine
Chronic kidney disease (CKD)[2] (including haemodialysis)	Pneumococcal (stage 4 and 5 CKD) Influenza (stage 3, 4 and 5 CKD) Hepatitis B (stage 4 and 5 CKD)	PCV13 (up to five years of age) PPV (from two years of age) Annual flu vaccine Hepatitis B
Chronic liver conditions[2]	Pneumococcal Influenza Hepatitis A Hepatitis B	PCV13 (up to five years of age) PPV (from two years of age) Annual flu vaccine Hepatitis A Hepatitis B
Haemophilia	Hepatitis A Hepatitis B	Hepatitis A Hepatitis B
Immunosuppression due to disease or treatment[2]	Pneumococcal Influenza	PCV13 (up to five years of age)[2] PPV (from two years of age) Annual flu vaccine
Complement disorders[2] (including those receiving complement inhibitor therapy)	Meningococcal groups A, B, C, W and Y Pneumococcal Haemophilus influenzae type b (Hib) Influenza	Hib/MenC MenACWY MenB PCV13 (to any age) PPV (from two years of age) Annual flu vaccine

Appendix 3: Suggestions from stakeholder engagement exercise – registered stakeholders

ID	Type	Stakeholder	Key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
1	SCM	SCM 6	Mumps Measles Rubella uptake	There is a good evidence that vaccines provide an effective way to prevent many infectious diseases and their use has had a major impact on public health but uptake in England of Mumps Measles Rubella (MMR) remains below the World Health Organisation (WHO) recommendations	MMR Rates remain below targets for full protection set by WHO according to The government statistics on vaccination uptake =MMR UPTAKE IS LOWER IN ENGLAND THAN OTHER UK COUNTRIES. Uptake needs improvement. To Explore what Wales and Scotland doing different	STATS FROM… https://www.gov.uk/government/collections/vaccine-uptake
2	SCM	SCM 6	Allay public fears about MMR	Allay public fears and health concerns by sharing the findings of the second report submitted in the lancet that contradicts Wakefield's damming public health scare re his allegation of links with MMR and autism	Change public perception and attitudes. Research by Wakefield was discredited and he was struck off in England after a research paper was published in 1998	Wakefield et (1998) The Lancet 351, 637-41 http://www.mmrthefacts.nhs.uk
3	SCM	SCM 1	Men ACWY vaccine uptake (meningococcal disease)	Men ACWY vaccine uptake via GP surgeries	Reported that teenagers are contacted by text, rather than the letter quoted. Not clear whether parents are informed in the case of children under 16y.	Issues of awareness and importance of obtaining vaccination ? needs national advertising etc.
4	SCM	SCM 3	MMR immunisation for children and young adults aged 12-19.	This cohort contains those who may not have been vaccinated with MMR in the 1990s, as a result of the Wakefield controversy, or who may not have received two doses as recommended.	A 3.5% increase in MMR uptake rates is all that is needed in England to close the immunisation gap and reach the World Health Organisation's 95% uptake target for 2 year olds. Increasing uptake among this cohort will increases the community's resilience to measles	https://publichealthmatters.blog.gov.uk/2016/04/26/european-immunisation-week-focussing-on-mmr/

ID	Type	Stakeholder	Key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
					(and mumps and rubella) and may prevent localised outbreaks as have been seen in recent years in London and South Wales.	
5	SH	Meningitis Now	Increased uptake of Men ACWY vaccine in the catch-up cohorts of this programme.	At the proposed date of publication of this Quality Standard (Feb 2017), this will only be applicable to the cohort born between 01.09.98 to 31.08.99 i.e. 2016/17 school year 13. The aim of this Men ACWY vaccination programme is to directly protect adolescents against meningococcal groups A, C, W and Y which in turn will generate population level herd protection and therefore protect all age groups.	The catch-up programme began with the 2014/15 school year 13 and was delivered through GP practice. In March 2016, data from 62.3% of GP practices in England showed that coverage for the Men ACWY vaccine in this cohort was 33.7% (Sept 15 – Jan 16).|This needs to improve, and as yet, there is no information about how the 2016/17 school year 13 will be offered the vaccine. This age group is hard to reach as some are still in school, others in further education or work etc. If herd protection is to be achieved, the uptake of this vaccine in this age group needs to increase.	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/505478/hpr0916_menACWY.pdf This is the HPR weekly report detailing the Men ACWY coverage for Sept 15 – Jan 16.
6	SH	AstraZeneca	Increase uptake in childhood influenza vaccination programme	The Joint Committee Vaccination and Immunisation's (JCVI) recommendation to implement the programme is based on an expectation that it will be a cost effective means to help protect children and reduce the transmission of flu within the wider population. Better uptake in the programme	The 2015/16 Flu Plan for England aimed to achieve childhood flu vaccination rates of between 40%-60% and for the uptake levels to be consistent across all localities and sectors of the population. The 2015/16 data have shown the following variance in uptake levels:|A mean of 34% of 2-4 year olds were vaccinated per CCG in NHS England.|The maximum percentage of 2-4 year olds vaccinated in any	Please see the latest "Seasonal influenza vaccine uptake amongst GP Patients in England" from Public Health England (PHE) for the provisional monthly data for 1 Sept 2015 to 31 Jan 2016: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/503124/January_2016_Season

ID	Type	Stakeholder	Key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
				would help achieve this.	CCG in NHS England was 54%.|The minimum percentage of 2-4 year olds vaccinated in any CCG in NHS England was 15%.|In addition, available data shows that 25% of CCGs in NHS England vaccinated fewer than 30% of 2-4 year olds against flu in the 2015/16 flu season. Please see reference in next column	al_flu_GP_patients_01Sept_31Jan.pdf
7	SH	Public Health England	Mumps Measles Rubella immunisation for children and young adults aged 12-19.	This cohort contains those who may not have been vaccinated with MMR in the 1990s, as a result of the Wakefield controversy, or who may not have received two doses as recommended.	A 3.5% increase in MMR uptake rates is all that is needed in England to close the immunisation gap and reach the World Health Organisation's 95% uptake target for 2 year olds. Increasing uptake among this cohort will increases the community's resilience to measles (and mumps and rubella) and may prevent localised outbreaks as have been seen in recent years in London and South Wales.	https://publichealthmatters.blog.gov.uk/2016/04/26/european-immunisation-week-focussing-on-mmr/
8	SCM	SCM 1	Annual flu uptake in children /YP with at risk conditions	Annual flu uptake in children /YP with at risk conditions (less than 50%)	GP, parental and paediatric training and awareness required.	
9	SCM	SCM 1	Annual flu uptake in well children	Annual flu uptake in well children (Less than 35%)	Complex reasons- awareness, vaccine supply etc.	
10	SCM	SCM 3	Routine adolescent immunisations (typically given in school settings).	Vaccine uptake for the routine adolescent immunisations (DTaP/IPV and MenACWY) is lower than for immunisations given in infancy.	Improving vaccine uptake for these immunisations will potentially improve community level resistance to disease. This is particularly important with the increasing number of MenW cases that are currently being reported.	The latest annual vaccine uptake rates relate to 2014/15 and can be viewed at: http://www.hscic.gov.uk/catalogue/PUB18472

ID	Type	Stakeholder	Key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
11	SH	Public Health England	Routine adolescent immunisations (typically given in school settings).	Vaccine uptake for the routine adolescent immunisations (DTaP/IPV and MenACWY) is lower than for immunisations given in infancy.	Improving vaccine uptake for these immunisations will potentially improve community level resistance to disease. This is particularly important with the increasing number of MenW cases that are currently being reported.	The latest annual vaccine uptake rates relate to 2014/15 and can be viewed at: http://www.hscic.gov.uk/catalogue/PUB18472
12	SCM	SCM 7	Sufficient appointments for vaccination, including absence of waiting lists			
13	SCM	SCM 6	Availability and accessibility of vaccines	Availability and accessibility of vaccines needs improvements	Low supplies of BCG vaccine this last year and there is a global shortage of MEN B vaccine. Information about possible shortages of supply of vaccine and improving production and supplies and continuing to “target” and provide full coverage to those at risk of infection	Manchester source and daily telegraph and WHO Manufacturers, UNICEF and hospitals working in partnership to manage the supply demand|Gap as part of the WHO Global TB Programme and UNICEF Supply and Programme Divisions|http://www.who.int/immunization/diseases/tuberculosis/BCG-country-prioritization.pdf
14	SCM	SCM 4	GP training and awareness	All GP practices to perform a demand and capacity exercise annually (i.e. monitor the age composition and size of practice population combined with number of vaccine appointments available)Over	NICE guidance (2009) NHS England Transforming Primary Care documents ||Securing the Future of Primary Care – Nuffield Trust	No national collection but there are regionally audits of GP readiness.

ID	Type	Stakeholder	Key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
				past few years, the number of immunisations being offered has increased to 8 slots now being required for the 0-5s programme as opposed to 5 pre 2013. There are also increased vaccination offers for adolescents and adults with decreasing practice staff and increasing populations. In London we are ~2.1 million vaccine appointments short. This can affect access and availability for parents and adolescents.		
15	SCM	SCM 4	Proactive tailored invites for immunisation appointments	There is good evidence from systematic reviews that proactive invites/reminders (call/recall) has a major effect on improving uptake of immunisations in under 19s.	Included in the NICE(2009) guidance) Williams et al (2011) Primary strategies to improve childhood immunisation uptake in developed countries||Jacobson & Szilagi (2005) Patient reminder and patient recall systems to improve immunization rates – Cochrane review.	No national data as yet. Data could be ascertained through local audits.
16	SCM	SCM 5	Ensure that all providers of immunisation operate call-recall systems	There is very good evidence that an efficient call-recall system is associated with increased coverage	I am aware that not all providers currently do this.	
17	SCM	SCM 7	Call and recall processes need to be in place for appointing children			

ID	Type	Stakeholder	Key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
			for relevant vaccinations			
18	SCM	SCM 4	Immunisation status checked at every appropriate health opportunity	Particularly looked after children, prison populations and school aged children receiving the school based programmes Incomplete vaccination status is fairly common in certain identifiable populations such as newly immigrant populations, looked after children, travelling and gypsy communities, Orthodox Jewish communities. Inconvenience of GP practice, other life's pressures or general vaccine hesitancy can mean that people do not complete their immunisation schedules. Recent measles outbreaks have occurred in partially vaccinated and unvaccinated individuals.	NICE guidance (2009)||Williams et al (2011) Primary strategies to improve childhood immunisation uptake in developed countries	Not as yet but if with systems being developed to extract data directly from GP systems – e.g. GPIS, we could develop a surveillance tool of proportion of 18 year olds with completed schedules using certain markers – e.g. teenage booster, Men ACWY and MMR2. The HSIC are trying to record this information via the maternal and child health data set which is not yet publicly shared.
19	SCM	SCM 5	Opportunist immunisations	Opportunist immunisations, ie not restricting immunisation at prescribed time slots, but being able to offer immunisation on many occasions when I child is seen		
20	SCM	SCM 5	Provide parents	A parent cannot give	I am aware that there are instances	

ID	Type	Stakeholder	Key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
			with appropriate information about the immunisations being offered.	informed consent without this.	of providers sending out invitations to parents who may not have received any information about what is being offered.	
21	SCM	SCM 2	Assessment of vaccination status at key stages and during opportunistic contact	To improve immunisation uptake no opportunity to identify missed immunisations and offer outstanding immunisations should be missed.	Green Book (GB) chapter 11 Immunisation against infectious disease states |When children attend for any vaccination, it is important to also check that they are up-to date for vaccines that they should have received earlier. No opportunity to immunise should be missed. The teenage booster vaccination (Td/IPV and MenACWY) administered at around 14 years of age, is an opportunity to check MMR status and offer outstanding vaccination (Green Book chapter 23 Mumps) The large outbreak of measles affecting Wales in 2012-13 was a legacy of the fact that large numbers of children who had missed out on routine MMR immunisations during the late 1990s and early 2000s never caught up with their vaccination schedule. CMO guidance already exists in Wales advising that Trusts and Practices are required to adopt uniform procedures in the routine follow up of immunisation defaulters pre-school age and on school entry, and introduce audit of compliance. In	Green Book Immunisation against infectious disease Chapter 11 The UK immunisation schedule https://www.gov.uk/government/publications/immunisation-schedule-the-green-book-chapter-11 https://www.gov.uk/government/publications/mumps-the-green-book-chapter-23 Welsh Health Circular (2005) 81. MMR immunisation Catch-up Programme: changes to routine follow up of children who miss MMR http://www.wales.nhs.uk/documents/WHC_2005_081.p  Update on MMR coverage in school-ag df Nationally, coverage of at least one dose of MMR was below 95% in children reaching their 11th, 12th, 13th, 14th and 15th birthdays. This shows the

ID	Type	Stakeholder	Key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
					Wales a child health system generated consent form is available for use in school vaccination sessions to offer information on which to base a full immunisation status check of each pupil to allow identification of and consent for missed MMR and other outstanding immunisations. The Welsh Government Flying Start (FS) Programme recognises immunisation as a major contributor to public health and has an important role to play in reducing health inequalities. The Tier 1 target for 95% of FS children to be fully vaccinated by 4 years is a population indicator for the programme. NICE Immunisations reducing difference in uptake in under 19s Recommendation 4: contribution of nurseries, schools, colleges of further education identifies the need for an immunisation status check when a child first attends nursery. The Welsh Network of Healthy school schemes – as part of the criteria for Healthy and Sustainable Pre-School Scheme National Award recommends the provision of welcome packs that include information on childhood immunisation for children, parent	continuing importance of the immunisation status check and offer of catch-up MMR doses at the '3 in 1' Td/IPV teenage booster which is given to teenagers in Wales at School Year nine age (turning 14 years of age). COVER data is used to assess achievement of tier 1 targets.

ID	Type	Stakeholder	Key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
					and staff. The pre-school immunisation resource pack was developed to support pre school settings in meeting this criteria. Pre school immunisation resource pack is available from http://www.wales.nhs.uk/sitesplus/888/page/75811	
22	SH	Institute of Health visiting	Local authorities should take responsibility to ensure all groups have access to immunisation services	Recommendation 5	Local authorities as the commissioner for 0-19 years should take responsibility to ensure all groups have access to immunisation services All professionals including social workers should encourage parents/carers to ensure immunisations are up to date.	
23	SH	Public Health England	Promoting immunisation before, during and after pregnancy	There is a wealth of evidence that immunisation against influenza at any stage of pregnancy reduces the risk of still birth, prematurity, low birth weight and serious maternal complications of influenza such as pneumonia. In addition there is evidence that the inactivated influenza vaccine can be safely given in pregnancy in any trimester. Immunisation against pertussis (whooping cough) in pregnancy is offered from 20 weeks gestation with the	Current uptake is sub optimal||Lack of knowledge amongst professionals and parents regarding the importance of vaccination|Pre-pregnancy: full immunisation including MMR to ensure Rubella immunity||During pregnancy: increase uptake of flu vaccine and pertussis in pregnancy to protect mother and baby. Post natally check the mother has had two doses of MMR. If not, offer MMR to protect future pregnancies from rubella infection.	PHE holds national data on vaccine uptake in pregnancy https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/407946/2903322_SeasonalFlu_GP_Jan2015_acc2.pdf|||https://www.gov.uk/government/publications/pertussis-vaccine-coverage-in-pregnant-women-april-2014-to-march-2015 COVER data for routine imms https://www.gov.uk/government/statistics/cover-of-

ID	Type	Stakeholder	Key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
				aim of providing the neonate with passive protection against pertussis until active immunity starts with the routine immunisation programme at 8 weeks of age. The vaccine is over 90% effective and safe in pregnancy.		vaccination-evaluated-rapidly-cover-programme-2014-to-2015-quarterly-data
24	SCM	SCM 7	Accuracy of population registers	Local child health registers and GP records need to be accurate both in terms of catchment population and in terms of vaccination status		
25	SCM	SCM 2	Transfer of immunisation data.	Effective process for transfer of immunisation data between practice and child health within agreed timeframe Green Book Immunisation against infectious disease – immunisation procedures (chapter 4) clearly states |Accurate, accessible records of vaccinations given are important for keeping individual clinical records, monitoring immunisation uptake and facilitating the recall of recipients of vaccines, if required.	Relevant vaccine information should be recorded in: ● patient-held record or Personal Child Health Record (PCHR, the Red Book) for children ● patient's GP record or other patient record, depending on location ● Child Health Information System ● practice computer system. (GB chapter 4) NICE Immunisations reducing difference in immunisation uptake in under 19s recommendation 2 Information systems –Ensure PCTs and GP practices have a structured, systematic method for recording, maintaining and transferring accurate information on the vaccination status of all children and young people. This should include	Green Book chapter 4 Immunisation against infectious disease https://www.gov.uk/government/publications/immunisation-procedures-the-green-book-chapter-4 **Outbreak of Measles in Wales Nov 2012 – July 2013: Report of the agencies which responded to the outbreak** available from http://www.wales.nhs.uk/sitesplus/888/opendoc/224574  CHIPS v2 - 5th March 2014 final.pdf

ID	Type	Stakeholder	Key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
					both scheduled immunisations and notification to PCTs/ Health Boards of unscheduled immunisations given opportunistically in GP practices. Outbreak of measles in Wales (Public Health Wales 2013) highlighted discrepancies between Child health and General practice systems with missing data on the Child Health System. These discrepancies were mainly due to failure of notifications being sent to Health Boards following opportunistic immunisations given in General Practices. Correct data is necessary to identify any individual's outstanding MMR vaccination as part of outbreak control during a measles outbreak. The CHIPS - Child Health Immunisation Process Standards - National Minimum Standards for Childhood Immunisation Administrative and Data v2 (CHIPS, Public Health Wales 2014) were developed to provide guidance for the standardisation, to a commonly agreed minimum standard, of administrative and data collection procedures associated with childhood immunisation across Wales; and to provide guidelines on maintaining agreed standards of	 CHIPS Audit Report.pdf  Appendix 2 CHIPS audit questionnaire.p

ID	Type	Stakeholder	Key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
					accuracy of Child Health Databases in Wales.	
26	SCM	SCM 4	Ensuring that vaccines given are uploaded to both CHIS and GP practice system within a timely manner	With increased choice of providers – eg. School nursing for child 'flu, some vaccinations being given in children's centres etc – timely exchanges of data are needed. Any delay can mean that a vaccine is not recorded or may be given again. Moreover, the provision of seasonal flu by pharmacy as seen a drop in overall flu uptake in some areas of England and whilst this is still under evaluation, within London it is looking like the data sent over by SONAR (pharmacy system) is not always manually uploaded and updated by the GP practice.	NICE guidance (2009)	Improvements to the national surveillance systems of COVER, UNIFY and GPIS may help with checking with discrepancies when triangulated. Imform data provides a more accurate uptake measure compared to COVER which comes off CHIS.
27	SCM	SCM 5	Immunisations are reported to the GP and Child Health Information System, and recorded in the Personal Child Health Record (PCHR or red book).	Ensure that all immunisations, provided by whoever are reported to the GP and Child Health Information System, and recorded in the Personal Child Health Record (PCHR or red book). When an immunisation is declined this should also be recorded.		

ID	Type	Stakeholder	Key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
				There should be common codes in use across providers. To operate an efficient call recall system requires accurate information. This is not the case in many areas. Recording information in the PCHR makes data sharing easier.		
28	SH	NHS England	Integrated CHIS system (national or regional)	There is currently a fragmented and complex set of local systems for maintaining accurate immunisation records for all local children 0-19 years who are GP-registered, non-registered, resident, and attending school. The lack of interoperability and integration of Child Health Information Systems creates duplication and antiquated processes within a changing organisational landscape. A standardised, streamlined national clinical information system that can drive forward improvements in patient care would greatly improve data quality and transfer, and ultimately vaccine coverage.	Work has been on-going to improve and bring greater consistency to the approach of CHIS across England. This was begun in 2007 and completed by the CHIS Transition Steering Group with the publication of the document Information requirements for Child Health Information Systems , which sets out what a gold standard CHIS looks like. The CHIS TSG then commissioned an Output Based Specification (OBS) that can be used by suppliers and commissioners when redesigning or re-procuring CHIS to move toward the gold standard. South Central (Thames Valley and BGSW) is following the West Midlands example of procuring an integrated CHIS system for a wider geography.	Please see 'Output and information requirements specification: for the Child Health information service and systems' (Public Health England) OBS 2015.
29	SCM	SCM 4	Use of	Use of immunisation apps		

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			immunisation apps and eRedbook	and eRedbook		
30	SH	Institute of Health visiting	Parent hand held records	Recommendation 1	The Green book no longer exists. The Parent hand held records should be used by all health professionals to ensure immunisations are updated.	
31	SCM	SCM 7	School health checks of vaccination status|	School health checks of vaccination status and offer of update at school entry, transition and prior to school leaving		
32	SCM	SCM 2	Development of universal standards for immunisation in school age children	To provide guidance for the standardisation, to a commonly agreed minimum standard, for the delivery and administration of immunisation services for school age children to improve uptakes and reduce inequalities.		Currently out for consultation in Wales, being developed jointly between Welsh Government, Public Health Wales and Health Boards Nurse-led immunisation of|school-aged children - Guidance for nurses RCN 2014 https://www2.rcn.org.uk/__data/assets/pdf_file/0010/585838/RCNguidance_immunisation_school-age_WEB.pdf
33	SCM	SCM 2	Vaccination for school age children is offered as part of a school based programme	Evidence suggests that a school based programme to offer vaccination to those of school age is likely to be most effective in achieving higher uptake rates.	Across the UK there are a variety of different models of vaccination delivery to the school age cohorts (Dep of Health PHE 2014 Maximising the school nursing team contribution to public health of school aged children A national audit undertaken in Wales in 2010	Teenage booster vaccine: factors affecting uptake [Crocker J, Porter-Jones G, McGowan A, Roberts RJ, Cottrell S J Public Health (Oxf) 2012;18:18 PMID: 22711912] (November

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					identified a consistently higher uptake of the teenage booster vaccine (Td/IPV) where the vaccinations were offered in school in comparison to primary care programmes (see Teenage booster vaccine publication in J of Public Health ref). (Consequently 6 out of 7 Health Boards in Wales now offer a school based programme for teenage booster vaccinations and the final HB are currently considering how it can be implemented.)||The Joint Committee on Vaccination and Immunisation (JCVI) identifies school based vaccination programmes as potentially the most effective setting for improving uptake of immunisations, specifically in adolescents (JCVI, July 2012). NICE Immunisations reducing difference in uptake in under 19s. Recommendation 4: contribution of nurseries, schools, colleges of further education –Head teachers, school governors, managers of children's services and PCT immunisation coordinators should work with parents to encourage schools to become venues for vaccinating local children. This would form part of the extended school role. Provision will need to be	2012) |||JCVI Minutes of Meningococcal sub committee July 2012, Available at: http://media.dh.gov.uk/network/261/files/2012/11/JCVI-meningococcal-sub-committee-meeting-13-July-2012.pdf Immunisation uptake data for vaccines given as part of the UK routine schedule in Wales is available from COVER

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					in place for children who do not attend school and or are outside school age as school based vaccination may not be suitable for these individuals.	
34	SCM	SCM 6	Full vaccination compulsory for school and nursery entry	Remains a Public health concern therefore a public duty should exist to make it compulsory for school and nursery entry=full vaccination programme followed	Children are being put at risk by not being fully vaccinated. Only a 1/3 of local authority areas in England are hitting the 95% coverage targets	(Health and social Care) Call for compulsory childhood immunisation
35	SCM	SCM 6	Regional variation of uptake	Consider Regional Variation. Target areas where vaccination uptake likely to be poor including the socially isolated, less educated including low maternal literacy, language barriers, deprived areas, housing issues, transport issues (travelling distance to health care facilities)	Regional inequalities exist and suggestions for low immunisation coverage given here and should be targeted and each are strongly correlated with vaccination uptake. Explore each area	Abebe et al (2012) BMC Public Health 12:1075 http://www.biomedcentral.com/1471-2458/12/1075
36	SCM	SCM 1	Child vaccination uptake in urban areas	Child vaccination uptake in urban areas	London, Manchester and Birmingham have lower uptake rates for most vaccines	Complex reasons eg data reliability, mobile families some with language / cultural barriers, neglect issues.
37	SCM	SCM 2	Targeting the Hard to reach children	To reduce inequality. There are considerable variations in immunisation uptake particularly in some of the most deprived areas.	Inequality exists between the most deprived and least deprived areas in the proportion of children completing all recommended immunisations. In Wales during 2014/15 the proportion of children up to date with the routine	|Public Health Wales Vaccine Preventable Disease Programme. Vaccine uptake in children in Wales; COVER Annual report 2015, July 2015.

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					schedule, by their fourth birthday was nearly 7% lower for children living in the most deprived areas compared to those living in the least deprived areas (Public Health Wales 2014/15 Annual COVER report). As children get older, inequalities in uptake increase. The gap between the most deprived and least deprived areas in the proportion of children completing all recommended immunisations by one year of age in 2011 was small at around 2%, increasing to 5% at two years and 6% at five years. This figure increased to 13.9 % at 16 years suggesting that deprivation has an increasing negative effect on vaccination status as the child ages. This is based on unpublished data, currently being drafted for peer-reviewed publication. NICE Immunisations reducing difference in uptake in under 19s Recommendation 5: targeting groups at risk of not being fully immunised highlights importance of identification of missed immunisations and improving access to vaccination in this identified group. Immunisation is a core component of the proposed Welsh Government Healthy Child Wales programme	Cardiff: Public Health Wales. http://www2.nphs.wales.nhs.uk:8080/VaccinationsImmunisationProgsDocs.nsf/3dc04669c9e1eaa880257062003b246b/91c8c4ced6f7929280257e890050fb24/$FILE/COVER20142015_v1.pdf A colleague recently attended the PHE national immunisation network meeting and there was a presentation on inequalities. Information shared in this presentation covered domiciliary vaccination and may offer further evidence to support this standard.

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					which is planning to build on a programme encompassing a universal, enhanced and intensive approaches to supporting families. In Wales the Health Boards frequently ask about the cost effectiveness of domiciliary vaccination to target those identified as hard to reach. The NICE guidance states in the context of preventing measles using MMR vaccine: 'modelling suggested that home visits (likely to be the most expensive means of increasing coverage by one percentage point) would be a cost effective use of NHS resources. The implication is that almost any method of increasing MMR coverage would be cost effective. The NICE assessment modelled only measles, therefore the cost effectiveness of catching up a number of missing vaccines at the same time would be greater.	
38	SCM	SCM 5	Target vulnerable groups	Ensure that vulnerable groups – some ethnic minorities, LAC, highly mobile families – are targeted and the facilities (time and place for immunisation) are appropriate to their needs There is good evidence that these groups may have lower coverage. This may be	Some areas have increased coverage of these groups, by especially targeted measures	

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				because of specific vaccine fears (MMR and Somali population), poor health care in general (LAC) or lack of a GP (mobile populations).		
39	SH	Faculty of Public Health	Local variations in uptake	We recognise the importance correct framing has in data collection, particularly in regards to issues relating to reaching hard to reach such as child and adolescent immunisation, and engagement with hard to reach groups. We hope that the below commentary helps develop robust tools to better increase the rates of immunisation among children and young people under 19. Commentary: The various minority and potentially under vaccinated groups listed in the NICE Topic overview are reasonable but miss a most important aspect of inequalities in vaccination uptake. One of the biggest measurable inequalities / differences in vaccination uptake is by the organisation / provider delivering the vaccination programme.	FPH recommends that NICE introduce anther line of enquiry: what aspects of local organisations responsible for vaccine delivery in specific populations, make them successful?. A sort of operational delivery question. Regarding delivery to schools, the line of enquiry may be: “What aspects of local schools, engagement and delivery in schools, make one school more likely to achieve high vaccination rates? An additional point is that we now have specialist Screening and Immunisation Teams across England, and NICE should actively engage with these teams in this topic area so that the best use is made of their knowledge and experience.	

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				Hence general practice teams, responsible for delivering infant vaccinations to defined populations, vary greatly in the vaccination rates they achieve; school age vaccination rates vary by the school as much as by any specific group.		
40	SH	NHS England	Improve uptake of childhood immunisations among hard to reach/health inequality groups	There is a strong body of evidence that reducing the disparity of childhood immunisation uptake among 0-5 year olds should be part of an effective public health prevention strategy for vaccine preventable diseases. Targeting groups at risk of not being fully immunised is recommended within the NICE guidance. Multidisciplinary participation and wider stakeholder engagement should be utilised to identify and encourage vaccination to parents of children in hard to reach groups.	Areas with high IMD and BME population (such as Slough and South Reading in the Thames Valley geography) have historically and consistently lower vaccine uptake than neighbouring areas. Figures indicate an up to 15% difference between the highest and lowest performing areas and represent hundreds of under 5 children who are unprotected from vaccine preventable diseases. This leaves them, their families, communities and schools at risk of contracting disease. These attributes of ethnic diversity and lower socio-economic status are well-documented characteristics associated with lower vaccine uptake.	Please see 'Immunisations: reducing differences in uptake in under 19s'. (2009) NICE guidelines PH21. Quarterly and annual COVER data: Public Health England (2016) Vaccine uptake guidance and the latest coverage data
41	SCM	SCM 6	Presence of midwife/nurse at birth	Vaccination rates higher for children born with the presence of a midwife/nurse compared to those born with a doctor	Emphasises the importance of the nursing profession in vaccine coverage	Zere, E, Moeti, M, kirigia, J, Kataiki, E (2007)Equity in health and haealthcare in Malawi: analysis of trends BMC Public Health 7:78

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42	SCM	SCM 1	Legal aspects of Parental Responsibility in Looked After children.	Legal aspects of PR in Looked After children.	Being a LAC does not guarantee the ability to be fully vaccinated if parents retain PR and object to catchup vaccination programmes.	
43	SCM	SCM 1	GP training and awareness	GP training and awareness of vaccination programmes		Many GPs remain ignorant of current vaccination programmes. Education is provided but tends to be taken up by practice nurses, whereas parents are likely to consult GPs for specific advice. This can create difficulties and anxieties for all concerned, sometimes resulting in either a paediatric referral or lack of vaccination due to risk aversion. Food allergies, family history etc are often prominent. Porcine gelatine is a new issue for specific faith groups. The information leaflet needs more publicity.
44	SCM	SCM 4	All immunisers are up-to-date with their immunisation training in accordance to PHE 'National minimum standard for immunisation	Trained staff are not only more competent in giving vaccinations but are more confident in discussing vaccinations with interested and hesitant parents. This reduces number of vaccine incidents and increases	NICE guidance (2009)||WHO SAGE work on vaccine hesitancy has shown that parents want to be able to discuss vaccines with a health professional and have their questions answered.	As far as I know there is no national audit or collection of how up-to-date immunisers are across the UK

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			training'	parents' likelihood of getting their children vaccinated.		
45	SCM	SCM 5	Training for professionals giving or advising on immunisation		Training is not provided in all areas and there are professionals offering a service without appropriate training for which there is national guidance.	
46	SCM	SCM 7	Practice nurse training	To ensure confidence in recommending and advising on vaccination		
47	SH	NHS England	Immunisation training for health care professionals	Ensuring public and professional confidence is critical to the success of immunisation programmes. As the incidence of infectious diseases declines, it remains imperative that healthcare professionals are able to explain why vaccinations are still needed. Providing training opportunities in a structured and systematic way are essential to ensuring up to date information is properly disseminated.	There are issues affecting the sustainability of the current provision including but not limited to a lack of national guidance, restricted or no resource, and organisational reviews (Screening and Immunisation Teams; PHE). Considering the current level of uncertainty around immunisation training provision, local community Trusts and primary care providers will have to be asked to continue exploring the alternative options of commissioning/accessing immunisation training. This will inevitably lead to an inconsistent and un-standardised delivery model. This also involves a duplication of time, finances and administration.	Please see 'Immunisations: reducing differences in uptake in under 19s'. (2009) NICE guidelines PH21. 'National minimum standards for immunisation training' (HPA, 2005) 'Immunisation training of healthcare support workers: national minimum standards and core curriculum' (PHE, 2015)
48	SH	Faculty of Public Health	Research questions on vaccine uptake	1. In collaboration with the Public Health Interventions Advisory Committee (PHIAC), FPH would pose 5 research questions that should be	What are the most effective and cost effective ways of providing parents of children and young people with information to encourage timely immunisation? Specifically, what are the most effective and cost effective	

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				addressed. It notes that 'effectiveness' in this context relates not only to the size of the effect, but also to cost effectiveness and duration of effect. It also takes into account any harmful or negative side effects: What are the most effective and cost effective ways of increasing immunisation uptake among looked after children and young people and other population groups at risk of being only partially immunised or not immunised at all? What are the most effective and cost effective ways of modifying services to increase vaccine uptake among children and young people, particularly those at risk of not being immunised, or of being only partially immunised? Does this vary by population subgroups? Examples might include home visits, changes in information provision and the introduction of opportunities to discuss immunisation before vaccines are given.	ways of providing information to reach those who are particularly at risk of not being immunised or only partially immunised? How effective – and how acceptable to the public – are quasi-mandatory and incentive schemes for immunisation? (Examples of the former are schemes linked to nursery or school entry.) What impact do such schemes have on the timely uptake of vaccinations? Does giving incentives to immunisation providers increase immunisation rates in the UK? For example, how does community target setting, or changes in targets or payment systems, affect immunisation coverage?	

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49	SH	NHS England	It is important that practitioners have the most up to date information	Many of the references are out of date – many are updated annually and so are no longer applicable/relevant even now, let alone by the time of publication – it would be better to use the generic links to the appropriate websites e.g. NHS Employers and PHE (https://www.gov.uk/government/collections/immunisation) Not really sure why rotavirus has been picked up when there are other programmes/reports? The DOH Hep B pathway – is outdated and contains outdated terminology/references which may lead to confusion. Again it may be better to refer to the PHE National 7a Service Specifications – which reflect the new landscape.		
50	SH	NHS England	A full picture/overview should be presented	Not sure why MMR and whooping cough have been singled out when there are many other programmes and reports/indicators – again referencing PHE uptake reports (which cover most programmes) might be more		

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				helpful		
51	SH	NHS England	General Comment	Can't really see how this will drive up/improve quality or uptake!		
52	SH	NHS England	It is important that practitioners have the most up to date information	Many of the references are out of date – many are updated annually and so are no longer applicable/relevant even now, let alone by the time of publication – it would be better to use the generic links to the appropriate websites e.g. NHS Employers and PHE (https://www.gov.uk/government/collections/immunisation) Not really sure why rotavirus has been picked up when there are other programmes/reports? The DOH Hep B pathway – is outdated and contains outdated terminology/references which may lead to confusion. Again it may be better to refer to the PHE National 7a Service Specifications – which reflect the new landscape.		
53	SH	Royal College of Paediatrics and Child	No comments	Thank you for inviting the Royal College of Paediatrics and Child Health to comment on the NICE guideline on		

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		Health		vaccine uptake in under 19s. We have not received any responses for this consultation.		
54	SH	Royal College of general Practitioners	No comments	I am afraid the RCGP do not comment on topic engagements and the deadlines are too tight. Normally we give to our network two weekends to review the documents to provide comments and then one more week for our Medical Director to review the document too and the comments submitted by our network. We will be more than happy to contribute to the quality standard consultation once this is ready.		
55	SCM	Royal College of Nursing	No comments	This is just to let you know that there are no comments to submit on behalf of the Royal College of Nursing in relation to the stakeholder engagement exercise for the vaccine uptake in under 19s quality standard.		
56	SH	Pfizer	No comments	Thank you for the opportunity to participate in this topic engagement exercise. I can confirm that Pfizer have no		

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				further comments to submit.		