NICE National Institute for Health and Care Excellence

NICE guideline

# Vaccine uptake in the general population

NICE guideline
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# Your responsibility

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

All problems (adverse events) related to a medicine or medical device used for treatment or in a procedure should be reported to the Medicines and Healthcare products Regulatory Agency using the Yellow Card Scheme.

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

# Contents

This guideline replaces PH21.

This guideline is the basis of QS145 and QS22.

# Overview

This guideline aims to increase the uptake of all vaccines provided on the NHS routine UK immunisation schedule by everyone who is eligible. It supports the aims of the NHS Long Term Plan, which includes actions to improve immunisation coverage by GPs (including the changes to vaccinations and immunisations detailed in the 2021/2022 and 2022/23 GP contracts) and support a narrowing of health inequalities.

## Who is it for?

- Commissioners and health policy makers
- Providers of healthcare services including general practice, pharmacy and school-aged immunisation providers, maternity services, emergency departments and independent providers of NHS services
- Social care providers
- Prison and secure setting employers
- Child health information services
- Local authorities, and community or voluntary sector organisations
- Education and training organisations
- UK and overseas Defence Medical Services providers and commissioners
- Occupational health services
- All people who are eligible for vaccination on the routine schedule, their families and carers.

# Recommendations

People have the right to be involved in discussions and make informed decisions about their care, as described in NICE's information on making decisions about your care.

Making decisions using NICE guidelines explains how we use words to show the strength (or certainty) of our recommendations, and has information about prescribing medicines (including off-label use), professional guidelines, standards and laws (including on consent and mental capacity), and safeguarding.

## 1.1 Service organisation

These recommendations should be read together with the NICE guideline on flu vaccination: increasing uptake.

### Named vaccination leads

1.1.1 Ensure that each organisation that commissions, provides or organises vaccination services has a named vaccination lead with responsibility (as relevant) for ensuring that:

- vaccination records are validated and updated
- people who are eligible for vaccination are identified
- invitations and reminders are sent to people eligible for vaccination
- vaccines are administered and recorded
- there is coordination between providers and other services involved in organising and reporting vaccinations.
- GP practices and child health information services (CHIS) understand each other's reporting systems and processes

- best practice is followed for ordering, storing, distributing and disposing of vaccines (see the Green book for more information).

1.1.2 Commissioners and providers should ensure that the named vaccination leads have access to the relevant information and facilities they need to carry out their role.

1.1.3 Nominate a named person in each primary care provider to be responsible for identifying people who are housebound and need vaccination.

1.1.4 Social care providers and providers of other non-healthcare services (who are asked to identify people eligible for vaccination opportunistically [see recommendation 1.2.9]) should identify a named lead responsible for the organisation's approach to:

- identifying people who are eligible for vaccination **and**
- ensuring that it is clear where to signpost these people to get vaccinated or to obtain further information.

1.1.5 In supported living settings and care homes, the named vaccination lead should also ensure that there is a policy in place covering what actions to take in response to vaccination invitation letters for residents.

1.1.6 For secondary and tertiary care providers who do not provide vaccinations, ensure that there is a named vaccination lead who can identify people eligible for vaccination and signpost them to relevant services.

For a short explanation of why the committee made these recommendations and how they might affect practice, see the rationale and impact section on named vaccination leads.

Full details of the evidence and the committee's discussion are in:

- evidence review A: identification and recording of vaccination eligibility and status
- evidence review D: interventions to increase the uptake of routine vaccines by improving access.

## Designing and raising awareness of payment schemes

These recommendations are for regional and local commissioners of NHS vaccination services.

1.1.7 Raise awareness among healthcare professionals and providers:

- about payments and funding streams to support the delivery of vaccination services, including those for populations with low vaccination rates
- that submission of information about vaccination uptake directly affects any linked organisational incentive payments.

1.1.8 When designing incentive schemes for providers, take into account that using incentives to prioritise certain vaccinations could have unintended consequences on the uptake of other vaccinations.

For a short explanation of why the committee made these recommendations and how they might affect services, see the rationale and impact section on designing and raising awareness of payment schemes.

Full details of the evidence and the committee's discussion are in evidence review G: interventions to increase the uptake of routine vaccines by improving infrastructure.

## Making vaccination services accessible and tailoring to local needs

1.1.9 NHS commissioners and NHS providers should ensure that they identify:

- local population needs
- barriers to vaccine uptake (see box 1)
- areas or populations with low vaccine uptake (see box 2).

They should do this using data from the Joint Strategic Needs Assessment and other data sources.

**Box 1 Some key barriers to routine vaccine uptake**

- Inflexible and inconvenient clinic times and locations
- Perceived lack of balanced information (including misinformation)
- Language and literacy problems
- Insufficient time in consultations to discuss concerns about vaccinations
- Lack of staff training in how to discuss vaccinations effectively
- Uncertainty about vaccine safety and effectiveness
- Uncertainty about whether vaccines are needed (including how severe the diseases are or how likely it is that someone will be exposed to the disease)
- Previous negative experiences of vaccination
- Lack of trust in the government, drug companies and the healthcare system
- Religious or cultural views that are against vaccination (this may relate to specific vaccinations, for example HPV [human papillomavirus])
- Individual barriers such as needle phobia or sensory impairment.

**Box 2 Some population groups that are known to have low vaccine uptake or be at risk of low uptake**

- People from some minority ethnic family backgrounds
- People from Gypsy, Roma and Traveller communities
- People with physical or learning disabilities
- People from some religious communities (for example, Orthodox Jewish)
- New migrants and asylum seekers
- Looked-after children and young people
- Children of young or lone parents
- Children from large families
- People who live in an area of high deprivation
- Babies or children who are hospitalised or have a chronic illness, and their siblings
- People not registered with a GP*
- People from non-English-speaking families*
- People who are homeless*

Communities with low uptake other than those listed above may also be identified specifically in your local area.

Sources: UK Health Security Agency (previously Public Health England) Health Equity Audit of the National Immunisation Programme, apart from those marked with an asterisk, which were raised by the committee.

1.1.10 In areas with low vaccine uptake, commissioners and providers should consider introducing targeted interventions to:

- overcome identified local barriers to vaccination (see box 1)

- address identified inequalities in vaccine uptake between different population groups (see box 2 and the UK Health Security Agency [UKHSA, previously Public Health England; PHE] immunisation equalities strategy).

  If introducing these interventions, develop them as part of a system-wide approach.

1.1.11 Commissioners and providers should ensure that they:

- Involve people in the local community when identifying barriers to vaccine uptake and when making decisions about accessibility of services (see the section on involving people in peer and lay roles to represent local needs and priorities in the NICE guideline on community engagement).
- Tailor service opening hours and locations for vaccinations to meet local needs. This should include providing multiple opportunities for people eligible for vaccination to have their vaccinations at a time and location convenient to them. Locations such as community pharmacies, clinics people attend regularly, and GP practices could be used.
- Provide a range of accessible options for booking appointments (such as telephone booking and online systems). Take into account that some people may need additional support to use these systems.

1.1.12 Consider using sites outside healthcare settings as settings for vaccination clinics, such as mobile vaccination units, children and family centres, or community or faith centres that provide a more family friendly environment, if this would address specific local barriers to vaccine uptake.

1.1.13 Consider providing vaccination services during extended hours and extended access appointments in evenings and weekends for people who may find it difficult to attend at other times. These services could be in primary care or community pharmacies, or be provided by a centralised service in each local area. If possible, provide these as part of existing out-of-hours services.

1.1.14 Commissioners and providers should coordinate vaccination services between providers to minimise wastage where vaccine supply is limited.

1.1.15 GP practices should ensure that contractual obligations and best practice on patient registration is followed (for example, not requiring immigration status or proof of address).

For a short explanation of why the committee made these recommendations and how they might affect services, see the rationale and impact section on making vaccination services accessible and tailoring to local needs.

Full details of the evidence and the committee's discussion are in evidence review D: interventions to increase the uptake of routine vaccines by improving access.

## Audit and feedback

1.1.16 NHS commissioners should ensure that there is a coordinated system in place for a quarterly cycle of feedback and audits of vaccine uptake data that can be compared against similar providers at a local and national level.

1.1.17 Providers should use available data to review current and past activity to help with continuous improvement.

1.1.18 To help increase vaccine uptake in the future, vaccine services should:

- evaluate initiatives for improving the uptake of routine or COVID-19 vaccinations carried out during the SARS-CoV-2 pandemic, and
- identify initiatives that could be used to increase the uptake of routine vaccination programmes.

For a short explanation of why the committee made these recommendations and how they might affect services, see the rationale and impact section on audit and feedback.

Full details of the evidence and the committee's discussion are in:

- evidence review G: interventions to increase the uptake of routine vaccines by improving infrastructure
- evidence review H: multicomponent interventions to increase uptake of routine vaccines
- evidence review K: COVID-19 call for evidence.

## Training and education for health and social care practitioners

1.1.19 Vaccination leads (see recommendation 1.1.4) should ensure that health and social care practitioners and other related staff who are in contact with people eligible for vaccination, but do not administer vaccines, have ongoing education about vaccination. These could include:

- Practitioners working in primary care settings, including GP practices, optometry, dental practices and community pharmacies.
- Secondary care practitioners, for example in clinics for children with chronic conditions, emergency departments or wards such as oncology, antenatal or neonatal.
- Social care practitioners who may have contact with carers and other eligible groups, such as people with learning disabilities. This may include contact during home visits, individual needs assessments and carers' assessments.

1.1.20 Ensure that education for health and social care practitioners and other related staff who are in contact with people eligible for vaccination, but do not administer vaccines, includes:

- an understanding of who is eligible for vaccination on the NHS routine UK immunisation schedule

- awareness of barriers to vaccination (see box 1)
- benefits and risks of vaccination
- where to signpost people for further information and vaccination.

Tailor the level and content of the information to the person's role.

1.1.21 Healthcare practitioners who administer vaccines should be given the time, resources and support to:

- Undertake mandatory training before administering vaccines (UKHSA [previously PHE] national minimum standards and core curriculum for immunisation training for registered healthcare practitioners).
- Include training on vaccination as part of their continuing professional development plan, including how to have effective and sensitive conversations about vaccination.
- Ask people for any questions and concerns they may have about vaccination and give them personalised responses (or signpost people to relevant sources).
- Provide tailored information on the risks and benefits of vaccination.
- Understand when a vaccine is contraindicated, for example for people with certain allergies or conditions, and when it can still be delivered, and be able to discuss this with the person concerned (see recommendation 1.2.18).
- Overcome particular individual barriers to vaccination such as those experienced by people who have a learning disability, needle phobia or sensory impairment.
- Offer and administer vaccines.

For a short explanation of why the committee made these recommendations and how they might affect services, see the rationale and impact section on training and education for health and social care practitioners.

Full details of the evidence and the committee's discussion are in:

- evidence review E: education interventions to increase the uptake of routine vaccines
- evidence review H: multicomponent interventions to increase uptake of routine vaccines.

## Appointments and consultations

1.1.22 Providers should ensure that there is sufficient time in an appointment or consultation to:

- allow the healthcare professional and individual, family member or carer (as appropriate) to have a discussion where any concerns can be identified and addressed. This could include using written information or websites to help the discussion
- gain informed consent
- administer vaccines
- complete documentation.

For information on how to support people to make informed decisions, see the NICE guideline on shared decision making.

For a short explanation of why the committee made this recommendation and how it might affect services, see the rationale and impact section on appointments and consultations.

Full details of the evidence and the committee's discussion are in evidence review E: education interventions to increase the uptake of routine vaccines.

# 1.2 Identifying eligibility, giving vaccinations and recording vaccination status

These recommendations should be read together with the NICE guideline on flu vaccination: increasing uptake.

NICE has produced a visual summary on identifying people eligible for vaccination and opportunistic vaccination.

## Using compatible systems and processes

1.2.1 Ensure that compatible systems or processes are in place to enable vaccination records to be shared and transferred effectively and in a timely way between different parts of the healthcare system, including other vaccination providers such as community pharmacies.

For a short explanation of why the committee made this recommendation and how it might affect practice, see the rationale and impact section on using compatible systems and processes.

Full details of the evidence and the committee's discussion are in evidence review A: identification and recording of vaccination eligibility and status.

## Keeping records up to date

1.2.2 Child health information services (CHIS) should ensure that their vaccination records are updated within 5 days or within service specifications if they exist, whichever is shorter, in response to new information about a person's vaccination status.

1.2.3 GP practices should ensure that their vaccination records are updated within 2 weeks (or as specified in the GP contract if shorter) in response to new information about a person's vaccination status.

1.2.4 GP practices should use an up-to-date clinical system template that includes relevant SNOMED CT codes to record vaccinations.

1.2.5 GP practices should validate their vaccination records at least monthly against data sources received. Check registered populations and vaccine eligibility and status, investigate any discrepancies and correct the record accordingly.

1.2.6 CHIS should give GP practices a monthly update (or as specified in the CHIS contract if shorter) on children who are not up to date with their vaccinations.

1.2.7 GP practices should inform CHIS if 3 invitations for vaccination are made but a child remains unvaccinated (see recommendation 1.3.16).

1.2.8 GP practices should ensure that they have up-to-date medical records, phone numbers, email addresses and addresses for people who are eligible for vaccination, or their family members or carers (as appropriate). Include the person's preferred methods of contact (such as letters, texts, emails or phone calls) and whether there are additional literacy issues or language needs.

For a short explanation of why the committee made these recommendations and how they might affect practice, see the rationale and impact section on keeping records up to date.

Full details of the evidence and the committee's discussion are in evidence review A: identification and recording of vaccination eligibility and status.

## Identifying people eligible for vaccination and opportunistic vaccination

1.2.9 Use every opportunity to identify people eligible for vaccination. This could include:

- at registration in general practice
- during health and developmental reviews as part of the healthy child programme and health visitor and school nursing targeted contacts
- during the annual learning disability health check for people with learning disabilities
- when making contact with people in healthcare settings, community health clinics, sexual health services or drug and alcohol services (including hospitals, emergency departments, inpatient services, rehabilitation services and general practice)
- when making contact with women who are trying to conceive or have a newly confirmed pregnancy, and at antenatal and postnatal reviews
- on admission to day care, nurseries, schools, special needs schools, pupil referral units, and further and higher education
- on admission to care homes and supported living settings
- when people visit community pharmacies for health advice, a medication review or an NHS New Medicine Service, or to collect prescriptions
- during home visits for healthcare or social care
- any health service contact with people who are homeless
- when new migrants, including asylum seekers, arrive in the country
- within 7 days of arrival in prisons and young offender institutions, during any contact with healthcare services in these places, and when people leave
- as part of a looked-after child or young person's health plan, and during initial health assessments, and annual and statutory reviews (see also the NICE guideline on looked-after children and young people)

- any contact with home-educated children
- during occupational health checks for everyone who works in a clinical or social care setting, even if their role is not healthcare related.

1.2.10 Offer people (or their family members or carers, as appropriate) access to online systems or apps to allow them to view and check their NHS vaccination records (or those of their child or the person they care for).

1.2.11 Providers of online systems or apps should ensure that people automatically have access to their vaccination status as part of their electronic records as the default option.

1.2.12 Use the NHS summary care record, or any other available vaccination records (including records held by the person), to opportunistically identify people who are eligible for vaccination.

1.2.13 Unless a person has a documented (or reliable verbal) vaccine history, assume that they are not immunised, and plan a full course of immunisations (see the UKHSA [previously PHE] guidance on vaccination of individuals with uncertain or incomplete immunisation status).

1.2.14 GP practices should ensure that there is a mechanism in place to check the vaccination status of people registered as temporary residents and offer any vaccinations needed.

1.2.15 Providers should routinely use prompts and reminders from electronic medical records to opportunistically identify people who are eligible and due or overdue for vaccination.

1.2.16 Add prompts to the records of parents or carers (as appropriate) if children are overdue vaccinations.

1.2.17 Midwives should offer vaccination to pregnant women during routine antenatal visits, as recommended by the Green book and the NHS routine UK immunisation schedule. If the midwife cannot administer the vaccine, they should signpost women to vaccination services, drop-in clinics or their GP practice.

1.2.18 When uncertainties exist around contraindications and allergies, consult the Green book and seek expert help if needed.

1.2.19 When people eligible for vaccination have been identified opportunistically:

- Healthcare professionals should:
  - if possible, discuss any outstanding vaccinations with them (or their family members or carers, as appropriate) and offer vaccination immediately
  - otherwise, encourage them to book an appointment to discuss the vaccinations or an appointment for vaccination
  - think about referring a child's parents or carers to the health visitor or school nurse, as age appropriate.
- Non-healthcare practitioners should signpost them to vaccination services.

See also recommendation 1.2.15.

For a short explanation of why the committee made these recommendations and how they might affect practice, see the rationale and impact section on identifying people eligible for vaccination and opportunistic vaccination.

Full details of the evidence and the committee's discussion are in:

- evidence review A: identification and recording of vaccination eligibility and status
- evidence review C: reminders interventions to increase the uptake of routine vaccines
- evidence review D: interventions to increase the uptake of routine vaccines by improving access
- evidence review E: education interventions to increase the uptake of routine vaccines
- evidence review H: multicomponent interventions to increase the uptake of routine vaccines.

## Recording vaccination offers and administration

1.2.20 When offering a vaccination, record in the GP record or other medical record whether it was accepted or declined or there was no response (see recommendation 1.3.20).

1.2.21 The person administering the vaccine should ensure that information is recorded accurately and consistently, regardless of where the vaccine is administered, and includes:

- details of consent to the vaccination (including if someone else has consented on the person's behalf, and that person's relationship to them)
- the dose, batch number, expiry date, vaccine name and vaccine product name
- the date, route and site of administration

- any reported adverse reactions
- whether the vaccine was administered under Patient Specific Directions or Patient Group Directions. (See the NICE guideline on patient group directions.)

1.2.22 Providers should ensure that clinical and patient-held records (including records held on behalf of children) are updated at the time of the vaccination. If the patient-held record is not available at the appointment, give the person a printed record of the vaccination and ensure that the patient-held record is updated at a subsequent healthcare appointment.

1.2.23 Providers should use electronic health record templates with compulsory data fields to support accurate recording of vaccination offers and administration (see recommendations 1.2.15 and 1.2.16).

1.2.24 Providers should ensure that vaccinations are reported promptly (within 5 working days, or in line with required standards if shorter) to GP practices and child health information services (CHIS) (if relevant).

1.2.25 Where commissioned locally, CHIS should send details of vaccinations administered outside of the GP practice to GP practices within 2 weeks or as specified in the CHIS contract if shorter.

1.2.26 Providers should ensure that the information they provide to GP practices and CHIS is clear and in a readily accessible format that minimises the need for manual re-entry of data.

For a short explanation of why the committee made these recommendations and how they might affect practice, see the rationale and impact section on recording vaccination offers and administration.

Full details of the evidence and the committee's discussion are in evidence review A: identification and recording of vaccination eligibility and status.

## 1.3 Invitations, reminders and escalation of contact

These recommendations should be read together with the NICE guideline on flu vaccination: increasing uptake.

### System organisation and accessibility issues

1.3.1 NHS England public health commissioning teams and screening and immunisation teams should ensure that there is a coordinated system in place at the local level for providers to send out invitations and reminders.

1.3.2 Consider sending invitations and reminders for different vaccinations together (for example, the pneumococcal vaccine with the flu vaccine).

1.3.3 If possible, ensure that the information, invitation and any subsequent reminders are given in a format and language appropriate for the person and their family members or carers (as appropriate).

1.3.4 Ensure that the information, invitation and any subsequent reminders meet the person's communication needs (see NHS England's Accessible Information Standard). For more guidance on giving people information and discussing their preferences, see the NICE guidelines on patient experience in adult NHS services and shared decision making.

1.3.5 Give people who have come from outside the UK:

- details of the NHS vaccine schedule, how it is delivered, where and by whom if they:
    - have started vaccinations before arrival and not completed them **or**
    - are eligible for vaccination.
- help to access healthcare, if needed.

  Be aware that expectations of who delivers vaccine services may differ by cultural background.

1.3.6 If people need to provide consent for vaccination but need additional support with decision-making (such as people with learning disabilities) or if they may lack mental capacity, follow the recommendations on supporting decision-making in the NICE guideline on decision-making and mental capacity.

For a short explanation of why the committee made these recommendations and how they might affect practice, see the rationale and impact section on system organisation and accessibility issues.

Full details of the evidence and the committee's discussion are in:

- evidence review C: reminders interventions to increase the uptake of routine vaccines
- evidence review E: education interventions to increase the uptake of routine vaccines
- evidence review I: interventions to increase vaccine uptake by targeting acceptability
- evidence review J: acceptability and effectiveness of interventions to increase routine vaccine uptake.

## Vaccinations for babies, infants and preschool-aged children, and adults

NICE has produced the following visual summaries:

- Vaccinations for young children and older people: invitations, reminders and escalation of contact
- Vaccinations for pregnant women: invitations, reminders and escalation of contact.

### Initial invitations

1.3.7 Invite people who are eligible for vaccination or their family members or carers (as appropriate) to book an appointment or attend an open access clinic. Do this opportunistically during consultations if possible, or by letter, email, phone call or text. Use the person's preferred method of communication for invitations if possible.

1.3.8 Practitioners working in maternity services and other healthcare practitioners who have contact with pregnant women should ensure that pregnant women are invited for vaccination or signposted to vaccination services or drop-in clinics.

1.3.9 Ensure that the following people (or their family members or carers, as appropriate) know how to get home visits for vaccination if they cannot attend vaccination clinics or other settings where vaccinations are available:

- people who live in care homes or residential settings
- people who are housebound
- babies and children whose parents or carers are housebound.

See also recommendation 1.3.6 and the NICE guideline on managing medicines in care homes.

1.3.10 Consider sending the vaccination invitation and any subsequent reminders from a healthcare professional or service that is known to the person or their family members or carers, such as a school, GP practice, doctor, nurse, midwife or health visitor.

1.3.11 Ensure that the vaccination invitation contains:

- The vaccines being offered (named in full) and the targeted diseases.
- A statement that the NHS and the relevant provider (with the type of provider specified) recommends the vaccination.
- Details on contacting a healthcare professional (for example, practice nurse, GP, school nurse or pharmacist) to discuss any concerns the person (or their family members or carers) might have (including about possible contraindications or allergies that could affect whether the person can have a vaccination).

- Instructions for how to book an appointment at a vaccination clinic, if relevant, or where and when drop-in clinics are held. If possible, include options for online booking.
- A reminder to bring any relevant patient-held records for updating.

1.3.12 If space allows, include the following in the vaccination invitation or provide links:

- Information on the vaccines, including:
  - the potential severity of the targeted diseases
  - the risks and benefits of vaccination, including individual benefits (including to the baby for maternal pertussis vaccination) and population benefits (protecting other people in their community)
  - if relevant, the importance of having all doses of a vaccination course
  - if relevant, why some vaccines are given at specific ages (for example, the HPV [human papillomavirus] vaccine).
- Instructions for accessing additional videos and information (including interactive information and decision tools) from trusted sources such as the Oxford University's Vaccine Knowledge Project, NHS England and the World Health Organization. Include hyperlinks or QR codes if possible.
- Information about what to expect at the appointment.

1.3.13 Ensure that the parents or carers (as appropriate) of babies who are in neonatal care units when they are eligible for their vaccinations receive relevant information (see recommendations 1.3.11 and 1.3.12) and are made aware of when and how their baby's vaccinations will take place.

For a short explanation of why the committee made these recommendations and how they might affect practice, see the rationale and impact section on initial invitations.

Full details of the evidence and the committee's discussion are in:

- evidence review C: reminders interventions to increase the uptake of routine vaccines
- evidence review E: education interventions to increase the uptake of routine vaccines
- evidence review H: multicomponent interventions to increase the uptake of routine vaccines.

### Reminders and escalation of contact

1.3.14 Providers (such as GP practices) should identify people who do not respond to invitations or attend clinics, vaccination appointments or other settings where vaccinations are available and send a reminder. (See also recommendation 1.3.10.) Confirm that the person has received the reminder.

1.3.15 At a pregnant woman's first appointment after the 20-week scan, antenatal care providers should check whether they have been offered and accepted vaccination against pertussis in this pregnancy. If not, ensure they receive offers of vaccination or reminders (as relevant) at subsequent antenatal appointments or during any contact with their GP, midwife, health visitor or any other healthcare provider.

1.3.16 Talk to parents or carers (as appropriate) of children aged 5 or under who have not responded to a reminder if a vaccination delay is approaching:

- 2 weeks, for immunisations for babies up to age 1 year
- 3 months, for immunisations for children aged 1 year and over.

Explore with them the reasons for their lack of response and try to address any issues they raise.

1.3.17 For pregnant women and older people who do not respond to reminders, consider more direct contact such as a phone call. Explore with them the reasons for their lack of response and try to address any issues they raise.

1.3.18 Consider a multidisciplinary approach to address any issues raised in recommendations 1.3.16 and 1.3.17, involving other relevant health and social care practitioners such as health visitors, social workers or key workers, while respecting the person's decision if they refuse vaccination.

1.3.19 Consider home visits for people who have difficulty travelling to vaccination services. Discuss immunisation and offer them or their children (as relevant) vaccinations there and then (or arrange a convenient time in the future).

1.3.20 If someone declines an offer of vaccination, record this with the reason why, if given, and make sure they know how to get a vaccination at a later date if they change their mind.

For a short explanation of why the committee made these recommendations and how they might affect practice, see the rationale and impact section on reminders and escalation of contact.

Full details of the evidence and the committee's discussion are in:

- evidence review C: reminders interventions to increase the uptake of routine vaccines
- evidence review D: interventions to increase the uptake of routine vaccines by improving access
- evidence review H: multicomponent interventions to increase the uptake of routine vaccines.

### People who are not registered with a GP practice

1.3.21 Commissioners should consider involving local authorities, health visitors, or the community or voluntary sector to ensure that people who are not registered with a GP practice are identified and have opportunities to access relevant vaccinations. This could include homeless people and other transient populations.

See also recommendation 1.2.9 on opportunistic identification, box 2 and the NICE guideline on integrated health and social care for people experiencing homelessness.

1.3.22 Commissioners should ensure that people who are not registered with a GP practice are aware that they are eligible for NHS vaccinations, and where and how to access them.

1.3.23 CHIS should identify children who are eligible for vaccination but are not registered with a GP practice. Where commissioned, they should send invitations to parents and carers or ensure this cohort is highlighted to the service commissioner. This might include children from Traveller, Gypsy and Roma communities, newly arrived immigrants or asylum seekers.

For a short explanation of why the committee made these recommendations and how they might affect practice, see the rationale and impact section on people who are not registered with a GP practice.

Full details of the evidence and the committee's discussion are in evidence review C: reminders interventions to increase the uptake of routine vaccines.

## Vaccinations for school-aged children and young people

1.3.24 When administering vaccinations to secondary school-aged children and young people, do this in schools if possible.

### Routine vaccinations at school

NICE has produced a visual summary on vaccinations for school-aged children and young people: invitations, reminders and escalation of contact.

1.3.25 School-aged immunisation providers and schools should work together to organise and carry out vaccinations for secondary school-aged children and young people.

1.3.26 Ensure that schools are involved in sending invitations (including consent forms) for vaccinations on behalf of the providers to pupils who attend school. Make the format of the invitation accessible to parents and secondary school-aged children and young people.

1.3.27 Ensure that the invitation, information and consent form are available in a digital format, with non-digital options available where needed.

1.3.28 Providers should ensure that young people and their parents or carers (as appropriate) have reliable information about vaccines that covers risks and benefits to help them to make informed decisions. The information should include who can consent to vaccination (Gillick competence) as well as the information listed in recommendations 1.3.11 and 1.3.12 (as appropriate). See also the NICE guideline on babies, children and young people's experience of healthcare.

1.3.29 Providers and schools should work together to ensure that school-based education about vaccines is available in an age-appropriate format to children and young people to increase their understanding about vaccinations.

1.3.30 Providers should offer incentives, such as a ticket for a prize draw, that encourage the return of consent forms.

1.3.31 If a completed consent form is not returned, send a reminder.

1.3.32 Phone the child or young person's parents or carers (as appropriate) to ask for verbal consent if they have not responded by the time preparations are being made for vaccination day. If contact cannot be made, involve other health and social care providers who may be involved with the family to help gain consent.

1.3.33 Be aware that young people under 16 can give their own consent to vaccination if they are assessed to be Gillick competent. Include an assessment for capacity to consent in the absence of parental consent or if there has been parental refusal, in line with guidance on consent in the Green book and from professional bodies such as the General Medical Council's advice on making decisions.

1.3.34 School-aged immunisation services should ensure that they have a policy in place to support school-aged immunisation teams in assessing Gillick competence. Include guidance on what action to take when a young person's vaccination preference is different from that of their parents or carers.

1.3.35 Commissioners should ensure that school-aged immunisation services offer catch-up vaccination sessions to children and young people who are not up to date with their school-aged vaccination schedule.

1.3.36 If children and young people who are not up to date with their school-aged vaccinations miss the catch-up sessions, alternative provision should be made for them to be offered the vaccinations.

1.3.37 Where children and young people are not up to date with any vaccinations that are not part of the school-aged programme, signpost parents and carers (as appropriate) to their GP to ensure that the children and young people can be offered these vaccinations.

1.3.38 CHIS should provide information to school nursing teams to help them identify children and young people who are not up to date with their preschool vaccinations.

### Children and young people who do not attend schools where vaccinations are provided

1.3.39 Commissioners of vaccination services for school-aged children should ensure that children and young people who do not attend schools where vaccinations are provided are invited for vaccination at another setting.

For a short explanation of why the committee made these recommendations and how they might affect practice, see the rationale and impact section on vaccinations for school-aged children and young people.

Full details of the evidence and the committee's discussion are in:

- evidence review C: reminders interventions to increase the uptake of routine vaccines
- evidence review D: interventions to increase the uptake of routine vaccines by improving access
- evidence review J: acceptability and effectiveness of interventions to increase routine vaccine uptake.

# Terms used in this guideline

This section defines terms that have been used in a particular way for this guideline. For other definitions, see the NICE glossary and the Think Local, Act Personal Care and Support Jargon Buster.

## Family members or carers

People with legal responsibility for decision-making for a person who is eligible for vaccination but cannot make this decision for themselves. These include parents of babies, children and young people and may also include other family members or guardians or carers if they have this responsibility (for example, if they hold a lasting power of attorney in health and welfare for another adult). See the Green book: chapter 2 on consent for more details.

## Housebound

People who are unable to leave their home environment through physical or psychological illness. The decision about whether someone is classified as housebound should be made according to relevant local or national policies. This terminology is used to maintain consistency with NHS documents and websites.

## Low vaccine uptake

An area or population in which uptake of a particular vaccine is lower than the national or regional average, as reported in the Public Health Outcomes Framework. This recommends a 95% vaccine coverage target for UK routine childhood vaccination programmes, with at least 90% coverage in each defined area. The performance indicators are set out in section 7A of the NHS public health functions agreement. See annex B of the NHS public health functions agreement 2019/2021.

## Older people

Adults who are eligible for routine vaccination on the UK schedule, excluding pregnancy-related vaccinations. At the time of publication (May 2022), the UK schedule had routine vaccinations for adults who are aged 65 years and over, but this is expected to change in line with the reduction in age of eligibility for the shingles vaccination. Consult the Green book for information about current age limits and vaccinations for older people.

## Pregnant women

Women who are pregnant as well as trans or non-binary people who are pregnant. This terminology is used to maintain consistency with NHS documents and websites.

# Recommendations for research

The guideline committee has made the following recommendations for research.

## Key recommendations for research

### 1 Increasing vaccination uptake in populations with low uptake

What are the most effective and acceptable interventions to increase uptake in populations or groups with low routine vaccine uptake in the UK?

For a short explanation of why the committee made this recommendation for research, see the rationale section on initial invitations.

Full details of the evidence and the committee's discussion are in evidence review B: barriers to, and facilitators for, vaccine uptake.

### 2 Incentives aimed at individuals, family members and carers

What is the effectiveness and acceptability of incentives to increase uptake of routine vaccines in the UK?

For a short explanation of why the committee made this recommendation for research, see the rationale section on vaccinations for school-aged children and young people.

Full details of the evidence and the committee's discussion are in evidence review G: interventions to increase the uptake of routine vaccines by improving infrastructure.

### 3 Quasi-mandation of vaccinations

What is the effectiveness and acceptability of quasi-mandation to increase vaccine uptake of routine vaccines?

For a short explanation of why the committee made this recommendation for research, see the rationale section on vaccinations for school-aged children and young people.

Full details of the evidence and the committee's discussion are in evidence review G: interventions to increase the uptake of routine vaccines by improving infrastructure.

## 4 Tailoring Immunisation Programmes

Is the use of the World Health Organization 'Tailoring Immunisation Programmes' approach an effective way of designing interventions to increase vaccine uptake in a UK context?

For a short explanation of why the committee made this recommendation for research, see the rationale section on vaccinations for school-aged children and young people.

Full details of the evidence and the committee's discussion are in evidence review J: acceptability and effectiveness of interventions to increase routine vaccine uptake.

## 5 Framing content in vaccination invitations

What is the relative effectiveness and acceptability of different styles of phrasing content in a vaccination invitation in the UK?

For a short explanation of why the committee made this recommendation for research, see the rationale section on initial invitations.

Full details of the evidence and the committee's discussion are in evidence review E: education interventions to increase the uptake of routine vaccines.

# Other recommendations for research

## 6 Increasing vaccination uptake in older people

What are the most effective and acceptable interventions to increase routine vaccine uptake in older people in the UK?

For a short explanation of why the committee made this recommendation for research, see the rationale section on initial invitations.

Full details of the evidence and the committee's discussion are in evidence review B: barriers to, and facilitators for, vaccine uptake.

## 7 HPV vaccination for boys

What are the most effective and acceptable strategies to increase HPV (human papillomavirus) vaccine uptake in boys in the UK?

For a short explanation of why the committee made this recommendation for research, see the rationale section on vaccinations for school-aged children and young people.

Full details of the evidence and the committee's discussion are in evidence review B: barriers to, and facilitators for, vaccine uptake.

## 8 Increasing pertussis vaccination uptake by pregnant women

What are the most effective and acceptable interventions to increase pertussis vaccine uptake in pregnant women in the UK?

For a short explanation of why the committee made this recommendation for research, see the rationale section on initial invitations.

Full details of the evidence and the committee's discussion are in evidence review F: interventions to increase the uptake of routine vaccines for pregnant women.

## 9 Provider incentives

What is the effectiveness and acceptability of giving incentives to providers to increase immunisation rates in the UK?

For a short explanation of why the committee made this recommendation for research, see the rationale section on designing and raising awareness of payment schemes.

Full details of the evidence and the committee's discussion are in evidence review G: interventions to increase the uptake of routine vaccines by improving infrastructure.

## 10 School-based versus GP-based catch-up campaigns

What is the effectiveness and acceptability of school-based catch-up vaccination sessions compared with GP-based catch-up campaigns in the UK?

For a short explanation of why the committee made this recommendation for research, see the rationale section on vaccinations for school-aged children and young people.

Full details of the evidence and the committee's discussion are in evidence review J: acceptability and effectiveness of interventions to increase routine vaccine uptake.

## 11 Incentives for school-aged vaccinations

What levels and types of incentives are effective and acceptable for increasing vaccination uptake in a school-aged population in the UK?

For a short explanation of why the committee made this recommendation for research, see the rationale section on vaccinations for school-aged children and young people.

Full details of the evidence and the committee's discussion are in evidence review J: acceptability and effectiveness of interventions to increase routine vaccine uptake.

# Rationale and impact

These sections briefly explain why the committee made the recommendations and how they might affect practice.

## Named vaccination leads

Recommendations 1.1.1 to 1.1.6

### Why the committee made the recommendations

The committee recognised several key stages in the vaccination process, such as identifying people eligible for vaccination. But based on their experience, they agreed that without a named vaccination lead, vaccine-related tasks for each organisation that provides or organises vaccinations may not be prioritised and completed, given the many other conflicting demands on people's time. Having a named lead would solve this issue. Named commissioner leads would be expected to liaise with the provider vaccination services to ensure that the vaccination process runs smoothly. They would not necessarily carry out the functions themselves but would be responsible for making sure they happened by involving other people with the required skill sets.

People who are housebound are less likely to be vaccinated because they cannot attend appointments or vaccination clinics. Having a named person in each GP practice to identify these people will help to ensure that they are vaccinated.

The committee were keen to promote opportunistic vaccinations as part of their overall strategy to increase uptake, and for this to take place in a range of settings (see recommendations in the section on identifying people eligible for vaccination and opportunistic vaccination). They recognised that it was not possible to vaccinate people in some non-healthcare settings, such as during home visits for social care. But these settings do provide opportunities to signpost people to vaccination services and having a named lead would help ensure that there is a strategy in place to do this.

The committee were also aware that in some places, such as supported living settings and care homes, there is not always a clear procedure about what should happen if a vaccine invitation is received. This could result in the residents missing out on vaccinations. Having policies in place to ensure these invites are responded to would help avoid this, whether this is in their home or a clinical setting. Other healthcare settings where vaccines are not routinely administered, such as hospitals or other secondary or tertiary care providers, could also be used for opportunistic identification. In these settings, the named lead could be any suitably trained healthcare professional, such as a nurse, doctor or pharmacist.

### How the recommendations might affect practice

These recommendations are not expected to need significant additional resources. It is likely that the named vaccination leads in healthcare settings would be existing members of staff. There are likely to be some small costs for the reallocation and reorganisation of tasks to the named lead in each scenario, but all of the activities should already be part of usual practice, and the benefits of having a named lead to ensure these tasks are carried out is expected to outweigh these costs. Although checking for eligibility for vaccination is not always usual practice in non-healthcare settings, it is unlikely to be a resource-intensive task.

Many GP practices already have a register of people who are housebound that the nominated lead could use. In practices that do not have a register, the lead could identify them by reviewing people who decline vaccination because they cannot attend the surgery and coding them appropriately. This is not expected to have a significant resource impact.

Return to recommendations

## Designing and raising awareness of payment schemes

Recommendations 1.1.7 to 1.1.8

### Why the committee made the recommendations

Although funding is already available for vaccination programmes, the committee agreed that in their experience, healthcare professionals and providers are not always aware of all the funding streams available to them, particularly if they change frequently or are only available for short periods of time. Therefore, it is important for commissioners to raise awareness of these funding options because access to more funding will help providers to develop their vaccination schemes, potentially increasing access to vaccinations. In addition, the committee wanted to raise awareness among healthcare providers about the need to submit data on vaccination uptake rates to enable them to take advantage of organisational incentives such as those provided by the Quality and Outcomes Framework for GPs.

There was some evidence that provider incentives could increase the uptake of routine vaccinations. However, this evidence comprised a small number of non-UK-based studies. Although organisational incentives for vaccination are currently in use in the UK, they are subject to change, and it is unclear what types and levels of incentives are most effective in the UK. The committee therefore included a recommendation for research on provider incentives.

The committee expressed concern that targets for some vaccinations may inadvertently result in those vaccinations being prioritised over other, non-targeted, vaccines. It is therefore important that commissioners consider the potential for unintended consequences when designing incentive schemes for providers. By highlighting these considerations, the committee thought that commissioners and providers should be able to develop ways to mitigate any reductions in the uptake of non-incentivised vaccinations that are detected using local uptake data. These could involve reminding professionals about the importance of other non-incentivised vaccinations.

## How the recommendations might affect services

Raising awareness about funding streams and payments for providers is unlikely to need any additional resources because it could be done as part of existing communications between commissioners and providers. Because the funding streams already exist, no additional resources to provide funding would be needed.

Making commissioners aware of potential unintended consequences of prioritising certain vaccinations when using incentives is unlikely to need additional resources. This could be communicated to commissioners during the process of designing incentive schemes.

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## Making vaccination services accessible and tailoring to local needs

Recommendations 1.1.9 to 1.1.15

### Why the committee made the recommendations

Based on their experience and the qualitative evidence, the committee agreed that it is important for commissioners and providers to identify the needs of their local communities because this will help them to tailor their vaccination services to address these needs. It will also allow them to identify areas of low uptake where targeted interventions may be needed, such as allowing extra time for healthcare professionals to identify and contact people eligible for vaccination. Using a Joint Strategic Needs Assessment will make sure that the local community is involved in determining local needs and priorities.

The committee did not state a single threshold for identifying areas of low vaccine uptake because uptake can vary greatly between different vaccines, leading to the need for separate vaccine-specific thresholds. Also, there may be some areas that have high vaccine uptake overall but subpopulations with low uptake. However, they did include a definition of the term low vaccine uptake, which includes links to information about targets for specific vaccinations. Targeted interventions could also involve developing ways for people to access vaccinations more easily, although the specific interventions used will vary depending on the local area, the community and its culture.

Developing these interventions using a system-wide approach to addressing uptake would make them as relevant to the local community as possible. This could include using services in the community, such as nurseries, schools and colleges, and involving community and faith leaders. By including people from different populations and organisations, it will be easier to develop effective interventions for particular groups with low vaccine uptake. The use of targeted interventions in areas of low uptake could potentially reduce some of the barriers to vaccination and increase vaccine uptake. This could also help to reduce inequalities between population groups and between areas of higher and lower vaccine uptake.

Although the specific barriers to uptake will vary between population groups, the committee thought it was important to highlight some of the key barriers that were identified during guideline development (box 1). These barriers were chosen on the basis that they were raised frequently across the age groups covered by the guideline or highlighted by the committee during discussions. The list is not exhaustive (see evidence review B for more details and additional barriers) but is intended to raise awareness of some of the common issues that may prevent people from accessing or consenting to vaccinations. The committee also included a list of population groups that are known to have low levels of vaccine uptake (box 2). Although this list is not exhaustive, it should give providers an indication about which populations may need more consideration when developing vaccination programmes. The committee noted that although people from some minority ethnic family backgrounds, such as those in the Black Caribbean, Somali and Polish communities, often have lower vaccine uptake than White British communities, the communities with low vaccine uptake can vary by immunisation programme, as well as by area.

Evidence showed that inconvenient times and locations for vaccinations were barriers to uptake, and that providing alternative locations improved uptake. The committee were also aware that difficulties with booking appointments can be a barrier to being vaccinated and that people have different needs when booking appointments. For example, some people may find online booking systems convenient and easy to use, whereas others may lack the equipment or skill to use them. Therefore, having a range of different booking options would make this process more accessible.

The committee agreed that offering vaccinations outside normal hours and having a range of settings would increase the number of people who are able to attend and access the services. However, they recognised that the specific needs will vary between different populations and that services need to be tailored to meet these needs. So they decided against recommending specific ways to increase access because public health teams and providers would know best how to meet local needs and understand local barriers to access. However, as part of this process, care would need to be taken to ensure that expanding the range of settings did not increase wastage of vaccines associated with unused stocks or lead to shortages of vaccines in some settings due to under-ordering to avoid wastage. GP practices, for example, would need to be able to plan their orders based on the numbers of eligible people.

The committee also highlighted the importance of involving the local community in making decisions over the accessibility of services because increased community engagement could help ensure that services meet local needs and make it easier for people to be vaccinated.

The evidence identified a range of barriers to vaccine uptake for specific populations, such as immigrants and the Traveller, Roma and Gypsy communities. This included problems with registering with a GP practice, which makes it harder for people to be identified as eligible and invited for vaccination, or for them to book vaccination appointments. The committee were aware that some providers may ask for specific information, such as immigration status and proof or address, at registration. Therefore, they decided it was important to highlight that this type of information is not needed, and that primary care providers should ensure that their patient registration systems follow the standards of best practice. This will remove unnecessary barriers to accessing vaccination services.

## How the recommendations might affect services

The ability to design services based on local needs will mean that providers can address any barriers to vaccination specific to their communities, thereby providing the opportunity to increase vaccine uptake and address inequalities in these areas. The impact on practice will therefore vary between areas. If the targeted interventions result in increased vaccine uptake, they are likely to also have time-saving and cost-saving benefits in the longer term, such as reducing the workload needed to identify, contact and vaccinate people who do not initially get vaccinated.

Identifying local population needs and tailoring hours and locations of vaccination services to meet those needs is not expected to need significant additional resources. This is already expected in current practice, and these recommendations are aimed at making this identification and tailoring of services more consistent across the country.

Providing multiple opportunities and locations for more convenient vaccination is likely to be associated with some additional resource use. However, some of the costs are likely to be offset by the significant savings and other benefits from avoiding disease outbreaks and their associated care costs, and saving practitioner time for chasing up people who have missed vaccination. However, some of the savings and other benefits may be from a different operational budget than the funding for these activities. Increasing the opportunities for vaccination may be particularly beneficial in some areas, such as rural areas, where there may be fewer GP practices and pharmacies and a greater distance to travel to access services. Although there may still be a cost associated with this recommendation, it is expected to be small and the benefits of providing more accessible vaccination locations are expected to outweigh the costs.

Providing a range of accessible options for booking appointments is not expected to need additional resources, as most vaccine providers should already have accessible methods of contact. Having a range of booking options would be beneficial not only for vaccination but also for various healthcare needs. Therefore, any resource impact would be shared across these areas and have a broader benefit.

Out-of-hours or weekend services for vaccination would be associated with a significant resource burden if provided on top of existing services solely for the purpose of delivering vaccinations. Combining them with existing out-of-hours provision will help to contain costs.

Return to recommendations

## Audit and feedback

Recommendations 1.1.16 to 1.1.18

### Why the committee made the recommendations

The evidence from studies on the effects of audit and feedback was inconclusive and varied in quality due to limitations with the design of some studies. These studies frequently included additional interventions such as provider education or bonuses, which made the effects of audit and feedback harder to isolate. Some showed increased vaccine uptake whereas in others, the studies could not detect a difference in uptake between the interventions and control (usual care or another non-vaccine-related intervention). In particular, 1 study was identified that used a multicomponent provider intervention that included audits and feedback with provider reminders and education, and this showed greater vaccine uptake than usual care. This study provided support for the use of multiple interventions including audit and feedback to increase uptake. It also reflected the committee's experience of the benefits to providers and healthcare professionals of being aware of their current vaccination activity and how it compares with other similar providers.

The committee recommended provider education and the use of alerts to facilitate opportunistic vaccination by providers (see the rationales for training and education for health and social care practitioners and identifying people eligible for vaccination and opportunistic vaccination). They also agreed that feedback needs to be available regularly to help providers keep track of their progress. In addition, if providers make use of this data, it can help to develop practices for continuous improvement as well as providing opportunities to share examples of good practice or effective interventions with similar providers.

While the guideline was in development, many vaccination initiatives were introduced that aimed to increase the uptake of COVID-19 vaccines or ensure the continued and increased uptake of routine vaccinations during the pandemic. It was too soon for these initiatives to be evaluated as part of the current guideline development process because there is currently little evidence available relating to the effectiveness of these new initiatives. The committee agreed that it was important that these interventions (and others that may be introduced later in the pandemic) be formally evaluated in the future so that any effective interventions that are considered to be transferable, particularly those that raise vaccination rates in areas of low uptake, can be applied to routine vaccination programmes.

## How the recommendations might affect services

These recommendations are not expected to need significant additional resources. Feedback and review are already current practice in some areas and the data on vaccine uptake is already reported. There may be an additional cost associated with compiling these feedback reports. But this is expected to be small, given that the task would probably be within the remit of an existing job role in most organisations.

Evaluating initiatives used to increase vaccine uptake during the coronavirus pandemic is not expected to need significant additional resources. This is because the data on vaccine uptake will probably have already been collected, and any costs associated with compiling this evidence are likely to be small. There is likely to be an administrative cost associated with evaluating this evidence, but it is not expected to be significant, and this evaluation is likely to be a one-off activity. However, repeat evaluations may be needed to assess the longer-term impacts of these initiatives on COVID-19 vaccination rates and on the rates of vaccine uptake in routine vaccination programmes if they are applied to them. This could have some additional cost implications in the future.

Return to recommendations

# Training and education for health and social care practitioners

Recommendations 1.1.19 to 1.1.21

## Why the committee made the recommendations

There was very limited evidence for the effect of provider education or information alone on vaccine uptake. However, this intervention was a component of several multicomponent studies that showed increased vaccine uptake. In particular, 1 study of multicomponent provider interventions that included education for practitioners showed an increase in vaccine uptake compared with usual care. Qualitative evidence also highlighted how education can help healthcare practitioners feel confident when discussing vaccination with people, and that some practitioners need training in how to administer vaccines.

The committee acknowledged that the UK Health Security Agency (UKHSA; previously Public Health England [PHE]) core curriculum for immunisation training for registered healthcare practitioners sets out content to be covered by practitioners who are administering vaccinations. However, they agreed that providers should be given the time to undertake this training and to revisit it as part of their continuing professional development because a lack of support and dedicated time could act as a barrier to completing it.

Having effective conversations about vaccination can be particularly helpful when trying to address vaccine hesitancy. It might include, for example, adapting what content to discuss to help address people's questions and concerns, or how to deliver and discuss the content. It can also include discussing sensitive issues around stigma, such as those that may be associated with HIV. In addition, the committee were aware that people with some allergies or conditions may think that they are unable to have a vaccination because they think it is contraindicated. But this is often not the case. If healthcare practitioners understand when a vaccine is contraindicated, or are able to seek further information or advice to determine this, and discuss these concerns with the person, fewer people may be prevented from being vaccinated. The committee recognised that there is a broad range of access needs and agreed that having an awareness of how to make suitable adjustments to overcome some specific individual barriers to vaccination would help improve access to vaccination for a range of people.

The committee also agreed that vaccine-related education is important for people, such as staff in GP practices and those who work in social care, who do not give vaccinations but are in contact with those eligible for it. Using their experience, the committee agreed that these people need a basic knowledge of immunisation practices and issues so that they can hold simple conversations about the benefits of vaccination and are able to signpost people to relevant sources of more detailed information. In comparison, healthcare staff who do not administer vaccines may need a greater understanding of these topics to enable them to hold useful conversations with people. Therefore, the content and depth of information provided to the people covered by this recommendation should vary depending on their specific role, and this should be considered when deciding what training to provide to different staff members. These recommendations are aimed at increasing staff confidence when discussing vaccinations, and at making every contact count to increase the opportunities for people to discuss and receive vaccinations.

### How the recommendations might affect services

These recommendations are not expected to need significant additional resources. The lower intensity education for health and social care staff not directly involved in administering vaccines is likely to need some additional resources to compile the information. However, the content is generally freely available, and the costs associated with delivering it could be contained by providing materials (such as a booklet or accessible webpage) rather than delivering education in person. Delivering education materials in this way is not expected to have a significant resource impact, even in heterogeneous groups such as social care practitioners whose education packages may not necessarily include information on vaccination.

Healthcare practitioners who administer vaccinations already have to complete mandatory training. Ensuring that there is time and resources for this training and for including training as part of continuing professional development is not expected to have a substantial impact because this is generally already current practice.

Return to recommendations

## Appointments and consultations

Recommendation 1.1.22

### Why the committee made the recommendation

There are several stages in each vaccination appointment, including discussing any questions or concerns that a person has about vaccination, gaining consent, administering vaccines and completing the necessary documentation. Despite this, vaccination appointments can be relatively short. The evidence highlighted that a lack of time during consultations can lead to rushed or incomplete discussions about vaccinations and therefore be a barrier to uptake. So the committee decided that it was important to highlight each of the stages of a vaccination appointment and the need to allocate sufficient time for each one, although they were unable to say how long the appointment should be.

Providing sufficient time for appointments may help to improve vaccination rates for people who have concerns by allowing them time to discuss safety and other issues with a trained healthcare provider. It also means that providers would have enough time to accurately record vaccinations. Having suitable literature available to support discussions will help people to make informed decisions. The choice of literature should be based on people's individual needs, such as whether it is needed in a different language or whether easy read materials are needed.

### How the recommendation might affect services

This recommendation is not expected to have a substantial resource impact because although additional staff time can be costly, it is expected that only a relatively small proportion of people eligible for vaccination will need a longer appointment for the purposes of addressing specific concerns. Additionally, the activities that should be carried out during a vaccination appointment are already current practice, so it is not likely that the recommendations will result in longer appointments.

Return to recommendation

## Using compatible systems and processes

Recommendation 1.2.1

### Why the committee made the recommendation

The committee were aware of issues about the compatibility of different systems used by different providers to record vaccination status. This can make it difficult to coordinate the updating of vaccination records between different systems. It can also be time-consuming if this cannot be done automatically. Improving the ability for data to be transferred between these systems would increase the accuracy and timeliness of vaccination record updates. Improved record sharing could also make it easier for healthcare professionals in a variety of settings to be able to opportunistically check the vaccination status of people who are consulting them for other reasons if the appropriate permissions are in place.

The committee recognised that updating these systems to improve compatibility could be a big, time consuming and expensive task. They noted that compatible processes could be used instead to try to overcome some of the problems discussed above. For example, processes could be put in place to ensure that providers are recording vaccination data in a way that can be easily understood by other providers and used to accurately update their records.

### How the recommendation might affect practice

Although updating systems used by different providers could be expensive and time consuming, it is not expected that these costs would fall on the individual trusts or providers, and costs could be contained by using compatible processes where possible.

Return to recommendation

## Keeping records up to date

Recommendations 1.2.2 to 1.2.8

### Why the committee made the recommendations

Based on their expertise and experience, the committee agreed that it was important to ensure that records at GP practices and child health information services (CHIS) are accurate and up to date to help identify people eligible for vaccination. Vaccines administered by other providers need adding to GP records. The committee agreed that a 2-week time limit was a realistic timeframe for this work given the competing demands for time in GP practices. If GP practices use the bulk transfers of information about children who are not up to date with their vaccinations provided by CHIS, this will help keep their records up to date. The GP practices can also use this information to facilitate their targeting of unvaccinated children for vaccination invitations and reminders. Informing CHIS if a child remains unvaccinated after 3 invitations means that they can provide additional follow-up.

The committee noted that discrepancies can occur between GP records and other sources of information, such as records from CHIS, pharmacies that provide vaccinations for older people and providers in any other settings. These can result in people not being identified as eligible for vaccination or being wrongly identified as eligible when they have already been vaccinated or have moved out of the area. Investigating and resolving any such discrepancies regularly should improve the identification and recording of eligibility and status. Using up-to-date clinical system templates should also help with accurate record keeping. The incorrect or inconsistent use of clinical coding is another source of discrepancies in vaccination records. Therefore, relevant SNOMED CT codes should help to reduce inconsistencies.

When a person has been identified as eligible for vaccination, it is important that their GP practice can contact them easily to invite them to be vaccinated. Some of the studies using invitations and reminders interventions reported issues with out-of-date contact details or use of unsuitable types of reminders, such as text messages for people who do not own a mobile phone. The qualitative evidence showed that an inability to speak English relatively fluently or understand the spoken or written language is a barrier to vaccine uptake for some people because it can make it harder to register at a GP practice and book appointments, and to ask for or understand information about vaccinations. In addition, low literacy levels can prevent people from accessing written information and may occur with or without the language barriers mentioned above. By making it clear whether a person has specific language or literacy requirements, it is more likely that any communications they receive will be in a language and format that they can understand.

## How the recommendations might affect practice

The resource use associated with ensuring that patient contact details are up to date is likely to be variable. For most of the population, it will be straightforward and there will be no cost impact. But more intensive methods will be needed for some people, such as those who have frequent changes of address or those who have no fixed address. However, collecting contact information is necessary not only for vaccine reminders but also for various healthcare needs, so any resource impact would be shared across these areas and have a broader benefit.

Regular validation of vaccination records against other sources by GP practices will lead to an increase in workload initially. However, once the current records have been checked, this workload would be expected to drop to a lower level because fewer discrepancies would be found.

The other recommendations in this section are not expected to need significant additional resources. Some small administrative costs may be incurred from allocating time for these tasks, but the tasks themselves should already be being done so should not need additional resources.

Return to recommendations

## Identifying people eligible for vaccination and opportunistic vaccination

Recommendations 1.2.9 to 1.2.19

### Why the committee made the recommendations

Based on their expertise and experience, the committee agreed that as well as inviting people for vaccination routinely (see the recommendations on invitations, reminders and escalation of contact), opportunistic identification and vaccination are important parts of an integrated strategy to increase vaccine uptake in the general population. This was supported by evidence showing that opportunistic vaccination in some settings increased vaccine uptake.

In the absence of specific evidence about how and where to opportunistically identify people eligible for routine vaccinations, the committee based their recommendation on recommendation 1.3.1 in the NICE guideline on flu vaccination: increasing uptake. The committee added several settings, including those outside the healthcare system, and points of contact with the healthcare system where they agreed that people eligible for vaccination could be identified. They also included some specific groups that may need more specific approaches (such as people who misuse alcohol, are homeless, use drugs, are asylum seekers or are in prisons). Because these people may not be in routine contact with the healthcare system, special consideration is needed to assess their eligibility for vaccination. The committee also noted that looked-after children and young people and those who are educated at home or outside mainstream schooling are particularly at risk of missing vaccinations. The list is not intended to be exhaustive.

The committee were aware of several barriers to opportunistic vaccination. For example, the lack of an integrated record-keeping system makes it hard for people eligible for vaccination to be identified. The committee agreed that if people can easily check their immunisation status, or that of their child or the person they care for using online systems such as digital apps, this would help them to stay up to date with their vaccinations. However, the committee were aware that routine vaccination records are not automatically available even when a person has signed up to the NHS app or has requested access to their GP records. People may need to contact their GP practice to activate access to the vaccination records section of their GP record, whereas ideally these would be available by default. The NHS app currently shows COVID-19 vaccinations and this functionality could be expanded to include routine vaccination status.

NHS summary care records could also be used to identify people eligible for vaccination. However, these records are not accessible to all healthcare professionals and cannot be checked by non-healthcare staff. In these cases, the committee agreed that any other available vaccination record, such as patient-held records, could be used for opportunistic identification.

There are additional issues with identification if there are uncertainties about someone's eligibility for vaccination, such as when someone has potential contraindications or allergies. Using the Green book, seeking expert advice or consulting other additional information (such as the British HIV Association guidelines on the use of vaccines in HIV-positive adults 2015) will help ensure that people are not missing out on vaccinations unnecessarily.

Further issues with identification may occur when people have uncertain vaccination histories. For example, this could be because they have come from outside the UK or they have moved around a lot within the UK. The committee were aware of the UKHSA (previously PHE) guidance on vaccinating people with uncertain or incomplete immunisation status. It states that, unless there is a documented or reliable verbal vaccine history, people should be assumed to be not immunised and a full course of immunisations planned. The committee agreed with this approach because duplicating vaccinations is generally not harmful but remaining unvaccinated could leave people open to infection.

The committee also noted that, in their experience, it can be more difficult to ensure that people who are registered as temporary residents have their vaccination status checked. It is important that GP practices have a mechanism in place to identify these people and assess their eligibility for vaccination to ensure that they are not overlooked.

The evidence showed that reminders to the provider in electronic medical records were effective at increasing vaccine uptake. The committee therefore wanted to highlight their use as prompts for opportunistic conversations about due and overdue vaccinations. The provider could then offer immediate vaccination if possible. Adding prompts to the records of parents or carers of children who are overdue vaccinations can help start discussions about vaccination for the children.

There was no evidence on invitations or reminders specifically for pregnant women, but the committee were confident that the evidence of the effectiveness of reminders for the other age groups and life stages would also apply to this group (see the rationale section on initial invitations for more details). The Green book recommends pertussis vaccination for pregnant women between 16 and 32 weeks, so the committee decided that it would be appropriate for midwives to opportunistically offer and remind women of this vaccination during routine antenatal visits.

The evidence showed that opportunistic vaccination increased uptake and was consistent with a making every contact count approach. Ideally, people eligible for vaccination would be able to discuss their outstanding vaccinations and be offered vaccination immediately. But the committee were aware that this may not be possible in all healthcare settings and would not be possible in non-healthcare settings, so alternative options are needed. Referring parents or carers to the health visitor or school nurse will not always be necessary, as the parent or carer may agree to vaccination or decide to book an appointment to discuss vaccinations. However, when referrals do take place, the services should be able to provide parents and carers with additional support and information about childhood vaccinations.

## How the recommendations might affect practice

Using more opportunities to identify people eligible for vaccination may lead to an increase in the numbers of people who are vaccinated on the spot or signposted to vaccination services. Healthcare settings that are not normally involved in vaccination may start to identify people eligible for vaccination and administer vaccines. Vaccinations provided as part of the routine UK immunisation schedule have already been assessed to be cost effective, and therefore increasing the number of people vaccinated is also expected to be cost effective.

Using existing records to facilitate opportunistic vaccination is not expected to need significant additional resources because the mechanisms for sharing and accessing these records are already in place.

Opportunistic identification, offers and vaccinations are not expected to need significant additional resources. Existing records can be used to check eligibility for opportunistic vaccination, and mechanisms for sharing and accessing these records are already in place. Opportunistic vaccination is not likely to incur additional resources, because it would only be offered at venues where there is already vaccine storage available and where practitioners are qualified to give vaccinations.

Where vaccinations cannot be given, practitioners would simply need to know what local services to signpost people to or where people should book appointments to discuss vaccination or be vaccinated.

Ensuring automatic access to electronic records is not expected to need additional resources because the mechanisms for making these records available to patients through the NHS app are already in place, for example, COVID-19 vaccination status.

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## Recording vaccination offers and administration

Recommendations 1.2.20 to 1.2.26

### Why the committee made the recommendations

The committee based these recommendations on information from the NHS England enhanced service specifications for GP contracts covering pneumococcal, pertussis and shingles vaccinations, and committee expertise. All of these specifications include a requirement to record vaccination offers, consent and details about the vaccine, including batch and site of administration, and adverse reactions. The committee included the dose of the vaccine, route and site of administration and details of consent on the basis of information for public health practitioners on immunisation in the Green book.

Recording when vaccinations have been declined should ensure that people are not repeatedly offered unwanted vaccinations. Also recording the reason for the refusal could provide information for future discussions to try to address why the person declined vaccination and overcome any barriers. If this information is available at a population level, this could help public health teams locally or nationally when designing strategies to increase vaccine uptake by targeting key barriers for the general population or specific subgroups. Recording a lack of response will enable non-responders to be followed up.

The committee also agreed that updating patient-held records with information about new vaccinations will ensure that people are aware of their vaccination status (or the status of the people they care for) and are able to request or chase up vaccinations if they wish to. Because some people may not have their vaccination record with them at the time of vaccination, the committee thought it was important for a printout to be provided as a temporary measure until the main record can be updated. However, they agreed it was best to update the records when the vaccinations are administered where possible because it could not be guaranteed that the record would be updated accurately later.

The committee agreed that accurate and timely updating of clinical records after vaccination is essential. One method to ensure accuracy and consistency of patient records is the use of compulsory vaccination fields in electronic health records. Providers also need to promptly report vaccinations to primary care, if the vaccination is carried out elsewhere, and to child health information services (CHIS) (if relevant). Child health information services can play an additional role in helping ensure that GP-held vaccination records are up to date by regularly sending information about new vaccinations to GP practices, where this service is commissioned in the local area. The 2-week time limit was based on committee consensus regarding a reasonable time period for this information to be relayed to the GP practice. However, the CHIS specification or local contracts may specify a different time period.

The committee noted that in some cases, the data supplied by other providers and CHIS needs to be reformatted before it can be added to patient records. This can be time consuming, therefore ensuring that the information is supplied in a format that is clear and readily accessible will help the GP practice.

## How the recommendations might affect practice

Recording offers and administration of vaccines is expected to be associated with some administrative costs to set up and record this information, but these costs are expected to be small. It should save staff time – and therefore future costs – when following up people and processing information.

GP practices already update their records when vaccination notifications are reported from other providers, and having to do this within a certain timeframe is not expected to lead to additional work. Providers already report information on vaccinations to primary care and CHIS. If the information is reported in a clear and readily accessible format, this may save GP practices time in not having to chase up inaccessible or unclear reports.

The recommendations on what to record when vaccinations are carried out broadly reflect current practice, and the additional detail about vaccination offers is not expected to take much additional time to record.

Using compulsory data fields in electronic health record templates is not expected to need additional resources because this is already possible and is simple to implement with current systems.

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# System organisation and accessibility issues

Recommendations 1.3.1 to 1.3.6

## Why the committee made the recommendations

The committee agreed that several processes needed to be in place to ensure that invitations and reminders were effective. They agreed that encouraging cooperation between providers and the local healthcare system would avoid duplication of effort. For example, the child health information services department could be contracted at the local level to send out invitations for young children (primary and preschool) on behalf of GP practices.

The evidence showed that bundling flu and pneumococcal vaccination invitations and reminders together was more cost effective than targeting pneumococcal vaccination separately. The committee agreed that sending invitations and reminders for different vaccinations together could be an effective way to increase vaccination uptake and reduce the number of reminders and vaccination appointments needed in some cases. However, they noted that this might not be clinically appropriate or effective for all combinations of vaccinations.

The qualitative evidence highlighted that some people (including some immigrants and people from Traveller, Gypsy and Roma communities) experience language barriers, and some cannot read or write in their own language. This can prevent them from accessing information about vaccines and make it harder for them to navigate the UK healthcare system to obtain vaccinations. Providing invitations and reminders in a language and format that the person, their family member or carer (as appropriate) can understand should help to increase vaccine uptake.

The qualitative evidence highlighted that some people from abroad had difficulties registering with GP practices to access NHS services. Differences in vaccination schedules between countries can also cause confusion. The committee therefore agreed that giving people information about the UK vaccination schedule could help them determine their eligibility for vaccination on the UK schedule. The committee also recognised that information alone might be insufficient and that some people might need help to understand the information and access healthcare. For example, for pregnant women and children under the age of 5 this could include involving health visitors.

The committee were also aware that the people who administer vaccinations can vary between the UK and other countries, and this can make some people hesitant about vaccination. Giving people from other countries information about who administers vaccinations in the UK, and where this takes place, can reassure people about what is standard practice and potentially remove 1 of the barriers to vaccination. Some people may need additional support to access vaccinations. This could be provided by health visitors for pregnant women and children under 5.

The committee discussed how consent can be a barrier to vaccination for some adults who need support with decision-making or who may lack the mental capacity to consent. Although there was no evidence for these populations, the committee thought it was important to promote equality by ensuring that all people are given the support necessary to make informed decisions on vaccination. They noted that the NICE guideline on decision-making and mental capacity provides healthcare professionals with guidance on what to consider when discussing consent for adult vaccinations.

## How the recommendations might affect practice

These recommendations are not expected to need significant additional resources. They are either easily incorporated into current practice, are required by law, or are anticipated to have lower administration costs by combining services for multiple vaccinations.

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# Initial invitations

Recommendations 1.3.7 to 1.3.13

## Why the committee made the recommendations

The evidence showed that invitations or reminders were more effective than controls (mainly usual care, the format of which varied between different studies) at increasing vaccine uptake in all age groups (apart from pregnant women, see below) that have routine vaccinations. Reminders of different types were better than usual care at increasing vaccine uptake. However, in most cases the evidence did not show whether particular types of invitations or reminders were more effective than others. Evidence that did show a difference came from single trials with small numbers of participants. Therefore, the committee agreed that a variety of methods could be used to contact people eligible for vaccination, based on the evidence and the 2019 GP contract. The committee agreed that 1 of the recipients' preferred methods of contact should be used when sending out invitations and noted that invitations given face-to-face in other appointments (opportunistic invitations) were also likely to be effective.

There was no evidence on whether invitations were effective in increasing vaccine uptake among pregnant women, but the committee agreed that the advice that applies to invitations for the general population should apply for pregnant women. Pregnant women have regular contact with their midwives, as well as other healthcare practitioners such as health visitors, general practice nurses and GPs. Therefore, they could receive in-person invitations, be signposted to vaccination services or offered vaccination during these appointments.

The committee agreed that some people, such as people living in care homes or other residential settings and those who are housebound, may be unable to attend vaccination clinics or other settings where vaccinations are available and are therefore at risk of remaining unvaccinated. The committee agreed that it is important that these people or their family members or carers (as appropriate) can arrange home visits for vaccination.

The qualitative evidence showed that healthcare providers who have built relationships with people (or their parents or carers) are likely to be trusted and able to positively influence the decision to vaccinate. However, not everyone has regular contact with a particular provider, and medical records that would be used to generate invitations may not show who a person has most contact with. The committee were also aware that in some areas, standardised invitations from a more centralised service are used, which may be difficult to personalise. Therefore, the committee agreed that using the name of a provider or service that is known to the person in the invitation and any subsequent reminders might be useful.

There was some evidence that education or information slightly increased vaccine uptake compared with usual care or another control intervention when all the studies were analysed together. However, most of the individual studies did not show that these interventions were better. The qualitative evidence highlighted barriers to vaccination that could be addressed by providing information or education, but there was little detailed evidence to suggest how these barriers could be overcome successfully. Because of the limitations above and taking into account that educational interventions are more expensive and labour intensive than giving information, the committee recommended providing information instead. The committee agreed that it was helpful to provide this information with the invitations.

The committee were aware that the invitations may differ in size depending on their format and they therefore came up with a list of points the invitation should contain to be useful. They also recommended a second list of items to include if space allowed. Although additional information would be too detailed for some types of invitations, such as text messages, it would be helpful to include this information in other types of invites if possible, such as those sent by post or email.

For items that should be included:

- The qualitative evidence showed that people did not necessarily link vaccinations to the prevention of specific diseases. For example, people did not always connect HPV (human papillomavirus) vaccination to the prevention of cervical cancer.
- The qualitative evidence showed that many people trusted the NHS and that people were more likely to accept recommendations to be vaccinated from healthcare practitioners that they trusted.
- Some people may not attend vaccination appointments if they have not had their questions answered in advance. Providing contact details should make arranging this discussion easier.

- The committee agreed that letting people know about drop-in clinics can help those who find it difficult to get to appointments. They also discussed how giving people hyperlinks to book directly could make it easier to book appointments.
- A reminder to bring any patient-held records enables providers to keep vaccination records up to date and means that people are aware of their current vaccination status.

For items that should be included if space allows:

- The qualitative evidence showed that some people underestimate the severity of certain diseases (for example, measles and shingles), and improved understanding of these issues may help increase the belief in the necessity of the vaccine and motivate people to be vaccinated.
- The committee agreed with the qualitative evidence that many people are worried about vaccine side effects and think they are being understated or hidden. Clearly explaining the benefits of vaccinations compared with the risk and severity of the of the illness in comparison with side effects could help encourage people to have vaccines. Explaining individual and population benefits may help persuade people in under-vaccinated areas understand the additional benefits of vaccination to their communities. Studies show that many people did not understand the need for maternal pertussis vaccination to protect the baby during pregnancy and were worried about adverse effects during the baby's development.
- Many people do not finish vaccination courses and do not understand why they should have boosters, so the committee agreed that an explanation of these issues is important to help people be properly protected.
- Studies showed that people did not necessarily understand why HPV vaccination was offered to young people before they were likely to be sexually active. Therefore, giving information about why a vaccination is given at a particular age may help to increase uptake.
- The qualitative evidence showed that people wanted information about vaccines from reliable sources but were unsure where to look. Providing links to trusted sites could help answer any outstanding questions about vaccines or the vaccination process, and interactive tools could help with the decision-making process. In addition, evidence from 1 quantitative study showed an increase in pertussis vaccine uptake in pregnant women using an interactive tool compared with non-specific advice about

vaccinations in general. The committee agreed that a variety of options would be best because, in their experience, different people prefer different formats of information and not everyone has access to a smartphone to be able to use QR codes.

- The qualitative evidence showed that people found attending a vaccination appointment for the first time or during the COVID-19 pandemic could be a stressful experience and that uncertainty about the process and safety was likely to be a barrier to attendance. Explaining the process and any COVID-19-related safety measures could remove this barrier.

It is also important that the parents or carers of babies in neonatal units are given this information. As some of these vaccinations may take place in the hospital, rather than with their GP, it is important that parents and carers are aware of how and when their baby's vaccinations will take place.

### Recommendations for research

The committee were interested in whether certain methods of framing information within invitations would be more effective at encouraging vaccine uptake than others (for example, gaining immunity to disease versus avoiding catching a disease). None of the identified studies looked at this directly and so the committee wrote a recommendation for research on framing content in vaccination invitations.

The committee noted that there was a shortage of evidence for interventions to increase the uptake of routine vaccinations in pregnant women (pertussis vaccination) and older people (shingles and pneumococcal vaccinations), with this being particularly pronounced for the former group. The committee therefore made a recommendation for research to try to stimulate more research about effective interventions to increase pertussis vaccination uptake for pregnant women and another recommendation for research for older people.

Finally, the committee agreed that it is especially important to try to increase routine vaccine uptake in groups, communities or populations with low uptake. They noted that there was limited evidence for groups of particular interest: Travellers, Gypsy and Roma; looked-after children and children not in mainstream education; migrants, asylum seekers and religious groups; and that the evidence was mainly qualitative in nature. Therefore, the committee included a recommendation for research to stimulate research on effective interventions to increase uptake in these and other groups of people with low routine vaccine uptake.

### How the recommendations might affect practice

These recommendations are not expected to need significant additional resources. The format and content of invitations, and who these invitations are addressed from, are expected to be easily incorporated into the current approach to invitations.

Ensuring that people (or their family members or carers) who live in care homes or residential settings, or who are housebound, are aware of how to access home visits for vaccination is unlikely to need substantial additional resources, because access to home visits is already in the GP contract and is common practice for people who are unable to attend clinics.

Ensuring that parents or carers of babies who are in neonatal care units receive the relevant information about vaccinations, including when and how their baby's vaccinations will take place, is not expected to need additional resources, as this information is readily available and communication with those parents or carers should already be established.

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## Reminders and escalation of contact

Recommendations 1.3.14 to 1.3.20

### Why the committee made the recommendations

The committee agreed that it is important to identify people who do not respond to invitations or do not attend scheduled clinics or vaccination appointments, because these people may respond to a reminder. In addition, some people may not have up-to-date contact details, for example if they have moved house recently, so it is important to check that they have received the invitation and reminder. This may mean using another method of contact in some cases, such as a phone call or text message.

For pregnant women, the Green book recommends vaccination between 16 and 32 weeks of pregnancy. Therefore, reminders can be provided at antenatal appointments after the 20-week scan or when they have contact with a GP or other healthcare provider, such as health visitor.

For babies and young children whose parents or carers (as appropriate) have not responded to the reminder, the committee agreed that the follow-up needs to occur rapidly and needs a conversation. Delays may cause some parents to think it was acceptable to defer vaccination. This could lead to them delaying subsequent vaccinations, which would expose the child to a higher risk of getting the diseases targeted by the vaccines. The time limits recommended were based on committee consensus aimed at preventing delays. The limits were shortest for babies because they have vaccinations due at 2, 3 and 4 months old and it is important that these are carried out in a timely manner as discussed above. Reminders for older people are less time sensitive because they can be vaccinated for shingles and pneumonia over a period of several years.

The committee acknowledged that invitations and reminders (or call-recall) activity is limited for certain vaccinations in the GP contract. However, they agreed that it was important to highlight the approaches and processes that were most effective at increasing vaccine uptake to promote best practice, based on the evidence. They also noted that the GP contract does not prevent people going beyond these requirements, and groups who are not covered by call-recall can be identified opportunistically.

There was qualitative evidence to show that if a person does not respond after being sent a reminder, an escalating system of contact can be effective in increasing uptake. The committee agreed that this approach matched their experience, and it was also supported by quantitative evidence from a study looking at an escalating reminders intervention that showed an increase in the number of people being vaccinated, with the intervention compared with usual care.

The committee agreed that initial vaccine invitations and reminders should use methods – such as a text or email – that are not labour intensive or costly. For people who continue not to respond, escalating reminders may initially involve a phone call from a GP receptionist, then from the practice nurse and finally from the GP, until the person is vaccinated or declines vaccination. However, this approach could be resource intensive and the evidence did not show that using escalating reminders was more effective than other forms of reminders. Despite this, the committee agreed that these more intensive methods of contact represented an appropriate use of NHS resources because the group of people needing to be contacted in this manner is likely to be relatively small and to consist of people in groups or communities with lower vaccination rates.

An economic analysis of the cost effectiveness of direct conversations with parents and carers of babies and toddlers who are behind on their vaccinations showed that the average cost per additional person vaccinated when using a direct contact intervention was estimated to be lower than the fee for the service that GPs receive for administering vaccines. On this basis, the committee agreed that the direct contact intervention would be a cost-effective use of resources. The committee also noted the very serious negative consequences of the diseases vaccinated against in babies and toddlers (and the high costs of treating those conditions) and were therefore confident that this would be an acceptable use of resources.

The committee agreed that when contact is made with a person who has not responded to an invitation or reminder to be vaccinated, it is important to try to understand the reasons behind the lack of response or delay in vaccination because this could enable any barriers to vaccination to be addressed. For example, if the person is concerned about vaccine safety and side effects, a conversation about this at the time of contact or a consultation with a nurse or GP may be able to encourage them to be vaccinated. In other cases, if access is a barrier to vaccination, then telling the person about out-of-hours clinics and other settings for vaccination may enable them or their children to be vaccinated.

The committee agreed that in some cases, a multidisciplinary approach could be helpful in overcoming barriers to vaccination. People such as social workers and health visitors may already be in direct contact with a person who has not responded to vaccination invitations and reminders and may therefore have more opportunities to discuss immunisation with them. Health visitors have multiple mandated contacts with the families of babies and young children under 2 years as part of the Healthy Child Programme (2021). They could use these as opportunities to discuss, educate, signpost and support families to access immunisations if they were made aware of unvaccinated children. This could also include implementing local interventions such as 'was not brought' protocols if there are frequent missed appointments and a lack of response to invitations. This information could be supplied by child health information services directly to the health visitors, but there might need to be a local agreement for health visitors to take on this work.

Evidence showed that providing vaccinations at home increased uptake compared with usual care. However, the committee were aware that home visits would be costly so they should be reserved for people who are unable to travel to vaccination clinics, appointments or other settings where vaccinations are available. Using these restrictions should ensure that the proportion of the population who would need home visits would be small because they would be offered only when all other routes to vaccination have been exhausted. This recommendation should help ensure that people who are housebound, for example, are vaccinated, and also improve access for other underserved populations, thereby reducing inequalities.

The committee agreed that it was important to record when people declined to be vaccinated so they were not offered vaccinations repeatedly, because this can be annoying and a waste of resources. However, they recognised that people can change their minds, so they wanted to make them aware that the offer of vaccination remains open if they wanted to take it up in the future.

### How the recommendations might affect practice

Direct conversations with parents and carers of babies and toddlers who are behind with their vaccinations are likely to have additional costs for staff time.

Identifying and providing additional reminders or offers of pertussis vaccination to pregnant women not already immunised is not expected to need additional resources, because these reminders can be given at existing antenatal appointments, and midwives already have a patient record in which vaccination status can be checked.

Escalation of contact is likely to need additional resources because it is generally associated with more intensive tasks that need more staff time.

Home vaccination visits would be associated with considerable additional resource use but the proportion of the population who would need them would be small because home visits would be offered only when all other routes to vaccination have been exhausted.

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## People who are not registered with a GP practice

Recommendations 1.3.21 to 1.3.23

### Why the committee made the recommendations

The committee were aware that some people such as some Travellers, Gypsy and Roma, homeless people, immigrants and asylum seekers are not registered with a GP practice and so will not receive vaccination invitations or reminders unless a different approach is taken to identify them. This is also reflected in the qualitative evidence, which showed that some Travellers, Gypsy and Roma and immigrants have difficulty registering with a GP practice and accessing healthcare from the NHS. The committee agreed that unless these people are made aware that they are eligible for NHS vaccinations and given help to access them, they are unlikely to be vaccinated. The committee agreed that local authorities, health visitors or community involvement could help to ensure that these people are not overlooked for vaccinations.

Children who are not registered with a GP practice may still be known to child health information services (CHIS). In these cases, where they are commissioned to, CHIS can send invitations to parents or supply this information to the service commissioner directly. CHIS can also include a message to encourage the parent or carer (as appropriate) to register the child with a GP practice. However, it is likely that some children will not be registered with either service and will need to be identified using alternative approaches (see recommendation 1.3.21).

## How the recommendations might affect practice

Involving local authorities, health visitors or the community or voluntary sector in identifying people not registered with a GP practice and ensuring they have opportunities to access vaccination may have an impact on resource use, but the committee considered this to be an appropriate use of NHS resources. Outbreaks of vaccine-preventable diseases are very costly and have significant health consequences for the population, so it is worth the additional effort of identifying and vaccinating people not registered with a GP practice. Identifying people not registered with a GP practice is not only necessary for vaccination but for various healthcare needs, so any resource impact would be shared across these areas and have a broader benefit.

Raising awareness about eligibility and how to access vaccination for people not registered with a GP practice is not expected to need additional resources. It is current practice to provide leaflets to new migrants about what vaccines are on the UK immunisation schedule, and where and how to access these. This information already exists and would be simple to pass on to people not registered with a GP practice once they have been identified.

Ensuring that invitations are sent to parents or carers of children not registered with a GP practice is not expected to need significant additional resources because CHIS already have a register of children, whether they are registered with a GP practice or not, and this information can be passed on to those sending out invitations for vaccination.

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# Vaccinations for school-aged children and young people

Recommendations 1.3.24 to 1.3.39

## Why the committee made the recommendations

The committee agreed, based on their experience, that vaccinating school-aged children and young people at school was the most efficient and convenient way to vaccinate this population. But they recognised that this may not be possible in all cases because not all school-aged children and young people attend school.

### Routine vaccinations at school

The committee agreed, based on their experience, that although vaccination programmes for school-aged children and young people are unique enough to need a separate set of recommendations, the main steps of the process are the same as for the other age groups and life stages. They all involve an initial invitation for vaccination, a reminder and then an escalation of contact for people who do not respond. However, the invitations are sent by schools on behalf of the vaccination providers. The qualitative evidence highlighted logistical barriers that providers face with running vaccination sessions in schools and that these could be overcome with support from the schools involved. However, they noted that schools may not always prioritise vaccinations and that it is very important that providers have a good relationship with the school to facilitate sending invitations to eligible pupils and running the school-aged vaccination sessions.

Invitations, information and consent forms are often provided in a digital format. Making non-digital options available will help parents, children and young people who are unable to access digital content to make informed decisions and will help reduce inequalities.

The evidence for young people aged 11 to 18 years eligible for HPV vaccination consistently highlighted that young people want to be involved in discussions about vaccination. The committee therefore agreed that information provided about the vaccinations needs to be aimed at both the parents or carers (as appropriate) and the young people themselves. The general contents of the information would be the same as for vaccinations for young children and adults but tailored to the relevant vaccinations for this age group. Although not discussed in the evidence, the committee decided that it was important for the information to also cover Gillick competence so that both parents and young people are fully aware of all the options for vaccine consent. They also agreed that sending the invitation for vaccination to the young people and secondary school-aged children as well as to the parents or carers would help them be involved in the process.

The committee agreed that school-based education is a key method of ensuring that children and young people understand the importance of vaccinations and can ask questions about their concerns. This was mentioned in the qualitative evidence as 1 of the acceptable methods of giving young people information about vaccinations and is already standard practice in some schools. They agreed that this education should be age appropriate and may involve school nurses, depending on commissioned service specifications.

The committee agreed that 1 of the main barriers to school vaccinations is the low rate of return of consent forms. This means that school immunisation teams are unaware of whether parents or carers consent to their child being vaccinated and they have to spend time chasing up people who do not respond. One study indicated that a programme that incentivises the return of consent forms could increase the number of forms returned, and that most of these consent forms were about vaccination acceptance. The committee agreed that in their experience, for school-aged vaccinations, a positive consent form would lead to vaccination and therefore that this intervention was likely to increase the number of children and young people who are vaccinated. In addition, although some incentives, such as prize draws, will have an associated cost, this is expected to be offset by a reduction in the time and costs of nurses having to contact parents and carers of children and young people who have not returned their consent form.

The committee discussed the acceptability of incentivising other parts of the vaccination process. However, they decided that incentivising consent form return rather than vaccination is likely to be more acceptable, because it is encouraging decision-making rather than the vaccination itself. There was some concern over the ethics and effectiveness of the financial incentive used in the study because in some communities, such as faith schools, a money-based incentive could be perceived as gambling and be inappropriate and ineffective. As a result, the committee did not specify the exact type of incentive in the recommendation so that local providers can make their own decisions on what is most appropriate for their local community.

The committee agreed that a reminder should be sent out in cases where the consent form has not been returned. However, even with invitations and standard reminders, there will still be some young people who do not return a consent form and a more direct method of contact (a phone call) can be made before vaccination day or even on vaccination day if there is time. The committee discussed other ways to encourage families to return consent forms and thought that contact from other health and social care providers who already know the family, such as school nurses, could be helpful.

In addition, the committee noted that catch-up sessions would ensure that children and young people who are not up to date with their vaccinations have other opportunities to be vaccinated. These sessions are currently limited to children and young people who have missed school-aged vaccinations, but they could be expanded to provide opportunities to catch up on earlier preschool vaccinations. Where children or young people are unable to attend the school-aged catch-up sessions, for example because of sickness, exclusion or extended leave, alternative provisions are necessary to ensure that they can be offered their overdue vaccinations. This could involve signposting to GPs or other places where the vaccinations are available. There was a shortage of evidence for catch-up campaigns, with only a single study identified that provided results in favour of school-based catch-up sessions over referring pupils to GP practices in the UK. The committee took this evidence into account and used their clinical experience of the importance of catch-up sessions to make a recommendation on this topic. However, they also included a recommendation for research on school-based versus GP-based catch-up campaigns to increase the evidence base and to examine the acceptability of catch-up sessions in these settings. To help with identifying these children and young people, child health information services can provide vaccination histories to providers.

The committee agreed that it was important to highlight that young people under 16 may be able to consent to their own vaccinations if they are assessed to have the competence and understanding to appreciate what it involves. These young people are said to be Gillick competent.

The assessment of Gillick competence, and when it was appropriate for young people to be assessed for competence and allowed to consent to vaccination for themselves, was a key discussion point. The committee decided that if the consent form had not been returned, and it was not possible to contact parents or carers, young people should be assessed for Gillick competence. They also agreed that young people whose parents or carers had refused consent should be given the opportunity to be assessed for competence. They thought that this should be done at the earliest opportunity, which could include on the day of the vaccination session if possible. However, they recognised that at times this assessment might be difficult to carry out on vaccination day itself because of the potentially large numbers of young people involved. In these situations, there may be more capacity to carry out these assessments before catch-up vaccination sessions. Committee discussions also highlighted the need for school immunisation teams to feel supported if they are assessing for Gillick competence; in particular when young peoples' wishes differ from that of their parents or carers. Therefore, they thought it important for providers to have policies to support local teams with these decisions.

## Additional recommendations for research

The committee made several recommendations for research that were linked to school-aged vaccinations or that came out of discussions relating to school-aged vaccinations. Although the committee made a recommendation for incentivising consent form return for school-aged vaccinations, this was based on evidence for a financial incentive for consent form return. It was unclear whether non-financial incentives would also be effective in this setting and what levels of financial or non-financial incentives would be effective. The committee wrote a recommendation for research on incentives for school-aged vaccinations. They were also interested in whether incentives would be effective and acceptable for other age groups or life stages and so they wrote a similar recommendation for research on incentives aimed at individuals, family members and carers.

Another potential method of increasing vaccine uptake in school-aged children and young people and the wider populations is using mandates. The evidence looked at mandating vaccinations or education to allow access to schools in the US. However, very few studies were identified that looked at the effectiveness of mandation, and the qualitative evidence about acceptability was mixed. The committee therefore made a recommendation for research on quasi-mandation of vaccinations.

There was limited quantitative and qualitative evidence for HPV vaccination in boys because routine HPV vaccination for boys has only recently been introduced in many countries, including the UK and US. The committee agreed that it is important to understand whether similar barriers and facilitators apply to HPV vaccination for boys as for girls and whether the same interventions are effective for them. They made a recommendation for research on HPV vaccination for boys to reflect this.

Finally, the committee discussed whether using the World Health Organization 'Tailoring Immunisation Programmes' approach would be an effective way of designing interventions to increase vaccine uptake in a UK context. Some qualitative evidence was identified that used this approach, but it was unclear if it had been used to help design any of the interventions included in this guideline. The committee made a recommendation for research on Tailoring Immunisation Programmes.

### Children and young people who do not attend schools where vaccinations are provided

The committee were aware that not all children and young people attend schools where vaccinations are available. These include those who do not attend school at all, such as those who are home educated, chronically unwell, have local authority tutoring, and those in faith or independent schools that do not routinely hold vaccination sessions, or those in young offender institutions. These children and young people could be at risk of not being vaccinated but it was unclear to the committee how they could be identified effectively using the current system. They therefore agreed that it would be best for commissioners of the vaccination services for school-aged children to ensure that systems are put in place to identify and vaccinate these people.

## How the recommendations might affect practice

These strategies are already current practice in most schools and are unlikely to have a resource impact. Offering one-off vaccination days to vaccinate children at school is likely to be less resource intensive than contacting and booking appointments for children individually in other settings.

### Routine vaccinations at school

Invitations and reminders for routinely offered school-aged vaccination programmes are not expected to have a substantial resource impact because the recommended activities are current practice in most schools that provide mass vaccination days. Providing a specification for the approach to these reminders is unlikely to have resource implications.

Ensuring that school-based vaccination education is accessible to children and young people is not expected to have a substantial resource impact, because this information is readily available and could simply be distributed to children and young people during school hours.

If more providers offer an incentive for returning consent forms, this is likely to increase the number of forms returned, which may lead to an increase in vaccine uptake. Although some incentives, such as prize draws, will have an associated cost, this is expected to be offset by a reduction in the time and costs of nurses having to contact parents and carers of children and young people who have not returned their consent form. The NHS already uses incentives (such as prize draws) to obtain feedback for certain initiatives, so this is not a completely new approach. These incentives do not necessarily have to be expensive or complicated, and lower or zero cost incentives such as school-based perks (for example, being able to go to the front of the lunch queue) could be used instead to contain costs.

Involving other health and social care providers that are in contact with the family to help gain consent where contact cannot be made through the school is not expected to need significant additional resources, because this is likely to be for a smaller group, and those people should already be in contact with the family.

Putting policies in place for assessing Gillick competence may increase the vaccination team's confidence in performing the assessment, thereby increasing the number of young people who are assessed for competence and allowed to consent to their own vaccination. This will help to reduce 1 of the barriers to vaccination and potentially increase vaccine uptake in this group.

Child health information services already hold vaccination records of children and young people, so identifying those who are not up to date with preschool vaccinations and informing the school nursing teams is not expected to need significant additional resources.

### Children and young people who do not attend schools where vaccinations are provided

This is not expected to need significant additional resources because local authorities already have a duty to know which children and young people do not attend schools where vaccinations are provided, and they have contact details for their parents or carers. Local authorities could therefore contact these people on behalf of vaccination providers to arrange vaccination in a suitable setting.

Return to recommendations

# Context

Vaccinations provide personal and population-level protection against many diseases. High vaccine uptake rates create population-level protection, leading to herd immunity. This protects both immunised and non-immunised people. Examples of non-immunised people include those who are highly susceptible to disease such as newborn babies and older people, and people who cannot be vaccinated for medical reasons or for whom vaccines are contraindicated. By contrast, vaccines for some diseases such as shingles only protect those who receive them and provide minimal indirect protection to other people.

The UK routine vaccination schedule covers key vaccinations for different stages in life including childhood, adolescence, pregnancy and old age (currently 65 years and older). Although vaccination coverage in general in the UK is relatively high, uptake varies between vaccines, areas and the age groups they are targeted at. For example, 5-in-1 coverage of children measured at 5 years was 95.2% in 2019/2020, whereas 83.9% of Year 9 girls completed the 2-dose HPV (human papillomavirus) vaccination course in 2018/19. By contrast, from April 2018 to March 2019, shingles vaccine uptake for the 70-year-old routine cohort was only 31.9%, pneumococcal vaccine uptake for all people aged 65 and over was 69.2% and pertussis vaccine coverage in pregnant women was 68.8%.

Vaccination coverage needs to be actively maintained, and ideally increased, in the face of increasing vaccine scepticism and misinformation. In addition, certain population groups (such as Travellers, Gypsy and Roma, refugees and asylum seekers) have lower levels of vaccination than the general public. Additional or different actions may be needed to increase their vaccination rates.

Reasons for low uptake may include poor access to healthcare services; inaccurate claims about safety and effectiveness, which can lead to increased concerns and a reduction in the perceived need for vaccines; and insufficient capacity in the healthcare system to provide vaccinations. In addition, problems with the recording of vaccination status and poor identification of people who are eligible to be vaccinated may have contributed to low uptake.

# Finding more information and committee details

To find NICE guidance on related topics, including guidance in development, see the NICE topic page on immunisation.

For full details of the evidence and the guideline committee's discussions, see the evidence reviews. You can also find information about how the guideline was developed, including details of the committee.

NICE has produced tools and resources to help you put this guideline into practice. For general help and advice on putting our guidelines into practice, see resources to help you put NICE guidance into practice.

# Update information

**May 2022:** This guideline replaces the NICE guideline on immunisations: reducing differences in uptake in under 19s, published in September 2009.

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