Current issues with variability in vaccine uptake and what can be done to improve it

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Content

- Inequalities - legal and local context and responsibilities
- Monitoring inequalities
- Inequalities by:
  - geography, ethnicity, deprivation
  - childhood vs adolescent programmes
- What works?
Setting the scene: legal context

**Legal duty** for the commissioning and delivery of English immunisation programmes to reduce inequalities:

- Public Sector Equality Duty section of the Equality Act 2010
- Health and Social Care Act 2012

Underpinned by:

- **National** systematic oversight, guidance and assurance
- **Local** effective evidence-based activity

**Section 7A:** aim to achieve high levels of immunisation coverage across all geographies and within the context of populations with protected characteristics.

**NHS England** also have a legal duty to offer immunisation to individuals:

“from hard to reach groups, for example gypsy traveller children or looked after children, who may require special and specific arrangements;” and people “moving into the country from abroad who have incomplete or unknown vaccination status.”
Setting the scene: local context

PHE - NHS England local teams - Directors of Public Health

ensure that local population needs are understood and addressed by local immunisation services

Screening and Immunisation Teams - Local Authorities – Immunisation Providers

• identify inequalities at the local level
• address inequalities in vaccine uptake through evidence based strategies to increase access, information and choice for disadvantaged communities
International evidence base: inequalities in vaccine uptake

In high-income countries, substantial differences exist in vaccine uptake relating to:
- socioeconomic status
- gender
- ethnicity
- geographic location
- religious belief

Herd protection confers benefits of some immunisation programmes to members of the community who are not immunised.
Monitoring inequalities

1. **PHE routine vaccine coverage data** collections describe inequalities in vaccine uptake by:
   a) geography (at the LA/CCG level)
   b) gender (some ImmForm collections only)
   c) ethnicity (some ImmForm collections only)

   Ad-hoc analyses can be done e.g. uptake by IMD quintiles

2. **PHE routine disease surveillance data** collections – evaluate the impact of the programme

3. PHE annual survey of **parental attitudes to vaccination** can identify divergent attitudes and experiences among different population groups e.g. by ethnicity, deprivation, education level

4. **Research** commissioned by PHE to answer specific questions about disease control, or factors associated with low coverage
5-in-1 vaccine coverage at 12 months by region, England: 2015/16 and 2016/17

Source: COVER

Primary course of DTaP/IPV/Hib/HepB: dose 1 at 8 weeks, dose 2 at 12 weeks and dose 3 at 16 weeks
5-in-1 vaccine coverage at 12 months by LA, 2016-17

- 22 LAs had coverage <90%, most of them in London
- Most children are caught up: national coverage for the 5-in-1 vaccine at 24 months has remained above the 95% target since 2009/10
5-in-1 vaccine coverage at 12 months, by LA: change from 2013-14 to 2016-17
Hib/MenC booster coverage at 24 months, by Region, England, 2015/16 and 2016/17
Source: COVER
MenB vaccine coverage, Jan to March 2018  
Source: ImmForm GP data

Routine schedule MenB vaccine: 1\textsuperscript{st} priming dose at 2 months, 2\textsuperscript{nd} priming dose at 4 months and booster dose at 1 year

<table>
<thead>
<tr>
<th>Age</th>
<th>1\textsuperscript{st} Dose Coverage</th>
<th>2\textsuperscript{nd} Dose Coverage</th>
<th>Booster Dose Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 months</td>
<td>96%</td>
<td>88%</td>
<td></td>
</tr>
<tr>
<td>12 months</td>
<td>96%</td>
<td>93%</td>
<td></td>
</tr>
<tr>
<td>18 months</td>
<td>95%</td>
<td>93%</td>
<td>87%</td>
</tr>
</tbody>
</table>

\~5\% of children receive the second MenB dose after six months of age (after peak risk period)

\~50\% of the infant MenB cases since programme was rolled out had missed their 2\textsuperscript{nd} MenB dose*

Predictors of coverage of the infant rotavirus vaccination programmes in England

Rotavirus programme introduced in 2013

Two dose schedule at 8 and 12 weeks

Data extracted from GP records and coverage evaluated at 25 weeks.

MenACWY coverage, England, 2016/17

Source: LA level data (and optional school level data) submitted by NHS England local teams via ImmForm

<table>
<thead>
<tr>
<th>Cohort number</th>
<th>School year in 2016/17</th>
<th>Age in 2016/17</th>
<th>Vaccine coverage (Range by LA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (catch up)</td>
<td>12</td>
<td>16-17 years old</td>
<td>71%</td>
</tr>
<tr>
<td>2 (routine)</td>
<td>11</td>
<td>15-16 years old</td>
<td>79%</td>
</tr>
<tr>
<td>3 (routine)</td>
<td>10</td>
<td>14-15 years old</td>
<td>83% (48-100)</td>
</tr>
<tr>
<td>4 (routine)</td>
<td>9</td>
<td>13-14 years old</td>
<td>84% (60-100)</td>
</tr>
</tbody>
</table>

School-based delivery: improves access and reduces inequalities
Higher uptake is achieved the earlier in school a vaccine is offered

All MenW cases in eligible teenagers since introduction of the programme have been unvaccinated
Childhood vaccination coverage by ethnicity within London between 2006/2007 and 2010/2011

• In general, the largest ethnic groups have good vaccination coverage.

• **Lowest coverage was observed in smaller ethnic groups:** newer, and smaller communities may need particular attention.

• **Deprivation** was not a strong indicator of coverage overall, and for most ethnic groups there was no relationship between deprivation and coverage.

• Improvements in **record keeping** and transfer of information are associated with improvements in reported vaccination coverage.

• **Children not registered with a general practitioner**, or without up-to-date GP practice details in the child health information system, have lower recorded vaccination coverage and are at risk of missing out on key primary care initiatives.

What works?

Aim: timely access to immunisation for all

NICE guidance on ‘Reducing differences in the uptake of immunisations’ (2009) and updated Systematic Review (Tim Crocker-Buque et. al 2016)

Recommendations for commissioners and providers:

• immunisation programmes (local ownership, access, call recall, information/communication, opportunistic checks, alternative service provision)

• information systems

• training

• contribution of nurseries, schools, colleges of further education

• targeting groups at risk of not being fully immunised
What works? Improve access

NICE quality standards (March, 2017)

Statement 1. Call-recall arrangements
Statement 2. Offering outstanding vaccinations
Statement 3. Recording vaccinations in:
  a) GP record
  b) personal child health record
  c) child health information system
Statement 4. Imms status check at key educational stages
Statement 5. Imms status check and catch-up for all young offenders on entry into secure setting
What works? Targeting groups at risk of not being immunised

- Local needs assessment
- Alternative service provision
  - language
  - community or outreach clinics
  - domiciliary vaccination

WHO: Tailoring Immunisation Programmes (TIP)

IDENTIFY

DIAGNOSE

DESIGN
The national immunisation programme is world leading with **high immunisation rates at the national level**

**Herd immunity** extends the benefits of the programme to unvaccinated individuals thus intrinsically **reducing inequalities in the community**

Coverage varies by **geography**, the worst performing LAs have seen the biggest declines in the last three years

**Evidence of inequalities** in vaccine uptake by ethnicity and deprivation which contribute to but do not wholly explain the geographical variation in coverage

**NICE guidance** and **quality standards** on ‘what works’ – for local implementation, responding to population needs

**School-based delivery** known to reduce inequalities in uptake for the adolescent programmes