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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

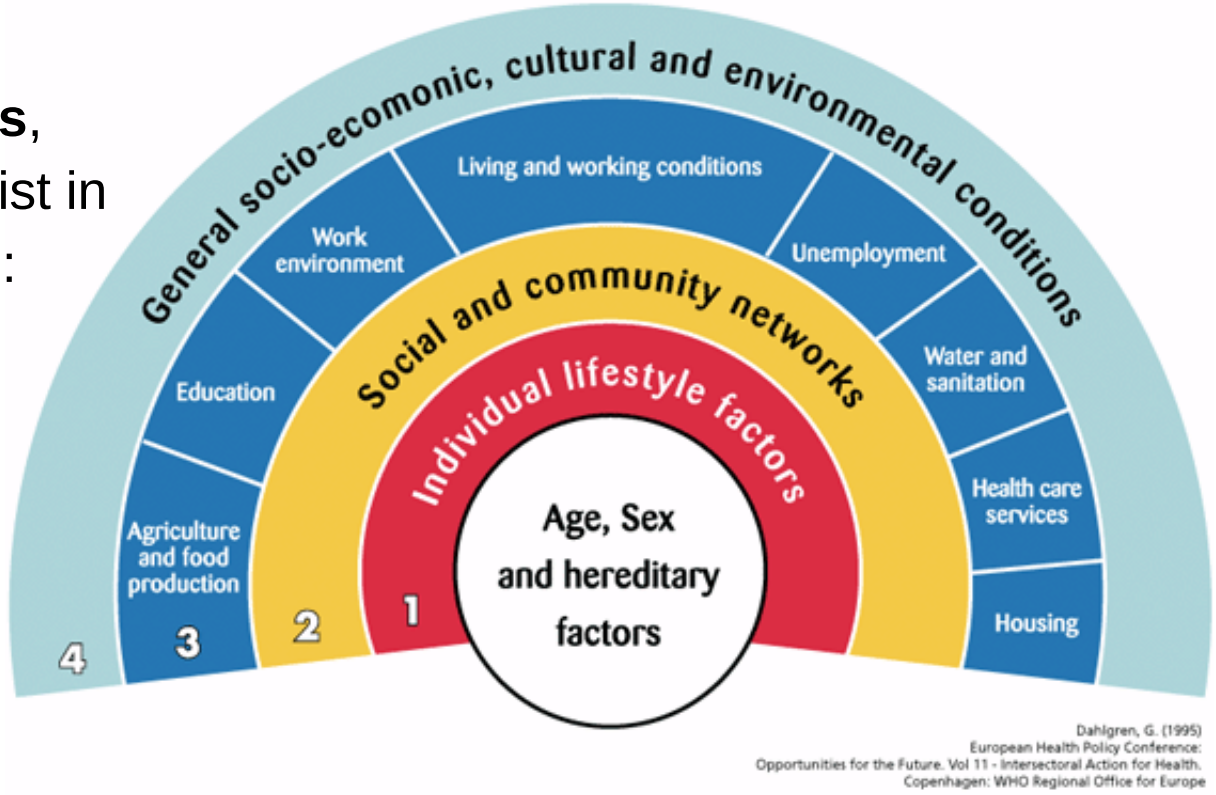
Screening and Immunisation Teams - Local Authorities – Immunisation Providers

- **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



Dahlgren, G. (1995)
European Health Policy Conference:
Opportunities for the Future. Vol 11 - Intersectoral Action for Health.
Copenhagen: WHO Regional Office for Europe

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

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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

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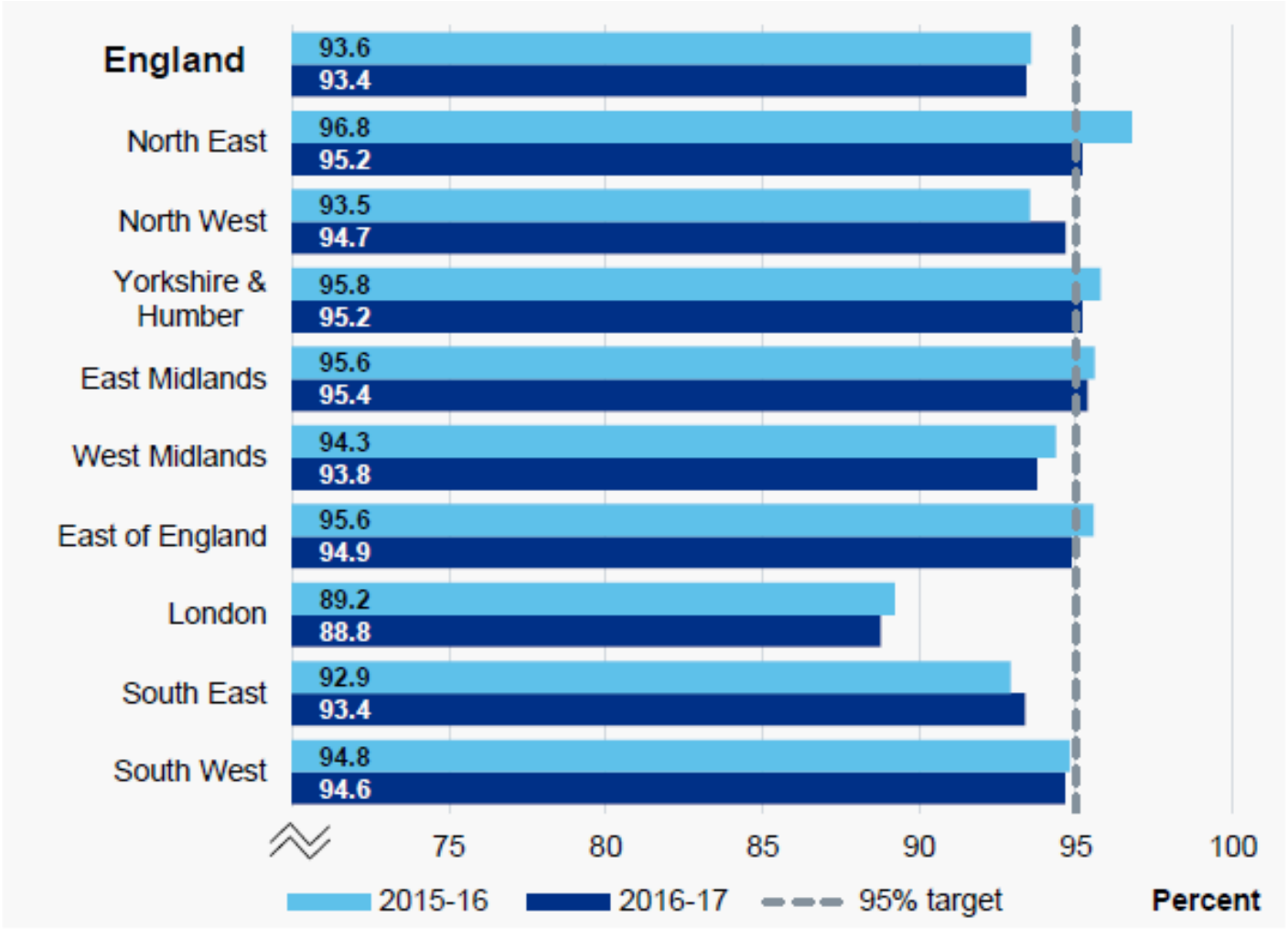
5-in-1 vaccine coverage at 12 months by region, England: 2015/16 and 2016/17 Source: COVER



Source: COVER - PHE, NHS Digital. See Table 8a in the Data Tables.

Primary course of DTaP/IPV/Hib/HepB: dose 1 at 8 weeks, dose 2 at 12 weeks and dose 3 at 16 weeks

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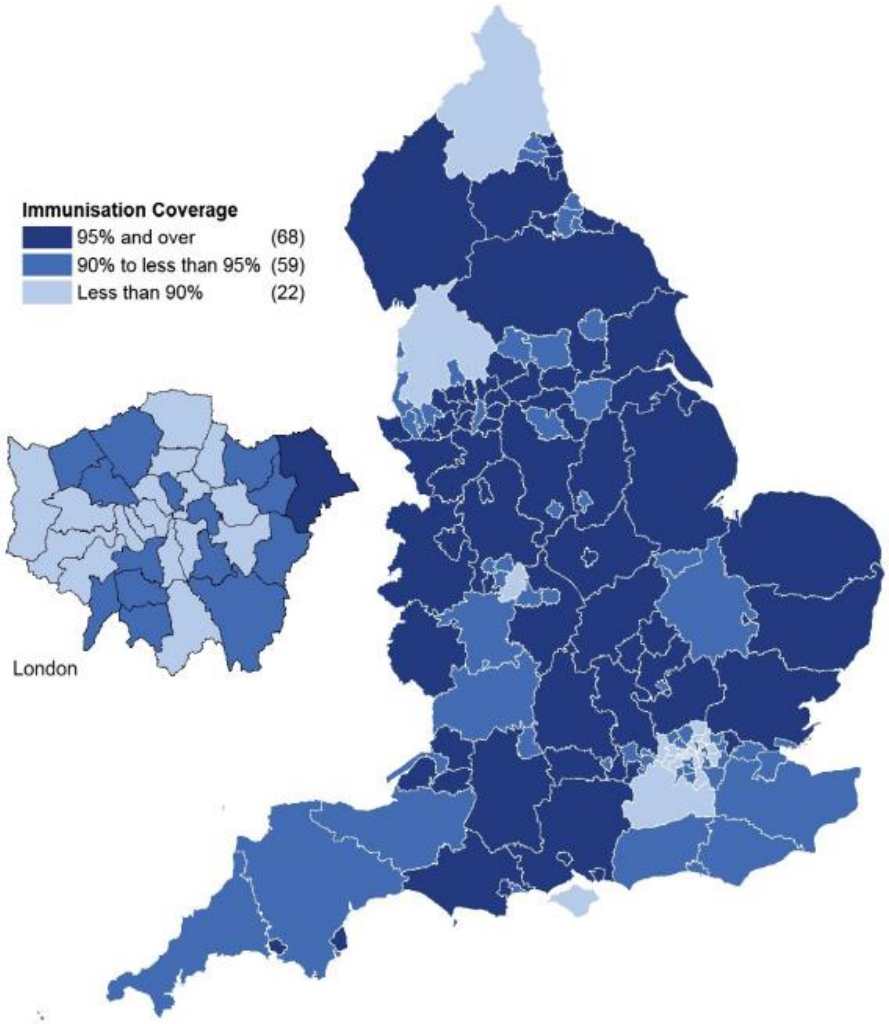
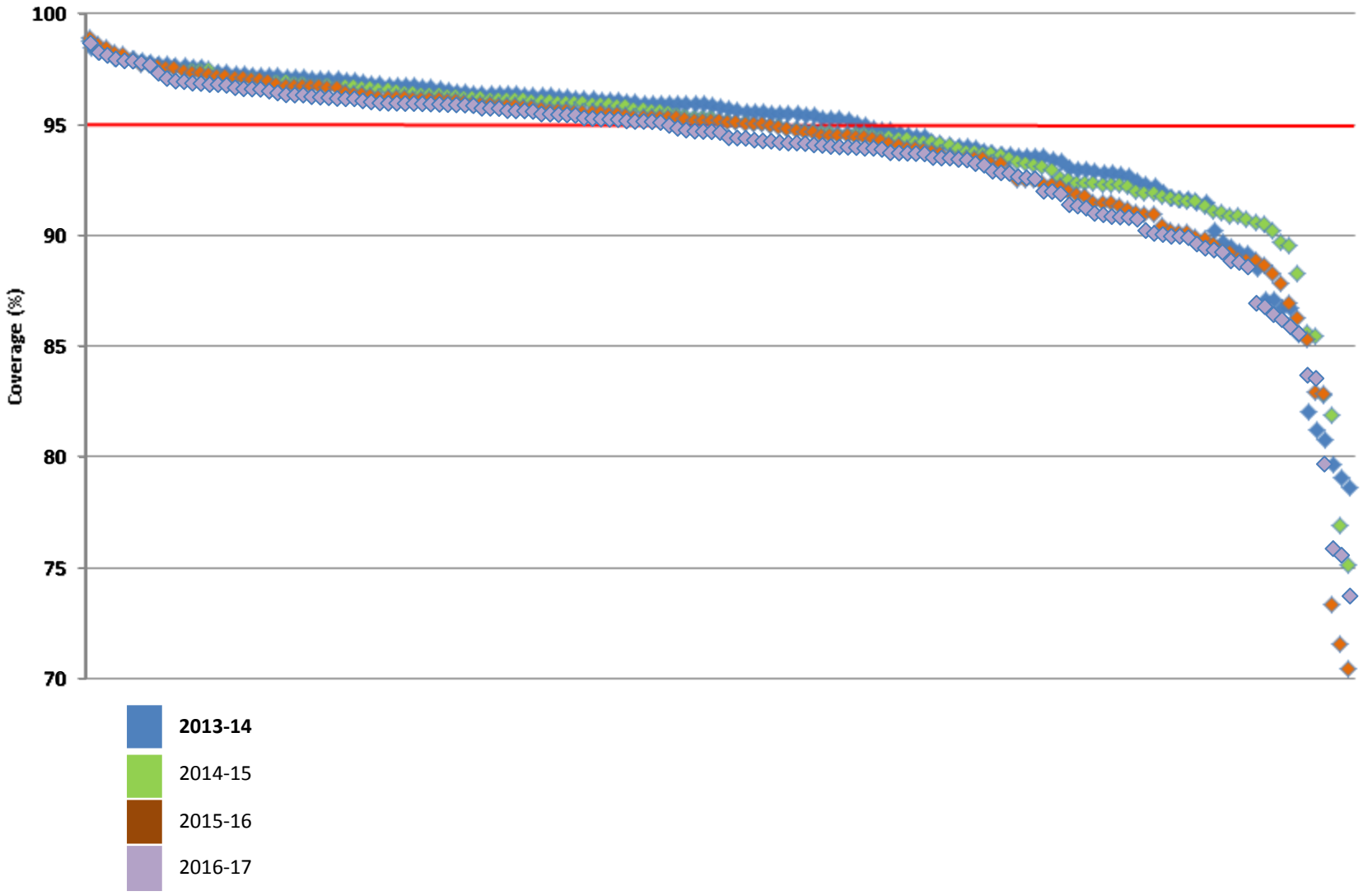
5-in-1 vaccine coverage at 12 months by LA, 2016-17



- **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



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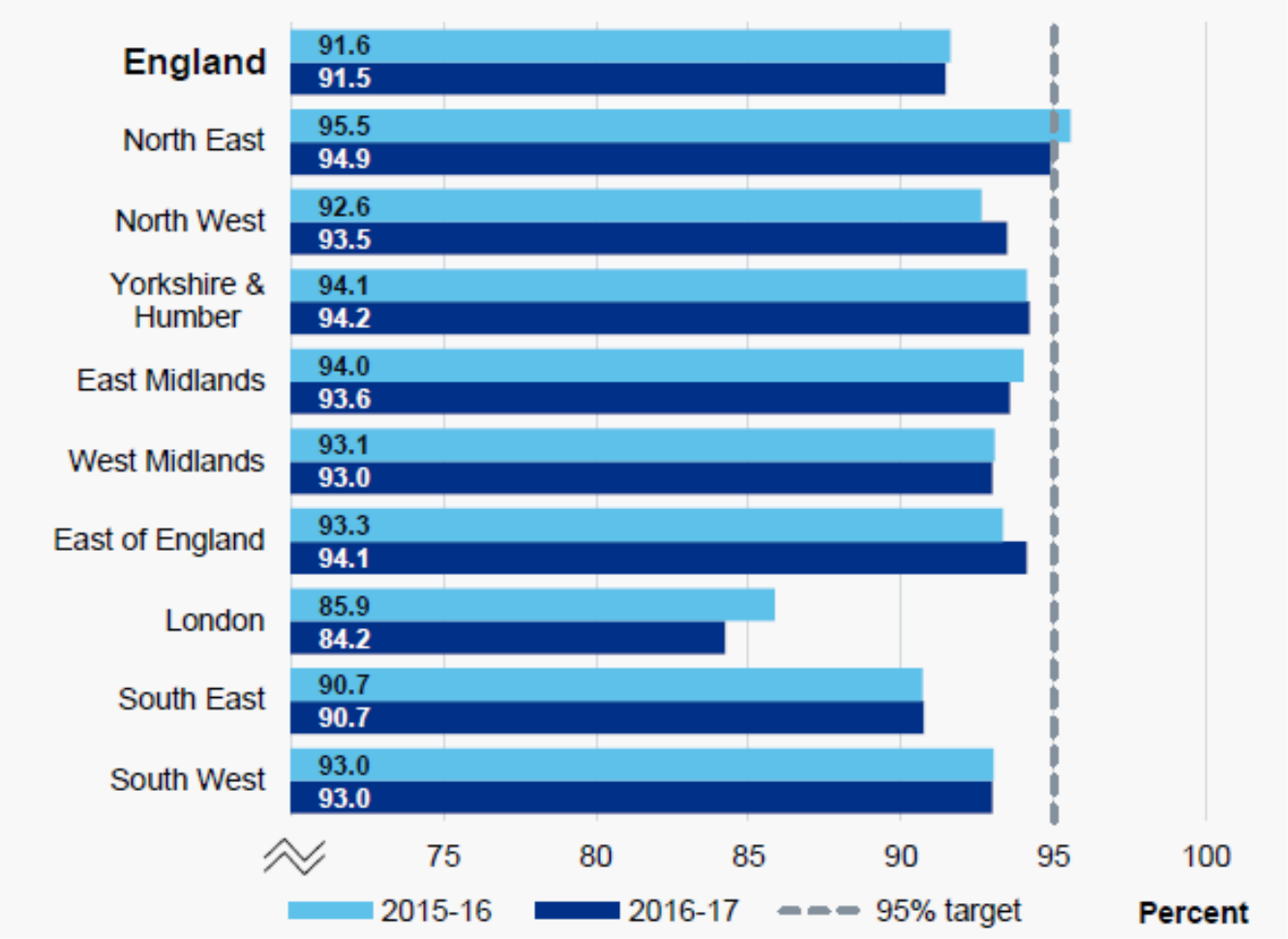
Hib/MenC booster coverage at 24 months, by Region, England, 2015/16 and 2016/17

Source: COVER



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MenB vaccine coverage, Jan to March 2018 Source: ImmForm GP data

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

aged 6 months	aged 12 months	aged 18 months
Dose 1 coverage: 96%	Dose 1 coverage: 96%	Dose 1 coverage: 95%
Dose 2 coverage: 88%	Dose 2 coverage: 93%	Dose 2 coverage: 93%
		Booster dose coverage: 87%

~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 2nd MenB dose*

**S Parikh, N Andrews, K Beebeejaun et al. Effectiveness and impact of a reduced infant schedule of 4CMenB vaccine against group B meningococcal disease in England: a national observational cohort study.* Lancet 2016; 388: 2775–82

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Predictors of coverage of the infant rotavirus vaccination programmes in England

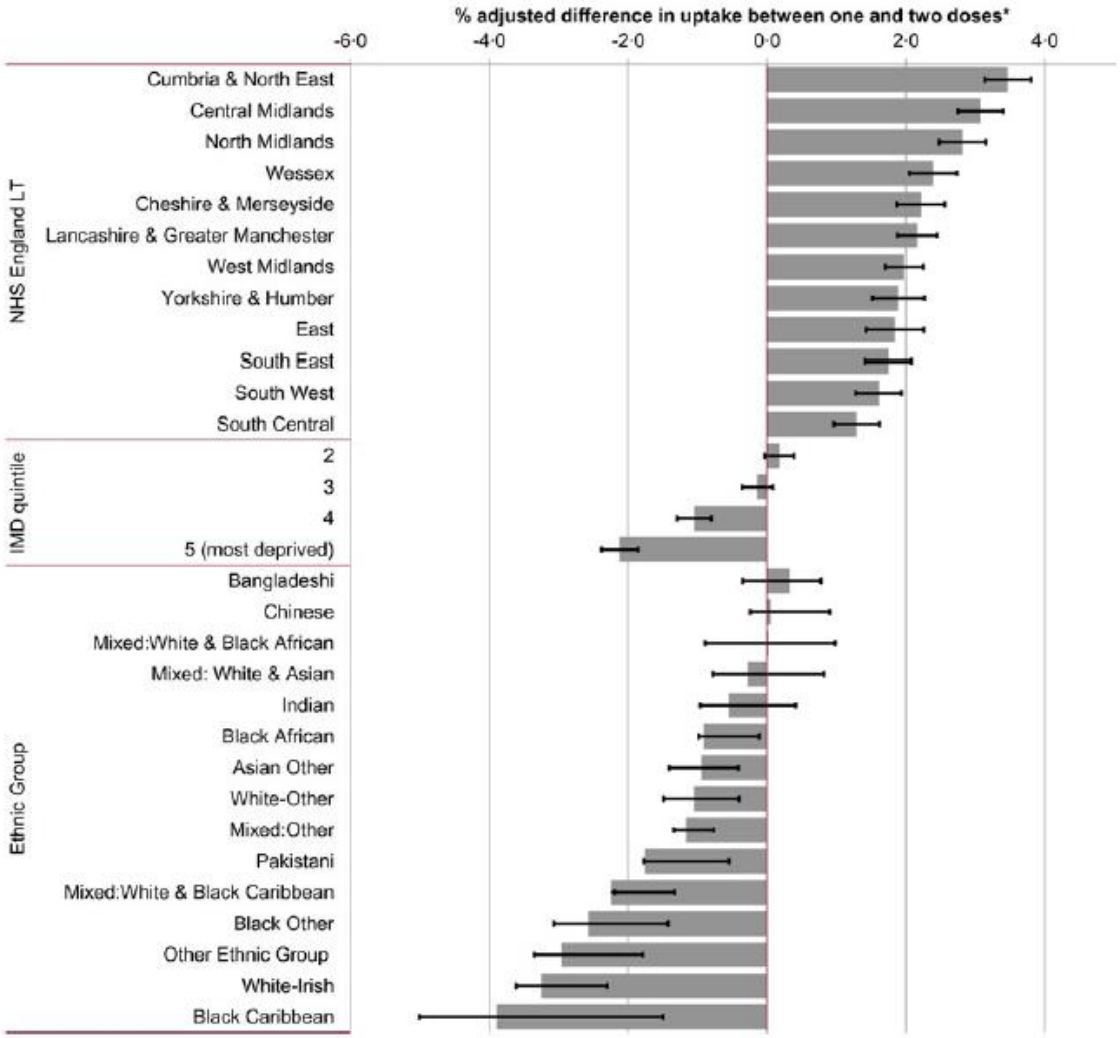

Fig. 1. Percentage difference between initiation and completion of the infant rotavirus vaccination schedule adjusted for socio-demographic factors[1,2]. (1) Adjusted for NHS England Area Team, ethnic group and IMD quintile. (2) Reference categories were London NHS LT; IMD quintile 1 (least deprived) and white-British ethnicity.

Rotavirus programme introduced in 2013

Two dose schedule at 8 and 12 weeks

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

L Byrne et. al. Predictors of coverage of the national maternal pertussis and infant rotavirus vaccination programmes in England. Epidemiol. Infect. (2018), 146, 197–206

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MenACWY coverage, England, 2016/17

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

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

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.

Wagner KS, van Wijgerden JCJ, Andrews N, et al. Arch Dis Child 2014;99:348–353

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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**

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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

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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

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Summary

- 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