Public Health England

Protecting and improving the nation's health

National Immunisation Network Meeting 2019
Vaccination - back to the future

London

21-22 May 2019

Public Health England

Protecting and improving the nation's health

National Immunisation Network Meeting 2019
Vaccination - back to the future

London

21-22 May 2019

Using tracking surveys to inform programme implementation

Louise Letley, Nurse Manager, Immunisation, Hepatitis and Blood Safety, Public Health England

Public Health England

Two annual tracking surveys

- Parents attitudes to infant vaccines since1991
- Parents and young people's attitudes to vaccines since 2017
- Interviews were conducted via a face-to-face methodology using Computer Assisted Personal Interviewing. Childhood survey undertaken Feb – April and teenagers during July - August
- The interviews are representative of England by deprivation within region (and age and gender of young people aged 13 to 15)

Public Health England

Survey content

- Awareness and recall of vaccination
- Sources of information and information needs
- Trust in different sources of information
- Confidence & satisfaction with the programme
- Views about safety of vaccines & seriousness of disease
- How decisions are made about vaccination (including who gives consent for teenagers)
- Questions about vaccination in pregnancy

Public Health England

2018: Who took part?

•Infant Survey

- 1,674 interviews were conducted with parents of children aged 2 months to 4 years
  - 1,050 with parents of children aged 0-2
  - 1,000 with parents of children aged 3 – 4

Teenager Survey

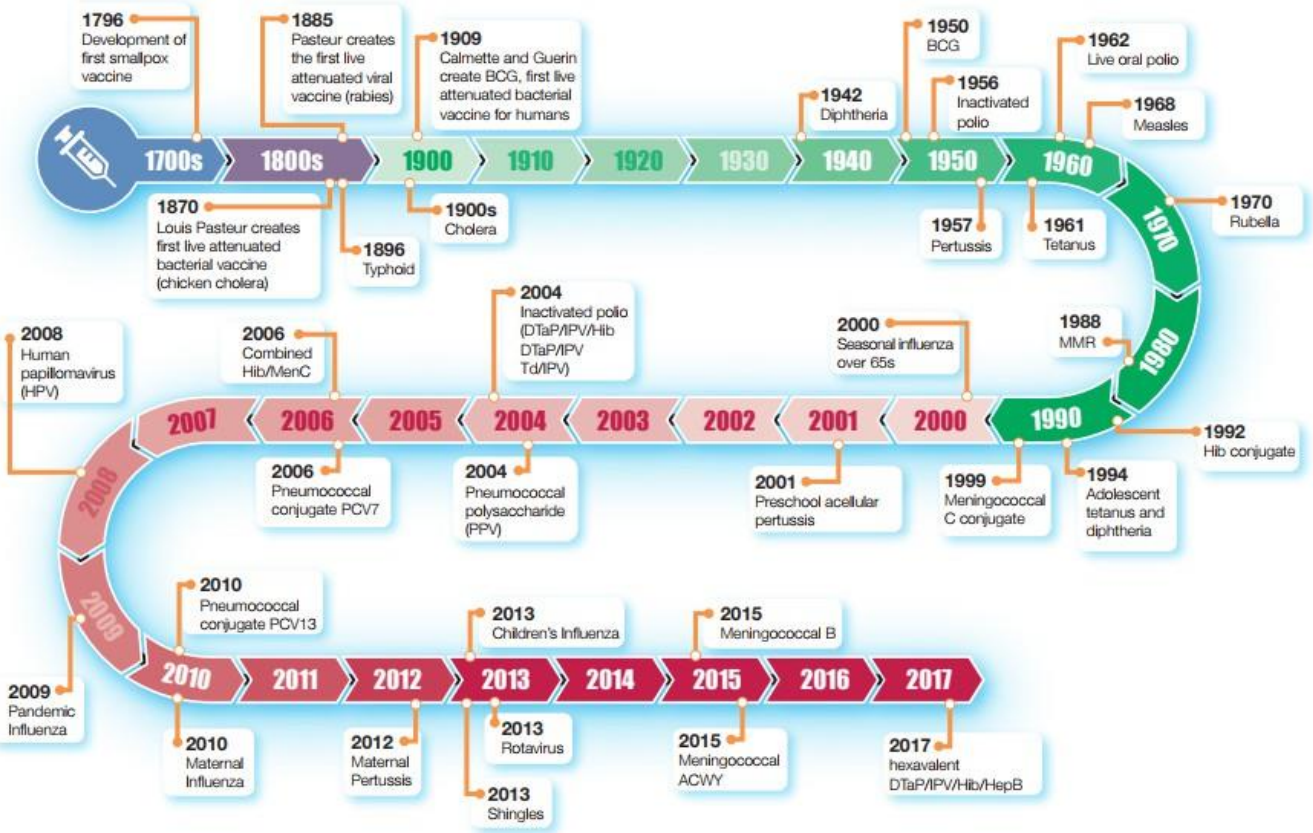
- 2,008 interviews were conducted with parents and young people:
  - 1,006 parents
  - 1,002 young people
  - 1,970 were conducted with parents and young people in the same household (985 households)

Public Health England

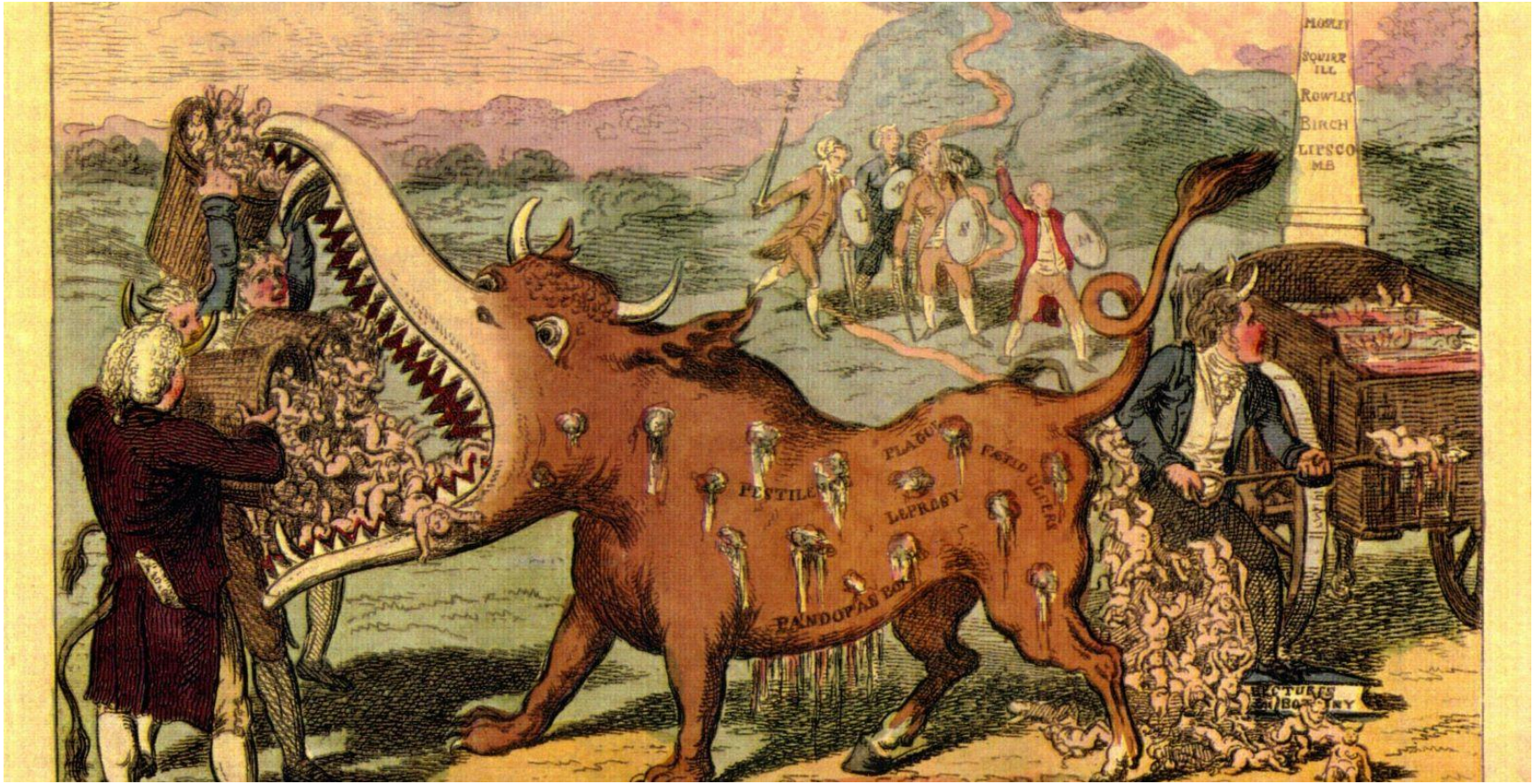
Monitor awareness of and trust in immunisation information and publicity

Public Health England

Historical vaccine development and introduction of routine vaccine programmes in the UK




VacTruth.com
Autism
Allergies
ADHD
Eczema
Asthma
THE GREATEST LIE EVER TOLD
Bipolar
Seizures
...THAT VACCINES ARE SAFE AND EFFECTIVE
Auto-Immune
Sudden Infant Death
Juvenile Diabetes
VaccineLiberationArmy.com


MOORE
SQUIRE
ILL
ROWLEY
BIRCH
LIPSCO
MB
PESTILE
PLAGU
LEPROSY
PANDORAS BOX


HUMBUG NEWS
FAKE NEWS
CHEAP SENSATION


including
one
electronic
almost
sharing
using
use
microblogs
knowledge
even
radios
big
adopting
free
inform
multiple
network
globally
properties
industr
statistics
platforms
refer
generally
include
page
producers
aggregation
issues

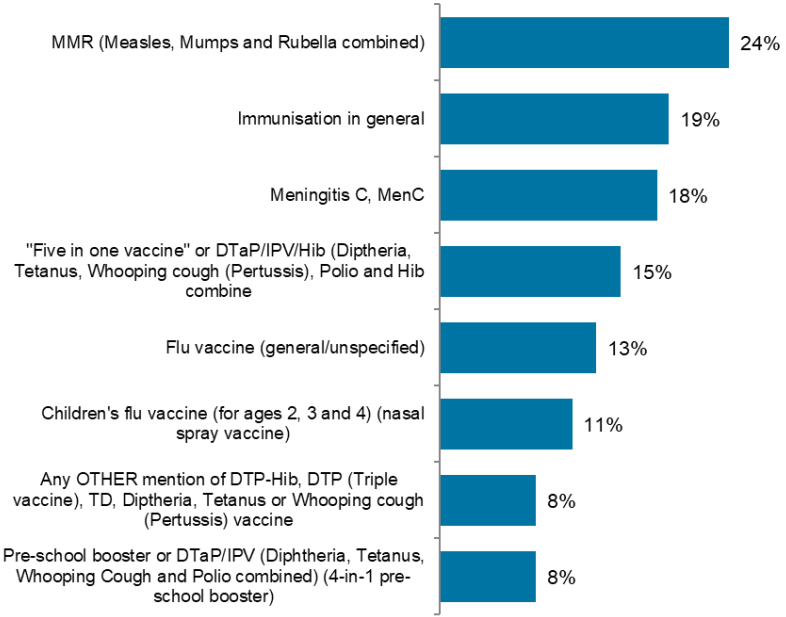

You
Tube


help
Internet
broadcast
Answers
accessible
people
Tagged
video
consume
syndication
anyone
user-generated
brands
physical
publish
enable
like
global
However
forms

What parents recalled about immunisation publicity

Public Health England

Which immunisation(s) was the information or publicity was about?

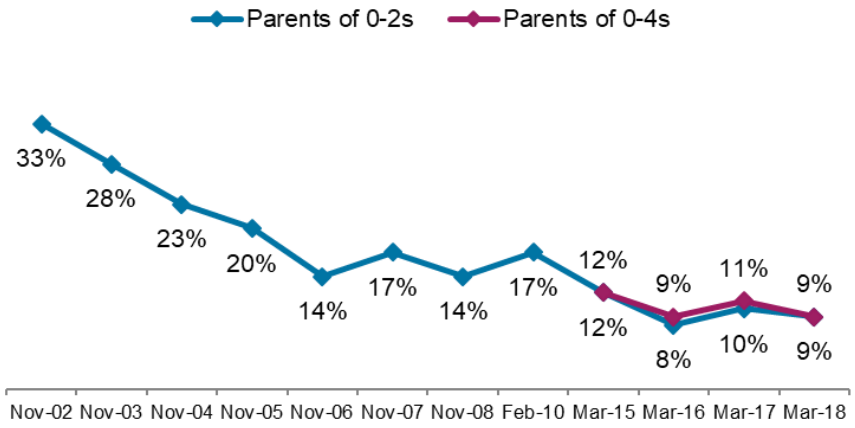


86%

of recalled messages were in support of immunisation. Just 4% were against.

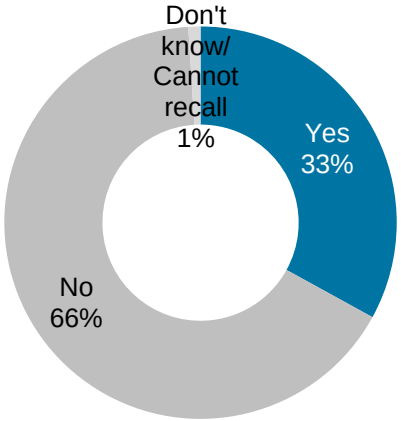
Very few parents had any concerns

Q8. Is there anything you have come across that would make you concerned or consider not having your child immunised?



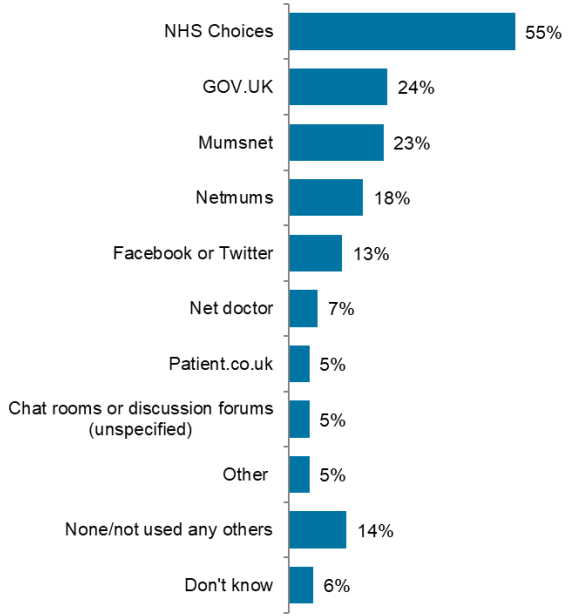
Most parents are not using the internet to find immunisation information

- Have you ever used the Internet to find out more about vaccinations or immunisation?

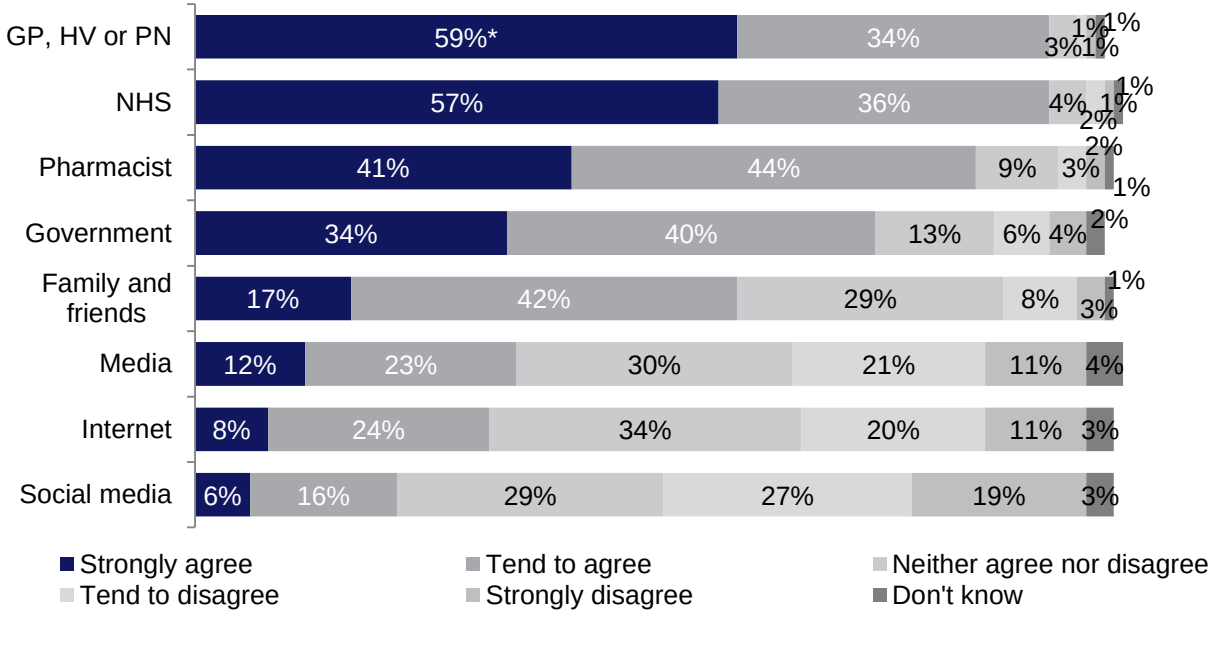


The main sources of information used by parents continued to be leaflets (60% - 58% specifically NHS leaflets) and the Red Book (50%).

Most who do are using recommended sites

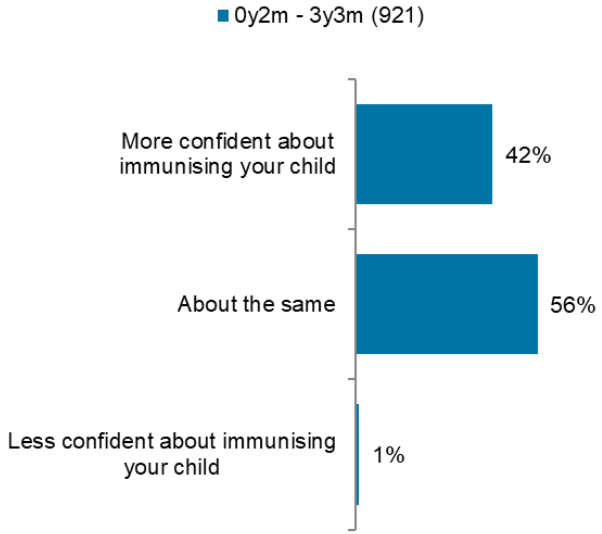


Healthcare professionals are most trusted source of information



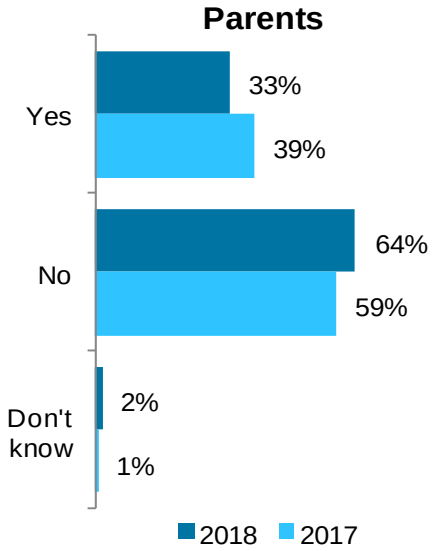
"I trust advice on immunisation information given by……"

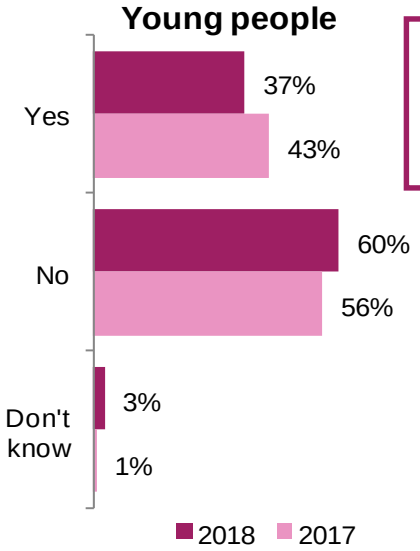
Discussion with healthcare professionals very positive



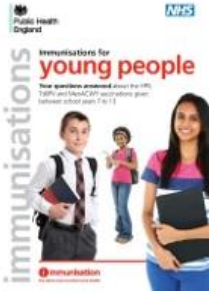
9% of parents with children aged 0y2m-3y3m changed their mind and choose to immunise following discussion with a health professional

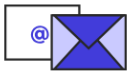
Did parents and teenagers remember hearing anything about immunisation in the last 12 months?





Year 9:	33%
Year 10:	42%
Year 11:	35%
Male:	32%
Female:	44%



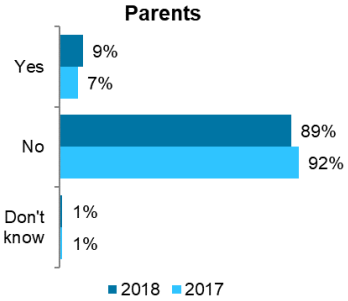


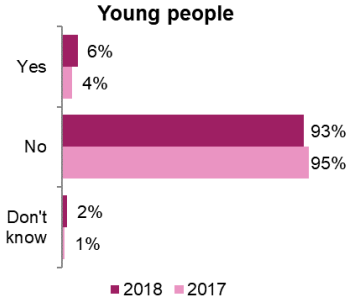
Via letter or email was the main source for parents (57%)

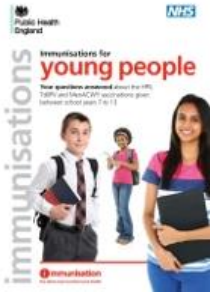
School (school nurse: 47%, teacher 34%) was the main source for teenagers

The vast majority of parents and young people had no concerns about teenage vaccination

Is there anything you have come across that would make you concerned or worried about you/your child having a teenage vaccination?







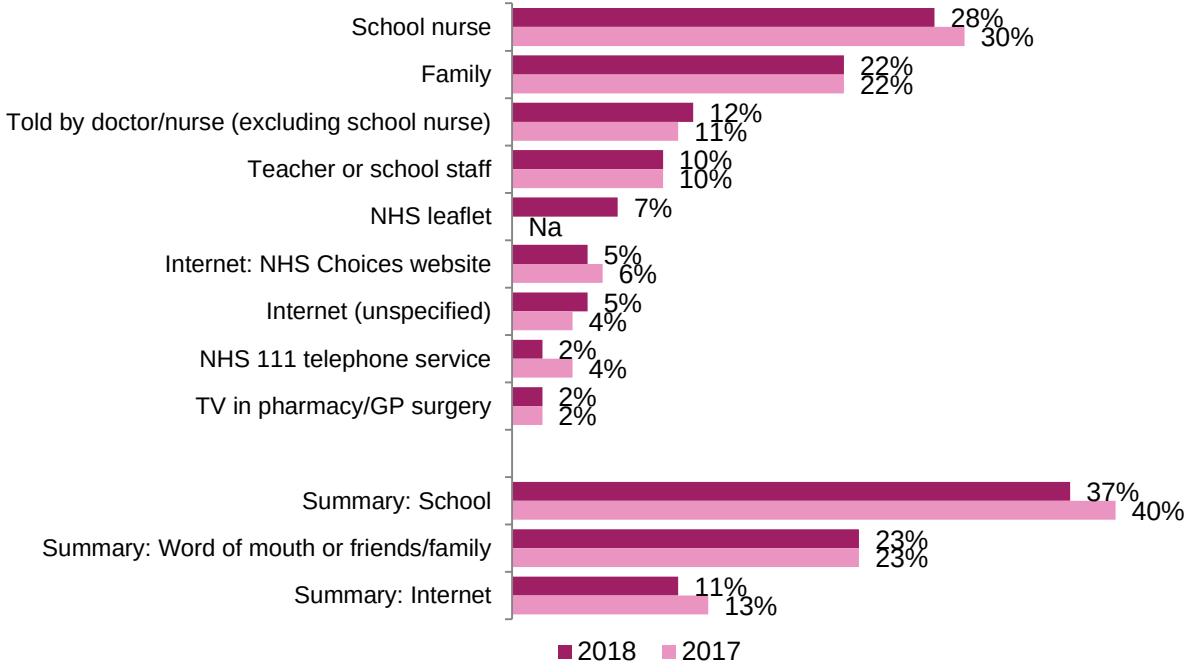
Concerns related to ...

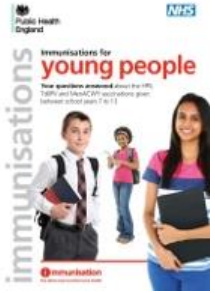
- Side effects
- Ingredients of the vaccine
- Negative experiences
- Potential risk factor

In addition for teenagers...

- Dislike of needles

Young people – where they would look for more information

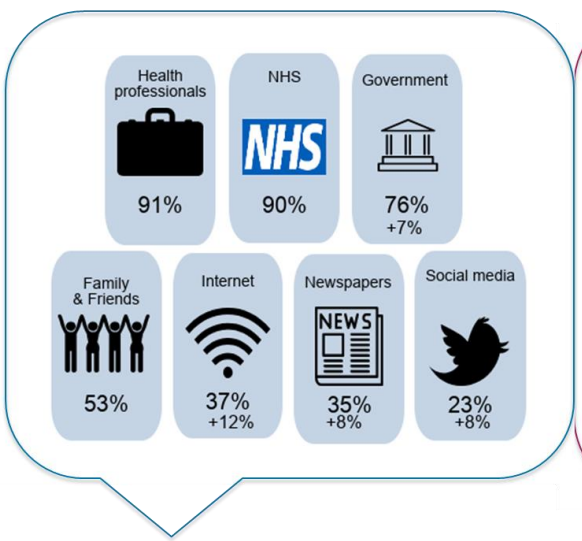


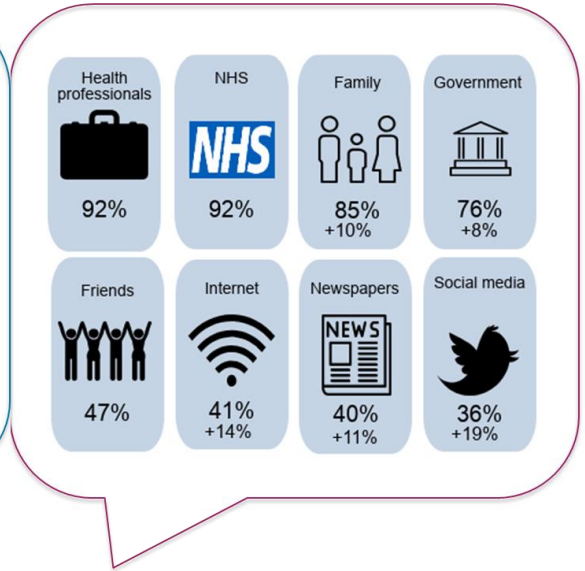


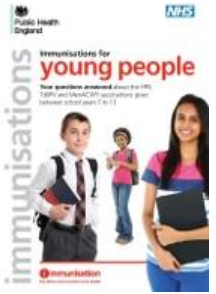
Q: "If you wanted to find out more about vaccination, which of these would you be most likely to use?"

Parents and young people trust advice given by health professionals

"I trust the advice on vaccination given by ..." – **Strongly agree or agree**





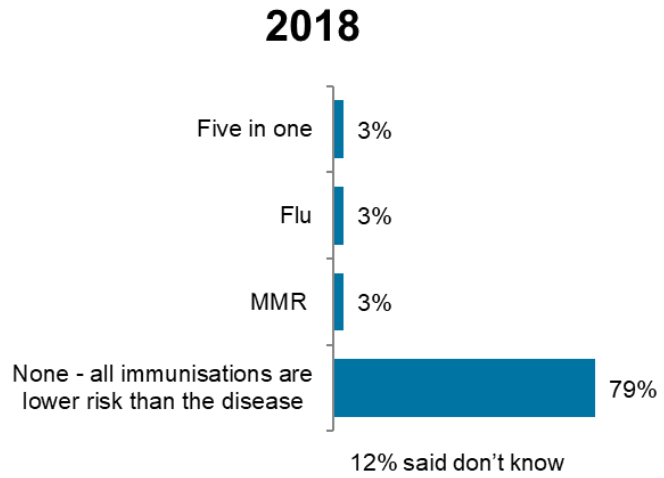


Public Health England

Monitor confidence in the programme

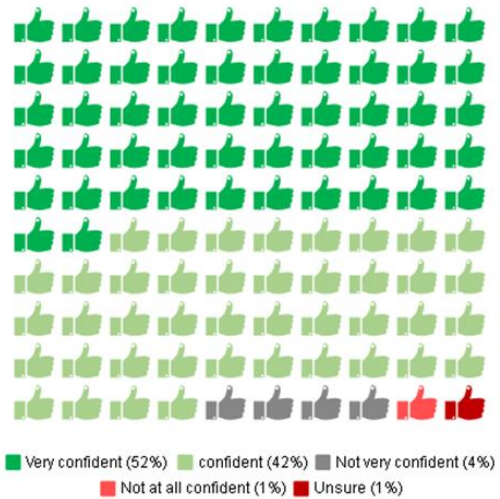
Parents think vaccines are safe

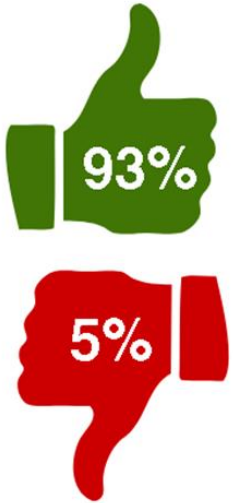
Do you think there are any immunisations that are worse for your child than the disease?



Confidence in the immunisation programme is high

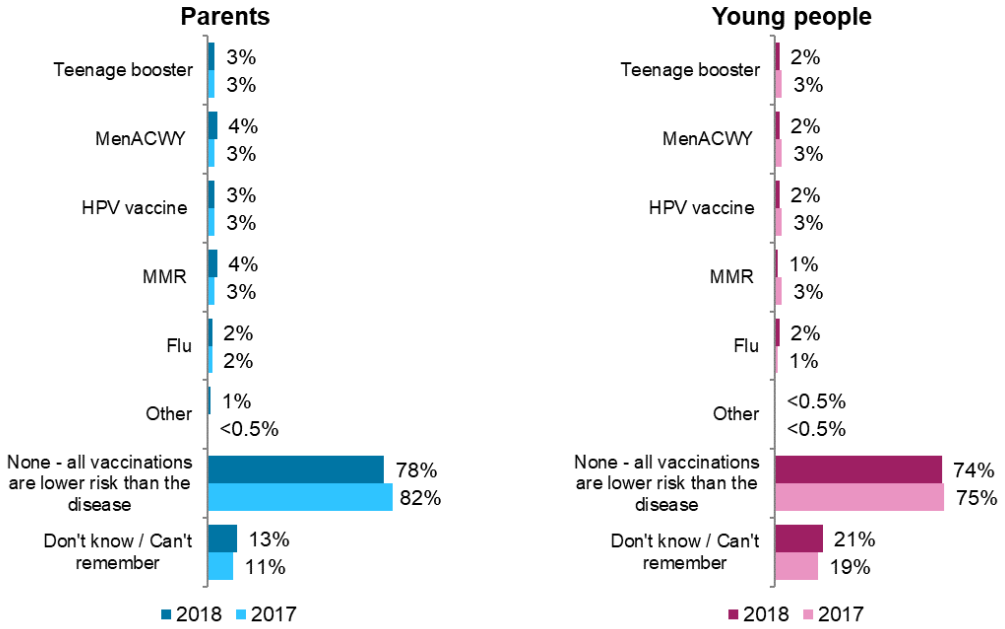
Q58b. In general, how much confidence do you have in the Immunisation Programme?

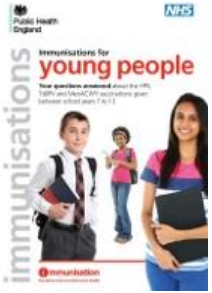




Parents and young people think vaccines are safe

Do you think there are any vaccines that are worse for teenagers than the disease?

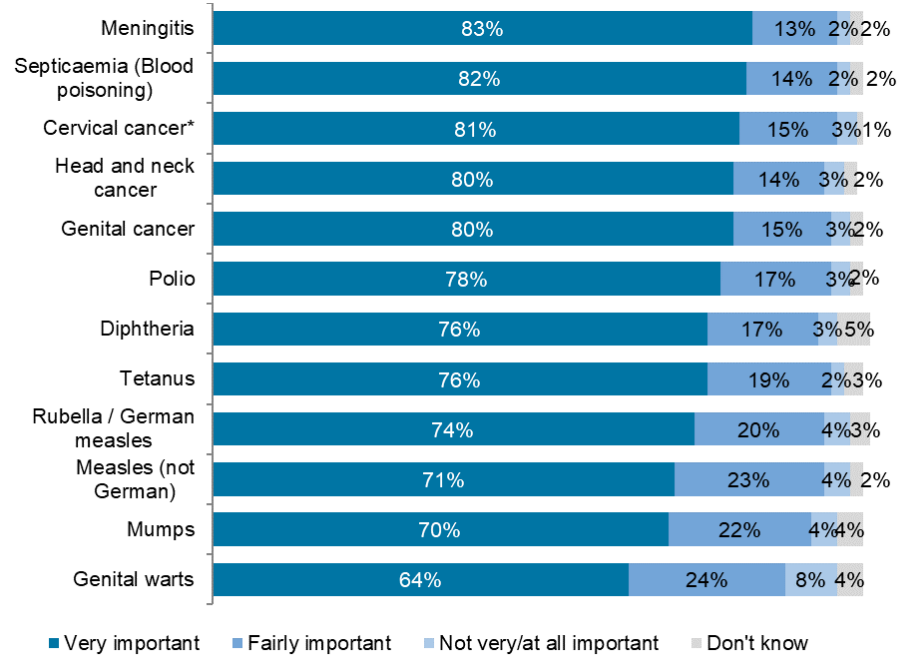


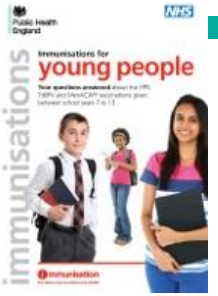


Public Health England

Parents and young people think vaccination is important

How important do you feel it is that your teenager is protected against each disease?



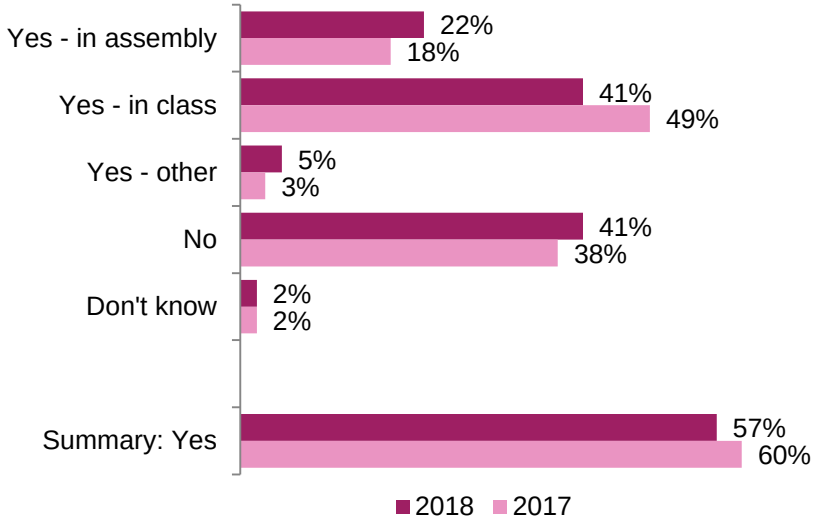


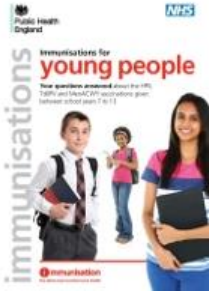
95%

Of teenagers feel it is important they get vaccinated (69% very important)

Public Health England

The importance of hearing about vaccinations at school



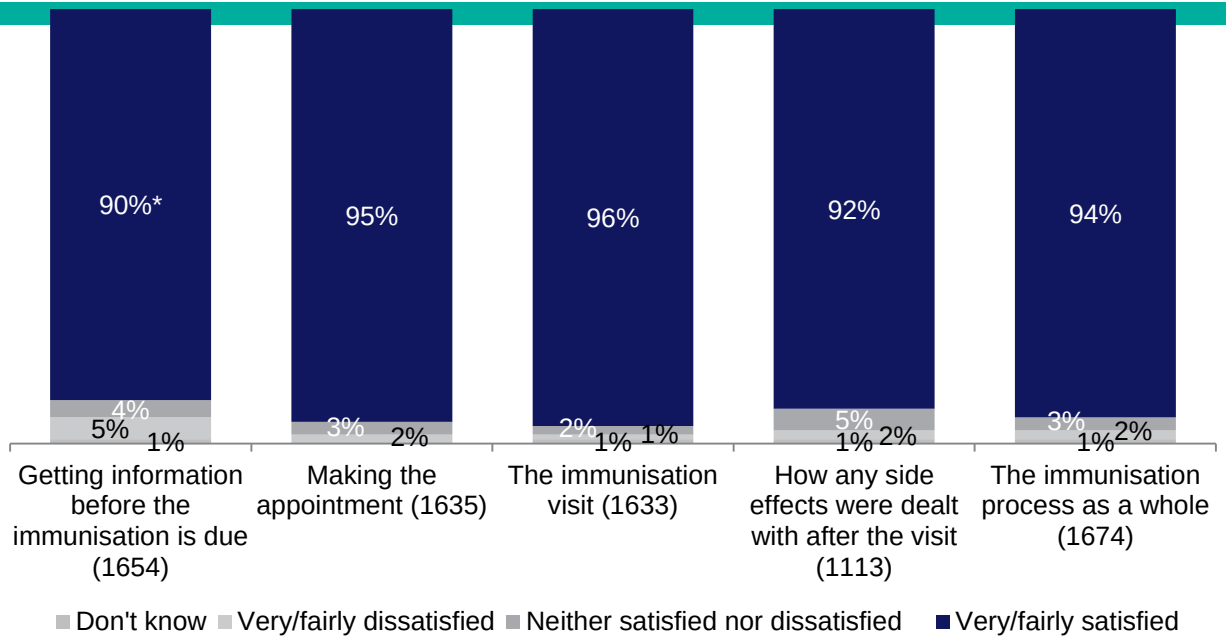


Q: "Have you been taught anything about vaccines at school?"

Public Health England

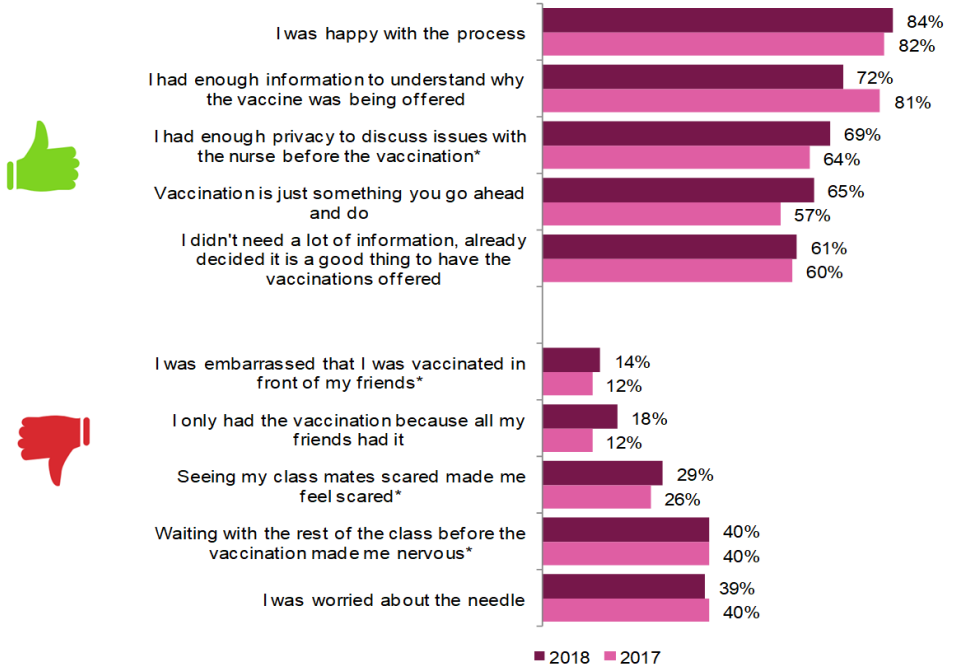
Monitor satisfaction with the immunisation process

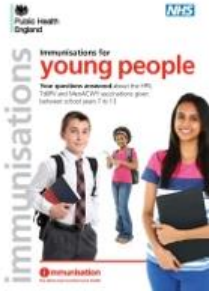
The vast majority of parents are satisfied with the immunisation process



Q: "How satisfied were you with the following?"

Young people are happy with the immunisation process





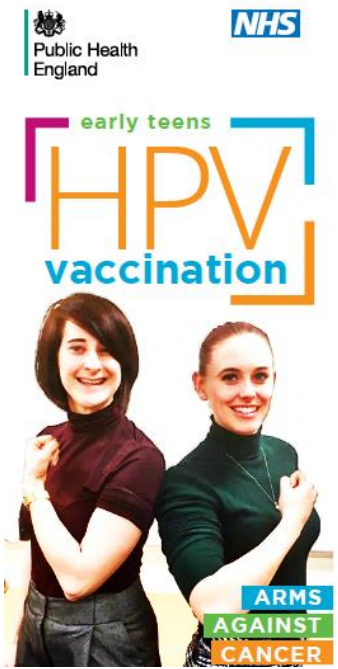
Public Health England

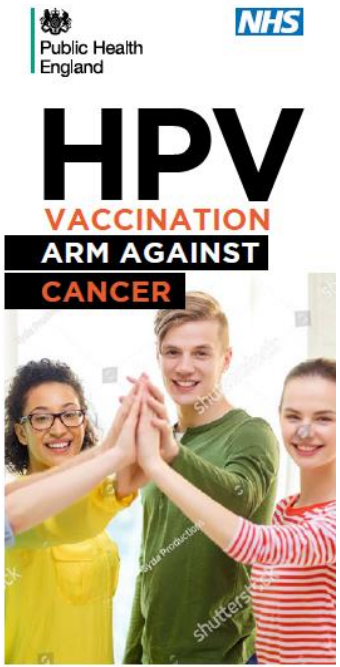
Inform development of new materials

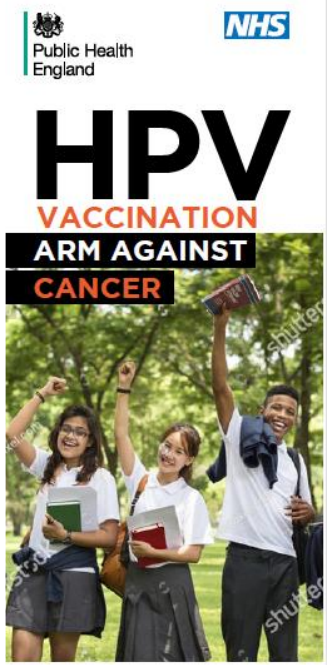
Public Health England

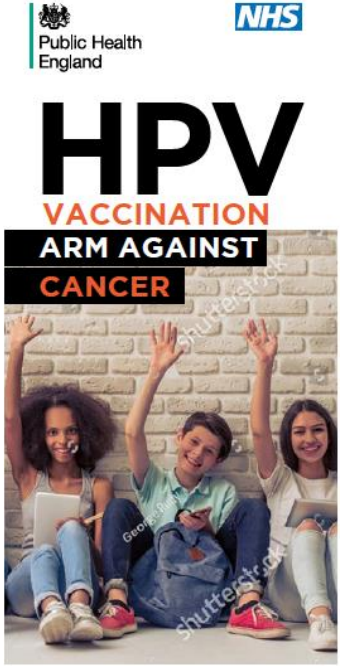
HPV vaccination materials: developing for a universal programme

Public Health England









Public Health England

Tracking Surveys inform programme planning, implementation and delivery

They show:

- immunisers are doing a great job!!
- confidence in the vaccination programme in England is very high
- parents and young people have a high level of trust in immunisation information provided by the NHS and health professionals.
- there is a far lower level of trust in immunisation information on social media

Public Health England

Acknowledgements

Helen Campbell, Angela Edwards, Mary Ramsay, Vanessa Saliba, Jo Yarwood: PHE

Sharon Gowland, Steve Handley, BMG Research

Public Health England

Protecting and improving the nation's health

National Immunisation Network Meeting 2019
Vaccination - back to the future

London

21-22 May 2019

Falsified medicines directive

Beth Graham, Lead Pharmacist, Immunisation, Hepatitis and Blood Safety, Public Health England
Arti Punn, Birmingham Community Healthcare NHS Foundation Trust
Tessa Seward, Dorset Healthcare University NHS Foundation Trust

What is FMD?

The EU Falsified Medicines Directive 2011/62/EU (FMD) and Delegated Regulation ((EU) 2016/161) (The Delegated Regulation) impose legal obligations on the EU medicines supply chain to prevent entry of falsified medicinal products into the legal supply chain from 9 February 2019.

- requires the majority of prescription only medicines (POM) to have both:
  - a unique identifier (contained in a 2D barcode) and
  - an anti-tampering device (a seal)
- introduces legal obligations on the UK medicines supply chain to ‘verify’ the authenticity of the products that it applies to, and ‘decommission’ those products before they are given to patients.

What is FMD?

A central EU database (the European Medicines Verification System; the EMVS database) has been established to which product data will be uploaded, enabling products to be scanned and verified throughout the supply chain.

The national medicines verification system (NMVS) provider in the UK is SecurMed UK.

Organisations are required to register their functions (GP, wholesaler, pharmacist etc.) and locations (where verification and/or decommissioning activity will take place) with SecurMed UK, in order to be able to verify/decommission medicines using their chosen IT system.

Implementing FMD

Invite presentations from:

Arti Punn – NHS Birmingham Community Healthcare Trust

and

Tessa Seward – Pharmacy Operations Manager, Dorset HealthCare

NHS
Birmingham
Community Healthcare
NHS Foundation Trust

Falsified Medicines Directive
FMD

NHS Birmingham Community Healthcare Trust (BCHC)

Arti Punn

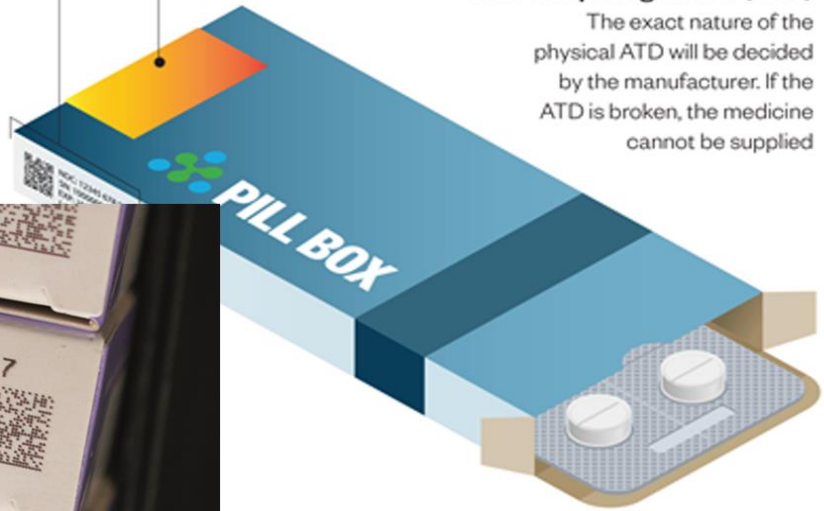
Best Care
Healthy Communities

Unique identifier (UI)

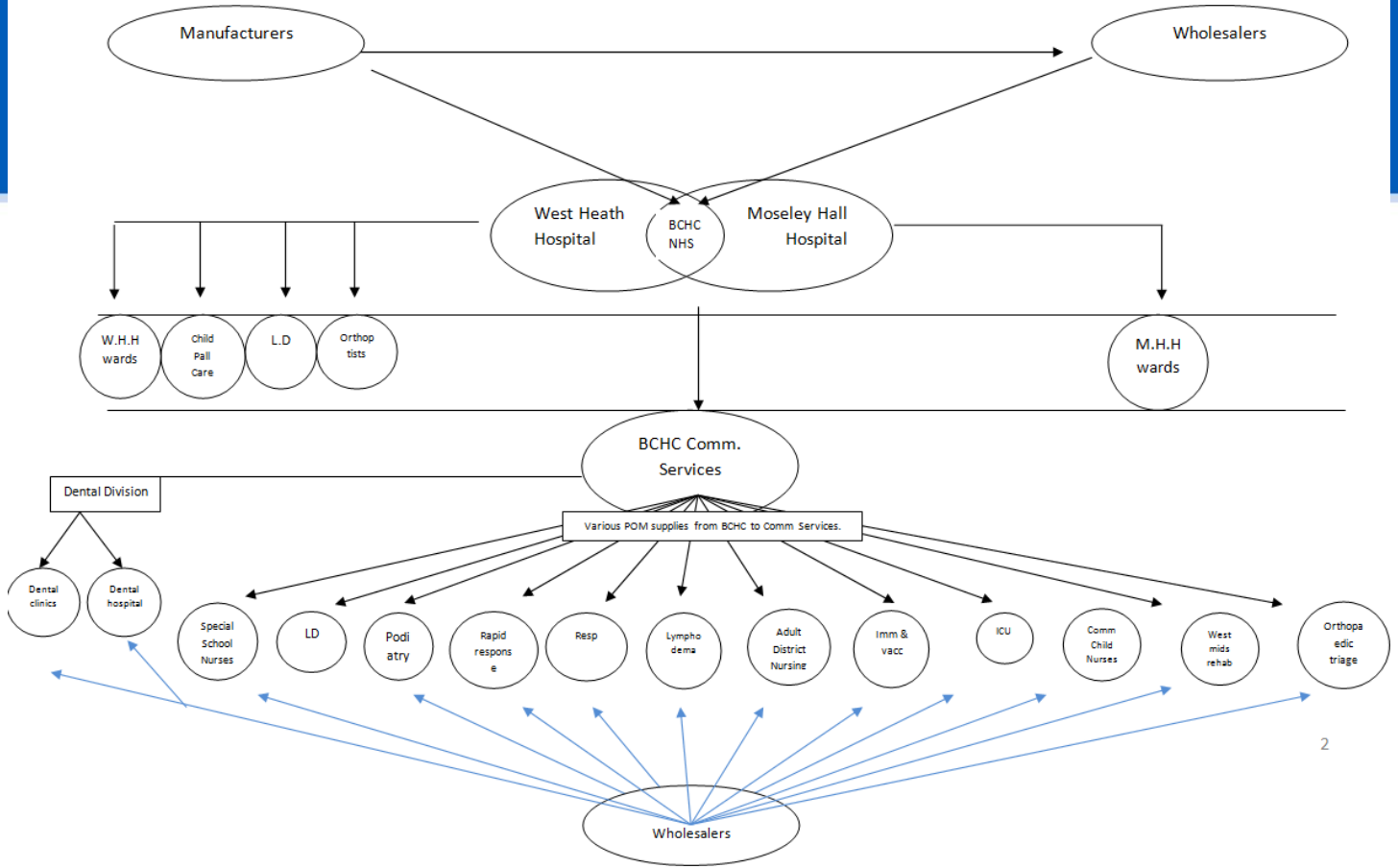
The UI is a unique 2D barcode made up of four key elements (shown below). If the pack size permits, it will also carry the same information printed in text adjacent to the barcode

Anti-tampering device (ATD)

The exact nature of the physical ATD will be decided by the manufacturer. If the ATD is broken, the medicine cannot be supplied



Best Care
Healthy Communities



Best Care
Healthy Communities

A Final Consultation on FMD…

Article 23 provides flexibility in the supply chain about where verification and decommissioning must take place.
It allows Member States to choose whether it is best to require wholesalers to verify and decommission a medicinal product before supplying to certain Article 23 providers, thereby exempting those which fall under that category from the obligation to do so.

Article 23 providers who can be exempted as:

- **persons authorised or entitled to supply medicinal products to the public who do not operate within a healthcare institution or within a pharmacy;**
- veterinarians and retailers of veterinary medicinal products;
- **dental practitioners;**
- optometrists and opticians;
- paramedics and emergency medical practitioners;
- armed forces, police and other governmental institutions maintaining stocks of
- medicinal products for the purposes of civil protection and disaster control;
- universities and other higher education establishments using medicinal
- **products for the purposes of research and education, with the exceptions of healthcare institutions;**
- prisons;
- **schools;**
- hospices; and
- nursing homes.

Best Care
Healthy Communities

Complexity with Immunisations

North Birmingham

South Birmingham

(1) Immunisations & Vaccine Service

- Average weekly vaccine delivery: Flu 1000-3000 per base
- Senior school programme: HPV/ Meningitis/Revaxis: 500-2500 per base

Central Birmingham

Key Issues for FMD Responsibility

- Large quantities received and to be kept within the cold chain supply – **RISK**
- Small working spaces
- Inadequate resources to verify & decommission each vaccine
- Equipment
- Pressure on the roles of nurses
- Aggregate barcoding unavailable

Best Care
Healthy Communities

Immunisation Solution…

ACCOUNTABILITY VS RESPONSIBILITY

Best Care
Healthy Communities

Solution for FMD, Compliance versus Pressure?

- Resources
- Revision of BCHC work processes/current contracts
- Review available funding
- Introduce medicine processes to healthcare staff not routinely used to dealing with them
- Maintaining the cold chain

Best Care
Healthy Communities

Thank You for Your Time

Best Care
Healthy Communities

NHS
Dorset HealthCare University
NHS Foundation Trust

Dorset HealthCare – A Community and Mental Health Trust

Implementing FMD

Tessa Seward
Pharmacy Operations Manager

NHS
Dorset HealthCare University
NHS Foundation Trust

Dorset HealthCare

- Responsible for all mental health and many physical health services in Dorset, providing healthcare at over 300 sites as well as peoples' homes

- 9 Community Hospitals throughout Dorset
  - Inpatient wards, Day surgery, MIUs, Outpatient clinics
- Inpatient units – Mental Health
  - Poole - St Ann's Hospital - 8 wards
  - 9 further units throughout County (located in Poole and West Dorset)

- Community health services (mental and physical) including:
  - CMHTs, Crisis teams, clozapine clinics etc
  - CASH clinics, Podiatry, District Nursing etc.
  - Childhood Immunisation Programme

- Medication Supply *including vaccines*
  - All Bournemouth and Poole – via St Ann's Pharmacy
  - Rest of County – outsourced to Dorset County Hospital (DCH)

Challenges

- Many services
- How many sites should we register?
- Different methods for medication supply

Process Mapping
- when and who to decommission ?

- St Ann's
  - ➢ verify and decommission on receipt in pharmacy .
- DCH ???? - **Separate legal entity**
  - ➢ Named patient meds - responsibility lies with **Supplier**
  - ➢ Unlabelled supplies e.g. stock, school vaccines – responsibility lies with **receiving Trust**
- **Childhood Immunisation Service – *Article 23 doesn't apply***

	St Ann's Pharmacy	DCH Pharmacy
Named Patient Medication *One Stop, Discharge medication*	**Verify and decommission upon receipt from wholesaler**	**Verify and decommission upon dispensing at DCH**
Stock Medication etc.	**Verify and decommission upon receipt from wholesaler**	**Receiving Trust decommissions - Solution in development with DCH**

Phased Approach

- Start at St Ann's with simple short term solution
- Risk Register where non compliant

Solutions

- Supplied by St Ann's – verify and decommission on receipt
  - Now registered with SecurMed
  - Able to decommission for Childhood Immunisation Programme as soon as PHE distribute compliant packs
- Supplied by DCH (separate legal entity)
  - Decommission on receipt at each unit by nurses?
  - Childhood Immunisation Programme - Nurses decommission on school site or team base?

	St Ann's Pharmacy	DCH Pharmacy
Named Patient Medication *One Stop, Discharge medication*	**Verify and decommission upon receipt from wholesaler**	**Verify and decommission upon dispensing at DCH**
Stock Medication etc.	**Verify and decommission upon receipt from wholesaler**	**Receiving Trust decommissions - Solution in development with DCH**

Possible Options for Supply by Trust which is a Separate Legal Entity

- **Stock supplies**

  - Decommission on *supplying Trust's site* by payrolled member of *receiving* Trust

  - *Would need agreement from supplying Trust (N.B. our Trust is not currently pursuing this as an option)*
  - *Would need to double check if possible with MHRA and SecurMed*

- **Childhood Immunisation only**

  - *School nurse teams order directly through Immform and supplies are delivered directly to their bases by Movianto (our Trust is considering a Pilot scheme)*
  - *Register school nurse bases as end user locations with SecurMed*
  - *School nurses could decommission on receipt prior to visiting schools*

Solutions

- **Software**
  - Implementation of ePMA – risk waiting for integrated solution or implement short term fix?
  - Interim : Falsified Medicines App – FOC for first year
  - Thereafter ePMA integrated solution

- **Hardware**
  - 2 cordless barcode scanners Zebra DS 2278. Pre-configured to work with the app.

- **SOPs**

Thank you for Listening

Useful web pages –
https://www.gov.uk/guidance/implementing-the-falsified-medicines-directive-safety-features
https://digital.nhs.uk/services/falsified-medicines-directive-fmd/secondary-care-toolkit
https://digital.nhs.uk/services/falsified-medicines-directive-fmd
www.falsifiedmedicinesapp.co.uk

Public Health England

Protecting and improving the nation's health

EU Falsified Medicines Directive (FMD)

Beth Graham – Lead Pharmacist Immunisation, PHE

Decommissioning

Where decommissioning takes place will vary depending on the set up of the organisation and service being delivered.

PHE will begin distributing fully compliant packs, which will require decommissioning, at different times throughout 2019 and into 2020 see ImmForm News (check regularly as timescales may change).

Immunisations and FMD

Vaccines in the supply chain

Scenarios	FMD Compliant Packs	On EMVS database	Decommissioning required	Comment
1	No	No	No	Entered the supply chain pre - Feb 19.* Unlicensed products
2	Yes	No	No	Check tamper evident seals. Will receive error message when scanned.*
3	Yes	Yes	Yes	Check tamper evident seals. Scan and decommission on EMVS.

*Stocks that are not compliant with FMD may still be supplied where there is no reason to think that the vaccine is falsified.

What to do if you suspect falsification

Any instances of suspected falsification (including physical signs of tampering) are to be reported in the usual way via the yellow card scheme using the ‘Fake’ button.

When decommissioning vaccines an error message may indicate that the medicine is not on the EMVS database. See references for further information.

Sources of further information

MHRA
https://www.gov.uk/guidance/implementing-the-falsified-medicines-directive-safety-features

UK FMD Working Group
https://fmdsource.co.uk/2018/11/22/right-and-wrong-scanning-guidance-for-fmd-early-adopters/

Royal Pharmaceutical Society
https://www.rpharms.com/resources/ultimate-guides-and-hubs/fmd

NHS Digital
https://digital.nhs.uk/services/falsified-medicines-directive-fmd#toolkits

Public Health England

Protecting and improving the nation's health

National Immunisation Network Meeting 2019
Vaccination - back to the future

London

21-22 May 2019

Vaccinating underserved populations

Dr Sadie Bell, Research Fellow, Public Health Evaluation, London School of Hygiene and Tropical Medicine

Dr Ash Banerjee, Screening and Immunisation Lead, Midlands and East, Public Health England

NIHR | Health Protection Research Unit in Immunisation at London School of Hygiene and Tropical Medicine

Exploring vaccination beliefs, attitudes, and behaviours amongst Polish and Romanian communities in England

Sadie Bell

London School of Hygiene and Tropical Medicine
NIHR Health Protection Research Unit in Immunisation

National Immunisation Network Meeting, 22nd May 2019

LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE

Public Health England

Presentation outline

Research background and methods

Findings

- Vaccine-related attitudes and beliefs amongst Polish, Romanian, and Roma Romanian communities
- Factors affecting vaccination
  - Communication barriers
  - Past experiences of health services - service expectations and trust
  - Population transiency
  - Ability to identify and engage with communities

Key messages – ways to improve vaccine access and uptake

Background

- In 2017, there were over 900,000 Polish born residents and just under 400,000 Romanian born residents living in the UK
- There are at least 200,000 Roma living in the UK
- Roma are one of the most marginalised ethnic minority groups in Europe – extensive history of persecution, discrimination, and social exclusion
- Limited research specifically on vaccine-related attitudes and behaviours among Eastern European communities in England

Methods

Study 1 (pre-measles outbreaks):

Focused on 3 areas of England with high Polish and/or Romanian populations (Boston, Lincolnshire; Slough, Berkshire; Brent, London)

- 20 interviews with Polish community members
- 10 interviews with Romanian community members
- 20 interviews with healthcare workers

Methods

Study 2 (in response to measles outbreaks):

Focused on Liverpool, Leeds, and Birmingham - 3 areas in which Romanian and Roma Romanian communities were largely affected by measles outbreaks in 2017/18

- 33 interviews with vaccination providers/key players involved in the outbreak response in the three study sites
- 9 interviews with Romanian women (3 also self-identified as Roma)

Research aims

1. To explore vaccine-related beliefs, attitudes, and behaviours amongst Polish, Romanian, and Roma Romanian communities

2. To explore factors affecting vaccine access, uptake, and delivery

3. To consider ways to improve vaccination access and uptake

Attitudes and beliefs

Measles

'I asked a nurse when I was in Romania. I asked her why do you have vaccinations against measles if they don't protect children and they still get the measles? And she said it happens for them to still get it.'

(Study 2: Participant #2, Romanian mother with 5 children, living in the UK for 3 years)

Flu

'….my attitude is, there are vaccines that are silly not to take, because the danger of the disease is such that you don't want to take that risk…..we can just manage without a [flu] vaccine'

(Study 1: CM#22, Polish mother with one daughter, living in the UK for 10 years)

Attitudes and beliefs

Perceptions of measles

'….the thought was that it wasn't particularly a disease that they worried about, so I don't know whether it was the attitude to the vaccine or the attitude to the disease…they didn't seem overly concerned.'

(Study 2: Birmingham, Provider #25)

Concerns about vaccine safety

'my concerns are that if they get the injections, they risk getting other diseases, illnesses…..of course, some children got fever afterwards and cold-like symptoms, some of them had their throats swollen, lung conditions that lead to cancer. This is my opinion.'

(Study 2: Participant #2, Romanian mother with 5 children, living in the UK for 3 years)

Communication barriers

Accessibility of vaccination information in translated forms

'I didn't understand all of the vaccinations at the time…. because all the information that I was provided with, all of it was in English'

(Study 1: CM#2, Polish mother with one daughter, living in the UK for 11 years)

Written and spoken language barriers

'A large number of them don't read. They can't read Romanian. We also struggle with their understanding even in spoken language, so even through interpreters. The interpreters often tell us they're struggling.'

(Study 2: Leeds, provider #12)

Communication barriers

Difficulties providing informed consent

'I used my phone to translate and ticked a few boxes. But they [the school nurses] told me that I didn't fill the form well and I missed several points in it.'

(Study 2: Participant #6, Roma Romanian mother with 4 children, living in the UK for 2 years)

Communication during consultations

'Getting translators, it can be expensive, it's timely and then are there going to be words, sentences, technical jargon, is it going to get lost in translation? So, there's always that risk'

(Study 1: HCW#3, Specialist nurse)

Different expectations of vaccination delivery

Vaccination provider and no examination before vaccination

'I do not like it, for example, that children are not tested (checked) before vaccination. [The decision to give the vaccination] depends on the parent's opinion whether the child is healthy or not, but it is sometimes difficult to really judge whether a child is healthy, if he or she goes with a cold, or I do not know, with something.'

(Study 1: CM#12, Polish mother, living in the UK for 12 years)

GP waiting areas

'…..[When you attend for vaccinations] you sit in a completely different room because your child is not sick, so you don't want your child to be exposed to the rest of the sicknesses, you know, like something can be contagious and you don't want your child to be vaccinated and come home with something else.'

(Study 1: CM#2, Polish mother, living in the UK for 11 years)

Different expectations of vaccination delivery

Vaccination timings

'.....if you look at some of the schedules in Poland and Romania, they have more appointments.....So they schedule theirs, they spread it over more [time] I think'

(Study 1: HCW#16, Practice Nurse)

Choice of formulations

'In Poland you get three separate jabs [for MMR]. If you want to have it in one jab, you have to pay extra for it.'

(Study 1: CM#10, Polish mother, living in the UK for 14 years)

Choice of vaccination brands

'...the GP [in Romania] told us, "just use this one." I think they might have told us, "If you want," you know, "I can give you this standard free of charge one. If you want your real one, you just go to the pharmacy, buy it, bring it, we'll do it, off you go." (Study 1: CM#4, Romanian father, living in the UK for 9 years)

Past experiences and trust in health services

‘I was afraid to have the vaccination for the boy. I was afraid because in Romania a lot has happened, I got scared and I refused……why did I refuse? Because someone in our village in Romania died because of the vaccination. The vaccine wasn’t done properly. I was afraid when [my] boy was born to have the vaccine on him. I refused the vaccination.’

‘she had a child in Romania who passed away when the child was four months old, that’s why she doesn’t trust in doctors too much, because she was in the hospital with her child and they said everything is okay, they could go back home, and after three days her child passed away.’

(Study 2: Participant #8, Romanian mother with 3 children, pregnant with her 4th child, living in the UK for 2 years)

Population Transiency

Frequent travel to Poland and Romania

'[Romanian families] go back to Romania so they will sort of disappear and you won't know where they are and then they will turn up again probably six, seven, eight months later.'

(Study 1: HCW#4, Specialist Health Visitor)

Returning to the UK with unknown or unrecorded vaccination history

'The main problem is, a lot of [Polish and Romanian families] come back, maybe, without the immunisation histories, or some of them come with no immunisation history from abroad.'

(Study 1: HCW#9, Practice Nurse)

Ways of reaching communities

Working with children's centres

'The key person was the Children Centre Manager….we put on a community meal in the evening in the Children's Centre. Now [the Children's Centre manager] does that regularly so she feeds these kids in school holidays because if they don't get a school dinner, they go short. So that's not unusual.'

Importance of pre-existing community knowledge and links

'[Knowing the community] it made a big difference to who was round the table because it meant then that when I started phoning around to get people to come to the outbreak meeting, we got the right people.' (Study 2: Liverpool, Provider #28)

Key messages

- Barriers to vaccination access, uptake, and delivery are multi-factorial and difficult to overcome.

- Challenges include overcoming communication barriers and different cultural expectations

- Ideas for improvement include: improving the readability and accessibility of credible vaccination information (in translated forms), providing greater support to HCWs to overcome language and cultural barriers, considering vaccine schedule travel disruptions, and encouraging the discussion of service expectations between HCWs and community members (particularly recent migrants)

- Need to develop and maintain links with communities – a more proactive and consistent approach to engagement– and think beyond the more traditional approaches that are used to reach communities

NIHR | Health Protection Research Unit in Immunisation at London School of Hygiene and Tropical Medicine

LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE

Public Health England

Acknowledgements

Thank you to all participants for their time and contribution to this research and to:

Sandra Mounier-Jack (LSHTM)

Mateusz Zatoński (LSHTM)

Vanessa Saliba (Public Health England)

Michael Edelstein (Public Health England)

Mary Ramsay (Public Health England)

Thank you to the National Institute for Health Research for funding this research as part of the Health Protection Research Unit in Immunisation (http://immunisation.hpru.nihr.ac.uk)

For further information contact Sadie Bell (sadie.bell@lshtm.ac.uk)

Public Health England

Interventions to improve vaccine uptake in Romanian and Roma traveller communities in Birmingham

22nd May 2019 – PHE National Immunisation Network Meeting

Dr Ash Banerjee, Screening & Immunisation Lead, PHE (WM) and NHSE/I Midlands
ashisbanerjee@nhs.net

Plan

- Birmingham measles outbreak
- Organisation of the response
- Estimating the size of the problem
- Romanian population
- Immunisation interventions
  - School Age Immunisation Service (domiciliary, school)
  - GP practices (targeted, enhanced service)
  - Direct letter to parents
- Reflections
- Ongoing work

Birmingham measles outbreak

- November 2017 to June 2018
- First case on 24 November 2017. Initially Birmingham, then Solihull & Warwickshire.
- Mainly Roma or Romanian children. By 22nd December 2018: 16/24 confirmed cases were Romanian. Mean age 7 (range 4 months to 25 years of age).
- By 18th June 2018, there were 116 confirmed measles cases and 20 likely cases. Most cases were in the non-Romanian population.
- Local PHE Screening & Immunisation Team (SIT) covers a wider area – WM DCO (Birmingham, Solihull, Black Country, Worcestershire, Herefordshire, Coventry, Warwickshire)

Organisation of the response

Group	Responsibility	Chair
Measles incident group	PHE Health Protection Unit has lead responsibility for overall management of the incident	Consultant in Health Protection (PHE)
Measles outbreak MMR group	PHE and NHSE (WM) 7a Commissioning Team has lead responsibility for coordinating the section 7A immunisation activity related to the incident. The measles incident group advises on what response is required after discussing with chairs of the MMR and engagement groups, who are part of the Incident group.	Screening & Immunisation Lead (PHE and NHS England)
Measles outbreak Engagement group	Birmingham and Solihull LAs have lead responsibility for community engagement in their respective geographical areas	Birmingham LA

Estimating the size of the problem

Criteria	% uptake (Source: COVER)		
	2016/17		
	Birmingham	Solihull	England
MMR1 at 2 yrs	88.0	95.4	93.2
MMR1 at 5 yrs	94.9	97.8	96.7
MMR2 at 5 yrs	82.9	93.3	89.9

ALL THOSE REGISTERED AND/OR RESIDENT BIRMINGHAM & SOLIHULL (Source: CHIS)				
	0 MMR	1 MMR	2 MMR	Need immunisation
13 months to 3.5 years	7562	(39025)	(1288)	7562
3.5yrs to 5 yrs	1716	5925	(21602)	7641
5 to 15 yrs	14379	16047	(159772)	30426
Needs immunisation	23657	21972	0	45629

Note: Figures in brackets are children who have been fully vaccinated according to their age and do not contribute towards the number who need vaccination

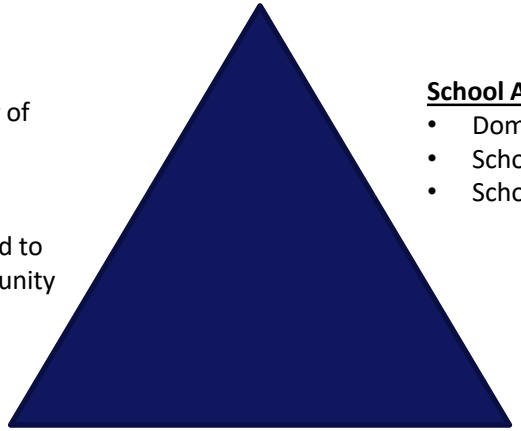
Romanian population

- ‘Roma’ vs ‘Romanian’
- Different communities:
  - B8/9: Lalomita county, traditional, less engagement with statutory services, lower literacy
  - B20, B21, B18, B6: Bacu and Craiova, registered at 3 GP practices
  - B10/11: mainly one large extended family, more integrated and engaged in local services
- Transient
- Variable English language skills
- Children’s Centres not used
- GP practices were more trusted venues. Most registered with a GP but would often present at hospital for health problems.
- Lack of school data from cases
- LA database of 3200 Roma children in Birmingham but unable to use – IG and capacity issues

Immunisation Interventions

GP Practices

- Practices with high number of Roma/Romanians
- MMR catch-up enhanced service in outbreak area
- All WM DCO practices urged to offer MMR at every opportunity



School Age Immunisation Service

- Domiciliary service to households of cases
- Schools with high numbers of Roma children
- School sessions in outbreak area

Communications - increase awareness

- Communications to professionals
- LA engagement with communities
- Direct mailing to parents

School Age Immunisation Service (SAIS) response

- Domiciliary visits to homes of measles cases
  - 17 MMRs given in 8 households targeted
  - Knocking door to door not welcome
  - Van and hot food may have worked better
- Schools with large number of Romanian children

School	Number vaccinated
School 1	12 vaccinated
School 2	9 vaccinated
School 3	21 vaccinated (136 eligible)
School 4	55 vaccinated (97 eligible)

- Schools with low MMR
  - Identified 20 schools in the outbreak area with at least 100 MMRs required
  - 220 / 2704 children immunised (8.1%)

GP response

- Initial work with 3 GP practices with known high Roma populations
- 1 practice invited all Roma patients to an immunisation session
  - Identified using ethnicity (33), others with same family name (33+227=260), MMR status incomplete (120 out of 260)
  - 120 patients invited by telephone and SMS
  - Practice immunised registered patients
  - SAIS immunised others
  - 12/120 immunised plus another 19 immunised from family groups who also turned up to the session

GP Enhanced Service (ES)

- Outbreak postcode defined as one with 2 or more confirmed measles cases
- ES offered to all practices in the outbreak postcode in rolling manner
- Offered due to exceptional circumstances + time-limited
- Requirements:
  - Identify all 13 months to < 16 with no MMR
  - Enhanced invitation (phone call/text, letter only if unsuccessful)
  - £2.50 per invite, £7.30 per immunisation
- Results:
  - 100 / 106 practices signed up (intensive CCG follow-up)
  - 10,966 children identified as no MMRs
  - 9028 contacted (82.3% of those with no MMR)
  - 1595 immunised (17.7% of those contacted)

CHIS Letters

- 16690 letters sent out to those 13 months to 5 years of age needing MMR
- 6664 (39.9%) were subsequently immunised

Patient name: insert name

DOB: insert DOB

LARGE SCALE MEASLES OUTBREAK IN BIRMINGHAM AND SOLIHULL

DON'T LET YOUR CHILD CATCH MEASLES

GET THEM VACCINATED WITH THE MMR VACCINE

Our records show that your child may not be fully protected against measles

Please contact your GP practice <u>now</u> to check if they need the MMR vaccine and to arrange an appointment (you can note the appointment details below)

- The measles outbreak is affecting children in Birmingham and Solihull who have not had their MMR vaccine
- Most of the children who have caught measles have become very ill and have been hospitalised
- Measles can lead to meningitis or pneumonia – in rare cases it can be fatal
- Measles is extremely infectious and spreads easily. The only way to protect children is to make sure they are up to date with their MMR vaccines.

The misery and illness associated with measles can be avoided. The MMR vaccine protects against measles, mumps and rubella. It is safe, effective and available free on the NHS.

More detailed information is available overleaf including links to national resources.

Yours sincerely,

Dr Ash Banerjee
Screening and Immunisation Lead
Public Health England and NHS England

----------✂----------

Please record the date and time of your GP vaccination appointment here and put it in an obvious place in your home.

Vaccination appointment: **on: _____/_____/_____ at _____am/pm**
Date **Time**

Reflections

- Initial approach to immunise Roma community had difficulties:
  - Poor engagement and services for Roma – difficult to identify population for awareness arising or offer of immunisation sessions
  - Resistant health beliefs compared to other outbreak areas in England
  - Difficult to organise services around Christmas and New Year
- Every extra MMR achieved was valuable and uptake through CHIS invite letter was effective
- Valuable learning
  - Services and engagement for underserved populations is a key component for measles elimination
  - Need to think through use of LA database on Roma children
  - Roma population very mixed

Ongoing work – see poster in exhibition area

- CHIS letters to 5-15 year olds – rejected (data quality)
- SAIS workshops x 2 – routine and outreach work, procurement
- Measles Health Needs Assessment – cohort susceptibility mapping (CHIS)
- PHE WM Centre measles elimination plan – LAs/CCGs/PHE/NHSE
- WMSIP – WM Screening and Immunisation Partnership – STP footprint LA/CCG groups
- Ongoing practice work: immunisation training audit, QLIST elimination plan, practice dashboard
- Support LAs: migrant workers in rural areas
- Increase HV awareness and training

Acknowledgements

- Other members of PHE and NHSE/I Screening & Immunisation Team (Yvonne Green, Diane Beale, Beckie Davies)
- PHE Health Protection (Bharat Sibal)
- Birmingham Local Authority (Chris Baggot)

Public Health England

Protecting and improving the nation's health

National Immunisation Network Meeting 2019
Vaccination - back to the future

London

21-22 May 2019

Vaccination in pregnancy programme

Ana Llamas, Public Health Registrar, Imperial NHS
Katie Harrison, Midwife from Royal Devon and Exeter Hospital

Public Health England

Background

- Pertussis (or whooping cough) is caused by a bacterium, *Bordetella pertussis*
- **Symptoms:**
  - It usually presents with an initial catarrhal stage, followed by an irritating cough and intense coughing spells (paroxysmal) within the first two weeks.
  - Coughing spells are often followed by a characteristic “whoop” or by vomiting.
  - In babies coughing bouts may be followed by apnoea

Public Health England

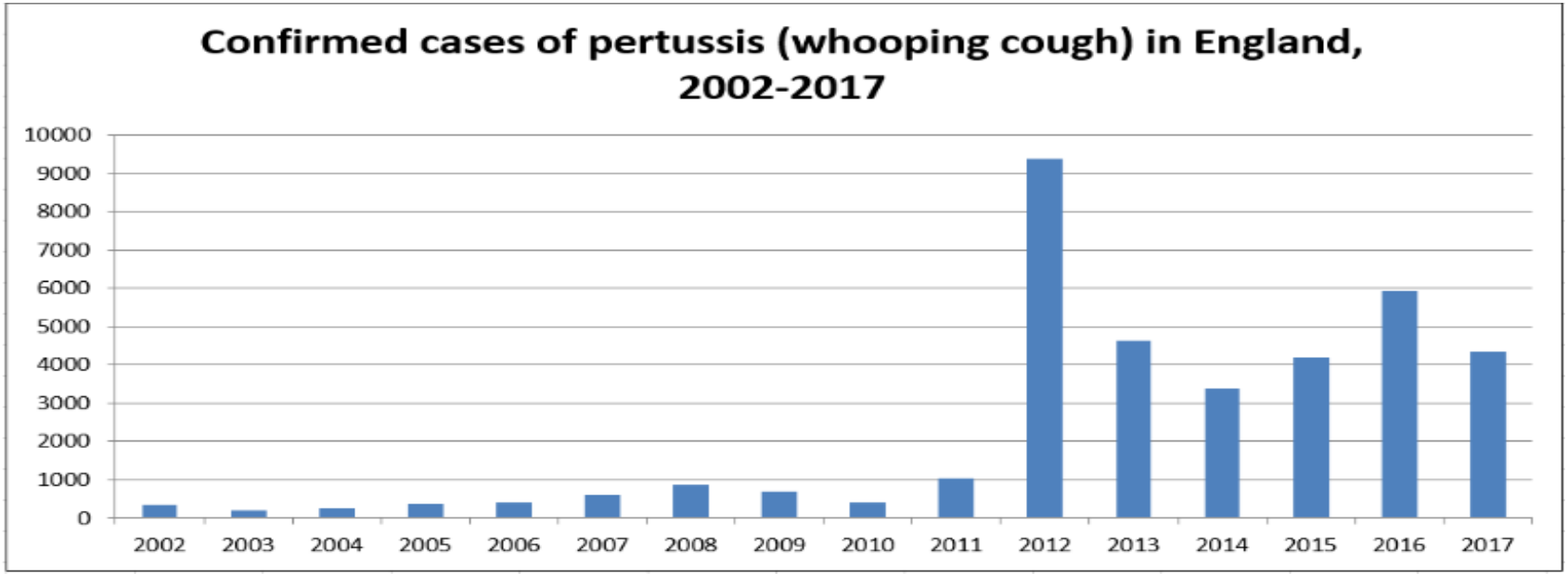
Background

Public health importance:

- It is a highly infectious respiratory disease.
- It is vaccine-preventable.
- Less severe in adults and older children.
- Most severe in young infants (<3m); highest mortality and morbidity.

Public Health England

Background



Source: Public Health England Archive and Public Health England pertussis reports

Public Health England

Background

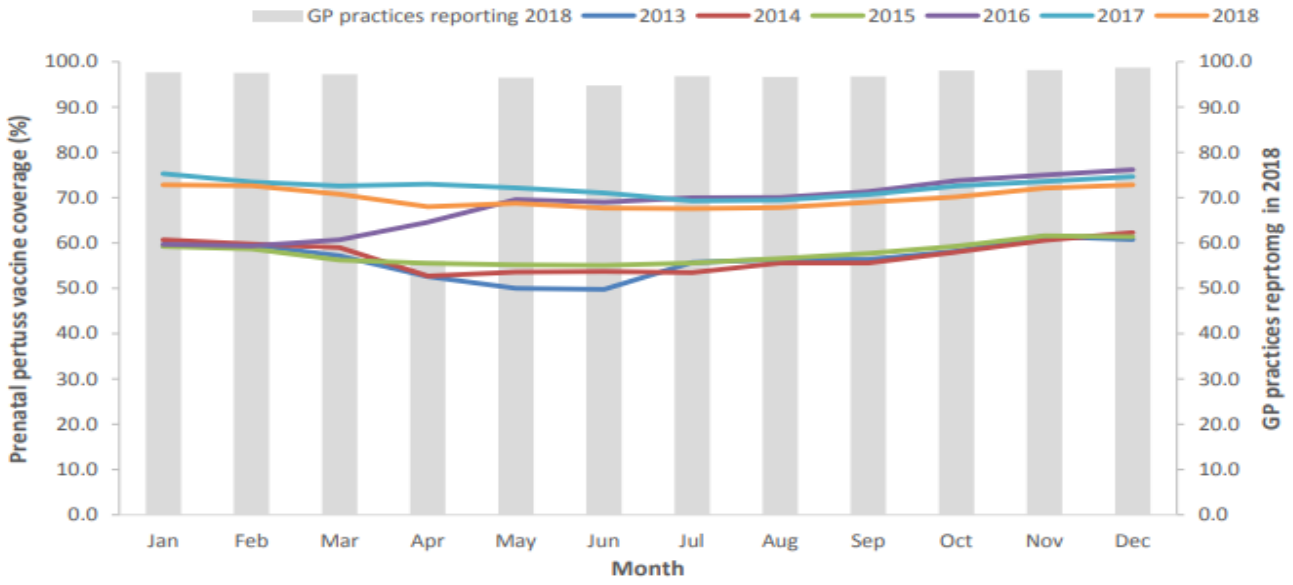
Maternal pertussis immunisation programme

- In April 2012, the then Health Protection Agency (now PHE) declared a national outbreak of pertussis.
- A temporary immunisation programme for pregnant women was introduced in October 2012.
- Currently, pertussis vaccine is recommended between weeks16-32 of pregnancy.
- This aims to passively immunise new-borns (through intra-uterine transfer of maternal antibodies to the foetus) until they are old enough to be vaccinated themselves (8 weeks).

Public Health England

Background

Figure 1. Monthly pertussis vaccination coverage (%) in pregnant women: England, 2013-2018



Source: PHE, 2019.

Public Health England

Background

Maternal pertussis immunisation programme

- Prenatal pertussis immunization has proven to be an effective, safe, and cost-effective strategy to reduce pertussis incidence among infants too young to be immunized.

- In England, since the programme started:
  - Cases in infants (**<1year of age**) are declining.
  - Pertussis incidence in **<3 months** of age has dropped from 234/100,000 in 2012 to 30/100,000 in 2018.

Public Health England

Background

Maternal pertussis immunisation programme

- Initially, pertussis vaccine was only given through primary care.
- Coverage is around 70% ; 30% still missing out on a potentially life-saving vaccine for new-borns and there is evidence of social inequities in pregnant women's access to it .
- In April 2017, pertussis vaccine made available through maternities as well as primary care. Providing pertussis vaccine as part of routine midwifery care was expected to widen access to the vaccine and lead to higher coverage.
- However, little is know about how the programme is working.

Public Health England

Aims & objectives

Overall aim:

To describe the maternity delivery model of prenatal pertussis vaccination in England and its impact on coverage to inform future policy on pertussis vaccination in pregnancy.

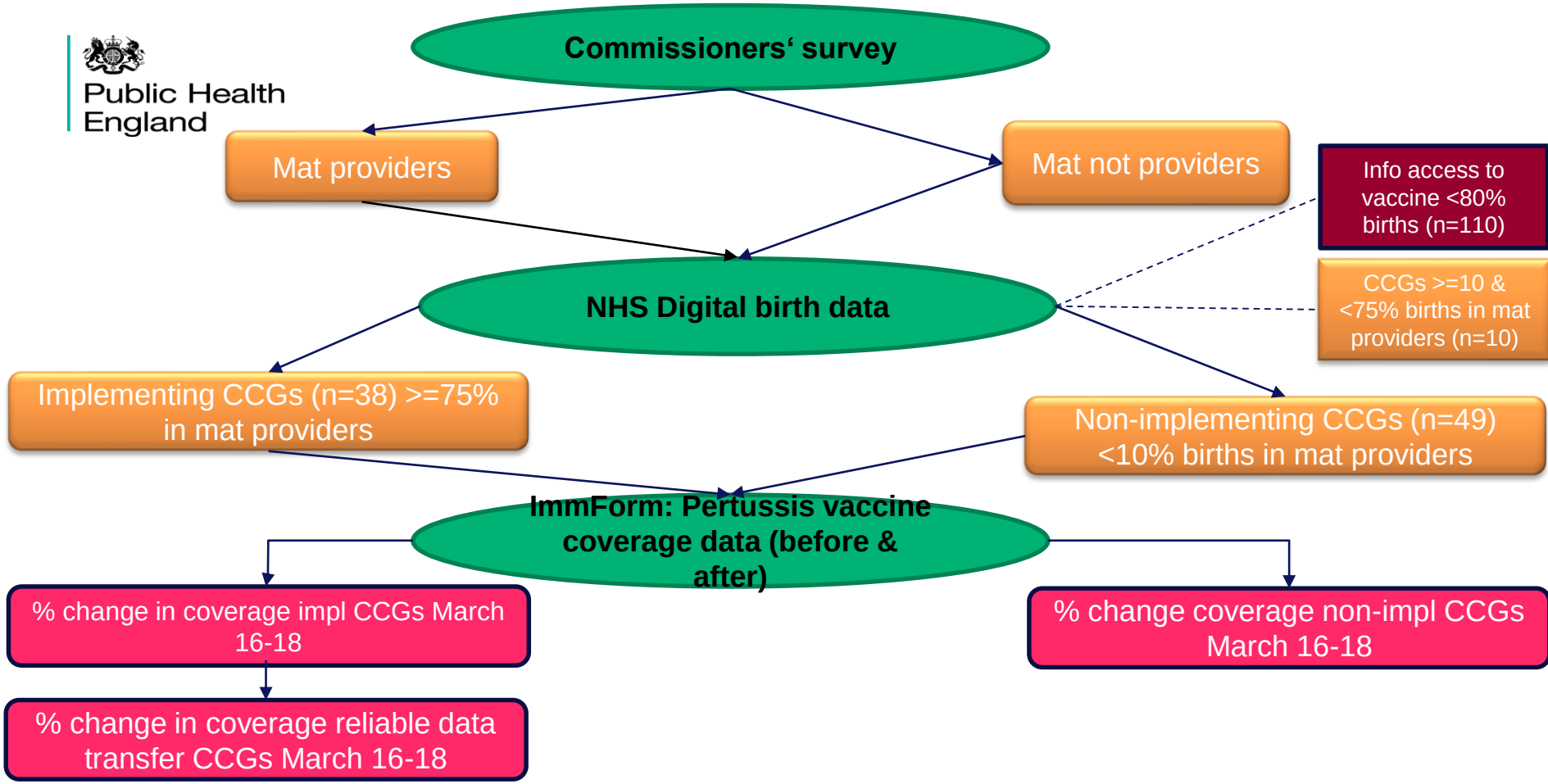
Objectives:

1. To describe the extent to which a national recommendation to provide pertussis vaccine through maternity services as well as GPs in England is being implemented.
2. To describe the transfer of pertussis vaccination data from maternity units to primary care.
3. To assess the impact of the delivery model of prenatal pertussis vaccine on coverage.

Public Health England

Methods: Data sources

1. **Survey of commissioners of maternity services**
   - Online self-administered questionnaire about pertussis and flu immunisation
2. **ImmForm pertussis vaccine coverage data**
   - ImmForm estimates vaccine coverage based on GP records
   - Available at various levels (e.g. CCG) but not maternity unit level.
3. **NHS digital birth data per maternity and CCG**
   - Matrix dataset of the no. births in 2017-18 by CCG and maternity.
   - We determined for each maternity the % women who originated from each CCG.


Public Health England
Commissioners‘ survey
Mat providers
Mat not providers
Info access to vaccine <80% births (n=110)
NHS Digital birth data
CCGs >=10 & <75% births in mat providers (n=10)
Implementing CCGs (n=38) >=75% in mat providers
Non-implementing CCGs (n=49) <10% births in mat providers
ImmForm: Pertussis vaccine coverage data (before & after)
% change in coverage impl CCGs March 16-18
% change coverage non-impl CCGs March 16-18
% change in coverage reliable data transfer CCGs March 16-18

Public Health England

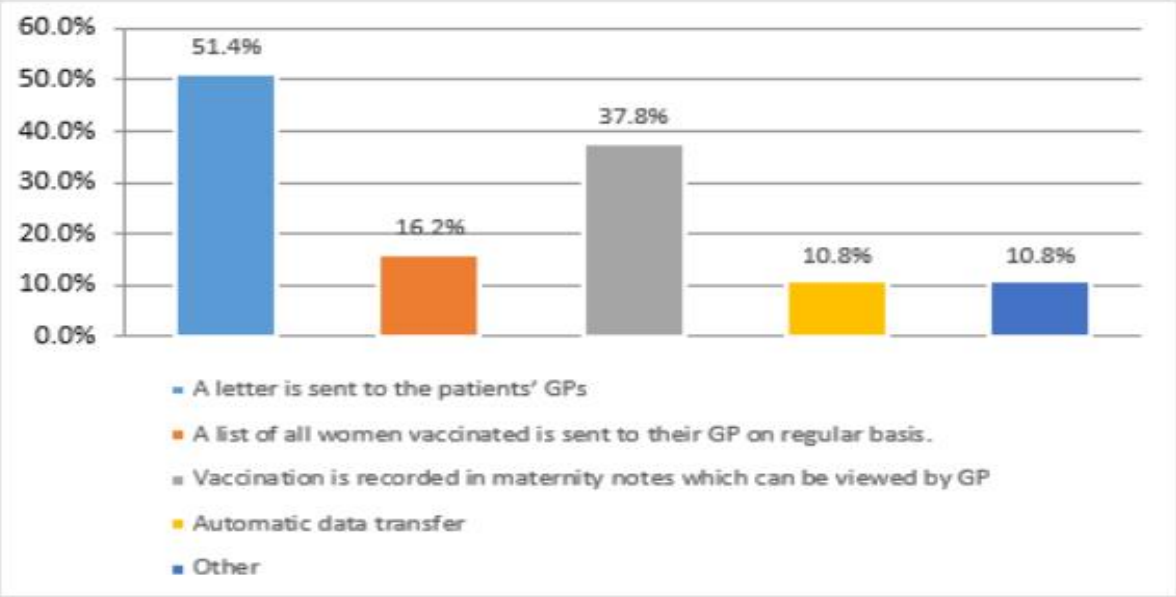
Results:

- Survey: 100% response rate (although incomplete answers)
- 61% (n=141) mat units offering the vaccine 2017-18.
- 70.1% (n=100) commissioners were planning to commission mat units to deliver the vaccine in 2018-19
- How maternities deliver the vaccine (more than one answered allowed)
  - In 95% of mat units it's given in ANC
  - 55% at 20/40 USS
  - 25% others (e.g. opportunistic-DAU, extra appt.)

Public Health England

Results

Prenatal pertussis vaccine data transfer between maternity units and GPs in England, 2018



Public Health England

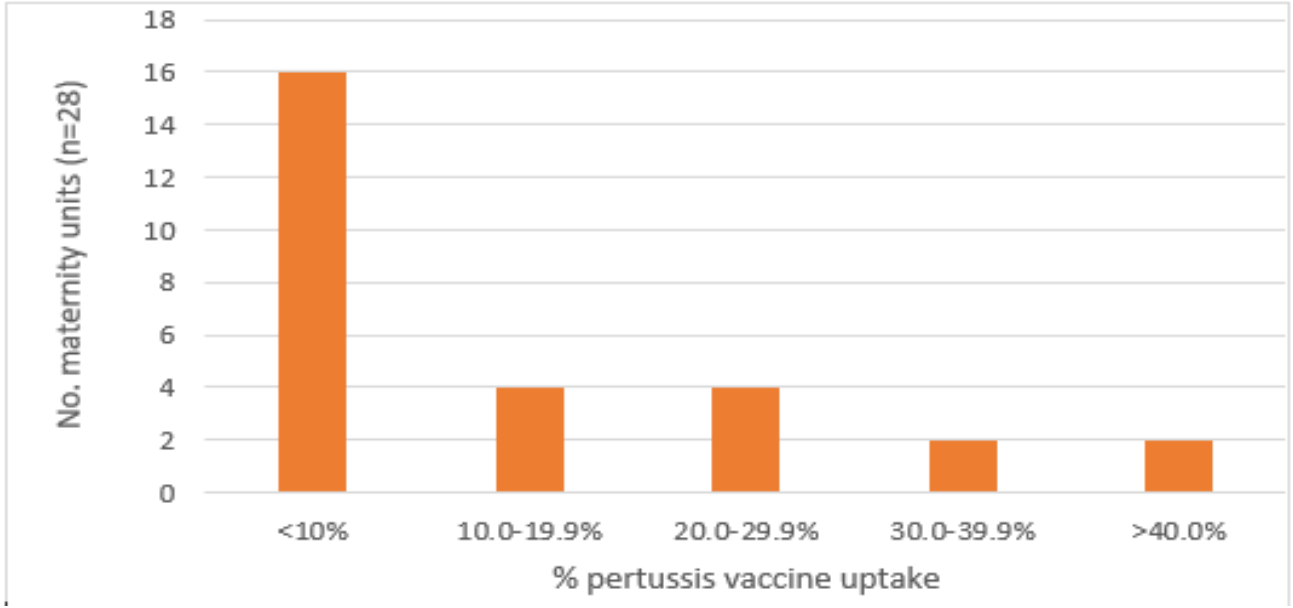
Results

- In England, 61.2% of births took place in mat units where the vaccine was available in 2017-18.
- 44,913 pertussis vaccine administered through mat units.
- However, only 6.9% of women received the vaccine through mat units (possible more as missing data).

Public Health England

Results

No. maternity units in England by % pertussis vaccine uptake, 2017-18.



Public Health England

Results

CCGs	Pertussis vaccine coverage March 2016	Pertussis vaccine coverage March 2018	% Change in pertussis vaccine coverage
Non-implementing CCGs	63.1%	76.0%	20.5%
Implementing CCGs	57.7%	68.0%	17.8%
Implementing CCGs with reliable methods of data transfer	49.7%	63.2%	27.2%

Public Health England

Results

Insights from free-text data suggest significant implementation challenges:

> *"The pertussis vaccination programme was commissioned in 2017/18; however no vaccinations were delivered. A Service Development Improvement Plan has been agreed with the Trust for 2018-19 to ensure implementation" (Commissioner 1).*

And difficulties with data transfer between mat units and primary care;

> *"GPs are required to enter that a vaccine has been given by another provider onto the patient's record. They do not always upload this information onto ImmForm. Therefore, some data for flu and pertussis [vaccine] given by other providers may not be reaching Immform. This will mean that the national return is not accurate, and a low uptake rate could be an inaccurate reflection of the true uptake rate.* […]. We are reluctant to encourage other maternity units to deliver flu and pertussis until the issue of accurately reporting uptake to ImmForm is resolved*" (Commissioner 2)*

Public Health England

Results

Data is not being adequately transferred from maternity units to primary care in an extractable format so it's likely that we're underestimating coverage:

- According to ImmForm there were 7,886 pertussis vaccines given by healthcare providers other than primary care in 2017-18.
- However, according to our commissioners' survey, 44,913 pertussis vaccines were given in mat units. So, over 82% of vaccines given by other healthcare providers are "missing" in ImmForm.
- Prenatal pertussis coverage may be about 6% higher than currently estimated.

Most importantly, it appears that the increase in coverage in implementing CCGs is due to women who would have not been vaccinated otherwise.

Public Health England

Conclusions & Recommendations

1. The JCVI recommendation to provide prenatal pertussis vaccine has been taken up locally.
2. Widening access to pertussis vaccine through maternity units appears to have had a moderate but important impact on women's vaccine uptake and this is likely to include women who would have missed the pertussis vaccine otherwise.
3. Data is not being adequately transferred from maternity units to primary care in an extractable format and this needs to be addressed in order to estimate coverage accurately.
4. This study suggests that there are significant implementation challenges; these should be further explored and addressed.
5. Pertussis disease levels remain high in the community and maternal immunisation is the most effective strategy to protect young infants. Thus, health professionals need to continue promoting it and more mat units need to offer it as part of routine ANC.

Public Health England

Thank you!

Ana.Llamas@phe.gov.uk

Public Health England

Analysis

1. Descriptive analysis of commissioners' survey
2. Maternity categorisation and data linkage
   - From the survey maternities providing the vaccine were identified
   - Linking the survey to NHS digital matrix: I determined the % of births in each CCG where women had access to the vaccine* (110 CCGs excluded for lack of information)
   - Categorised remaining 97 CCG according to % women who had access to vaccine through mat units:
     1. 49 Non-implementing CCGs: less than 10% of births in mat units that provided the vaccine
     2. 38 Implementing CCGs: at least 75% of births in mat units that provided the vaccine
     3. 10 CCGs were excluded (%of births in mat units where vaccine was >=10% and <75%)

Public Health England

Analysis

1. Then, I obtained uptake data before (March 2016) and after (March 12018) pertussis vaccine was introduced in mat units for implementing and non-implementing CCGs.
2. I calculated prenatal pertussis vaccine uptake for implementing and non-implementing CCGs in March 2016 and March 2018.
3. I compared the **proportional change** in vaccine uptake during this time period between implementing CCGs and non-implementing CCGs.
4. Proportional change was calculated for each group as:

[(Uptake in March 2018-Uptake in March 2016)/Uptake in March 2016]*100

5. Sub-analysis of CCGs with good data transfer methods

Public Health England

Results

Insights from free-text data suggest significant implementation challenges:

> *"The pertussis vaccination programme was commissioned in 2017/18; however no vaccinations were delivered. A Service Development Improvement Plan has been agreed with the Trust for 2018-19 to ensure implementation" (Commissioner 1).*

And difficulties with data transfer between mat units and primary care;

> *"GPs are required to enter that a vaccine has been given by another provider onto the patient's record. They do not always upload this information onto ImmForm. Therefore, some data for flu and pertussis [vaccine] given by other providers may not be reaching Immform. This will mean that the national return is not accurate, and a low uptake rate could be an inaccurate reflection of the true uptake rate.* […]. We are reluctant to encourage other maternity units to deliver flu and pertussis until the issue of accurately reporting uptake to ImmForm is resolved*" (Commissioner 2)*

The Pregnancy Immunisation Service

Royal Devon and Exeter
NHS Foundation Trust

NHS 70 YEARS OF THE NHS 1948 - 2018

The Pregnancy Immunisation Team

The beginning:


uvex
SURGICARE PLUS

The Challenges


5
6

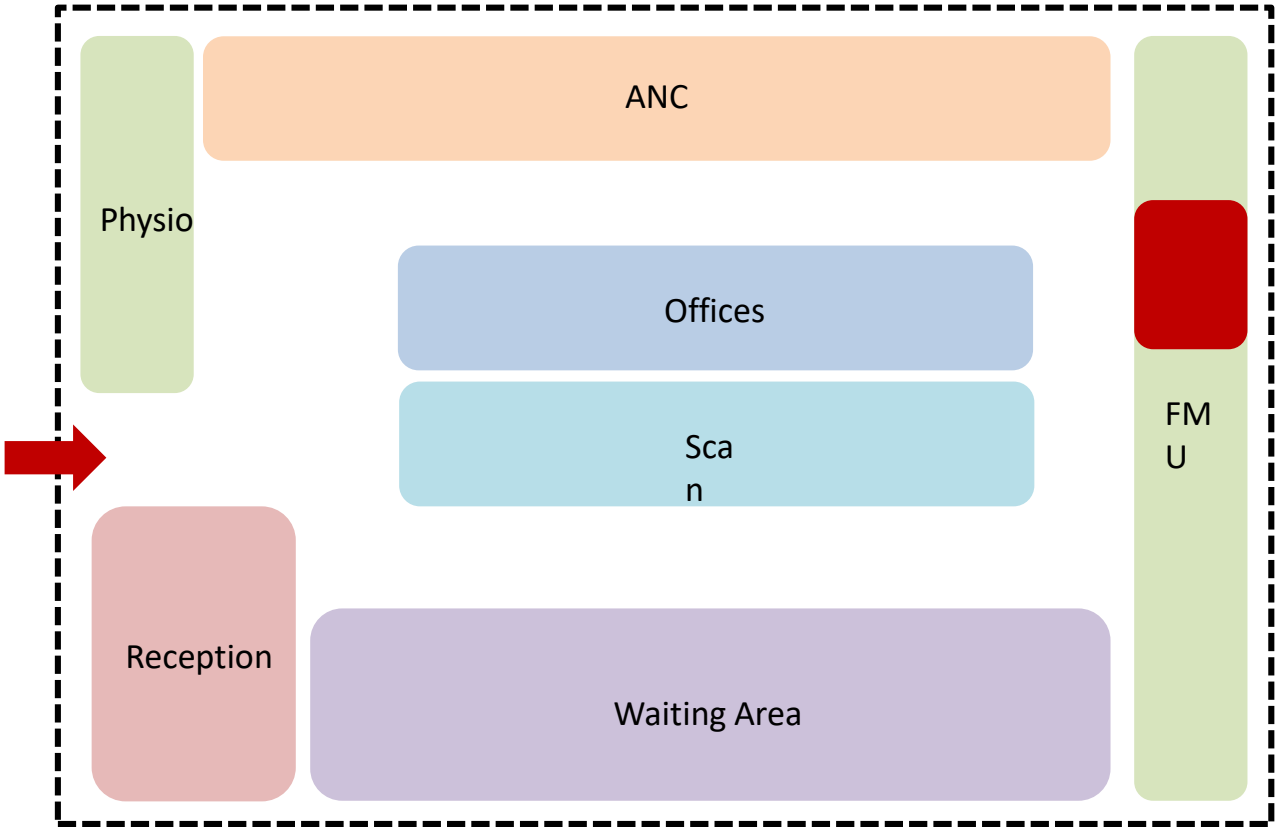

MacBook Air


12
1
2
3
4
5
6
7
8
9
10
11
Radio Controlled

Key points to the programmes success

The secret of success!

Sketch of department, and siting of pregnancy immunisation service

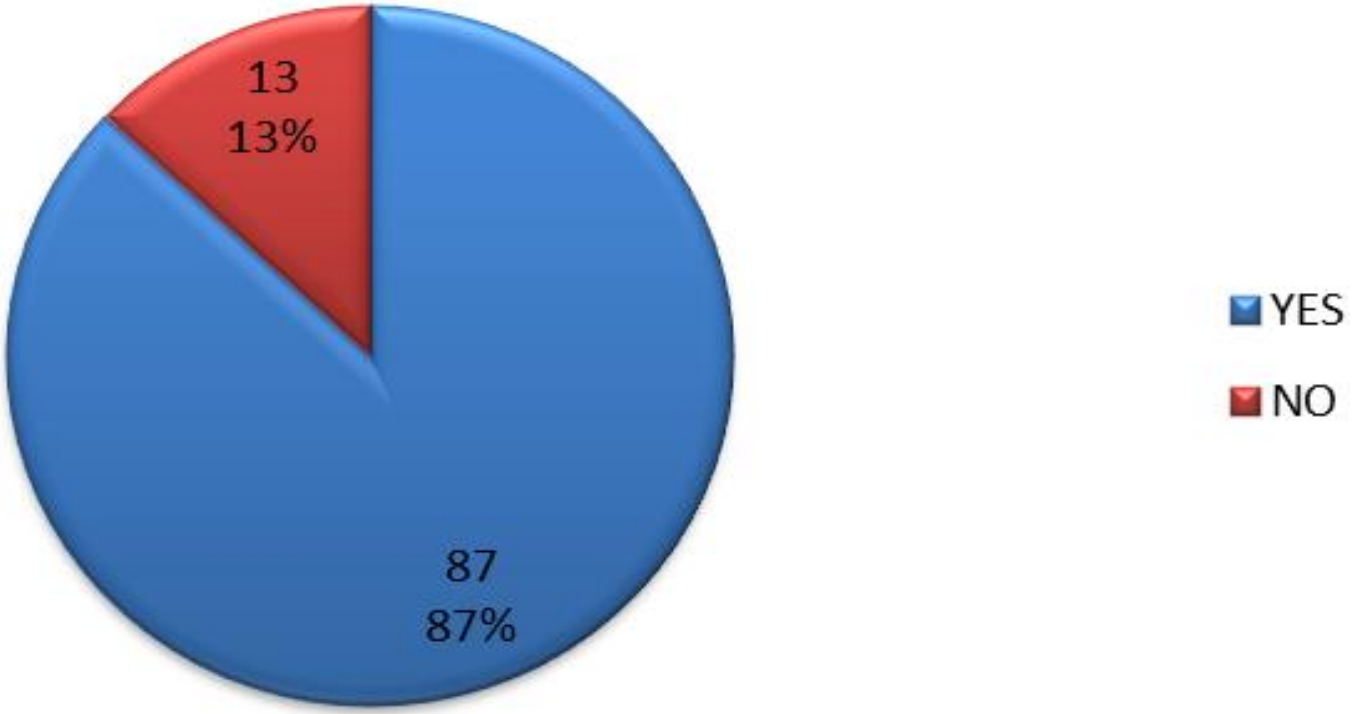


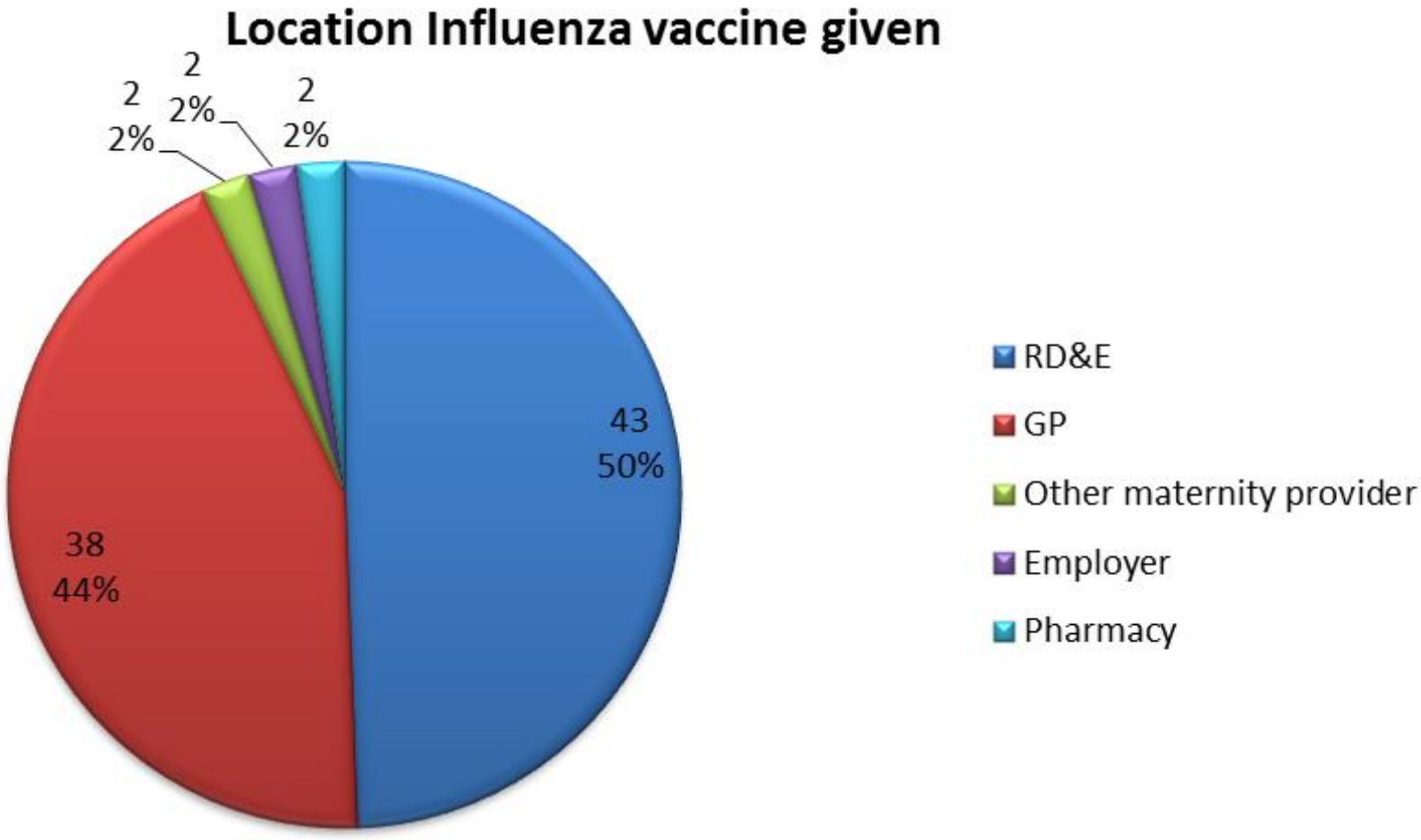
How the service works

- Booking with a Midwife
- First trimester scan appointment.
- 16 week appointment reoffer.
- 20 week scan.
- GP offer too.

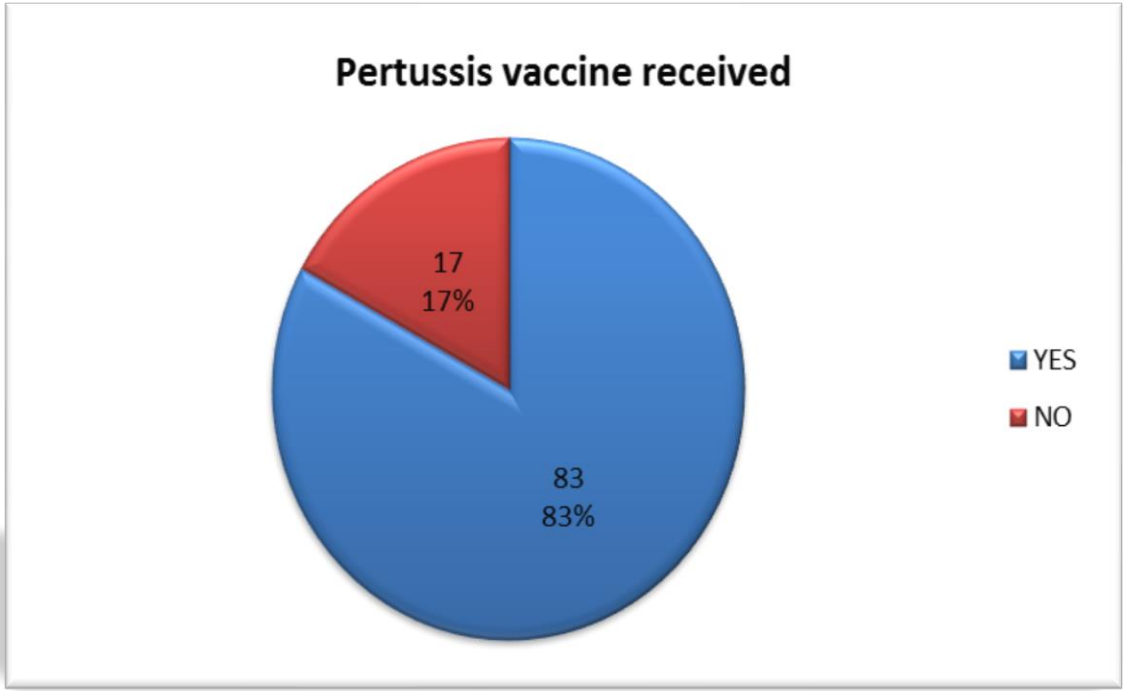
Evaluation

Influenza vaccine received

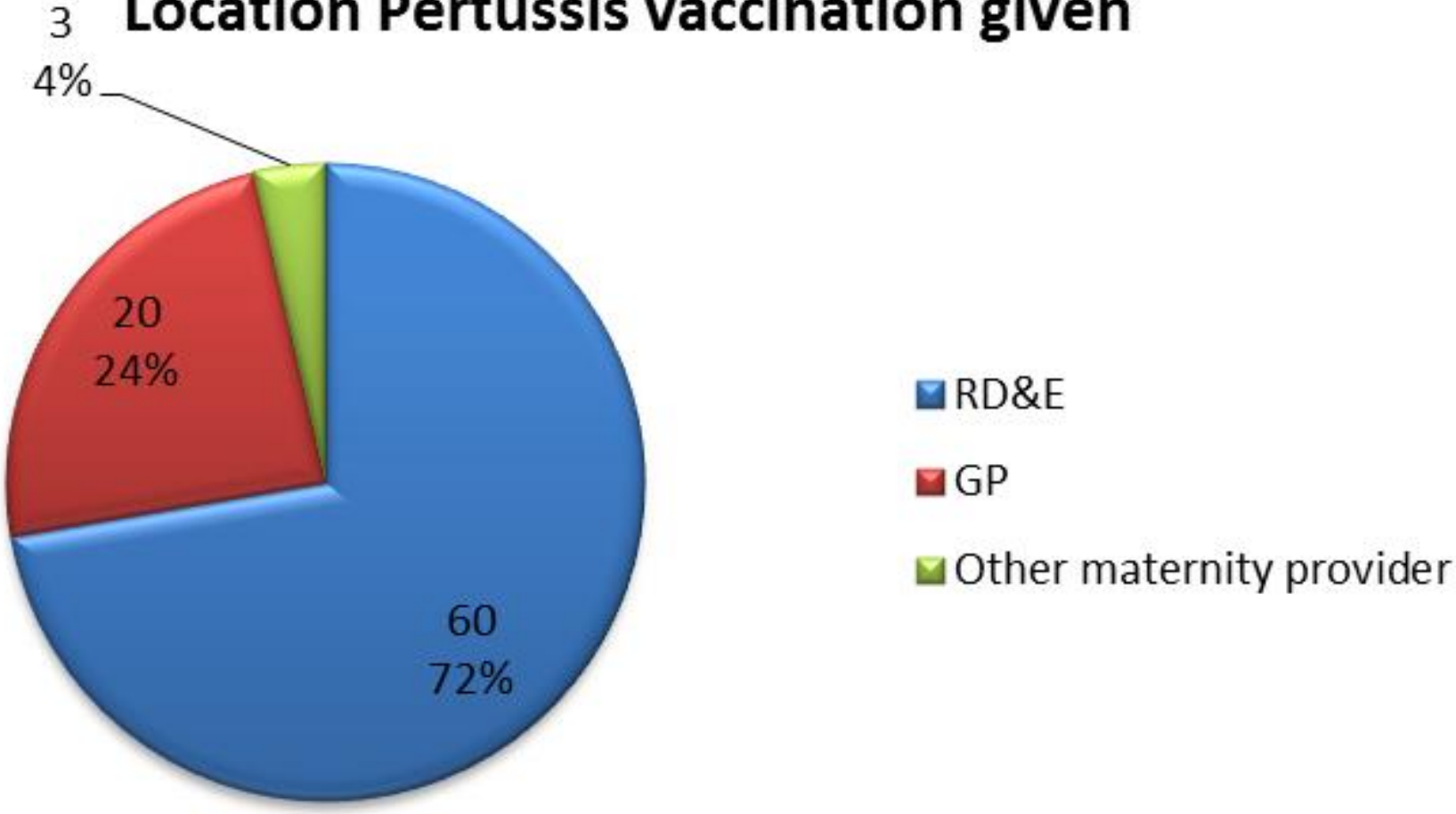



Location Influenza vaccine given
2
2%
2
2%
2
2%
43
50%
38
44%
RD&E
GP
Other maternity provider
Employer
Pharmacy

Uptake Results Pertussis



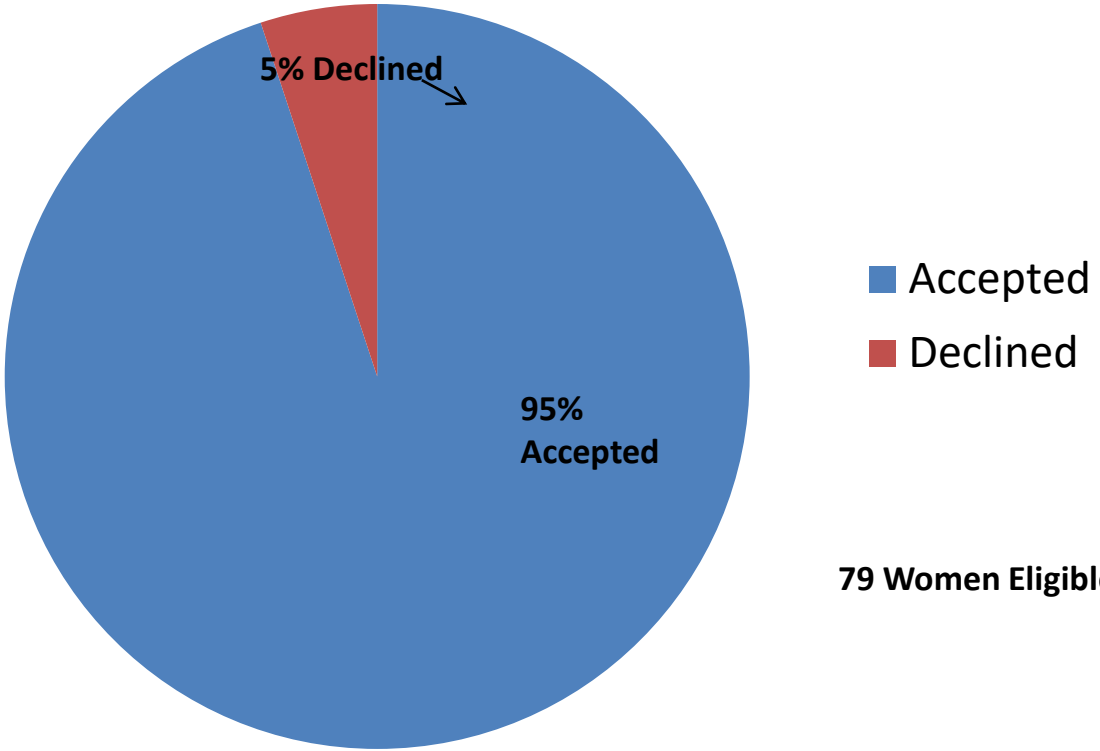
Location Pertussis vaccination given



Findings and Conclusions

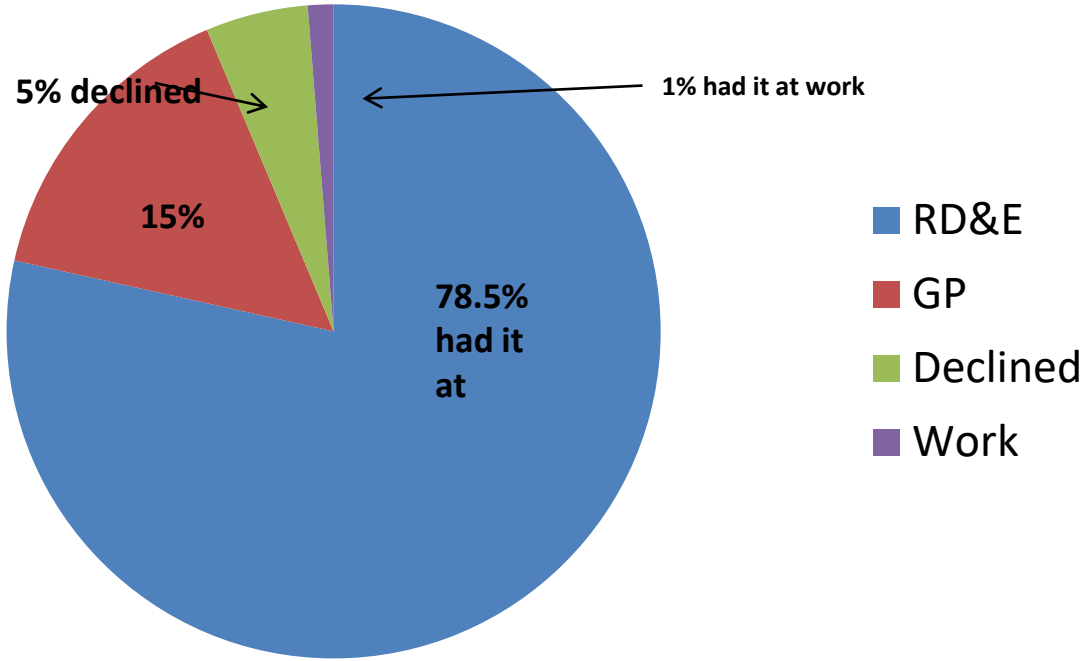
11/12/18

FLU

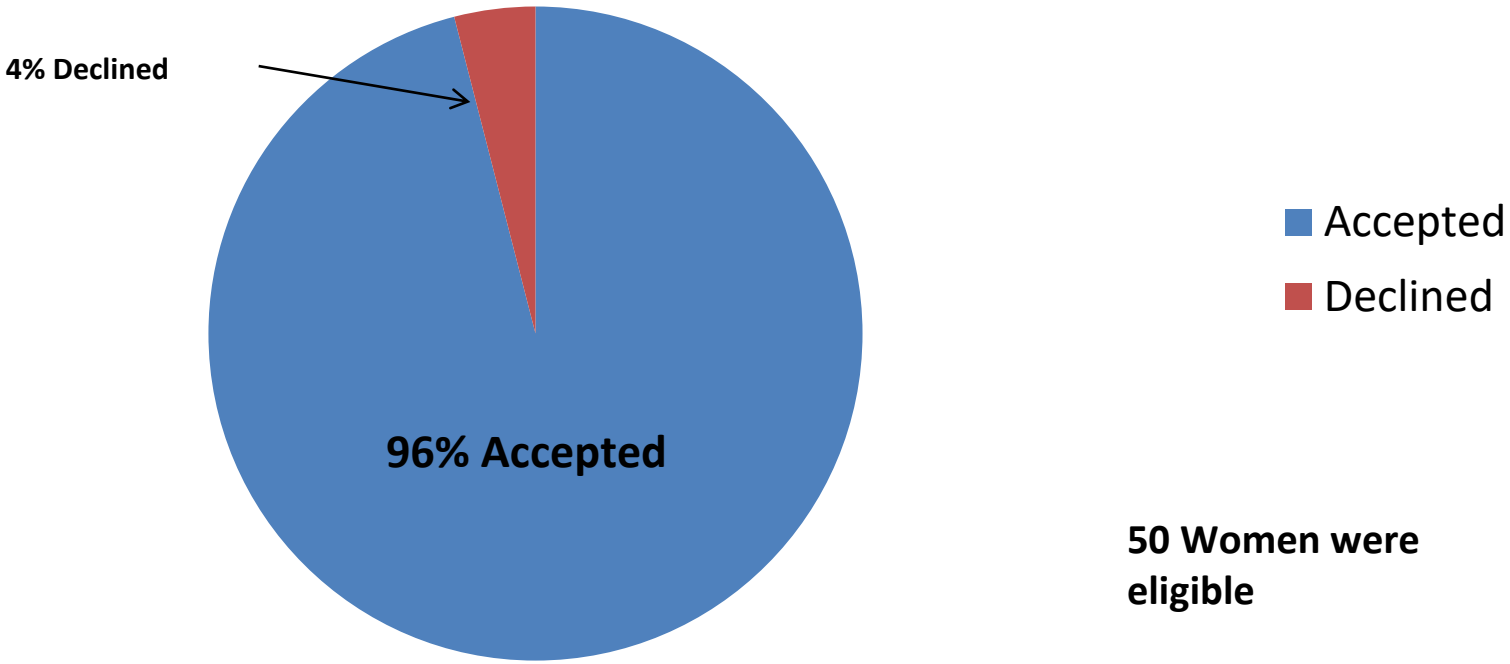


79 Women Eligible

Influenza Vaccination Service Provider

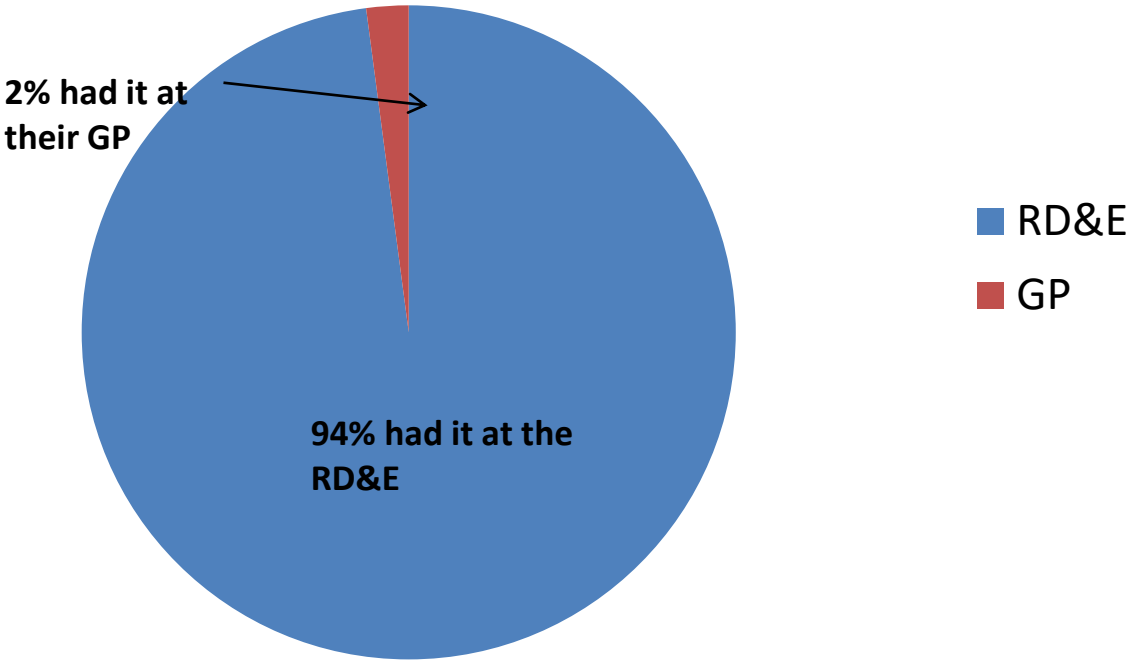


Whooping Cough Uptake

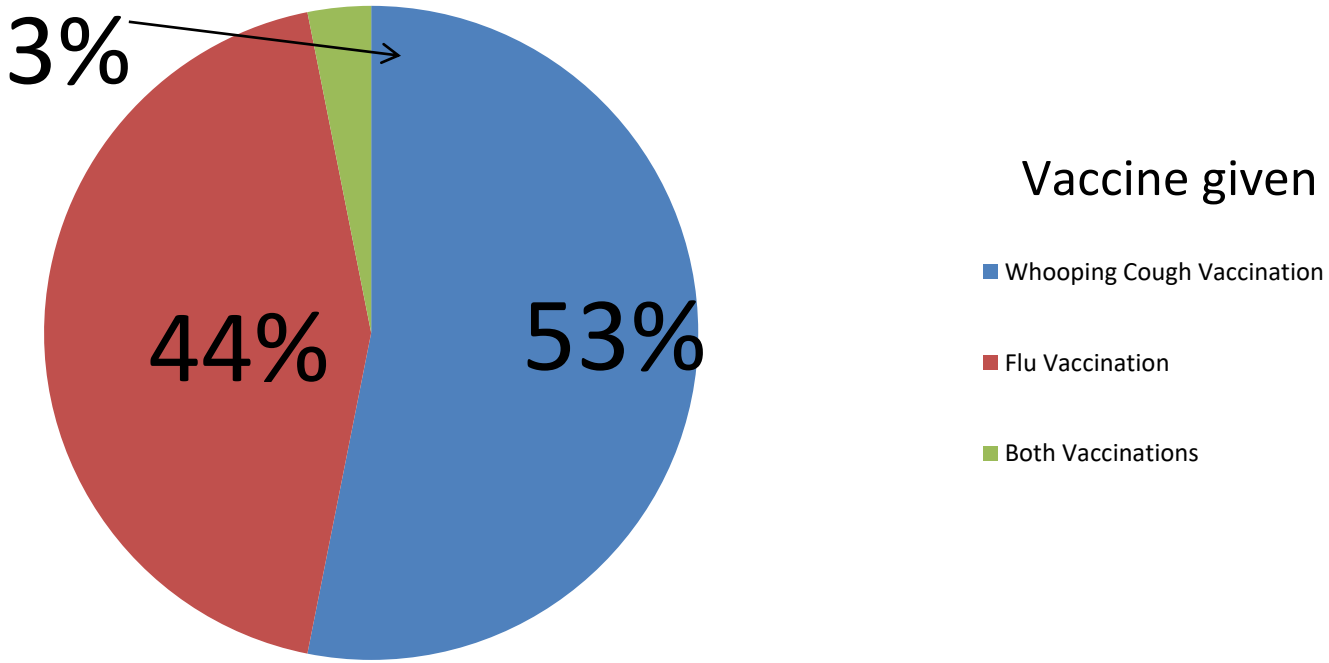


50 Women were eligible

Whooping Cough Vaccination Provider



Patient Satisfaction Audit




£20
Bank of England
I PROMISE TO PAY THE BEARER ON DEMAND THE SUM OF TWENTY POUNDS
LONDON
FOR THE GOVERNOR AND COMPANY OF
THE BANK OF ENGLAND
CHIEF CASHIER
Twenty
Pounds
20
EHR

Taking the service forward

The Pregnancy Immunisation Plan

Royal Devon and Exeter
NHS Foundation Trust

NHS 70 YEARS OF THE NHS 1948 - 2018

Public Health England

Protecting and improving the nation's health

National Immunisation Network Meeting 2019
Vaccination - back to the future

London

21-22 May 2019

Improving flu vaccine uptake

Dr Ash Banerjee, Screening and Immunisation Lead, Midlands and East, Public Health England

Barbara Hamill, Screening and Immunisation Manager, South Midlands and Hertfordshire, Public Health England

Plan

- Commissioning renal dialysis flu immunisations since 2016/17
- Challenges of secondary care flu commissioning
- Flu at-risk letters – personalised invites scheme

Commissioning renal dialysis flu immunisations

Background

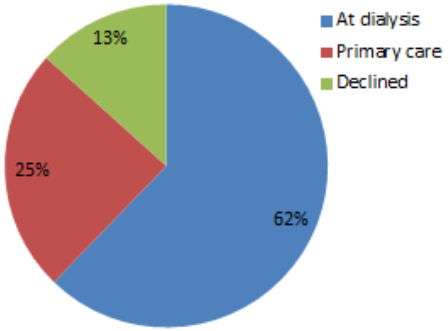
- Renal dialysis patients likely to have high flu mortality and low flu immunisation uptake
  - CKD Age-adjusted Relative Risk flu mortality = 18.5 (Green Book)
  - At the time in 2015/16 flu uptake in CKD patients was 53.5 % in England (WM DCO 53.8%)
- Reported at-risk uptake stalled for several years despite pharmacy programme
- Haemodialysis x3/wk in hospital (GP visits variable)
- Dialysis units staffed by nurses who could be immunisers

Description

- University Hospitals Birmingham NHS Trust
  - 10 dialysis units including subcontracted private providers
  - Nurses immunised during dialysis
  - 1 or more nurses trained per unit
  - Timely GP notification
  - Evaluation and patient satisfaction
  - Payment in line with pharmacy service
- PGD developed – OH / Pharmacy / GP templates
- Training – SIT training cascaded
- Has been running for 3 years now since 2016/17

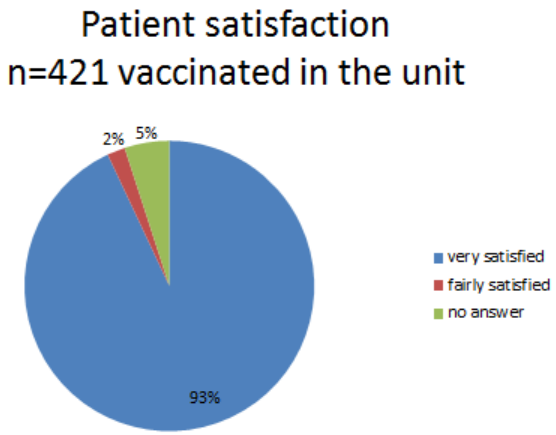
2017/18 results

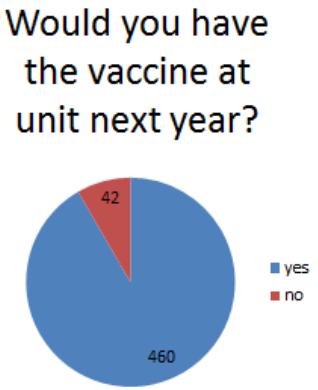
Total patients n=851
87% vaccinated in total
(range at units 67.7-93.5%)

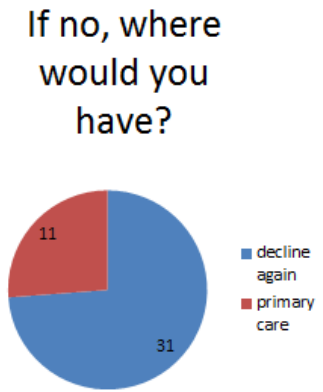


Total % vaccinated in units 62.1%
Range in units 34.5-75.3%

High patient satisfaction







2018/19 results

- 75.7% uptake (75% of activity in dialysis unit, 25% in GP/pharmacy)
- Difficulties acquiring vaccines for 65+

Learning

- Enthusiastic and tenacious clinical champion essential
- Cost-effective way of improving uptake in a vulnerable group
- We have struggled to commission in other inpatient/outpatient groups – clinical leadership, requirement for GP reporting within 2 working days, training requirements

Flu at-risk letters initiative

GP flu scheme

In 2018/19, NHS England invited all practices within the West Midlands Direct Commissioning Organisation area to:

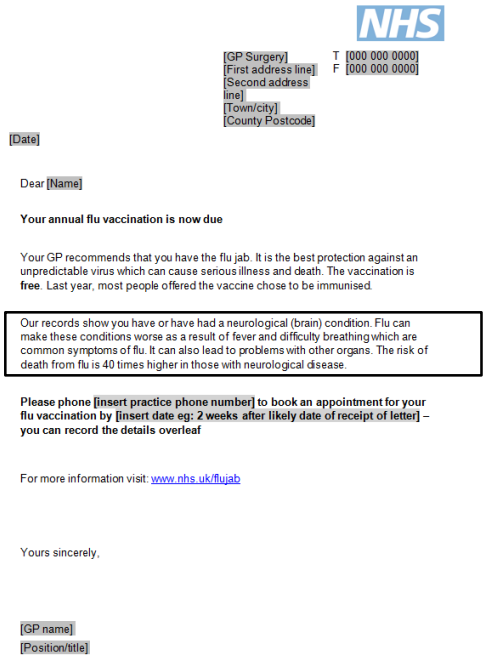
- Identify patients in specific clinical risk groups (high morbidity, low uptake)
- Send invite using template letters were provided by SIT team
- Letters based on behavioural insights methodology
- Practices to send letters out by a set date
- £1.50 per letter sent

Eligible groups

4 groups: High flu morbidity/mortality, Low flu uptake

Patients aged 6 months to 64 years of age with an at-risk condition for flu	At-risk condition	Letter template
	Neurological disease	Letter 1
	Liver disease	Letter 2
	Immunosuppressed	Letter 3
	Pregnant women	Letter 4

Letters



NHS

[GP Surgery]
[First address line]
[Second address line]
[Town/city]
[County Postcode]

T [000 000 0000]
F [000 000 0000]

[Date]

Dear [Name]

Your annual flu vaccination is now due

Your GP recommends that you have the flu jab. It is the best protection against an unpredictable virus which can cause serious illness and death. The vaccination is **free**. Last year, most people offered the vaccine chose to be immunised.

Our records show you have or have had a neurological (brain) condition. Flu can make these conditions worse as a result of fever and difficulty breathing which are common symptoms of flu. It can also lead to problems with other organs. The risk of death from flu is 40 times higher in those with neurological disease.

Please phone [insert practice phone number] to book an appointment for your flu vaccination by [insert date eg: 2 weeks after likely date of receipt of letter] – you can record the details overleaf

For more information visit: www.nhs.uk/flujab

Yours sincerely,

[GP name]
[Position/title]

- Letters contained a tailored paragraph aimed at the at-risk group:

- e.g.

- "*Our records show you have or have had a neurological (brain) condition. Flu can make these conditions worse as a result of fever and difficulty breathing which are common symptoms of flu. It can also lead to problems with other organs. The risk of death from flu is 40 times higher in those with neurological disease.*"

Flu invite letter to pregnant women

Dear [Name]

Your annual flu vaccination is now due

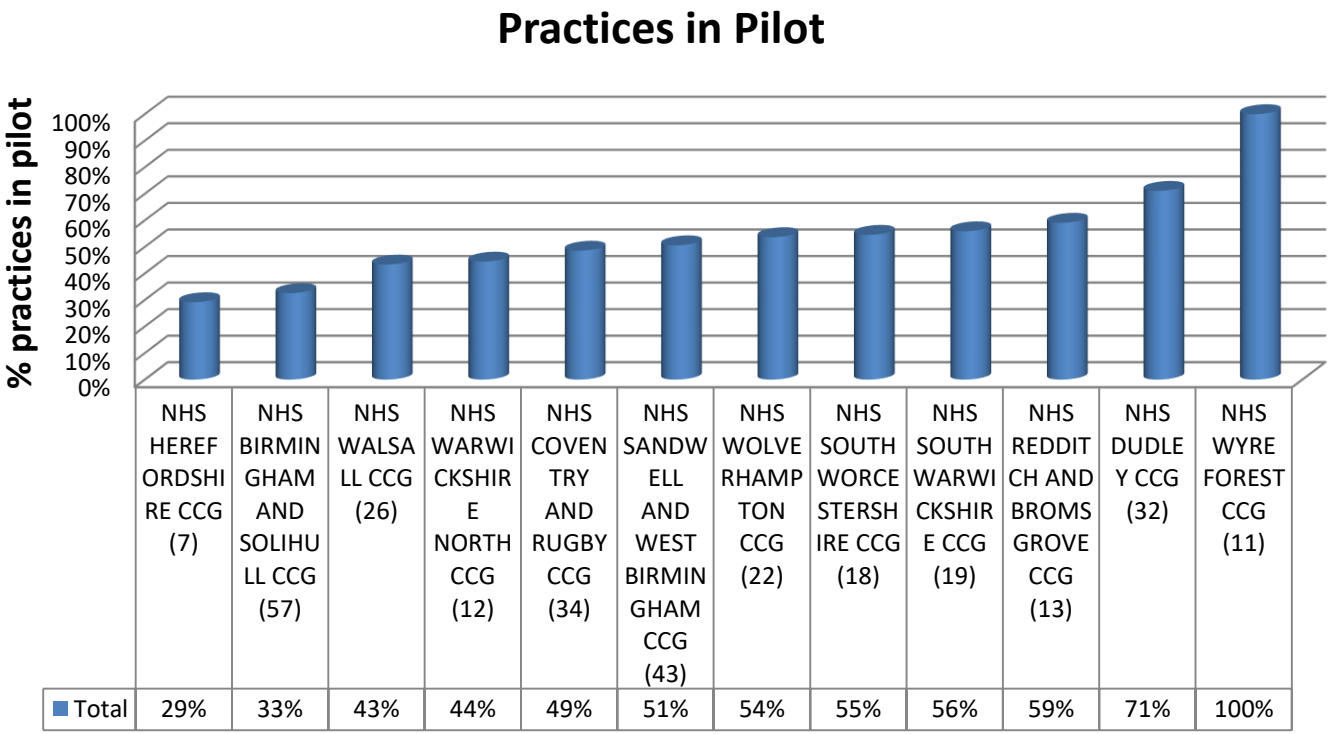
Your GP recommends that you have the flu jab. It is the best protection against an unpredictable virus which can cause serious illness and death. The vaccination is **free**. Last year, most people offered the vaccine chose to be immunised.

Our records indicate that you are pregnant. Flu infection in pregnancy puts your baby at increased risk of being born prematurely or with a low birthweight. In serious cases it can even lead to stillbirth or death. By being immunised, these risks may be reduced. This protection extends into the first few months of life when babies are most vulnerable but too young to have a flu jab themselves. The flu jab also helps protect pregnant women directly from the complications of flu. Studies have shown that it's safe to have the flu vaccine during any stage of pregnancy - I therefore recommend being immunised as soon as possible.

Less than 50% of practices took part in the pilot

	Number of practices that participated	Number of non participant practices	Percentage taking part
Neurological	288	316	48%
Liver	289	315	48%
Immunocompromised	287	317	48%
Pregnant	289	322	47%

GP participation varied by CCG



	NHS HEREFORDSHIRE CCG (7)	NHS BIRMINGHAM AND SOLIHULL CCG (57)	NHS WALSALL CCG (26)	NHS WARWICKSHIRE NORTH CCG (12)	NHS COVENTRY AND RUGBY CCG (34)	NHS SANDWELL AND WEST BIRMINGHAM CCG (43)	NHS WOLVERHAMPTON CCG (22)	NHS SOUTH WORCESTERSHIRE CCG (18)	NHS SOUTH WARWICKSHIRE CCG (19)	NHS REDDITCH AND BROMSGROVE CCG (13)	NHS DUDLEY CCG (32)	NHS WYRE FOREST CCG (11)
Total	29%	33%	43%	44%	49%	51%	54%	55%	56%	59%	71%	100%

Did uptake increase?

Cohort	Practices not sending template invite letters				Practices sending template invite letters				Pilot Summary
	No. practices	% uptake September 1st - January 31st 2017/ 18	% uptake September 1st- January 31st 2018/19	% change 2018/19 compared to 2017/18	No. practices	% uptake September 1st - January 31st 2017/ 18	% uptake September 1st- January 31st 2018/19	% change 2018/19 compared to 2017/18	Affect on Uptake
Neurological	316	49.9%	47.3%	-2.6%	288	52.0%	52.8%	0.8%	3.40%
Liver	315	45.3%	42.8%	-2.5%	289	46.3%	47.9%	1.6%	4.10%
Immunocompr-omised	317	53.8%	52.3%	-1.5%	287	55.8%	58.0%	2.2%	3.70%
Pregnant	322	44.0%	40.7%	-3.3%	289	46.5%	45.1%	-1.4%	1.90%

Source of Data: ImmForm

Did it work?

- Increased uptake by 1.9%-4.1% compared to non-participation
- At £1.50 per letter cost is £37-£79 per person immunised

Issues

- Only half the practices took part
  - ? £1.50 inadequate
  - Practices did not recognise the benefit
  - Lacked capacity to implement
  - Variable ability to identify patients into the 4 groups

- Neurological letter offended some patients

Summary

- Scheme was a simple and effective way of imposing uptake in these vulnerable groups
- Not clear if impact due to 100% eligible offer or personalisation of invite
- Increase in uptake least pronounced for pregnant women but could this relate to maternity to GP notification issues
- Previous pilot had showed that general at-risk letter was not effective so level of personalisation important
- GP participation only 50% and lower performers less likely to participate
- Future –remove paid scheme but encourage use of template letters in light of evidence of effectiveness (100% eligible offer clearer in 2019/20 plans)

Public Health England

NHS

A collaborative study to understand and meet the needs of a Luton community and influence flu vaccination uptake.

Public Health England

NHS England

Maidenhall Primary School

NHS Essex Partnership University NHS Foundation Trust

Public Health England

NHS

Year One
2017/18

Gathering the Evidence
Nasal flu spray

Public Health England

NHS

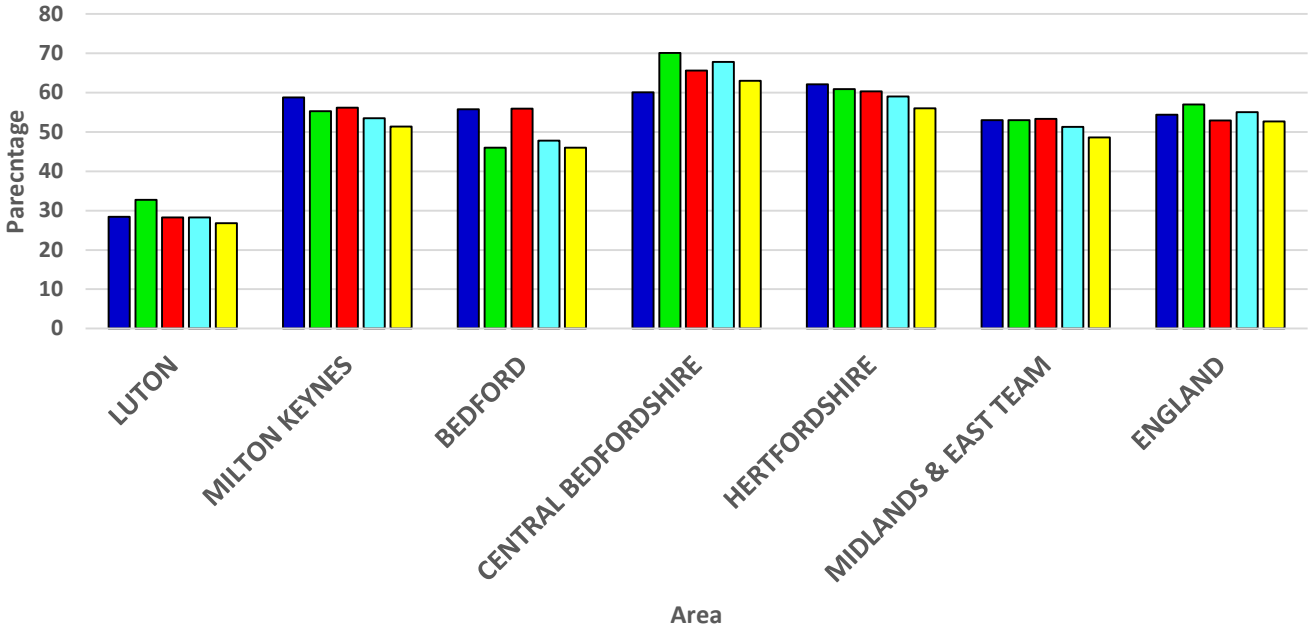
Childhood Nasal Flu uptake in Luton

LOCAL AUTHORITY	Year 1 % uptake 2015/16	Year 1 % uptake 2016/17	Year 2 % uptake 2015/16	Year 2 % uptake 2016/17	Year 3 % uptake 2016/17
LUTON	**28.4**	**32.7**	**28.3**	**28.3**	**26.8**
MILTON KEYNES	58.8	55.3	56.2	53.5	51.4
BEDFORD	55.8	46.0	55.9	47.8	46.0
CENTRAL BEDFORDSHIRE	60.1	70.1	65.6	67.8	63.0
HERTFORDSHIRE	62.1	60.9	60.3	59.0	56.0
MIDLANDS & EAST TEAM	53.0	53.0	53.3	51.3	48.6
ENGLAND	54.4	57.0	52.9	55.0	52.7

Public Health England

NHS

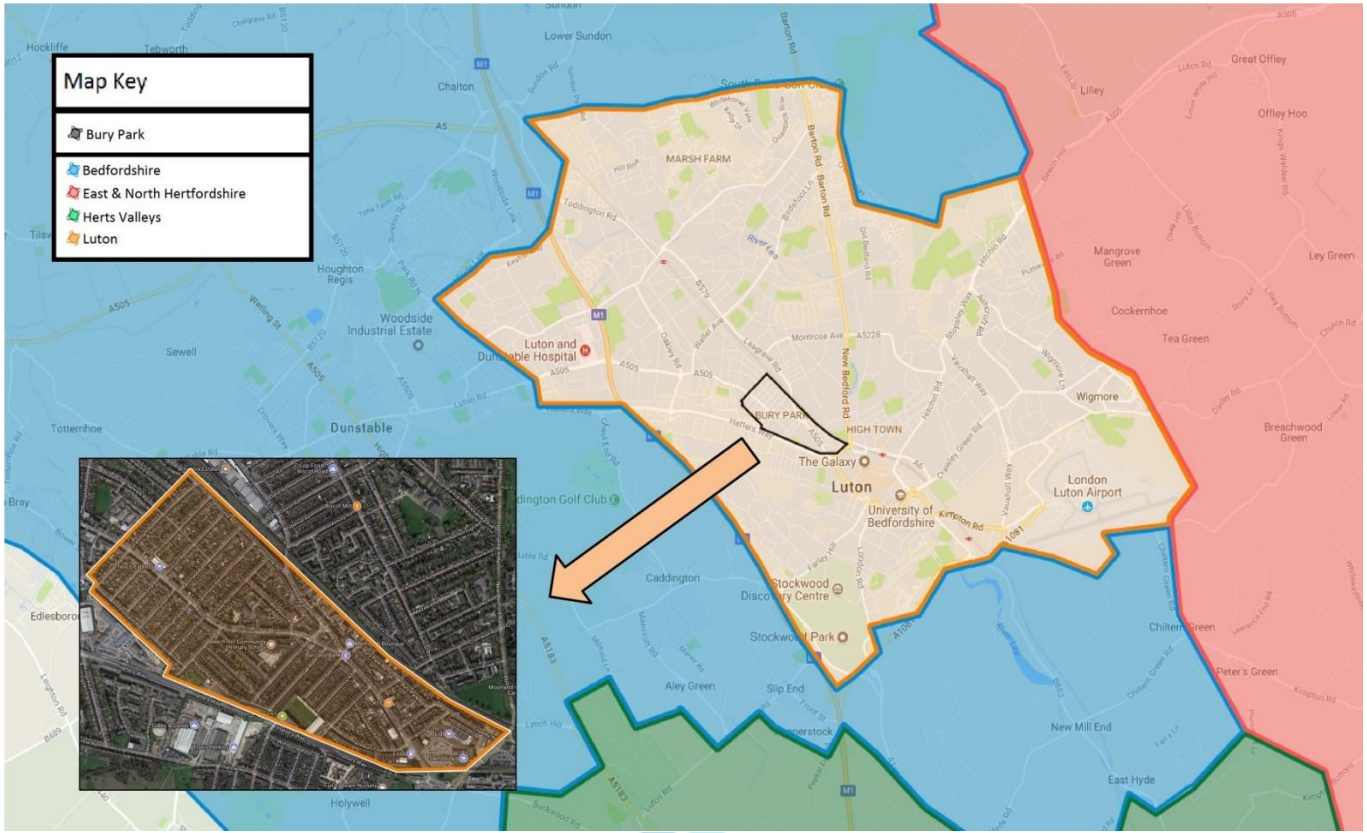
Childhood Nasal Flu uptake in Luton



Public Health England

Luton and the Bury Park Area

NHS



Public Health England

Why focus on this area?

Year One - Schools in the Study

School	No: eligible children	No: returned consent forms	No: refusals	No: consent forms not returned	No: children vaccinated	% uptake
one	360	91	22	269 (74%)	60	16.6%
two	300	91	22	209 (70%)	42	14.0%
Three	446	48	0	398 (89%)	48	10.8%
Four	270	86	30	184 (68.1%)	54	20.0%
Five	210	53	10	157 (74.7%)	38	18.1%
Maidenhall	270	63	7	207 (76.6%)	48	17.8%

Public Health England

NHS

Flu vaccination uptake in adult programme 17/18

Flu vaccination uptake in the adult programme at a national, CCG and local level.

Area	Over 65s	Under 65 at risk	Pregnant women
England	72.6%	48.9%	47.2%
Luton CCG	68.5%	47.5%	39.9%
GP practices linked to schools	68.4	46.4%	40.8%

Public Health England

NHS

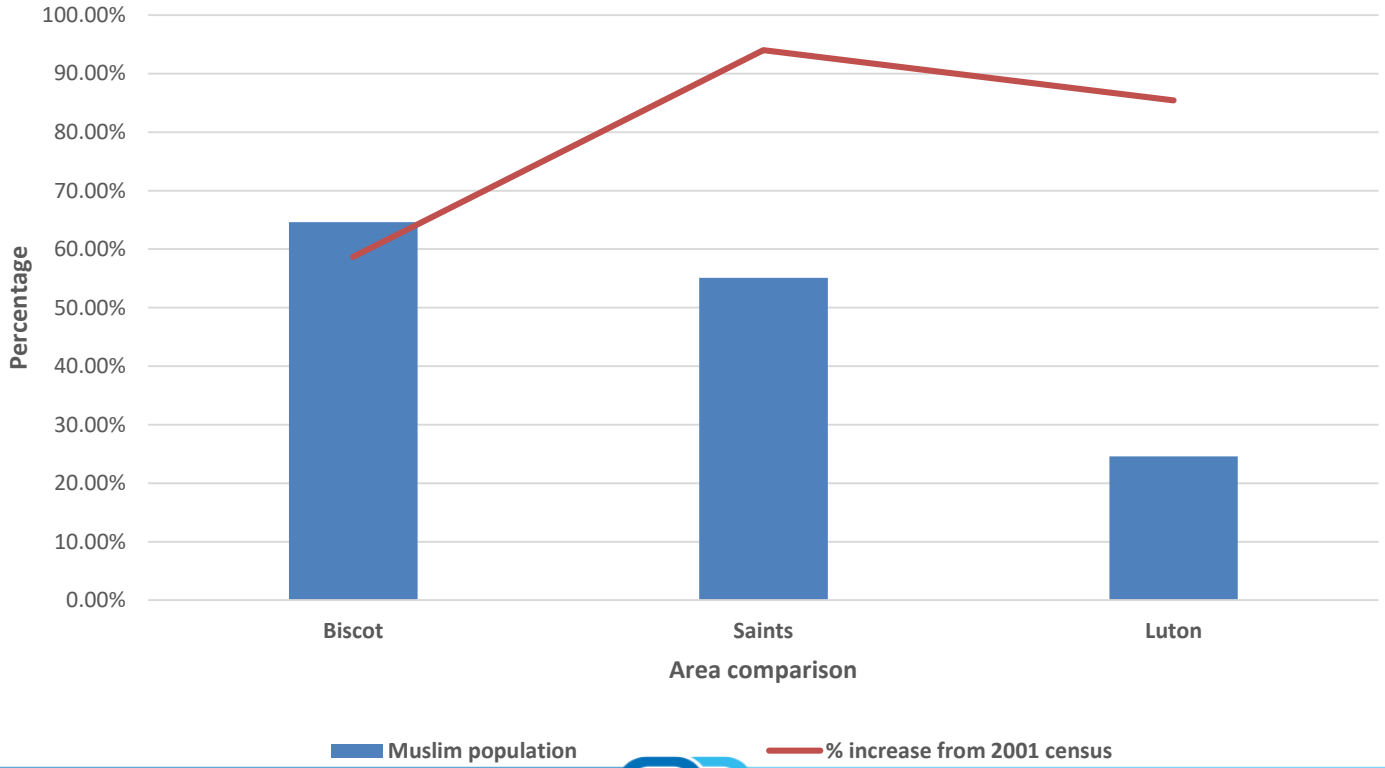
Muslim population in Luton Wards

Ward	Muslim population	% increase from 2001 census
Biscot	64.6%	58.7%
Dallow	61.6%	49.8%
Saints	55.1%	94.0%
Challney	34.4%	185.3%
Leagrave	19.0%	185.3%
Icknield	11.9%	207.8%
Crawley	9.2%	56.0%
Sundon	7.9%	75.2%
Bramingham	5.2%	96.3%
Wigmore	3.2%	58.6%
Stopsley	3.1%	40.6%
Luton	24.6%	85.4%
England	4.8%	---

Public Health England

NHS

Muslim population changes data



Objectives of the study in Year one

1. Improve flu vaccination uptake by between 5% and 10% compared to base year for years one to three

2. Improve flu vaccination uptake by between 5% and 10% for the same cohorts across the school group as a whole.

3. Improve parental response rate.

4. Gain evidence regarding reasons for non-consent, to help understand the barriers to vaccination.

Working group

Led by PHE Screening and Immunisation Team

With members

School representation (Headteachers, Family workers)
Parent Governor
Representative from the Luton Council of Mosques
Essex Partnership University Trust Provider Immunisation Team

Public Health England

NHS

Head Teachers agreed to collaborate on this Study for the following reasons:

School perspective

It is important for all children attending this school to avoid the flu virus.

Flu vaccination can reduce absences over the winter months.

Community

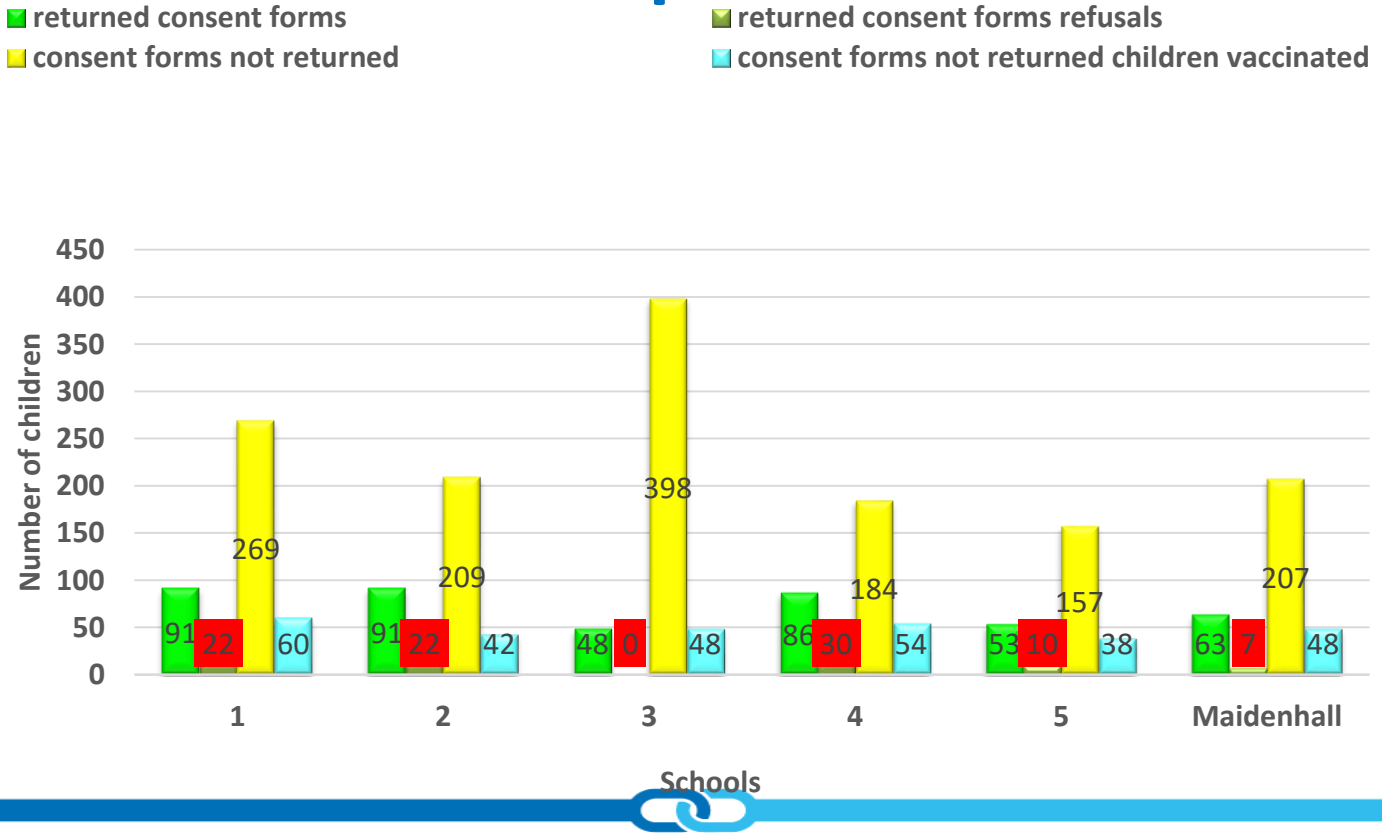
It is important to increase the number of children having a flu vaccination.

It is important to reduce the circulation of flu within the community.

Public Health England

NHS

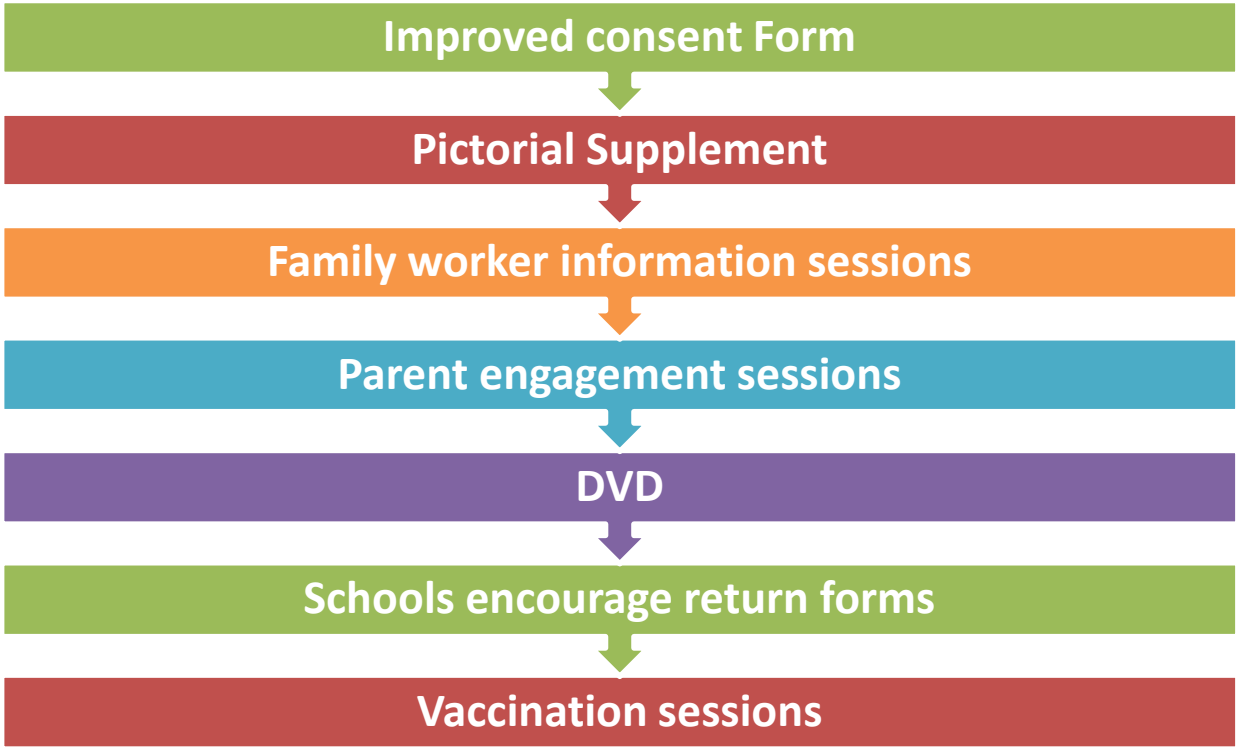
Consent form uptake for Nasal Flu



Public Health England

NHS

Model – Year One



Public Health England

NHS

Issues identified in working group in Year One

- Consent form
- Lack of literacy skills in households.
- Parental perception of flu
- Lack of awareness of vaccine

Public Health England

NHS
Essex Partnership University
NHS Foundation Trust

Picture Consent Forms.

Seasonal Flu Vaccine	
	The Seasonal Flu virus changes every year, so it is important to get your seasonal flu vaccine every winter.
	The Seasonal Flu vaccine delivered in schools is a spray up each nostril. There is NO needle.
	Antibiotics and other cold medicines do NOT get rid of flu.
	A nice nurse will visit your school to give you the flu spray.

What does your nurse need to know?	
	Has your child had a Seasonal Flu Vaccine already this winter?
	Does your child have asthma?
	Does your child have inhalers?
	Have they taken medicine from GP to help with their asthma?
	Is your child having treatment at hospital that affects their immune system?
	Is anyone in your family having treatment at hospital that affects their immune system?
	Has your child needed to go to hospital after having egg?
	Is your child taking any regular medicines?

NHS

Public Health England

NHS

Benefits of Parent Consultation Sessions

- Existing relationship/trust with the parents and school staff.
- Endorsed by the Head Teacher and key staff at school opportunity to discuss best clinical option nasal flu vs inactivated option.
- Direct contact with parents and carers, being able to answer questions straight away.
- Emphasised the importance of protecting children against flu but also others in the wider community.

Public Health England

Impact of interventions
Year One

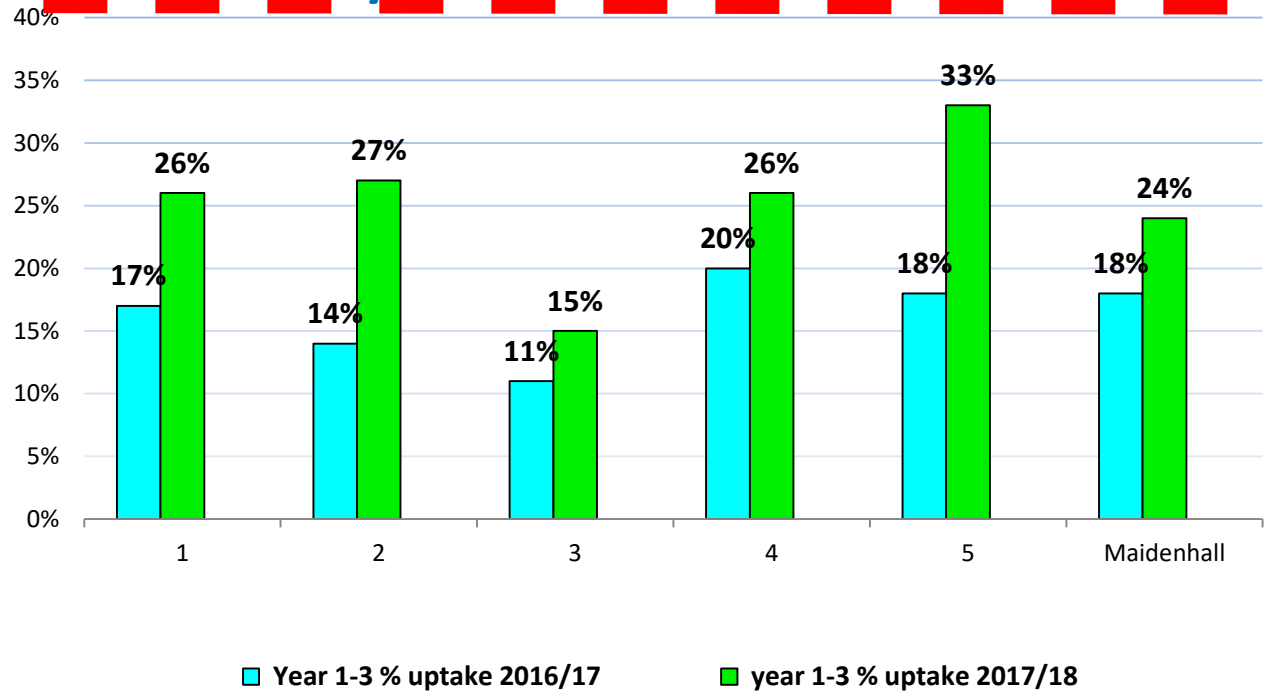
- Parents with incorrect assumptions.
- Parents with their differing information regarding the flu vaccine effectiveness
- Porcine gelatine content in vaccine
- Getting the message across about how serious the flu can be and potentially life threatening to some groups of people
- Negotiating the process with each school

NHS

Public Health England

NHS

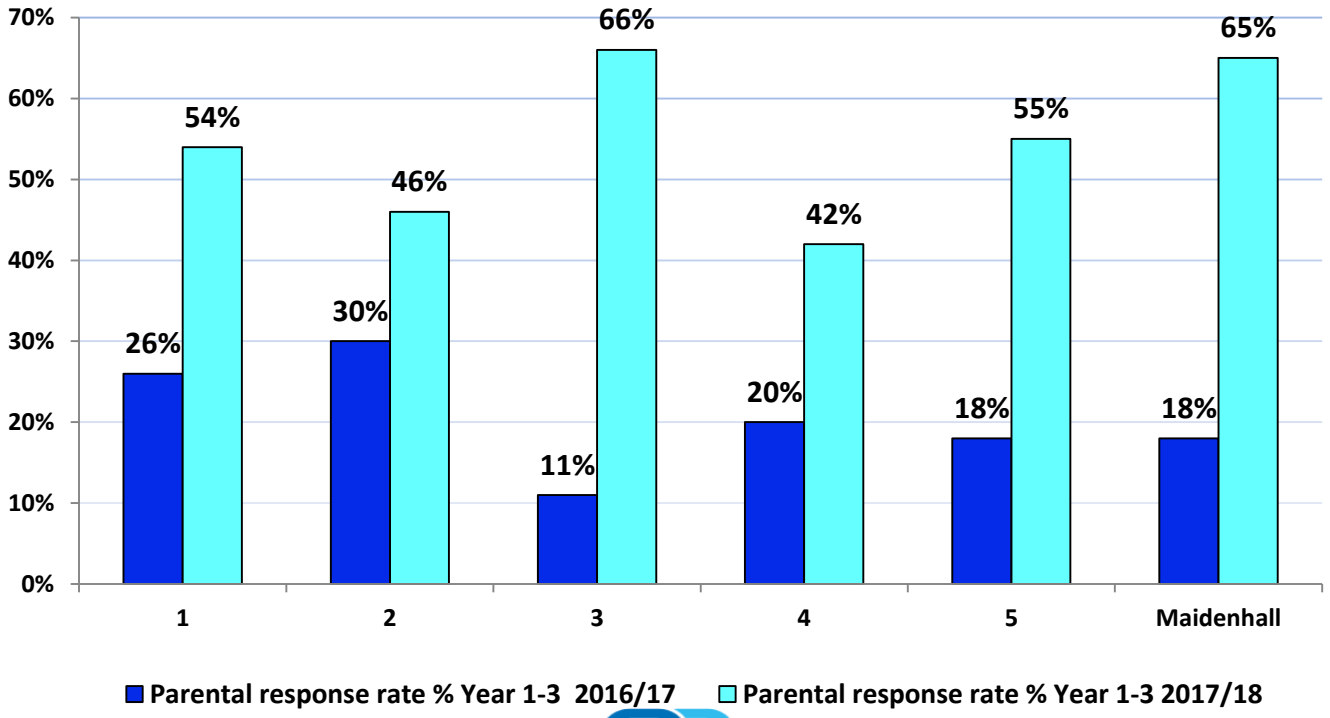
Luton childhood flu uptake in school years 1-3 2016/17 and 2017/18 Year One.



Public Health England

NHS

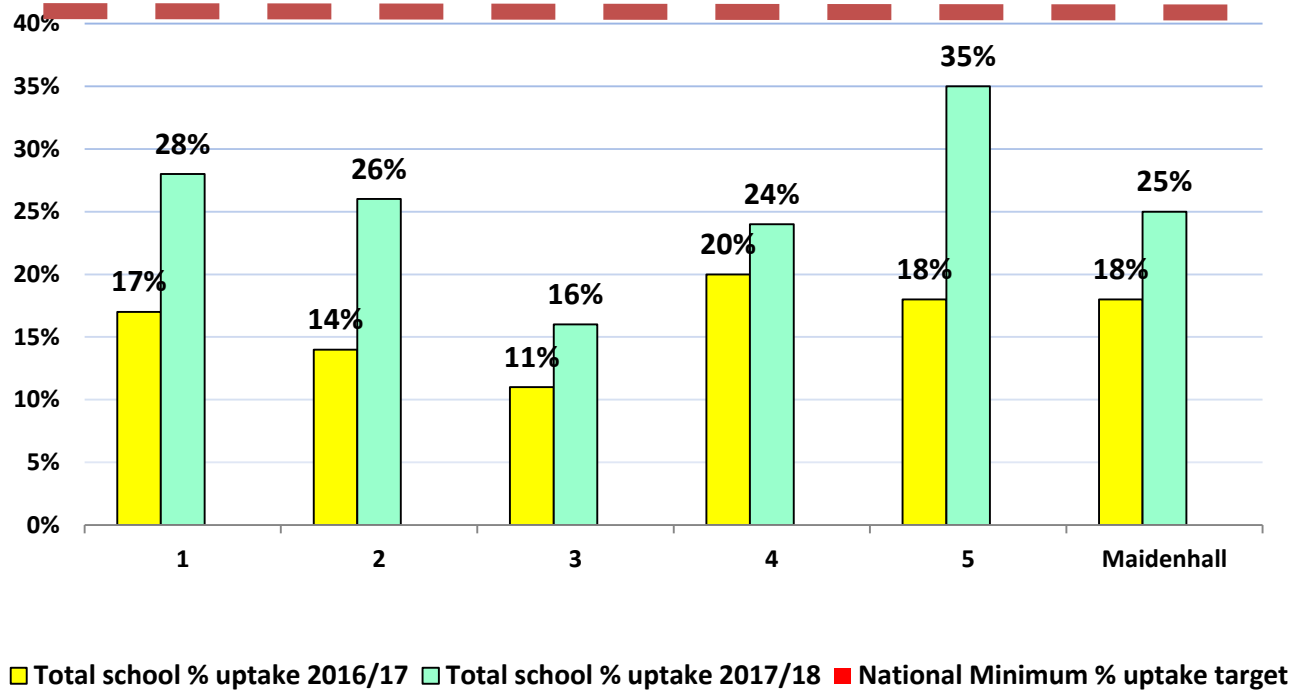
Parental response rates Year One.



Public Health England

NHS

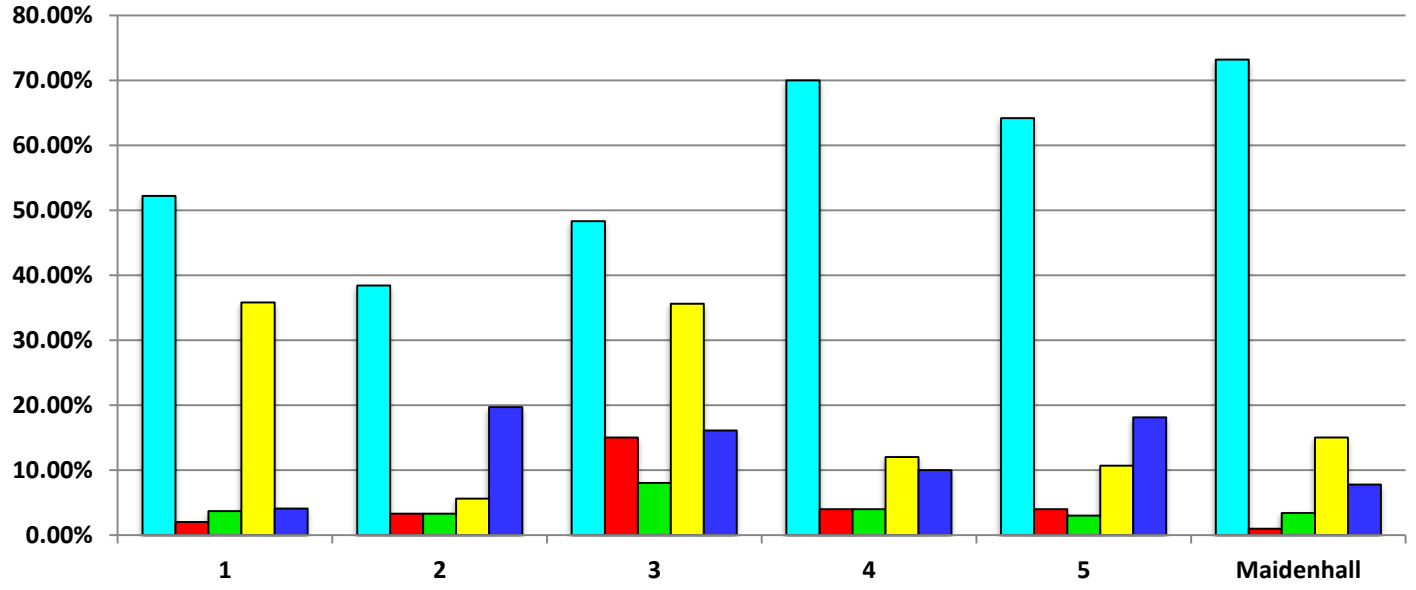
Luton childhood flu total school uptake 2016/17 and 2017/18 Year One.



Public Health England

Porcine Gelatine? Year One.

NHS



Public Health England

NHS

Parent and Community Perspective in Year One.

Parents consultation 2017-18

- Reason for refusing nasal vaccination
- Requesting an alternative
- Community support for less expensive alternative

Public Health England

NHS

Year One Study Area

- There is a disproportionately large Muslim population in the project area.
- Only by using collaborative working were the objectives achieved.
- There is a large proportion of the population in this area for whom the vaccine is not acceptable.
- Population density in this area mean the risk and complications of flu are high if people are not accepting of a vaccine.

Public Health England

NHS

Year One from a public health perspective…

- Have all the objectives of the project met?

- Have all the needs of the local population met?

Public Health England

NHS

Year two
2018/19

Listened to parents – only option to pilot an alternative vaccine in one school in 2018/19

Continuation of the present project to sustain uptake.

Share this project with other NHS England Screening and Immunisation Teams

Public Health England

NHS

Context of **Maidenhall** school

- 700+ pupils on role
- 638 Muslim pupils (91%)
- 92% of pupils have English as an Additional Language
- 30% of families speak Pahari (primarily a spoken language)
- Top 10% area of deprivation
- 360 children on safeguarding register (13 serious cases)
- 191 medical conditions

Public Health England

NHS

Population density and study.

Area	Hectares	Population	Density	RAG
Barnfield	166	7,877	47.5	
Biscot	147	17,023	115.8	
High town	155	10,360	66.8	
Saints	186	15,446	83.0	
Stopsley	314	7,135	22.7	
Central	968	57,841	59.8	
Luton	4,335	214,700	48.7	
East of England			3.2	
England			4.2	
Source: LG Inform, Accessed November 2016				
RAG rating based on Luton density				

Public Health England

NHS

Year 2
Planning ‘Getting It Right’

- Earlier planning
- Understanding each school across the geographical area that would benefit from parent consultations.
- The importance of parent consultations.
- Working collaboratively with schools and the whole staff group.
- Expanding the use of the family workers in parent engagement sessions.

Delivering a vaccination session offering two options

How long would we need to deliver?

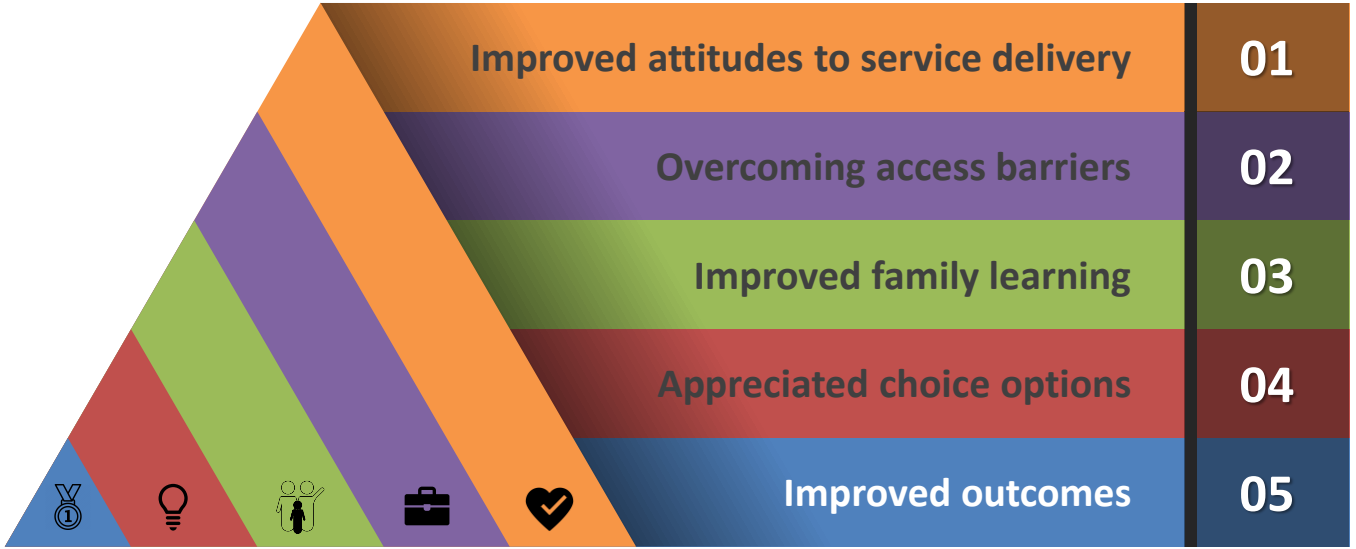
How much space do we need?

How many nurses will we need?

How many support staff do we need in the school and in the team?

Will I be able to order the number of vaccines we will need?

Insights from the Muslim community

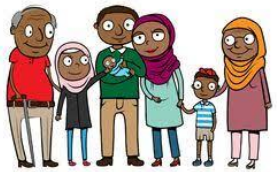


Improved collaboration & family partnership

Role of parent / Community representative.

Parents consultation 2018-19

- Happy voices are being heard
- Increased uptake
- Future community support



Role of the Headteacher

- All staff demonstrated commitment as they recognised the importance of the programme
- Attendance is an issue for the school
- Lots of organisation but we have a very organised PA!
- Each child had a sticker with name, dob, class etc and these had to be married up with consent forms
- Staff accompanied children to ensure no-one swapped stickers as well as to re-assure and comfort children
- Also had photographs printed to match up with each child
- Good community links

Public Health England

NHS

Partnership working

Essential!

Public Health England

NHS

Celebration

Acknowledgements.

- Barbara Hamill-Public Health England.
- Rebecca Twist- Essex University Partnership Foundation Trust.
- Coral Campion- Maidenhall Primary School Headteacher.
- Fahad Matin- Bedfordshire Clinical Commissioning Group.
- Jayne Lane- Public Health England.
- Professor Abdul Ghafoor- Luton Council of Mosques.

Public Health England

Protecting and improving the nation's health

National Immunisation Network Meeting 2019
Vaccination - back to the future

London

21-22 May 2019

Hepatitis B antenatal screening and neonatal immunisation enhanced pathway

Sharon Webb, Programme Manager, Infectious Diseases in Pregnancy, Public Health England

WHO global health strategy on viral hepatitis 2016 - 2021

- an estimated 250 million people worldwide are chronically infected with HBV
- international public health challenge comparable to HIV, TB and malaria
- acknowledged largely ignored issue
- the first global health sector strategy on viral hepatitis, 2030 Agenda for Sustainable Development: Target 3
- specific actions required to combat viral hepatitis and aim to eliminate it as a public health threat

Main points

- strategy addresses all five hepatitis viruses (hepatitis A, B, C, D and E)
- a particular focus on hepatitis B and C, owing to the relative public health burden they represent
- provides a vision of a world where:
  - viral hepatitis transmission is halted
  - everyone living with viral hepatitis has access to safe, affordable and effective care and treatment;
  - a goal of eliminating viral hepatitis as a major public health threat by 2030

5 core intervention areas

1.Vaccines-

- A,B,E available
- Large scale hep B childhood programmes

2.Prevention of mother-to-child transmission of hepatitis B

- Antenatal testing
- Antivirals in pregnancy
- Timely birth dose

3.Injection, blood and surgical safety

- Universal precautions and safety measures
- Safe blood products

4.Harm reduction for people who inject drugs

- Access to sterile equipment and drug dependence treatments

5.Treatment

- Effective treatment and monitoring regimens

What are we doing?

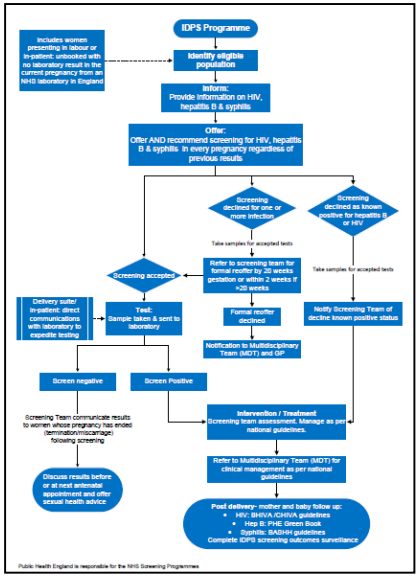
- PHE liver strategy- hepatitis group
- PHE screening and immunisation quality improvement initiative 2017-2020
  - improved surveillance systems
  - gold standard care in line with HIV
  - increase public awareness and knowledge
  - improve professional knowledge
  - increase multidisciplinary working
- regional stakeholder events
- communications and resources
- strategic engagement- SITs, NHS England, PHE Nurse Directorate, Maternity Transformation Team, Royal Colleges of Nursing and Midwifery

Rationale for enhanced pathway

- evidence- IDPS standards data, COVER data
- incidents- missed screening, late or missed vaccinations/HBIG, failure to refer for vaccination schedule, failure to complete schedule
- equality issues- part of PHE strategy
- vulnerable populations- language barriers, ethnic minority populations, no strong charitable voice
- need for updated screening and immunisation guidance from PHE
- need for updated clinical guidelines and professional resources

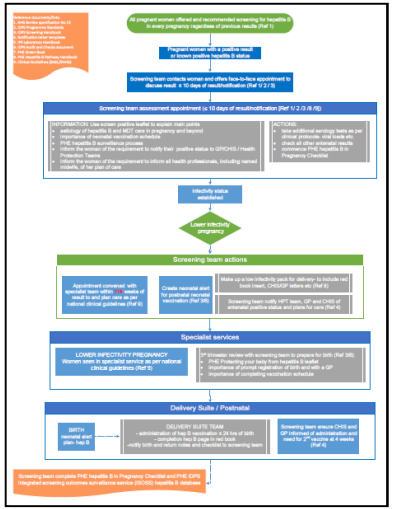
It's a preventable disease in children born to women who are hepatitis B positive

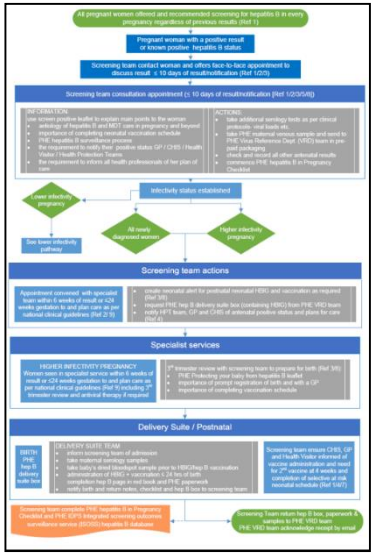
Seamless maternal and neonatal pathways



Generic screening

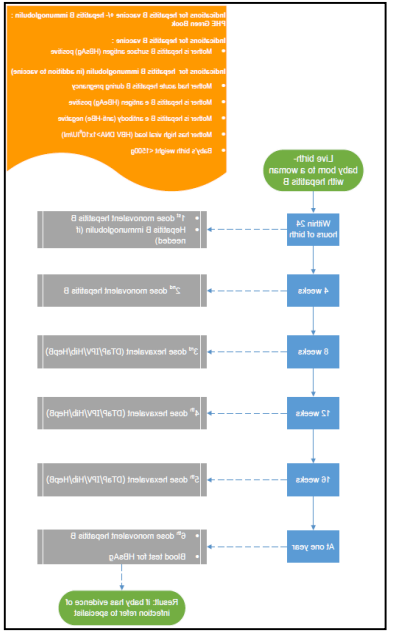
Lower infectivity





Higher infectivity

Neonatal schedule



Handing over the baton –improving the pathway from antenatal care through to neonatal immunisation

- **WHO-** define roles and responsibilities to ensure seamless handover of care
- **WHEN-** establish key timescales for effective care provision
- **WHAT-** the care needed to be provided at each stage
- **WHY-** evidence, safety, standards, guidelines, equality and access

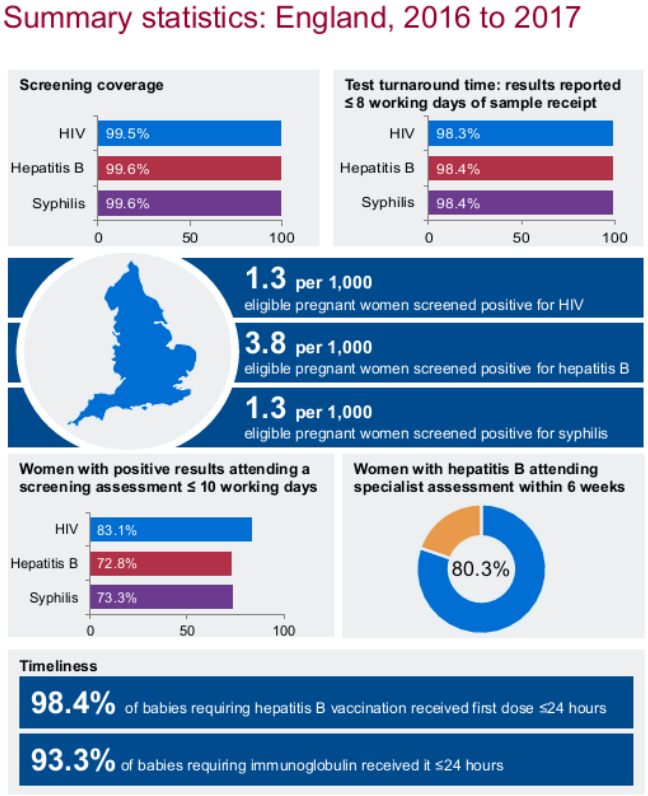
Improve outcomes for women, their babies and their extended family

Quality improvements: screening pathway

- screening recommended in every pregnancy regardless of previous results to ensure current results on local systems
- coordinated multidisciplinary model based on HIV model
- professional resources- patient safety checklists, notification letter templates, information leaflets
- programme standards with measurable metrics across the pathway
- Surveillance- the IDPS Integrated Screening Outcomes Surveillance Service (ISOSS) with maternal and paediatric outcomes up to 1 year of age
- education- new advanced eLearning module
- Screening Quality Assurance Service (SQAS)- embedded in operations model for peer review visits and provider assessments

Antenatal screening activity

- matched cohort data collected by IDPS programme follows screening pathway
- 2017/18 data under analyses
- trends to inform national standards and service specifications
- metrics
  - 2 quarterly KPIs
    - Coverage- HIV, hepatitis B & syphilis
    - Hep B timely entry into clinical care ≤ 6 weeks
  - laboratory turnaround times
  - entry into midwifery screening assessment
  - timely vaccination & HBIG administration for babies born to hep B mothers



Data Source: Infectious diseases in pregnancy screening: standards data report 2016 2017 on Gov.uk

Breakdown of women who are hepatitis B positive, England, 2016/17

Breakdown of screen positives	n	% of total
Newly screened positive women	494	23.0
Previously known positive women, not re-tested	35	1.6
Previously known positive women, re-tested in this pregnancy	1,615	75.3
Total screen positive women	2,144	100.0

Data Source: Infectious diseases in pregnancy screening: standards data report 2016 2017 on Gov.uk

- returns received 126/145 maternity providers
- returns excluded 4/126- no data submission / incomplete or incorrect data

Key messages- generic

Updated pathways referenced in the service specifications 2019/2020

Updated versions of screening and laboratory handbooks in 2019

- check all results at every contact
- management of women who decline in a timely manner
- care of women who miscarry after screening
  - trust process in place
- triage into clinical care and multidisciplinary working
- work as a team- involve members of MDT
- support improvement of screening on delivery suites

Key messages- women with hepatitis B

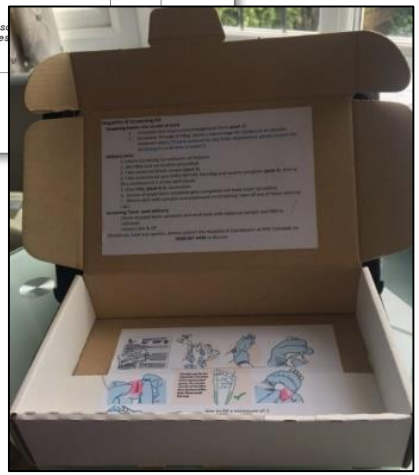
Screening team co-ordinate care package from start to finish

- never presume known positive women understand their condition and the care they will need to protect their babies
- information giving on data collection, disease notification and national surveillance processes important
- all newly diagnosed women need clinical assessment for their new diagnoses
- establish who orders the HBIG - work together
- third trimester review-
  - important to individualise care for each woman
  - check understanding of care at delivery and beyond
  - repeat info about schedule, registration of birth and with GP

Key messages- delivery and postnatal

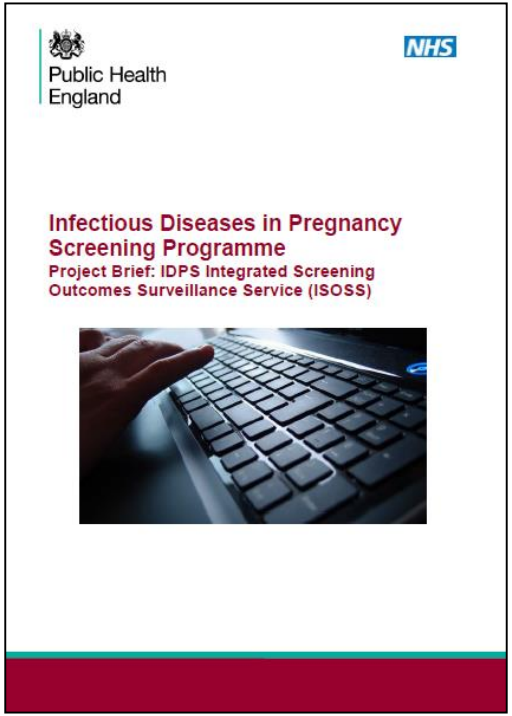
- check every woman's results on admission
- offer and recommend screening if no reliable results in labour
  - expedite lab testing
  - notify screening team to follow up
- PHE HBIG box
  - maternal serology sample
  - neonatal dried bloodspot
- HBIG box and paperwork back to screening team complete the notifications to primary care and CHIS and ISOSS

Delivery Suite Team				
Higher infectivity mother & baby	**On admission** - Inform screening team of admission - locate PHE hepatitis b delivery suite box and store on delivery suite			
	Using the hepatitis B delivery suit box - take maternal serology sample and complete form (Pack1)	*Date / time of blood test*		
	- take neonatal 'Dried Blood Spot' prior to vaccination (Pack 2) - give HBIG + hep B vaccination (Pack 3)	*-card number / time of blood test* *-Date/time given / batch number*		
	- complete paperwork and store with samples in Hep B delivery suite box and return to screening team as soon as possible (if weekend/BH– store in fridge 4°C)			
Lower infectivity mother & baby	-Vaccination administered ≤24 hours of birth -Red book insert completed and given to mother	*Press notes*		
Post-natal Screening team	- Check request form for maternal sample & form G1 are fully completed - DBS and bloods despatched -Inform CHIS, GP, & CMW of vaccination -Complete ISOSS database			



IDPS Integrated Screening Outcomes Surveillance Service (ISOSS)

- based on National Surveillance of HIV in Pregnancy and Childhood (NSHPC) methodology
- secure web based submission tool
- new governance arrangements- part of IDPS team
  - Yr. 1- HIV review; plan maternal and paediatric syphilis / maintain congenital rubella syndrome (CRS) monitoring
  - Yr. 2- roll-out maternal and neonatal syphilis service, plan hep B service / maintain (CRS) monitoring
  - Yr. 3- roll-out maternal hep B and linkage with Imms/BBV team on paediatric outcomes at 1 year



Quality improvements: immunisation pathway

- introduction of universal hepatitis infant immunisation –*Infanrix hexa*
- joined up working: maternity and primary care for improved delivery
- Dried Blood Spot (DBS) testing at 12 months in primary care to exclude infection
- review of vaccine and HBIG incidents to reduce errors
- surveillance enhancements: data for action
  - what laboratory and epidemiological surveillance of infected mothers and at risk babies tells us about the performance of the programme
  - what additional surveillance is proposed to optimise the programme and care of these mothers and babies

Introduction of hexavalent infant vaccine into UK programme 2017

News story

Hexavalent 6-in-1 vaccine to be made available to newborn babies

From: Public Health England
Published: 1 August 2017

The hexavalent vaccine replaces the existing 5-in-1 pentavalent vaccine, which infants are routinely given at 8, 12 and 16 weeks.

All babies born on or after 1 August 2017 will be offered protecti
hepatitis B as part of our universal childhood immunisation progr
Public Health England has announced. This is in addition to conti
protection against diphtheria, tetanus, pertussis, polio and Hib.

The hexavalent vaccine replaces the existing 5-in-1 vaccine that c
routinely receive. It is already widely used with around 150 millio
having been given in 97 countries in Europe and across the world

There has been no change to the immunisation schedule or to th


theguardian

UK politics world sport football opinion culture business lifestyle fashion environment tech travel browse all sections

home › UK › society law scotland wales northern ireland education media

Hepatitis B

Hepatitis B jab to be added to immunisations of babies born in UK

Babies born from the 1 August will be offered new 'hexavalent' jab in effort to clamp down on infections that cause cirrhosis and liver cancer

Ian Sample Science editor

All babies born in the UK will receive the hepatitis B jab as part of their routine immunisations from the autumn in an effort to drive down viral infections that

Hep B vaccine schedule for routine and at risk infant

Age	Routine childhood		Babies born to hepatitis B infected mothers	
Birth	X		✓	Monovalent HepB (Engerix B or HBvaxPRO Paediatric) (with HBIG if indicated)
4 weeks	X		✓	Monovalent HepB (Engerix B or HBvaxPRO Paediatric)
8 weeks	✓	DTaP/IPV/Hib/HepB (Infanrix hexa)	✓	DTaP/IPV/Hib/HepB (Infanrix hexa)
12 weeks	✓	DTaP/IPV/Hib/HepB (Infanrix hexa)	✓	DTaP/IPV/Hib/HepB (Infanrix hexa)
16 weeks	✓	DTaP/IPV/Hib/HepB (Infanrix hexa)	✓	DTaP/IPV/Hib/HepB (Infanrix hexa)
1 year	X		✓	Monovalent HepB (Engerix B or HBvaxPRO Paediatric) Test for HBsAg

Post exposure prophylaxis (PEP)

- Hepatitis B infections at birth are commonly asymptomatic and frequently lead to persistence – i.e. chronic infection
- chronic infection from birth can lead to onward transmission in the population
- without intervention the risk of vertical (mother to child) transmission is high
  - higher infectivity mother (e.g. HBeAg +ve) : >75% transmit
  - lower infectivity mother (e.g. anti-HBe +ve): <10 % transmit
- with intervention –**post exposure prophylaxis (PEP)** – can prevent over 90% of chronic infections due to vertical transmission
- during vaccine shortages –this group is top priority – there should be no delay

THERE IS NOTHING ROUTINE ABOUT SELECTIVE NEONATAL IMMUNISATION: IT IS URGENT POST EXPOSURE TREATMENT

Hepatitis B vaccine timeliness matters

- the selective neonatal hepatitis B immunisation programme for babies born to hepatitis B infected mothers is designed to prevent the baby from acquiring hepatitis B during the perinatal period
- baby is likely to have had a significant exposure to blood and body fluids during birth
- the accelerated course of hepatitis B vaccine (±HGIB) offers post-exposure prophylaxis
- the programme is different to the routine childhood immunisation programme, in that if offers protection against an infection to which the baby has already been exposed to
- delayed or missing early doses of hepatitis B vaccine in such babies increases the risk of baby acquiring its mother's infection

Monitoring and evaluating hepatitis B immunisation programmes

PRE-EXPOSURE

- **universal immunisation programme with hexavalent vaccine**
  - vaccine uptake
  - efficacy, safety and impact
  - enhanced molecular surveillance
  - need for booster / reinforcing doses

POST EXPOSURE

- **selective immunisation programme – babies born to infected mothers**
  - timeliness of doses
  - optimising schedule post hexa introduction (immunogenicity and duration of protection)
    - will we be able to drop 4 week dose and/or 12 month dose?
  - impact of anti-viral treatment in pregnancy
  - contribution of *in utero* transmission: correctly attributing vertical transmission events to whether vaccine preventable or not

Vaccine, test uptake and outcome in high risk babies

* Provisional data as incomplete returns and less than 2 years follow up

Year of birth	PHE Colindale HBIG eligible	Total f/up	HBIG %	Dose1 %	Dose2 %	Dose3 %	Dose4 %	% tested	No. infected	% infected of tested
2010/11	**288**	**171**	93.0	95.9	95.9	95.9	94.7	73.7	7	5.6
2011/12	**305**	**149**	94.6	96.6	96.0	95.3	94.0	65.8	5	5.1
2012/13	**297**	**128**	96.1	97.7	99.2	99.2	99.2	68.0	2	2.3
2013/14	**271**	**158**	94.3	98.1	98.7	98.1	96.8	69.6	2	1.8
2014/15	**265**	**190**	97.4	100.0	100.0	100.0	88.9	58.9	1	0.9
2015/16	**249**	**197**	92.9	99.0	98.5	97.0	53.8	31.5	0	0.0
2016/17*	**245**	**171**	87.7	89.5	78.4	71.9	70.2	43.3	2	2.7
2017/18*	**200**	**148**	89.9	91.9	49.3	52.0	8.8	6.8	0	0.0

Investigating hepatitis B vaccine failures

In spite of vaccine/HBIG intervention, hepatitis B infected babies are still seen, possibly due to:

- inter-uterine transfer of infection, or perinatal transmission
- important factors in vaccine/HBIG failure include **maternal viral load** and **mutant hepatitis B viruses that** “escape” the vaccine

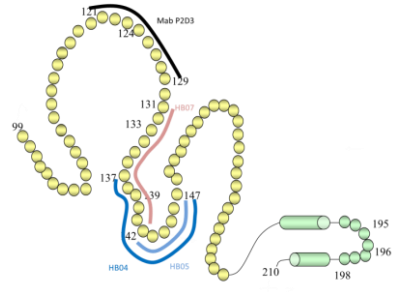
PHE immunisation surveillance process extension to collate data needed to monitor the **selective & universal neonatal Hep B immunisation** programmes to:

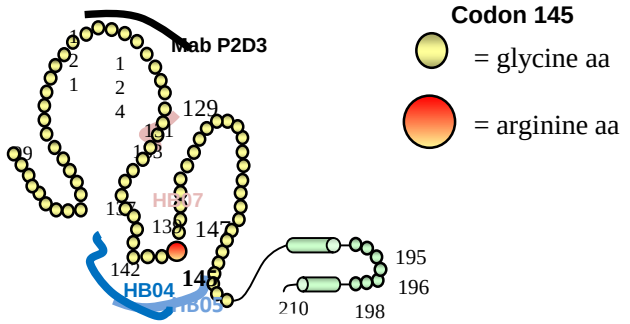
- inform interventions to prevent transmission
- monitor the safety and efficacy of vaccination programmes
- identify risks and trends in disease to control communicable diseases

Approvals :Regulation 3, S251 of NHS Act 2006 and Health Service Regulations 2002; Caldicott Guardian; Research Ethics Governance Group

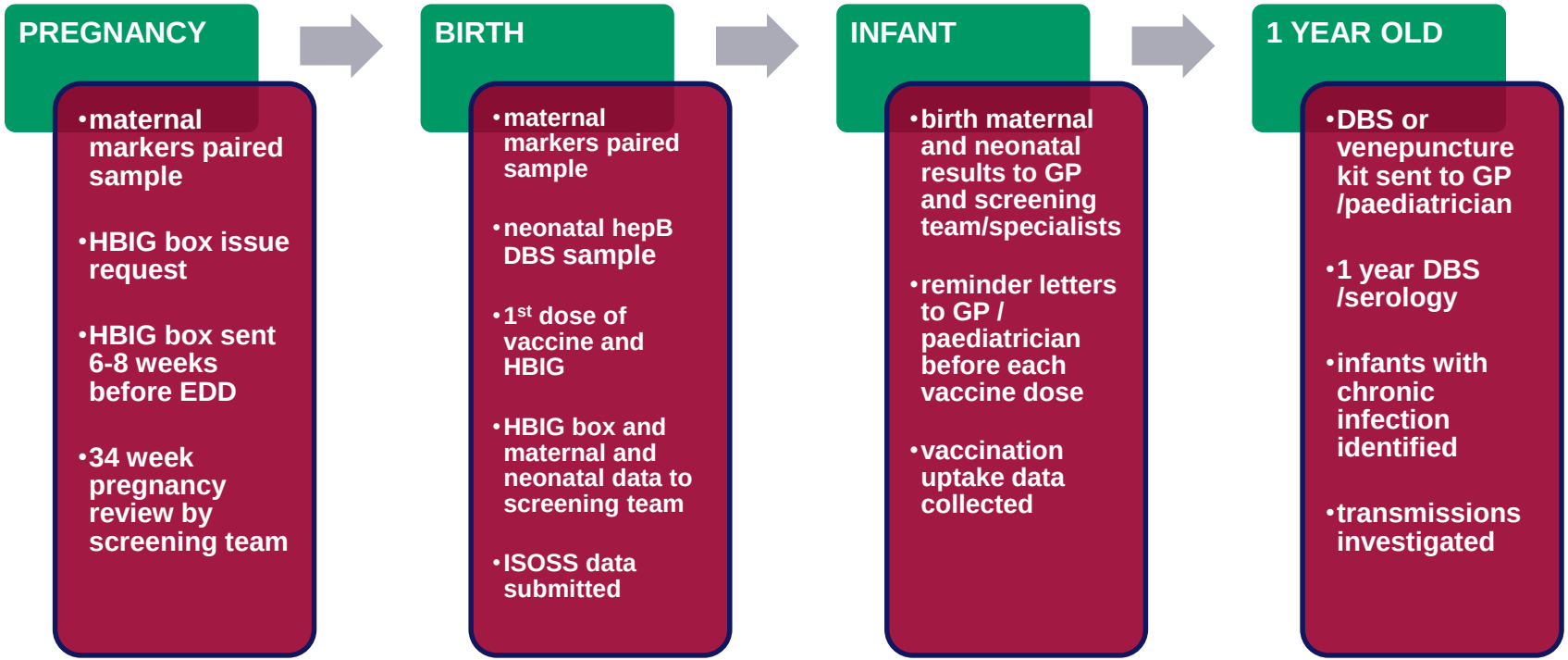
Important factors – mutant viruses that escape vaccine

- shape matters – alterations in shape will allow virus to escape vaccine
- HBV is a clever virus – evolves to evade immune response
- testing of 12 month sample in HBV-infected infants by sequencing of the major antigenic region
- indicates 40% harbour amino acid changes which alter the shape of the virus
- vaccine escape mutants do results in infections



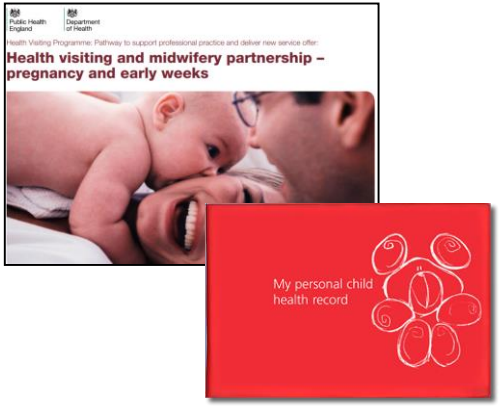


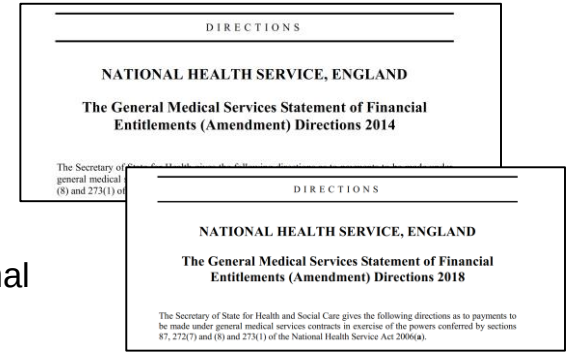
PHE surveillance of infants at higher infectivity risk



Strengthening handover to and primary care

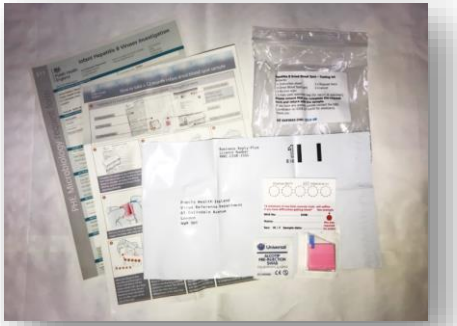
- notifications by screening team to GP, CHIS and Health Visitor:
  - after appointment for screen positive result
  - after delivery: ‘Red Book’, template notification letter and discharge summary
- Health visitor- highlighted for targeted care antenatally,10-14 days old and 6-8 week review
- CHRD/CHIS- vaccination reminders to GP practice noting urgency for 4 weeks dose
- parents - when registering baby at GP for 4 week dose – with red book and patient leaflet
- GP practices- The General Medical Services Statement of Financial Entitlements (Amendment) Directions 2014 and 2018
  - delivery of timely vaccinations and 1 year DBS/serology
  - reporting administered doses to CHIS to enable accurate local and national estimates of vaccine





12 month blood test (DBS) for at risk infants

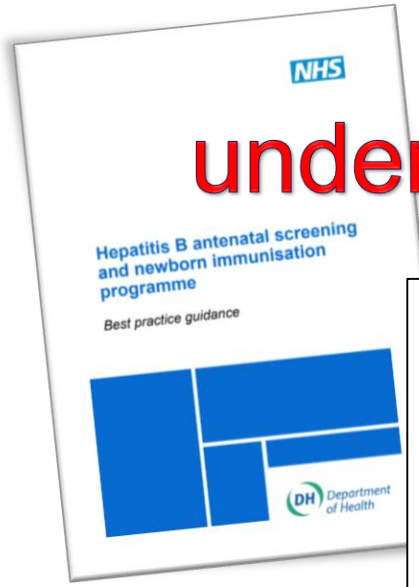
- a very small number of infants may still acquire infection despite vaccination and immunoglobulin
- testing at risk infants at 12 months old is important to enable timely assessment of their infection status to reduce risk of long term liver disease and complications in later life
- purpose and priority is to check for infection (HBsAg), not to check or measure response to the vaccine
- PHE national dried blood spot(DBS) testing service:
  - provides an alternative to venepuncture in primary care
  - no need for hospital referral and waiting times
  - validated assay to detect HBsAg and anti-HBcore antibody
  - DBS kits provided by and tested at PHE-Colindale free of charge
  - collects maternal hepatitis markers and infant vaccination history
  - results go to requesting clinician (GP) and local coordinator (cc to PHE Health Protection Team).



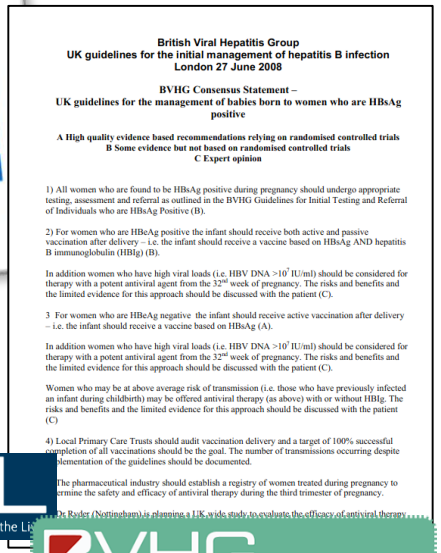
https://www.gov.uk/guidance/hepatitis-b-dried-blood-spot-dbs-testing-for-infants

Professional Guidance

- antenatal screening and selective neonatal immunisation guidance:
  - previous "*best practice*" published in 2011 is now out of date
  - new supporting PHE is being developed to support the quality improvement initiative
- clinical guidelines
  - last published in 2008
  - under review by British Association for the Study of the Liver (BASL) British Viral Hepatitis (BVHG) group



under revision


British Viral Hepatitis Group
UK guidelines for the initial management of hepatitis B infection
London 27 June 2008

BVHG Consensus Statement –
UK guidelines for the management of babies born to women who are HBsAg positive

A High quality evidence based recommendations relying on randomised controlled trials
B Some evidence but not based on randomised controlled trials
C Expert opinion

1) All women who are found to be HBsAg positive during pregnancy should undergo appropriate testing, assessment and referral as outlined in the BVHG Guidelines for Initial Testing and Referral of Individuals who are HBsAg Positive (B).

2) For women who are HBeAg positive the infant should receive both active and passive vaccination after delivery – i.e. the infant should receive a vaccine based on HBsAg AND hepatitis B immunoglobulin (HBIg) (B).

In addition women who have high viral loads (i.e. HBV DNA >10^7 IU/ml) should be considered for therapy with a potent antiviral agent from the 32nd week of pregnancy. The risks and benefits and the limited evidence for this approach should be discussed with the patient (C).

3 For women who are HBeAg negative the infant should receive active vaccination after delivery – i.e. the infant should receive a vaccine based on HBsAg (A).

In addition women who have high viral loads (i.e. HBV DNA >10^7 IU/ml) should be considered for therapy with a potent antiviral agent from the 32nd week of pregnancy. The risks and benefits and the limited evidence for this approach should be discussed with the patient (C).

Women who may be at above average risk of transmission (i.e. those who have previously infected an infant during childbirth) may be offered antiviral therapy (as above) with or without HBIg. The risks and benefits and the limited evidence for this approach should be discussed with the patient (C)

4) Local Primary Care Trusts should audit vaccination delivery and a target of 100% successful completion of all vaccinations should be the goal. The number of transmissions occurring despite implementation of the guidelines should be documented.

The pharmaceutical industry should establish a registry of women treated during pregnancy to determine the safety and efficacy of antiviral therapy during the third trimester of pregnancy.

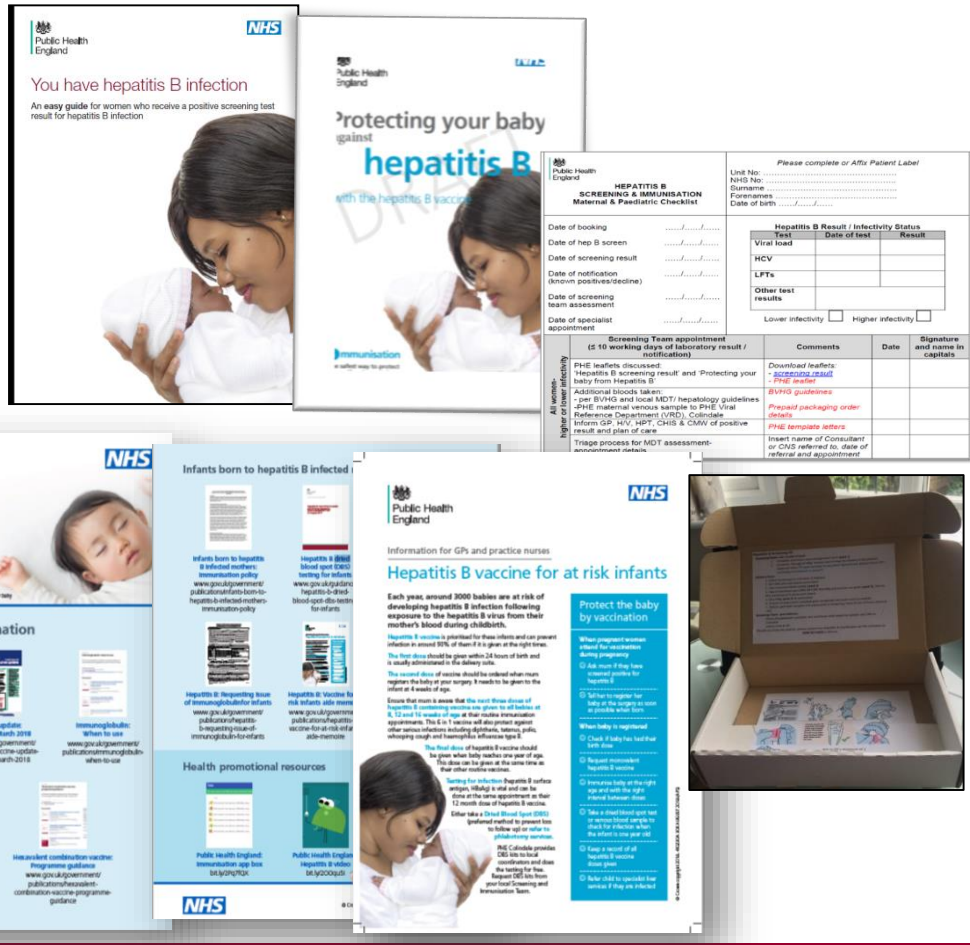
Dr Ryder (Nottingham) is planning a UK wide study to evaluate the efficacy of antiviral therapy

BASL
British Association for the Study of the Li

BVHG
British Viral Hepatitis Group

Supporting resources

- IDPS screen positive leaflet
- PHE hepatitis B safety checklist
- prepaid serology packages
- notification letter templates
- PHE vaccination leaflet
- delivery suite ‘HBIG box’
- red book inserts
- primary care aide memoire



Education

- professional publications
- revised generic ANNB eLearning resource
- new IDPS eLearning package
  - developed by clinicians
  - interactive- 3 and 4D media / videos and quizzes
  - recommended completion every 2 years for screening teams
  - launch autumn 2019
- RCN practice nurse webinar
- RCGP/PHE courses
- social media banners, posters, videos

Acknowledgements

Sharon Webb
Sema Mandal
Samreen Ijaz
Pat Schan
David Green
Nadia Permalloo
Cherstyn Hurley
Michelle Falconer
Laura Craig
Peter Lamb
Amanda Dennis
Shirley Cole
Lorraine Martin

PHE internal project group

AND all the members of the:

- PHE hepatitis B antenatal and selective neonatal immunisation Strategic Group
- IDPS Screening Coordinator & Clinical Nurse Specialists Forum

Public Health England

Protecting and improving the nation's health

National Immunisation Network Meeting 2019
Vaccination - back to the future

London

21-22 May 2019

The effect of Severe Combined Immunodeficiency (SCID) screening on the infant BCG programme

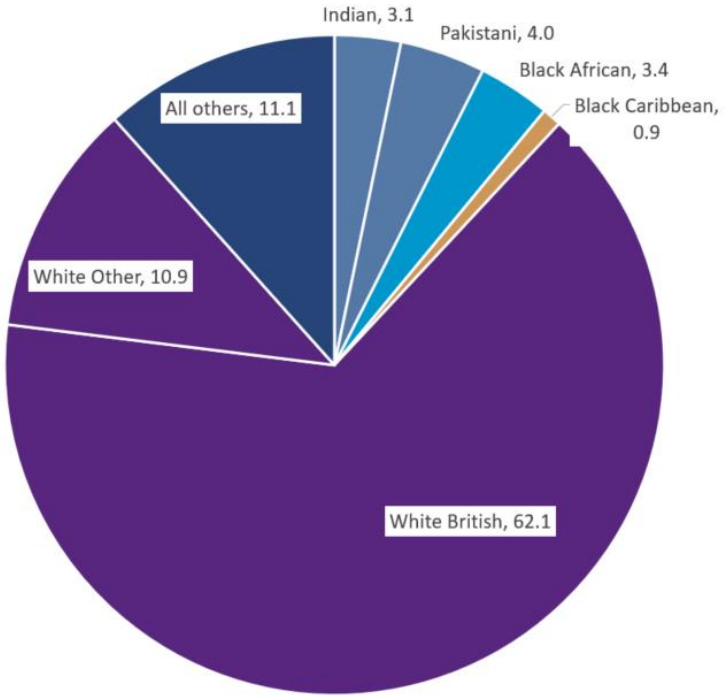
Dr David Elliman, Clinical Lead, Newborn Blood Spot, Public Health England

SCID
(Severe Combined Immunodeficiency Syndrome)

- Group of inherited disorders
- Absence of lymphocytes
- c. 1 in 40,000 live births
- Partially protected by maternal antibodies at birth
- Present usually at 3-6 months with infection
- Untreated, leads to death in first year of life in most cases
- Commoner in some BEM

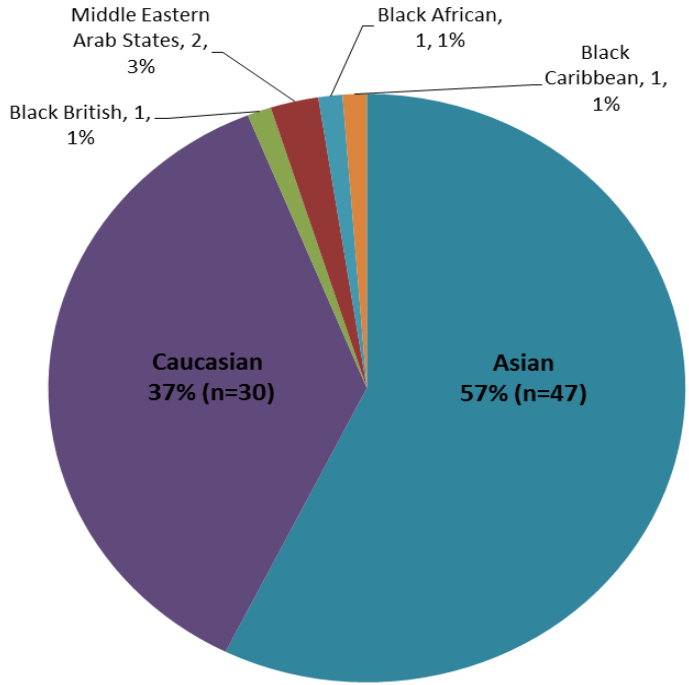
SCID and Ethnicity

Live births by ethnic group, 2015 England and Wales



ONS

SCID cases



With thanks to Prof. Bobby Gaspar/Austen Worth UCL GOSH Institute of Child Health

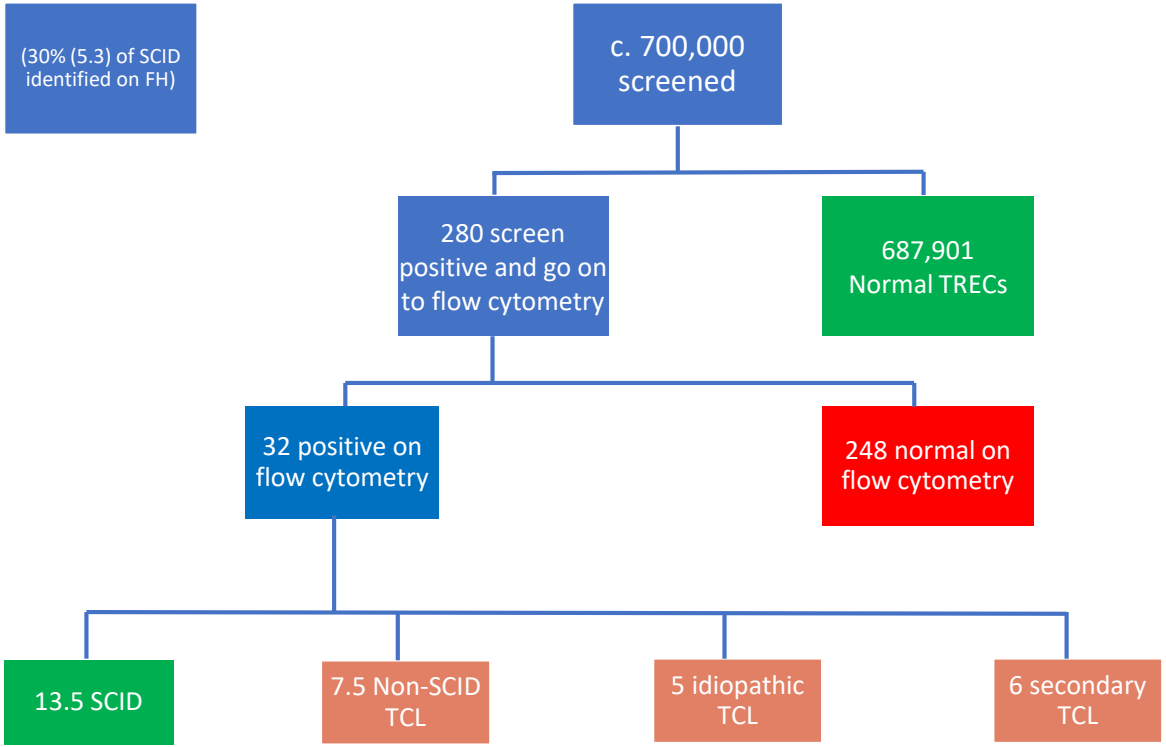
SCID

- Younger siblings of cases are identified at birth
- Early treatment with haematopoietic stem cell transplantation (HSCT) or gene therapy
- Outcome much improved
- Therefore should we screen?

SCID screening

- Important condition
- Natural history known
- Treatment effective
- Test (TREC; T-cell excision circles) available that can be used on a whole population basis, but……

SCID Screening Using TRECs



SCID screening

- Important condition
- Natural history known
- Treatment effective
- Test available (TREC; T-cell excision circles) that can be used on a whole population basis, but …….

- Cost effective, so we should evaluate in practice, before making a final decision, but …….

SCID and live vaccines

- Rotavirus
  - Chronic gastroenteritis needing TPN and prolonged hospital stay
  - Screening result will be available, so not given, therefore screening is of benefit
- BCG
  - Leads to disseminated BCGosis and possible death, and if not, then major complication to treatment
  - Screen results available by 4 weeks (usually sooner), when asymptomatic, therefore treatment much easier, but is still two extra drugs, potential hepatotoxicity and therefore increased monitoring

SCID and BCG

- Currently we do not screen for SCID, so cannot anticipate an adverse reaction to BCG
- If we screen, what should we do about BCG?
- Possible policies in SCID screening areas:
  - 1. Continue as we are and treat to prevent BCGosis if discovered to have SCID
  - 2. Offer parents possibility of delaying BCG
  - 3. Delay BCG until SCID result available, ie 4-6 weeks old
  - 4. Stop giving BCG

Screening for SCID
Where are we now?

- Mapping and costing change to BCG programme
- Assessing disbenefits in changing BCG programme
- Resubmitting cost effectiveness assessment
- If given go ahead:
  - Laboratories need to procure equipment, hire and train extra staff and adapt IT system
  - Midwifery staff need training
  - Materials needed for staff and parents
  - CHIS systems need adapting
  - BCG programme needs to be changed

Public Health England

Protecting and improving the nation's health

National Immunisation Network Meeting 2019
Vaccination - back to the future

London

21-22 May 2019

Moving the needle: Royal Society for Public Health report

Duncan Stephenson, Director of External Affairs and Marketing, Royal Society for Public Health

RSPH
ROYAL SOCIETY FOR PUBLIC HEALTH
VISION, VOICE AND PRACTICE

National Immunisation Network Meeting 2019

Duncan Stephenson

Director of External Affairs

RSPH
ROYAL SOCIETY FOR PUBLIC HEALTH
VISION, VOICE AND PRACTICE

Our vision

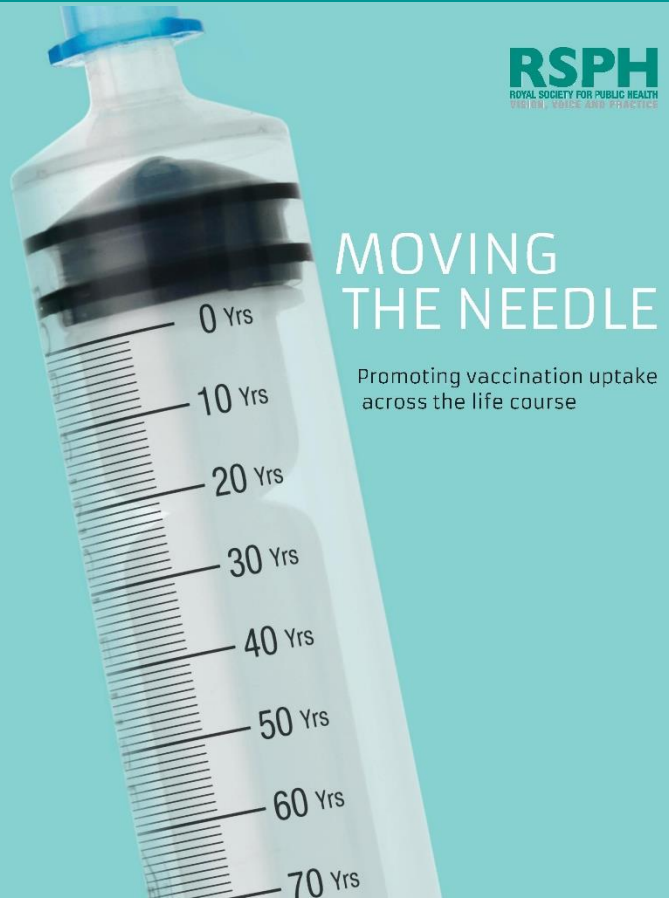
"Everyone has the opportunity to optimise their health and wellbeing"

Moving The Needle

RSPH
ROYAL SOCIETY FOR PUBLIC HEALTH
VISION, VOICE AND PRACTICE

A snapshot of public and professional attitudes to vaccination across the life course. Including:

- **A survey of 2,622 parents**
- **A survey of 2000 adults**
- **A survey of 216 healthcare professionals**



Key Findings

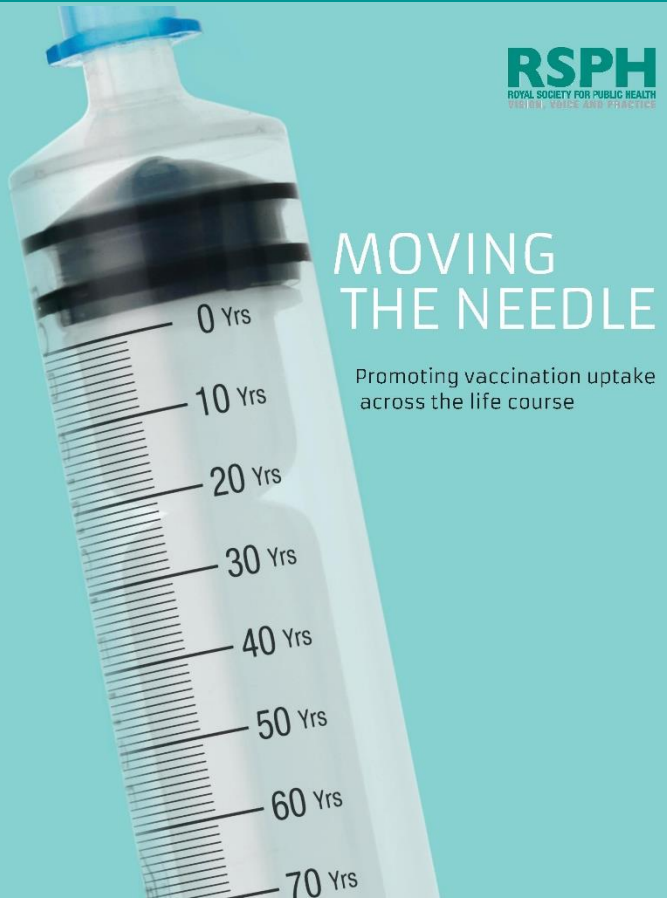
RSPH
ROYAL SOCIETY FOR PUBLIC HEALTH
VISION, VOICE AND PRACTICE

Positive attitudes:

- **91% of parents agreed vaccines are important for their children's health.**

Trust in our healthcare professionals:

- **Parents identified doctors (94%) and nurses (92%) as the most trusted sources of advice**

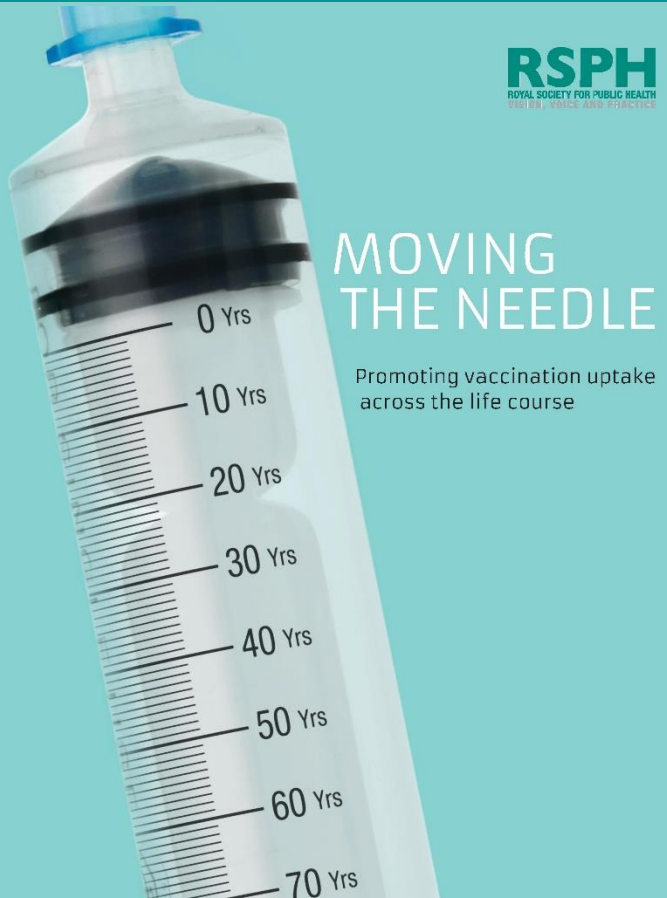


Key Findings

RSPH
ROYAL SOCIETY FOR PUBLIC HEALTH
VISION, VOICE AND PRACTICE

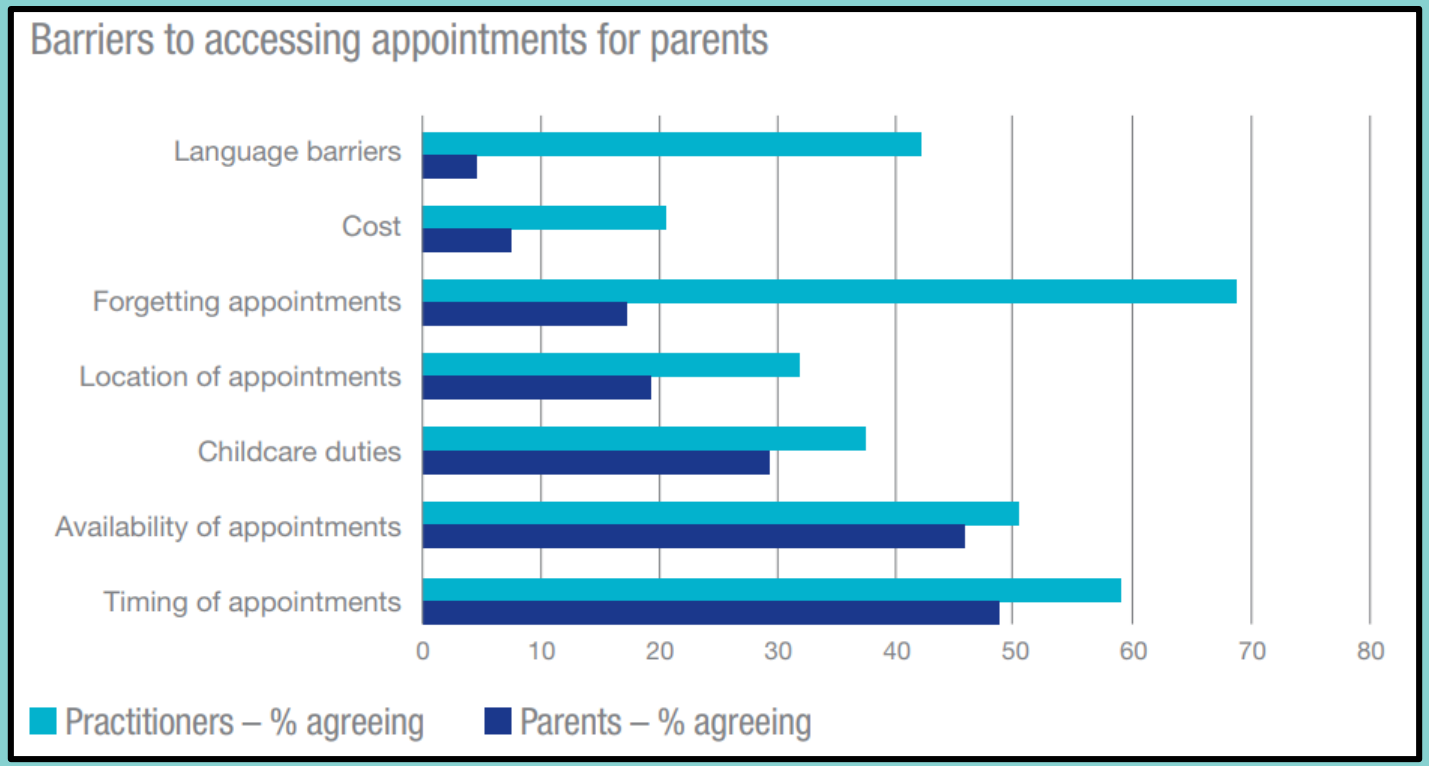
Reasons for not vaccinating children:

- **Fear of side effects**
- **Lack of confidence in effectiveness**



Key Findings

RSPH
ROYAL SOCIETY FOR PUBLIC HEALTH
VISION, VOICE AND PRACTICE

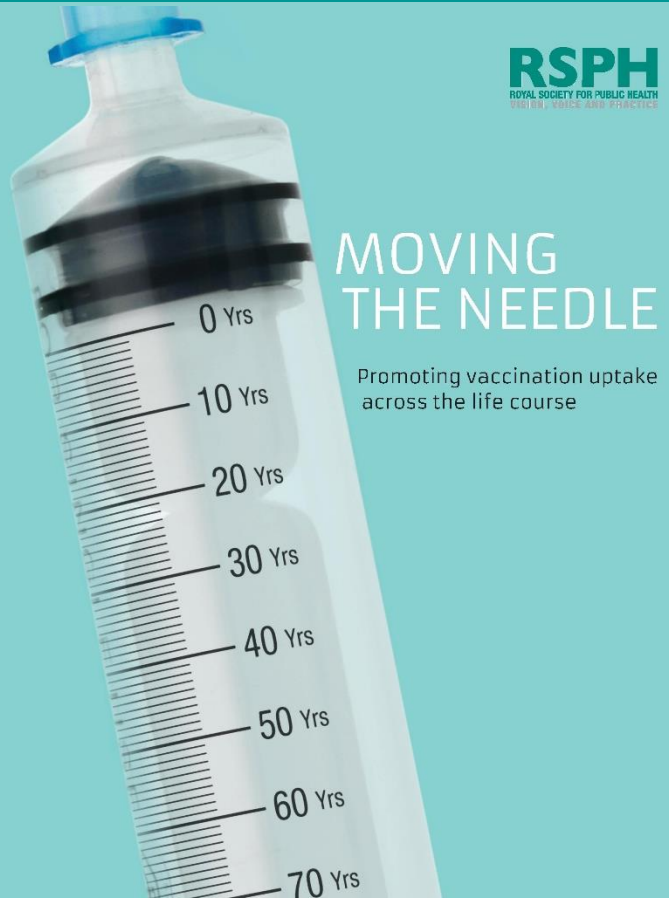


Key Findings

RSPH
ROYAL SOCIETY FOR PUBLIC HEALTH
VISION, VOICE AND PRACTICE

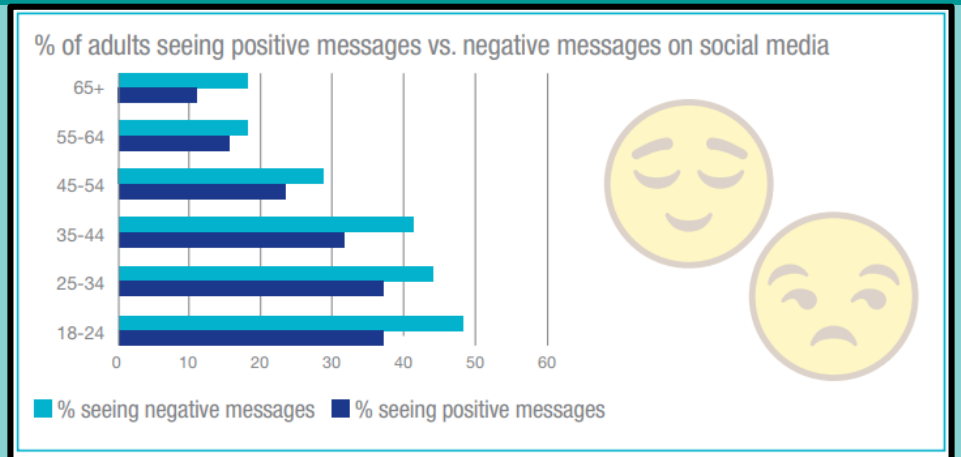
Social Media:

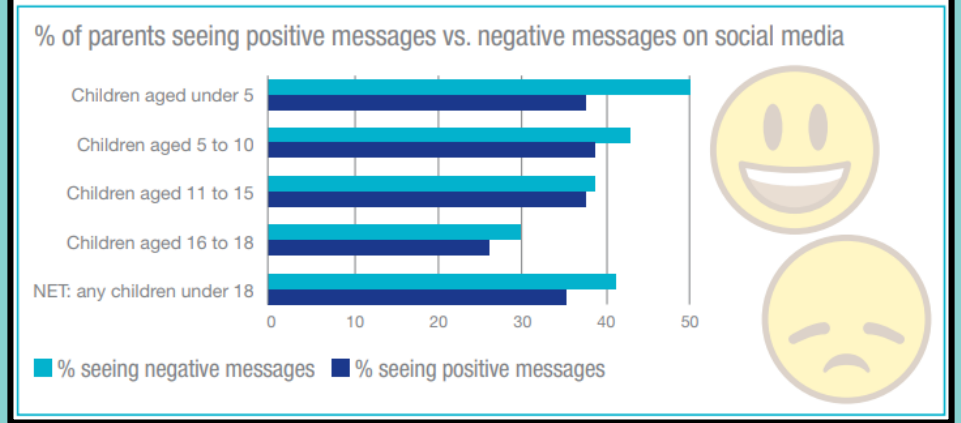
- **Two in five (41%) parents say they are often or sometimes exposed to negative messages about vaccines on social media**
- **One in two (50%) among parents with children under five years old**



Key Findings

RSPH
ROYAL SOCIETY FOR PUBLIC HEALTH
VISION, VOICE AND PRACTICE





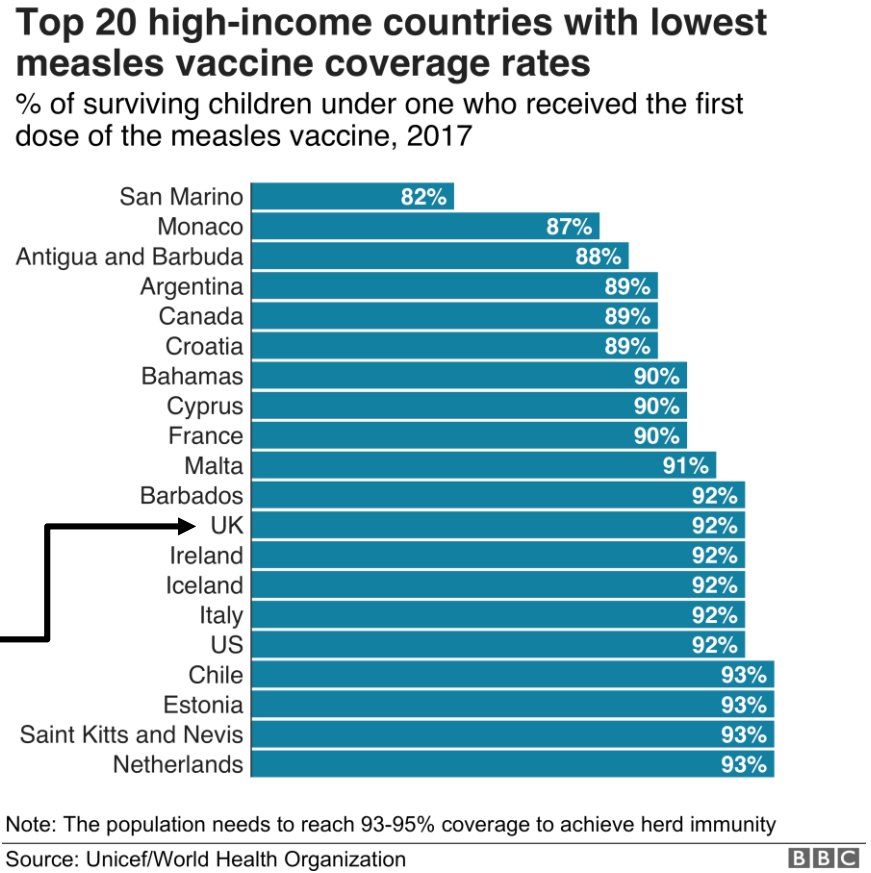
Measles in the UK

RSPH
ROYAL SOCIETY FOR PUBLIC HEALTH
VISION, VOICE AND PRACTICE

unicef
UNITED KINGDOM

FOR EVERY CHILD IN DANGER

We are close to, but missing, the required 93-95% coverage.



Measles in the UK

RSPH
ROYAL SOCIETY FOR PUBLIC HEALTH
VISION, VOICE AND PRACTICE

unicef
UNITED KINGDOM
FOR EVERY CHILD IN DANGER

These numbers of people unvaccinated are a serious cause for concern.

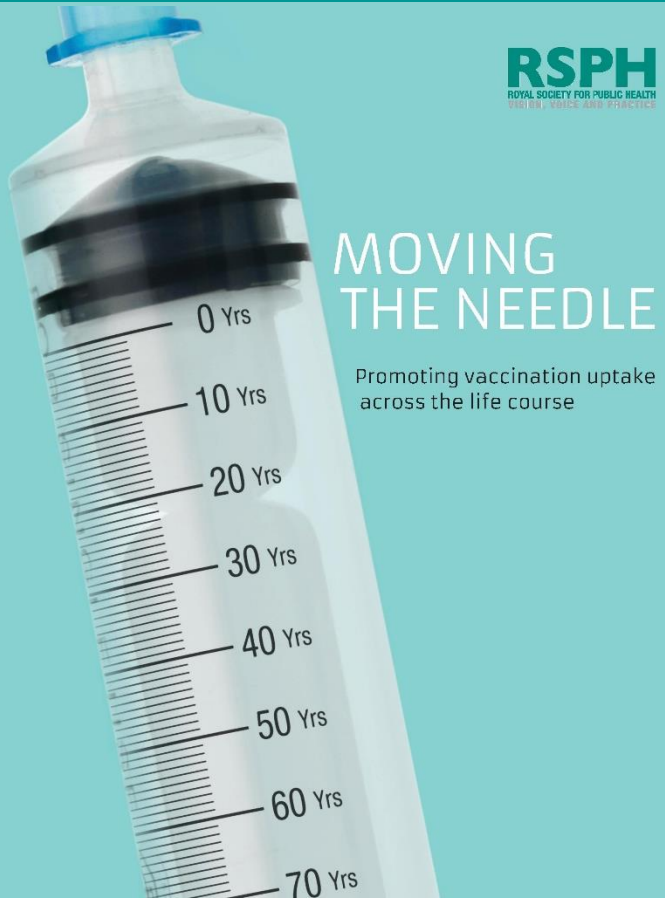
Top ten high-income countries where children not vaccinated with the first measles vaccine dose 2010 - 2017
1. United States: 2,593,000
2. France: 608,000
3. United Kingdom: 527,000
4. Argentina: 438,000
5. Italy: 435,000
6. Japan: 374,000
7. Canada: 287,000
8. Germany: 168,000
9. Australia: 138,000
10. Chile: 136,000

What are we recommending?

RSPH
ROYAL SOCIETY FOR PUBLIC HEALTH
VISION, VOICE AND PRACTICE

- Conversation with parents
- Education, for children and parents
- Regulation, for social media

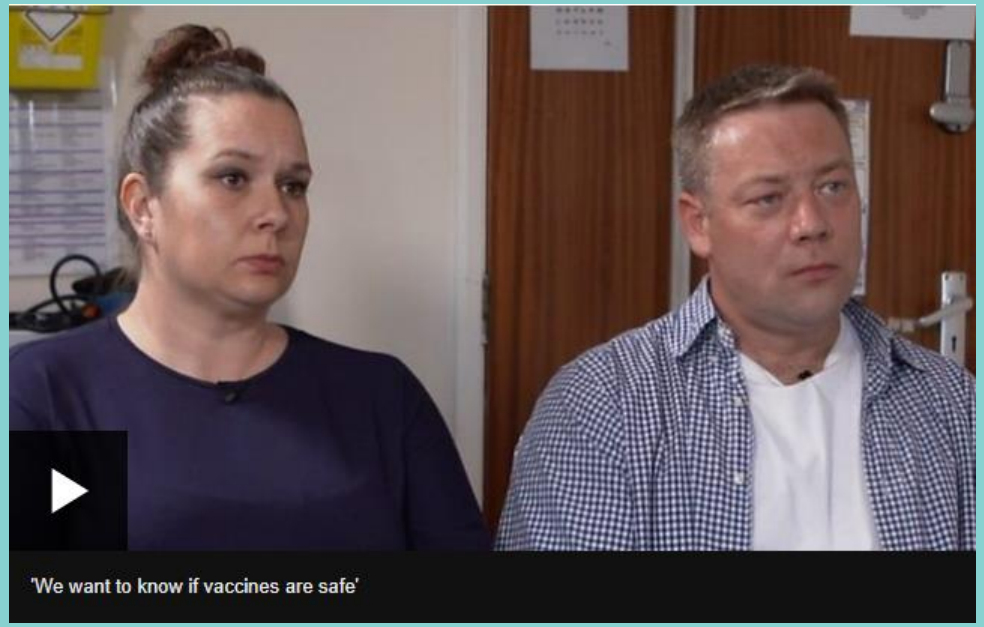
… How?



Conversation

RSPH
ROYAL SOCIETY FOR PUBLIC HEALTH
VISION, VOICE AND PRACTICE

Making the most of the trust our health professionals have.

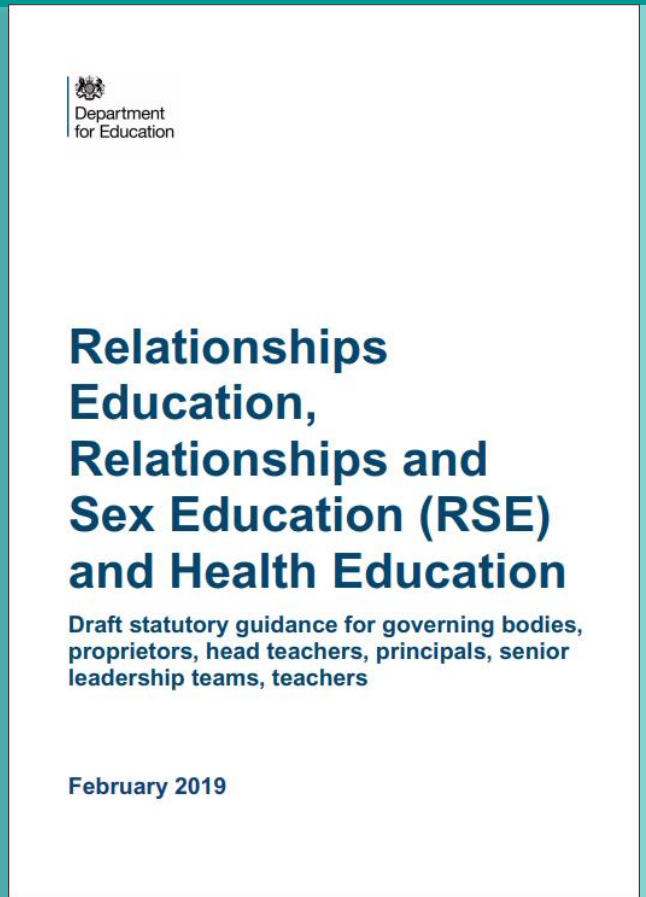


Education

RSPH
ROYAL SOCIETY FOR PUBLIC HEALTH
VISION, VOICE AND PRACTICE

Sustained funding for Government social media campaigns

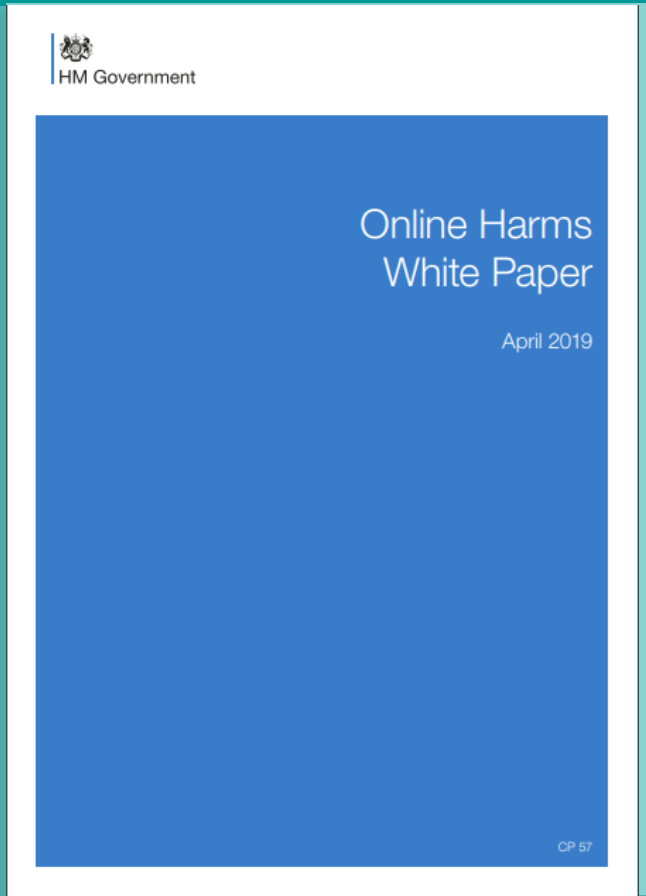
Education



Statutory RSE guidance. By 2020, primary and secondary schools must teach:

- **"The facts and science relating to immunisation and vaccination."**
- **"How to be a discerning consumer of information online."**

Regulation



The Government's Online Harms White Paper

- **Duty of care**
- **Independent Regulator**
- **Online literacy strategy**

"Inaccurate information, regardless of intent, can be harmful – for example the spread of inaccurate anti-vaccination messaging online poses a risk to public health."

Thank you

RSPH
ROYAL SOCIETY FOR PUBLIC HEALTH
VISION, VOICE AND PRACTICE

@DuncanStephens9

DStephenson@rsph.org.uk

www.rsph.org.uk

Public Health England

Protecting and improving the nation's health

National Immunisation Network Meeting 2019
Vaccination - back to the future

London

21-22 May 2019

Health behaviour communication

Professor Noel Brewer, Professor of Health Behaviour and Psychology, Gillings School of Global Health, University of North Carolina

Increasing Vaccination:
Putting Psychological Science Into Action

Noel Brewer

Professor of Health Behavior

@noelTbrewer

UNC
GILLINGS SCHOOL OF
GLOBAL PUBLIC HEALTH

Funding

American Academy of Pediatrics

American Cancer Society

Centers for Disease Control & Prevention

Food & Drug Administration

GlaxoSmithKline

Merck Sharp & Dohme

National Cancer Institute

Pfizer Fdn

Robert Wood Johnson Fdn

Problems with vaccination uptake

Low uptake

- Highest for pediatric vax
- Lower for adolescent and adults
- No evidence for declining coverage across many vaccines

Delay

- Delayed schedules
- No evidence for increase in delay

Instability of coverage

- Many examples of instability for specific vaccines

Brewer, Chapman, et al., 2017, *PSPI*

Increasing uptake

WHAT PEOPLE THINK AND FEEL

Increasing uptake

SOCIAL PROCESSES

Increasing uptake

CHANGING BEHAVIOR DIRECTLY

Increasing vaccine uptake

WHAT PEOPLE THINK AND FEEL


Ten threats to global health in 2019

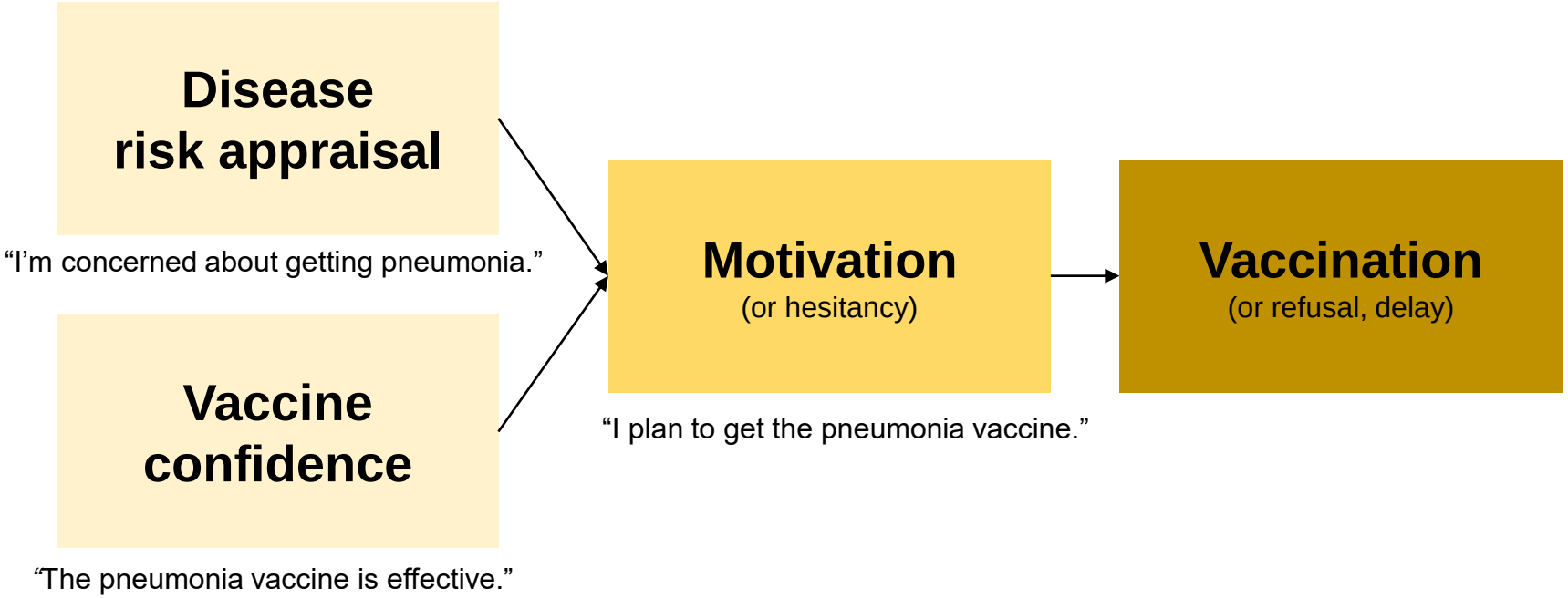
Vaccine hesitancy

Vaccine hesitancy – the reluctance or refusal to vaccinate despite the availability of vaccines – threatens to reverse progress made in tackling vaccine-preventable diseases. Vaccination is one of the most cost-effective ways of avoiding disease – it currently prevents 2-3 million deaths a year, and a further 1.5 million could be avoided if global coverage of vaccinations improved.

Measles, for example, has seen a 30% increase in cases globally. The reasons for this rise are complex, and not all of these cases are due to vaccine hesitancy. However, some countries that were close to eliminating the disease have seen a resurgence.

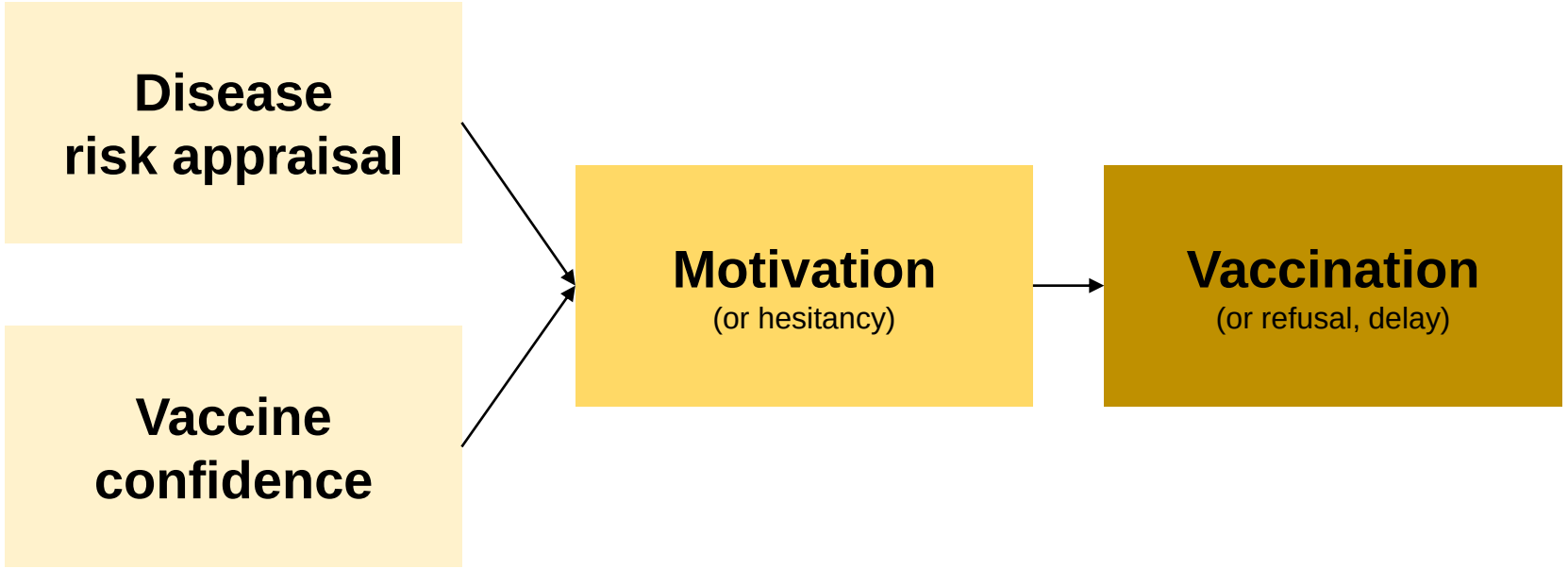
The reasons why people choose not to vaccinate are complex; a vaccines advisory group to WHO identified complacency, inconvenience in accessing vaccines, and lack of confidence are key reasons underlying hesitancy. Health workers, especially

Proposition 1: Thoughts and feelings influence vaccination



Brewer, et al., 2017, *PSPI*

Correlational evidence strongly supports Proposition 1 (Thoughts and feelings influence vaccination).



Brewer, et al., 2017, *PSPI*

Intervention evidence supports Proposition 1 very weakly, and may even reject it.

Interventions

What people think and feel	Likely impact
Messages that increase disease risk appraisals	○
Education campaigns that increase vax confidence	○

○ None or minimal
◎ Modest
● substantial

From Brewer, et al., 2017, *PSPI* (Table 4, p. 188)

Example

Vaccine confidence

INTERVENTION message	OUTCOME Vaccine confidence	OUTCOME Vaccine intent.
Control (text about bird feeding)		
CDC: Evidence on autism and vaccines	Increase	Decrease
CDC: Disease sx and sequelae	-	-
CDC: Mom's story of hospitalized child	-	-
Disease images	Decrease	-

1,754 parents, US. Online experiment.

No behavioral outcome.

Nyhan et al., 2014, *Pediatrics*

Interventions

What people think and feel	Likely impact
Messages that increase disease risk appraisals	○
Education campaigns that increase vax confidence	○
Decision aids	○
Motivational interviewing	○

○ None or minimal
◎ Modest
● substantial

From Brewer, et al., 2017, *PSPI* (Table 4, p. 188)

Example

Motivational interviewing

Motivational interviewing

- express empathy
- note discrepancy between current and desired behavior
- roll with resistance
- support self-efficacy)

Intervention

7 hour training?

20 min visit, 1-2 days post-delivery in hospital

2,389 New mothers, Canada

Static comparison group

Results

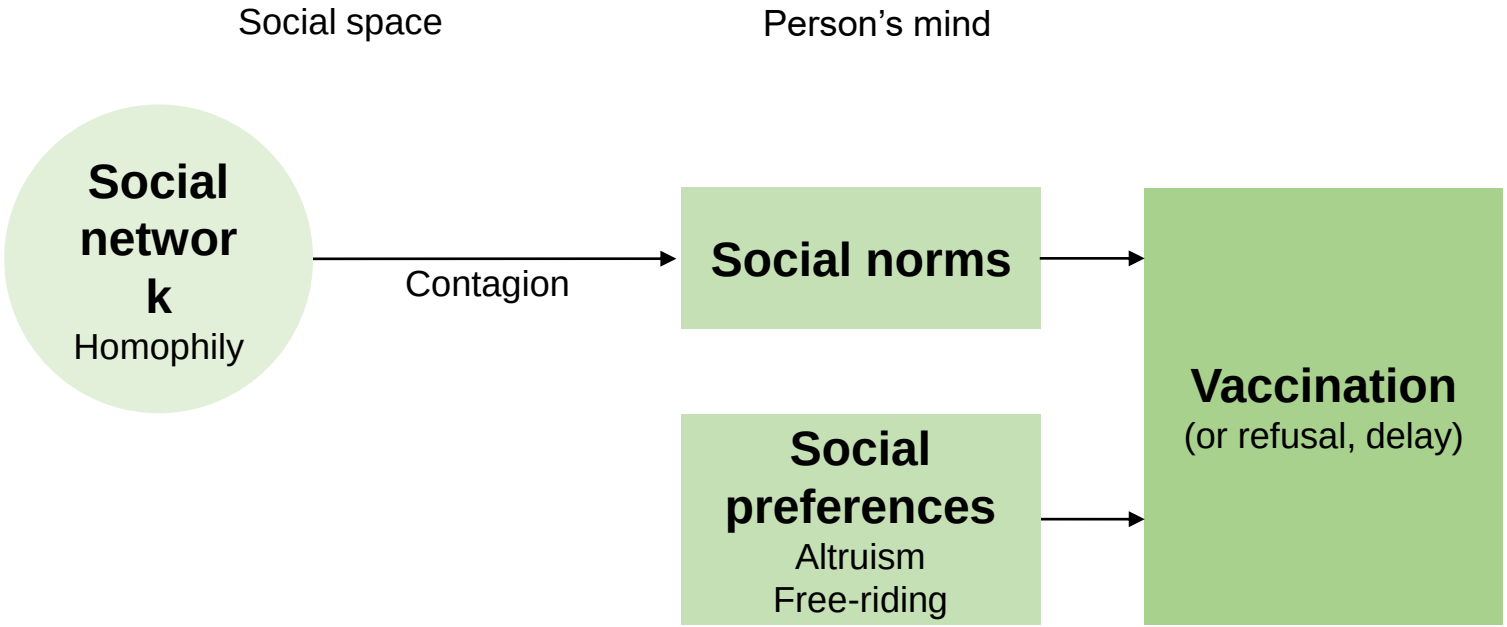
Increase in infant vaccination coverage (7.3% at 7 mos)

Gagneur et al., 2018, *BMC Public Health*

Increasing vaccine uptake

SOCIAL PROCESSES

Proposition 2. Social processes influence vaccination



Correlational evidence supports Proposition 2.

Brewer, et al., 2017, *PSPI*

Intervention evidence supports Proposition 2 in various behaviors, but almost none of the evidence is in vaccination.

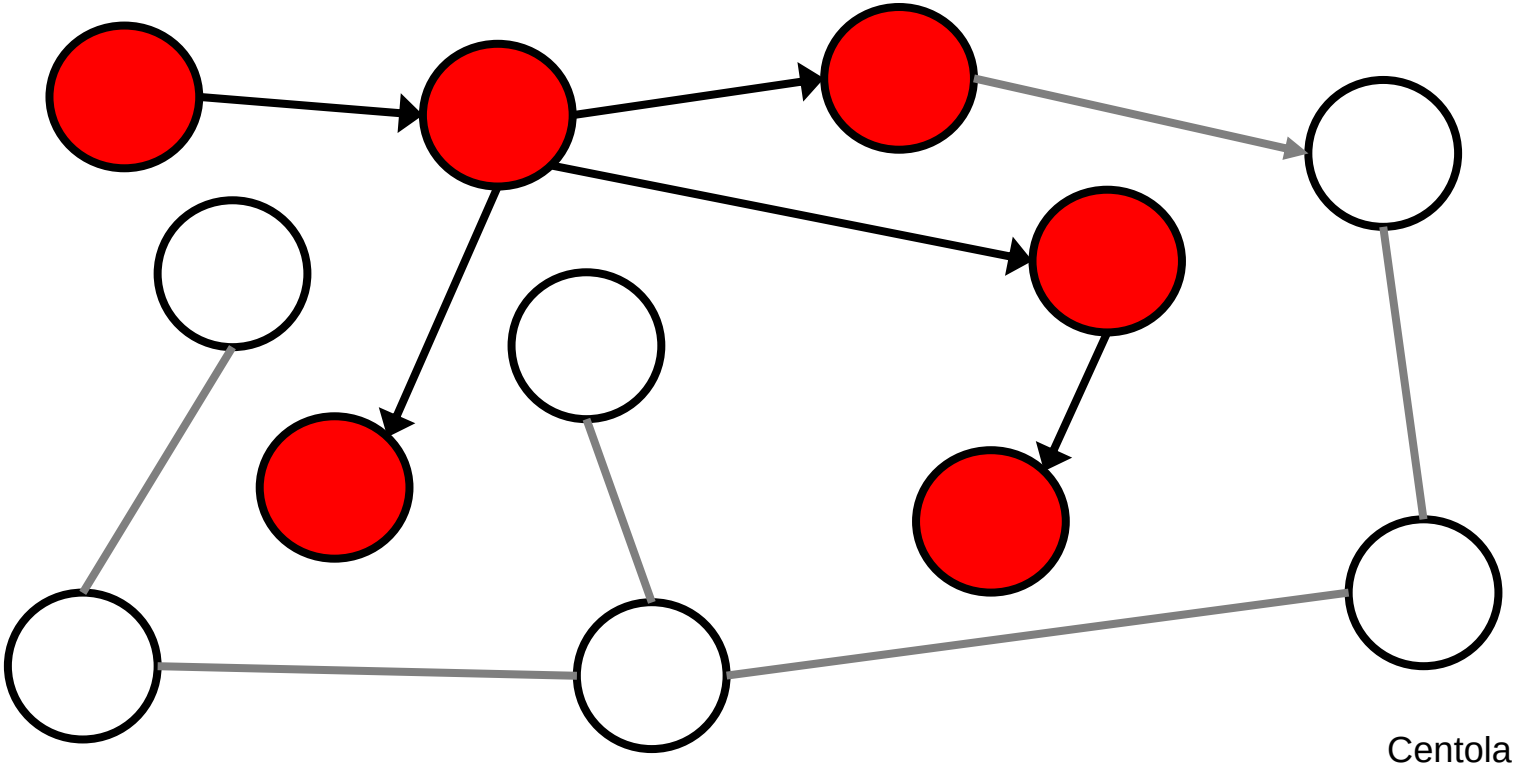
Interventions

What people think and feel	Likely impact
Messages that increase disease risk appraisals	○
Education campaigns that increase vax confidence	○
Decision aids	○
Motivational interviewing	○
Social processes	
Descriptive norm messages	◎
Social network interventions that build on contagion	◎
Messages that change altruism or freeriding beliefs	○

○ None or minimal
◎ Modest
● substantial

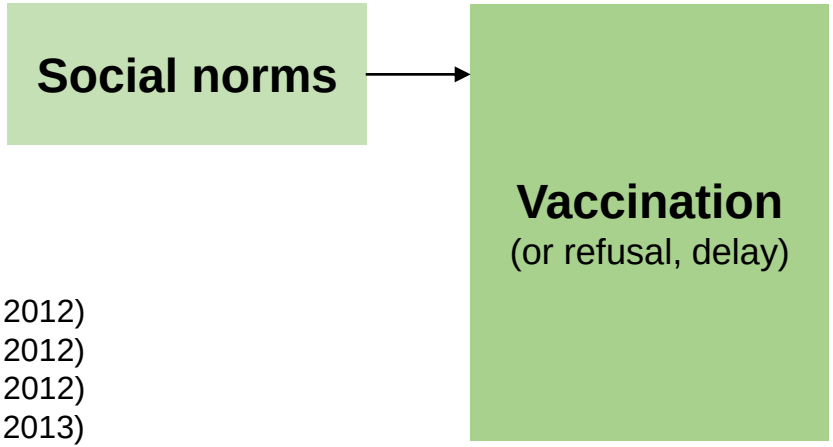
From Brewer, et al., 2017, *PSPI* (Table 4, p. 188)

Health behaviors propagate through social networks.



Centola (2010). *Science*.
Centola (2011). *Science*.

Social norms and vaccination



HPV vaccination intention (Juraskova et al., 2012)
HPV vaccination behavior (Gerend & Shepherd, 2012)
H1N1 vaccination intention (Nyhan et al., 2012)
Childhood vaccination behavior (Brunson, 2013)


GET
YOUR
FLU SHOT
TODAY[1]
because 63% of
your friends didn't[2]

Does social media drive vaccine sentiment?

- Easy to spread (mis)information quickly over social media
- People network with like-minded people (homophily)
- Homophily amplifies contagion
- True information contagion hard to detect in real world

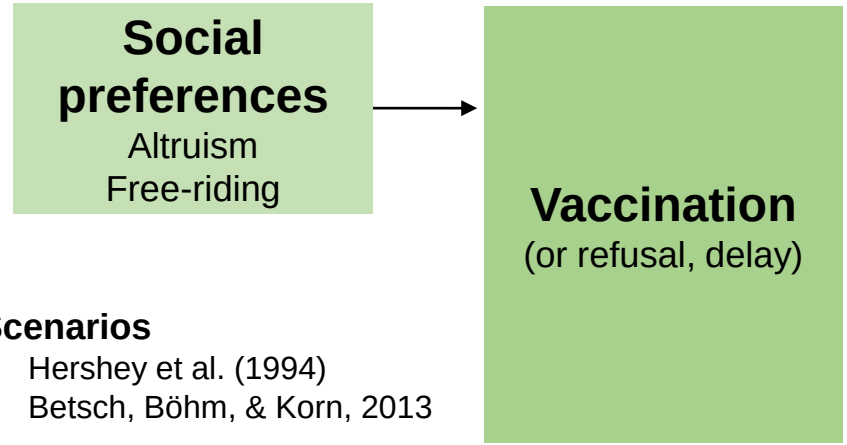
Echo chamber effects are real

- Likely overstated, and impact is unpredictable

- Power of narratives
- Complete non-vaccination rare
- Geographic clustering of non-vaccinators important
  - Enhances spread of disease

Guess et al., white paper

Social preferences



Hypothetical Scenarios

Hershey et al. (1994)
Betsch, Böhm, Korn, and Holtmann (2016, 2017)
Vietri et al. (2012)

Hershey et al. (1994)
Betsch, Böhm, & Korn, 2013

Laboratory Experiments

Chapman et al. (2012)
Betsch, Böhm, & Korn (2017)

Correlation with self-reported vaccination

Polonijo et al. (2016)
Shim et al. (2012)

Meszaros et al. (1996)

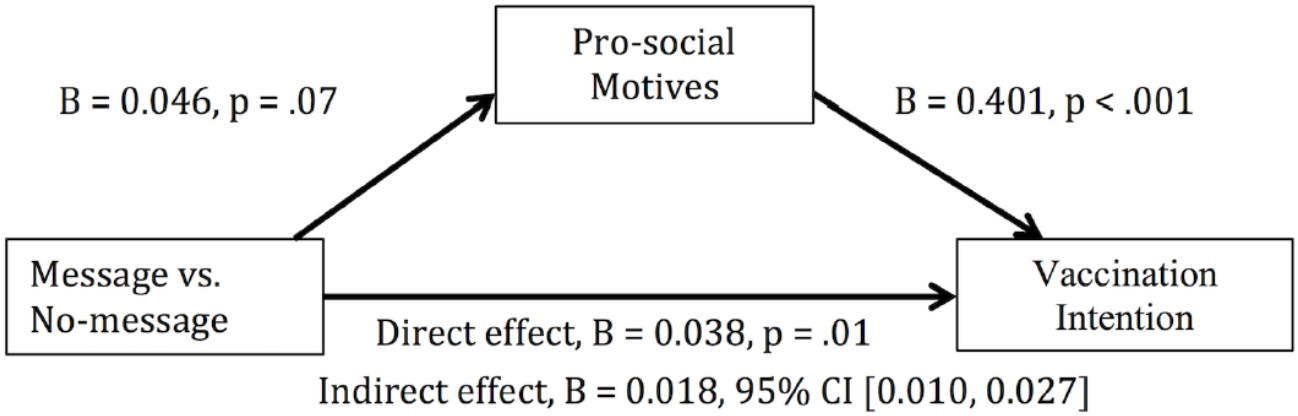
Intervention on vaccination intention

Li et al. (2016)

Example

Pro-social motives

Message about an individual who died from the flu because others around him did not vaccination affected flu vaccination intentions by way of pro-social motives.



Li et al. (2016) *PLOS ONE*

A few more ideas

Other evidence

~No social process interventions with vaccine behavior outcomes

- Effective interventions in other behaviors

Speculations

Social network and social norm effects will be modest in size

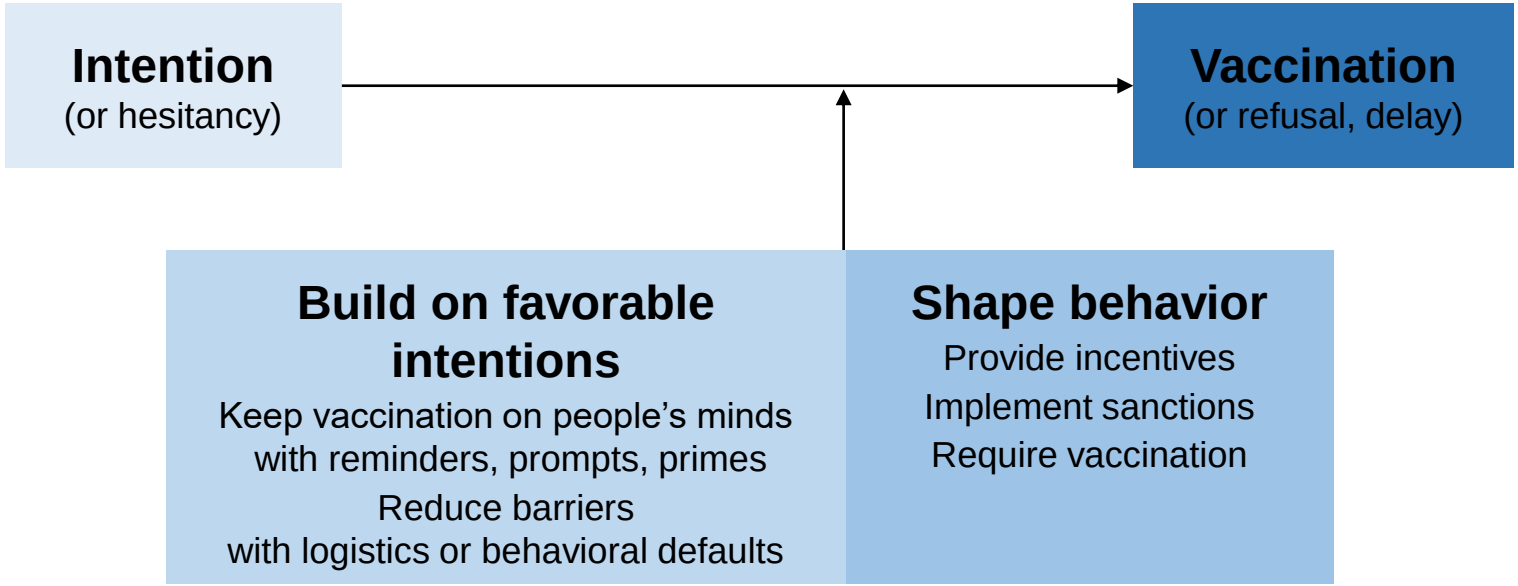
- Altruism effects will be small

Brewer, Chapman, et al., 2017, *PSPI*

Increasing vaccine uptake

CHANGING BEHAVIOR DIRECTLY

Proposition 3. Interventions can influence vaccination directly, without changing thoughts and feelings



Intervention evidence robustly supports Proposition 3.

Brewer, Chapman, et al., 2017, *PSPI*

Interventions

What people think and feel	Likely impact
Messages that increase disease risk appraisals	○
Education campaigns that increase vax confidence	○
Decision aids	○
Motivational interviewing	○
Social processes	
Descriptive norm messages	◎
Social network interventions that build on contagion	◎
Messages that change altruism or freeriding beliefs	○
Direct behavior change	
Presumptive healthcare provider recommendations	●
Reminders and recalls	◎
Implementation intention interventions	◎
Mere measurement interventions	◎
Onsite vaccination	●
Default appointments	●

○ None or minimal
◎ Modest
● substantial

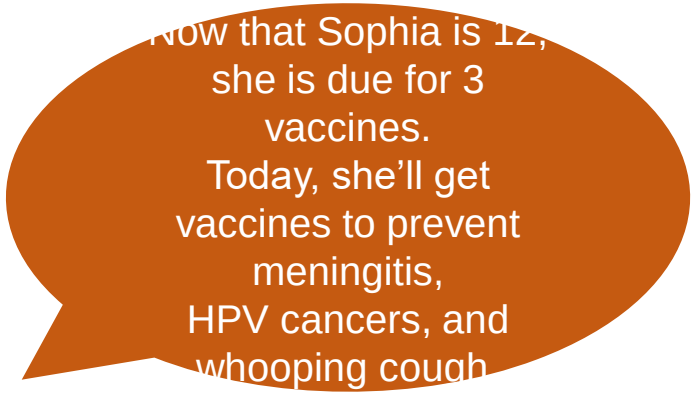
From Brewer, et al., 2017, *PSPI* (Table 4, p. 188)

Example

Presumptive recommendation training

Intervention
Train providers to make presumptive announcements

- Note **child's age.**
- Announce the child is due for **vaccines** recommended for children this age.
- Say you will vaccinate **today.**



NCT02377843

Brewer, et al., 2017, *Pediatrics.* Based on hypothesis from Opel et al., 2013, *Pediatrics*.

Example

Presumptive recommendation training

1 hour training
Physician led
In-clinic, US
CME

Announcement Approach

Presumptive announcement

Only if needed

Ease concerns

Recommend

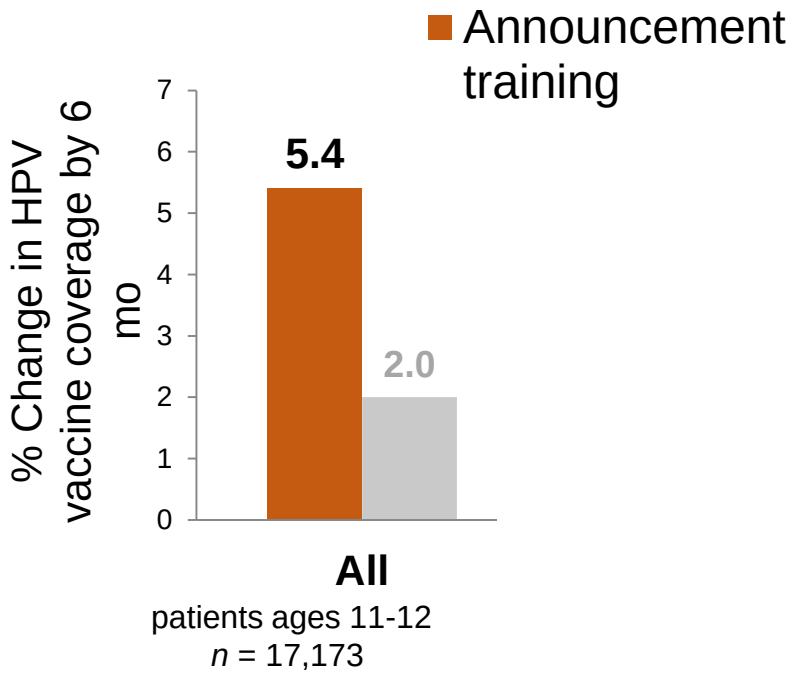
Start the Conversation

Start a conversation

Ease concerns

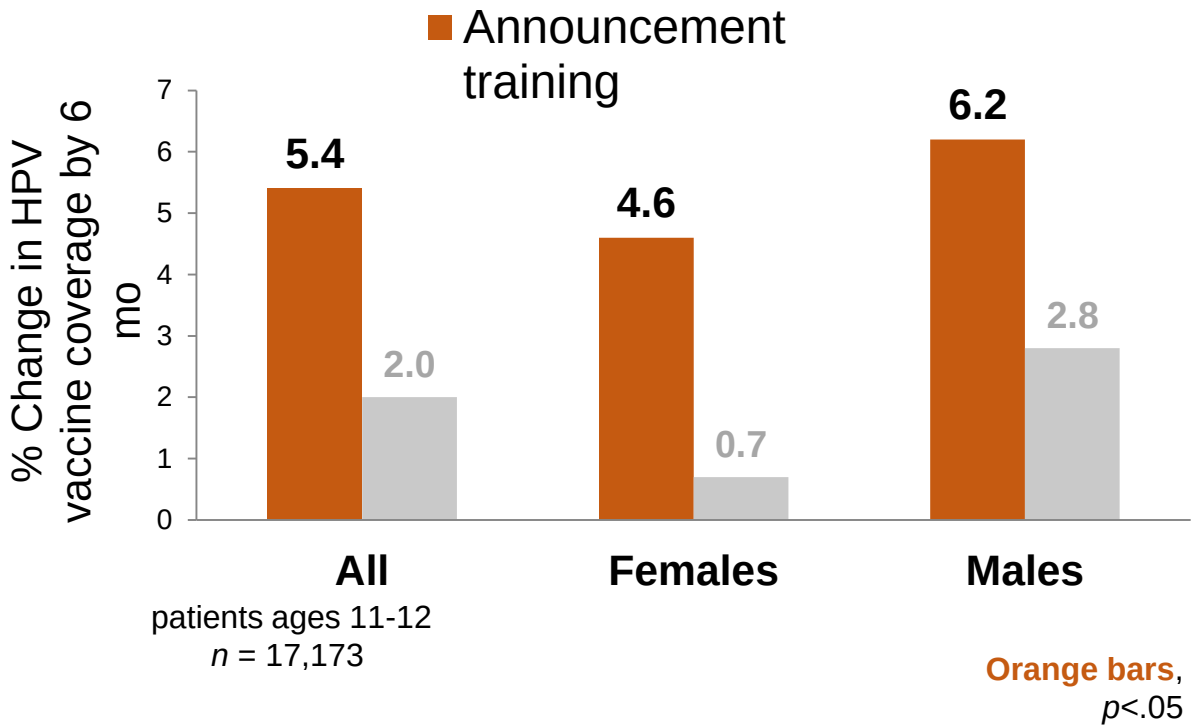
Recommend

Brewer, et al., 2017, *Pediatrics*



Orange bars, $p<.05$

Brewer, et al., 2017, *Pediatrics*



Brewer, et al., 2017, *Pediatrics*

Example

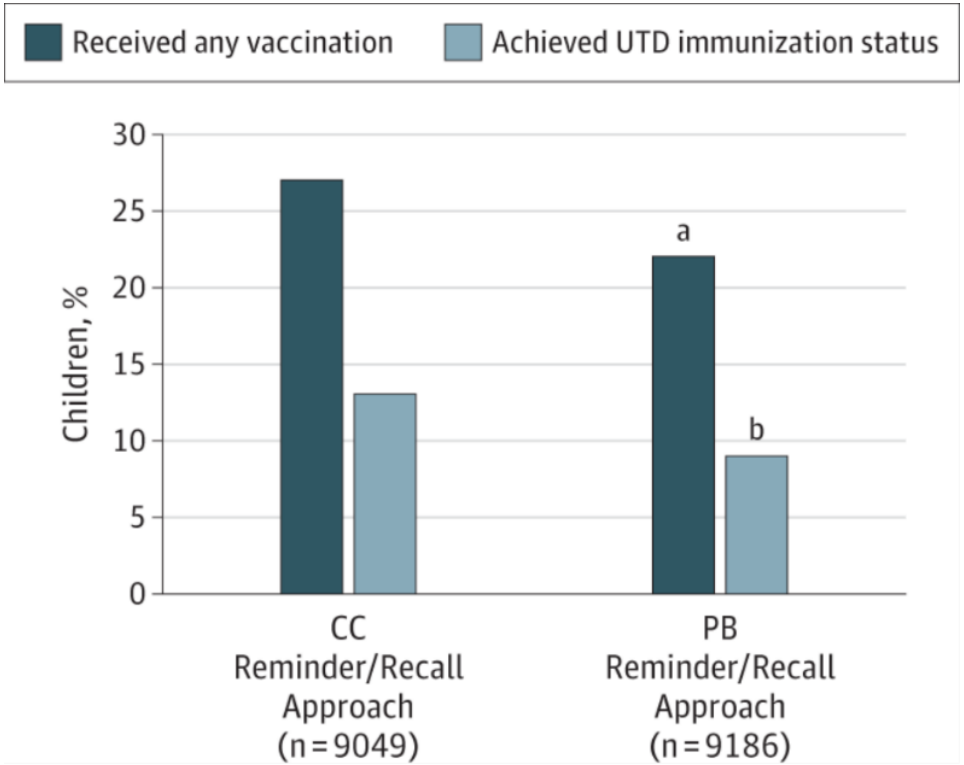
Reminder/recall

HPV Vaccination Outcome	Intervention, Enrolled, *n* = 374	Control, *n* = 555	*P*
Received dose 2	83%	71%	<.001
Received dose 3	63%	38%	<.001

Kempe, et al. (2016) *Pediatrics*

Example

Centralized reminder/recall



Kempe et al., 2015, *JAMA*

Example

Default appointments

Intervention
Automatic appointments scheduled for seasonal flu vaccination

vs. emailed notice that appointments are available

480 university employees, US

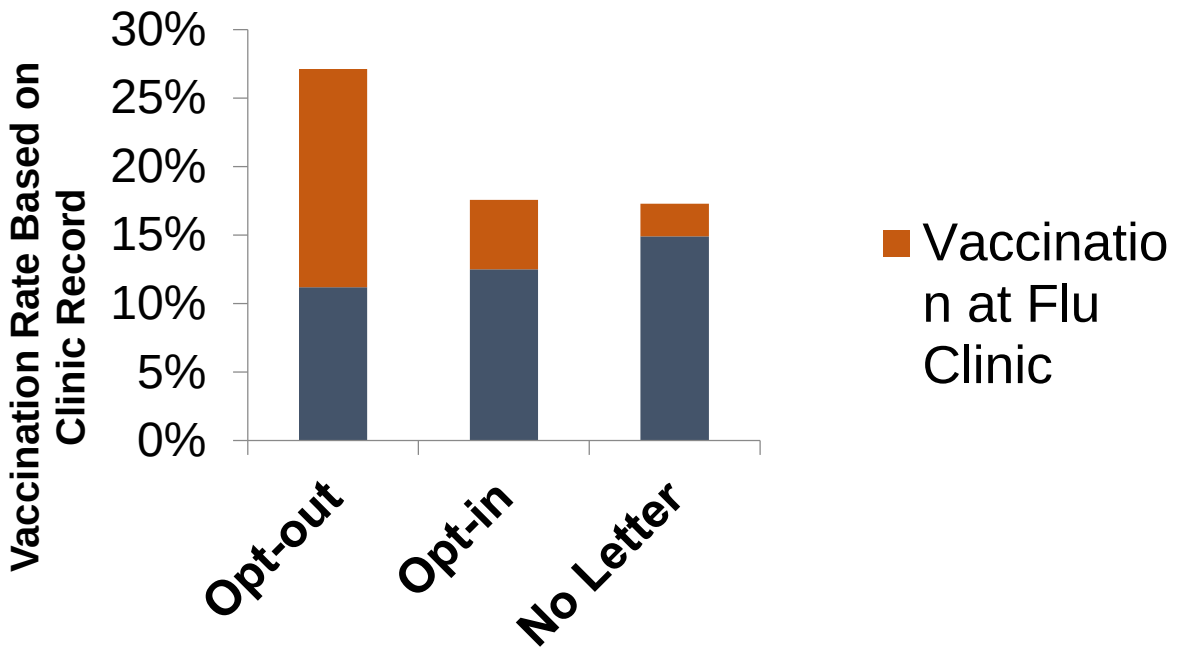
Results
45% vs. 33% vaccinated, according to clinic records

Other studies confirm the increase is not displaced service provision

Chapman et al., 2010, *JAMA*

Example

Default appointments



Chapman, Li, Leventhal, & Leventhal (2016) Behavioral Science & Policy. NIH 1R01AG037943-01

Example

Incentives

INTERVENTION	**OUTCOME** **Fully vaccinated** (at 18 mos, self-report)
Control	6%
Monthly vaccination camp	18%
Monthly vaccination camp + incentives -kg of lentils/shot (value ~$1, ¾ day's wage) -set of metal thali plates at completion (value ~$2)	39%

1,640 children in 134 villages, India.

Banejeree et al., 2010, *BMJ*

A few more ideas

Other evidence

Relatively little evidence on sanctions

- Australia is rare exception

Speculations

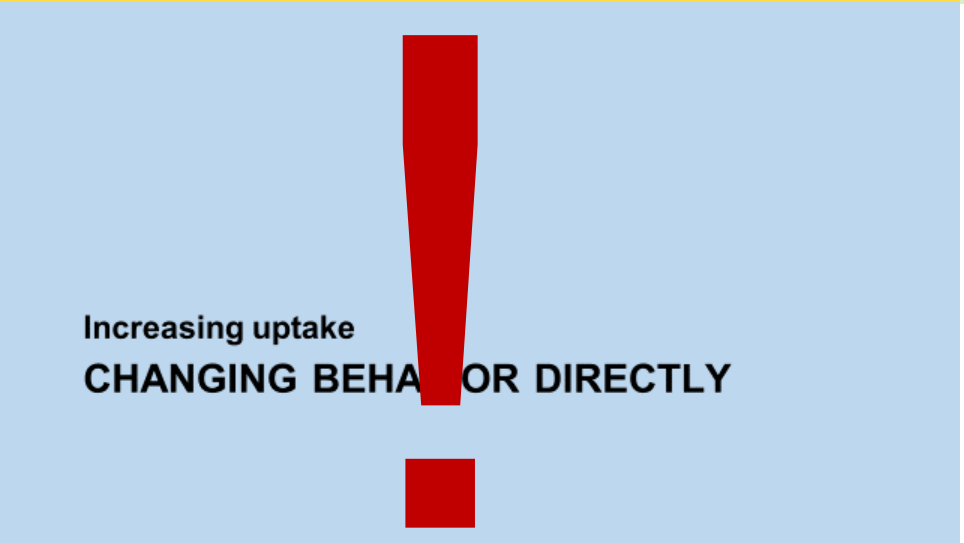
Provider recommendations are likely the most “like” direct behavior change

- Persuasive communicator
- Vaccine available
- Payment addressed
- Implies vaccination is the default

Brewer, et al., 2017, *PSPI*


Increasing uptake
WHAT PEOP THINK ND FEEL


Increasing uptake
SOCIAL PROCES S


Increasing uptake
CHANGING BEHA OR DIRECTLY

Increasing uptake

WHAT PEOPLE THINK AND FEEL

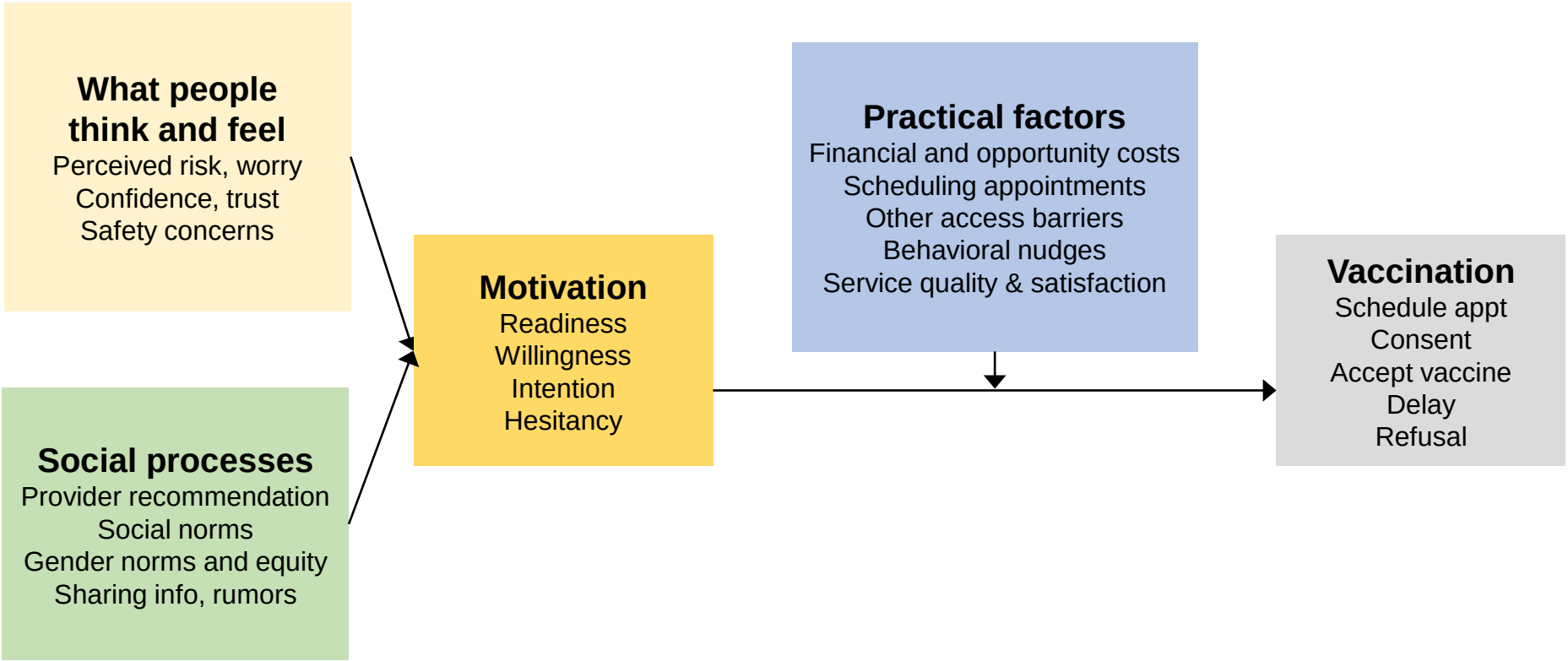
Increasing uptake

SOCIAL PROCESSES

Increasing uptake

CHANGING BEHAVIOR DIRECTLY

Increasing Vaccination Model



Based on Brewer, Chapman, Rothman, Leask, & Kempe, 2017, *PSPI*


REGISTRATION
50

Public Health England

Protecting and improving the nation's health

National Immunisation Network Meeting 2019
Vaccination - back to the future

London

21-22 May 2019