

Immunisations and Vaccinations

Nottingham City Joint Strategic Needs Assessment April 2012

Introduction

Immunisation is, after clean water, the most effective public health intervention in the world for saving lives and promoting good health. It is the process of protecting individuals from infection through passive or active immunity and protects individuals and the population against serious diseases. If a person is not immunised, they will be at risk from catching the disease and will rely on other people being immunised to avoid becoming infected. If people choose not to be immunised, then the number of people at risk of catching a disease will increase and outbreaks of the disease will occur. Low uptake of immunisations puts others at risk and when there is herd immunity of less than the recommended percentage uptake for public protection.

The national NHS Immunisation Information website <http://www.immunisation.nhs.uk/> details all the up-to-date information about the national immunisation programmes for children and adults.

The Department of Health 'Immunisation against infectious disease', otherwise known as 'The Green Book' contains the latest information about vaccines and vaccination procedures for vaccine preventable diseases in the UK. See

<http://immunisation.dh.gov.uk/category/the-green-book/>

Key issues and gaps

General

- The leadership, coordination and organisation of vaccination programmes are key to ensuring a high uptake.

Children

- The national NHS Immunisation Information website <http://www.immunisation.nhs.uk/> details up-to-date information on childhood vaccines, disease and immunisation in the UK. The national schedule sets out a vaccination programme to protect children from ten vaccine preventable diseases including diphtheria, tetanus, polio, pertussis (whooping cough), haemophilus influenza B, meningitis C, pneumococcal disease, measles, mumps and rubella. In addition to this, there is a vaccination schedule to protect children at risk of tuberculosis (BCG vaccine) and hepatitis B. It also protects girls from cervical cancer through administration of the human papilloma virus (HPV) vaccine.
- Not achieving national targets of the childhood immunisation programme with poorer rates of uptake in the most deprived practices. NHS Nottingham City has the lowest performance in the East Midlands. However, there has been a sustained improvement in performance over the last four years. Working with and supporting primary care in their leadership, coordination and organisation of vaccination programmes has been key to increasing uptake.
- The Department of Health introduced a human papilloma virus (HPV) vaccine for the prevention of cervical cancer for girls aged 12 – 13 years (School Year 8) commencing September 2008. In December 2008 the DH announced an acceleration of the national programme to enable the girls already identified for the previously announced catch-up. From September 2008 to August 2012 the Department of Health procured Cervarix® as the national vaccine. As from September 2012, following a re-procurement exercise, the centrally procured vaccine is Gardasil®. The programme in Nottingham City is commissioned from Nottingham CityCare school nursing service.

- Low reported coverage of school leaving vaccinations of diphtheria, tetanus and polio age 13 – 18 years old. There is a mixed model of delivery of this vaccine by primary care and school nurses. Recording and reporting of this vaccine is variable and complex. The information is collected through KC50 returns and not through the HPA COVER data returns.
- Most childhood vaccination, excluding HPV vaccine and BCG vaccines, are delivered through primary care. Practice leadership and organisation of vaccination programmes is key to ensuring a high uptake.
- In July 2012, the Department of Health announced that the seasonal flu vaccination programme would be extended to all children from 2014 at the earliest. This is in addition to children in at risk groups. It will be implemented following further work to ensure sufficient supplies of the vaccine and model of delivery.

Adults

- The national NHS Immunisation Information website <http://www.immunisation.nhs.uk/> details up-to-date information on vaccines, disease and immunisation for adults in the UK.
- There is an increased emphasis in increasing the uptake of the uptake of the annual seasonal flu vaccination programme for people aged 65 years and over and people aged under-65 years in the 'at risk' categories; The target for people aged over 65 years is 75%. There is a three year trajectory increase in the target for people aged under 65 years in at risk groups, including pregnant women. These targets are 60% in 2011-12, 70% in 2012-13 and 75% in 2013-14.
- Continuing momentum in the administration of the pneumococcal vaccine for people aged 65 years and over.
- In February 2010 the Department of Health announced that the Joint Committee on Vaccination and Immunisation (JCVI) had provided advice on shingles vaccine for people aged 70-79 years that a universal herpes zoster vaccination programme should be introduced provided that a licensed vaccine is available at a cost effective price. JCVI will issue a full statement in due course.

Seasonal flu

In August 2009, the Department of Health announced, in response to the swine flu pandemic, a swine flu (H1N1) vaccination programme for the following groups - individuals aged six months and up to 65 years in the current seasonal flu vaccine clinical at-risk groups, all pregnant women, household contacts of immunocompromised individuals, people aged 65 and over in the current seasonal flu vaccine clinical at-risk groups. This was followed in December 2009 by a Phase 2 programme for all children aged from 6 months to under 5 years. In addition to these groups, frontline health and social care workers were offered the vaccine as they are at increased risk of infection and of transmitting that infection to susceptible patients.

Since 2010-11, the seasonal flu vaccine offers protection against H1N1 along with other A and B strains as recommended by the World Health Organisation.

As part of the annual seasonal flu vaccination programme there is a flu vaccination for frontline health and social care workers. This seeks a year on year increase in uptake. Local targets are set in line with the increased trajectory for people aged under 65 years in clinical at risk groups.

Recommendations for consideration by commissioners

Children

- Continue to implement strategies to improve overall performance and reach target of 95% for the whole of the childhood immunisation programme using MMR as a tracer immunisation.
- Continue to implement strategies to improve uptake in all practices and communities with a particular emphasis on underperforming practices.
- Continue the implementation of the HPV vaccine programme and monitor performance against target of 90% for Year 8 girls.
- Increase the uptake of seasonal flu uptake in children age six months to 16 years in clinical at risk groups.
- Implement the seasonal flu vaccination programme to all children when directed by the Department of Health.

Adults

- Continuation of annual seasonal flu programme with year on year increases in uptake to reach target of 75% in line with Department of Health trajectory including for pregnant women and frontline healthcare workers.
- Work with Nottingham University Hospitals Trust midwifery and obstetric services to promote seasonal flu vaccination to all pregnant women.
- Continue to target and offer support to underperforming practices.
- Continue to promote the uptake of the pneumococcal vaccine for people aged 65 years and over and participate in HPA annual pneumococcal survey;
- Increase the uptake of seasonal flu uptake in children age six months to 16 years in clinical at risk groups.

1) Who's at risk and why?

There are a range of different immunisations for different groups in the population dependent on their age and needs. These can be broadly grouped into vaccinations for children and older people.

See section above regarding priority groups.

2) The level of need in the population

The NHS Information Centre holds the national annual uptake of immunisations in England, by region and Primary Care Trusts. This is updated each autumn. See

<http://www.ic.nhs.uk/statistics-and-data-collections/health-and-lifestyles/immunisation>

Web link to NHS Childhood Immunisation Schedule for 2012 on NHS Choices

<http://www.nhs.uk/Planners/vaccinations/Pages/Vaccinesforkidshub.aspx>

Children

Routine childhood immunisation programme

The national COVER (Cover of Vaccination Evaluated Rapidly) data run by the Health Protection Agency (HPA) programme monitors immunisation coverage data in the UK for ten vaccine preventable diseases for children who reach their first, second, or fifth birthday during each evaluation quarter as well as for the full year. This information is fed back to the Primary Care Trust. Uptake is analysed and strategies and actions devised and implemented to improve coverage and detect changes in vaccine coverage.

Using MMR as a tracer condition, NHS Nottingham City's performance is below the performance of other Primary Care Trusts in the East Midlands. Even if the performance is compared to comparable cities based on being co-terminous with Local Authority and being 'nearest neighbours' based on similar indicators, the performance is still poor. There is also a link with inequalities which shows lower uptake in the most deprived GP quintiles.

Figure 1: NHS Nottingham City - measles, mumps and rubella (MMR) uptake

Year	% uptake of primary MMR by age 2 years	% uptake of second MMR by age 5 years
2006-07	78.0	64.0
2007-08	80.0	66.0
2008-09	76.6	76.2
2009-10	82.2	80.3
2010-11	84.0	81.3
2011-12	88.8	82.5

Figure 2: NHS Nottingham City DTaP/IPV/Hib (Diphtheria, tetanus, polio, pertussis and haemophilus influenza B), known as the '5 in 1' vaccine by age 1 year uptake

Year	% uptake of DTaP/IPV/Hib by age 1 year
2006-07	81.0
2007-08	79.0
2008-09	87.0
2009-10	90.5
2010-11	91.1
2011-12	92.4

Figure 3: NHS Nottingham City DTaP/IPV/Hib (Diphtheria, tetanus, polio, pertussis and haemophilus influenza B) uptake by age 5 years - known as the pre-school booster

Year	% uptake of DTaP/IPV/Hib by age 5 years
2006-07	68.0
2007-08	70.0
2008-09	79.0
2009-10	82.0
2010-11	82.7
2011-12	83.6

See NHS Immunisation Statistics for latest data on all immunisations
[Immunisation | The NHS Information Centre](#)

HPV

Human Papilloma Virus (HPV) vaccine programme for girls aged 12 – 13 years commenced in September 2008. HPV is a sexually transmitted virus that causes 99 per cent of invasive cervical cancers. The vaccine protects against the two viruses responsible for about 70 percent of cases. To ensure maximum benefit and protection from this vaccine, it is necessary to administer it before the onset of sexual activity. The vaccine is administered in 3 doses over six months.

Figure 4: NHS Nottingham City HPV vaccine uptake

September – August	% uptake of HPV vaccine Year 8
2008-09	77.8
2009-10	80.4
2010-11	87.1
2011-12	TBC

Adults

Annual flu vaccination programme

Influenza uptake in patients aged 65 years and over

	2011-12	2010-11	2009-10	2008-09
Nottingham City	73.7%	71.9%	72.3%	73.2%

Influenza uptake in patients aged under 65 years in clinical at risk groups

	2011-12	2010-11	2009-10	2008-09
Nottingham City	51.5%	49.8%	52.8%	48.0%

Pneumococcal vaccination programme

There is a marked seasonal pattern with the greatest number of reports of pneumococcal infection occurring in December and January each year. All those aged 65 and over are recommended to be vaccinated. The Centre for Infections annually collects pneumococcal vaccine uptake data on the aged 65 years and over population on behalf of the Department of Health each year to estimate the impact and effectiveness of the vaccine programme.

The annual survey of pneumococcal immunisation data for the over 65 year olds 2012 data collection for anyone who had received the pneumococcal vaccine at anytime up until 31 March 2012.

Annual survey of pneumococcal immunisation data for the over 65 year olds

	2011-12	2010-11	2009-10	2008-09
Nottingham City	71.4	72.1	71.7	71.4

Issues of Inequality

Health inequality performance reports show a correlation between low uptake and higher levels of deprivation based on GP practices configured into deprivation quintiles. Evidence of the way in

which inequalities in immunisation affect health is highlighted in studies that show poorer children or households with low up-take rates are at increased risk of developing vaccine-preventable diseases. Ref. Department of Health (2005) Vaccination services: reducing inequalities in uptake. Available at http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4105349

3) Current services and assets in relation to need

Children

The delivery of the childhood vaccination programme is lead primarily through Practice Nurses in GP surgeries. In addition to this, the PCT employs a Specialist Nurse for Immunisations who supports clinicians in delivering immunisation programmes in the PCT. This is done by offering verbal/telephone advice on complex cases, visiting and vaccinating hard to reach families in their own homes, offering supervision to clinicians who have undertaken the immunisation training and required supervised practice, providing a service to families in homeless accommodation and travelling families. In addition to this, there is an increasing cohort of health visitors in the PCT who are also trained to give immunisations and who will opportunistically immunise hard to reach families. In March 2012, following a pilot in 2010, Nottingham CityCare and NHS Nottingham CityCare launched a joint protocol where members of the skill-mixed health visiting team offer home immunisation of unimmunised/incompletely immunised children that have not accessed GP provision despite repeated offers.

The HPV vaccination programme for girls aged 12-13 years is delivered through the Nottingham CityCare School Nursing Service. A Local Enhanced Service (LES) is in place for the accelerated catch up programme for girls aged up to 18 years.

Advice and support is also available from the local Health Protection Agency.

A two day training programme on immunisations and vaccinations follows the Health Protection Agency guidelines for all new staff. There is also a one day update for staff already in post.

See 'Level of need in the population' section above

Adults

See 'Level of need in the population' section above

4) Projected service use and outcomes in 3-5 years and 5-10 years

Children and Young people

The birth rate is increasing in the City, particularly in BME groups who may have lower uptake of vaccination (DH 2005). For more information on the socio demographic changes projected for Nottingham city please see [this chapter](#) of the JSNA.

There is also a new significant population of young families who have migrated to the UK to work from the EU accession countries, who are less likely than the general population to access services including immunisations and vaccinations. A full [Health Needs Assessment](#) of this population has been carried out by NHS Nottingham City (Bunting et al 2009) and summarised in another [JSNA chapter](#).

Immunisation activity will increase when the seasonal flu vaccination programme is introduced for all children.

The sustained improvement in the uptake of childhood immunisations will decrease the risk of outbreaks of vaccine preventable diseases and the morbidity associated with each disease and increase the chances of reaching the herd immunity target of 95% uptake.

Adults

For further information about the projected health needs of older people please see the [JSNA chapter](#). The Proportion of people resident in the City aged 65+ will broadly stay the same, however the proportion of the population aged 85+ will increase which may present a challenge in terms of vaccinating this group of particularly vulnerable older people aged 85+, a proportion of whom are likely to be housebound. The number of older people with [dementia](#) and the number of people with [mental health](#) problems is also increasing and these groups may have lower uptake.

Also of these demographic changes may present challenges in terms of improving uptake of immunisation uptake.

5) Evidence of what works

Children

The DH published '[Vaccination Services – reducing inequality in uptake](#)' in March 2005. This outlined the particular groups at risk including children in care, young people who missed previous immunisations, children with physical or learning difficulties, children of lone parents, children not registered with a GP, children in larger families, hospitalised children, and minority ethnic groups. It also outlined strategies that can be used to increase uptake, including making specific provisions to improve access for target groups.

NICE (National Institute for Health and Clinical Excellence) developed guidance entitled 'Reducing differences in the uptake of immunisations' on differences in the uptake of immunisations (including targeted vaccines) in people younger than 19 years. It was published in September 2009. <http://guidance.nice.org.uk/PH21>

Adults

Flu vaccinations are 70-80% effective in healthy adults in years when there is a good match between the vaccine and the strains of flu in circulation.

NHS Immunisation website

A comprehensive, up-to-date and accurate source of information on vaccines, disease and immunisation for the UK.

<http://www.immunisation.nhs.uk>

Health Protection Agency (HPA)

The Health Protection Agency is an independent UK organisation that was set up by the government in 2003 to protect the public from threats to their health from infectious diseases and environmental hazards. It does this by providing advice and information to the general public, to

health professionals such as doctors and nurses, and to national and local government and includes specific information about immunisations and vaccinations

http://www.hpa.org.uk/infections/topics_az/vaccination/vacc_menu.htm

Joint Committee for Vaccinations and Immunisations

The Joint Committee on Vaccination and Immunisation (JCVI) is an independent expert advisory committee first set up in 1963 to advise the Secretaries of State for Health, Scotland, Wales and Northern Ireland on matters relating to communicable diseases, preventable and potentially preventable through immunisation. JCVI gives advice to Ministers based on the best evidence reflecting current good practice and/or expert opinion. The process involves a robust, transparent, and systematic appraisal of all the available evidence from a wide range of sources. The committee is appointed by the Appointments Commission and is independent of the Department of Health. <http://www.dh.gov.uk/ab/jcvi/index.htm>

Department of Health Immunisation against infectious disease - 'The Green Book'

This includes evidence vaccine efficacy

http://www.dh.gov.uk/en/Publichealth/Healthprotection/Immunisation/Greenbook/dh_4097254

6) User Views

The PCT has actively participated in two city centre Department of Health immunisation roadshows. August 2009 focus on MMR uptake and October 2009 focus on HPV vaccine uptake. Anecdotally, feedback from the public was generally positive. Formal feedback is awaited from the Department of Health.

7) Equality Impact Assessments

Individual Equality Impact Assessments are required for each immunisation and vaccination programme.

8) Unmet needs and service gaps

School leaving boosters

- Variable administration and reporting of vaccines given by GP practices. Most vaccines given and reported by the school nursing service. Work underway to scope delivery of the programme and recommend systematic approach.

9) Recommendations for consideration by commissioners

Children

- Continue to implement strategies to improve overall PCT performance in childhood immunisation programme using MMR as a tracer immunisation
- Continue to implement strategies to improve uptake in all practices
- Continue the implementation of the Year 8 HPV vaccine programme and monitor

performance

- Scope issues around school leaving vaccinations – current performance and who delivers the service and make recommendations for future service

Adults

- Continuation of annual seasonal flu programme with year on year increases in uptake. Need to continue to target and offer support to underperforming practices
- Uptake of the pneumococcal vaccine for people aged 65 years and over – need to continue to support this

10) Recommendations for needs assessment work

- Scope issues around school leaving vaccinations – current performance and who delivers the service and make recommendations for future service

Key contacts

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