Health and Wellbeing Board

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Immunisations and Screening Update

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SUMMARY

This report provides an overview and update on Shropshire's position regarding screening and immunisation programmes. It outlines areas of responsibility for partners locally and areas of concern.

Key Findings

Coverage has declined for all routine vaccinations across England as a whole. Shropshire continues to perform favourably in comparison, particularly for vaccinations at 12 months of age.

- Specifically, PCV and Hepatitis B exceeded the 95% target in line with previous years. However, DTaP/IPV/Hib coverage dipped to 94.9%. Rotavirus vaccine uptake at 12 months has generally been below target in previous years and is currently at 92.9%. Regarding 24-month immunisations, only uptake of the DTaP/IPV/Hib vaccine exceeded the 95% target. Others were, on average, 1.4% below this but still Shropshire outperformed both West Midlands and England in general, where uptakes were persistently around 5% below target.

- Uptake of the complete HPV vaccine amongst year 9 girls is very high in Shropshire in comparison with the rest of England.

- Flu vaccination rates have been variable with uptake for children and those aged 65+ being below the clinical standard. For individuals at risk this fell to below even the lower threshold. This persisting low coverage is consistent with the nationwide picture.

Shropshire has exceeded the national screening targets for breast and bowel cancer. Screening rates for these cancers are stable and remain on average 5.2% above those reported for England as a whole. Cervical cancer screening rates have declined most years since 2010 and last year continued to fall. A slight increase in uptake occurred

both locally and nationally in 2019 but remains below target. Figures for Shropshire continue to be significantly higher than the national average.

Adherence to both immunisation and screening programmes overall remains higher than the national average within Shropshire. However, variations in uptake remain. Particularly with regards to immunisations, there are new challenges, with adherence steadily dropping over time and the 2nd dose of MMR and shingles vaccinations remain a focus as does cervical screening uptake and promotion of the flu vaccination in all groups. Indeed, the UK was stripped of its measles-free status in 2018[2]; the reasons for this are multifactorial.

Recommendations to the Health and Wellbeing Board

To note the report and data contained within.

Support and promote activities designed to improve uptake of vaccines and screening programmes, raising awareness of these interventions.

REPORT

1.0. Introduction

1.1. According to the World Health Organization (WHO), "The 2 public health interventions that have had the greatest impact on the world's health are clean water and vaccines"[1]. Immunisation programmes are a safe and cost-effective public health intervention that have saved countless lives and reduced health expenditure.

1.2. The UK has a proud history of a well delivered, highly structured immunisation programme spanning the whole of life, designed to provide effective protection from disease at appropriate, evidence-based opportunities.

1.3. Screening programmes sit alongside immunisation in terms of preventative medicine and are used to detect both individuals at risk of developing a disease as well as those who may currently undiagnosed, so that early treatment can be offered, or information given to help them make informed decisions.

2.0. Immunisations

2.1. As per Appendix 1 the current immunisation programme consists of multiple vaccinations spanning from pre-birth to old age which protect against 20 different infectious diseases[3].

2.2. The public health benefits of these immunisations have been considerable leading to the significant reduction of some diseases that were once common, and Polio has been successfully eradicated in the UK.

2.3. As vaccine uptake will never be 100%, for multiple reasons such as refusal of consent, allergy or another medical contraindication, the concept of herd immunity is important to keep vulnerable populations safe from disease. The

target set by Public Health England (PHE) varies by disease but for childhood immunisations is 95% uptake in order to achieve this protection.

2.4. Despite the success of the UK vaccination programme, it is clear that adherence has dropped over recent years. This threatens herd immunity and leaves unvaccinated and immunocompromised individuals at risk.

3.0. Screening

3.1. The UK's current screening programme includes 3 cancers, abdominal aortic aneurysm in men, diabetic eye screening, newborn physical and hearing tests and screening for a selection of genetic diseases (Appendix 2).

3.2. Screening for disease can be complicated by several factors, such as risks from procedures and statistical error (for example, false positives and negatives in testing). The UK National Screening Committee advises on such risks and benefits and makes recommendations on which programmes to offer based on evidence base against set criteria.

3.3. PHE's Screening Quality Assurance Service (SQAS), as well as local audit teams, help to ensure a high quality of appropriate information is gathered.

4.0. Governance

4.1. Since 1st April 2013, national screening and immunisation programmes have been the responsibility of Screening and Immunisations Teams (SITs) compromised of professionals from PHE and NHS England.

4.2. It it is important to note that the delivery and success of the national vaccination programme is a massive joint effort: from the public, the health service, public health authorities and private pharmaceutical companies. No single entity can take the credit for the social and medical advancements that have enabled the success of our vaccination and screening programmes.

4.3 PHE is responsible for supporting both the Department of Health and the NHS with system leadership, national planning and implementation of immunisation programmes (including the procurement of vaccines and immunoglobulins). They issue specialist advice and information to ensure consistency in efficacy and safety across the country and support the Directors of Public Health in local authorities who have a responsibility to provide assurance on behalf of the population of Shropshire that there are safe and effective plans in place to protect local population health. This includes communicable disease control, infection prevention and control and screening and immunisation programmes.

4.4. In order to take a strategic lead for health protection, discuss and collaborate on plans and seek assurance from partners, Public Health attends the Shropshire and Staffordshire Seasonal Flu Planning Meeting, the Vaccination and Immunisation Programme Board and the Telford & Wrekin and Shropshire Health Protection Quality Assurance Group, held routinely to receive reports from Public Heath England and providers on progress and actions.

5.0. Immunisation and Screening uptake

5.1. The data for uptake of immunisations in Shropshire compares favourably with the rest of the West Midlands and England, as shown in Table 1. However, targets are still not being met, particularly for vaccination at 24 months of age and for the Shingles vaccine, although the latter was only introduced in 2013.

Table 1: Summary of uptake in Shropshire, West Midlands and England 2018/19, rates expressed as a percentage

	Shropshire	West Midlands	England
Routine 12 months:			
DTaP/IPV/Hib	94.9	92.2	92.1
PCV	95.3	92.9	92.8
Rotavirus	92.9	88.9	89.7
Men C	97.9	-	-
Men B	95.0	92.2	92.0
Routine 24 months:			
DTaP/IPV/Hib	96.4	94.5	94.2
MMR 1st dose	93.9	90.6	90.3
Hib/Men C booster	93.9	90.5	90.4
PCV booster	93.8	90.5	90.2
Flu:			
Child	55.8	44.8	44.9
At risk	49.9	47.8	48.0
Aged 65+	72.6	71.1	72.0
Shingles:			
70 yrs old	36.3	31.1	31.9
78 yrs old	41.3	32.4	32.8
Other immunisations:			
HPV 2 doses	96.2	83.8	83.9
PPV	71.3	68.6	69.2
Pertussis in Pregnancy	84.9	65.3	68.9
Men ACWY	87.6	83.65	85.4

5.2. Similarly, Shropshire's performance in terms of screening generally exceeds that of the West Midlands and the country as a whole. Uptake of cervical cancer screening remains below target and requires improvement. Whilst figures for newborn hearing screening and physical examination are high, uptake has dropped below the average for England and this needs to be addressed.

Table 2: Summary of most recent figures for uptake in screening all regions 2018/19 (%)

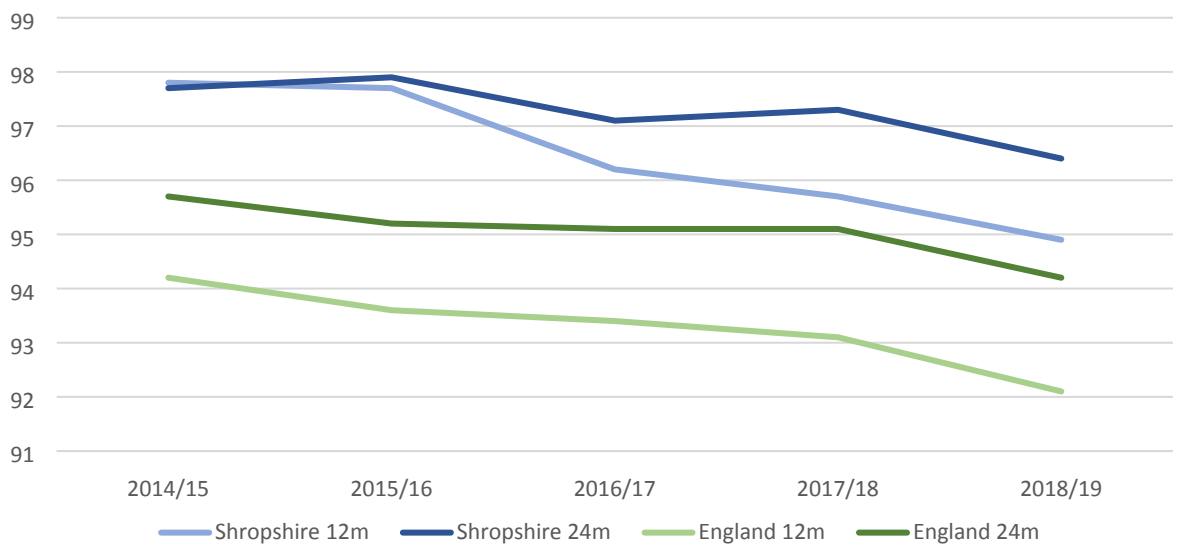
	Shropshire	West Midlands	England
Breast Cancer	81.5	74.3	74.9
Cervical Cancer (age 25-49) 2019	77.0	69.6	69.8
Cervical cancer (age 50-64) 2019	78.2	75.7	76.2
Bowel Cancer	62.8	57.4	59.0
Aortic Abdominal Aneurysm	84.8	-	78.0
Diabetic Eye Screening	82.4	-	82.8
Infectious diseases in pregnancy - HIV	99.8	-	99.6
Infectious diseases in pregnancy - Hepatitis B	99.8	-	99.6
Infectious diseases in pregnancy - Syphilis	99.8	-	99.6
Sickle Cell and Thalassaemia	99.8	-	99.6
Newborn blood spot	97.8	-	97.8
Newborn hearing	98.7	-	98.8
Newborn and infant physical examination	95.1	-	96.4

Key:

Green – meets or exceeds target
Amber – meets lower threshold but below target
Red – fails to meet lower threshold
Black – no data

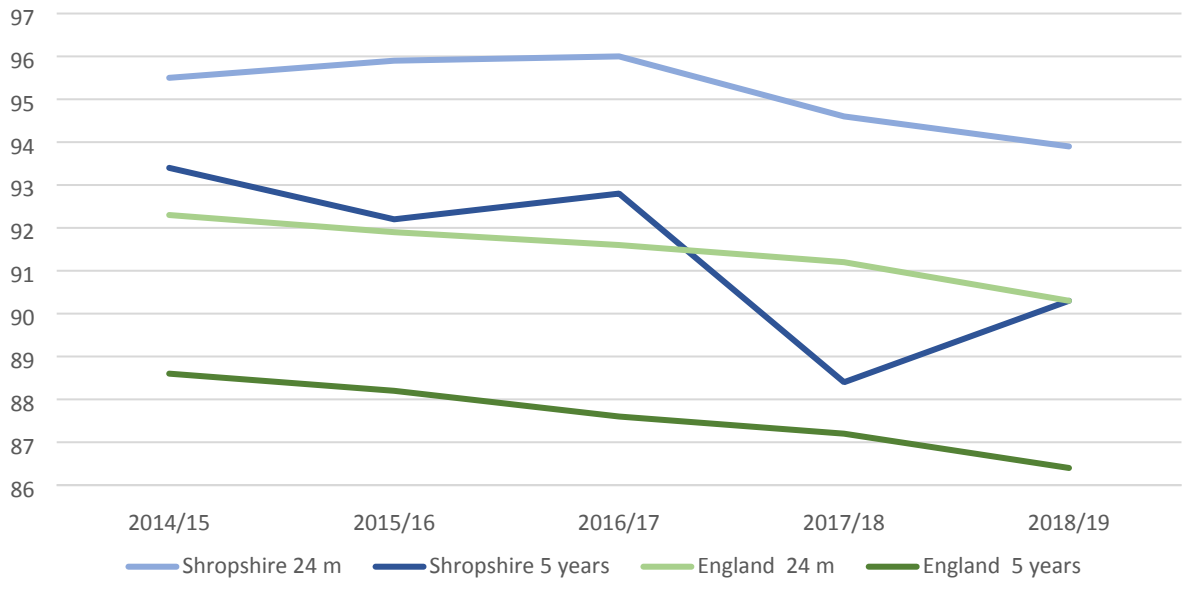
5.3. A downward trend is noted in terms of general vaccine uptake. This is demonstrated in Figure 1, below, both in Shropshire and England for the hugely important 12 and 24 months triple vaccine.

Figure 1: 5 year trend in uptake of DTaP/IPV/Hib vaccine at 12 months and 24 months of age in Shropsire and England



5.4. A similar pattern is seen for the MMR vaccine (Figure 2). The drop in uptake seen for 2017/18 has been noted by Public Health England. A local measles elimination strategy is being developed in line with national measures to tackle the decline in vaccine uptake.

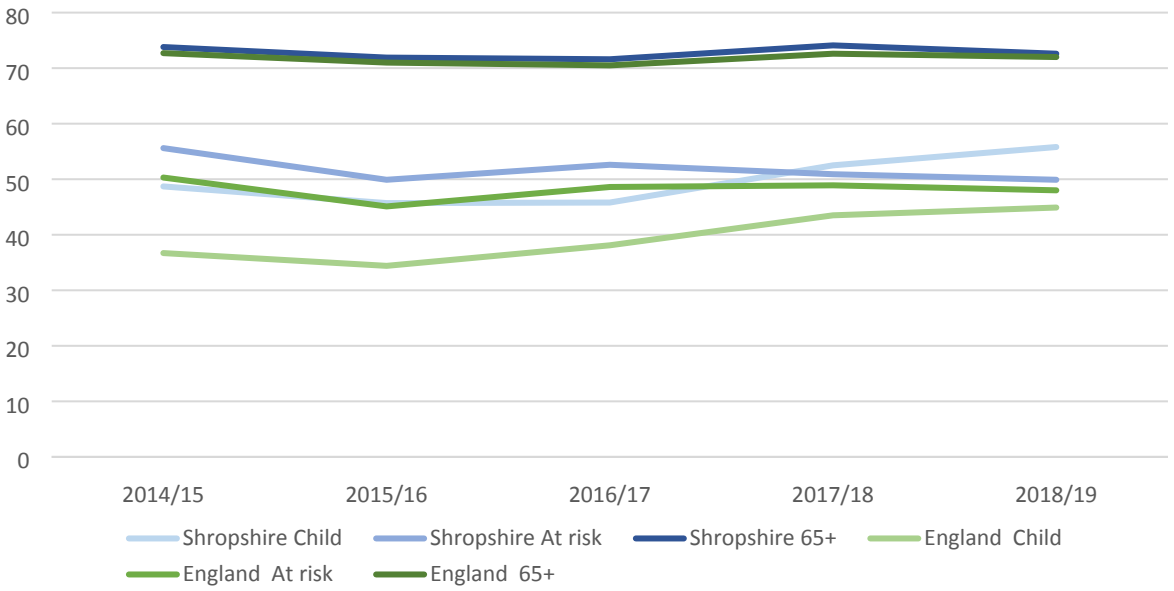
Figure 2: 5 year trend in uptake of MMR vaccine at 24 months (1 dose) and 5 years (2 doses) in Shropshire and England



5.5. The flu vaccine uptake remains steady but slightly below target for the 65+ age group. Targeted immunisation for children and at-risk groups requires improvement (Figure 3).

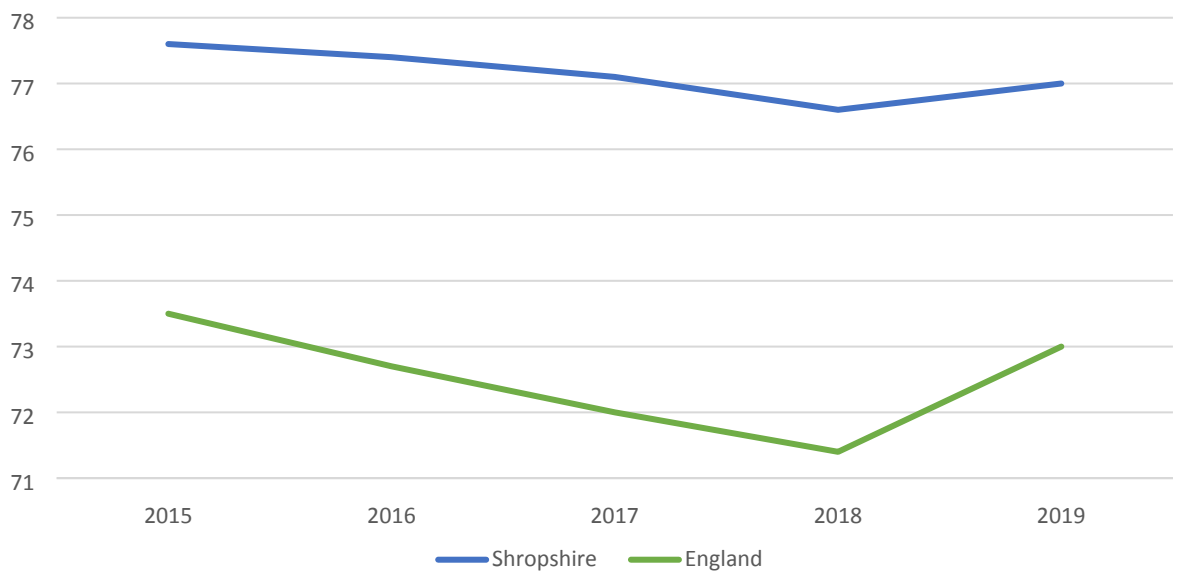
The latest data available for the current flu season suggests that compared to the same point in 2018/19 there has been a decrease in uptake for 2-3 year olds and at-risk groups, with numbers for those aged over 65 years remaining stable.

Figure 3: 5 year trend in uptake of flu vaccine for all target populations in Shropshire and England



5.6. Cervical cancer screening has remained on target in Shropshire over the past 5 years (Figure 4).

Figure 4: 5 year trend for cervical cancer screening rates in Shropshire and England (Target = 80%)



6.0. Future areas of work/recommendations

6.1. Work with PHE to understand and challenge obstacles to uptake in immunisations locally and target groups. Promoting screening and immunisation programmes including the MMR elimination plan, acting as champions within their services and communities to further raise awareness and encourage immunisation and screening uptake.

6.2. Public Health to work with colleagues at PHE to monitor and improve uptake of DTaP/IPV/Hib and rotavirus at 12 months and increase all 24-month vaccines (be vigilant of possible dip in DTaP/IPV/Hib despite meeting target now).

6.4. Continue to focus on improving flu uptake rates in all groups during winter 2019/20.

6.5. Consider further promotion of Shingles vaccine to improve persistently low rates.

6.6. Continued focus on reversing the previous decline in cervical cancer screening.

6.7. Improvement should be sought to meet targets for newborn hearing and physical examination screening.

References

1. https://www.gov.uk/government/collections/immunisation
2. https://publichealthmatters.blog.gov.uk/2019/08/19/measles-in-england/
3. https://www.abpi.org.uk/publications/public-health-benefit-of-vaccination/

Data from

https://www.gov.uk/government/collections/vaccine-uptake
https://www.gov.uk/government/collections/nhs-population-screening-programmes-kpi-reports
COVER dashboard
PHE Fingertips

Appendices

1. The UK Immunisation Schedule

The routine immunisation schedule from Autumn 2019

Age due	Diseases protected against	Vaccine given and trade name		Usual site
Eight weeks old	Diphtheria, tetanus, pertussis (whooping cough), polio, *Haemophilus influenzae* type b (Hib) and hepatitis B	DTaPIPV/Hib/HepB	Infanrix hexa	Thigh
	Pneumococcal (13 serotypes)	Pneumococcal conjugate vaccine (PCV)	Prevenar 13	Thigh
	Meningococcal group B (MenB)	MenB	Bexsero	Left thigh
	Rotavirus gastroenteritis	Rotavirus	Rotarix	By mouth
Twelve weeks old	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B	DTaPIPV/Hib/HepB	Infanrix hexa	Thigh
	Rotavirus	Rotavirus	Rotarix	By mouth
Sixteen weeks old	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B	DTaPIPV/Hib/HepB	Infanrix hexa	Thigh
	Pneumococcal (13 serotypes)	PCV	Prevenar 13	Thigh
	MenB	MenB	Bexsero	Left thigh
One year old (on or after the child's first birthday)	Hib and MenC	Hib/MenC	Menitorix	Upper arm/thigh
	Pneumococcal	PCV	Prevenar 13	Upper arm/thigh
	Measles, mumps and rubella (German measles)	MMR	MMR VaxPRO[2] or Priorix	Upper arm/thigh
	MenB	MenB booster	Bexsero	Left thigh
Eligible paediatric age groups[1]	Influenza (each year from September)	Live attenuated influenza vaccine LAIV[2,3]	Fluenz Tetra[2,3]	Both nostrils
Three years four months old or soon after	Diphtheria, tetanus, pertussis and polio	DTaPIPV	Infanrix IPV or Repevax	Upper arm
	Measles, mumps and rubella	MMR (check first dose given)	MMR VaxPRO[2] or Priorix	Upper arm
Boys and girls aged twelve to thirteen years	Cancers caused by human papillomavirus (HPV) types 16 and 18 (and genital warts caused by types 6 and 11)	HPV (two doses 6-24 months apart)	Gardasil	Upper arm
Fourteen years old (school year 9)	Tetanus, diphtheria and polio	Td/IPV (check MMR status)	Revaxis	Upper arm
	Meningococcal groups A, C, W and Y disease	MenACWY	Nimenrix or Menveo	Upper arm
65 years old	Pneumococcal (23 serotypes)	Pneumococcal Polysaccharide Vaccine (PPV)	Pneumococcal Polysaccharide Vaccine	Upper arm
65 years of age and older	Influenza (each year from September)	Inactivated influenza vaccine	Multiple	Upper arm
70 years old	Shingles	Shingles	Zostavax[2]	Upper arm

1. See Green book chapter 19 or visit www.gov.uk/government/publications/influenza-the-green-book-chapter-19 or www.nhs.uk/conditions/vaccinations/child-flu-vaccine/
2. Contains porcine gelatine.
3. If LAIV (live attenuated influenza vaccine) is contraindicated and child is in a clinical risk group, use inactivated flu vaccine.

Selective immunisation programmes

Target group	Age and schedule	Disease	Vaccines required
Babies born to hepatitis B infected mothers	At birth, four weeks and 12 months old[1,2]	Hepatitis B	Hepatitis B (Engerix B/HBvaxPRO)
Infants in areas of the country with TB incidence >= 40/100,000	At birth	Tuberculosis	BCG
Infants with a parent or grandparent born in a high incidence country[3]	At birth	Tuberculosis	BCG
At risk children	From 6 months to 17 years of age	Influenza	LAIV or inactivated flu vaccine if contraindicated to LAIV or under 2 years of age
Pregnant women	During flu season At any stage of pregnancy	Influenza	Inactivated flu vaccine
Pregnant women	From 16 weeks gestation	Pertussis	dTaPIPV (Boostrix-IPV or Repevax)

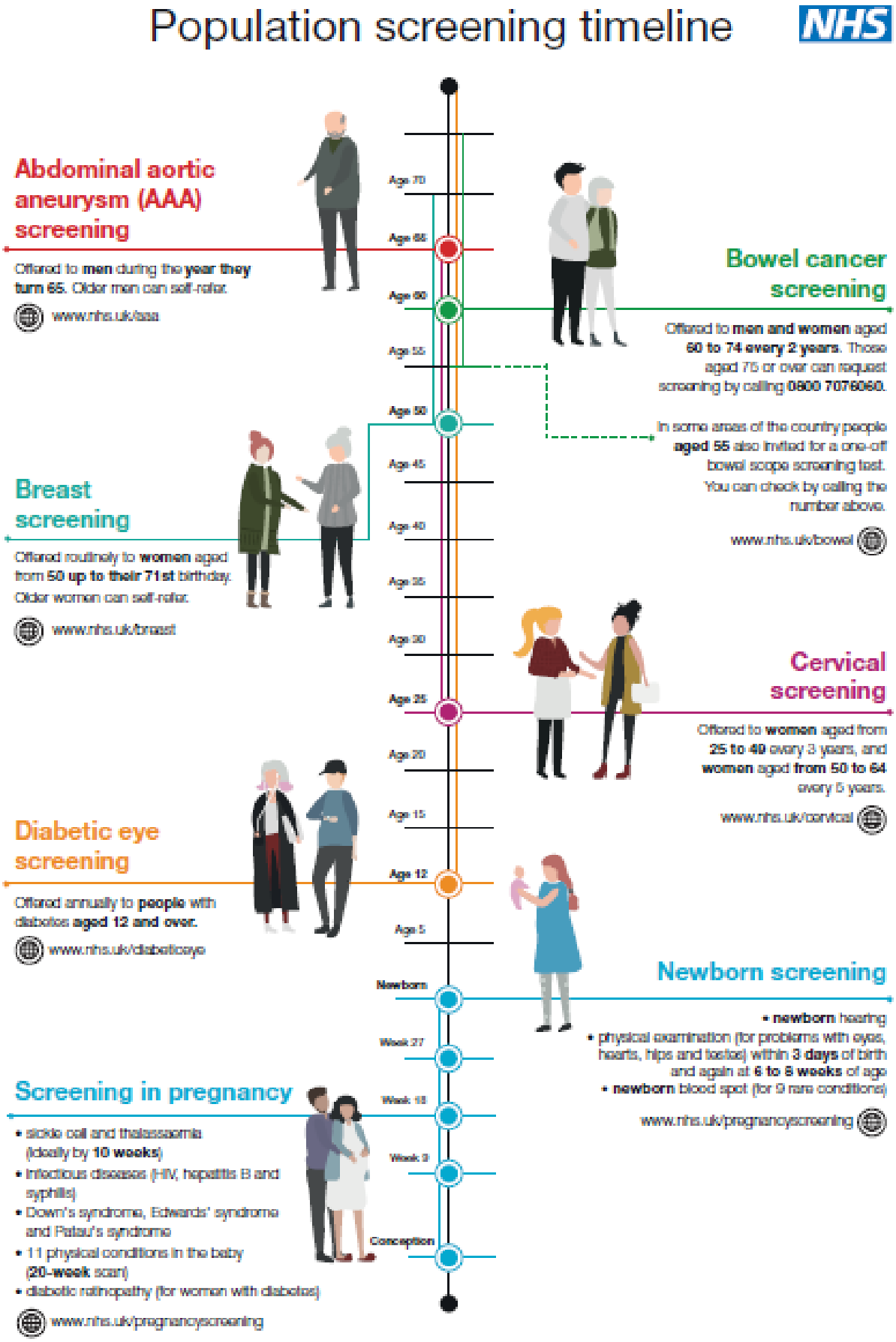
1. Take blood for HBsAg at 12 months to exclude infection.
2. In addition hexavalent vaccine (Infanrix hexa) is given at 8, 12 and 16 weeks.
3. Where the annual incidence of TB is >= 40/100,000 – see www.gov.uk/government/publications/tuberculosis-tb-by-country-rates-per-100000-people

Additional vaccines for individuals with underlying medical conditions

Medical condition	Diseases protected against	Vaccines required[1]
Asplenia or splenic dysfunction (including due to sickle cell and coeliac disease)	Meningococcal groups A, B, C, W and Y Pneumococcal Haemophilus influenzae type b (Hib) Influenza	Hib/MenC MenACWY MenB PCV13 (up to two years of age) PPV (from two years of age) Annual flu vaccine
Cochlear implants	Pneumococcal	PCV13 (up to two years of age) PPV (from two years of age)
Chronic respiratory and heart conditions (such as severe asthma, chronic pulmonary disease, and heart failure)	Pneumococcal Influenza	PCV13 (up to two years of age) PPV (from two years of age) Annual flu vaccine
Chronic neurological conditions (such as Parkinson's or motor neurone disease, or learning disability)	Pneumococcal Influenza	PCV13 (up to two years of age) PPV (from two years of age) Annual flu vaccine
Diabetes	Pneumococcal Influenza	PCV13 (up to two years of age) PPV (from two years of age) Annual flu vaccine
Chronic kidney disease (CKD) (including haemodialysis)	Pneumococcal (stage 4 and 5 CKD) Influenza (stage 3, 4 and 5 CKD) Hepatitis B (stage 4 and 5 CKD)	PCV13 (up to two years of age) PPV (from two years of age) Annual flu vaccine Hepatitis B
Chronic liver conditions	Pneumococcal Influenza Hepatitis A Hepatitis B	PCV13 (up to two years of age) PPV (from two years of age) Annual flu vaccine Hepatitis A Hepatitis B
Haemophilia	Hepatitis A Hepatitis B	Hepatitis A Hepatitis B
Immunosuppression due to disease or treatment[2]	Pneumococcal Influenza	PCV13 (up to two years of age)[2] PPV (from two years of age) Annual flu vaccine
Complement disorders (including those receiving complement inhibitor therapy)	Meningococcal groups A, B, C, W and Y Pneumococcal *Haemophilus influenzae* type b (Hib) Influenza	Hib/MenC MenACWY MenB PCV13 (to any age) PPV (from two years of age) Annual flu vaccine

1. Check relevant chapter of green book for specific schedule.
2. To any age in severe immunosuppression.
3. Consider annual influenza vaccination for household members and those who care for people with these conditions.

2. Public Health UK screening timeline



3. Local authority immunisation data

Annual Childhood Immunisations by Local Authority

Cohort	Indicator	Lower threshold[1]	Standard[2]	Geography	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
12 months	3.03i - Population vaccination coverage - Hepatitis B (1 year old)			Shropshire		83.3			100.0	50.0			100.0
				England									
	3.03iii - Population vaccination coverage - Dtap / IPV / Hib (1 year old)	90	95	Shropshire	96.5	97.0	98.2	97.8	97.8	97.7	96.2	95.7	94.9
				England	94.2	94.7	94.7	94.3	94.2	93.6	93.4	93.1	92.1
	3.03iv - Population vaccination coverage - MenC	90	95	Shropshire	96.2	96.1	97.5			97.9			
				England	93.4	93.9	93.9						
	3.03v - Population vaccination coverage - PCV	90	95	Shropshire	96.3	96.6	97.9	97.3	97.3	97.3	96.3	96.0	95.3
				England	93.6	94.2	94.4	94.1	93.9	93.5	93.5	93.3	92.8
24 months	3.03i - Population vaccination coverage - Hepatitis B (2 years old)			Shropshire						100.0			100.0
				England									
	3.03iii - Population vaccination coverage - Dtap / IPV / Hib (2 years old)	90	95	Shropshire	98.3	98.0	97.9	98.5	97.7	97.9	97.1	97.3	96.4
				England	96.0	96.1	96.3	96.1	95.7	95.2	95.1	95.1	94.2
	3.03vii - Population vaccination coverage - PCV booster	90	95	Shropshire	95.0	95.9	96.6	97.8	95.6	95.7	96.1	94.7	93.8
				England	89.3	91.5	92.5	92.4	92.2	91.5	91.5	91.0	90.2
	3.03viii - Population vaccination coverage - MMR for one dose (2 years old)	90	95	Shropshire	93.2	95.4	96.9	97.8	95.5	95.9	96.0	94.6	93.9
				England	89.1	91.2	92.3	92.7	92.3	91.9	91.6	91.2	90.3
5 years	3.03ix - Population vaccination coverage - MMR for one dose (5 years old)	90	95	Shropshire	95.1	95.5	95.9	97.1	96.7	96.3	96.7	95.2	96.2
				England	91.9	92.9	93.9	94.1	94.4	94.8	95.0	94.9	94.5
	3.03vi - Population vaccination coverage - Hib / Men C booster (5 years old)	90	95	Shropshire		95.8	96.0	96.2	95.5	94.8	96.3	95.3	91.1
				England		88.6	91.5	91.9	92.4	92.6	92.6	92.5	86.0
	3.03x - Population vaccination coverage - MMR for two doses (5 years old)	90	95	Shropshire	90.0	91.1	93.4	94.6	93.4	92.2	92.8	88.4	90.3
				England	84.2	86.0	87.7	88.3	88.6	88.2	87.6	87.2	86.4

5 year trend DTaP/IPV/Hib 12m and 24m in Shropshire (%)

	2014/15	2015/16	2016/17	2017/18	2018/19
12m	97.8	97.7	96.2	95.7	94.9
24m	97.7	97.9	97.1	97.3	96.4

MMR 24m (1 dose) and 5 years (2 doses) (%)

	2014/15	2015/16	2016/17	2017/18	2018/19
24m	95.5	95.9	96.0	94.6	93.9
5 years	93.4	92.2	92.8	88.4	90.3

Flu vaccine, all groups (%)

	2014/15	2015/16	2016/17	2017/18	2018/19
Child	48.7	45.7	45.8	52.5	55.8
At risk	55.6	49.9	52.6	50.9	49.9
65+	73.8	71.9	71.6	74.1	72.6

Cervical cancer screening (%)

	2015	2016	2017	2018	2019
All ages	77.6	77.4	77.1	76.6	77.0

4. PHE Fingertips screening data

Cancer screening coverage - breast cancer	2018	◀ ▶	74.9*	74.3*	68.5	70.1	76.0	76.5	70.4	81.5	74.6	74.4*	74.4	78.9	72.7	76.2*	68.6	79.0*
Cancer screening coverage - cervical cancer (aged 25 to 49 years old)	2019	◀ ▶	69.8*	69.6*	61.9	65.7	72.1	73.0	66.0	77.0	72.5	75.2*	68.8	72.6	71.2	72.8*	66.7	74.9*
Cancer screening coverage - cervical cancer (aged 50 to 64 years old)	2019	◀ ▶	76.2*	75.7*	73.4	76.1	73.2	76.8	72.7	78.2	77.4	77.0*	74.8	75.9	76.0	76.6*	72.7	78.3*
Cancer screening coverage - bowel cancer	2018	◀ ▶	59.0*	57.4*	48.1	55.7	57.4	62.6	49.3	62.8	60.3	61.2*	53.9	58.0	54.5	61.3*	51.3	61.9*