



Infection reports

Volume 8 Number 43 Published on: 14 November 2014

HIV-STIs

Antenatal screening for infectious diseases in England: summary report for 2013

This report presents a summary of the uptake and test results of antenatal screening for hepatitis B, HIV, syphilis and rubella susceptibility in 2013 in England, updating the previous HPR report that included data to the end of 2012 [1]. Uptake of screening for all infections remains high (>95%) and the proportion of women with a positive test result for either HIV or, syphilis remains stable, whilst the proportion of women with hepatitis B and a rubella antibody level <10 IU/ml increased.

Background

Since 2004, Public Health England's National Antenatal Infection Screening Monitoring (NAISM) Programme has had a formal role in centrally collating, analysing and publishing Infectious Diseases in Pregnancy (IDPS) surveillance data for England [1]. This was introduced following the implementation of the 2003 Department of Health standards [2]. The NAISM Programme, in collaboration with the NHS Screening Programmes, now both part of Public Health England, monitors the uptake of antenatal screening for hepatitis B, HIV, syphilis and susceptibility to rubella.

Screening is offered and recommended to all pregnant women in England as part of the UK National Screening Committee's NHS Infectious Diseases in Pregnancy Screening (IDPS) Programme [3]. The screening aims to identify women with hepatitis B, HIV and syphilis early in pregnancy so that strategies can be offered which prevent mother-to-child transmission and benefit the woman's health. Currently, women identified as susceptible to rubella are offered postnatal MMR vaccination to protect future pregnancies.

The 2003 Department of Health's Screening for Infectious Diseases in Pregnancy Standards set a target of 90% for the uptake of antenatal screening for HIV. The 2010 revised Standards retained this 90% uptake target as a reference point for all four infections [4]. In 2009, the UK National Screening Committee agreed on a set of Key Performance Indicators (KPIs) as part of a Quality Assurance strategy for the collation and return of performance data. Two of these indicators are related to infectious disease screening in pregnancy: HIV coverage and timely referral of hepatitis B positive women for specialist care [5].

Data collection and methodology

Data are collected at maternity unit or trust level on the number of pregnant women attending and booking for antenatal care; the number screened for each of the four infections and the results of the screening tests, together with the number of women previously diagnosed with hepatitis B or HIV.

These data are requested and collated by PHE's Field Epidemiology Teams with support from some Regional Antenatal and Newborn Screening Quality Assurance teams and sent to PHE's National Centre for Infectious Disease Surveillance and Control, where national figures and trends are generated. The IDPS Programme and NAISM team continue to work collaboratively to align future management of the data collation and reporting processes.

Data limitations

Data quality has improved significantly since 2004, though data still need to be interpreted cautiously as limitations remain. The data analysis methodology can be found on the NAISM website and limitations to data quality have been detailed in previous reports [6].

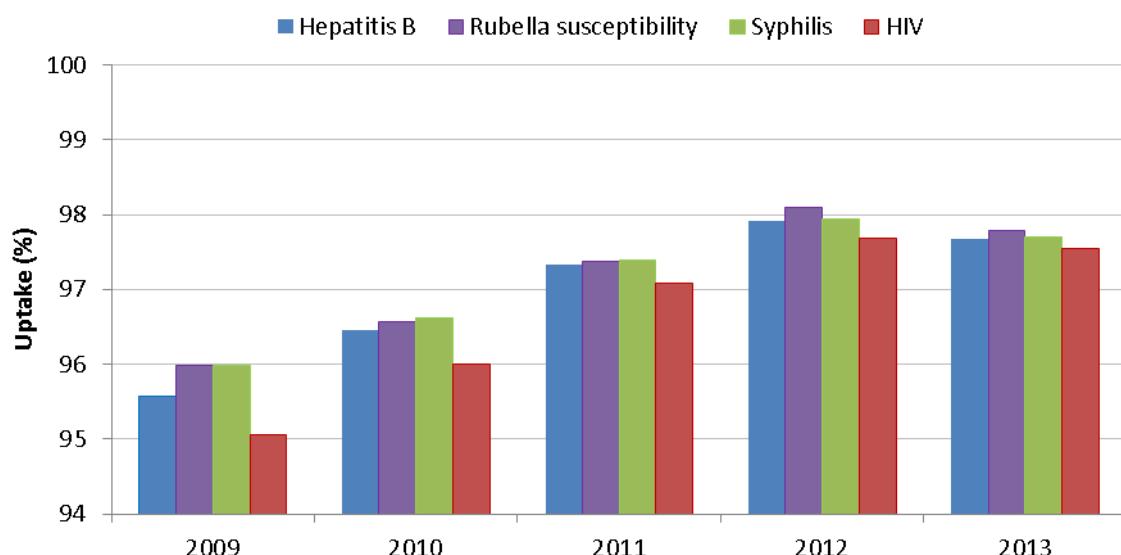
Uptake of antenatal screening is calculated as the proportion of women booked for antenatal care who have a screening test, as reported by maternity services. The number of maternity units able to report booking data has increased steadily and significantly from less than half in 2009 to 96% in 2013. As part of the data processing, data exclusions and adjustments were made, mainly when the denominator, numerator or both were unavailable or when the screening uptake for a particular infection was over 100%.

Where maternity unit booking data were not available, a proxy was used such as the number of laboratory tests for syphilis or rubella, under the assumption that most booked women are screened for these infections. Use of this proxy data would lead to an overestimate of the uptake of screening as not all women who are offered screening choose to accept.

Uptake of antenatal screening

Screening uptake for all four infections remain high in the period from 2009 to 2013 with values >95% (figure 1).

Figure 1. National reported uptake of antenatal screening by infection in England: 2009-2013*.



* In 2011 a change in the way denominator data were collected was introduced improving the accuracy and consistency of the estimates from then on.

Pregnant women positive for HIV and hepatitis B

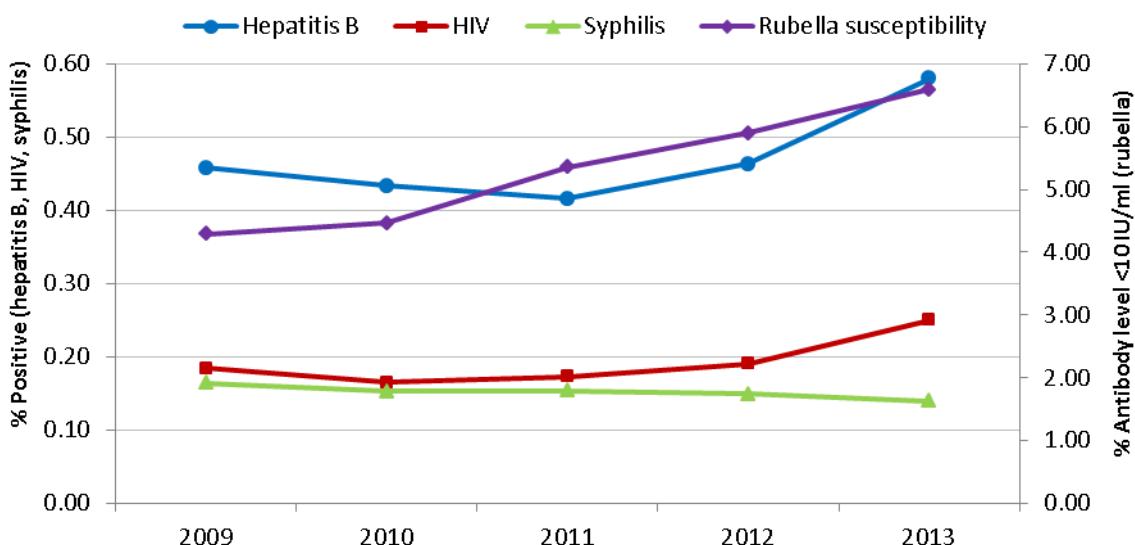
The UK NSC Infectious Diseases in Pregnancy Screening Programme Standards (2010) [4], which came into effect in April 2011, state that screening for hepatitis B or HIV is not required where a prior positive diagnosis of HIV or hepatitis B is documented and known to the healthcare professional. Both newly and previously diagnosed women should be promptly referred for specialist care and clinical evaluation.

In 2011, in line with the new standards, a new data collection form was introduced which requested the number of women not screened as a result of prior diagnosis. Some maternity units could not supply information on previously diagnosed women and, therefore, data from these units were excluded from the newly diagnosed calculations.

In 2013, all maternity units provided data on women who were newly diagnosed, those previously diagnosed but rescreened, and those not screened because they were previously diagnosed. For details on how positivity rates are calculated, see appendix.

The IDPS Programme has recently conducted a study utilising the 2012 NAISM data to ascertain the reasons why the majority of trusts are retesting the cohort of known positive women for HIV and hepatitis B. The findings will further inform the revision of the IDPS programme standards.

Figure 2: Percentage of pregnant women positive for hepatitis B, HIV or syphilis or with a rubella antibody level <10 IU/ml, in England: 2009-2013.



In England in 2013 0.25% (1,749/688,755) of pregnant women screened positive or were reported already known to have HIV (figure 2/table 1). This has increased from 0.18% (1,275/690,695) in 2009.

The proportion of women screening positive for Hepatitis B was 0.58% (3,982/690,760) in 2013. There is an increasing upward trend in the reported cases of hepatitis B. The cause of this is not apparent from the data provided. For both infections regional variation was apparent, with women in London presenting the highest positivity rates.

The UK National Screening Committee (UK NSC) has commissioned a national audit of practice regarding management of hepatitis B in pregnancy over a 12 month period. It will highlight aspects of service provision requiring improvement, in order to optimise current strategies for prevention of vertically-acquired hepatitis B and to inform future service planning [7].

Women newly diagnosed through antenatal screening

Figures 3a and 3b present the percentage of screened women who were newly diagnosed with hepatitis B and HIV during the three years for which we have complete data. In 2013, 28% (1,073/3,886) of diagnosed hepatitis B infected women and 16% (276/1,758) of diagnosed HIV-positive women were identified as a result of antenatal screening in their current pregnancy. Overall the proportion of women being newly diagnosed with either hepatitis B or HIV has declined. In the case of HIV this may be partially explained by the fact that the number of positive women having repeat pregnancies has increased and the prevalence of HIV in pregnant women overall has stabilised [8,9].

Figure 3a. Percentage of pregnant women newly and previously diagnosed with Hep

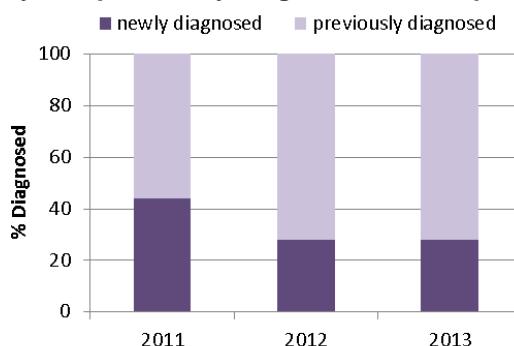
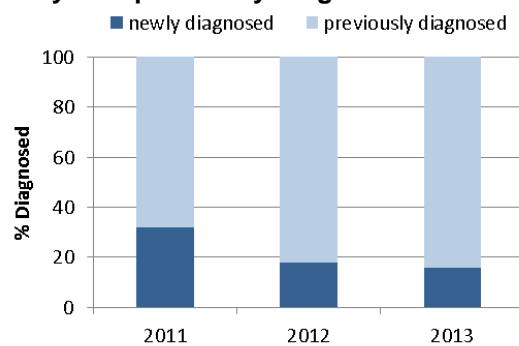


Figure 3b. Percentage of pregnant women newly and previously diagnosed with HIV,



Syphilis positivity

In 2013 0.14% (944/678,611) of woman were reported screen positive for syphilis (table 1) a rate that has remained stable since 2009 (figure 2). The Antenatal Syphilis Screening Study (SASS) was funded by the UK NSC to provide evidence to improve current screening practice, by establishing what proportion of women identified at antenatal screening in 2010-2011 required treatment to reduce the risk of transmitting syphilis to their babies, how they were managed, and what happened to their babies. The study (final report pending) showed that 20% of the screen positive were subsequently classified as other treponemal infections or false positive results. This report will inform the planned revision of the IDPS Programme standards and clinical pathways.

Rubella susceptibility

The percentage of women with a rubella antibody level <10 IU/ml continues to increase reaching 6.59% (44,650/677,479) in 2013 (figure 2). However, this trend is unlikely to represent a true increase in susceptibility due to variation in laboratory testing assays and cut-off values used and the difficulty in defining susceptibility [11].

Screening for rubella susceptibility does not meet the UK NSC criteria for a screening programme. The IDPS programme is currently working collaboratively with the PHE Immunisation team and plan to cease antenatal screening for rubella susceptibility. The present arrangements for antenatal screening and post-partum immunisation will continue until other arrangements are in place.

Conclusion

Uptake of antenatal screening for hepatitis B, HIV, syphilis, and susceptibility to rubella infection in England remains high, well above the 90% set by the Department of Health's Screening for Infectious Diseases in Pregnancy Standards.

The proportion of screened women who tested positive for HIV and syphilis has been stable over the past five years whilst there has been an increase in positivity rates for hepatitis B and a significant increase in pregnant women with a rubella antibody level <10 IU/ml. The proportion of women newly diagnosed with either hepatitis B or HIV has declined. Data limitations exist; however, there continues to be great improvement in data quality submission since monitoring began in 2004.

The IDPS and NAISM programme continues to work collaboratively as part of Public Health England to improve future data quality.

Acknowledgements

We would like to thank the maternity units and trusts, particularly the Antenatal & Newborn Screening Coordinators and Field Epidemiology Teams for their contributions to data collection and the Infectious Diseases in Screening Programme for the on-going collaboration.

Table 1. Percentage of pregnant women screening positive for hepatitis B, HIV, syphilis or with a rubella antibody level <10 IU/ml, in England: 2013.

	Hepatitis B			HIV			Syphilis		Rubella antibody level <10 IU/ml	
	% positive	# screened positive & newly diagnosed/ number screened	% newly diagnosed	% positive	# screened positive & newly diagnosed/ number screened	% newly diagnosed	% positive	# screened positive & newly diagnosed/ number screened	% antibody level <10 IU/ml	# screened positive & newly diagnosed/ number screened
East Midlands	0.26	106 / 40,315	0.06	0.14	56 / 40,257	0.01	0.17	67 / 40,330	5.13	2,084 / 40,589
East of England	0.44	354 / 80,770	0.23	0.15	124 / 80,596	0.07	0.09	75 / 79,914	4.23	3,432 / 81,066
London	1.46	2,174 / 148,684	0.34	0.67	998 / 148,105	0.09	0.29	404 / 138,470	5.92	8,265 / 139,595
North East	0.17	53 / 30,702	0.07	0.07	20 / 30,688	0.02	0.14	44 / 30,746	7.84	2,411 / 30,746
North West	0.34	315 / 91,970	0.13	0.14	124 / 91,582	0.03	0.09	78 / 91,485	6.19	5,649 / 91,192
South East	0.29	303 / 105,810	0.10	0.10	106 / 105,248	0.02	0.06	67 / 105,335	7.57	7,843 / 103,564
South West	0.16	91 / 57,286	0.05	0.09	54 / 57,206	0.02	0.05	31 / 57,301	5.62	3,234 / 57,508
West Midlands	0.55	366 / 66,922	0.08	0.27	180 / 66,727	0.03	0.18	118 / 66,760	8.19	5,304 / 64,744
Yorkshire & the Humber	0.32	220 / 68,301	0.11	0.13	87 / 68,346	0.01	0.09	60 / 68,270	9.39	6,428 / 68,475
National	0.58	3,982 / 690,760	0.16	0.25	1,749 / 688,755	0.04	0.14	944 / 678,611	6.59	44,650 / 677,479

References

1. Health Protection Agency (2012). Antenatal screening for infectious diseases in England: summary report for 2011, *HPR* 6(36).
2. Department of Health (2003). Screening for infectious diseases in pregnancy: standards to support the UK antenatal screening programme.
http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4050934
3. NHS Infectious Diseases in Pregnancy Screening (IDPS) Programme homepage,
<http://infectiousdiseases.screening.nhs.uk/>.
4. UK National Screening Committee (2010). IDPS Programme: programme standards,
<http://infectiousdiseases.screening.nhs.uk/standards>.
5. IDPS Programme: key performance indicators,
<http://infectiousdiseases.screening.nhs.uk/reporting>.
6. National Antenatal Infections Screening Monitoring (NAISM) Programme,
http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb_C/1245581538007.
7. IDPS Programme: UK NSC National Hepatitis B in Pregnancy Audit.
<http://infectiousdiseases.screening.nhs.uk/hepbaudit>.
8. French CE, Cortina-Borja M, Thorne C, Tookey PA (2012). Incidence, patterns and predictors of repeat pregnancies among HIV-infected women in the United Kingdom and Ireland, 1990-2009. *Journal of acquired immune deficiency syndromes* 59(3), 287-93.
9. PHE (2012). [Data tables of the unlinked anonymous dried blood spot survey of newborn infants – prevalence of HIV in women giving birth](#).
10. Townsend CL and Tookey PA (2013). Syphilis screening in pregnancy: results from a UK-wide surveillance study. Poster at PHE annual conference (Warwick University).
11. UK National Screening Committee. Infectious Diseases in Pregnancy Laboratory Survey 2012.
<http://infectiousdiseases.screening.nhs.uk/news.php?id=10948>.

Appendix

The positivity rate is calculated using the following equation:

$$\% \text{ positive} = \frac{\# \text{ newly diagnosed} + \# \text{ previously diagnosed (not rescreened and rescreened)}}{\# \text{ screened} + \# \text{ previously diagnosed, not rescreened}} * 100$$

The positivity is therefore measuring how many pregnant women who accept screening are found positive during this pregnancy or were diagnosed previously.

The percentage of women newly diagnosed is presented separately, and only takes into account women who are screened during this pregnancy, as presented in the following equation:

$$\% \text{ newly diagnosed} = \frac{\# \text{ newly diagnosed}}{\# \text{ screened}} * 100$$