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HIV-STIs

Antenatal screening for infectious diseases in England: summary report for 2012

This report presents a summary of the uptake and test results of antenatal screening for hepatitis B, HIV, syphilis and rubella susceptibility in 2012 in England, updating the previous HPR report that included data to the end of 2011 [1]. Uptake of screening for all infections remains high (>95%) and the number of women with a positive test result for HIV, syphilis or hepatitis B remains stable, whilst the number of women with a rubella antibody level <10 IU/ml increased.

Background

Since 2004, the National Antenatal Infections Screening Monitoring (NAISM) Programme has been monitoring the uptake and test results of antenatal screening for hepatitis B, HIV, syphilis and rubella susceptibility. This screening is offered to all pregnant women in England as part of the NHS Infectious Diseases in Pregnancy Screening Programme [2]. The screening aims to identify women with hepatitis B, HIV or syphilis early in pregnancy so that strategies can be offered which prevent mother-to-child transmission and benefit the woman's health. Additionally, women identified as rubella susceptible are offered postnatal MMR vaccination for protection during 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 [3]. 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].

Methodology

Data collection

Data are collected at maternity unit or trust level on the number of pregnant women attending for antenatal care; the number screened for each of the four infections and the results of the screening tests, together with the number previously diagnosed with hepatitis B or HIV. These data are requested and collated by PHE's Field Epidemiology Teams in collaboration with the Regional Antenatal & Child Health Screening Teams and sent to PHE's National Centre for Infectious Disease Surveillance and Control, where national figures and trends are generated.

Uptake

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. 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. The number of maternity units able to report booking data has increased steadily and significantly from less than half in 2008 to 82% in 2012. 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%.

Women previously diagnosed with hepatitis B or HIV

The UK NSC Infectious Diseases in Pregnancy Screening Programme Standards (2010) [3], which came into effect in April 2011, state that screening for hepatitis B or HIV is not required if the woman is already known to be positive and reliable results evidence is documented and known to the healthcare professional. Both newly and previously diagnosed women should be promptly referred for specialist care (KPI ID2 – within six weeks of the test result).

In 2009 and 2010, prior to the introduction of these standards, data were collected on the number of women previously diagnosed with hepatitis B or HIV, and the percentage rescreened in the current pregnancy. The percentage of women newly diagnosed with hepatitis B or HIV and the total percentage of women positive for these infections were then calculated. 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 2012, 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. The positivity rate is calculated using the following equation:

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

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:

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

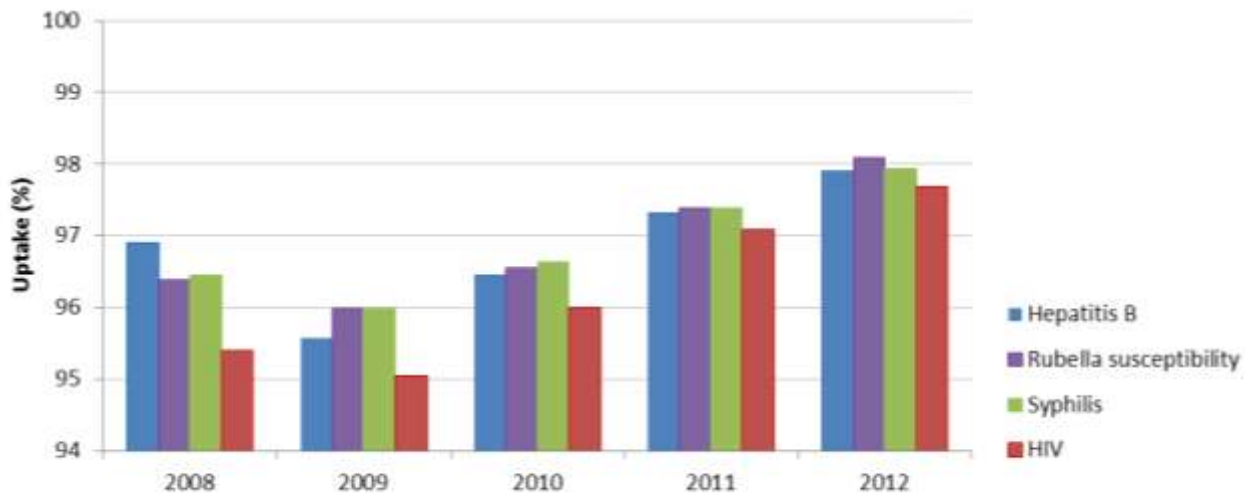
Limitations

Data quality has improved 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].

Reported uptake of antenatal screening

Screening uptake for all four infections was high in the period from 2008 to 2012, with values >95% (figure 1). The drop in screening uptake between 2008 and 2009 presented in figure 1 is likely to be a reflection of improved data quality, rather than a true decrease, as fewer maternity units relied on numbers of laboratory tests as a proxy for booking data. The difference in uptake for HIV, in comparison to uptake for the other infections has declined over recent years, reaching similar uptake rates.

Figure 1. National reported uptake of antenatal screening by infection (England, 2008-2012)



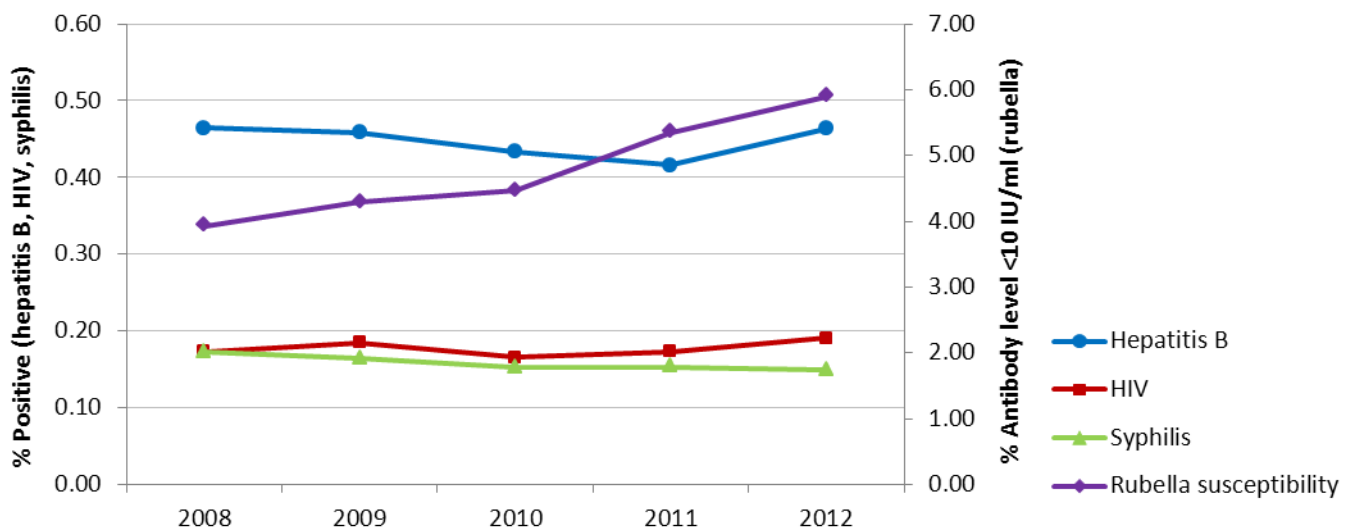
Pregnant women screening positive for HIV, hepatitis B, syphilis or with a rubella antibody level <10 IU/ml

Among women who accepted screening, the percentage who screened positive for HIV or syphilis remained relatively stable from 2008-2012 (figure 2). Nationally in 2012, 0.19% (1,306/684,566) of pregnant women tested positive for HIV and 0.15% (1,026/688,869) was screen positive for syphilis (tables 1a and 1b). For syphilis however, recent research showed that less than a third of screened positive women had an active infection requiring treatment [7].

There was an increase in women testing positive for hepatitis B after a slight decline in recent years, reaching a positivity of 0.46% (3,178/686,004 in 2012). Regional variation was apparent, with women in London presenting the highest positivity rates for each of the three infections.

Over the same five year period, there has been a significant increase in the percentage of women with a rubella antibody level <10 IU/ml (Figure 2). In 2012, 5.9% (40,710/690,734) of women screened positive, compared to 3.9% (25,711/659,256) in 2008. However, this may not represent a true increase in susceptibility due to variation in laboratory testing assays and cut-off values used [8].

Figure 2. Percentage of pregnant women positive for hepatitis B, HIV or syphilis or with a rubella antibody level <10 IU/ml, (England, 2008-2012)



Figures 3a and 3b present the percentage of screened women who were newly diagnosed with hepatitis B and HIV. In 2012, 28% (1,218/3,178) of diagnosed hepatitis B infected women and 18% (296/1,306) of diagnosed HIV-positive women were identified as a result of antenatal screening in their current pregnancy. With all maternity units now reporting information on previously and newly diagnosed women, trends will be reported from next year onwards.

Figure 3a. Percentage of pregnant women newly or previously diagnosed with hepatitis B (England, 2012)

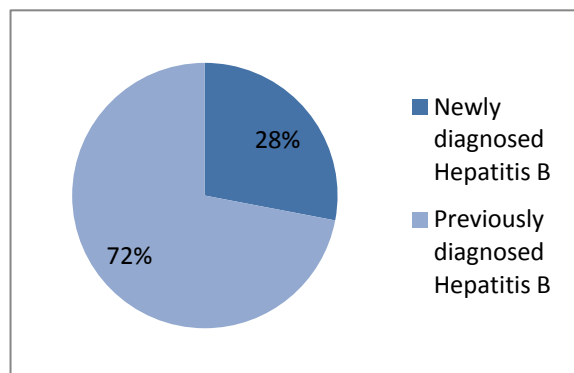


Figure 3b. Percentage of pregnant women newly or previously diagnosed with HIV (England, 2012)

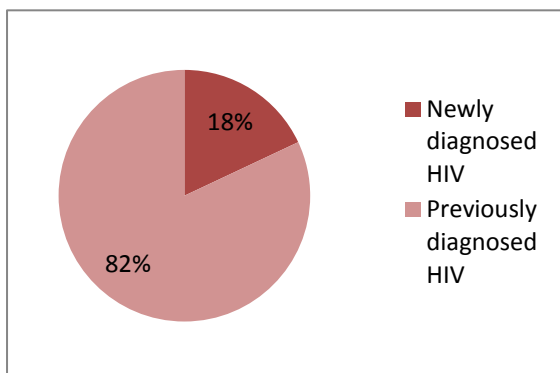


Table 1a. Percentage of pregnant women screening positive for hepatitis B, or HIV (England, 2012)

	Hep B				HIV			
	No. screened and previously diagnosed	% positive	No. screened	% newly diagnosed	No. screened + previously diagnosed	% positive	No. screened	% newly diagnosed
East Midlands	53,592	0.33	53,478	0.12	53,408	0.18	53,340	0.05
East of England	62,171	0.33	52,300	0.11	62,464	0.12	56,496	0.02
London	147,142	1.07	146,224	0.45	146,448	0.39	146,013	0.09
North East	31,959	0.18	31,933	0.09	31,914	0.10	31,893	0.03
North West	77,800	0.34	77,658	0.16	80,253	0.18	80,138	0.04
South East	106,145	0.29	105,965	0.12	107,225	0.12	107,119	0.02
South West	65,596	0.19	65,519	0.07	65,546	0.07	65,504	0.01
West Midlands	70,595	0.36	68,503	0.09	66,559	0.17	65,615	0.02
Yorkshire & the Humber	71,004	0.31	67,436	0.09	70,749	0.14	70,683	0.05
National	686,004	0.46	669,016	0.18	684,566	0.19	675,801	0.04

Table 1b. Percentage of pregnant women screening positive for syphilis, or with a rubella antibody level <10 IU/ml (England, 2012)

	Syphilis		Rubella antibody level <10 IU/ml	
	No. screened	% positive	No. screened	% antibody level <10 IU/ml
East Midlands	53,570	0.15	55,706	5.70
East of England	62,328	0.11	63,232	3.84
London	145,587	0.34	138,698	5.09
North East	31,965	0.13	32,186	8.01
North West	87,128	0.07	88,781	5.36
South East	107,327	0.06	108,173	5.70
South West	65,633	0.06	65,878	5.29
West Midlands	66,671	0.15	66,683	7.73
Yorks. & the Humber	70,857	0.09	71,397	8.28
National	691,066	0.16	690,734	5.89

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, syphilis, and hepatitis B has been stable over the past five years whilst there has been a significant increase in pregnant women with a rubella antibody level <10 IU/ml. Data limitations exist; however, there has been great improvement in data quality submission since monitoring began in 2004. The IDPS and NAISM programme are working collaboratively to improve future data quality.

Acknowledgements

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