



*UK National Screening
Committee*



Infectious Diseases in Pregnancy Screening Programme

**2007 / 08 Annual Report and
2005-2007 Surveillance Data**

Health Protection Agency &
UK National Screening Committee
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Key Findings

Antenatal Screening Uptake in England

National uptake of antenatal hepatitis B screening increased from 93.4% in 2005 to 95.0% in 2007. In 2007, uptake ranged from 86.1% in the North East to 98.4% in the East Midlands.

National uptake of antenatal HIV screening was 93.2% in 2007, an increase from 88.9% in 2005. Although nationally uptake is now above the 90% target, two regions have yet to reach the target.

National uptake of antenatal syphilis screening increased from 93.7% in 2005 to 94.7% in 2007. In 2007, uptake ranged from 82.3% in the East Midlands to 98.0% in the West Midlands.

National uptake for antenatal rubella susceptibility screening was 95.0% in 2007, and ranged from 78.2% in the East Midlands to 98.3% in the West Midlands. There was no significant national change in the proportion of women screened for rubella susceptibility during the period 2005-2007.

In 2007, 0.47% of pregnant women screened for hepatitis B were positive for hepatitis B surface antigen (a marker of current infection). In 2007 this number ranged from 0.13% in the North East to 1.18% in London. Overall hepatitis B rates were lower in 2005 (0.40%) than in 2007; however, no significant regional changes in positive results were observed during this time.

The national percentage of HIV positive results in pregnant women was 0.17% in 2007. The rate was highest in London at 0.32% and lowest in the North East and South West at 0.08%. National HIV positive results have not changed significantly since 2005; however, there has been a slight decline in women testing HIV positive in London since 2005 (0.41% to 0.32%).

In 2007, 0.17% of pregnant women screened for syphilis were positive. In the same year, regional positive results ranged from 0.05% in the North West to 0.43% in London. Overall, the percentage of positive syphilis results has not changed significantly since 2005. Regionally, syphilis increased in the East Midlands and decreased in the North West.

Overall, the rubella susceptibility rate was 3.06% in 2007. In 2005, the proportion of women susceptible to rubella (2.59%) was significantly lower. In 2007, rubella susceptibility ranged from 1.46% in the East Midlands to 4.41% in Yorkshire & Humber.

Overview

This is the first annual report of the Infectious Diseases in Pregnancy Screening (IDPS) Programme. It provides a summary of the activities of the IDPS Programme between autumn 2007 and spring 2008. It focuses on activity arising from a screening programme development workshop held in October 2007 and on screening uptake and positive test results for infections based on data collected in England between 2005 and 2007 by regional HPA teams and sent to the National Antenatal Infections Screening Monitoring (NAISM) Programme for analysis.

Recommendations

- Opportunities should be sought to promote a standardised approach to the comprehensive collection of key data items, particularly booking data.
- A greater emphasis on the collection of data on screening offer and those declining the offer would improve the overall quality of the data.
- Implementation of the revised Health Protection Agency (HPA) data collection proforma should be actively encouraged.
- IT systems at laboratory and maternity unit level should be developed to help improve current reporting practices.
- Work between national and regional levels should be undertaken to develop a more consistent approach to data analysis across the regions.
- Efforts should be made to ensure that the syphilis positive results reflect the final diagnosis following assessment at a GU clinic rather than a laboratory test alone.
- On completion of their work, the infection-specific task groups should recommend revised screening programme standards and highlight key priorities to guide implementation.

Programme Background 2003 - 7

The IDPS Programme is a collaboration between the UK National Screening Committee (UK NSC), HPA and the Department of Health (DH).

Screening for infectious diseases has been a feature of antenatal care for many years. The Department of Health's 2003 'Screening for Infectious Diseases in Pregnancy: Standards to Support the UK Antenatal Screening Programme'¹ consolidated this ongoing and varied practice into a national screening programme which includes hepatitis B, HIV, syphilis and rubella susceptibility. This document was developed as part of the work to implement 'Getting Ahead of the Curve'.²

The 2003 DH programme standards have been integrated into the National Institute for Health and Clinical Excellence (NICE) routine antenatal care guideline³ and the standards are supported by a wide range of stakeholders involved in the delivery of antenatal care.

The Organisational Context

The IDPS Programme is a component of the wider Antenatal & Newborn Screening Programme which comprises six nationally managed programmes covering a diverse range of disease conditions. The other nationally managed programmes are the:

- Fetal Anomaly Screening Programme
- Sickle Cell and Thalassaemia Screening Programme
- Newborn Bloodspot Screening Programme
- Newborn Hearing Screening Programme
- Newborn and Infant 6 – 8 week Physical Examination

The Fetal, Maternal and Child Health Coordinating Group (FMCH), a subgroup of the UK NSC, provides a reference group for all screening programmes working within these age groups. The FMCH's overall priority is to promote the integration of the discrete screening programmes into a more unified entity. In common with the other FMCH programmes, the priority for the IDPS Programme is to move from an emphasis on implementation to an emphasis on improving the quality of the screening programme.

October 2007 IDPS Programme Development Workshop

The first of an annual cycle of IDPS Programme workshops was held towards the end of October 2007. The workshop was convened to consider a wide range of issues arising from the experience of antenatal screening for infectious diseases since publication of the DH Programme Standards in 2003.¹

It was agreed at the workshop that:

- The policies for screening in pregnancy for the four infectious diseases continued to be relevant.
- There was a need for a forum for continuous collaboration at a national level which should have a remit to manage the NSC antenatal screening policies for infectious diseases and oversee the programme development project work.
- The priorities identified for crosscutting and infection-specific work should be addressed through time limited project work.

Since the workshop, the initiation of a UK NSC project to develop a specification for screening programme quality assurance provided an impetus to develop patient pathways for each disease area. These will help address the communication problems which continue across organisational demarcations and identify education and training needs to improve programme delivery.

This workshop emphasised the need for a national programme of work to address the organisation, delivery and quality of screening. This work will feed back into the development of updated screening programme standards.

The main achievement in the period covered by this report has been the formation of a structure within which these projects could be initiated. This consists of a Programme Board and a range of infection-specific stakeholder task groups. This represents a significant step forward.

Infectious Diseases in Pregnancy Screening Programme Board

A Programme Board was established to initiate and oversee the project work agreed upon at the workshop. The active core of the Programme Board membership comprises UK NSC and HPA representatives. Representatives of the Departments of Health from the four countries are 'corresponding members' of the Board. Individual experts are invited to attend Board meetings to address particular issues.

The aims of the Programme Board are to oversee the time limited project work identified at the 2007 workshop which will run for two years and to manage the portfolio of UK NSC policies covering infectious diseases screening in the antenatal period. In addition, attention has been given to the development of public information relating to infection in pregnancy, identifying education and training requirements, and the production of an annual report.

The IDPS Programme Board reports to the UK NSC's FMCH Coordinating Group and the FMCH's agenda informs its work. On completion of the project work the Programme Board will make recommendations on how the Infectious Diseases in Pregnancy Screening Programme should be managed in the longer term.

Task groups which report to the Programme Board have been formed to take the workshop priorities forward. The composition and terms of reference of the Programme Board and membership of the task groups can be found in Appendix 1.

IDPS Programme Development

Infection-specific task groups have been formed and will develop patient pathways which link to existing guidelines, identify roles and responsibilities at critical points and contribute to the revision of the programme standards. Work on the priorities identified at the workshop will contribute to the development of the pathways, which in turn will provide the basis for revised programme standards. The task groups have also been asked to identify programme issues for future work.

Hepatitis B

The unknown and variable uptake of the infant/childhood vaccination schedule provided the background to discussion of the main issues at the workshop. These included concern about the interface between maternity services and primary care which is compounded by insufficient IT systems in the context of a mobile population. This impacts on the delivery of the full course of infant vaccination and there is a need to clarify patient pathway.

The hepatitis B task group will consider the need to develop a pregnancy-specific laboratory protocol and will determine further project work arising from the development of the patient pathway.

HIV

The success of screening in reducing the risk of HIV transmission to the fetus provided the background to discussion of the main issues at the workshop. These included the potential of the National Study of HIV in Pregnancy and Childhood (NSHPC), which provides information on HIV infection in pregnancy and paediatric infection in children, could provide a model for the other conditions within the antenatal screening programme. The experience of the NSHPC is of particular relevance for monitoring the effectiveness of the care pathway as a whole and identifying areas requiring development.

The HIV task group will consider whether repeat screening in the third trimester will address the problem of seroconversion in pregnancy, the characteristics and application of tests for rapid diagnosis for women who book late in pregnancy or in labour and the way in which current policies on patient confidentiality impact on the delivery of care.

Syphilis

A rising prevalence of syphilis in the adult population formed the background to discussion of the main issues at the workshop. These included concerns about the lack of data on screening, diagnosis and outcomes, which means that current maternal and neonatal infection is difficult to quantify and understand. There was concern that the problematic interface between maternity services and GU medicine creates difficulties in supporting the continuity of care in the antenatal and neonatal periods and also that a national laboratory protocol for testing in the antenatal period was not available.

The Syphilis task group will consider ways in which testing and reporting of results might be clarified, the need to develop a pregnancy specific laboratory protocol and will scope, specify and initiate a project to assess the prevalence and outcome of maternal syphilis.

Rubella susceptibility

The workshop discussion was informed by a report from the National Congenital Rubella Surveillance Programme. Fifty-five cases of congenital rubella infection had been reported since 1990; however, demographic change, variable uptake of vaccine and frequency of overseas travel provided a context in which congenital rubella outbreaks could not be ruled out. Regional audits highlighted that a significant number of women declined screening and also that difficulties remained in implementing the postnatal MMR vaccine, particularly following discharge into primary care settings.

A rubella task group will be set up in 2009 to develop a pathway for rubella susceptibility screening and address a range of issues relating to the postpartum MMR vaccination of women identified as susceptible.

Laboratory quality assurance

UK NSC initiatives in the area of laboratory quality assurance and reflections on the experience of antenatal screening in National Blood Service (NBS) laboratories provided the background to discussion. The main issues identified related to the lack of current knowledge regarding the links between maternity units and laboratories, the processes shaping interaction between them and current arrangements for laboratory quality assurance.

Since the workshop, a crosscutting laboratory quality assurance task group has been formed and a survey of laboratory practice will be undertaken to, amongst other things, establish whether the creation of laboratory standards is required. The group will also take the action required to establish a consistent national approach to quality assurance including producing consolidated standards and testing algorithms, if this is deemed necessary. This will help define the criteria for an infectious diseases screening laboratory service.

The recent announcement of the withdrawal of the NBS's antenatal screening service has increased the urgency to ensure that service provision specifications are developed to assist in commissioning a high quality service.

Policy Review Work

The UK NSC has screening policies relating to 14 infectious diseases (see Appendix 2) and these are re-visited on a regular basis or when new information emerges. Recent policy reviews have been initiated to review the evidence for antenatal screening for Group b streptococcal carriage, asymptomatic Chlamydia infection and maternal susceptibility to varicella infection. The results of the policy work and the outputs of the task groups will be included in the next annual report.

Programme Mapping Project

An HPA funded project to map current practice in infectious diseases, combined with parallel work on sickle cell and thalassaemia screening, has also been initiated and this will provide further information on screening and data collection practices at maternity unit level.

Programme Monitoring

Information on the offer, uptake and results of antenatal screening for hepatitis B, HIV, syphilis and rubella susceptibility are collected at maternity unit or trust level and supplied to HPA Regional Epidemiologists and NSC Regional Antenatal Screening Co-ordinators. The data are cleaned and then forwarded to the HPA Centre for Infections (Cfi) where the National Antenatal Infection Screening Monitoring (NAISM) programme analyses the data and generates the figures shown in this report.

The NAISM programme was set up in 2004 with the strategic objectives to:

- Monitor at national level the offer and uptake of antenatal screening for infections as well as the prevalence of infection in pregnant women screened
- Provide support and advice at local NHS level to those involved in the implementation of the national policy

Background

The figures presented below for 2005-2007 relate to antenatal screening and are provided by the HPA NAISM programme. All data presented in this report are provisional and current as of September 2008.

Figures for regional uptake and positive results may differ slightly from those calculated by the regions because of differences in calculation methods used. It is necessary for the NAISM programme to use the same method of analysis for all regions in order to provide uniformity across the programme and track changes over time.

All women should be offered antenatal screening for hepatitis B, HIV, syphilis and rubella susceptibility early in pregnancy or when first booking for care, even if this is in labour. Screening should be offered to all women in each pregnancy, and for all four conditions, a high uptake rate is required. The 2003 Department of Health Standards¹ set an uptake target of 90% for HIV screening but it should be emphasised that HIV is the only condition with such a defined uptake target.

Data Flow

Data flow varies slightly by region. In most regions the local screening co-ordinator provides data to the HPA regional units based on maternity and laboratory IT and manual data collections systems to the defined schedule. Information officers or epidemiologists at the regional units consult with regional and local antenatal screening co-ordinators and midwives to ensure data is complete before forwarding these data to Cfl. At Cfl the data are cleaned and standardised. In cases where poor data are received, gaps in service or trends are noted and the Regional Antenatal Screening Co-ordinator liaises with the relevant providers and commissioners to ensure the issues are addressed.

A standard proforma for data collection (often referred to as the 'antenatal return') was developed in 2004 (Appendix 4). The proforma includes a record of the number of women booking for antenatal care, and the number of women who are offered, decline and receive tests for HIV, hepatitis B, syphilis and rubella susceptibility. The numbers of women who test positive for HIV, hepatitis B and syphilis, and who are susceptible to rubella infection are also recorded. A new proforma has been introduced in 2009 to collect additional information on the number of women known to be HIV and/or hepatitis B positive prior to screening.

Outcome variables for uptake and positive test results are calculated using the proportion of women booked for antenatal care who are tested and the proportion of positive results of those tested. The methods used to clean and analyse NAISM data are described fully in Appendix 3.

Maternity Unit and Trust Coverage

The NAISM programme should receive data from every obstetric-led maternity unit in England. However, some maternity units are unable to provide data on antenatal infections screening and data from some maternity units is provided at Trust level which may include data from one or more maternity units. Trust level data may hide poor uptake or high rates of positive test results in maternity units belonging to the same trust.

In 2007, data were received from 100% of known maternity units and/or trusts in seven of the nine regions. This is an improvement from 2005 when only three regions supplied data from 100% of known maternity units and/or trusts.

Data Limitations

Data sources

Due to limitations in the record systems within maternity units and trusts, booking data is difficult to collect. In view of this, data are derived from a variety of sources. The data source for the number of women booking for antenatal care is usually recorded and included in the returns made to the regional units. Maternity unit computerised or paper records are reported as the source of the greatest percentage of booking data; however, there seems to have been an increase in the proportion of laboratory-derived booking data between 2005 and 2007.

Table 5. Data sources, definitions, and proportions, 2005-2007.

Data Source	Definition	Proportion of Data		
		2005	2006	2007
Maternity	Data extracted from computerised or paper records held at the maternity unit.	43.7%	47.0%	45.9%
Laboratory	Data based on laboratory records of the number of samples sent for testing for each infection.	29.3%	30.3%	32.1%
Combination Data	Data derived from maternity units and laboratory records.	8.4%	10.4%	12.2%
Other	Data from any other source such as a one off audit.	3.5%	3.7%	3.2%
Unknown	Data with no information about the source	15.0%	8.6%	6.6%

In 1997, a study investigating data collection at maternity units revealed that approximately 40% of maternity units in England did not use computerised information systems.⁹ Ten years later, several maternity units still used paper records, and the existing computer systems often lacked linkage between maternity and laboratory systems. For this reason, many maternity units have difficulty completing and returning the data proforma. The process of extracting data from maternity and/or laboratory records is not simple, and this can impact on the quality and consistency of the data.

Booking numbers

A significant proportion of returns used proxy data from laboratories for the number of bookings. For example, the number of laboratory tests for one or more infections was sometimes used as an indicator for the number of bookings. Although most women accept antenatal screening for infections, some women will decline. The use of these tests as a proxy for the number of women booking introduces uncertainty into the denominator data, potentially leading to an overestimated uptake rate. This approach should only be used as a last resort when no reliable data on bookings is available.

Furthermore, booking figures do not precisely represent the number of women who receive antenatal care or deliver in a particular unit. Population mobility can mean women who move may be double counted or missed out altogether. Additionally, women who present late for antenatal care, or present for the first time at delivery, may not be counted in the bookings figures. This will contribute further towards booking figure discrepancies.

Test numbers

There are also scenarios where tests are duplicated and counted twice, thus overestimating screening uptake. Women who move between centres in the same pregnancy may be screened in each one. A woman may be tested more than once in the course of the pregnancy if she is considered to be at high risk of having acquired an infection since the initial screening test. It is unclear if these repeated tests are included in the number tested.

Test results

Based on national screening protocols, only confirmed screen positive results should be sent for collation in the national dataset. There is no mechanism at present to ensure that this is adhered to. Confirmatory testing of a sample often takes place in a reference laboratory separate to the laboratory where the original screening test may have taken place. Where data are laboratory derived it is possible that they may include positive screening tests that were not confirmed. This is of particular concern in relation to syphilis screening where women with a positive screen are referred to a genitourinary medicine clinic for assessment and may be found to have past rather than current infection.

Since the introduction of interventions that can reduce mother-to-child transmission of HIV and hepatitis B, women who are known to have these infections when they attend antenatal care may not be screened and could be included in the number of women reported as not screened or as having declined screening. For this reason, the HIV and hepatitis B positive results are likely underestimates. Action has been taken to address this issue with implementation of a new data proforma in 2009.

Timing of data collection

Data were collected on either a six monthly or quarterly basis. However, it is recognised that some women may book in one quarter and be tested in another quarter. Where annual data are presented, this may affect denominators and numerators at the beginning and the end of the year.

If an HPA regional unit received updated data after sending the respective quarter's data to Cfl, the updates were not always relayed to Cfl as well, and therefore some numbers are not captured. As of 2009, Cfl has changed the data collection schedule to once annually in order to avoid this problem.

Completeness of the data

Completeness of the data is assessed by monitoring the proportion of missing data. Nationally, data on offers and declines are the most poorly completed. There is considerable variation between regions; for example, data completeness is highest in the East of England, the North West, and Yorkshire and Humber and lowest in the West Midlands (see Appendix 3 for data analysis methods in the West Midlands) and the South West. There was an improvement in the completeness of data received from the West Midlands and the South West between 2005 and 2007, but there is still a need for more completeness of data captured nationally. Because of incomplete data, it was not possible to analyse the number of women who declined tests at a regional or national level. This information is particularly important in understanding variations in testing uptake and would be of use to individual maternity units in identifying the women who should be offered screening again later in pregnancy.

Appendix 1: Programme Board Terms of Reference (approved by FMCH, June 2008)

The aim of the Programme Board is to develop and maintain an up to date policy and implementation framework for antenatal infectious diseases screening in the UK.

Towards this end the Programme Board will:

- ensure that the published standards and policies for antenatal screening for infectious diseases in pregnancy are met by identifying and initiating project work to address key priorities in policy and implementation
- work with project groups at key points in the project lifecycle – e.g. helping to specify project areas and outputs, receive highlight / progress reports, sign off key milestones, address project issues and exception reports as necessary

Objectives

- Organise a cycle of policy / standards review projects on a time and event driven basis for all antenatal infectious diseases on the UK NSC policy chart
- Organise projects to develop public information to coincide with the policy / standards review cycle
- Monitor implementation against standards at a national and regional level with a view to identifying programme improvement projects
- Provide a focus for enquiries and advice regarding screening for infectious diseases in pregnancy
- Produce an annual report to inform national policy
- Organise an annual stakeholder workshop / conference to coincide with the publication of the annual report

Communication – Arrangements to be confirmed with reference to the forthcoming communications framework for screening programmes and the relevant elements of the HPA Children's Programme business plan.

Standard reporting line/s: FMCH a minimum of twice per year or more if required
HPA to be considered
Annual stakeholder workshop / conference

Constraints: FMCH cross cutting agenda
HPA Children's Programme business plan

Frequency of meetings: Bi monthly in the first instance, quarterly in due course.

Infectious Diseases in Pregnancy Screening Programme Board	
Catherine Peckham	Chair
Joe Kearney	HPA Children's Lead (Local and Regional Services / Children's Programme Board)
Fortune Ncube	HPA Centre for Infections
Sam Bracebridge	HPA Local and Regional Services Regional Epidemiologist Antenatal Screening Lead, East of England
Hilary Phelps	HPA Centre for Infections
Sharon Hodgkiss	UK NSC Regional Antenatal Screening Coordinator
John Marshall	UK NSC Projects and Programmes Manager
	UK Departments of Health have an open invitation to attend meetings

Laboratory QA Task Group	
David Worthington	Chair
Catherine Peckham	UK NSC / Chair, Infectious Diseases Screening Programme Board
Cathy Ison	HPA Centre for Infections
Vivienne James	UK NEQAS Microbiology
Joe Vincini	HPA Centre for Infections
Geoffrey Bengé	Head of Pathology North Middlesex University Hospital Trust
Pat Tookey	Chair, HIV Task Group
Siobhan O'Shea	HIV Task Group / input on rubella also
Roger Eglin	National Blood Service
Malcolm Guiver	Association of Clinical Microbiologists
Claire Aitken	Royal College of Pathologists
Christine McCartney	HPA Regional Microbiology Network
Kim Moonlight	UK NSC Regional Antenatal Screening Coordinator
Val Armstrong	UK NSC Regional Antenatal Screening Coordinator
Elizabeth Boxall	HPA RMN / Chair, Hepatitis B Task Group

Hepatitis B Task Group	
Elizabeth Boxall	Chair
Nadia Permalloo	UK NSC Regional Antenatal Screening Coordinator
Maddie Smith	UK NSC Regional Deputy Antenatal Screening Coordinator
Margaret Costello	Specialist Midwife, North West London Hospitals NHS Trust
Matthew Cramp	British Viral Hepatology Group
Mary Ramsay	HPA Centre for Infections

HIV Task Group	
Pat Tookey	Chair
Mervi Jokinen	Royal College of Midwives
Jane Anderson	British HIV Association
Siobhan O'Shea	Guy's & St Thomas' NHS Foundation Trust
Annette McHugh	UK NSC Antenatal Screening Coordinator
Annemiek DeRuiter	Guy's & St Thomas' NHS Foundation Trust
Hermione Lyall	St Mary's Hospital
Susan Sellers	Expert Advisory Group on AIDS (EAGA)
Maddie Smith	UK NSC Antenatal Screening Coordinator
John Parry	HPA Centre for Infections
Rosemary Johnson	Programme Coordinator, Antenatal Screening Wales
Catherine Peckham	UK NSC / Chair, Infectious Diseases Screening Programme Board

Syphilis Task Group	
Catherine Peckham	Chair
Cathy Ison	HPA Centre for Infections
Pat Tookey	Chair, HIV Task Group
Jackie McGeagh	Northern Ireland, Antenatal & Newborn Screening Coordinator
David Goldmeier	British Association of Sexual Health & HIV
Margaret Kingston	British Association of Sexual Health & HIV
Melanie Douglas	Specialist Midwife, St Mary's Hospital
Alison Cryer	UK NSC Regional Antenatal Screening Coordinator
Rana Chakraborty	Infectious Diseases Paediatrician

Health Departments of the United Kingdom contacts	
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Jennie Carpenter	England (Screening Policy Unit)
Lorraine Gregory	England (Screening Policy Unit)
Margaret Boyle	Senior Medical Officer, Department of Health, Social Services and Public Safety Northern Ireland
Rosemary Johnson	Wales Antenatal Screening Programmes Co-ordinator
Gerry Robb	England (Infectious Diseases and Blood Policy)
Susan Sellers	Expert Advisory Group on AIDS (EAGA)

Appendix 2: UK National Screening Committee's Policy Positions, July 2008

The table below is a synopsis of the current NSC position on a wide range of conditions. It is updated annually and approved at the June meeting of the UK National Screening Committee. Significant changes of course occur during the year and are notified to all Directors of Public Health in the bi-monthly newsletter and to relevant Trusts, professionals and patient groups.

CONDITION	MOSTRECENT REVIEW DATE	CURRENT NSC POLICY For England and the rest of UK unless otherwise stated	Significant change since March 2005	NEXT REVIEW
ANTENATAL				
		Infectious Diseases in Pregnancy Screening Programme		
Hepatitis B	2007	Screening should be offered to all pregnant women Evidence : "Screening for Infectious Diseases in Pregnancy" Section 5 More information: NLH Screening Hepatitis B	No	2010/11
HIV	2007	Screening for HIV should be offered to all pregnant women. Evidence: "Screening for Infectious Diseases in Pregnancy" -Department of Health publication Section 4: HIV (p8-9). More information : NLH Screening HIV Wales: All pregnant women are offered screening for HIV Northern Ireland: screening for HIV implemented from April 2003	No	2010/11
Rubella susceptibility	2007	Screening for rubella immunity should be offered. Evidence: " Review of Antenatal Screening for Rubella Immunity " Also : " Screening for Infectious Diseases in Pregnancy " p5 Wales: women are offered screening for rubella susceptibility	No	2010/11
Syphilis	2007	Screening should be offered. Evidence: " Screening for Infectious Diseases in Pregnancy " published by the Department of Health Section 3: Syphilis (p7) More information: NLH Screening Syphilis	No	2010/11
		Policies on infectious diseases not within the Screening		

CONDITION	MOSTRECENT REVIEW DATE	CURRENT NSC POLICY For England and the rest of UK unless otherwise stated	Significant change since March 2005	NEXT REVIEW
		Programme		
Asymptomatic bacteriuria in pregnancy	2004	Screening for this condition should be offered. Guideline : NICE Routine Antenatal Care Guideline March 2008 More information : NLH Screening : Bacteriuria	No	2009 / 10 following HTA preterm labour review summer 2008
Bacterial vaginosis	2004	Screening for this condition should not be offered. Guideline: NICE Routine Antenatal Care Guideline March 2008 More information : NLH Screening Bacterial Vaginosis	No	2009 / 10 following HTA preterm labour review summer 2008
Chlamydia	2006	Chlamydia screening should not be offered to pregnant women Guideline : NICE Routine Antenatal Care Guideline . March 2008 More information : NLH Screening Chlamydia	No	2008/09
Cytomegalovirus	2001	Screening should not be offered. Evidence : review of literature at NLH Screening Cytomegalovirus	No	2009/10
Hepatitis C	2002	Screening for Hepatitis C should not be offered. Evidence : Journal Medical Screening 2003;10:161–168). Guideline: NICE Routine Antenatal Care Guideline. More information : NLH Screening Hepatitis C	No	2009/10
Herpes	2006	Screening for genital herpes should not be offered. Review to be carried out following publication of BPSU data and literature search. Guideline: NICE Routine Antenatal Care Guideline. Evidence : report commissioned by NSC at NLH Screening Herpes	No	2010/11
HTLV1	2005	Screening for HTLV1 should not be offered to pregnant women. More information : NLH Screening HTLV1	No	2010/11
Streptococcus B	2005	Screening for streptococcus B should not be offered. The NSC is considering this position. Evidence: Prevention of Group B Streptococcus in Neonates:	No	2008/09

CONDITION	MOSTRECENT REVIEW DATE	CURRENT NSC POLICY For England and the rest of UK unless otherwise stated	Significant change since March 2005	NEXT REVIEW
		Workshop Report More information: NLH Screening Streptococcus B		
Toxoplasmosis	2004	Screening for toxoplasmosis should not be offered. Evidence : Antenatal and Newborn Screening for Toxoplasmosis : a report More information: NLH Screening Toxoplasmosis	No	2009/10
Varicella susceptibility	New topic in 2008		N/A	2008/09

Appendix 3: Methods for Data Analysis

DATA CLEANING:

- Records outside of the time period of interest were deleted.
- Duplicate records were deleted.
- Data on Bookings, Offers, and Tested were validated. Zero is not an acceptable number of bookings, offers, or tests, therefore zeroes in these columns were replaced with blanks.
- Comments were reviewed and data adjusted as appropriate. For example, where a comment stated that no data on HIV test results were available for a particular maternity unit but the maternity unit data file showed that there were zero HIV positive test results, the zero would be replaced with a blank cell.

UPTAKE CALCULATIONS:

- Uptake was calculated as the number of women tested divided by the number of women booked.
- Where the number of women booked were unavailable, the number of women offered testing was used to calculate uptake.
- Records were excluded from the calculations for regional and national uptake if both the number of women booked for antenatal care and the number of women offered testing were unavailable.
- Records were also excluded from the calculations for regional and national uptake if the number of women tested were unavailable.
- In 2005, the number of syphilis tests were used as a proxy for the number of women booked for antenatal care in the West Midlands as no booking data was available. For maternity units in the West Midlands which still could not provide booking data in 2006 and 2007, the number of rubella tests were used as a proxy for the number of women booked for antenatal care.
- Maternity unit data were not used to calculate uptake for hepatitis B and HIV in the East Midlands. Instead, NBS data (at PCT level) were used to calculate uptake as follows.
 - HIV Uptake: number of HIV tests performed by the NBS divided by the number of syphilis tests performed by the NBS
 - Hepatitis B Uptake: number of hepatitis B tests performed by the NBS divided by the number of syphilis tests performed by the NBS
- Records were excluded from the regional and national uptake when the number of women tested was higher than the number of women booked (or offered testing), making uptake greater than 100%. Strategies where these uptakes are capped at 100% rather than being excluded were investigated, and the results differed very little. These capping strategies may be reconsidered in future reports.
- Records were excluded from regional and national uptake calculations when uptake was clearly incorrect (i.e. below 20%).

- Trends in regional and national uptake were analysed using linear regression methods in STATA 10.

CALCULATION OF POSITIVE AND NEGATIVE RESULTS

- Positive results for hepatitis B, HIV, syphilis and rubella susceptibility were calculated as the number of women testing positive or rubella susceptible divided by the number of women tested.
- Records where the number of women testing positive or rubella susceptible were missing were excluded from calculations of regional and national results.
- Likewise, records where the number of women tested were missing were excluded from the regional and national calculation of positive results.
- Outliers were excluded from the regional and national results. Between 2005 and 2007, 3 outliers were excluded from the regional and national results:
 - 20% HIV-positive results;
 - 48% Rubella susceptible results;
 - 72% Syphilis-positive results.
- Trends in regional and national prevalence were analysed using linear regression methods in STATA 10.

Appendix 4: Standard Data Collection Form



Antenatal infection screening surveillance Regional return form for maternity units

Name of Region _____

Number of maternity units in the Region _____

Total number of maternity units providing data _____

Six-month period ending ____/____/____

Name of contact person completing this form _____

Contact telephone number(s) of contact person supplying data

Date of completion ____/____/____

Total number of antenatal bookings in this six-month period

Data source:

Number of units using each data source and number of women booked in those units

Data source	Number of units	Number of women booked
Maternity generated figures*		
Proxy (laboratory generated) figures**		

* Maternity generated figures (maternity paper or computer database, or where the laboratory collates data for *all* women booking)

** Proxy figures are used to estimate number of women booking (e.g. number of blood tests, or laboratory generated figures which may not include all women booking)

Testing data tables overleaf...

Testing:

Table of testing data where data source is maternity generated figures:

Test	Number offered	Number declined	Number tested	Number of positive results	Number rubella antibody negative
Hepatitis B					
HIV					
Syphilis					
Rubella					

Table of testing data where data source is proxy (laboratory generated) figures:

Test	Number offered	Number declined	Number tested	Number of positive results	Number rubella antibody negative
Hepatitis B					
HIV					
Syphilis					
Rubella					

Notes on completing this form:

Six month periods: 1 January to 30 June, 1 July to 31 December

Booking: The 'point at which the woman sees a midwife/GP for an antenatal booking history, and details/history of the current pregnancy are documented and logged onto the common Maternity Unit database'. The total should include all initial bookings regardless of the intended place of delivery (whether as GP antenatal care, midwife antenatal clinic or hospital antenatal clinic). It is recognised that a small proportion of women who book in one quarter will have booking bloods taken in another quarter. It is also recognised that not all women who book will go on to deliver or indeed have bloods taken.

Tested: The number of antenatal tests carried out within this period.

Number offered and number declined: Number of tests offered or declined in this period

Hepatitis B: Hepatitis B surface antigen (HBsAg)

Number of positive results: Number of **confirmed** positives in this period

Number of rubella antibody negative results: Number of **confirmed** negatives in this period

References

- ¹ Department of Health. Screening for infectious diseases in pregnancy: Standards to support the UK antenatal screening programme. 2003.
- ² Department of Health. Getting ahead of the curve: a strategy for combating infectious diseases (including other aspects of health protection). 2002.
- ³ National Institute for Health and Clinical Excellence. 2008. NICE Clinical Guideline 62 – Antenatal care: routine care for the healthy pregnant woman.
- ⁴ Department of Health. Immunisation against infectious disease 2006 – “The Green Book”. London, 2006.
- ⁵ Townsend C L *et al.* Low rates of mother-to-child transmission of HIV following effective pregnancy interventions in the United Kingdom and Ireland, 2000-2006. *AIDS* 2008 **22**:973-981.
- ⁶ The UK Collaborative Group for HIV and STI Surveillance. Testing Times. HIV and other Sexually Transmitted Infections in the United Kingdom: 2007. London: Health Protection Agency, Centre for Infections. November 2007.
- ⁷ Association for Genitourinary Medicine (AGUM), Medical Society for the Study of Venereal Disease (MSSVD). 2002 national guidelines on the management of early syphilis. London: Association for Genitourinary Medicine (AGUM), Medical Society for the Study of Venereal Disease (MSSVD); 2002.
- ⁸ National Institute for Health and Clinical Excellence. Routine postnatal care of women and their babies. CG37. 2006.
- ⁹ Kenney N & Macfarlane A. Identifying problems with data collection at a local level: survey of NHS maternity units in England. *BMJ* 1999 **319**:619-622.