Antenatal and Newborn Screening

Introduction

Best practice guidance and evidence used include:

I. *UK National Screening Committee (UKNSCa) (2010) 'Infectious Diseases in Pregnancy Screening Programme, Programme Standards' September 2010;*

II. *UK National Screening Committee (UKNSCb) 'Infectious Diseases in Screening Programme Handbook for Laboratories' September 2010*

III. *Department of Health (DoH) 'Hepatitis B antenatal screening and new-born immunisation programme - Best practice guidance' makes clear recommendations to improve the uptake rate of existing Hepatitis B immunisation programmes for new-borns who are at risk of Hepatitis B infection (DH, 2011).*

What do we know?

HIV

Pregnant women are offered antenatal screening for HIV in order to identify infection, to both allow the timely offer of interventions to reduce the risk of mother-to-child transmission and to safeguard the women's own health. A combination of antiretroviral therapy, appropriate management of labour, and the avoidance of breastfeeding can reduce the risk of mother-to-child transmission from 15-25% to 1% or less (UKNSC, 2010a).

Hepatitis B

Hepatitis B infection is caused by the Hepatitis B virus (HBV), which is transmitted through infected blood and other bodily fluids. The risk of perinatal transmission is dependent on the status of the maternal infection, with around 70-90% of mothers testing positive for HBV e-antigen passing the infection on to the infant. The rate of transmission is lower, at around 10%, in women with antibodies to HBV e-antigen.

The objectives of the screening programme are:

i. To ensure that all Hepatitis B positive mothers identified are referred for specialist care within 6 weeks of screening results and
ii. To ensure that all infants born to Hepatitis B positive mothers receive vaccination within 24 hours of delivery and at 1, 2 and 12 months. In babies born to mothers with a higher risk of transmission, the additional Hepatitis B Specific Immune Globulin (HBIG) can reduce the risk further. With this strategy, transmission can be prevented in over 90% of infants exposed to maternal infection (UKNSC, 2010a).

The antenatal screening programme for infectious diseases should be delivered in line with *'The Infectious Diseases in Pregnancy Screening Programme Standards'* (UKNSC, 2010a). Specific best practice titled *'Hepatitis B antenatal screening and new-born immunisation programme'* (DH, 2011) is available in relation to the delivery of neonatal Hepatitis B immunisation. Both Hepatitis B and postnatal MMR vaccination should be delivered in line with the Department of Health 'Green Book' recommendations for immunisation (DH, 2009). Screening for each of the four conditions should be undertaken using the nationally agreed screening protocols. Analytical processes which govern the diagnostic sensitivity and specificity of tests are outlined in the IDPS Handbook for Laboratories (UKNSC, 2010b).

What are the unmet needs/ service gaps?

There are a number of gaps identified in relation to the screening pathway for infectious disease in pregnancy and newborn screening, as well as the subsequent management of positive screens.

i. The ability to disaggregate data in order to analyse screening uptake for women living in Bedford Borough. This subsequently prevents the development and implementation of targeted strategies to promote screening uptake within specified populations. The ability to analyse screening outcome data beyond the level of acute Hospital Trust. This inhibits the compilation of trend data relating to HIV, Syphilis, Hepatitis B and Rubella.

ii. The absence of a locally agreed, multiagency protocol to govern the postnatal management of women identified as Rubella susceptible

iii. Sickle Cell Thalassaemia screen: Currently early access is measured at 12 weeks and 6 days against expected 10 weeks' time.

iv. Newborn Blood spot test: Delay in sample taking, some of the samples are taken at day 17. Also there are issues with avoidable repeat test that has risen nationally due to new National Lab Quality Criteria implementation; and issue with NB coverage for Movers- In where there are delays in maintaining time frame of 21 days from GP notifications to results

v. Newborn physical Examination: No designated clinical lead at the provider hospital. and communication gap within the service; no clarity on responsibilities such as who owns the KPI and who is responsible for data entering; exceptional report required, and not clear who will do that

Recommendations:

i. Develop and implement a local protocol for the management of infants born to Hepatitis B positive mothers.
ii. Data quality improvements should be sought, in order to improve local knowledge of screening uptake and trends in relation to screening outcomes. Access to this level of data will need to be negotiated with Acute Trusts.
iii. Improving early access to Antenatal and newborn screening so that results are available by 10 weeks