

Management of syphilis in pregnancy in two UK district general hospitals

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What is syphilis and why does it matter in pregnancy?

Syphilis is an infection caused by *treponema pallidum* spirochete. This can be spread via direct contact with a skin lesion, blood transfer or transplacental. The clinical course is characterised by three stages:

1. 10-90 days after exposure - headache, myalgia and skin ulcer
2. 2-8 weeks after completion of stage 1 - pyrexia, rash and mucosal irritation
3. Any time, months to years after stage 2 - internal organ dysfunction, respiratory failure and psychotic disorders

It is of concern in pregnancy as maternal infection is associated with a 50% fetal loss rate. If the pregnancy is not lost, neonatal disease ranges from rhinitis to desquamative rash to splenomegaly and anaemia. If neonatal symptoms are present at birth, a 50% neonatal death rate is seen.



Fig 1: scanning electron microscope image of *treponema pallidum* spirochete



Fig 2: example of the desquamative rash seen in neonatal syphilis

Why did we audit our management?

UK Government data has shown that since 2017, the number of pregnant women screened for syphilis who have returned a positive result has increased (1). Our local database of pregnancies affected by syphilis also reflected this.

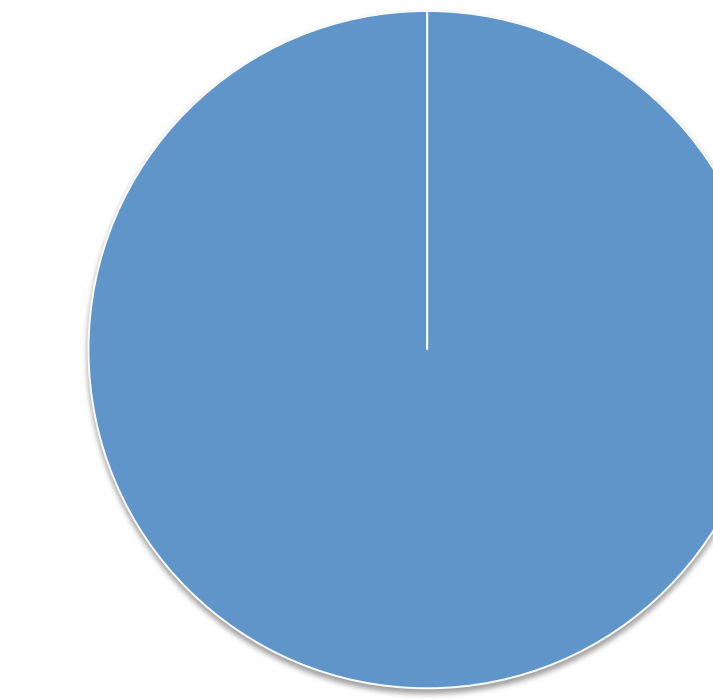
National guidance on the management of these pregnancies has been available since 2015 (2). We wanted to ensure that local practice across our two district general hospital sites followed this.

Method

Eligible participants were identified by searching women who had accessed local maternity services and were found to be syphilis positive between 1st January 2020 and 30th June 2022. Electronic pregnancy notes were searched for details of antenatal and peripartum care. Fifteen patients were identified. Fourteen were diagnosed during the antenatal period. One was diagnosed in the immediate postnatal period due to a diagnosis of congenital syphilis in the neonate.

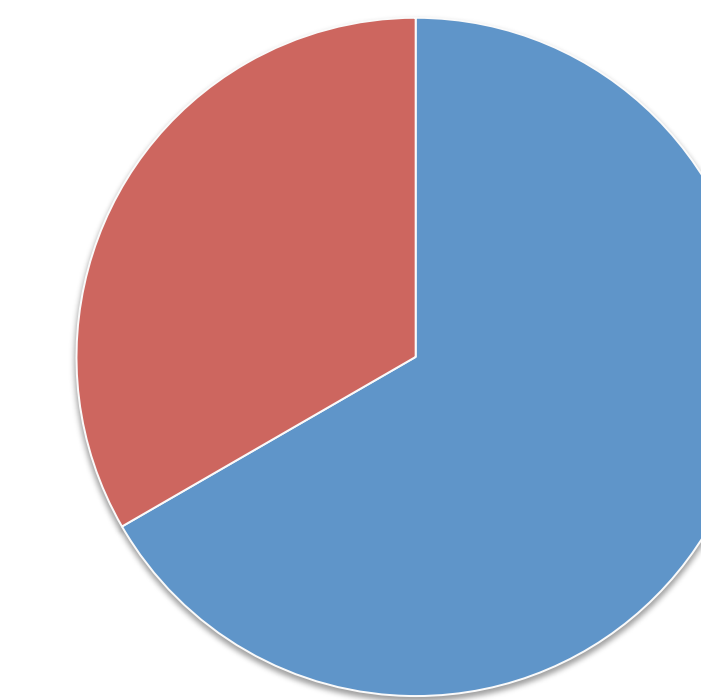
Management in accordance with national guidance was examined by looking at rates of referral to GUM (Genitourinary Medicine), referral to FMU (Fetal Medicine Unit) where indicated, completion of a standardized birth plan, documented paediatric alert and treatment of neonates born to affected mothers where applicable.

Results



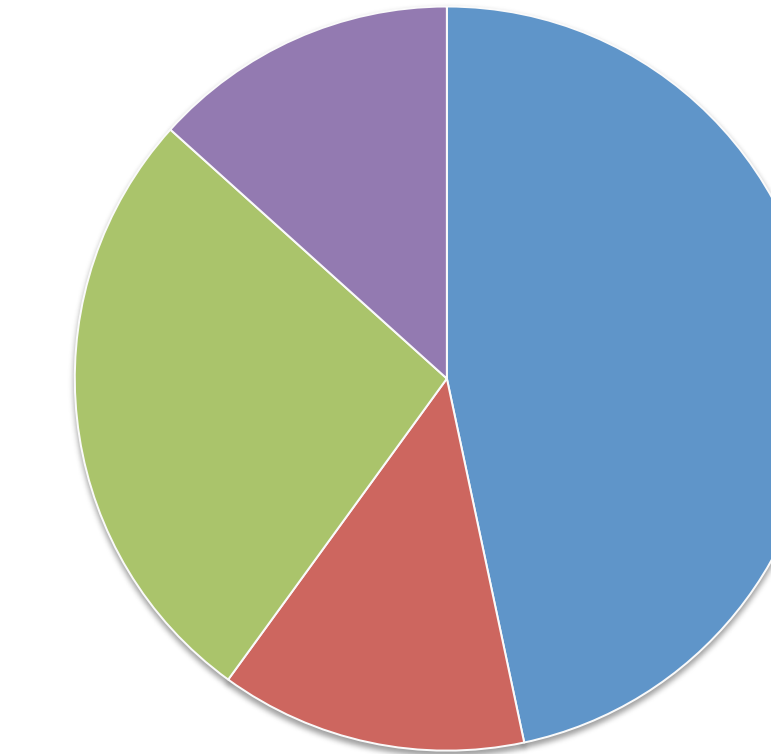
100% of patients were referred to GUM within seven days of receipt of a positive blood test.

100% of patients requiring FMU referral had this completed.



75% of neonates born to affected mothers who required treatment received IgM at birth as per national guidance.

Completed standardised birth plan



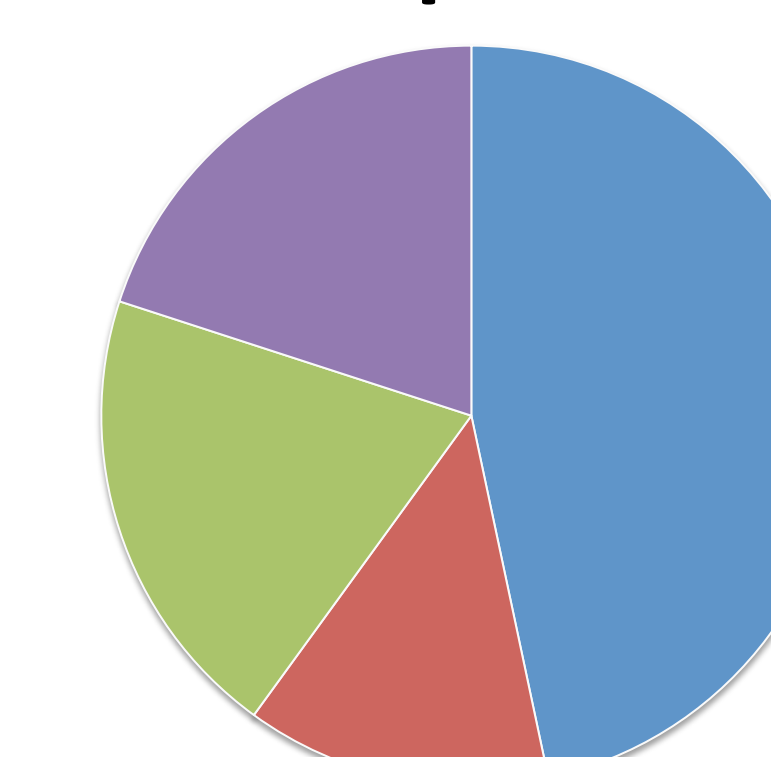
47% of patients had a completed standardized birth plan

13% birth plans awaited as not yet delivered

27% birth plans not required as either moved out of area, treated prior to pregnancy or postnatal diagnosis of syphilis

13% no birth plan documented

Paediatric Alert Response



47% of patients had a paediatric alert response

20% birth plans awaited as too early gestation

20% birth plans not required as either moved out of area, treated prior to pregnancy or postnatal diagnosis of syphilis

13% no paediatric alert response

Conclusion

National guidance for management of syphilis in pregnancy is implementable at a local level. Despite being relatively rare, these cases can be managed appropriately in a district general hospital to reduce the risk of vertical transmission. This audit has identified that a negative antenatal screening result is not a failsafe mechanism for the prevention of congenital syphilis. Clinicians should be mindful of this if identifying hepatomegaly, ascites, hydrops, fetal anaemia or a thickened placenta during fetal sonography. A low threshold for repeat syphilis testing should be used even in the absence of known risk factors.

References

- Fig 1: Lindsley S, 1972. 14966 [Online]. Public Health Image Library. Available from <https://phil.cdc.gov/Details.aspx?pid=14966>. [Accessed 13th May 2023].
- Fig 2: Yang M, 2023. Mississippi sees 900% rise in number of infants born with congenital syphilis [Online]. Available from <https://www.theguardian.com/us-news/2023/feb/12/mississippi-alarming-rise-newborns-syphilis>. [Accessed 13th May 2023].
1. Integrated Screening Outcomes Surveillance Service, 2022. NHS England. Available from <https://www.gov.uk/government/publications/infectious-diseases-in-pregnancy-screening-isoss-syphilis-report-2022/isoss-syphilis-report-2022#introduction>. [Accessed 13th May 2023].
 2. Kingston M, French P, Higgins S, McQuillan O, Sukthankar A, Stott C, et al. UK national guidelines on the management of syphilis 2015. *Int J STD AIDS*. 2016 May; 27(6):421–46.