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### CAN BEDSIDE BETA-HCG TESTING IN THE PAEDIATRIC POPULATION IMPROVE THEATRE EFFICIENCY?

*A. J. Hall, S. J. Wade, M. Khan, R. Tupprasoot*

*Evelina London Children's Hospital, London, UK*

#### Introduction and Aims

Theatre delays are a large cause of reduced productivity and efficiency of operating theatres. At Evelina London, a proportion of cases are delayed or cancelled due to a lack of pregnancy test result either due to absence of test prior to arrival in the anaesthetic room, or inability to produce a urine sample.

In the UK between 2005 and 2007, nearly 24,000 young girls aged 13-15 fell pregnant; and as such the APAGBI recommend all girls aged 12 and over to have a pregnancy-test [1].

We are the first paediatric centre in the UK to use the bedside ADEXUSDx hCG test (NOW Diagnostics Inc). Most urinary  $\beta$ hCG tests detect positive results at 20mIU/ml, whereas ADEXUSDx can detect at 10mIU/ml, leading to earlier detection of pregnancy, and a reduced false-negative result which can affect other serum or urinary  $\beta$ hCG tests. Additionally, results are available within 10 minutes [2]. We propose that using this easy bedside ten-minute test from either capillary, arterial or venous blood may improve theatre efficiency that can be affected by waiting for a pregnancy test to be performed.

#### Methods

Anaesthetists and operating department practitioners received face-to-face training using the product literature and online video. A usability questionnaire was completed once the test was used, which was when a urine test could not be performed prior to theatre. The questionnaire included patient demographics, indicators of the test's usefulness and ease of use with Likert scoring to aid analysis. This study ran prospectively for 2 months.

#### Results

We collected 14 patients during the 2-month data collection period. The average age patient was 14.8 years; with 11 patients rated American Society of Anaesthesiologists (ASA) classification 3. The test was well received with 93% (13/14) of respondents agreeing or strongly agreeing the test was easy to use and easy to interpret. Eighty-six percent of respondents thought the test reduced delays or cancellations (12/14), with no-one disagreeing with this statement.

#### Discussion and Conclusion

Improvements in theatre efficiency are always welcome and the ADEXUSDx bedside  $\beta$ hCG test has proven to be a simple test to perform and interpret. A previous audit performed at our centre found average delays of 45 minutes for patients presenting to theatres without a confirmed pregnancy status. Given this test takes a maximum of 10 minutes we can be confident it should reduce delays. Furthermore, the accuracy of the test not only further improves early diagnosis of pregnancy, but would reduce embarrassment for patients and their families of those who cannot pass urine who are

often overlooked and are some of the most vulnerable. We will continue collecting data to analyse the potential improvement in theatre time.

References:

1. Association of Paediatric Anaesthetists of Great Britain and Ireland. Information for teenage girls – pregnancy testing before surgery. Available from: <https://www.apagbi.org.uk/children-and-young-people/useful-leaflets-young-people-when-to-pregnancy-test> [Accessed 4th January 2020].
2. ADEXUSDx. ADEXUSDx hCG Test. Available from: <https://nowdx.com/adexusdx-hcg-test/#product-specifications>. [Accessed 20th January 2020.]