Oxford AHSN Case Study

May 2021

Two-thirds of maternity units in England adopt test to rule out pre-eclampsia following roll-out led by Oxford AHSN

Overview

Quick, accurate blood tests which can help rule out pre-eclampsia are contributing to safer pregnancies and better outcomes for tens of thousands of pregnant women and their unborn babies. More accurate diagnosis reduces the need for admission and enables a clearer focus on women needing closer monitoring. The pandemic has underlined the importance of safe and effective care, and minimising unnecessary hospital admissions. Within four years of the first real world evaluation in the Oxford AHSN region, 119 of England's maternity units (two-thirds of the total) have adopted the test into standard clinical practice following a rapid adoption project led by AHSNs. This is a successful example of AHSNs understanding the challenges to adopting new technology and helping the NHS and innovators work together to overcome them.

What is the challenge?

Pre-eclampsia (PE) is a multi-system hypertensive disorder - a serious disease that complicates around four per cent of all pregnancies – usually in the latter stages. It adversely affects thousands of women and their babies every year and can lead to small birth weight babies, organ damage and – in extreme cases – death. It is not unusual to induce the baby early, even with mild pre-eclampsia.

Correctly diagnosing PE is notoriously difficult. Clinical teams have a high degree of suspicion for PE and a low threshold to admit pregnant women with suspected PE. However, only a small proportion of these go on to develop it. This places significant economic and capacity burdens on maternity systems. It costs the NHS an estimated £9,000 per pregnancy to treat. There has previously been no definitive way to accurately diagnose who is not at risk of developing pre-eclampsia. Women are routinely admitted for an anxious few days of hospital tests 'just in case' - but most do not actually have the condition. Based on the NICE guidance DG23 Resource Impact Model hospital admissions related to pre-eclampsia could be reduced by more than one third.

What did we do?

In 2017, the Oxford AHSN initiated a project to increase uptake and adoption of placental growth factor-based (PlGF) testing which highlights women who are likely to develop pre-eclampsia within 7-14 days. The blood test can be taken as part of routine checks at between 20 weeks and 34 weeks plus 6 days of pregnancy in line with NICE guidance. The test supports clinical decision-making by providing an objective measurement to combine with other clinical symptoms, such as high blood pressure, blurred vision or high protein in urine.

Working with the Oxford Patient Safety Collaborative and clinical leads, laboratory heads, finance and management functions, the Oxford AHSN helped three of the first hospitals in England to adopt PlGF-based testing into standard clinical practice.

This successfully demonstrated that by offering tests to women suspected of having pre-eclampsia clinical teams were better able to identify women who did not have the disease and could safely be sent home, avoiding unnecessary hospital admissions for monitoring. It provided a platform for wider spread and adoption - both within and beyond the Oxford AHSN region. The Oxford AHSN developed an implementation pack to support this work. This supports a collaborative, multi-disciplinary approach including changes required to pathways and practices. For each maternity unit AHSNs are developing insight into their unique pathway and needs and providing project management and business support behind the adoption process.

The test was selected for the NHS England Accelerated Access Collaborative, Innovation Technology Payment and Rapid Uptake programmes in 2019/20 which introduce an accelerated pathway to market for highly transformative innovations. From April 2019 providers of maternity services were able to adopt and implement either the Quidel Triage PlGF test or the Roche Elecsys sFlt-1:PlGF ratio test fully funded, as NHS England centrally reimbursed the suppliers directly.

All AHSNs, led by the Oxford AHSN, have been working together to ensure rapid and widespread adoption of the test into standard clinical practice in maternity units across the country.

In March 2021 the Oxford AHSN delivered a workshop on overcoming barriers to adopting placental growth factor testing as part of Bridging the Gap, an AHSN Network event offering insights and guidance to healthcare industry innovators.

What has been achieved?

By February 2021, 119 maternity services had adopted the test – which equates to around two thirds of maternity units in England. Thousands more pregnant women and their babies are benefiting. This is leading to improvements to patient safety, experience and satisfaction. Projected annual savings in England are estimated at £4m per year relating to reduced hospital bed occupancy.

Positive impacts include:

- improved patient safety through accurate diagnosis on the suspicion of PE
- a reduction in the number of (unnecessary) admissions for suspected PE
- improvement in maternity capacity as the result of having fewer women to monitor as inpatients
- improvement in community midwifery capacity due to a reduction in the number of follow-on appointments required once PE is suspected
- a reduction in the direct costs to the system from the array of inpatient monitoring tests undertaken on the woman and her foetus by keeping women on the most appropriate treatment pathway (standard, Intermediate or Intensive) and not having to escalate the level of her care to a higher pathway during the pregnancy upon suspicion of PE, for which no additional funds are made available
- a reduction in the number of pre-term or emergency deliveries (delivery of the baby is the only ‘cure’ for PE)

- positive impact on workload and costs incurred by both maternity and paediatric services as a result of fewer pre-term births – cost savings based on fewer outpatient visits, admissions, monitoring, pre-term deliveries and less onward neonatal care. Savings in England are expected to be in the region of £4m per year, based on an estimated saving of £250-£600 per woman tested projected from health economic models.

In 2019 this initiative was a category winner at the HSJ Partnership Awards and won the inaugural UNIVANTS Healthcare Excellence award.

What people said

"I was so happy not to be admitted to hospital; knowing I could go home and that I was safe was brilliant." **Mother**

"Having a test that effectively triages patients into high risk and low risk groups means that we can focus our care." **Midwife**

"This project showed high levels of innovation and sophistication. This evidence-based project delivered demonstrable improvements in patient experience." **HSJ Partnership Awards judges 2019**

"The key has been combining industry innovation and research evidence to meet a known NHS need. That is where the AHSNs came in. The Oxford AHSN's expertise and connections opened doors and enabled use of this test to spread from an initial hospital to multiple sites. They developed insight into pathways and needs as well as providing project management and business support for adoption. This test improves our diagnostic accuracy and is a welcome step forward." **Dr Manu Vatish, Consultant Obstetrician, Oxford University Hospitals, and Senior Clinical Fellow with the University of Oxford's Nuffield Department of Women's and Reproductive Health**

"The success of the ITP programme was dependent on collaboration, teamwork and innovative thinking. The Oxford AHSN and the national AHSN Network brought all these skills to the project, and were crucial in opening doors and bringing together manufacturers, clinical teams and all stakeholders to ensure PlGF testing was adopted. PlGF testing remains an important tool to guide clinical management of these patients." **Eoin Madigan, Sales Manager, Quidel Ireland Ltd.**

"Roche Diagnostics is delighted that the majority of NHS maternity services have adopted the PlGF-based test for pre-eclampsia. After a successful initial partnership with the Oxford AHSN, the project has widened to include all the AHSNs across England and their respective maternity services. We are grateful to all those partners involved within the AHSNs and NHS trusts who have adopted this test to give pregnant women the reassurance and safety benefits it brings." **Julia Eades, Market Access Manager - Women's Health, Roche Diagnostics UK & Ireland**

Key learning

Key to the success of the project is confirmation of local clinical need, drivers and priorities in each hospital, mapping current and future clinical pathways with associated costs and benefits.

To successfully deliver the project, key internal stakeholders (e.g. labs, finance) who are required to approve and then implement the adoption of the new test and pathway have to be identified and engaged early on in the process.

As with most diagnostic tests, simply adopting the test into existing clinical or patient pathways will likely add cost with limited additional benefit for the clinical team or pregnant women under their care. As such, clinical and laboratory teams must adopt new pathways to incorporate PlGF-based testing into standard clinical care. Example pathways are available through the AHSN Network.

What next?

From April 2021 PlGF-based testing is one of four technologies included under the new NHS MedTech Funding Mandate, an NHS Long Term Plan commitment to get selected NICE-approved cost-saving devices, diagnostics, and digital products to patients more quickly.

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