ABHI

DELIVERING GOLD STANDARD MATERNITY CARE WITH HEALTHTECH

EXECUTIVE SUMMARY

The quality of NHS maternity care is under the microscope[1]. Too many preventable adverse events occur which have long-term consequences for mothers, babies and families[2].

Numerous reviews have identified persistent, system-wide failures and their impact can be profound and life changing. ABHI welcomes the most recent National Maternity and Neonatal Investigation, which seeks to definitively highlight the persistent and significant challenges that are preventing the improvements in outcomes that the NHS strives for.

This paper responds to those challenges by outlining the opportunity for HealthTech (encompassing medical devices, diagnostics and digital health technologies) to support safer, more responsive and more equitable care.

Established technologies, some of which are already integrated into healthcare systems internationally, could deliver immediate benefits for the NHS. We make seven, actionable recommendations within the three broad themes of personal experience, enhanced safety and alignment and collaboration. For each recommendation we share examples to illustrate how HealthTech can improve quality, safety and outcomes for mothers and their babies.

Personal Experience

Recommendation 1: Develop a clinical pathway for maternity care, from preconception to postpartum, supporting clear lines of accountability so every woman knows who is responsible for her care, and utilise digital technologies to help midwives and practitioners provide timely and accessible care.	**Technologies:** AI-driven platforms that offer personalised guidance and resources to women and men for preconception health. Smartphone applications that provide culturally sensitive, linguistically appropriate, and evidence-based information for pregnant and postnatal women in different communities. Digital health solutions for post-partum depression management.
Recommendation 2: Support the shift to more personalised, community-based maternity care through technologies that enable remote monitoring and home testing.	**Technologies:** Home urinalysis for proteinuria to identify risk for pre-eclampsia. Wearables to monitor and detect gestational diabetes.

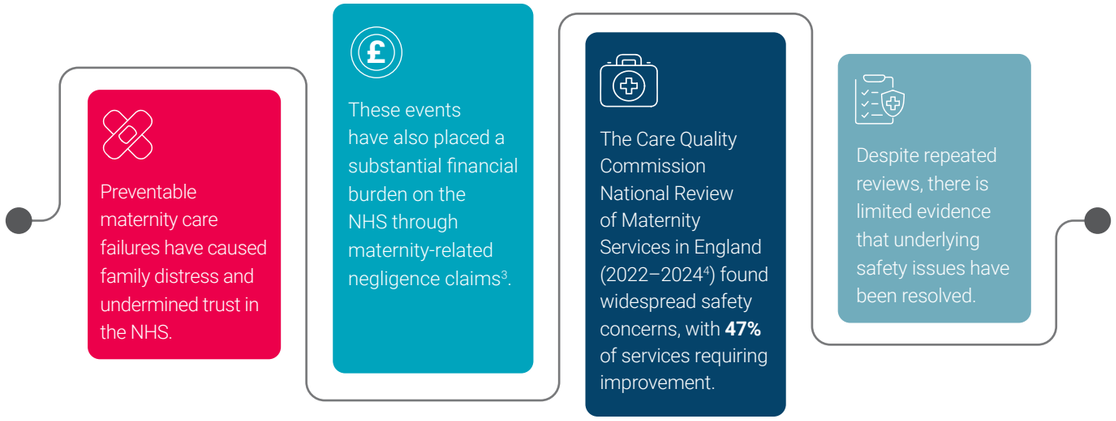
Enhanced Safety

Recommendation 3: Embed safety-focused HealthTech across maternity pathways to improve the safety of care and detect complications earlier to reduce further harm and costly litigations.	**Technologies:** Inflatable device designed to assist in prolonged and complicated vaginal births. Rapid-AI Detection of Obstetric Anal Sphincter Injuries (OASI). Vaginal Retractor that dramatically improves visibility and access for the suturing of postpartum tears and episiotomies.
Recommendation 4: Embed genomics throughout the NHS Maternity and Neonatal Care pathway to strengthen early detection of disease.	**Technologies:** Non-Invasive Prenatal Testing. Genomic testing for newborns.

Alignment and Collaboration

Recommendation 5: Improve data quality, interoperability and real-time access to information, ensuring maternity teams can learn from incidents, reduce variation in care and drive continuous improvement.	**Technologies:** Advanced digital maternity systems provide real-time interpretation of fetal heart rate patterns, strengthen oversight and enhance communication across multidisciplinary teams.
Recommendation 6: Accelerate the adoption and spread of proven HealthTech solutions, reducing unnecessary barriers to uptake, focusing on value-based procurement and ensuring that innovation is implemented consistently across the NHS.	**Technologies:** Pulse oximetry screening (POS) to improve detection of Critical Congenital Heart Defects in newborn babies. Detection drapes to identify postpartum haemorrhage.
Recommendation 7: Strengthen collaboration between industry, the NHS, Government and academia, recognising HealthTech as a delivery partner in achieving national maternity safety and workforce ambitions.	**Technologies:** VR simulation for training. Online mobile and virtual reality (VR)-based learning platforms.

INTRODUCTION



Reducing maternal mortality and ending preventable deaths of newborns and children under 5 years of age are key targets of the Sustainable Development Goal (SDG) 3 on Health and Wellbeing. While the UK ranks 11th globally in the 2025 SDG Index[5], its performance in maternity is concerning. The UK ranks only 19th out of 22 comparable countries for infant and newborn mortality, and maternal mortality rates have risen to their highest levels in almost two decades[6].

Currently the NHS is undergoing major reform through Fit for the Future: 10 Year Health Plan for England, including moving care closer to homes, focusing on early detection and prevention, and shifting from analogue to digital systems. Despite the strength of these policy ambitions, the adoption and spread of technology in maternity services has lagged behind other areas of care. Evidence from a regional report highlights that while some digital tools, such as electronic patient records and parent video sharing technologies, are in place, their integration and functionality are inconsistent[7]. The report also identifies significant infrastructure challenges, including a lack of robust IT systems, non-integrated imaging solutions and limited use of remote consultations.

These challenges underscore the need for a strategic delivery plan for integrating technology into the maternity care pathway.

Evidence shows the effective use of technology correlates with improved safety and outcomes by detecting complications early, supporting digital monitoring and clinical efficiency, enhancing procedural accuracy, and facilitating earlier diagnosis of maternal and neonatal conditions. Beyond clinical benefits, the Royal College of Midwives recognised that digital technology has the potential to improve the experiences of women using maternity care[8], an area highlighted as a priority in the national maternity investigation.

Against this backdrop, this paper brings together recommendations to respond to persistent, well-documented challenges facing the NHS and the opportunity presented by the current national investigation of maternity care. It outlines proactive steps and interventions where the integration of HealthTech could:

- Improve the experiences of families going through NHS maternity care
- Improve outcomes and safety in pregnancy and the long-term health of the child
- Ensure NHS Maternity care aligns with global care standards
- Reduce the cost of negligence claims to the NHS.

RECOMMENDATION 1

Develop a clear clinical pathway for maternity care, from preconception to postpartum, supporting clear lines of accountability so every woman knows who is responsible for her care and utilise digital technologies to help midwives and practitioners provide timely and accessible care.

ABHI supports Baroness Amos' Interim National Maternity and Neonatal Investigation report highlighting the need for maternity and neonatal care to follow a 'continuum of care', from preconception to postpartum and neonatal care, and believes HealthTech can support this journey, with digital health technologies that help women stay connected with professional advice for timely and accessible care.

As well as integrating digital health technologies throughout the maternity care pathway, ABHI believes each woman should have a dedicated named professional with clear responsibility for coordinating her care across settings. This could be a lead midwife or care coordinator, supported by interoperable digital systems that ensure information follows the woman, enables proactive monitoring, is there for the woman to raise concerns to, and supports escalation when risks emerge.

Preconception Care: Preconception is the earliest intervention opportunity for disease prevention and may be the most effective period to implement health interventions with both women and men motivated to adopt healthy behaviours that will benefit themselves and their children.

Challenge: Currently, within the UK, preconception efforts focus primarily on completing maternal health assessments and initiating lifestyle interventions such as smoking cessation, weight management, folic acid supllementation, and chronic disease control. However, a review of preconception health and care policies, strategies and guidelines in the UK and Ireland[9] highlighted uneven implementation across regions; unrealistic expectations placed upon healthcare professionals limiting timely and accessble care; and limited inclusion of paternal care. Consequently, current practice does not meet WHO reccommendations for a comprehensive, holistic model that addresses biomedical, behavioural, and social risk factors for both women and men[10].

Antenatal Care: Antenatal care provides the opportunity to screen for diseases linked to pregnancies, detect future birth complications, prepare women for childbirth and provide education on nutrition, exercise, lifestyle changes.

Challenges: Recommendations from NICE and national guidelines note the first appointment with a midwife or obstetrician should take place before 10 weeks pregnant to facilitate a timely dating scan[11]. The National Maternity and Perinatal Audit (NMPA) assessed timely and accessible antenatal care across the UK and identified that 1 in 4 women and birthing people attended their first appointment with a midwife after 10 weeks of gestation, with a wide distribution of rates between maternity care providers[12]. The 2025 MBRRACE-UK report[13] audited the care of women who died during or up to one year after pregnancy in the UK and Ireland, finding almost 1 in 5 had delayed antenatal care.

The 2025 MBRRACE-UK report also highlighted significant disparities in maternal morbidity, with Black women dying at more than twice the rate of white women and women living in deprived areas dying at 1.9 times the rate of those in the least deprived areas[13]. Language barriers, deprivation and ethnicity can all contribute to late bookings of appointments, therefore implementing technologies that reduce inequalities in care along the maternity care pathway should be a national priority.

RECOMMENDATION 1 Cont.

Intrapartum Care: Intrapartum care refers to the comprehensive care provided to a women and her baby during labour and delivery. This includes risk assessments on admission, continuous fetal and maternal monitoring, managing pain, and the management of delivery and complications.

Challenge: Baroness Amos identified in her interim report that the absence of clear expectations after things have gone wrong can often lead to women wrongly blaming themselves and experiencing high levels of distress, pain and suffering. It is essential that where complications arise in birth, women feel supported and know who is responsible for their care in a timely manner. Baroness Amos also identified the challenge that increased use of social media has created, with misinformation spread and lack of nuances distorting perceptions and understanding of risk, highlighting the need for women to have timely access to a healthcare professional during this period.

Postpartum Care: Postpartum care is the recovery period following birth and should be provided to all women, whether they are a new mother or have lost their child.

Challenge: In the UK, the NHS recommends that all new mothers should receive a follow-up check appointment 6 to 8 weeks after the birth to ensure the mother's recovery is monitored[14]. These appointments mostly focus on the physical health of the mother, measuring blood pressure, checking stitches have healed if they had a caesarean section and completing a blood test to check for anaemia and vitamin deficiencies. Aside from a general discussion about wellbeing, an area that is commonly overlooked in these appointments is postnatal depression.

Example: AI-driven platforms can offer personalised guidance and resources to women and men for preconception health. These resources can provide evidence-based support to women including dietary recommendations such as folic acid and iron supplement guidance, hormone health support and lifestyle advice. For men, this includes optimising sperm health, and exercise, fitness and lifestyle factor tracking, and for couples including synchronised wellness plans and goal tracking. Platforms that are research-led and community-driven ensure genuine needs are meet with scientific and technological solutions. These platforms can support the initiative to make preconception care a priority by providing more accessible information and a comprehensive digital tool in line with NHS and NICE guidelines. These platforms could, used appropriately, ease the pressure on healthcare professionals to deliver these services.

Example: Digital health solutions, particularly smartphone applications are a promising tool for postpartum depression management[16], allowing mothers to track their mood, providing education modules for those struggling with their mental health, and providing clinician alerts. Many apps integrate artificial intelligence (AI), machine learning, and wearable devices to enhance risk assessment, personalised support, and real-time monitoring. When developed with clinicians using real-world guidance and clinically integrated[17], these tools could support both the NHS 10 Year Health Plan and NHS Maternity Care.

Example: Smartphone applications can provide culturally sensitive, linguistically appropriate, and evidence-based information for pregnant and postnatal women in different communities. Available in many different languages, these apps are designed to educate, empower, and reduce inequalities in maternal health. With underserved communities facing barriers to healthcare and being more likely to book late appointments for their first antenatal check-up, this innovation bridges the gap by delivering tailored antenatal, postnatal and mental health education in an accessible format. One of these apps has been successfully supported by the NHS Innovation Accelerator, reducing unnecessary appointments, emergency hospital visits, early presentations and interpreter costs[15]. Its implementation has also supported the improvement of patient knowledge and anxiety, and increased confidence in navigating maternity care for those find it a challenge.

Given persistent inequalities in maternal health outcomes and the aim of the 10 Year Health Plan to reduce these, implementing technologies that reduce inequalities in care should be a national priority.

RECOMMENDATION 2

Support the shift to more personalised, community-based maternity care through technologies that enable remote monitoring and home testing.

One of the three key shifts of the 10 Year Health Plan focuses on shifting care closer to home, moving to personalised, community-based care. This shift presents a significant opportunity in maternity services to tackle the current challenges identified in Baroness Amos' interim report, as shifting appropriate elements of care into the community helps relieve pressure on overstretched maternity services and supports staff to focus on women with the greatest clinical need.

Embedding digital health technologies that enable safe remote monitoring and earlier identification of risk outside traditional clinical settings can reduce reliance on in-person appointments, support timely clinical intervention where needed, and ensure care is delivered in a way that is more convenient, equitable and responsive to individual needs.

Example: Pre-eclampsia is a pregnancy condition, associated with high-blood pressure and proteinuria, that can cause serious consequences such as stroke, seizures or even death of the mother. A review of screening for the prevention and prediction of pre-eclampsia found that better early identification methods are needed to screen for pre-eclampsia before population screening is recommended[18]. Routine proteinuria testing could provide a solution to identify higher-risk people for pre-eclampsia screening. An NIHR horizon scanning report also identified that a significant number of women develop pre-eclampsia during the interval between antenatal visits[19], and a significant proportion of deaths from pre-eclampsia also had serious disease present between normal antenatal visits. The same report identified regular self-testing of proteinuria could improve detection of pre-eclampsia in the higher risk pregnant population, as well as reducing the time, cost, stress and inconvenience of frequent appointments without compromising the ability to detect and monitor the disease[19]. Home urinalysis for proteinuria could provide an accessible way to identify risk for pre-eclampsia earlier. Using a self-testing kit and smartphone application, users can self-test for protein and other analytes in their urine at home. Results can be integrated with any clinical system's medical records and become immediately available to clinicians for follow-up.

A 12-month study of pregnant women at the Royal United Hospitals Bath NHS Foundation Trust[20] found that shifting routine testing to the home improves women's experience and involvement in their health, enables midwives to focus on clinical and patient-facing activity rather than routine testing at appointments, reduces up to 60% of Day Assessment Unit visits needed for at-risk pregnancies during the third trimester (if normal results) and mitigates at-risk pregnancies through more frequent home testing to early detect complications. These findings build a strong case that nationwide implementation of home urinalysis in the maternity care pathway could not only move care into the community but also strengthen safety, equity, and early detection capabilities.

Example: Gestational diabetes affects 10-20% pregnant women, raising the risks of complications, including a larger baby causing prolonged and complicated labour, hypoglycaemia, jaundice and increased risk of obesity and type 2 diabetes in adulthood for the baby[21]. Detecting and monitoring gestational diabetes in pregnancy can reduce these risks by implementing lifestyle changes to reduce blood sugar levels.

Currently, in the first antenatal appointment, pregnant women will be asked questions to determine their risk of gestational diabetes and, if at high risk, an oral glucose tolerance test (OGTT) will be completed to confirm whether the woman has gestational diabetes. Those who have gestational diabetes are given lifestyle intervention plans and an at home blood sugar testing kit. However, a study revealed that over half of women with gestational diabetes in the UK are being underdiagnosed under current OGTT testing[22], which is also reported as inaccessible and inconvenient for under-represented groups. Due to the increased risk of developing diabetes in pregnancy and the importance of routine monitoring for healthy pregnancy, implementing wearables to provide an accessible way to continuously track blood glucose in this specific population could improve outcome.

As a priority, women who have already been diagnosed with gestational diabetes and have been advised to implement dietary and physical activity lifestyle changes by their healthcare professional should be offered wearable continuous glucose monitoring devices. As these women are already engaging in behaviour change interventions, wearables could have a higher immediate impact by enabling digitalised self monitoring. They also empower women to better understand and control their health, provide clearer insights into whether lifestyle changes are working and provide a valuable alternative to an at home blood sugar testing kit. By improving ongoing monitoring after diagnosis, wearables could also reduce the need for a significant number of extra appointments, relieving pressure on maternity services, supporting clinicians, and improving patient experience.

RECOMMENDATION 3

Embed safety-focused HealthTech across maternity pathways to improve the safety of care and detect complications earlier to reduce further harm and costly litigations.

A major issue that is consistently highlighted in maternity care reviews is preventable adverse events, which cause profound distress for families, undermine trust, and place significant financial burden on the NHS through negligence claims[3].
The Care Quality Commission's National Review of Maternity Services in England 2022 to 2024, found widespread safety concerns with 47% of services requiring improvement[4].

The appropriate use of HealthTech in maternity care can improve safety and satisfaction during birth and help clinicians detect complications to reduce preventable harm.

Example: 24% of neonatal deaths are related to intrapartum complications[23] and 4%-13% of maternal deaths are related to a complicated or prolonged second stage of labour[24].
A significant proportion of these births could be supported by performing an assisted vaginal birth (AVB). However, traditional methods of AVB, such as forceps and vacuum extraction, are associated with maternal and neonatal complications including bruising, cephalohematoma, caput succedaneum, and pelvic floor trauma[25]. These interventions are often perceived by mothers and midwives as physically and psychologically traumatic[26].

An inflatable device, designed to assist in prolonged and complicated vaginal births, represent a significant advancement in maternal and neonatal safety, providing a gentler alternative, with no consistent pattern of neonatal soft tissue bruising or head injury[27] which are typically seen with the current methods and midwives perceiving the births using the device as kinder, noting babies often had no visible marks[26].
By facilitating vaginal birth in cases where caesarean section might otherwise be considered, the device lowers rates of medically unnecessary caesarean sections and leads to better maternal and neonatal outcomes than those associated with caesarean sections[27]. This device mitigates long-term maternal risks associated with surgical delivery, such as infection, haemorrhage, and complications in future pregnancies, leading to long-term cost savings and most importantly improving patient experience.Studies and patient testimonies highlight that the use of this device reduces trauma and promotes a sense of control during birth[26]. Its adoption nationwide would contribute to better maternal mental health outcomes and overall satisfaction with care.

Example: Obstetric Anal Sphincter Injuries (OASI) affect up to 1 in 10 women however, many injuries are missed at the time of birth[29]. This can result in years of pain, incontinence and trauma for the mother. Furthermore, missed diagnosis can lead to lost opportunity for timely repair, potential litigation (costs £465,000 if an OASI legal claim is incurred[29]) and compromised quality of care. Adoption of an innovative device that uses rapid AI-powered detection of OASI could mean less OASI are missed, improving patient experience of maternity care and preventing costly litigation for the NHS[29]. This device is also time-effective and requires minimal training.

Example: Around 70% of women in the UK require perineal suturing following a vaginal birth[30]. Clinicians typically use their hands to hold back damaged tissue and the vaginal wall. This reduces visibility, and uncomfortable positioning makes suturing hard on both the mother and clinician.
An innovate vaginal retractor has been designed that dramatically improves visibility and access for the suturing of postpartum tears and episiotomies[30]. This device has been shown to allow clearer visibility of trauma, save clinician time, minimise the risk of needlestick injuries.

RECOMMENDATION 4

Embed genomics throughout the NHS Maternity and Neonatal Care pathway to strengthen early detection of disease.

As outlined in the 10 Year Health Plan, genomics is a critical enabler of prevention and early disease detection. The Plan commits to the creation of a national Genomics Population Health Service (GPHS) to shift genomics from specialist settings and into prevention and population-level risk stratification, alongside ambitions to implement universal newborn genomic testing, informed by evidence from the Generation Study, and to ensure 50% of healthcare interventions are genomics-informed by 2035. Maternity and neonatal services are uniquely positioned to lead this transition, providing a defined, longitudinal care pathway that spans preconception, pregnancy, birth and early life. Embedding genomics within this pathway can enable earlier identification of inherited conditions, support personalised clinical decision making in pregnancy, and reduce diagnostic delay for newborns.

Example: Prenatal tests are used in pregnancy to detect whether there are an abnormal number of chromosomes present, which can cause Down Syndrome, Edward Syndrome, or Patau Syndrome. Currently in the UK, the first step in the screening pathway for these trisomies is to perform the first trimester combined test. The combined test uses maternal age, biochemical markers and ultrasound measurements to determine the risk of having a pregnancy with a specific trisomy. If a mother is deemed to have a high risk, an invasive procedure is undertaken. An invasive test involves a doctor using ultrasound guidance to insert a needle through the mother's abdomen to collect a sample of tissue or fluid for testing.
These can be uncomfortable for patients, carry a 1 in 1000 risk of serious infection and a small risk of miscarriage, with 1 in 200 women miscarrying from this procedure[31].

Additionally, around 7% of women will need the needle re-inserted if an insufficient amount of fluid is taken, causing additional distress.
Combined testing during the first trimester for trisomy detection has a 4.0% false positive rate therefore, around 24,316 women each year may be having unnecessary invasive procedures that pose a risk to their pregnancy. These incorrect results may also affect parental mental health and anxiety, as well as leading to resource misallocation[32].

Non-Invasive Prenatal Testing (NIPT) is a safer, more accurate method of screening that analyses cell-free fetal DNA (cfDNA) in the mother's blood to screen for trisomies in pregnancy. Combining NIPT with ultrasound is a more accurate screening option compared with combined testing, with only a 0.13% false positive rate due to higher sensitivity, leading to fewer unnecessary invasive procedures[32]. Due to the limited availability of NIPT within the NHS, many pregnant women seek these tests through private providers. The National Screening Committee recommended an evaluative rollout of NIPT in 2015 for women with a high risk to assess impact on the NHS Fetal Anomaly Screening Programme and began to evaluate the rollout of NIPT in 2021, but progress stalled, with decisions potentially delayed until 2026[32]. This delay poses several challenges as it prolongs inequitable access to safer, more accurate screening; it increases variability in care between regions; and it heightens reliance on private providers, creating financial and informational barriers for many pregnant women. It also risks widening existing maternity inequalities and places additional pressure on clinicians who must navigate inconsistent pathways and provide counselling on tests that are not universally available. The Netherlands, Luxembourg, Switzerland, Finland, France, Spain, Czech Republic, Denmark and Norway all offer NIPT for those who have a high-risk of trisomies in pregnancy. Wales also introduced NIPT into routine clinical practice in 2018 and continues to deliver this test for high-risk pregnancies. Without timely national decisions, the UK falls further behind international comparators and misses opportunities to improve safety, consistency, and patient experience across prenatal screening. Providing equitable access to NIPT across the NHS would represent a meaningful step in maternity care and towards the commitments of the 10 Year Health Plan.

Example: A screening test that has been committed to implementing by the NHS 10 Year Health Plan is universal genomic testing for newborns, a significant step for genomics. Currently, the Generation Study is aiming to enrol 100,000 babies to sequence their entire genome which will allow 200 rare diseases to be sequenced over the eight currently[33]. The aims of the Generation Study are threefold: to determine whether whole-genome sequencing will result in better outcomes for the children, to use the anonymized data (with parental consent) for ongoing research into diagnostics and therapies, and finally, to understand if having a child's genomic data would be helpful across its lifespan. The NHS is currently using a pathway approach to manage patients, with a clinical scientist reviewing genetic variations, before notifying an appropriate specialist who calls the newborn's family (for example, a haematologist if it's a blood disorder).
Furthermore, Genomics England screens for only those disorders where the treatment is available and approved in the UK therefore, allowing for equitable access to appropriate follow-up through the NHS.

RECOMMENDATION 5

Improve data quality, interoperability and real-time access to information, ensuring maternity teams can learn from incidents, reduce variation in care and drive continuous improvement.

Baroness Amos' interim report highlights that clinicians in overstretched maternity wards are often required to manage complex care without access to timely, joined-up information due to ineffective communication between maternity care teams, limiting the ability to spot issues early and escalate concerns properly. A regional report also highlighted significant issues in digital infrastructure, with Trusts lacking a robust IT system and integrated imaging[7]. HealthTech can be utilised in maternity care wards to support busy clinicians, track performance and prevent siloed care.

Example: Healthcare professionals continuously monitor mother and baby during labour to ensure the safety and wellbeing of both. Advanced digital maternity systems could assist clinicians by providing real-time interpretation of fetal heart rate patterns, allowing staff to focus their attention on direct clinical care. This technology also facilitates a paperless workflow for maternity wards by capturing digital Cardiotocographs, generating comprehensive clinical notes, and offering a digital situation board.

For maternity wards that are working to meet specific improvement targets, these technologies can strengthen oversight by giving senior staff visibility across all activity on the labour ward. These systems could also enhance communication across multidisciplinary teams to help with coordination of care. Furthermore, the ability to collect and analyse data can facilitate audit, and, when built into clinical guidelines, could help reinforce best practices.

RECOMMENDATION 6

Accelerate the adoption and spread of proven HealthTech solutions, reducing unnecessary barriers to uptake, focusing on value-based procurement and ensuring that innovation is implemented consistently across the NHS.

Baroness Amos' interim report highlights a lack of consistency in the provision of maternity care, described by women, families and staff as a 'postcode lottery', with access to safe, high-quality care varying significantly between regions and providers. This variation is reflected not only in workforce capacity and service quality, but in the adoption of HealthTech. Where innovative maternity technologies demonstrate improved outcomes, their ability to scale remains limited due to fragmented commissioning across ICBs and Trusts. Therefore, clinicians and women may have access to effective digital tools, diagnostics or monitoring technologies in one area, whilst others are unable to benefit from the same innovations elsewhere.

Furthermore, even where technologies are clinically effective and cost-effective over a longer period of time, their adoption is constrained by procurement processes which prioritise short term cost savings over longer term value. Although the 10 Year Health Plan presents promising direction in the shift towards value-based procurement, this is yet to be fully adopted across the NHS.

Scaling successful innovations consistently across the NHS is important to ensure care remains in line with global standards and value-based procurement could transform NHS maternity mare, with cost-effective technologies.

Example: Critical Congenital Heart Defects (CCHD) are serious heart defects present from birth, resulting from problems with the formation of the heart which prevents the heart from pumping blood effectively and reduces the amount of oxygen in the body. CCHDs are a major cause of neonatal mortality and morbidity[34] however, modern day surgical advancements have led to excellent outcomes for most cases of CCHD when detection is timely[35].

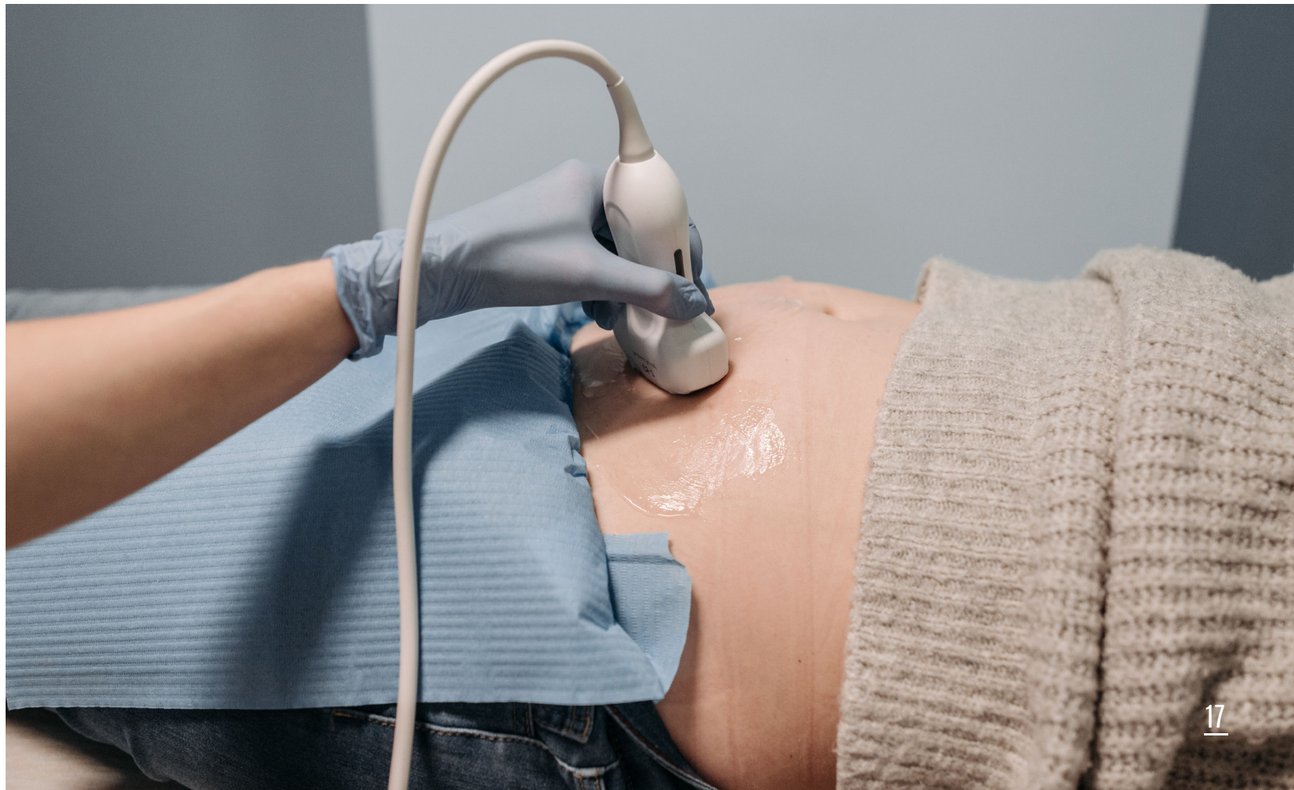
Existing screening strategies for newborn babies, including antenatal ultrasound and postnatal examination, do not detect non-syndromic CCHD before discharge in up to one-third of cases[35]. Many affected infants will either collapse or die before diagnosis. Pulse oximetry screening (POS) can improve early detection of CCHD in newborn babies by identifying those with low oxygen saturations[36]. Studies in the UK have demonstrated that POS could be cost-effective or even cost-neutral in certain settings[37]. To date, however, only a few countries (including Poland, Ireland, and Switzerland) have issued national guidelines recommending universal screening with pulse oximetry.To improve earlier detection in NHS maternity care and align with global recommendations, consideration should be given to the implementation of universal screening for CCHD with pulse oximetry.

Example: Around 1 in 4 births in England result in postpartum haemorrhage[38], which can lead to several complications if not detected and treated including hypovolemic shock, organ failure and long-term anaemia. In the UK, the rate of mortality due to postpartum haemorrhage has increased over the past few years[13], therefore, improving the methods of detection of post-partum haemorrhage could significantly improve the safety of NHS maternity care.

The National Maternity and Perinatal Audit (NMPA)[12] identify the need to measure and record all volumes of blood loss during labour and birth. Currently blood loss during pregnancy is measured using visual estimation which involves a midwife assessing the amount of blood lost that may be on the floor or towels and estimating its volume.

This method can behighly inaccurate and lead to missed cases of postpartum haemorrhage.

This problem can be addressed simply and cost-effectively using HealthTech. Detection drapes[39] can be attached to the mother during birth to facilitate blood collection into an integrated calibrated pouch which easy-to-read markers. This allows clinicians to monitor continuous blood loss quickly and accurately, and detect postpartum haemorrhage and replace blood lost. However, due to continued budget pressures and the prioritisation of short term cost savings over longer term value, it has been difficult for this innovation to be adopted at scale despite the long-term patient benefits and potential savings.



RECOMMENDATION 7

Strengthen collaboration between industry, the NHS, Government and academia, recognising HealthTech as a delivery partner in achieving national maternity safety and workforce ambitions.

Persistent safety concerns and workforce pressures require coordinated action that brings together policy leadership, frontline clinical insight, academic research and innovation. Effective collaboration enables - technologies co-designed with clinicians, solving real-world problems, and the robust evaluation of HealthTech pre and post implementation.

Example: The 2023-2024 CQC State of Care report found that 65% of maternity units are not safe to give birth in[40] and repeated inquires have concluded that improving on-the job training for NHS maternity staff is essential to improve safety[41]. The integration of VR simulation and online mobile and virtual reality (VR)-based learning platforms could help overcome barriers to training healthcare professionals in maternity care, such as limited access to clinical training sites and insufficient numbers of qualified doctors[42].

VR simulators allow the workforce to practice in realistic birthing environments for normal deliveries and complex emergencies, which accelerates learning and improves problem-solving abilities[43] and workforce confidence dealing with emergency obstetric situations. VR simulators can also allow workforce to practice realistic patient-practitioner interactions that may arise on labour wards. Extended-reality assisted clinical training[44] has been launched by Higher Education England in collaboration with the University of Leeds for perinatal mental health training, a positive step towards using advancements in technology to accelerate learning and provide new opportunities for students to practice. This technology showed potential to reduce anxiety surrounding discussing perinatal mental health with patients, and healthcare professionals felt more prepared to deliver care.

Example: Online mobile and virtual reality (VR)-based learning platforms[41] designed to provide midwives with bite-sized training that is accessible on demand and 'in the flow of work' have shown to help overcome NHS barriers to delivering training. This method of training could transform the conventional topic-focused learning into case-based learning by allowing NHS midwives to have voice-to-voice consultations with an AI-powered digital avatar, trained on the lived experience of real-life women. If this technology is designed with frontline NHS midwives and clinicians and rolled out as a long-term strategy to improve training, it could have significant benefits improving staff experiences and safety in maternity wards.

CONCLUSION

Focusing on these seven, actionable recommendations provides the opportunity to significantly improve personal experience, enhance safety and strengthen collaboration and alignment across maternity care. To deliver high-quality care at a national level, it is essential that proven technologies are adopted and scaled across the NHS, with a focus on the long-term patient outcomes and system-wide value.

As the findings of the Baroness Amos review will continue to shape maternity care priorities, there is a clear opportunity for industry help inform service improvement and implement solutions that address challenges identified. Utilising the HealthTech sector as a delivery partner will be essential to ensuring the national investigation delivers impact at scale.

References

1. Independent Investigation into Maternity and Neonatal Services in England - Interim Report - National Maternity and Neonatal Investigation
2. Fit for the future: 10 Year Health Plan for England p86
3. Safer National Maternity Care: Prospects and Challenges
4. National review of maternity services in England 2022 to 2024 - Care Quality Commission
5. Sustainable Development Report 2025
6. Maternal, newborn and infant health: priorities for improved outcomes - POST
7. neonatal-technology-enabled-care-ntec-final-output-report-5.pdf
8. neonatal-technology-enabled-care-ntec-final-output-report-5.pdf
9. Preconception health and care policies, strategies and guidelines in the UK and Ireland: a scoping review
10. https://iris.who.int/server/api/core/bitstreams/eb2b7bdf-14c4-48a4-a4e9-2adaf2279f69/content
11. NG201 Evidence review H
12. Ref 545 SON 2023 data_VF.pdf
13. Saving Lives, Improving Mothers' Care 2025 - Lessons learned to inform maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2021-23 | MBRRACE-UK | NPEU
14. Your 6-week postnatal check - NHS
15. Information available upon request.
16. Assessing the features of mobile Apps for self-management of postpartum depression - PubMed
17. The effect of smartphone application on postpartum depression among mothers: a literature review | Middle East Current Psychiatry | Springer Nature Link
18. Pre-eclampsia - UK National Screening Committee (UK NSC) - GOV.UK
19. Urinalysis self-testing in pregnancy — NIHR Community Healthcare MIC
20. https://gtr.ukri.org/projects?ref=105336
21. Gestational diabetes causes | Diabetes UK
22. Enhanced glucose processing in gestational diabetes diagnosis: Effects on health equity and clinical outcomes - Jones - 2025 - Diabetic Medicine - Wiley Online Library
23. Levels and Trends in Child Mortality 2019 - UNICEF DATA
24. Trends in Maternal Mortality: 2000 to 2017 | United Nations Population Fund
25. Maternal and neonatal trauma during forceps and vacuum delivery must not be overlooked | The BMJ
26. e057023.full.pdf
27. The OdonAssist inflatable device for assisted vaginal birth—the ASSIST II study (United Kingdom) - American Journal of Obstetrics & Gynecology
28. Safety and efficacy of the OdonAssist inflatable device for assisted vaginal birth: the BESANCON ASSIST study - American Journal of Obstetrics & Gynecology
29. ONIRY - Maternity by Kimal
30. Hegenberger Retractor - Maternity by Kimal
31. Prenatal diagnosis - GOV.UK
32. Information available upon request.
33. Programs around the globe bring newborn screening into the Genome Era
34. Twenty-year trends in diagnosis of life-threatening neonatal cardiovascular malformations - PubMed
35. Missed diagnosis of critical congenital heart disease - PubMed
36. Critical Congenital Heart Defects CCHD & Pulse Oximetry Screening | Medtronic (UK)
37. Pulse oximetry as a screening test for congenital heart defects in newborn infants: a test accuracy study with evaluation of acceptability and cost-effectiveness - PubMed
38. NHS Maternity Statistics - NHS England Digital
39. https://maternity.kimal.com/products/ammalife-pph-detection-drape/
40. State of Care - Care Quality Commission
41. Fixing outdated approaches to training is critical to safe maternity care: enter Upskill.Health - Health Innovation Network
42. Transforming Midwifery Education with VR: The BirthWise VR Experience
43. (PDF) Effects of integrating maternity VR-based situated learning into professional training on students' learning performances
44. Virtual patient teaches real-life mental health skills | University of Leeds

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