

Saving Lives, Improving Mothers' Care

State of the Nation Report

Surveillance findings and lessons learned to inform maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths from haemorrhage, amniotic fluid embolism, infection, general medical and surgical disorders and neurological conditions 2022-24, including lessons for critical care and morbidity findings for women requiring networked maternal medical care.



September 2026

Acknowledgements

It is with grateful thanks that the MBRRACE-UK collaboration would like to acknowledge the contribution of the many health-care professionals and staff from the health service and other organisations who were involved in the notification of maternal deaths, the provision of data and the assessment of individual deaths in both the UK and Ireland. A full list of acknowledgements is available in online supplementary material at:

www.npeu.ox.ac.uk/mbrrace-uk/reports/maternal-reports/maternal-report-2022-2024

Funding

The Maternal, Newborn and Infant Clinical Outcome Review Programme (MNI-CORP), delivered by MBRRACE-UK, is commissioned by the [Healthcare Quality Improvement Partnership](#) (HQIP) and funded by NHS England and the Governments of Wales, Northern Ireland, Jersey, Guernsey, Scotland and the Isle of Man as part of the [National Clinical Audit and Patient Outcomes Programme](#).

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This report should be cited as:

MBRRACE-UK. Saving Lives, Improving Mothers' Care State of the Nation Report 2026: Surveillance findings and lessons learned to inform maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths from haemorrhage, amniotic fluid embolism, infection, general medical and surgical disorders and neurological conditions 2022-24, including lessons for critical care and morbidity findings for women requiring networked maternal medical care. Oxford: National Perinatal Epidemiology Unit, University of Oxford 2026.

ISBN: 978-1-9191819-5-0

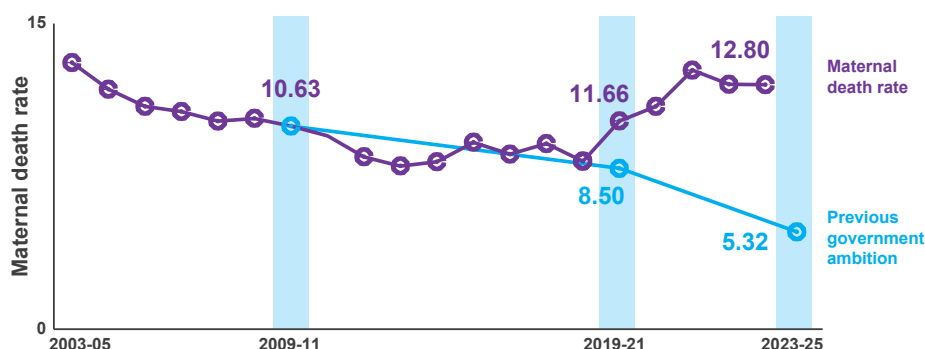
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Key messages

from the surveillance report 2026



In 2022-24, **252 women died** during pregnancy or up to six weeks after pregnancy in the UK, a maternal death rate of **12.80 women per 100,000** women giving birth



This rate is 20% higher than the maternal death rate in 2009-11, when the previous government set an **ambition to halve the number of maternal deaths** in England by 2025

Inequalities in maternal mortality

Ethnic group

White women

12/100,000



Asian women

15/100,000



Black women

32/100,000



1.3x

2.7x

Deprivation

Least deprived

9/100,000



Most deprived

18/100,000



1.9x

Leading causes of maternal deaths

1



Blood clots
(42 women)

2



Heart disease
(39 women)

3



Mental health conditions
(35 women)

4



Epilepsy and stroke
(30 women)

5



Infection (excl. COVID-19)*
(26 women)

6



Other physical conditions*
(26 women)

*Responsible for the same number of maternal deaths in 2022-24

1. Introduction and methods

In accordance with funder requirements, the findings of the Maternal, Newborn and Infant Clinical Outcome Review Programme, including the MBRRACE-UK Confidential Enquiry into Maternal Deaths and Morbidity, are now released as a condensed State of the Nation report highlighting the key surveillance findings, national recommendations and new lessons learned from the review of the care received by women who died from specific causes or women requiring networked maternal medical care who experienced morbidity due to pre-existing conditions. This report also emphasises clinical messages for healthcare providers and restates previous recommendations that require improved implementation.

Supplemental material including the full data on maternal mortality rates and the characteristics of the women who died, quality improvement messages concerning the women who were reviewed as part of the confidential enquiries into maternal mortality and morbidity, and the background, details of methods and chapter authors for different topics are available online at:

www.npeu.ox.ac.uk/mbrrace-uk/reports/maternal-reports/maternal-report-2022-2024

Key to colour coding

Vignettes concerning the care of women who died are described in blue shaded boxes.

Vignettes concerning the care of women who had severe morbidity but survived are described in purple shaded boxes with the character M in the corner. **M**



Key surveillance findings

Key surveillance findings are presented in purple boxes.

All previous recommendations or existing guidance requiring improved implementation are presented in green boxes.



National recommendations

New national recommendations are presented in purple boxes.



Clinical messages

Clinical messages to emphasise previous recommendations or existing guidance are presented in blue boxes.



Safety messages

Safety messages to highlight areas of potential patient safety risk that clinicians and healthcare commissioners should be mindful of for future care and care planning are presented in red boxes.



NHS England's Maternal Care Bundle

Relevant best practice standards from *NHS England's Maternal Care Bundle** are highlighted in blue boxes to indicate areas of care where continued implementation of these standards may improve future care.

*Although this care bundle has been published by NHS England, the principles and standards described within it are relevant to maternity care across the UK.

2. Summary messages

2.1 Key surveillance findings



Key surveillance findings

1. There was no statistically significant difference in the overall maternal death rate in the UK between 2021-23 and 2022-24 but rates remained higher than the last complete triennium of 2019-21. In 2022-24 the overall rate of maternal death in the UK was 20% higher than it was in 2009-11 when the previous government set an ambition to halve the rate of maternal mortality in England.
2. The number of deaths due to COVID-19 dropped significantly with six women dying from COVID-19 complications in 2022-24. When these deaths due to COVID-19 were excluded, rates of overall and indirect maternal deaths remained statistically significantly increased in 2022-24 compared to the corresponding rates in 2019-21, the last complete triennium.
3. Thrombosis and thromboembolism remained the leading cause of maternal death in 2022-24 in the UK during or up to six weeks after the end of pregnancy. Cardiac disease was the second most common cause of maternal death followed by psychiatric causes.
4. Maternal suicides remained the leading cause of maternal death occurring between six weeks and one year after the end of pregnancy. As a whole, deaths from psychiatric causes accounted for 33% of maternal deaths in this period.
5. Inequalities in maternal mortality persisted in 2022-24. Compared to women aged 25-29, women aged 35 or older were nearly two times more likely to die. There was a nearly three-fold higher maternal mortality rate for Black women compared to White women and Asian women's risk of maternal death was also slightly higher compared to White women. Women living in the most deprived areas continued to have a maternal mortality rate twice that of women living in the least deprived areas.

2.2 National recommendations



National recommendations

1. Review theatre and workforce capacity planning guidance to manage the additional workload associated with changing trends in maternal characteristics and associated caesarean section rates **[ACTION: Departments of Health in each of the devolved nations]**
2. Ensure postnatal contraception can be prescribed and administered in maternity services for future pregnancy planning **[ACTION: Integrated Care Boards in England and commissioning bodies in the devolved nations]**
3. Ensure there is a mechanism for rapid access to antibiotics in all hospital-based care settings to allow for rapid management of sepsis at the point of care **[ACTION: Hospitals, trusts and health boards]**
4. Implement processes for acute community or hospital-based prescribing of medications where an urgent initiation or change in medications is required **[ACTION: Integrated Care Boards, hospitals, trusts and health boards]**

5. Ensure appropriate multidisciplinary care to enable consistency of advice for high-risk women with complex medical comorbidities regarding birth planning, medication adherence and monitoring and vaccination, including advice for the vaccination of infants exposed to biologic medications **[ACTION: Integrated Care Boards in England and commissioning bodies in the devolved nations]**

2.3 Clinical messages



Clinical messages

1. **Clinical message:** Care should be proactive, not reactive

Proper preparation and planning with multidisciplinary input and standard procedures can help avoid delays and support effective management.

2. **Clinical message:** Prioritisation of scheduled caesarean births

Some caesarean births are planned as time-critical risk-reduction interventions. It is important to recognise the difference between these and other scheduled caesarean births when prioritising scheduled caesarean section lists.

3. **Clinical message:** Record maternal observations using MEWS

Maternity early warning scores (MEWS) should be used for all pregnant or recently pregnant women in all settings, not just maternity.

4. **Clinical message:** Test and de-label penicillin allergies

Penicillin allergy testing and de-labelling, conducted before pregnancy and in accordance with [published guidelines](#), can help identify women at low risk of severe reactions and allow for safer, more effective antibiotic treatment of sepsis.

5. **Clinical message:** Recognise rapid deterioration

Pregnant women tend to be young and fit and may compensate physiologically, despite significant illness or infection, before experiencing rapid decline.

6. **Clinical message:** Remember the mother

Do not let your focus on the safety of the baby or other clinical management prevent you from caring for the mother. It is important that any concerns expressed by the mother are listened to and escalated appropriately.

7. **Clinical message:** Provide joined-up care

Senior oversight and effective multidisciplinary working, with clear documentation of all multidisciplinary discussions and decision-making, can promote consistent management and prevent adverse outcomes that may result from gaps in communication.

8. **Clinical message:** Get ready for pregnancy

The period before conception, or between pregnancies, including after miscarriage, is an ideal time to counsel women about their health and address any physical or mental health conditions or social needs that may require management prior to becoming pregnant. Counselling should include, but is not limited to, optimisation of medications for chronic conditions, advice on weight management or smoking cessation and specialist referral to mental health or addiction services (Felker, Patel et al. 2025).

9. **Clinical message:** Incorporate safeguarding

Effective safeguarding should be incorporated into all aspects of maternity care, especially for women facing multiple disadvantages.

10. **Clinical message:** Plan for care outside of maternity wards

Defined management plans, including for assessment and triage in pre-hospital and emergency care settings, and clear communication between hospitals and specialities are important to ensure timely transfer and care in an appropriate setting that matches the woman's clinical needs.

2.4 Safety messages



Safety messages

1. **Safety message:** Service provision and acuity

Service provision must keep pace with increasing maternal complexity and clinical demand with regular review of capacity across emergency triage, staffing and operating theatres. Escalation pathways and flexible resource allocation are essential to ensure patient safety during periods of high acuity. Ongoing monitoring and support, including skills-based training, should be prioritised to reduce risk and provide safe, effective care.

2. **Safety message:** Risk counselling

Counselling women about the possible risks of pregnancy, for themselves and their babies, must be trauma informed with consideration of prior adverse experiences and complex social, medical and obstetric histories. Information provided must be balanced to promote informed decision-making and clinicians should be prepared to hold these discussions, including signposting for further support or guidance if needed. Particular consideration is required for higher-risk situations including when women become pregnant or make other decisions against medical advice. In such situations, robust documentation, clear safety-netting procedures and the offer of follow-up discussions and support arrangements are essential to reduce risk.

3. **Safety message:** Electronic patient records

The use of different electronic patient record systems within or between different trusts or health boards, primary care and emergency services may lead to gaps in communication, underappreciation of deterioration, missed opportunities for intervention and diminished continuity of care. Improving the interoperability of systems and standardising key elements, including the ability to attach key pieces of correspondence and the integration of early warning scores, should be prioritised to support timely decision-making, minimise risk and enhance outcomes. The readability of outputs, including copies of records for use in review processes, must also be improved to facilitate learning from adverse events.

3. Surveillance and epidemiology

Note that more in-depth analysis is available at:

www.npeu.ox.ac.uk/mbrance-uk/reports/maternal-reports/maternal-report-2022-2024

3.1 Causes and trends

In 2022-24, 276 women died during pregnancy or within 42 days of the end of pregnancy in the UK. The deaths of 24 women were classified as coincidental. Thus, in this triennium, 252 women died from direct and indirect causes, classified using ICD-MM (World Health Organisation 2010), among 1,969,321 maternities, a UK maternal mortality rate of 12.80 per 100,000 maternities (95% confidence interval (CI) 11.27-14.48). This is unchanged from the rate of 12.82 per 100,000 maternities (95% CI 11.30-14.49) in 2021-23 (rate ratio (RR) 1.00, 95% CI 0.84-1.19, $p=0.981$). Maternal mortality rates for England, Scotland and Wales were not significantly different from the overall UK rate, noting that these comparisons have very limited statistical power. Although the maternal mortality rate for Northern Ireland was statistically significantly lower than the overall UK rate, low numbers of deaths in Northern Ireland mean that this rate is subject to high levels of random variation.

There were six women who died during or within 42 days of the end of pregnancy in 2022-24 whose deaths were directly attributed to complications of COVID-19 infection; none of these deaths occurred in 2024. If the women's deaths attributable to COVID-19 were excluded, the maternal mortality rate for 2022-24 would be 12.49 per 100,000 maternities (95% CI 10.98-14.15). This is statistically significantly higher than the corresponding rate for 2019-21, the last complete triennium (RR 1.24, 95% CI 1.03-1.50, $p=0.022$). The rate of indirect maternal deaths was similarly higher in 2022-24 compared to 2019-21 when deaths due to COVID-19 were excluded (RR 1.43, 95% CI 1.09-1.88, $p=0.009$).

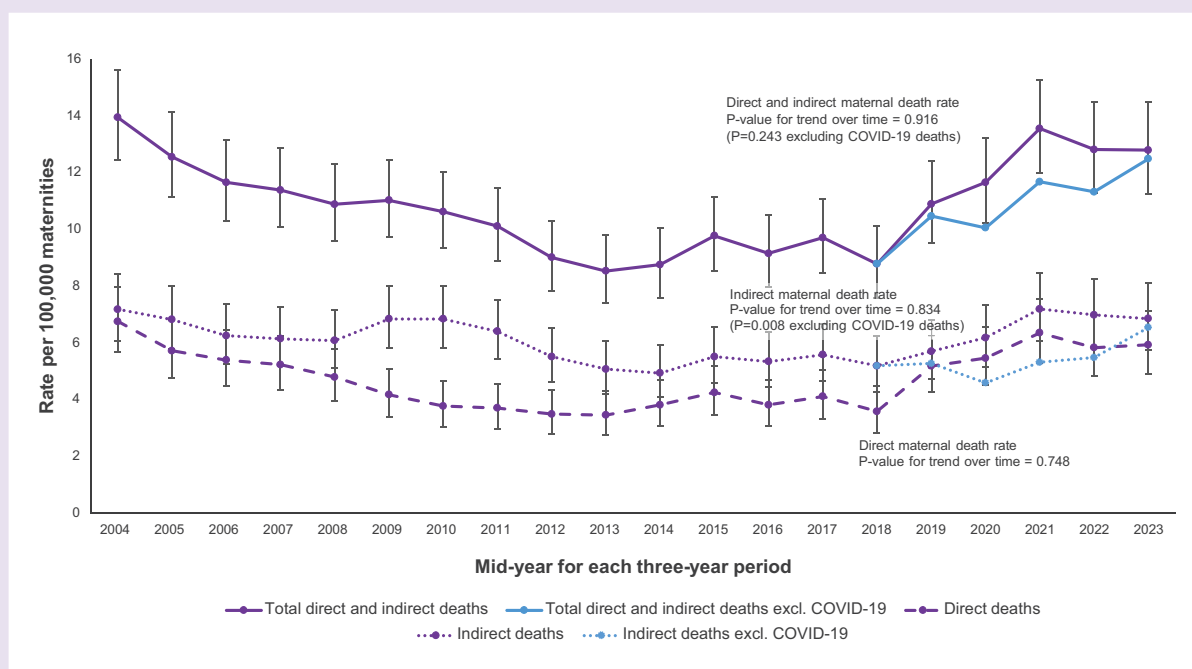
Progress towards the previous government ambition to reduce maternal mortality by 50% between 2010 and 2025 in England (Department of Health 2017) can be assessed by comparing the rates of maternal deaths between 2009-11 and 2022-24. Over this time, the maternal mortality rate in the UK increased by 20% (RR 1.20, 95% CI 1.01-1.44, $p=0.038$). The magnitude of this increase is only slightly reduced when deaths due to COVID-19 are excluded (RR 1.17, 95% CI 0.98-1.41, $p=0.073$). The rate of direct maternal deaths increased by 57% over this same period (RR 1.57, 95% CI 1.18-2.09, $p=0.001$) and rates of indirect maternal deaths remained unchanged when deaths due to COVID-19 were included (RR 1.00, 95% CI 0.79-1.26) or excluded (RR 0.96, 95% CI 0.75-1.21).

Figure 1 ([Supplemental Table 2.1](#)) shows rolling three-yearly maternal death rates since 2003 classified using ICD-MM. As in previous years' reports, there was no statistically significant change in the rate of maternal death between 2003-05 and 2022-24 (RR 0.92, 95% CI 0.77-1.09, $p=0.916$ for trend in rolling rates over time). This was also true when deaths directly due to COVID-19 were excluded (RR 0.90, 95% CI 0.75-1.06, $p=0.243$ for trend in rolling rates over time). Similarly, despite increasing rates in recent triennia, there were no statistically significant differences in the rate of direct or indirect maternal deaths between 2003-05 and 2022-24 and, if the six deaths attributable to COVID-19 were excluded, the indirect maternal death rate in 2022-24 would be statistically significantly lower compared to 2003-05 (RR 0.91, 95% CI 0.71-1.16, $p=0.008$ for trend in rolling rates over time).

3.1.1 Deaths due to individual causes during pregnancy or up to six weeks after the end of pregnancy

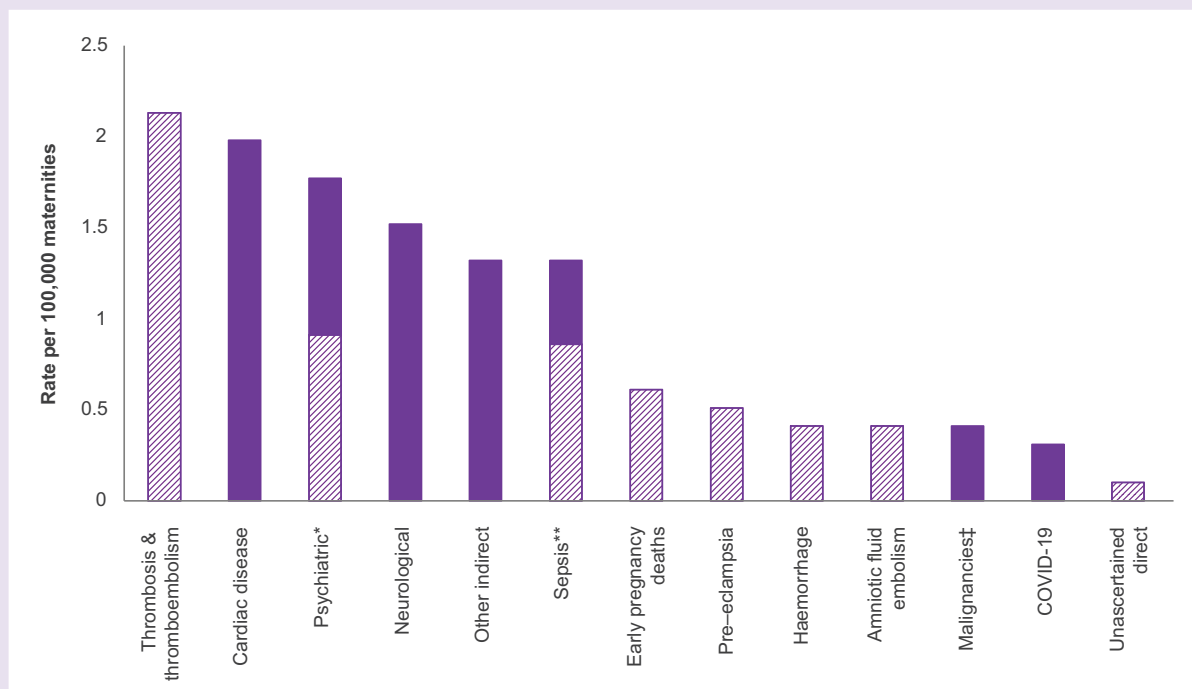
Maternal deaths by cause in 2022-24 are shown in Figure 2 ([Supplemental Figure 2.4 and Tables 2.3-2.5](#)). As in the two previous overlapping triennia, in 2022-24 thrombosis and thromboembolism (VTE) remained the leading cause of maternal death in the UK during or up to 42 days after pregnancy. The rate of VTE was unchanged from 2021-23 (RR 1.02, 95% CI 0.65-1.60, $p=0.936$) but has increased 34% since 2019-21, the last complete triennium (RR 1.34, 95% CI 0.83-2.18, $p=0.215$). The rate of VTE in 2022-24 was more than twice that of the next leading direct cause of maternal death, suicide, which occurred at a rate of 0.91 per 100,000 maternities (95% CI 0.54-1.44). This rate is now comparable with 2018-20, which had the highest reported rate of maternal death due to suicide (RR 0.96, 95% CI 0.48-1.91). After suicide, the next most frequent direct cause of maternal death was sepsis, emphasising the importance of the lessons in section 4.2 of this report.

Figure 1: Three-year rolling average direct and indirect maternal mortality rates per 100,000 maternities, deaths classified using ICD-MM and previous UK classification systems, UK 2003-24



Sources: CMACE, MBRRACE-UK

Figure 2: Maternal mortality rates by cause per 100,000 maternities, UK 2022-24



Hatched bars show direct causes of death, solid bars indicate indirect causes of death

*Rate for suicides (direct) is shown in hatched and rate for indirect psychiatric causes (drugs/alcohol) in solid bar

**Rate for direct sepsis (genital tract sepsis and other pregnancy-related infections) is shown in hatched and rate for indirect sepsis (influenza, pneumonia, others) in solid bar

‡Rate for indirect malignancies (breast/ovary/cervix)

Source: MBRRACE-UK

Indirect causes continued to account for more than half (54%) of all direct and indirect maternal deaths in the UK in 2022-24. Cardiac disease remained the leading indirect cause of maternal death during or up to 42 days after pregnancy followed by deaths due to neurological conditions and other indirect causes of death. Although not statistically significantly higher, rates of maternal death due to neurological conditions or other indirect causes, including general medical or surgical disorders, have been steadily increasing and are now 43% and 44% higher, respectively, than in 2019-21. This suggests that the lessons for the care of these women described in section 4.3 and 4.4 remain imperative to reduce the risk of maternal death in women with pre-existing conditions and physical comorbidities.

Importantly, COVID-19 was no longer a leading cause of maternal death in 2022-24. Rates of maternal death due to COVID-19 continued to decline and were statistically significantly lower in 2022-24 compared with all previous triennia encompassing the COVID-19 pandemic. As in previous enquiries, none of the women who died had adverse outcomes following SARS-CoV-2 vaccination. Despite the significant decline in maternal deaths associated with COVID-19, the lessons for the care of women with COVID-19, as outlined in section 4.2, remain important to ensure continued equity in the treatment of all women with respiratory infections or other causes of sepsis.

3.1.2 The women who died between six weeks and one year after the end of pregnancy

Rolling triennial rates of late pregnancy-associated deaths are shown in Figure 3 and causes of late pregnancy-associated deaths in Figure 4. The rate of late pregnancy-associated maternal deaths has been consistently rising over previous overlapping triennia. In 2022-24, 322 women died between six weeks and one year after the end of pregnancy, representing a mortality rate of 16.35 per 100,000 maternities (95% CI 14.61-18.24). This compares to a rate of 13.66 per 100,000 maternities in 2009-11, the first MBRRACE-UK confidential enquiry report (RR 1.20, 95% CI 1.02-1.40, $p=0.031$ for trend in rolling rates over time). The 2009-11 triennium also corresponds with the start of the previous government ambition to reduce maternal mortality by 50% between 2010 and 2025 in England (Department of Health 2017). While this ambition applies only to maternal deaths occurring during or up to 42 days after pregnancy, it is important to highlight that late pregnancy-associated deaths also increased by 20% from 2009-11 to 2022-24.

Suicide remained the leading cause of late deaths occurring between six weeks and one year after the end of pregnancy. As a whole, deaths from psychiatric causes accounted for 33% of late pregnancy-associated deaths in 2022-24.

Figure 3: Rates of pregnancy-associated deaths occurring between six weeks and one year after the end of pregnancy, UK 2009-24

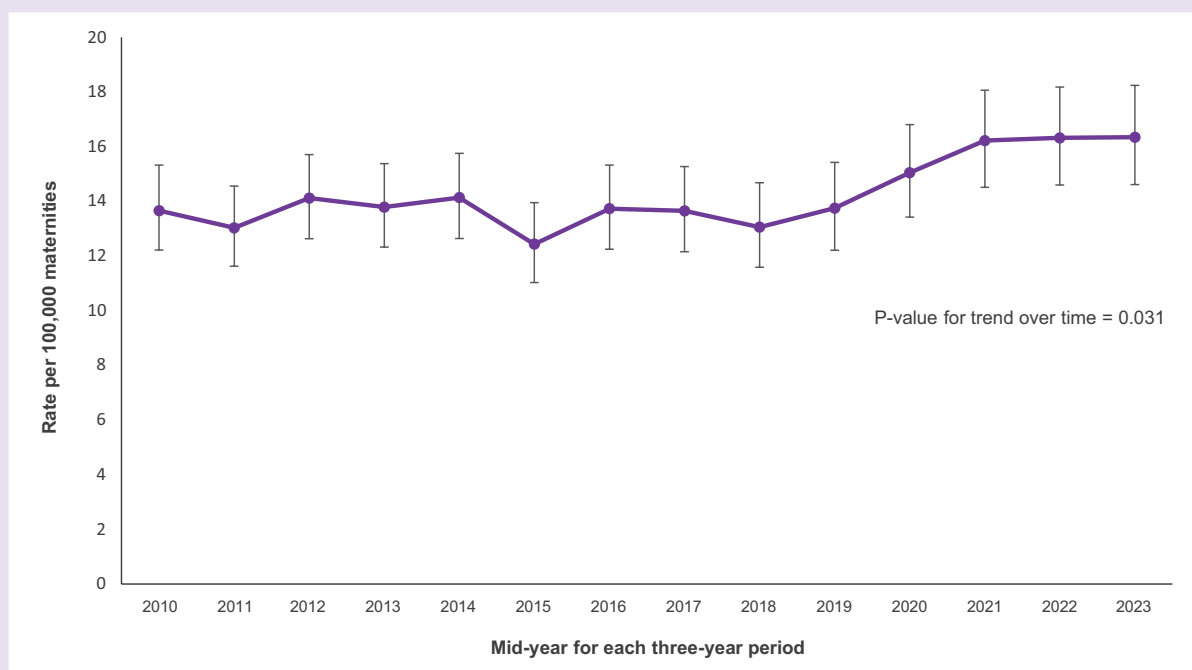
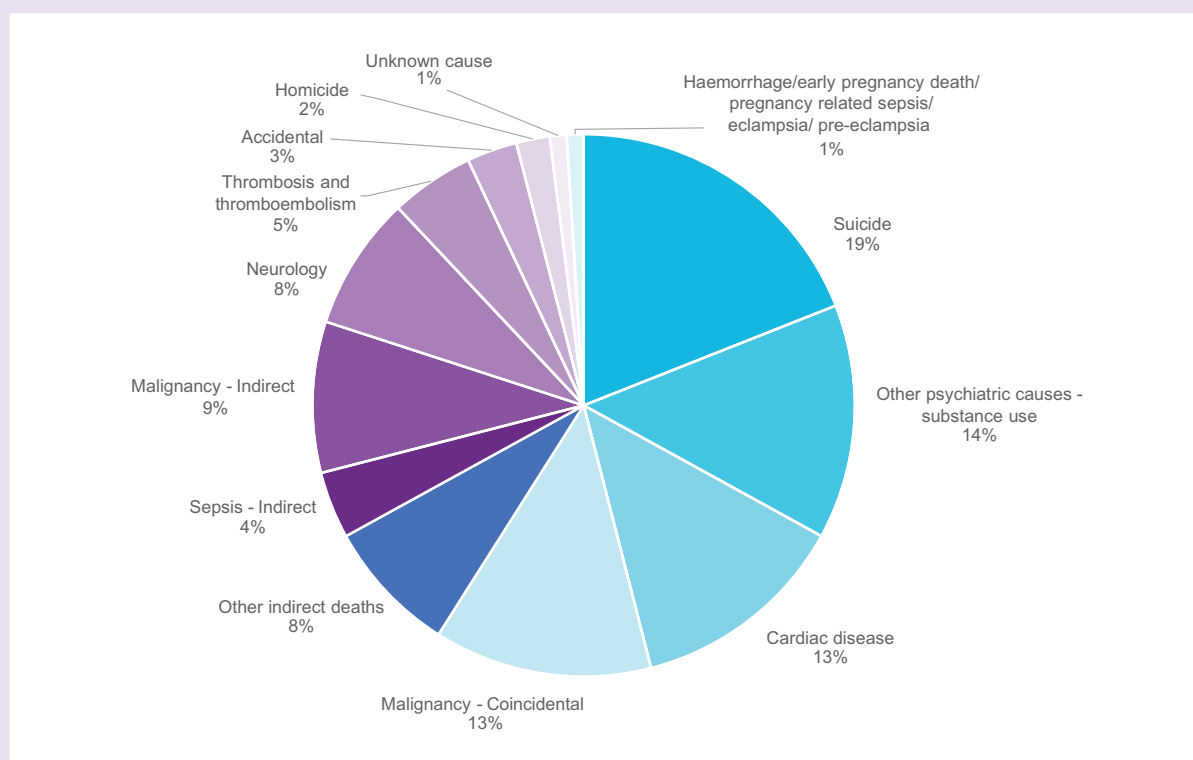


Figure 4: Proportion of deaths, by cause, amongst women who died between six weeks and one year after the end of pregnancy, UK 2022-24



3.2 The characteristics of the women who died 2022-24

Of the 252 women who died from direct and indirect causes during or up to 42 days after the end of their pregnancy in 2022-24, 79 women (31%) were still pregnant at the time of their death. Of these women, 51 (65%) died when they were ≤ 20 weeks' pregnant ([Supplemental Table 2.7](#)). Thirty-four women had an early pregnancy loss and 139 women gave birth. Of the women who gave birth, the majority did so in hospital (80%). A further 9% of women gave birth in an emergency department or an ambulance and 11% at home ([Supplemental Table 2.8](#))

3.2.1 Sociodemographic characteristics

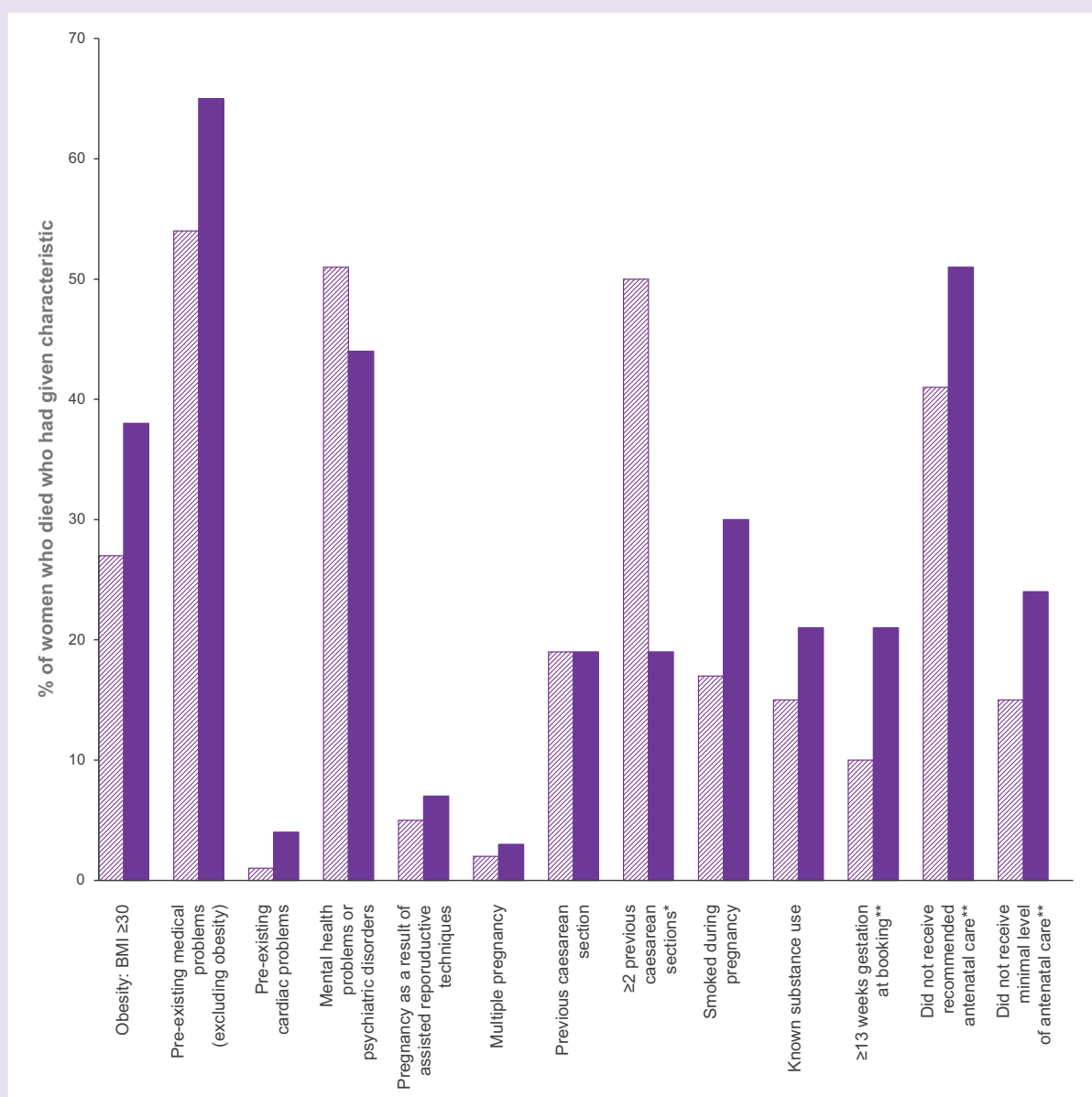
The sociodemographic characteristics of women who died in 2022-24 are shown in Figure 5 ([Supplemental Tables 2.9-2.16](#)).

3.2.2 Inequalities in maternal mortality

Compared to women aged 25-29, women aged 35 or older had significantly increased rates of maternal death (RR 1.62, 95% CI 1.17-2.26, $p=0.002$). This was largely driven by a nearly three-fold higher risk of death amongst women aged 40 and over (RR 2.89, 95% CI 1.87-4.43, $p<0.001$). Women aged 35-39 were also at an increased risk of death compared to women aged 25-29, but this was not statistically significant (RR 1.30, 95% CI 0.91-1.87, $p=0.136$) ([Supplemental Table 2.12](#)).

Women living in the most deprived areas of England continued to have the highest maternal mortality rates in 2022-24, twice as high as the maternal mortality rate of women living in the 20% least deprived areas (RR 1.94, 95% CI 1.19-3.29, $p=0.005$). While maternal mortality rates for women living in most areas of England either declined or remained the same in recent triennia, rates of maternal mortality for women living in the second most deprived areas (IMD IV) have continued to rise and, in 2022-24, were also nearly twice that of women living in the least deprived areas (RR 1.76, 95% CI 1.04-3.07, $p=0.025$) (Figure 6 and [Supplemental Table 2.12](#)).

Figure 5: Selected characteristics of women who died from direct or indirect causes, UK 2022-24



Hatched bars indicate direct causes of death, solid bars indicate indirect cause of death

*Amongst women who had a previous caesarean birth

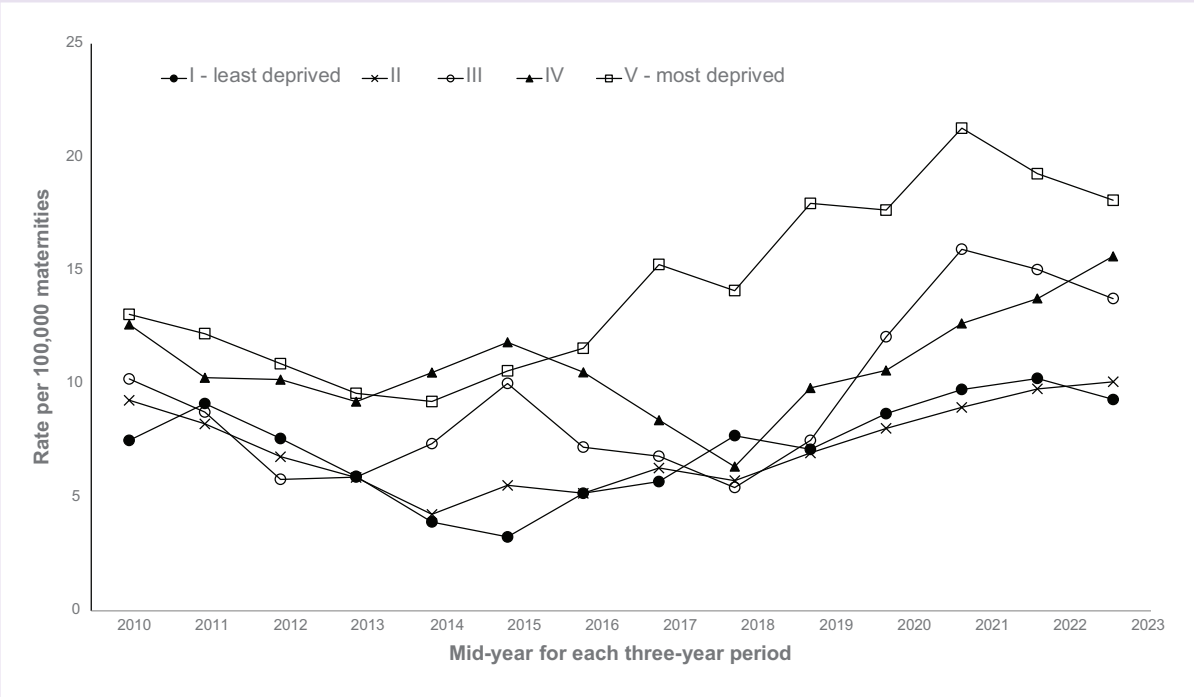
**NICE-recommended antenatal care: booked at 10 weeks or less and no antenatal visits missed. Minimum level of care: booked at less than 13 weeks and 3 or fewer antenatal visits missed.

After slight decreases in the previous two overlapping triennia, the mortality rate for women in England from Black ethnic backgrounds was statistically non-significantly increased in 2022-24 and comparable to earlier rates including 2019-21, the last complete triennium (RR 0.87, 95% CI 0.51-1.49, $p=0.590$). In 2022-24, women from Black ethnic minority groups had a risk of maternal death that was nearly three times higher compared to White women (RR 2.72, 95% CI 1.80-4.00, $p<0.001$) (Figure 7 and [Supplemental Table 2.12](#)).

The mortality rate for women in England from Asian ethnic backgrounds was similar in 2022-24 and 2021-23 (RR 0.90, 95% CI 0.56-1.47, $p=0.668$) and the risk of maternal death for Asian women in 2022-24 remained statistically non-significantly higher compared to White women (RR 1.27, 95% CI 0.86-1.84, $p=0.202$) (Figure 7 and [Supplemental Table 2.12](#)).

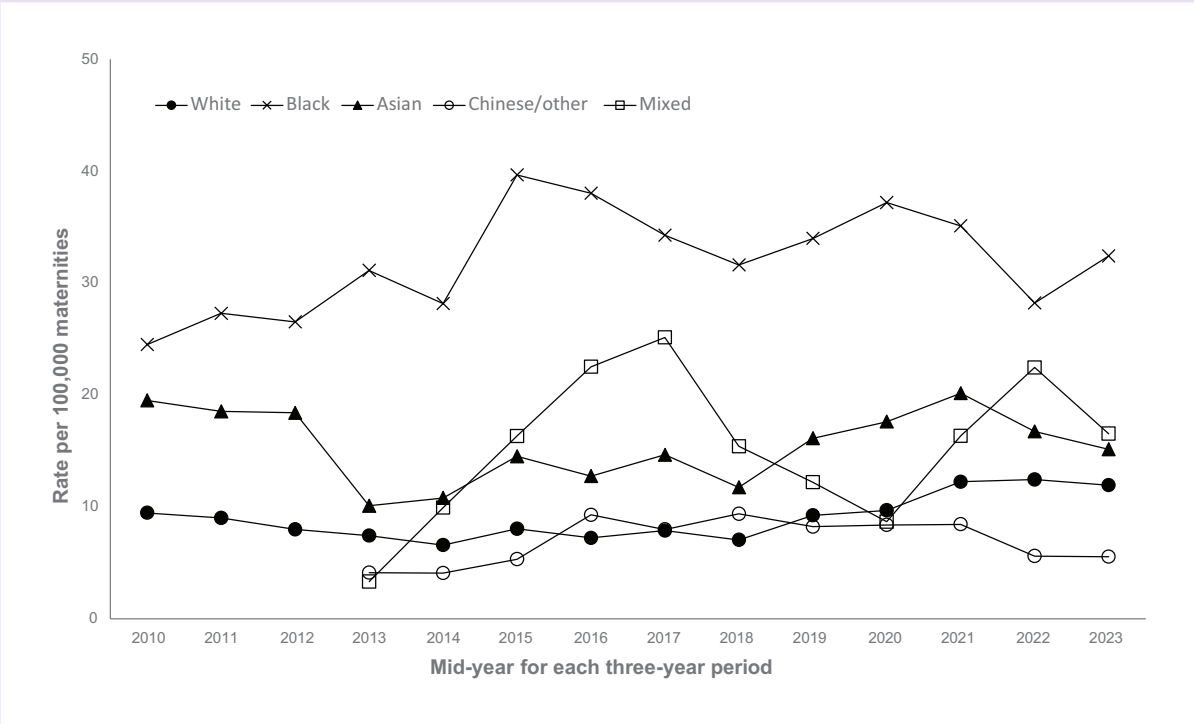
Maternal mortality rates amongst women from mixed ethnic backgrounds in England were non-statistically significantly decreased in 2022-24 compared to 2021-23, but rates remained two times higher than in 2019-21, the last complete triennium, and women from mixed ethnic backgrounds had a 39% increased risk of maternal mortality compared to White women (RR 1.39, 95% CI 0.55-2.93, $p=0.395$). As noted in last year's report, low numbers of women from mixed ethnic backgrounds mean that this rate is subject to high levels of random variation (Figure 7 and [Supplemental Table 2.12](#)).

Figure 6: Maternal mortality rates per 100,000 maternities according to women's area of residence, England* 2009-24



*Data for England only due to availability of denominator data

Figure 7: Maternal mortality rates per 100,000 maternities amongst women from different ethnic groups, England* 2009-24



*Data for England only due to availability of denominator data

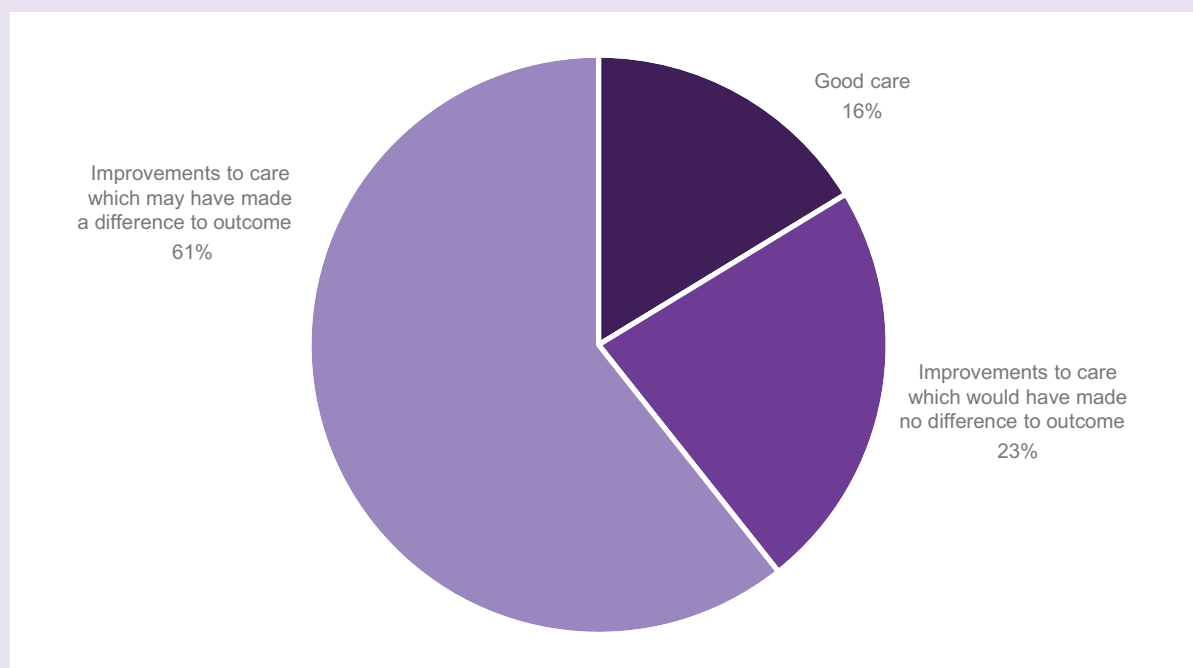
Social risk factors

It has been consistently noted in these enquiries that women at severe disadvantage appear to be over-represented amongst the women who die ([Supplemental Tables 2.9, 2.11, 2.14 and 2.16](#)). In total, of the 252 women who died during pregnancy or up to six weeks after pregnancy from direct or indirect causes in 2022-24, 40 (16%) were considered to have multiple disadvantages on the basis of the data available. Twenty-one percent of the women who died were subject to domestic abuse either prior to or during pregnancy. This proportion has been continually increasing since MBRRACE-UK reporting began, and in 2022-24, was 7% higher than the proportion noted in 2019-21, the last complete triennium. The proportion of women with known mental health problems also increased across this period, rising from 37% in 2019-21 to 47% in 2022-24. In addition, 7% of the women who died had a history of abuse as a child, 20% were known to social services and 18% had known substance use; these figures are similar to last year's report and the last complete triennium.

3.2.3 Classification of quality of care for women who are included in the confidential enquiries, 2022-24

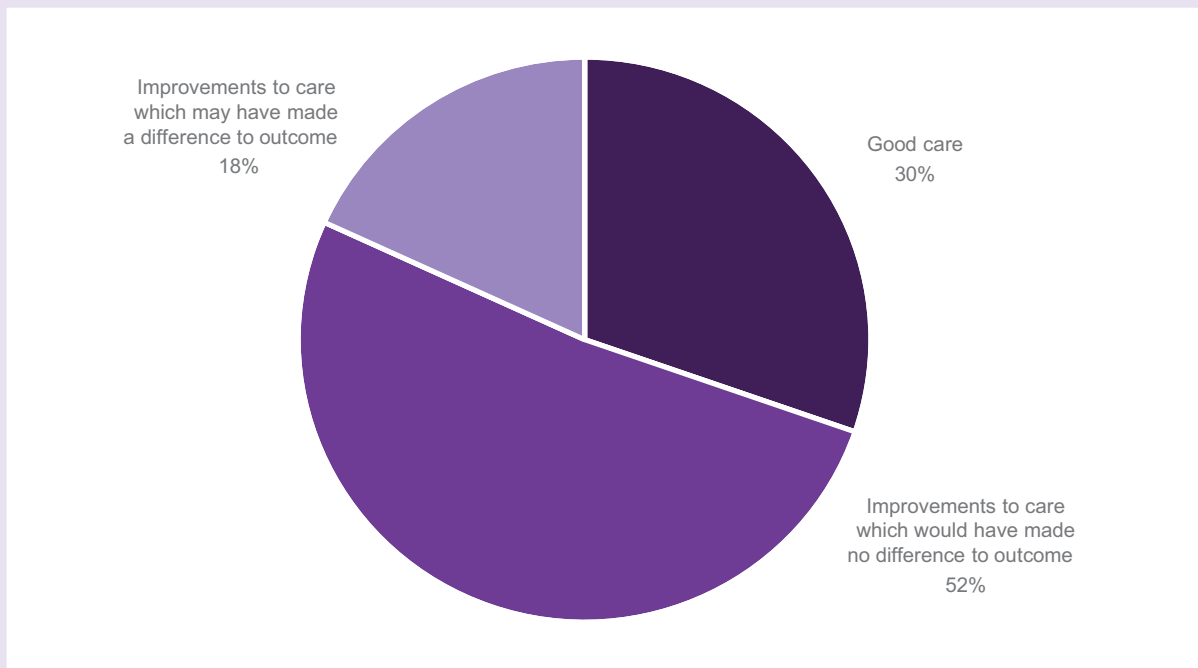
This section includes information on women who are included in this year's confidential enquiry reports (including women who died between six weeks and a year after the end of pregnancy, women from the Republic of Ireland and women included in the morbidity enquiry). Figure 8 ([Supplemental Table 2.17](#)) shows the classification of care as agreed by the assessors for 178 of the women who died and Figure 9 ([Supplemental Table 2.17](#)) shows the classification of care for the 33 women who were included in the morbidity confidential enquiry. Only the women whose case notes were available with sufficient information for an in-depth review are included.

Figure 8: Classification of care received by the women who died and who are included in the confidential enquiry chapters*, UK and Ireland 2022-24 (n=178)



*includes only women whose case notes were available with sufficient information for an in-depth review

Figure 9: Classification of care received by the women who are included in the morbidity confidential enquiry into the care of women with networked maternal medical care, UK 2022-2024 (n=33)



4. Specific messages from the confidential enquiries

The new recommendations highlighted in this report should be read in conjunction with previous recommendations made by MBRRACE-UK. More in-depth findings, previous recommendations, other relevant guidance and further lessons for care are available at: www.npeu.ox.ac.uk/mbrrace-uk/reports/maternal-reports/maternal-report-2022-2024

4.1 Obstetric haemorrhage and amniotic fluid embolism

4.1.1 The women who died

In the UK and Ireland there were 11 women who died from obstetric haemorrhage during pregnancy or up to six weeks after the end of pregnancy in 2022-24 (Table 1). This represents a mortality rate of 0.52 per 100,000 maternities (95% CI 0.26–0.93). This rate is lower than in previous triennia but the decrease is not statistically significant compared to 2019-21 (RR 0.64, 95% CI 0.27-1.44) or 2016-18 (RR 0.89, 95% CI 0.37-2.12). Six women died following a caesarean birth and one following an assisted vaginal birth. The remaining four women had spontaneous vaginal births.

Table 1: Direct deaths by type of obstetric haemorrhage, UK and Ireland 1994-2024

Time period	Placental Abruption	Placenta Praevia/ accreta	Postpartum haemorrhage	Uterine inversion	Total deaths from haemorrhage	Direct haemorrhage death rate per 100,000 maternities	
			Atony	Genital Tract Trauma		Rate	95% Confidence Interval (CI)
1994-96	4	3	5	5	0	17	0.77 0.45 - 1.24
1997-99	3	3	1	2	0	9	0.42 0.19 - 0.80
2000-02	3	4	10	1	0	18	0.90 0.53 - 1.42
2003-05	2	3	9	3	0	17	0.80 0.47 - 1.29
2006-08	2	2	4*	1*	1	9	0.39 0.18 - 0.75
2009-12†	2	1	7	7	0	17	0.49 0.29 - 0.78
2013-15†	3	9	9	1	0	22	0.88 0.55 - 1.33
2016-18†	3	3	2	4	2	14	0.58 0.32 - 0.97
2019-21†	4	6	4	4	0	18	0.80 0.48 - 1.27
2022-24†	0	2	4	5	0	11	0.52 0.26 - 0.93

*Includes one woman for whom both atony and genital tract trauma contributed to her haemorrhage

†Figures for UK and Ireland. All other figures are UK only

Eight women died following an amniotic fluid embolism (AFE), a rate of 0.38 per 100,000 maternities (95% CI 0.16-0.74). This is comparable to rates of AFE in both 2019-21 (RR 1.05, 95% CI 0.34-3.22) and 2016-18 (RR 1.13, 95% CI 0.37-3.47). All eight women died following a caesarean birth; two were scheduled caesarean births and six were emergency caesarean births due to maternal collapse. Of the emergency caesarean births, five were classified as a resuscitative hysterotomy. Three women had an induction of labour and all the women died on the same day as giving birth.

There was sufficient information to assess care for all eight women who died from AFE and nine of the women who died from haemorrhage. Improvements in care were noted for the majority of women. Assessors felt that improvements in care may have made a difference to outcome for two of the women who died from AFE (25%) and eight of the women who died from haemorrhage (89%).

4.1.2 Overview of care and lessons to be learned

Caesarean section lists

A woman was considered very high risk for uterine rupture. She had been advised to delay future pregnancies following complications at a previous caesarean birth requiring an extended incision. She became pregnant before the recommended time and a plan was made for scheduled caesarean birth at 38 weeks' gestation. Her caesarean section was postponed twice, by eight days in total, due to theatre availability and workload capacity. Although her previous surgery and potential operative difficulty were acknowledged as part of caesarean list prioritisation, her obstetric risk was not considered. Early on the morning of her rescheduled operation, she went into spontaneous labour. On arrival, she was pale, clammy and tachycardic having fainted on the way to the hospital. She had a category 1 caesarean birth of a stillborn baby that was complicated by a massive obstetric haemorrhage and uterine rupture. She died a few days after giving birth.

The care of this woman demonstrates the challenge of managing growing caesarean section lists. National figures suggest that the number of caesarean births in England has markedly increased in the past five years, which is not reflective of trends in other Western European countries (Ambia, Alderdice et al. 2026). In 2025, 45% of all births were by caesarean section, compared with 33% of all births in 2020 (Ambia, Alderdice et al. 2026, NHS Digital 2025). Of these caesarean sections, half were scheduled operations (NHS Digital 2025) rising from 14% of all births in 2020 to 20% of all births in 2025 (Ambia, Alderdice et al. 2026). Within this report, six of the ten women who died from obstetric haemorrhage had a caesarean birth; three of these births were scheduled caesarean sections. Assessors noted that the capacity for caesarean sections is becoming a patient safety issue. They felt that both this woman and her baby would have survived if she had had her caesarean section on either of the two rescheduled dates.



Safety message

1. **Safety message:** Service provision and acuity

Service provision must keep pace with increasing maternal complexity and clinical demand with regular review of capacity across emergency triage, staffing and operating theatres. Escalation pathways and flexible resource allocation are essential to ensure patient safety during periods of high acuity. Ongoing monitoring and support, including skills-based training, should be prioritised to reduce risk and provide safe, effective care.

The recent report from the Independent Investigation into Maternity and Neonatal Services in England noted capacity pressures as a factor potentially contributing to broader system pressures on the maternity and neonatal system (National Maternity and Neonatal Investigation 2026). This finding was also echoed in a recent recommendation from the National Maternity and Neonatal Audit (NMPA) regarding the impact of changes in maternal characteristics and mode of birth on resource allocation (National Maternity and Perinatal Audit 2026). Similar findings have also been reported in previous MBRRACE-UK enquiries where insufficient theatre capacity, simultaneous emergencies and the skill mix of available surgeons, contributed to postponements and delays in management of both scheduled and emergency caesarean births (Knight, Bunch et al. 2023).

For the women who died in 2022-24, assessors noted that there was little evidence of structured, risk-based processes for the prioritisation of scheduled caesarean births, including decisions around postponements or cancellations. The woman above had well known clinical risk factors, but surgical prioritisation focussed on logistical and workload considerations, such as the expected theatre time required and the perceived complexity of the surgery, rather than obstetric risk. There was also no documented re-assessment of the woman's clinical risk category at either postponement. Assessors noted opportunities for system-level learning regarding the management of planned caesarean sections. They highlighted that there is a difference between scheduled caesarean births in women who are low risk for complications and those who have planned caesarean birth as a risk-reduction intervention. In these high-risk women, cancellation or delay of a planned caesarean section should be treated as a clinical incident with senior input, clearly documented re-evaluation of the risks of delay and multidisciplinary agreement on a revised delivery plan. They suggested consideration of the use of a standardised proforma for risk-assessment to help guide management of scheduled caesarean lists.



National recommendations

Review theatre and workforce capacity planning guidance to manage the additional workload associated with changing trends in maternal characteristics and associated caesarean section rates.



Clinical message

1. **Clinical message:** Care should be proactive, not reactive

Proper preparation and planning with multidisciplinary input and standard procedures can help avoid delays and support effective management.



Clinical message

2. **Clinical message:** Prioritisation of scheduled caesarean births

Some caesarean births are planned as time-critical risk-reduction interventions. It is important to recognise the difference between these and other scheduled caesarean births when prioritising scheduled caesarean section lists.

Of the three women who had a scheduled caesarean birth, two, including the woman above, were considered high risk and had been advised about the risk of future pregnancy and repeat caesarean sections. However, it is unclear whether these women were provided with contraceptive advice or if the counselling they received effectively conveyed their risk. A newly developed toolkit aimed at improving postnatal care recommends the development of integrated pathways across hospital and community settings to ensure women have timely access to post-pregnancy contraception and advice (NHS England 2026a). It is important that maternity services are included in such plans to improve postnatal care so that women can be provided with appropriate methods of contraception before they are discharged from the service.



National recommendations

Ensure postnatal contraception can be prescribed and administered in maternity services for future pregnancy planning.



Safety message

2. **Safety message:** Risk counselling

Counselling women about the possible risks of pregnancy, for themselves and their babies, must be trauma informed with consideration of prior adverse experiences and complex social, medical and obstetric histories. Information provided must be balanced to promote informed decision-making and clinicians should be prepared to hold these discussions, including signposting for further support or guidance if needed. Particular consideration is required for higher-risk situations including when women become pregnant or make other decisions against medical advice. In such situations, robust documentation, clear safety netting procedures and the offer of follow-up discussions and support arrangements are essential to reduce risk.

4.2 Infection

4.2.1 The women who died

In 2022-24, 49 women died from infection in the UK and Ireland during or up to one year after the end of pregnancy. Of the 49 women who died from infection, 33 died during pregnancy or up to six weeks after pregnancy, a rate of 1.47 per 100,000 maternities (95% CI 1.01-2.07) (Figure 10).

Genital tract and other direct causes of infection

Twenty women died from direct causes of infection. All but two of these women died during pregnancy or up to six weeks after pregnancy, a maternal mortality rate of 0.80 per 100,000 maternities (95% CI 0.48-1.27) (Figure 10). The majority of maternal deaths (75%) were due to three organisms: *Escherichia coli* (*E. coli*) (8/20, 40%), group B streptococcus (GBS) (4/20, 20%) and group A streptococcus (GAS) (3/20, 15%).

Eleven women died from genital tract sepsis. One woman died from GBS infection while still pregnant and two women died shortly after early pregnancy losses, one from GBS infection following a first trimester termination of pregnancy and the other from *E. coli* infection after a septic miscarriage. Three women died following chorioamnionitis at term, all due to GAS infection. The remaining five women died following preterm prelabour rupture of membranes (PPROM), all due to *E. coli* and all with associated intrauterine fetal death.

Two women died from urinary tract sepsis, both due to *E. coli*. Three women died following a caesarean birth, one due to infection with *Staphylococcus lugdunensis* and *Granulicatella adiacens*, one from *Morganella morganii* and one from an unknown organism. For the remaining four women, the primary causative organism was unknown.

There was sufficient information to assess the care of 19 of the women who died from direct causes of infection. Assessors felt that different care may have made a difference to the outcome for almost all the women (n=17, 89%).

Indirect causes of infection

Twenty-nine women died from indirect causes of infection, 15 of whom died during pregnancy or up to six weeks after pregnancy, a rate of 0.67 per 100,000 maternities (95% CI 0.38-1.10) (Figure 10).

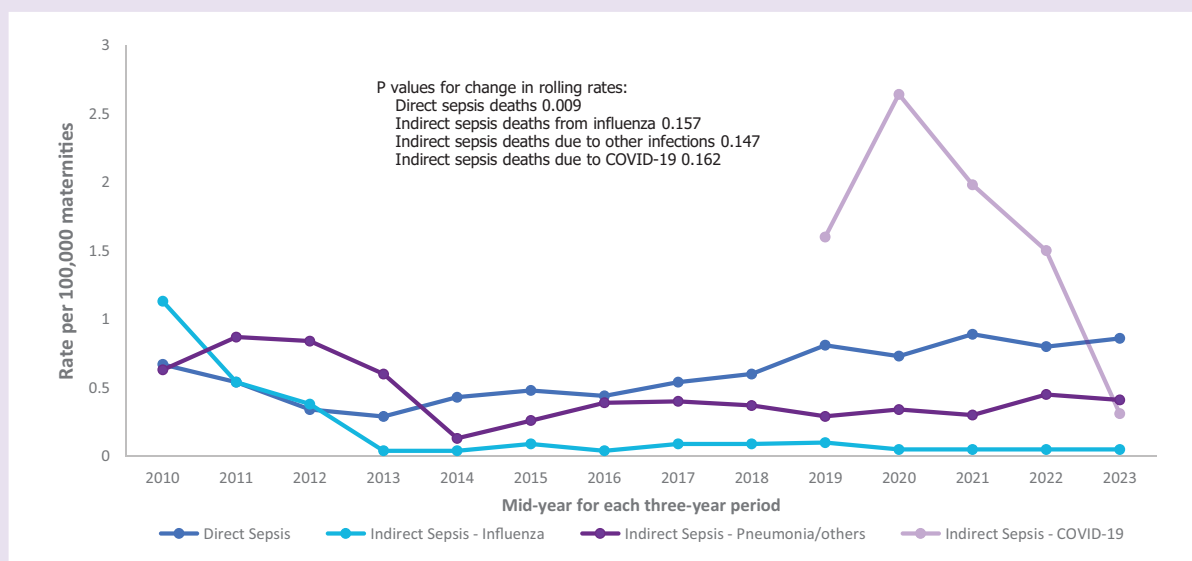
Two women died from influenza: one from influenza A on the day of resuscitative hysterotomy and one from influenza B between six weeks and one year after the end of pregnancy. Neither woman had received an influenza vaccine in pregnancy.

Ten women died from COVID-19 in 2022-24; none died in 2024. Six women died during or up to six weeks after the end of pregnancy and a further four women died more than six weeks after the end of pregnancy, one of whom had contracted COVID-19 in the third trimester. The majority of the women who died from COVID-19 were unvaccinated (60%). Three women were vaccinated for COVID-19 prior to pregnancy but none received a booster vaccination in pregnancy. One further woman was partially vaccinated having received one dose of the vaccine one month prior to her illness. None of the women who died, and whose deaths are considered in this or any other section, had adverse outcomes following SARS-CoV-2 vaccination.

Seventeen women died from other indirect infections. Eight women died during or up to six weeks after the end of pregnancy: five from pneumonia; two from disseminated herpes simplex virus (HSV) infection, one from HSV-1 and the other HSV-2; and one from bacterial meningitis. Nine women died from other infectious causes between six weeks and one year after the end of pregnancy: three from pneumonia, one due to *Streptococcus pneumoniae* and the other two from unidentified organisms; and six from other causes of infection.

The care of all the women who died from indirect causes of infection was reviewed and assessors felt that improvements in care may have made a difference for 24 of the women (83%), including all of the women who died from influenza and COVID-19.

Figure 10: Maternal mortality rates from infectious causes per 100,000 maternities, during or up to six weeks after pregnancy, UK 2009-24



4.2.2 Overview of care and new lessons to be learned

Delays in antibiotic administration

A Black woman requiring interpreter support had an uncomplicated scheduled caesarean birth at term. She presented twice to the emergency department in the early postnatal period. On her first visit, maternal observations were incomplete and did not include temperature or respiratory rate. On her second visit, three days later, she had a MEWS of 5 and the Sepsis Six pathway was commenced. She was admitted with suspected urinary sepsis and given IV antibiotics 1.5 hours after her initial MEWS was recorded. She was discharged with oral antibiotics after two days. She returned to hospital a few days later with a MEWS of 10 indicating critical deterioration. There was a three-hour delay in administration of antibiotics due to delays in transfer for HDU care and difficulties with prescribing due to new electronic systems. High acuity on the unit resulted in further delays in consultant review and anaesthetic involvement. She died the following day. Swabs grew *Enterobacter spp.* and *Morganella morganii*.

Recommendations from the National Institute for Health and Care Excellence (NICE), including previous (National Institute for Health and Care Excellence 2016) and newly published guidelines on the management of sepsis in pregnant or recently pregnant women (National Institute for Health and Care Excellence 2025b) recommend administration of broad-spectrum antibiotics within one hour of suspected sepsis. However, as in previous reports (Knight, Bunch et al. 2023, Knight, Kenyon et al. 2014), this woman faced delays in antibiotic administration on both her presentations to the emergency department, with the second delay being significant. Previous reports have emphasised that it is the responsibility of the prescriber to ensure antibiotics are given, even if this means they need to administer the antibiotics themselves (Knight, Kenyon et al. 2014). Assessors noted that the hospital caring for the woman above had introduced 'grab bags' to allow for rapid access to appropriate antibiotics; however, these were only available within the delivery suite. They felt that the decision to wait for transfer before giving antibiotics may not have been appropriate, especially as there were further delays on the delivery suite due to difficulties accessing electronic prescribing systems.

NEW

National recommendations

Ensure there is a mechanism for rapid access to antibiotics in all hospital-based care settings to allow for rapid management of sepsis at the point of care.

For [women] with suspected sepsis who are or have recently been pregnant, and meet one or more high-risk criteria, give a broad-spectrum antimicrobial without delay (within 1 hour of identifying that they meet any high-risk criteria), if antibiotics have not already been given for this episode of sepsis.

NICE NG255: Suspected sepsis in pregnant or recently pregnant [women]: recognition, diagnosis and early management (National Institute for Health and Care Excellence 2025b)



Safety messages

3. **Safety message:** Electronic patient records

The use of different electronic patient record systems within or between different trusts or health boards, primary care and emergency services may lead to gaps in communication, underappreciation of deterioration, missed opportunities for intervention and diminished continuity of care. Improving the interoperability of systems and standardising key elements, including the ability to attach key pieces of correspondence and the integration of early warning scores, should be prioritised to support timely decision-making, minimise risk and enhance outcomes. The readability of outputs, including copies of records for use in review processes, must also be improved to facilitate learning from adverse events.

Assessors also felt that, as highlighted previously in **safety message one**, service pressures on the unit and midwifery staffing below recommended levels may have affected the management of this woman's infection. She was reviewed by a consultant obstetrician only after the midwife raised concerns about the woman's condition and there was no anaesthetic involvement for over four hours. In situations such as this, assessors highlighted the importance of frequent monitoring and the use of modified early warning scores (MEWS) so maternal deterioration is recognised and care is escalated appropriately.



Clinical message

3. **Clinical message:** Record maternal observations using MEWS

Maternity early warning scores (MEWS) should be used for all pregnant or recently pregnant women in all settings, not just maternity.

Penicillin allergies

A woman planning a home birth had a category 2 caesarean section for prolonged labour, which was complicated by a major obstetric haemorrhage. Due to a penicillin allergy, she was given teicoplanin and metronidazole pre-surgery with gentamicin after birth of the baby. Postnatally, there were limited maternal observations. One week after birth she collapsed at home and was transferred to hospital with suspected sepsis. Intravenous piperacillin/tazobactam (containing penicillin) and metronidazole were given on admission with no adverse reaction, but two further doses of piperacillin/tazobactam were missed due to confusion around her penicillin allergy. Despite antibiotic treatment, her condition continued to deteriorate rapidly and she died shortly afterwards.

This woman was one of five who died from sepsis who were noted to have a penicillin allergy. For all five women, assessors questioned whether their allergy impacted the effectiveness of the antibiotics they received and the timeliness of antibiotic administration. For this woman, assessors noted she may not have had sufficient antibiotic cover for gram-negative organisms before her caesarean section, though a single dose of gentamicin, with good gram-negative cover, was given post-birth. After her sepsis was recognised in hospital, she was initially treated with tazobactam and piperacillin which belongs to the penicillin class of antibiotics. This was subsequently stopped when her recorded penicillin allergy was noted. However, after it was determined that she did not have an anaphylactic reaction to the first dose, and in view of the severity of her condition, piperacillin/tazobactam was subsequently restarted. Assessors felt it was unlikely that this delay would have impacted the woman's outcome but noted that clarity around allergy severity is needed to distinguish severe anaphylactic allergies.

De-labelling of penicillin (Savic, Ardern-Jones et al. 2022) or beta-lactam allergies should be considered for women thinking about becoming pregnant to help prevent unnecessary delays in care. For women with penicillin or other beta-lactam allergies, there should be a clear plan for an alternative regime that provides appropriate antibiotic cover.



Clinical message

4. **Clinical message:** Test and de-label penicillin allergies

Penicillin allergy testing and de-labelling, conducted before pregnancy and in accordance with [published guidelines](#), can help identify women at low risk of severe reactions and allow for safer, more effective antibiotic treatment of sepsis.

Maternal observations

This woman's condition deteriorated quickly from the time of her first presentation with signs of sepsis. As has been a message in multiple MBRRACE-UK reports, pregnant and recently pregnant women are generally young and fit and tend to compensate physiologically, despite significant illness or infection, before rapid deterioration (Knight, Bunch et al. 2023). Assessors noted that postnatal visits within the first week after birth often focussed primarily on the well-being of the baby with very little detail about the mother's condition including clinical observations or wound assessment. Although postnatal care guidelines from NICE recommend assessing women for signs of infection, they do not specify the need to routinely record vital signs including blood pressure, heart rate or respiratory rate (National Institute for Health and Care Excellence 2021). This woman had several risk factors for sepsis including prolonged labour, a raised BMI and sepsis following a previous caesarean birth, but it is not clear if these were considered. A need to improve maternal observations was also noted for many other women who died from sepsis and has been emphasised in past MBRRACE-UK reports (Knight, Bunch et al. 2020).

In the postnatal period health professionals must perform and record a full set of physiological vital signs, pulse, blood pressure, temperature and respiratory rate, in any woman with symptoms or signs of ill health (Knight, Bunch et al. 2020)



Clinical message

5. **Clinical message:** Recognise rapid deterioration

Pregnant women tend to be young and fit and may compensate physiologically, despite significant illness or infection, before experiencing rapid decline.



Clinical message

6. **Clinical message:** Remember the mother

Do not let your focus on the safety of the baby or other clinical management prevent you from caring for the mother. It is important that any concerns expressed by the mother are listened to and escalated appropriately.

Most women who died from sepsis, or other causes, were not assessed using MEWS. Other women did not have observations performed regularly, correctly or, in some instances, at all. Several MBRRACE-UK reports have recommended the use of MEWS for pregnant and recently pregnant women (Knight, Bunch et al. 2022). The Joint Royal Colleges Ambulance Liaison Committee's (JRCALC) Pre-hospital Maternity Decision Tool (Joint Royal Colleges Ambulance Liaison Committee (JRCALC) and Association of Ambulance Chief Executives (AACE) 2024) and NHS England's Maternal Care Bundle recommend the use of MEWS across all settings, including pre-hospital and acute care (NHS England 2026b). The Royal College of Obstetrics and Gynaecologists (RCOG) guideline on maternal sepsis also recommends monitoring using an early warning system modified for obstetrics (Lissauer, Morgan et al. 2025); however, there must remain a continued focus on its digitisation and implementation in non-maternity settings. Although recent updates to guidance on the management of sepsis recommends the use of the National Early Warning Score (NEWS2) to assess people aged 16 or over who are not pregnant or recently

pregnant (National Institute for Health and Care Excellence 2025a), corresponding updates to guidelines on suspected sepsis in pregnant or recently pregnant women do not specify the use of MEWS as an early warning score (National Institute for Health and Care Excellence 2025b). Additionally, while assessors noted that MEWS is integrated into some electronic record systems, this is not the case for all systems (**safety message three**), which therefore does not allow for monitoring of trends in vital signs using MEWS parameters.



NHS England's Maternal Care Bundle

NHS England's Maternal Care Bundle: Pre-hospital and acute care

Intervention 2.1:

Implement the national maternity early warning score (MEWS) tool across all settings for women who are or have been pregnant in the past 4 weeks. This means ensuring timely obstetric team and/or obstetric physician review in line with the MEWS escalation timeframes, according to the total score identified and relevant additional concerns.

Ensure the appropriate national Maternity Early Warning Score is used to monitor pregnant women wherever in the hospital she receives care (Knight, Bunch et al. 2022)

Home births

The woman above with the penicillin allergy initially planned a vaginal birth at home before requiring transfer to hospital for a caesarean section. In total, there were five women included in this year's enquiries who planned to give birth at home; all were considered high risk. Assessors felt that discussions around birth plans would have benefited from more senior, multidisciplinary input to effectively communicate women's individual risks, including the limitations around treatment options and interventions and speed of transfer in the event of an emergency at home. As noted in **safety message two**, they stressed that risk counselling must be trauma informed with recognition of how a woman's past obstetric history can influence decision-making.

Preterm prelabour rupture of membranes (PPROM)

As noted in previous reports, PPRM carries a high risk of infection (Knight, Bunch et al. 2023, Knight, Bunch et al. 2020). In 2022-24, five women died from sepsis following PPRM, all from *E. coli*. Four women had rupture of membrane at less than 22 weeks' gestation, with two at less than 20 weeks'. As emphasised in previous reports, there are challenging decisions around whether to continue a pregnancy with early rupture of membranes (Knight, Bunch et al. 2020, Knight, Kenyon et al. 2014). Women need counselling that clearly details the baby's chances of survival and the risk of maternal sepsis if the pregnancy continues; however, only two of the women who died from sepsis following PPRM had evidence of such discussions in their notes.

Two women had cervical sutures placed prior to membrane rupture; cerclage was attempted for a third but her membranes ruptured intra-operatively and no sutures were placed. Of the two women with cervical cerclage, both had an initial suture placed at 15+ weeks' gestation and both had a second suture placed weeks later. For one woman, the second suture was placed at a different clinic after the first was removed due to suspected PPRM. In both instances, assessors questioned whether cerclage was appropriate. Although there was no information available in the notes to determine the type of cervical sutures used, monofilament sutures are associated with a lower risk of infection than braided filaments (Hodgetts Morton, Tooze-Hobson et al. 2022) and should be considered in women at high risk of sepsis.

4.3 Neurological causes

4.3.1 The women who died

In total, 60 women died during or up to one year after pregnancy from neurological causes in the UK and Ireland in 2022-24. Thirty-three women died during or in the six weeks after pregnancy, a maternal mortality rate of 1.55 per 100,000 maternities (95% CI 1.07-2.18).

Fifteen of the women died from causes related to epilepsy, 13 from sudden unexpected death in epilepsy (SUDEP). Two further women had suspected SUDEP but did not have a formal epilepsy diagnosis at the time of their death. Thus, the maternal mortality rate for the 17 women who died from causes related to confirmed or probable epilepsy in 2022-24 is 0.80 per 100,000 maternities (95% CI 0.47-1.28). The mortality rate for the 13 women who died from SUDEP in 2022-24 is 0.61 per 100,000 maternities (95% CI 0.33-1.04). These rates are similar to those reported for 2016-18 and 2019-21. Two additional women who died had non-epileptic seizure disorders (or functional/dissociative seizures); they are not included in the maternal mortality rates for epilepsy-associated deaths but are considered in overall mortality rates for neurological causes.

The care of all 19 of women who died from epilepsy or who had non-epileptic seizure disorders (or functional/dissociative seizures) was reviewed and assessors felt that improvements in care would have made a difference for 15 of the women (79%).

Twenty women died from stroke during or up to six weeks after pregnancy: twelve from intracerebral haemorrhage, seven from subarachnoid haemorrhage and one from ischaemic stroke. Twenty-one women died from stroke or other neurological causes between six weeks and one year after pregnancy: ten from subarachnoid haemorrhage, five from ischaemic stroke, four from intracerebral haemorrhage and two from other causes.

Information was sufficient to assess care for 38 of the 41 women who died from stroke and other neurological causes. Assessors felt that 11 of the women received good care (29%) but identified improvements to care that may have made a difference for 13 women (34%).

4.3.2 Overview of care and lessons to be learned for women with epilepsy

Multidisciplinary care

A vulnerable, young woman with a ten-year history of juvenile myoclonic epilepsy died early in the third trimester. This was her second pregnancy and was unplanned. She was taking levetiracetam and ethosuximide and was advised to continue this in pregnancy by her epilepsy specialist nurse (ESN). She was cared for by a community midwife and her ESN with a single obstetric appointment at 13 weeks' gestation. A consultant obstetrician was not present for this appointment. She had increasing seizure frequency from 20 weeks' gestation. Seizures were primarily nocturnal. This was noted by the maternity team on multiple occasions, but they were reassured by the fact that she was in contact with her epilepsy team. There was no evidence of joined-up care or communication between the maternity and epilepsy teams. Her epilepsy was considered well controlled and increased seizures were attributed to stress and lack of sleep. Her anti-seizure drug levels were not checked and no changes were made to her medications. She died from SUDEP at 32 weeks' gestation. Her levetiracetam level was found to be subtherapeutic at post-mortem.

The NHS England Maternal Care Bundle, launched in January 2026, provides best practice standards for women with epilepsy in England including referral to a maternal medicine network (MMN) and care provided by a local team consisting of, at minimum, an epilepsy specialist nurse (ESN) or neurologist, a maternal medicine obstetrician and an obstetric physician, if available locally (NHS England 2026b). The women included in this chapter died before the development of this care bundle; however, their care demonstrates the importance of this element and a need to ensure its implementation to prevent future deaths and severe morbidity. At the time of this woman's death there was no evidence of joined-up care between neurology and maternity services. Instead, care was provided by separate hospitals with no communication between the teams or senior involvement or input from a consultant obstetrician or neurologist. As a result, there appeared to be no awareness of the danger associated with nocturnal epilepsy, or sleep-onset seizures, and false reassurances about the woman's increasing seizure frequency and anti-seizure medication (ASM) dosage.



Clinical message

7. Clinical message: Provide joined-up care

Senior oversight and effective multidisciplinary working with clear documentation of all multidisciplinary discussions and decision-making can promote consistent management and prevent adverse outcomes that may result from gaps in communication.

Develop clear standards of care for joint maternity and neurology services, which allow for: early referral in pregnancy, particularly if pregnancy is unplanned, to optimise anti-seizure drug regimens; rapid referral for neurology review if women have worsening epilepsy symptoms; pathways for immediate advice for junior staff out of hours; postnatal review to ensure anti-seizure drug doses are appropriately adjusted (Knight, Bunch et al. 2020)



NHS England's Maternal Care Bundle

NHS England's Maternal Care Bundle: Epilepsy in pregnancy

Intervention 3.1:

Every pregnant woman with epilepsy has access to a local epilepsy in pregnancy team who will ordinarily lead the early pregnancy, intrapartum and postnatal care plans in line with the local maternal medicine network's (MMN) management and escalation protocol. The local team will consist of, at a minimum:

- epilepsy nurse specialist or neurologist
- maternal medicine obstetrician (see national service specification for maternal medicine networks)
- obstetric physician (subject to local availability)

Intervention 3.2:

Women requiring more complex epilepsy care should be referred by the local epilepsy in pregnancy team to a maternal medicine network (MMN) multidisciplinary team (MDT) who can oversee and – where necessary – lead the provision of care.

This woman was prescribed ethosuximide in addition to levetiracetam. Ethosuximide is a first-line ASM for childhood absence seizures (National Institute for Health and Care Excellence 2022). Unlike some other ASMs, ethosuximide controls only absence seizures and does not adequately treat focal seizures or generalized tonic-clonic seizures. As adults are more likely to have seizure types requiring broader-spectrum medications, assessors felt that its use was an indication that this woman's ASMs had not been properly re-assessed when she transitioned out of paediatric services. Gaps in the transition from paediatric to adult neurology services have been noted in previous reports (Knight, Bunch et al. 2023, Knight, Bunch et al. 2020) and remain an area of focus for pre-pregnancy counselling and ASM optimisation.

Senior oversight

A woman in her second pregnancy had a fifteen-year history of epilepsy. She was managed with lamotrigine and levetiracetam with seizures every other month. She booked at 8 weeks' gestation and was referred to a consultant obstetrician with an interest in epilepsy. She contacted her epilepsy specialist nurse (ESN) about a seizure a couple of weeks later and was advised on the importance of taking her medications but no adjustments were made. The ESN was previously unaware of her pregnancy. The woman had her first medical review in a joint clinic with a senior obstetric registrar and ESN at 16 weeks' gestation. She had another seizure a few weeks later resulting in an injury. She was attended to by ambulance but was not taken to hospital. The woman told her epilepsy team about this seizure and an increase in her medications was suggested. Following a third seizure two weeks later her levetiracetam was increased. Medications were provided by her GP not her epilepsy team. She had one further seizure before she died from SUDEP in the early third trimester.

Assessors felt that this woman would also have benefitted from the consensus recommendations laid out in the Maternal Care Bundle (NHS England 2026b). These state that women requiring complex epilepsy care should be reviewed and triaged by an epilepsy in pregnancy specialist within two weeks of a first contact with a positive pregnancy test. This should be followed by a medication review within a further two weeks (NHS England 2026b). Previous MBRRACE-UK reports have recommended similar urgent referral pathways to triage women with high-risk medical conditions, including epilepsy (Felker, Patel et al. 2025, Knight, Bunch et al. 2020), which underpin the NHS England guidance. This woman was referred for specialist care at 8

weeks' gestation but this did not take place until 16 weeks' when she was seen by an ESN and senior obstetric registrar rather than the specialist consultant obstetrician as planned. Although this appointment took place in a joint clinic, assessors still felt that this woman would have benefited from better communication between teams and more senior oversight of her care.



NHS England's Maternal Care Bundle

NHS England's Maternal Care Bundle: Epilepsy in pregnancy

Expert consensus recommendations

While local epilepsy pregnancy teams should provide care in line with agreed MMN protocols, the element 3 [epilepsy in pregnancy] working group recommends by expert consensus that services work to put in place local pathways so that every woman with epilepsy receives:

- a case review and triage by a member of the local epilepsy in pregnancy team within 2 weeks of first NHS care contact with a positive pregnancy test, and that highest risk women are then seen in person for medications review within a further 2 weeks (so 4 weeks from first care contact).
- a follow-up appointment (in person or virtual) with a member of the local epilepsy in pregnancy team within 14 days of the end of pregnancy, to review medications and discuss post-partum risks and contraceptive options. This plan should be communicated to primary care and the woman's neurology service.

Assessors felt that this woman's care should have been escalated for review by a consultant neurologist following her second seizure in pregnancy. This would have allowed for review of her medications and counselling about ASMs and potential side-effects, including how these may be affected by pregnancy-related changes to metabolism. Levels of lamotrigine are reported to fall by up to 70% in pregnancy (Royal College of Obstetricians and Gynaecologists 2016). Demonstrating to this woman that her serum ASM levels were subtherapeutic may have led her to accept an earlier increase in medication. However, as was common for many of the women who died from causes related to epilepsy, this woman did not have her ASM levels monitored throughout pregnancy. In instances where monitoring was done, it was not always done appropriately. Often there were no pre-pregnancy baselines for comparison or monitoring was considered too late to allow for effective changes to medications.

The care of this woman also demonstrates an important point about the availability of medications at the point of care. After it was agreed that the levetiracetam dose should be increased, a letter was sent to the woman's GP to prescribe the medication rather than the epilepsy team providing it themselves. This resulted in unnecessary delays, which may have impacted the woman's outcome.

NEW

National recommendations

Implement processes for acute community or hospital-based prescribing of medications where an urgent initiation or change in medications is required.

Escalation of care and safeguarding

The care of the two women above demonstrates a common theme in the care of women with epilepsy where having intermittent seizures was treated as normal. Assessors noted that abnormal changes in blood pressure or blood glucose levels would not usually be dismissed in this manner. They emphasised the need to be proactive about seizure management, especially when there is increasing seizure frequency or a change in the type of seizures that women experience.

A vulnerable young woman had a seven-year history of juvenile myoclonic epilepsy. She had tried several anti-seizure medications and found sodium valproate to be most effective. She was taking sodium valproate at the time she conceived her second child. Sodium valproate was stopped in early pregnancy and she was started on clonazepam. Her antenatal care was provided by different hospitals with input from multiple neurologists and epilepsy specialist nurses. She experienced recurrent tonic-clonic seizures with frequent hospital admissions throughout her pregnancy. She had an emergency caesarean birth at term and continued to experience persistent seizures. She was not re-started on sodium valproate postnatally. She died from SUDEP seven months after giving birth.

Clinicians must 'remember the mother' when counselling women on the use of medications so that the safety of both mother and baby is appropriately considered. This should apply to all counselling provided before pregnancy, during pregnancy, including if any changes are made to medications, and after pregnancy, when it may be appropriate to reassess ongoing seizure frequency and re-start ASMs that were previously effective but which should be avoided in pregnancy.

Pre-pregnancy counselling is recommended by the RCOG (Royal College of Obstetricians and Gynaecologists 2016) and is associated with improved medication adherence and disease quiescence during pregnancy (Nana, Stannard et al. 2023); however, the primary focus of this counselling relates to the risks of fetal exposure to ASMs with very little information in guidance documents about the risks to women of uncontrolled seizures. This is also the case in the national guidance on the use of sodium valproate (Medicines and Healthcare products Regulatory Agency 2025). It is unclear whether any of these women received pre-pregnancy counselling or if counselling they received at any point during their pregnancy properly conveyed the importance of ASMs or the risks of SUDEP, including risk mitigation strategies such as the use of sleep alarms or monitors for women sleeping alone.



Clinical message

8. **Clinical message:** Get ready for pregnancy

The period before conception, or between pregnancies, including after miscarriage, is an ideal time to counsel women about their health and address any physical or mental health conditions or social needs that may require management prior to becoming pregnant. Counselling should include, but is not limited to, optimisation of medications for chronic conditions, advice on weight management or smoking cessation and specialist referral to mental health or addiction services (Felker, Patel et al. 2025).

Develop guidance to ensure that SUDEP awareness, risk assessment and risk minimisation is standard care for women with epilepsy before, during and after pregnancy and ensure this is embedded in pathways of care. Clinicians need to talk to women and their partners or carers about the risk of SUDEP and how to minimise it (Knight, Bunch et al. 2020)

4.3.3 Overview of care and lessons to be learned for women with stroke

Blood pressure management

Eight of the 41 women who died from stroke (20%) had persistent hypertension; six had pre-existing chronic hypertension, three of whom had superimposed pre-eclampsia; and two women who had pre-eclampsia during pregnancy had uncontrolled blood pressure postnatally. An additional four women had elevated blood pressure recordings in the intrapartum or early postnatal period, one of whom collapsed hours after giving birth. For most of the women with hypertension, assessors felt that postnatal monitoring and management could have been improved. They highlighted that any complications or new issues that arise as a result of pregnancy must be specified in the discharge summary for primary care.

Discharge summaries for primary care should clearly indicate in an initial summary box the key conditions that require ongoing support or management and a clear plan for postnatal care. Detailed information about medical, mental health and social complexities and ongoing medications, monitoring requirements or safeguarding concerns must be included to facilitate a clear plan for postnatal care (Felker, Patel et al. 2025)

Symptom recognition

A woman in her second trimester experienced a sudden onset headache with accompanying seizure. Imaging revealed a subarachnoid haemorrhage (SAH) secondary to a middle cerebral artery (MCA) aneurysm, which was coiled with complete occlusion. Her obstetric team was not notified of her surgery and there was no further input from the neurosurgical team. An MRI was scheduled for six months later. She had ongoing headaches with worsening frequency but was reassured that they were normal. In the third trimester, her GP noted a raised blood pressure and prescribed oxycodone for pain. She collapsed at home at term with a repeat SAH and MCA aneurysm. She had an emergency caesarean birth and died a few days later.

Assessors noted that this woman received good, multidisciplinary care when she presented to hospital with her second subarachnoid haemorrhage; however, they noted significant improvements to care in the weeks preceding this event. Following her initial diagnosis and surgery, this woman would have benefitted from a referral to the maternal medicine team where she would have received senior oversight and neurological input. As it was, there was little communication between the medical teams and limited support from the neurosurgical team after discharge from hospital. The woman was instructed to email the neurosurgical team about her headaches, but these emails went unanswered. Although headaches are common after intracranial procedures, assessors noted that it would have been appropriate to receive clinical follow-up with direct communication between the medical teams, including multidisciplinary planning for delivery. It was also noted that repeat imaging was postponed until after pregnancy, where it would normally be performed within one to two months. This could have been discussed and clarified had the maternal medical team been involved.

The importance of the recognition of 'red flags' in pregnant women presenting with headaches is a common message in MBRRACE-UK reports (Knight, Bunch et al. 2023, Knight, Bunch et al. 2020). This woman was incredibly high risk but her symptoms, including persistent headaches and the use of opioids for analgesia, did not appear to be appreciated in the context of her recent history.

Red flags in the history and examination of a pregnant patient presenting with headaches:

- Sudden-onset headache / thunderclap or worst headache ever
- Headache that takes longer than usual to resolve or persists for more than 48 hours
- Has associated symptoms – fever, seizures, focal neurology, photophobia, diplopia
- Excessive use of opioids

RCP Acute care toolkit 15 Managing acute medical problems in pregnancy (Royal College of Physicians 2019)

4.4 General medical and surgical conditions

This section contains the characteristics and lessons learned from the care of women who died from connective tissue, endocrine, gastrointestinal, haematological and respiratory conditions as well as those who died from anaphylaxis and spontaneous intra-abdominal bleeding. Also included in this section are the characteristics and lessons learned from the care of women who did not die but who had inflammatory medical conditions requiring networked maternal medical care.

4.4.1 The women who died

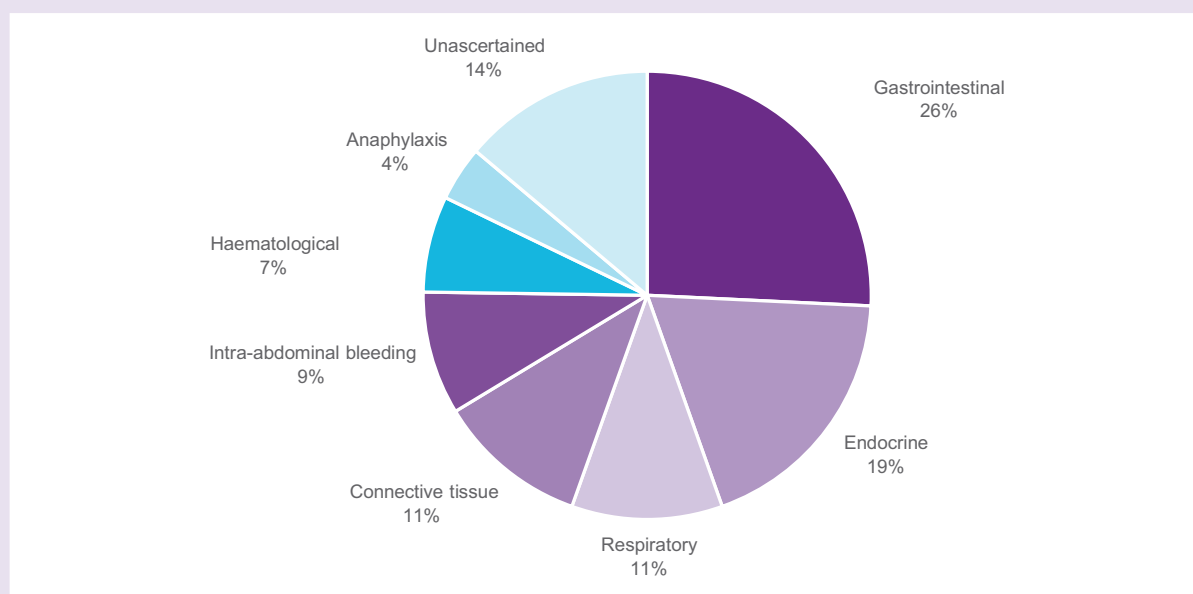
Between 2022-24, 27 women died in the UK and Ireland during pregnancy or up to six weeks after pregnancy from general medical and surgical conditions not considered elsewhere in these reports ('other indirect causes'). This represents a mortality rate of 1.27 per 100,000 maternities (95% CI 0.84-1.85). A further 30 women died from these causes between six weeks and one year after the end of pregnancy. The causes of the women's death are shown in Table 2 and Figure 11.

Information was sufficient to assess the care of all but three of the women who died from general medical and surgical conditions. Of the 54 women whose care could be reviewed, assessors felt that 19% received good care; however, for the majority of women (n=29, 54%), they noted improvements in care that may have made a difference to the outcome.

Table 2: Causes of death for women who died from medical and surgical disorders during pregnancy or up to one year after pregnancy, UK and Ireland 2022-24

Cause of death	Number of women (%) N=57
Gastrointestinal	15 (26)
<i>Pancreatitis</i>	10
<i>Bowel obstruction</i>	2
<i>Hepatic conditions</i>	3
Endocrine	11 (19)
<i>Diabetes</i>	8
<i>Other endocrine conditions</i>	3
Respiratory	6 (11)
<i>Asthma</i>	3
<i>Other respiratory conditions</i>	3
Connective tissue disorders	6 (11)
<i>Systemic lupus erythematosus (SLE)</i>	4
<i>Other connective tissue disorders</i>	2
Non-obstetric intra-abdominal bleeding	5 (9)
Haematological	4 (7)
<i>Haemophagocytic lymphohistiocytosis (HLH)</i>	2
<i>Other haematological conditions</i>	2
Anaphylaxis	2 (4)
Unascertained indirect	8 (14)

Figure 11: Causes of death for women who died from medical and surgical disorders during pregnancy or up to one year after pregnancy, UK and Ireland 2022-24



4.4.2 The women whose care was reviewed for the morbidity enquiry

A sample of women was drawn from the UK Obstetric Surveillance System (UKOSS) study on the use of biological agents in pregnancy conducted from May 2022 to October 2024. Stratified sampling included 45 women spread across the UK nations with varied representation by age and ethnic group. Of the 45 women identified, records were received for 33 women. Twelve of the women whose care was reviewed had Crohn's disease, eight had ulcerative colitis, seven had inflammatory arthritis and six women had systemic lupus erythematosus (SLE).

The records of 33 women were available for review for this year's morbidity enquiry of women with networked medical care. Assessors felt that nearly a third of these women received good care (n=10, 31%) and just over half had improvements in care noted but that would not have changed their outcome (n=17, 52%)

4.4.3 Overview of care and lessons to be learned

Networked maternal medical care

Maternal medicine networks (MMNs) in England were launched in 2021 to support the care of women with complex health conditions before, during and after pregnancy. Specialised centres with maternal medicine expertise also exist across Wales, Scotland and Northern Ireland. Although the networks in England operate based on a national service specification (NHS England 2021), care is delivered regionally and so varies in the conditions women have which make them eligible for referral and the threshold for acceptance. The level of maternal medicine input can also differ on an individual basis; however, for the highest risk and most complex women, the expectation is that all care will be delivered within specialised centres.



NHS England's Maternal Care Bundle

NHS England's Maternal Care Bundle: Pre-hospital and acute care

Intervention 2.3:

Establish acute referral pathways from local services to the maternal medicine centre (MMC) for acutely unwell pregnant or recently pregnant women presenting with symptoms or diagnostic uncertainty necessitating maternal medicine expertise. Maternity services and the maternity medicine network (MMN) should review these pathways annually.

A primiparous White woman had been diagnosed with Crohn's disease five years prior to her first pregnancy. Her disease was well controlled with her last flare three years prior to pregnancy. She had recently started taking vedolizumab and budesonide around the time she became pregnant. She booked at 11 weeks' gestation and antenatal care was provided by a community midwife with three obstetric appointments and one consultation with a separate inflammatory bowel clinic. She had a flare in the early third trimester due to a clerical prescribing error with her vedolizumab. She was induced at term and had a caesarean birth due to fetal concerns. Postnatally she contacted the IBD hotline to ask about contraception and live vaccines for her baby. No discussions were initiated by her care team. M

A primiparous Black woman had a nearly ten-year history of Crohn's disease. Her last flare was one year prior to pregnancy and she had no previous surgeries. Her condition was previously managed with adalimumab, which she stopped prior to becoming pregnant. She booked at 11 weeks' gestation and she was cared for by a local maternal medicine team in coordination with gastroenterology. She was counselled about starting biologics early in her pregnancy but was hesitant to do so; however, following a flare in the second trimester she was started on ustekinumab after discussion with her gastroenterology team. Advice was provided on avoiding live vaccinations for her baby in view of her ustekinumab use and a plan was made for a vaginal birth. She presented with spontaneous rupture of membranes at 39+2 weeks and had a caesarean birth due to fetal concerns. M

These two women were both in their first pregnancies and booked for antenatal care within similar timeframes. They had similar histories of Crohn's disease, which was well controlled by biological agents. Based on their medical history, both women should have received local care with review, advice and guidance provided by maternal medicine teams. However, although assessors felt that both women received good antenatal care, they recognised that, across all the reviews, there was significant variation in the management of women with similar obstetric and medical histories.

The first woman above had care provided locally, but without local maternal medicine team or network input or support. Although there were clear pathways for escalation in the event of complications, she did not have any input from obstetric medicine specialists. She did have input from a gastrointestinal team on one occasion, but the appointment did not take place in a combined clinic. There was also no evidence that she was counselled about postnatal contraception or infant vaccination as she contacted the IBD helpline herself to ask about this information. In contrast, the second woman described above was managed by a maternal medical team with coordinated input from gastroenterology. She was appropriately counselled on the use of biological agents, including which infant vaccinations to avoid, and had multidisciplinary discussions about her birth plan.

This difference in care was common amongst the women whose care was reviewed as part of the morbidity enquiry as well as those who died from neurological or other general medical conditions. While the anonymisation of records prevents awareness of regional service specifications and the availability of local services, all high-risk women who are eligible to receive care under or input from maternal medical centres should be provided with consistent advice regarding their pregnancy and postnatal health.

NEW

National recommendations

Ensure appropriate multidisciplinary care to enable consistency of advice for high-risk women with complex medical comorbidities regarding birth planning, medication adherence and monitoring and vaccination, including advice for the vaccination of infants exposed to biologic medications.

The European Crohn's and Colitis Guidelines on Sexuality, Fertility, Pregnancy, and Lactation and lactation (Torres, Chaparro et al. 2023) suggest that all women of reproductive age with inflammatory bowel disease should receive pre-pregnancy counselling, but it is unclear if this was the case for many of the women included in the morbidity enquiry. The first woman was using combined oral contraception but there were no discussions around the effectiveness of this form of contraception in the context of her Crohn's disease, which may impact absorption (Torres, Chaparro et al. 2023). Neither woman above had clear documentation of postnatal contraception counselling or future pregnancy planning. This was a common theme across all chapters of this report. Assessors noted that it can be difficult to determine whose responsibility it is to hold these discussions, especially when care is shared across multiple teams or sites. However, the national service specifications for MMNs indicate that pre-pregnancy counselling and postnatal care plans, including contraception, should be coordinated by maternal medical centres (NHS England 2021). For many women, it was not clear whether they had access to post-pregnancy contraception and whether there were educational resources to equip professionals to deliver post-pregnancy contraception. This aligns with recommendations within NHS England's postnatal care toolkit, published in 2026 (NHS England 2026a) and a new recommendation from this year's report.

NEW

National recommendations

Ensure postnatal contraception can be prescribed and administered in maternity services for future pregnancy planning.

Pancreatitis

A young woman died from necrotising pancreatitis ten months after a vaginal birth. She had a BMI over 30 kg/m² and was considered vulnerable with a history of social service involvement, domestic abuse and mental health problems. She had an uneventful pregnancy with input from a perinatal mental health team and social care. Five months postpartum, she attended the emergency department with severe abdominal pain and vomiting. Her bloods were normal apart from a mildly raised ALT. It is not clear if amylase and lipase were measured. She was discharged with a diagnosis of gastritis and a plan for the GP to repeat her liver function tests in a month. It is not clear if this happened. She presented again three months later with similar symptoms and was admitted for pancreatitis. Scans showed multiple gallstones with necrotising pancreatitis affecting half the pancreas. She was admitted to the ICU but was unable to be resuscitated after a cardiac arrest.

Assessors commented on the number of maternal deaths due to pancreatitis in 2022-24. During this period, ten women died from pancreatitis in the UK and Ireland. This is more than twice the number of women who died from pancreatitis in 2019-21 and five times higher compared to the number of deaths in 2013-15. Of the women who died from pancreatitis in 2022-24, seven had gallstones and all were overweight or obese. Pancreatitis is associated with high rates of mortality, even with good care. It should be considered in the differential diagnosis when women present with abdominal pain and vomiting, especially if they have a raised BMI or have a history or risk of gallstones (Box 1).

Box 1: Risk factors for gallstones

- Female sex
- High oestrogen levels (including pregnancy)
- Age over 40 years
- BMI over 30 mg/kg²
- Rapid weight loss or prolonged fasting
- A family history of gallstones
- Medical conditions including diabetes, Crohn's disease, cirrhosis and infections
- Diets that are high in refined sugars or fats and low in fibre

The care of this woman also demonstrates another common theme across this and past MBRRACE-UK reports. Many of the women who died were vulnerable and had periods of disengagement from maternity care. This was particularly apparent in the postnatal period when the supports provided during pregnancy fell away. For women who experienced the loss of a child, including bereavement or through social service involvement, disengagement from care was often associated with deteriorating physical health. While past reports have emphasised the need to consider declining mental health following loss events (Felker, Patel et al. 2025), it is also important to recognise that mental health problems may manifest as inattention to physical health needs.



Clinical message

9. Clinical message: Incorporate safeguarding

Effective safeguarding should be incorporated into all aspects of maternity care, especially for women facing multiple disadvantages.

4.5 Critical care and anaesthesia

4.5.1 The women who died

For the first time since MBRRACE-UK reporting began, there were no women in the UK and Ireland who died from complications of anaesthesia in 2022-24.

During the four-year period (2021-24) since the last MBRRACE-UK report that featured lessons for critical care, there were 144 women who required ICU admission prior to their death. Sepsis was the most frequent cause of death amongst these women (Table 3), including four women who died from COVID-19 in 2021-24. Neurological and other general medical and surgical disorders ('other indirect deaths') were the next most frequent causes of death.

Table 3: Causes of death amongst women who required critical care admission, UK and Ireland 2021-24

Cause of death	Number of women (%) N=144
Sepsis	28 (19)
Neurological	25 (17)
Other indirect deaths	25 (17)
Thrombosis and thromboembolism	14 (10)
Deaths from psychiatric cause	13 (9)
Cardiac disease	13 (9)
Pre-eclampsia and eclampsia	5 (4)
Obstetric haemorrhage	5 (4)
Amniotic fluid embolism	4 (3)
Early pregnancy death	4 (3)
Malignancy	4 (3)
Accidental	2 (1)
Unascertained	2 (1)

4.5.2 Overview of care and lessons to be learned

Obstetric management in critical care

Multidisciplinary working is a common theme across all MBRRACE-UK reports and can be particularly complicated when caring for pregnant or recently pregnant women who are critically ill. Previous enquiries into critical care have demonstrated the unique challenges that arise when speciality teams who may have no experience working together engage in coordinated clinical decision making, particularly in acute situations (Knight, Bunch et al. 2022).

A young woman developed a facial rash shortly before her first pregnancy. She had multiple appointments with her GP in early pregnancy and was treated with topical steroids and antibiotics. A diagnosis of systemic lupus erythematosus (SLE) was considered following an appointment with a consultant dermatologist at 13 weeks' gestation. Less than a month later, she was admitted to a different hospital's ICU with a rash over nearly half her body. She had dermatology and rheumatology advice while on the ICU but did not have obstetric involvement. She was discharged after five days and re-presented to the same emergency department less than a week later where she waited over 40 hours before being admitted to the ICU. Haemophagocytic lymphohistiocytosis (HLH) was considered and she had a bone marrow biopsy. She deteriorated rapidly and an ECMO referral was made three days after her admission. This was declined and she died the next day, in her second trimester.

Assessors identified areas where improvements in communication between hospitals and between specialities in each hospital may have changed this woman's outcome. There was evidence of siloed working in the care she received from dermatology and rheumatology while on the ICU. These appointments were not combined resulting in unnecessary re-investigation of her SLE and inaccurate interpretation of her history, including when her rash first developed in relation to steroid use. Many women will present with more than one complex medical condition. Effective communication and collaboration are essential to prevent the duplication of efforts and avoid unnecessary delays in management. If multidisciplinary team meetings are held to discuss women's care, they should include all relevant specialities, including obstetrics, with clear documentation of who was present and what was discussed.



Clinical message

7. **Clinical message:** Provide joined-up care

Senior oversight and effective multidisciplinary working with clear documentation of all multidisciplinary discussions and decision-making can promote consistent management and prevent adverse outcomes that may result from gaps in communication.

This woman had very limited obstetric involvement during her admission to the ICU; she was reviewed by a senior obstetric registrar on her second admission who decided that she did not need daily obstetric review due to an upcoming antenatal appointment. Guidelines for the Provision of Intensive Care Services specify daily obstetric review as a minimum standard of care for maternity patients admitted to the ICU. For women under 20 weeks' gestation, this may be substituted by gynaecology review depending on local arrangements. These guidelines also recommend named leads for maternal critical care who can provide oversight and coordinate multidisciplinary care (Intensive Care Society and Faculty of Intensive Care Medicine 2026).

All intensive care services (including outreach) caring for maternity patients must appoint a named lead clinician and a lead nurse for maternal critical care.

All maternity patients admitted to intensive care must have evidence of a clearly documented, multidisciplinary, intensive care, obstetric and anaesthetic consultant-led review at least once every 24 hours.

ICS and FICM Guidelines for the Provision of Intensive Care Services (Intensive Care Society and Faculty of Intensive Care Medicine 2026)

Obstetric involvement in the care of critically ill maternity patients is crucial to ensure that care is appropriate and equitable. This may involve providing advice on the safety of medications, treatments and imaging modalities in pregnancy or risk counselling so that the woman can make informed decisions about her own care and the care of her baby. This woman developed an infection during her admission and was counselled about the potential risks of antibiotic use for her baby by a critical care physician. She chose not to go home with antibiotics and instead was given safety-netting advice for signs of sepsis. Assessors felt that she would have benefited from obstetric input that more clearly outlined the significant risk of sepsis for the woman versus limited risks of *in utero* antibiotic exposure for the baby. They also felt that risk counselling and safety-netting advice at hospital discharge needs to consider other potential barriers in access, including system pressures and long wait times in emergency departments.

Improving obstetric critical care

Although the appointment of a named lead and daily obstetric review is regarded as a minimum standard, this is dependent on staff capacity and the availability of services. Hospitals differ in their configuration of care for women who are critically ill during pregnancy. Regardless of the care setting, whether it is the labour ward, medical ward or ICU, it is important that hospitals recognise potential pitfalls in the configuration of services and facilitate ways of providing appropriate, multidisciplinary care regardless of the location. This should include clear escalation pathways that recognise the dynamic nature of staffing workload and ward capacity as outlined in **safety message one**.



Clinical message

10. **Clinical message:** Plan for care outside of maternity wards

Defined management plans, including for assessment and triage in pre-hospital and emergency care settings, and clear communication between hospitals and specialities are important to ensure timely transfer and care in an appropriate setting that matches the woman's clinical needs.

The care of critically ill pregnant and recently pregnant women sits at the interface of obstetrics and intensive care. Safe practice therefore depends on clinicians in both specialties understanding when and how to involve one another and work together effectively. Critical care assessors highlighted that current training structures do not reliably support this cross-speciality collaboration. Neither the RCOG nor the Faculty of Intensive Care Medicine (FICM, now the College of Intensive Care Medicine (CICM)) curricula mandate defined placement in the other's setting (Faculty of Intensive Care Medicine 2021, Royal College of Obstetricians and Gynaecologists 2024). This means that obstetricians may not have familiarity with organ support or invasive monitoring and intensivists may not be aware of maternal physiology or the management of obstetric emergencies. Compounding this issue, the proportion of intensive care medicine residents entering from anaesthesia, which has historically provided obstetric exposure, is falling, and recent changes to anaesthetic training have reduced obstetric requirements (Royal College of Anaesthetists 2021). Cross-speciality exposure is considered essential for safe practice in other General Medical Council (GMC) approved curricula. For instance, FICM requires placements in paediatric and cardiothoracic intensive care. Assessors felt that the same principle should apply to obstetric critical care and structural biases in medical training should be amended so that clinicians are aware of the unique care needs of pregnant and recently pregnant women and are able to provide equitable treatment.

5. References

Available as supplementary material at:

www.npeu.ox.ac.uk/mbrrace-uk/reports/maternal-reports/maternal-report-2022-2024

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ISBN: 978-1-9191819-5-0

