

Lessons learnt from maternal deaths involving pre-hospital care:

The Maternity & Newborn Safety Investigations (MNSI) programme



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BACKGROUND

The Maternity and Newborn Safety Investigations (MNSI) programme investigates patient safety events and works with staff, trusts and families to improve maternity safety in England.

Maternal deaths involving pre-hospital care are rare, critical events. The MNSI programme undertook a secondary thematic analysis of maternal death investigations involving ambulance services to identify learning opportunities for pre-hospital and perinatal settings.

SAFETY PROMPTS

Ambulance Services

- What are the barriers for call handlers in identifying pregnant, suspected pregnant or recently pregnant women to ensure they are correctly triaged?
- Does an ambulance service have a robust system for ensuring pre-alert calls are timely and effective?
- Do dispatch protocols enable early dispatch of appropriate resources to deteriorating pregnant, suspected pregnant or recently pregnant women?
- Does resuscitation training routinely include the importance of early defibrillation, manual uterine displacement and establishment of ALS in maternal cardiac arrest?
- How are communication barriers assessed and addressed to ensure timely triage?
- What are the barriers for ambulance clinicians using the pre-hospital maternity decision tool when attending pregnant, suspected pregnant or recently pregnant women?

Maternity Care Providers

- Is it clear to staff which telephone number or clinical area a pre-alert call will be made to?
- What are the barriers to using the pre-alert call information in a timely and effective way to mobilise and inform the appropriate MDT team?
- Has your trust reviewed potential barriers for an ambulance service's access to the maternity unit?
- Do you have a process to learn from patient safety events that includes the ambulance service?

METHODS

- Review period: April 2019 – October 2023
- 133 maternal death investigations included
- All investigations involved ambulance service care
- Data extraction and thematic analysis conducted to identify recurring patterns and areas for improvement



If you would like a copy of the pre-hospital maternity decision tool please email camella.main@nhs.net

MNSI THEMATIC REVIEW

Learning from maternal deaths that included an ambulance service

111/999 CALL

- 1 in 3 women who called 111/999 were from a global majority ethnic background
- 2 in 3 women were pregnant at the time of call
- 1 in 4 calls were made via 111

DISPATCH & ARRIVAL

- The importance of early dispatch of appropriate resources to manage clinical need
- System pressures affect the ability of ambulance services to meet national target timeframes
- Navigation and access challenges delay timely arrival to the woman

IN SCENE CLINICAL MANAGEMENT

- Pregnancy specific tools were not always available to assist clinicians in assessing pregnant women
- The importance of early establishment of effective advanced life support, manual uterine displacement and providing defibrillation when indicated
- Variation in location & service provision impacts conveyance decisions

PRE-ALERT

- Pre-alert is not consistently used by ambulance services to ensure mobilisation of appropriate teams within the receiving unit

ACCESS TO UNIT

- Ambulance clinicians experience challenges accessing receiving units due to physical barriers such as public lifts and locked doors



KEY FINDINGS

Demographics & call patterns:

- 35% of women were from global majority ethnic groups
- 69% were antenatal at the time of care
- 74% of emergencies accessed via '999'
- 47% had a pre-alert call to receiving units

Primary complaints:

- Breathing difficulties: 22%
- Collapse: 22%
- Seizure-related events: 7%

Causes of death (post-mortem):

- Thromboembolic events (e.g. PE): 19%
- Respiratory causes incl. COVID-19: 14%
- Intracranial events (e.g. stroke): 13%

CONCLUSIONS

- Effective triage and communication at the point of the emergency call are critical.
- Maternity-specific red flags should be embedded within call handling processes.
- Clear, reliable pre-alert processes and early multidisciplinary team mobilisation are essential.
- Ambulance and maternity services must work in partnership to address access, training, and shared learning.

EMERGING THEMES

Call handling challenges

- Difficulty identifying pregnant or recently pregnant patients
- Communication barriers affecting triage accuracy

Operational barriers

- Geographical and environmental factors delaying response
- Inconsistencies in pre-alert procedures

Interface & handover variability

- Inconsistent pre-alert effectiveness
- Limited coordination between pre-hospital and maternity teams

FORWARD LOOK

Our next phase of work will focus on:

- Targeted training for ambulance clinicians and maternity units
- Optimising use and response to pre-alerts for maternal patients
- Developing shared learning frameworks between ambulance services and maternity units
- Collaborative approach to ensure all relevant aspects of pre-hospital care are examined during MNSI investigation processes

