Resuscitation Council UK

Nadia Persaud
Senior Coroner
Walthamstow Coroners Court
Queens Road
Walthamstow
E17 8QP

31 January 2022

Dear Ms Persaud,

Re: **Inquest touching upon the death of Mrs Hurrun Maksur - Preventing Future Deaths Report**

Thank you for your request dated 15 December 2021. The Resuscitation Council UK (RCUK) has reviewed the Regulation 28 (Preventing Future Deaths) Report and case summary provided.

The RCUK has been specifically asked to incorporate the MBRRACE UK 2019 Guidance that states: *'Women of reproductive age, presenting to the ED collapsed, in whom a pulmonary embolism is suspected, should have a Focussed Assessment with Sonography in Trauma (FAST) scan to exclude intra-abdominal bleeding from a ruptured ectopic pregnancy especially in the presence of anaemia.'*

The RCUK response below has been led by Dr [redacted], Chair of the ALS Subcommittee and Subcommittee members Dr [redacted] and Dr [redacted].

1. The RCUK updates its guidelines on a regular basis using a process that is accredited by the National Institute for Health and Care Excellence (NICE). The most recent update was in May 2021. With regards the use of sonography (ultrasound is the more commonly used term), the latest 2021 the RCUK guidelines include:

    a. A greater emphasis on the use of ultrasound during Advanced Life Support (ALS) to identify and treat reversible causes of cardiac arrest. This applies to all cardiac arrests and not just for the pregnant patient. This is specifically mentioned in the reversible causes part of the

ALS algorithm. See https://www.resus.org.uk/library/2021-resuscitation-guidelines/adult-advanced-life-support-guidelines

b. Specific guidelines for cardiac arrest in the pregnant patient including *'Identify and treat reversible causes (e.g. haemorrhage). Focused ultrasound by a skilled operator can be used to identify reversible causes and may also be used to assess if a fetal heart rate is present.'* See https://www.resus.org.uk/library/2021-resuscitation-guidelines/special-circumstances-guidelines

2. The RCUK Advanced Life Support Manual (8th Edition, May 2021) includes the following regarding haemorrhage:

> ***Reversible causes of collapse and cardiac arrest in pregnancy***
> *Look for reversible causes using the 4 Hs and 4 Ts approach. Abdominal ultrasound by a skilled operator to detect possible causes during cardiac arrest can be useful. It can also permit an evaluation of fetal viability, multiple gestations (twins) and placental localisation. It should not however delay treatments. Specific reversible causes of collapse or cardiac arrest in pregnancy include:*
> ***Haemorrhage***
> *This can occur both antenatally and postnatally. Causes include ectopic pregnancy, placental abruption, placenta praevia, abnormal placentation (increta/ percreta) and uterine rupture. Maternity units should have a massive haemorrhage protocol. Treatment is based on the ABCDE approach. The key step is to stop the bleeding.*

3. RCUK Advanced Life Support Manual (8th Edition, May 2021) includes the following regarding pulmonary embolism in pregnancy:

> ***Pulmonary embolism***
> *Pulmonary embolism causing cardiopulmonary collapse can present throughout pregnancy. CPR is started with modifications as necessary. The use of fibrinolytic therapy needs considerable thought, particularly if a peri-mortem caesarean section is being considered (see below). If the diagnosis is suspected and maternal cardiac output cannot be restored it should be given.*

4. The RCUK ALS subcommittee's opinion is that the issues raised by the MBBRACE report and the Inquest are addressed in the most recent RCUK guidance and teaching materials. Specifically:

a. Firstly, RCUK is mindful that its guidelines address all cardiac arrests and that maternal cardiac arrests make up a very small proportion these arrests. In addition the specialist skills and equipment required for ultrasound during resuscitation are not always immediately available in all settings. Any changes therefore need to be proportionate and recognise the risks of delaying time critical treatments such as fibrinolysis in patients with a suspected PE.

b. Active major bleeding (haemorrhage) is a contraindication for thrombolytic (fibrinolytic) drugs regardless of the cause of bleeding or the patient group. This risk of bleeding with fibrinolytic drugs (which dissolve clots and prevent clotting) should already be known to those who use them. The section of the RCUK Advanced Life Support Manual (8th Edition, May 2021) lists contraindications to fibrinolytic therapy – active internal bleeding is an absolute contraindication.

c. In addition to an ectopic pregnancy, there are a number of causes of collapse from bleeding in the pregnant patient and these are highlighted in the current teaching materials.

d. There is already a strong emphasis on the use of ultrasound to look for reversible causes including haemorrhage in RCUK guidelines and teaching materials for all causes of cardiac arrest including cardiac arrest during pregnancy.

5. To address the variance with the MBRRACE UK 2019 guidance, RCUK will further emphasise the need to exclude major bleeding as the cause of collapse before giving fibrinolytic drugs for suspected PE in pregnancy. We will also consider other learning from this case. The following areas will be reviewed and updated as necessary:

   a. Next print run of RCUK Advanced Life Support Manual (8th Edition, May 2021).
   b. Teaching materials on the ALS course concerning pregnancy.
   c. Obstetric Cardiac Arrest Quick Reference Handbook in collaboration with MBBRACE and the Obstetric Anaesthetists Association.

6. The RCUK will share this response with:

Resuscitation Council UK

a. The Royal College of Obstetricians and Gynaecologists and liaise with the College regarding whether further updates are required.

b. The ALSG that oversees the Managing Medical and Obstetric Emergencies and Trauma (mMOET) course.

Yours Sincerely

[redacted]
Director of Clinical and Service Development
On behalf of Resuscitation Council UK

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