Sudden Maternal Collapse Including the Management of Amniotic Fluid Embolus and Anaphylaxis

Classification:	Guideline		
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Authors Division:	Women's and Children's Health		
Departments/Group this Document applies to:	Maternity		
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Unique Identifier: MIDW/GL/30	**Status:** APPROVED	**Version No: 6**	
Guideline to be followed by (target staff): All maternity and theatre staff			
To be read in conjunction with the following documents: None			
Are there any eCARE implications? No			
CQC Fundamental standards: Regulation 9 – person centered care Regulation 10 – dignity and respect Regulation 11 – Need for consent Regulation 12 – Safe care and treatment Regulation 13 – Safeguarding service users from abuse and improper treatment Regulation 14 – Meeting nutritional and hydration needs Regulation 15 – Premises and equipment Regulation 16 – Receiving and acting on complaints Regulation 17 – Good governance Regulation 18 – Staffing Regulation 19 – Fit and proper			

Disclaimer

Since every patient's history is different, and even the most exhaustive sources of information cannot cover every possible eventuality, you should be aware that all information is provided in this document on the basis that the healthcare professionals responsible for patient care will retain full and sole responsibility for decisions relating to patient care; the document is intended to supplement, not substitute for, the expertise and judgment of physicians, pharmacists or other healthcare professionals and should not be taken as an indication of suitability of a particular treatment for a particular individual.

The ultimate responsibility for the use of the guideline, dosage of drugs and correct following of instructions as well as the interpretation of the published material **lies solely with you** as the medical practitioner.

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Guideline Statement

This guideline will enable staff to manage maternal collapse, which is a rare but life-threatening event for both mother and fetus. Maternal collapse has a wide range of causes, and this guideline will assist staff in diagnosing and managing an episode of maternal collapse. This guideline covers general approach and includes specific situations including amniotic fluid embolism, anaphylaxis and anaesthetic causes (high spinal block and local anaesthetic toxicity); for other causes of collapse eg sepsis and haemorrhage, please refer to the relevant guidelines.

In this guideline, we use the terms maternity service user, woman and women's health. We acknowledge however that people who do not identify as women will use our services. We aim to give all those who access the maternity service, appropriate, inclusive and care sensitive to their individual needs.

Executive Summary

Maternal collapse is a rare but life-threatening event with a wide range of causes. The common reversible causes of collapse in any person can be remembered using the 'aide memoire' of the 4Hs and 4Ts (see Figure 1) with the addition of intracranial haemorrhage secondary to pre-eclampsia.

Maternal resuscitation should follow the Resuscitation Council (UK) guidelines using the standard ABCDE approach, not forgetting to relieve aortocaval compression by manual displacement of the uterus. Resuscitation of the pregnant woman may require early delivery of the fetus.

Figure 1 from *Maternal collapse in pregnancy and the puerperium* RCOG 2019

Reversible cause		Cause in pregnancy
4H's	Hypovolaemia	Bleeding (obstetric/other; may be concealed) or relative hypovolaemia of dense spinal block, septic or neurogenic block
	Hypoxia	Pregnant women can become hypoxic more quickly. Cardiac events – peripartum cardiomyopathy, myocardial infarction, aortic dissection, large vessel aneurysms
	Hypo/hyperkalaemia and Hyponatraemia	Hypo and hyperkalaemia are no more likely. Hyponatraemia may be caused by oxytocin use
	Hypothermia	No more likely
4T's	Thromboembolism	Amniotic fluid embolus, pulmonary embolus, air embolus, myocardial infarction
	Toxicity	Local anaesthetic, magnesium, other
	Tension pneumothorax	Following trauma/suicide attempts
	Tamponade	Following trauma/suicide attempts
Eclampsia and pre-eclampsia		Includes intracranial haemorrhage

1.0 Roles and Responsibilities:

All clinicians have a responsibility to ensure they know how to alert appropriate help in an emergency and are competent to administer emergency treatment. The on-call consultant must be informed when a service user collapses unless it is thought by the obstetric team to be a simple vaso-vagal event.

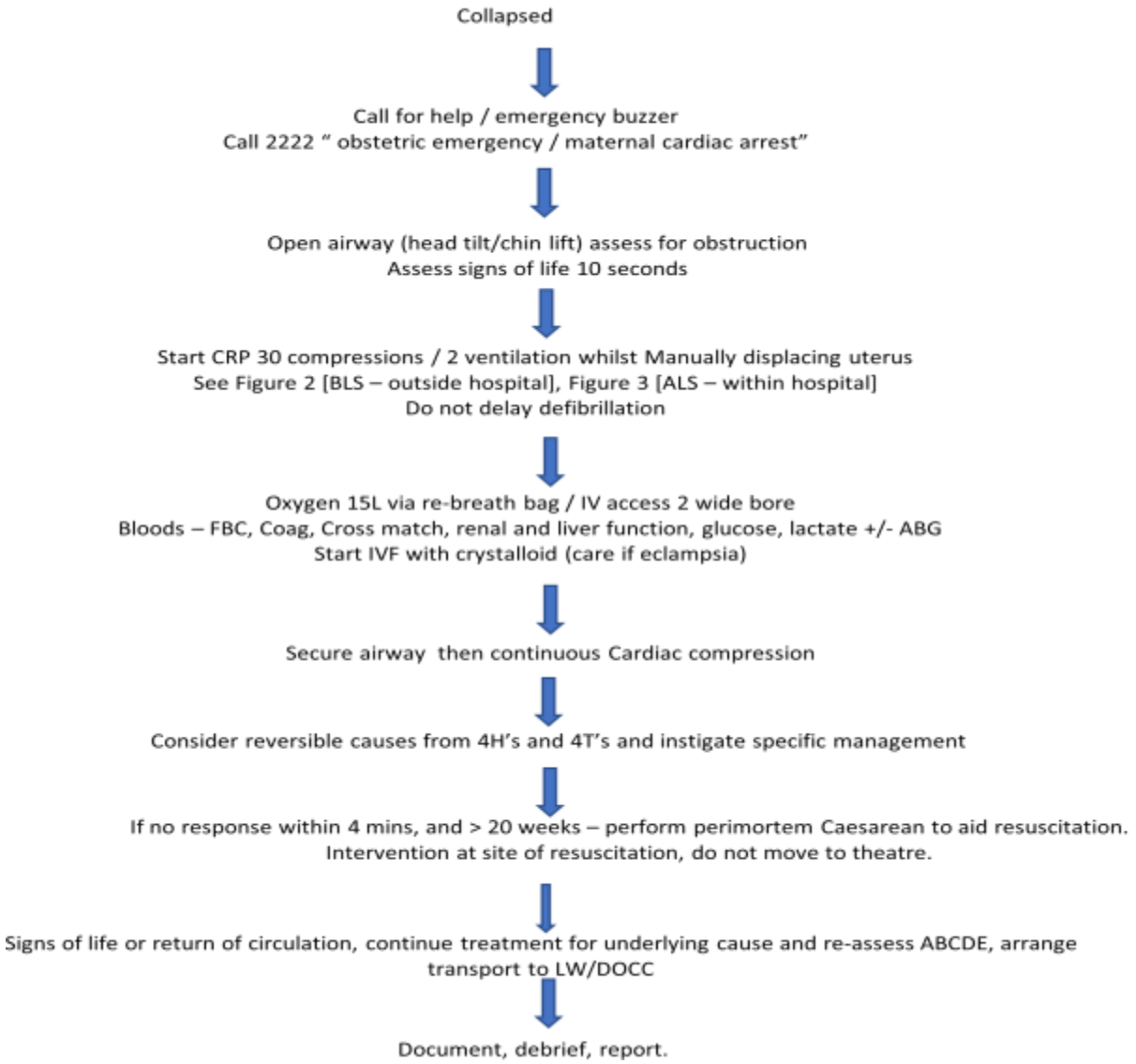
2.0 Implementation and dissemination of document

This guideline is available on the Trust intranet and has followed the full guideline review process prior to publication.

3.0 Processes and procedures

3.1 Action for the collapsed maternal patient

The flowchart should be used with reference to the 2021 The Resuscitation Council (UK) guidelines for adult resuscitation with additional guidance for the obstetric patient [refer - figure 3].



3.1.1 The Importance of a Multidisciplinary Approach

The obstetricians, anaesthetists, medical physicians and/or specific medical teams i.e. cardiologist, endocrinologists, neurologists must be involved in the care of service user with serious medical illness.

3.1.2 Peri-mortem Caesarean Section (PMCS)

- PMCS should be performed to aid maternal resuscitation on any patient ≥20 weeks gestation if no response to CPR within 4 minutes, with an aim to achieve delivery within 5 minutes
- PMCS **should not be delayed by moving** the maternity service user. It should be performed where maternal collapse has occurred with resuscitation continuing.
- The surgeon should use an abdominal incision to facilitate the most rapid access. This may be a midline vertical incision or a suprapubic transverse incision.
- A scalpel and umbilical cord clamps (or alternative ligatures) should be available on the resuscitation trolley in all areas where maternal collapse may occur, including the accident and emergency department.
- Resuscitation efforts should be continued until a decision is taken by the Consultant Obstetrician and Consultant Anaesthetist in consensus with the cardiac arrest team.

3.1.3 Documentation

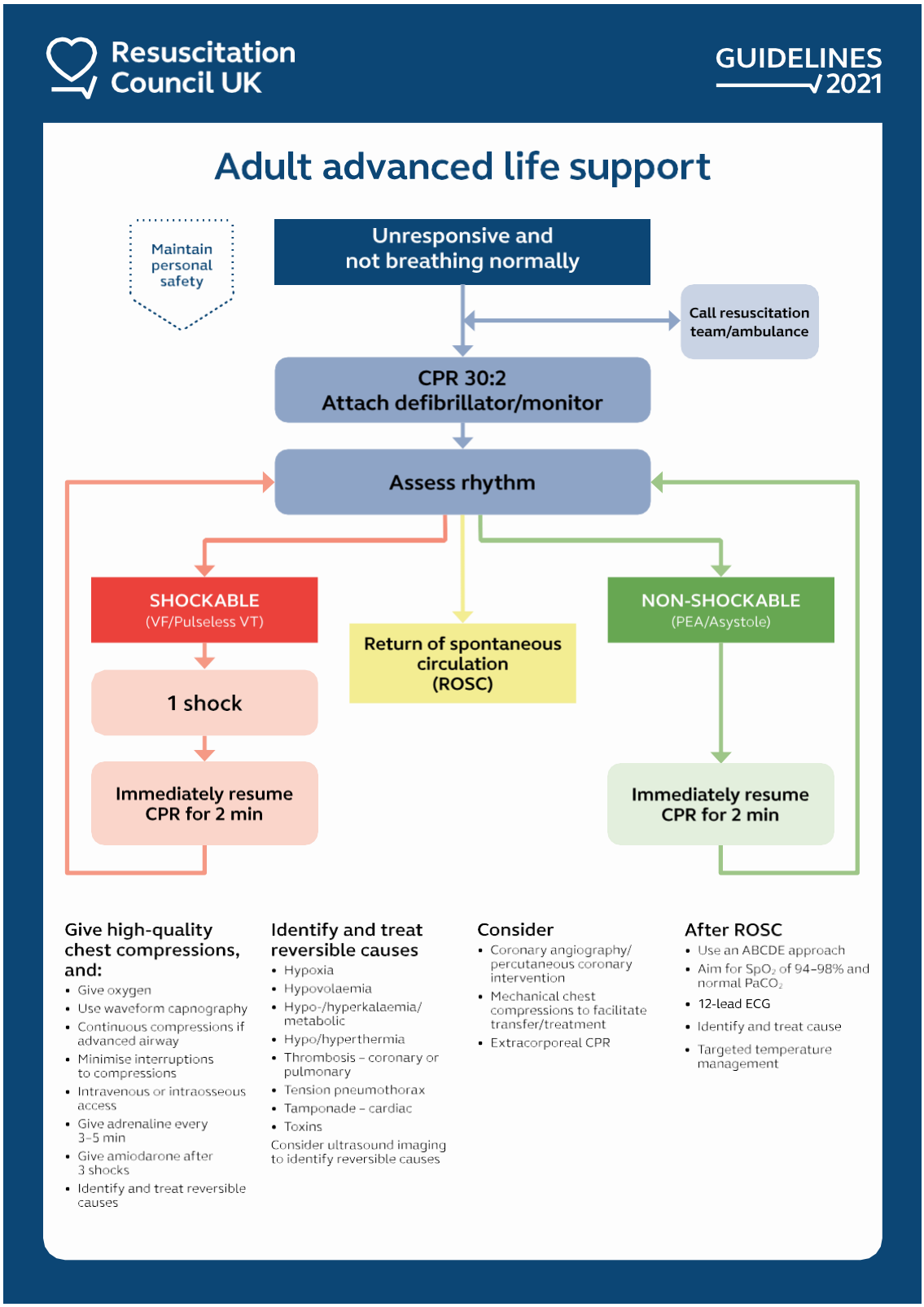
- Accurate documentation is essential in all cases of maternal collapse, whether or not resuscitation is successful.
- Allocate a scribe to provide contemporaneous notes. Scribe records must be filed in the maternal records.
- All cases of maternal collapse should generate a clinical incident form.
- All cases of amniotic fluid embolism, whether the maternity service user survived or not, should be reported by the identified Trust UKOSS contact to the AFE Register at UKOSS. See https://www.npeu.ox.ac.uk/ukoss/current-surveillance/amf

3.1.4 Debriefing

Debriefing is recommended for the maternity service user, their family and the staff involved in the event (please refer to the Debriefing guideline).

Figure 2: Resuscitation Council 2021 – Basic Life support algorithm.

Figure 3: Resuscitation Council (UK) Adult Advanced Life Support Algorithm 2021



3.2 Specific Conditions Leading to Collapse

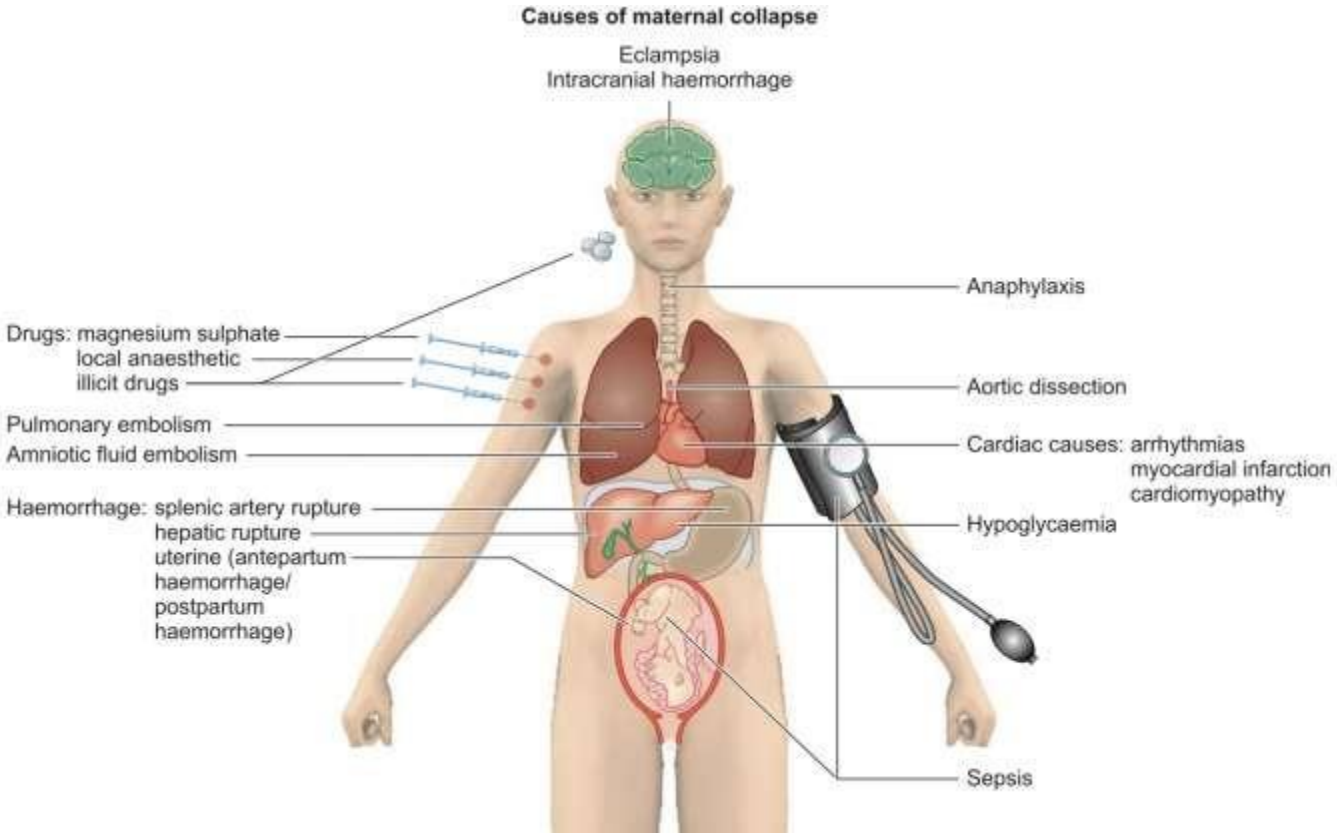


Figure 4: Causes of Maternal Collapse : RCOG GTG 56

See the appropriate trust guideline for management of the following conditions:

Sepsis
Major Obstetric Haemorrhage
Venous thromboembolism (Pulmonary)
Hypertension in pregnancy – including Eclampsia

3.3 Amniotic fluid Embolism

Amniotic fluid embolus (AFE) is a rare obstetric emergency which can present as a sudden and unexpected maternal collapse associated with hypotension, hypoxia and disseminated intravascular coagulation (DIC). It usually occurs during labour or within 30 minutes of birth. AFE affects 1 in 50,000 pregnancies and the mortality from the condition is approximately 16-30% (UKOSS, 2020).

AFE is thought to occur when amniotic fluid enters the maternal circulation, causing a massive anaphylactic-type reaction, with severe cardio-respiratory failure together with activation of platelets and consumption of the coagulation cascade. Most fatalities occur within 12 hours of presentation. Diagnosis is clinical, and management is supportive (oxygenation, inotropic cardiovascular support, blood transfusion and replacement of clotting factors). Maternal outcome is improved if the maternity service user has rapid access to an intensive care unit. Diagnosis is often confirmed post mortem with fetal squames in the lungs.

Risk factors for AFE include: advanced maternal age (over 35 yrs), multiple pregnancy, placenta praevia, induction of labour, operative delivery (assisted vaginal or Caesarean)

3.3.1 Presentation of AFE

Consider AFE in a labouring or recently delivered service user with no previously known cause for acute onset of symptoms as below:

- Acute hypotension / cardiac arrest
- Acute hypoxia
- Coagulopathy followed by haemorrhage (seen 65%)

Other features include preceding behavioural changes, significant agitation, respiratory distress, tonic-clonic seizures, fetal distress as seen with CTG (cardiotocographic) abnormalities prior to maternal collapse, uterine hypertonus and placenta abruption leading to massive haemorrhage.

Progression usually occurs in two phases.

In phase 1, vascular occlusion by debris or constriction leads to pulmonary hypertension and elevated right ventricular pressure causing hypoxia. This leads to left ventricular dysfunction and acute respiratory distress syndrome.

Phase 2 is coagulopathic, characterized by massive haemorrhage with uterine atony and disseminated intravascular coagulation (DIC). However, fatal consumptive coagulopathy may be the initial presentation.

3.3.2 Management of AFE

ABC approach management of collapse as per Section 3.1, above.

In addition, massive haemorrhage with coagulopathy should be anticipated. A fall in platelet count, abnormal clotting screen, or clinical features of DIC (bruising or bleeding from venipuncture sites, skin incisions or the genital tract) must be treated aggressively with blood products before results are available. Consultant Obstetrician and Anaesthetist should be present. Liaise with on-call Consultant Haematologist and Intensivist.

- Activate Major Obstetric Haemorrhage protocol
- X-Match and transfuse 4 units Red cells
- If bleeding ongoing following red cell transfusion, infuse fresh frozen plasma (FFP) at a dose of 12–15 ml/kg until coagulation results are known.
- If prothrombin time/activated partial thromboplastin time is more than 1.5 times normal and haemorrhage is ongoing, volumes of FFP in excess of 15 ml/kg are likely to be needed.
- Tranexamic acid 1 g IV should be given early, as per PPH guideline.
- Further blood product replacement including cryoprecipitate and platelets should be given guided by fibrinogen and platelet count results and multidisciplinary discussion, as per PPH guideline.
- Recombinant factor VII should only be used if coagulopathy cannot be corrected by blood component replacement as it has been associated with poorer outcome in maternity service users with AFE.
- Maternity service users with symptoms suspicious of amniotic fluid embolism should be transferred to ITU for central invasive monitoring as soon as possible to optimise survival.

  All cases of amniotic fluid embolism should be reported by the identified Trust UKOSS contact to the AFE Register at UKOSS.

3. 4 Anaphylaxis

Anaphylaxis is an acute life-threatening hypersensitivity reaction, leading to airway, breathing and circulatory changes which can precipitate maternal collapse. Available UK estimates suggest that approximately 1 in 1333 of the population of England has experienced anaphylaxis at some point in their lives. Risk of death is low <1%, however, increased in those with pre-existing asthma. When anaphylaxis is fatal, collapse and potential of death usually occurs very soon after contact with the trigger (typically fatal food reactions after 30–35 minutes; insect stings after 10–15 minutes; intravenous medication within five minutes).

3.4.1 Triggers for Anaphylaxis

Anaphylaxis can be immunologically mediated, non-immunologically mediated or idiopathic. Common allergens/triggers include foods (eg nuts), insect venoms, drugs (eg muscle relaxants, antibiotics, NSAIDS and aspirin) and latex. The immediate removal of potential causative agents is crucial in management.

3.4.2 Diagnosis of Anaphylaxis

A diagnosis of anaphylactic reaction is likely if a patient who is exposed to a trigger develops sudden symptoms including:

• Looking and feeling unwell, the patient may experience a "sense of impending doom".
• Airway problems – pharyngeal, laryngeal and tongue oedema
• Breathing difficulties - wheeze and stridor, hypoxia
• Circulatory collapse (hypotension)
• Skin / mucosal changes (flushing, urticaria, angioedema)
• Confusion and agitation
• Possible GI disturbance (diarrhoea/vomiting)

If untreated, these symptoms can lead to collapse and cardio-respiratory arrest. Most reactions occur over several minutes. Rarely, reactions may be slower in onset. An intravenous trigger will cause a more rapid onset of reaction than orally ingested triggers

Skin changes can present as a first feature in 80% of cases of anaphylaxis; without the presence of life-threatening airway, breathing or circulation problems they do not signify an anaphylactic reaction. Skin and mucosal changes can be subtle or absent in up to 20% of reactions.

3.4.3 Management of Anaphylaxis

ABC approach management of collapse as per Section 3.1, above.

In addition:

- Remove trigger if known eg stop drug/iv infusion immediately
- Give **intramuscular** Adrenaline 500mcg (0.5 ml) of 1:1000 solution into the middle third of the thigh. Further doses can be administered at 5-minute intervals if required.
- IV fluid bolus with 500-1000ml crystalloid stat
- Exposure to examine whole body for skin/mucosal changes.
- Consider cardiac monitoring/ECG/CXR/DOCC care
- Send bloods (as per 3.1) and additionally **mast cell tryptase level** (yellow-top bottle, see section 3.4.6 below)

3.4.4 IV Adrenaline for Anaphylaxis (specialist use only)

Adrenaline can be given intravenously as a bolus dose. Cardiac monitoring must be attached prior to administration. Titrate IV adrenaline in 50 microgram boluses according to response.

If repeated adrenaline doses are needed, start an IV adrenaline infusion, particularly if there is ongoing respiratory of cardiovascular issues despite 2 doses of IM adrenaline.
The pre-filled 10 mL syringe of 1:10,000 adrenaline contains 100 micrograms/ml. A dose of 50 micrograms is 0.5 mL, which is the smallest dose that can be given accurately. **Do not give the undiluted 1:1000 adrenaline concentration IV.**

3.4.5 Further Treatment for Anaphylaxis

- Corticosteroids are no longer advised for routine emergency treatment
  but can be used if concerns re secondary reaction inject hydrocortisone – 100 - 200mg IV slowly to avoid inducing further hypotension)
- Antihistamines (chlorphenamine 10 mg) are a third line treatment for an anaphylactic reaction. Non sedating oral anti-histamines maybe given after stabilizing treatment if there are persisting symptoms with urticaria or angioedema.
- Nebulised Salbutamol (2.5 mg in 2.5 ml of normal saline) if wheezing (nebuliser and Salbutamol on cardiac arrest trolley).
- Adults who have had emergency treatment for suspected anaphylaxis should be observed for at least 6–12 hours from the onset of symptoms, depending on their response to emergency treatment.

  Document the timing and acute clinical features of the suspected anaphylactic reaction.

  Document which drug/substance was thought to have precipitated the anaphylactic reaction. Report any dry allergy to the Medicines and Healthcare Products Regulatory Agency (MHRA) using the yellow card scheme.
- Arrange follow up with a specialist allergy service
- Complete a RADAR

3.4.6 Serum Mast Cell Tryptase Levels

- Can be used to confirm the diagnosis of anaphylaxis
- Take serum tryptase bloods in the yellow-topped bottle. Record the timing of each sample accurately.
- Send 3 samples: an initial sample as soon as possible after resuscitation started, at 1-2h from start of reaction and at 24 hours or later following reaction.
- Bleep the biochemist via the switchboard before taking the sample so that the lab is ready to receive it.

3.4.7 Considerations Prior to Discharge

Senior clinician review is needed prior to discharge to ensure no further investigations or prolonged observation is needed – this can be up to 24 hours if a recurrence of symptoms is suspected (biphasic reaction).

This caution is particularly applicable to:

- Severe reactions with slow onset caused by idiopathic anaphylaxis.
- Reactions in individuals with severe asthma or with a severe asthmatic component.
- Reactions with the possibility of continuing absorption of allergen.
- Patients with a previous history of biphasic reactions.
- Patients presenting in the evening or at night, or those who may not be able to respond to any deterioration.
- Patients in areas where access to emergency care is difficult.

After emergency treatment for suspected anaphylaxis, warn about possibility of recurrence and offer people (or, as appropriate, their parent and/or carer) an appropriate adrenaline injector as an interim measure before the specialist allergy service appointment. Patients must be given clear instructions to return to hospital if symptoms return.

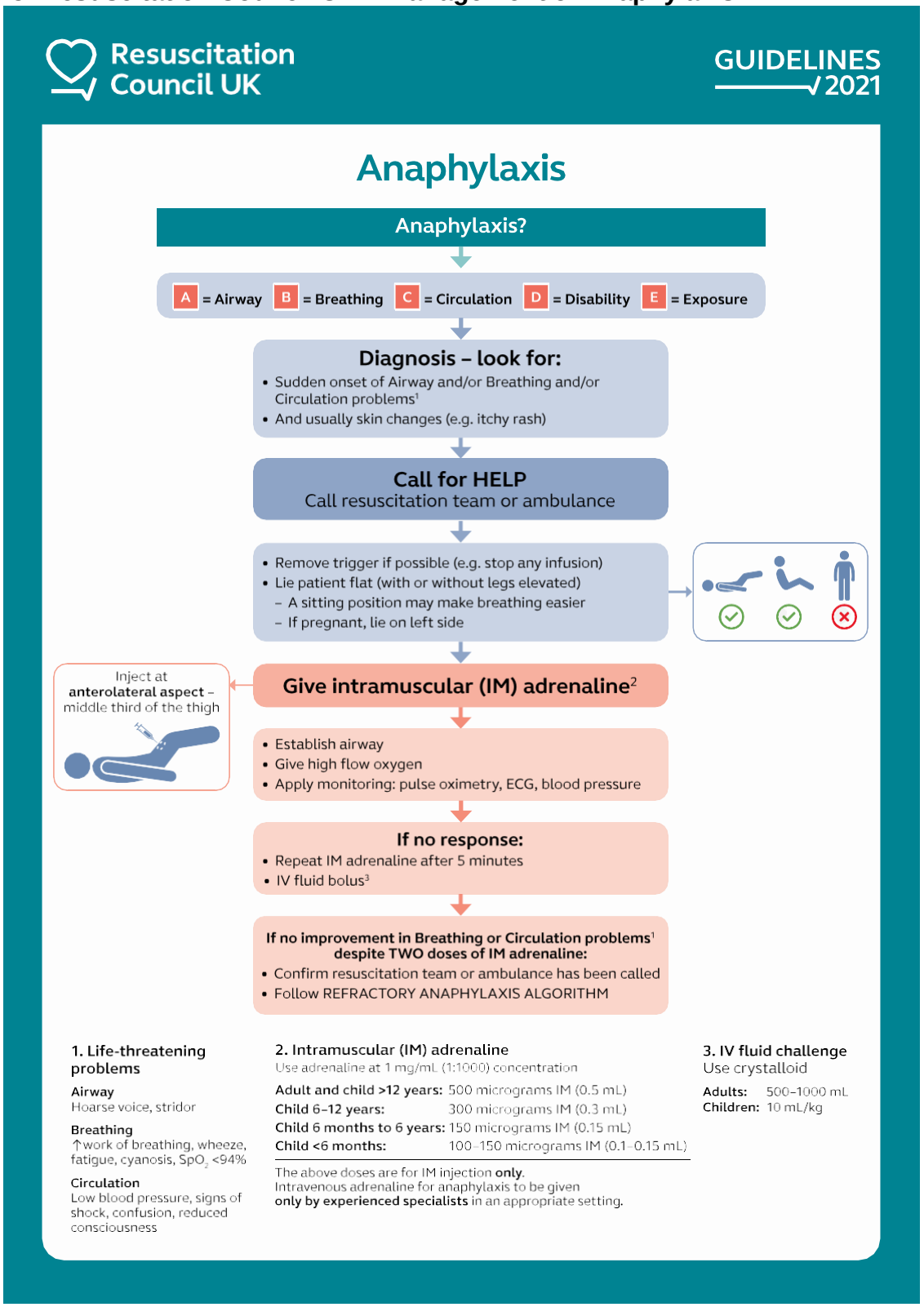
- Anti-histamines and oral steroid therapy for up to 3 days can be helpful and may decrease the chance of further reaction.
- Have a plan for follow-up including contact with the patients GP for discussion regarding specialist referral for Anaphylaxis.

3.4.8 Patient education for Anaphylaxis

- Patients need to know the allergen responsible and how to avoid it. If the allergen is a food, they need to know what products are likely to contain it, and all the names that can be used to describe it.
- Where possible they also need to know how to avoid situations that could expose them to the allergen.
- Patients need to be able to recognize the early symptoms of anaphylaxis, so that they can summon help quickly and prepare to use their emergency medication. Patients at risk are usually advised to carry their adrenaline auto-injector with them at all times.
- Patients and those close to them (i.e., close family, friends, and carers) should receive training in using the auto-injector and should practice regularly using a suitable training device, so that they will know what to do in an emergency

- Patients must always seek urgent medical assistance when experiencing anaphylaxis and after using an adrenaline auto-injector.
- Information about managing severe allergies can be obtained from their allergy specialist, general practitioner, other healthcare professional or the Anaphylaxis Campaign.

Figure 5: Resuscitation Council UK – Management of Anaphylaxis



3.5 Local Anaesthetic Toxicity

Local anaesthetic toxicity can present with a sudden alteration in mental status, loss of consciousness, seizures, cardiac arrhythmias and circulatory collapse following injection of local anaesthetic. Toxicity may arise some time after an initial injection.

Take an ABC approach management of collapse as per Section 3.1, above.

In addition:

- Stop injecting the local anaesthetic
- Treatment is with intravenous lipid emulsion (*Intralipid 20%*– see Figure 6 (below) for dose
- Manage arrhythmias using standard protocols

If suspected LA toxicity, please refer to the Assocation of Anaesthetists (AAGBI) Safety Guideline on "Management of severe local anaesthetic toxicity" (AGGBI, 2010) for further details and management.

Figure 6: Pharmacological Management of Local Anaesthetic Toxicity

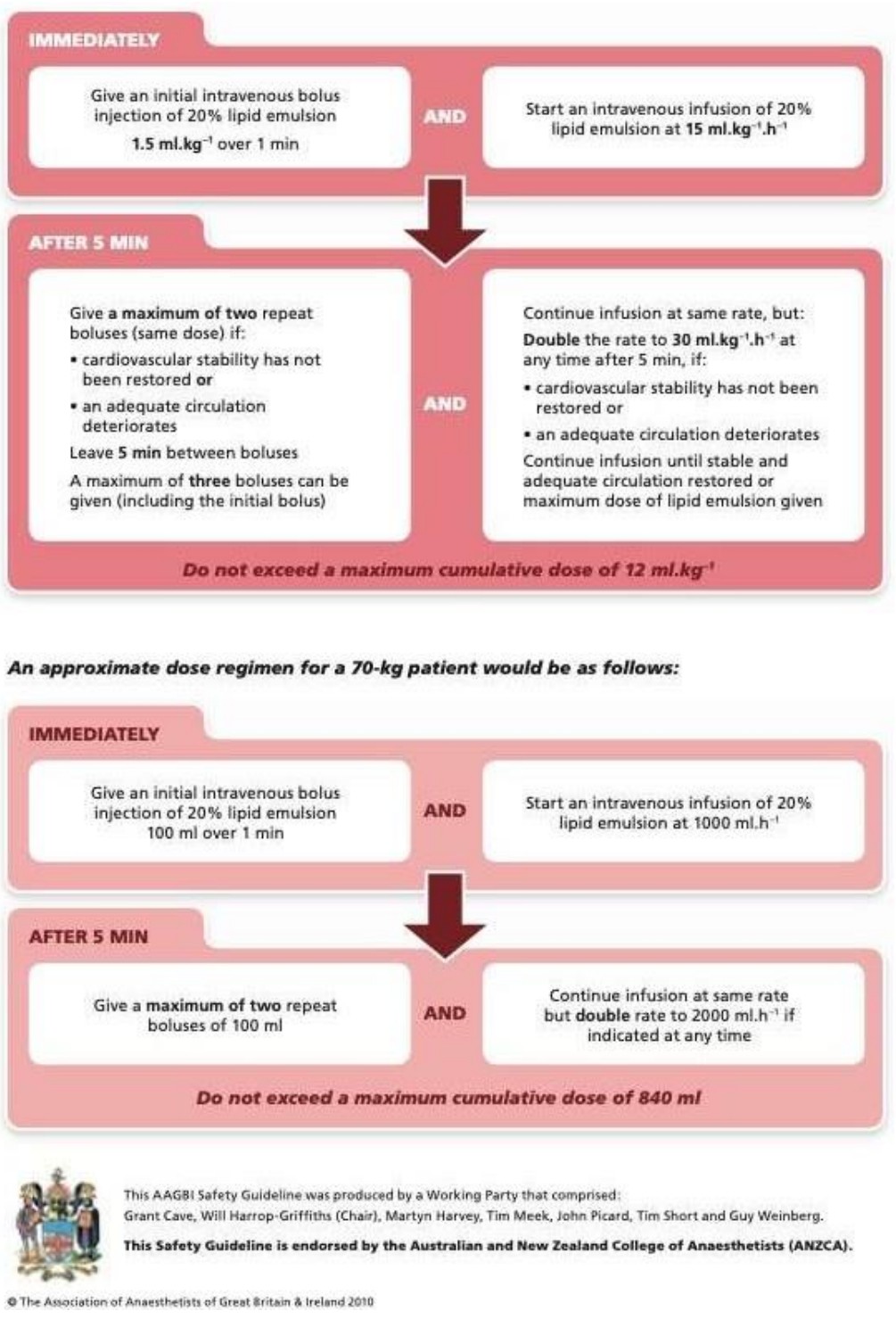


Figure taken from AAGBI Safety Guideline on "Management of Severe Local Anaesthetic Toxicity" (2010)

3.6 High/Total Spinal

Reassure the patient – remember that they may be fully aware.
• Plan to ensure hypnosis as soon as clinical situation permits.

Call for help and inform theatre team of the problem.

Treat airway and breathing:
• Give 100% oxygen.
• Chin lift / jaw thrust may suffice.
• Consider supraglottic airway or tracheal intubation (Box A).

Treat circulatory insufficiency:
• Give i.v. fluid by rapid infusion.
• Elevate the legs. Do not use head-down tilt.
• relieve aorto-caval compression.
• Bradycardia: give atropine or glycopyrrolate (Box B).
• Hypotension: give metaraminol, phenylephrine or ephedrine (Box B).
• CPR may be necessary to circulate drugs.

Consider expedited delivery of the baby (see PeriMortem CS above)

Consider other causes that may mimic signs and symptoms, including:
• Local anaesthetic toxicity.
• Embolism.
• Vasovagal event.
• Haemorrhage.

Plan ongoing care in a suitable location.

The guideline for management of high spinal can be found in the AAGBI Quick Reference link (updated May 2018)

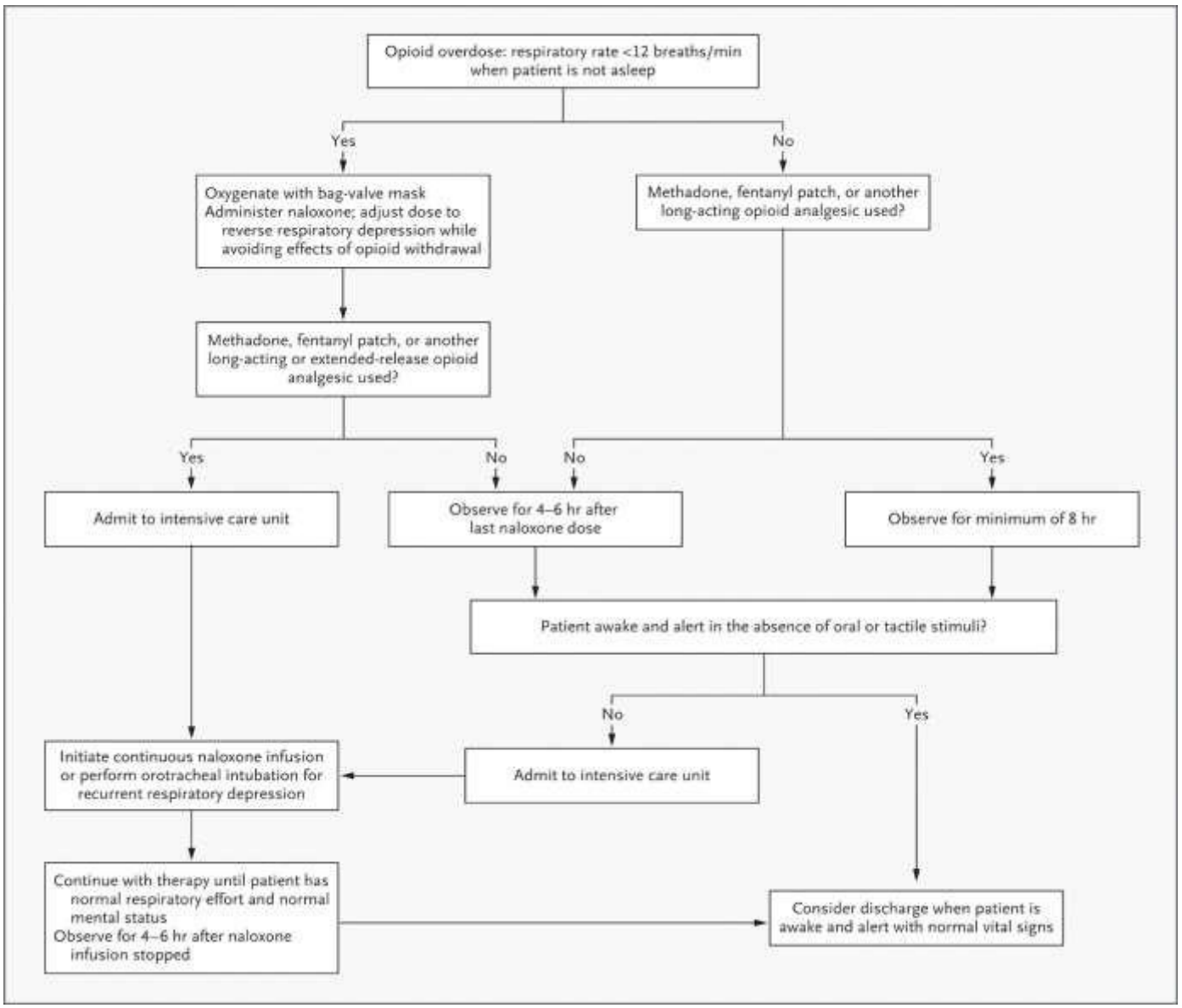
3.7 Opioid toxicity

Naloxone hydrochloride is used to treat known opioid overdose associated with respiratory depression, respiratory arrest, or to help diagnose suspected opioid overdose.

Naloxone is given intravenously, initially 400 micrograms, then 800 micrograms for up to 2 doses at 1 minute intervals.

If no response to preceding dose, the dose can be increased to 2 mg for 1 dose if still no response (4 mg dose may be required in seriously poisoned patients), then review diagnosis. Intravenous administration has more rapid onset of action, however doses may be given by intramuscular route if the intravenous route is not feasible (BNF).

Figure 7: Management of opioid overdose



3.8 Clinical Governance

Accurate documentation is essential in all cases of maternal collapse, whether or not resuscitation was successful.

All cases of maternal collapse an incident form (RADAR) must be filled.

All cases of maternal death should be reported to MBRRACE

All clinical maternity staff should attend skills and drills sessions at least annually on the basis of generic life support and the management of maternal collapse.

All staff as well, as the family and the maternity service user must be adequately debriefed after the event.

Please refer to the following guidelines as needed.

Milton Keynes University Hospital NHS Foundation Trust. *Cardiac disease in pregnancy.* MIDW/GL/16, Version 5, 2021.

Milton Keynes University Hospital NHS Foundation Trust. *Diabetes in pregnancy.* MIDW/GL/122. Version 5, 2017.

Milton Keynes University Hospital NHS Foundation Trust. *Epilepsy guideline.* MIDW/GL/69. Version 5, 2021.

Milton Keynes University Hospital NHS Foundation Trust. *Hypertensive disorders of pregnancy (including pre-eclampsia and eclampsia).* MIDW/GL/133. Version 2, 2015.

Milton Keynes University Hospital NHS Foundation Trust. *Maternal death.* MIDW/GL/68. Version 4, 2016.

Milton Keynes University Hospital NHS Foundation Trust. *Maternity Early Observation Warning System including Level 1 Pathway escalation.* MIDW/GL/151. Version 2.2, 2014.

Milton Keynes University Hospital NHS Foundation Trust. *Obstetric haemorrhage.* MIDW/GL/125. Version 3, 2018.

Milton Keynes University Hospital NHS Foundation Trust, *Sepsis Identification and Management in adults including Maternity and Neutropenic sepsis.* GENM/GL/99, Version 2 2018

Milton Keynes University Hospital NHS Foundation Trust. *Thromboembolic disease in pregnancy and the puerperium.* MIDW/GL/21. Version 5, 2015.

Milton Keynes University Hospital NHS Foundation Trust. *Thromboprophylaxis in pregnancy and puerperium.* MIDW/GL/152. Version 3, 2016.

Milton Keynes University Hospital NHS Foundation Trust. *Uterine inversion.* MIDW/GL/28. Version 5, 2018.

4.0 Statement of evidence/references

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Nolan, Jerry (ed) (2016) *Advanced life support.* 7th ed. London: Resuscitation Council (UK). ***Available in MKUH library at WD 456 RES***

Resuscitation Council (UK). *Adult advanced life support. Resuscitation Council (UK) Guidelines 2019.* Available from: https://www.resus.org.uk/resuscitation-guidelines/adult-advanced-life-support/ (accessed January 2022)

Resuscitation Council (UK). *The ABCDE approach.* Available from: https://www.resus.org.uk/resuscitation-guidelines/abcde-approach/ (accessed January 2022)

Royal College of Obstetricians and Gynaecologists (2019) *Maternal collapse in pregnancy and the puerperium. Green-top guideline No.56.* Available from: https://www.rcog.org.uk/en/guidelines-research-services/guidelines/gtg56/ (accessed Jan 2022)

Trulhar, A., et al. (2015) *European Resuscitation Council Guidelines for Resuscitation 2015: Section 4. Cardiac arrest in special circumstances*. Available from: https://ercguidelines.elsevierresource.com/european-resuscitation-council-guidelines-resuscitation-2015-section-4-cardiac-arrest-special/fulltext (accessed 12 November 2018)

5.0 Governance

5.1 Document review history

Version number	Review date	Reviewed by	Changes made
6	January 2022	L Mant; A Johansen-Bibby	Updated resuscitation guidelines, included anaphylaxis, and amniotic fluid embolism
5	02/2019		Updated: 3.9 Reference updated to include 3rd Edition 3.10 Specific conditions added 3.12 Updated with new algorithm 3.13 Updated with new algorithm
4			
3.11			Updated: Section added
3.7			Updated: The management of AFE is supportive i.e correction of fluid deficit, blood replacement and cardiopulmonary resuscitation.
3.6			Updated: In the absence of breathing despite a clear airway, chest compressions should be commenced immediately Compressions should be performed at a ratio of 30:2 ventilations.
3.6			Maternal resuscitation should follow the Resuscitation Council(UK) guideline using the standard A,B, C approach
3.5			Updated: Section added
3.4			Updated: Illicit drug overdose
3.4			Updated: Intravenous, administration of local anaesthetic agents/local anaesthetic toxicityl Removed: Accidental IV local anaesthetic/local anaesthetic toxicity
3.1			Removed: Septic shock

5.2 Consultation History

Stakeholders Name/Board	Area of Expertise	Date Sent	Date Received	Comments	Endorsed Yes/No
Natalie Lucas	Outpatient Matron	7/7/22	14/7/22	All staff neeed annual skills drill for maternal collapse and life support	Yes confirmed
Leanne Andrews	Guideline and Audit Midwife	14/7/22	14/7/22	No comments	N/a

Stakeholders Name/Board	Area of Expertise	Date Sent	Date Received	Comments	Endorsed Yes/No
Edward FitzGerald	Governance Lead	15/1/15	15/1/15	Yes	Yes
Lydia Stratton-Fry	Labour Ward Manager	15/1/15	29/1/15	Yes	Yes
Sophie Conneely	Midwife	15/1/15	25/2/15	Yes	Yes
Leanne Holliday	Midwife	15/1/15	25/2/15	Yes	Yes
Stephanie Brown	Pharmacist	15/1/15	28/1/15	Yes	No
All Women's Health Staff		15/1/15			
Jayne Plant	Library	15/10/2018	14/11/2018	Yes	Yes
Eleanor Tyagi	Anaesthetist	28/01/2019	29/01/2019	Yes	Yes
Consultants in Women's Health	Obstetrics	26/02/2019	01/03/2019	Yes	Yes
Junior Doctors in Women's health	Obstetrics	26/02/2019			
Midwives	Maternity	26/02/2019	01/03/2019	Yes	Yes
Julie Cooper	HoM	26/02/2019	26/02/2019	Yes	No

5.3 Audit and monitoring

Audit/Monitoring Criteria	Tool	Audit Lead	Frequency of Audit	Responsible Committee/Board
To monitor the clinical practice	Report via Radar	Doctors and midwives	On going	Labour Ward Forum
To monitor clinical practice	Skills and drills	Practice Development team	On going	Senior Team

5.4 Equality Impact Assessment

As part of its development, this Guideline and its impact on equality has been reviewed. The purpose of the assessment is to minimise and if possible remove any disproportionate impact on the grounds of race, gender, disability, age, sexual orientation, religion or belief, pregnancy and maternity, gender reassignment or marriage and civil partnership. No detriment was identified. Equality Impact assessments will show any future actions required to overcome any identified barriers or discriminatory practice.

Equality Impact Assessment			
Division	Women and children	Department	Maternity
Person completing the EqIA	Anja Johansen-Bibby	Contact No.	
Others involved:	Yes	Date of assessment:	Jun 2022
Existing policy/service	Yes	New policy/service	No

Will patients, carers, the public or staff be affected by the policy/service?	Yes
If staff, how many/which groups will be affected?	All clinical staff

Protected characteristic	Any impact?	Comments
Age	NO	Positive impact as the policy aims to recognise diversity, promote inclusion and fair treatment for patients and staff
Disability	NO	
Gender reassignment	NO	
Marriage and civil partnership	NO	
Pregnancy and maternity	yes	
Race	NO	
Religion or belief	NO	
Sex	NO	
Sexual orientation	NO	

What consultation method(s) have you carried out?
Circulation for comments, guideline review group
How are the changes/amendments to the policies/services communicated?
Guideline review Group minutes, Guideline monthly memo
What future actions need to be taken to overcome any barriers or discrimination?

What?	Who will lead this?	Date of completion	Resources needed
Review date of EqIA	Jun 2025		

Appendix 1: Maternal collapse/cardiac arrest proforma

Maternal collapse/cardiac arrest Proforma

2222 OBSTETRIC EMERGENCY: Time of call:…… 2222 CARDIAC ARREST: Time of call:……..
2222 NEONATAL EMERGENCY: Time of call:……..

Patient's name: ……MRN: ……. Drill: ☐ Yes ☐ No

Assigned Midwife:…….....Date and time of collapse: ……..

Pregnant: ☐ Yes ☐ No Gestation:… Known Risk factors:……

ABCDE	Procedure	Time	Comments
A AIRWAY	Patent (talking/not talking)		
	Bed flat/head of bed removed		
	Head tilt/chin lift/jaw thrust		
	Suction		
	Adjuncts (OPA/NPA)		
	O2 (15l via non-rebreathe bag)		
B BREATHING	Respiratory rate		
	SpO2% (target 94-98%)		
	Work of breathing		
	ABG		
	Ventilation; Observe for chest movement **In cardiac arrest;** 2 breaths, 1 second each **Ventilation only;** 1 breath every six seconds		
C CIRCULATION	Heart rate		
	BP		
	Capillary refill (<2seconds)		
	IV access X2 16g cannula		
	IV fluids		
	Urine (input/output)		
	Defib pads/ECG		
	Chest compressions (100 – 120 per min 30 compressions to 2 breaths		
D DISABILITY	ACVPU		
	Capillary blood glucose (CBG)		
	Left lateral/Uterine displacement		
	Check drug chart/drug history		
E EXPOSURE	Top to toe assessment		
	Repeat ABCDE		
	Maintain dignity		
	Temp		
	Peri-mortem C/S		

Maternal observations	TIME	TIME	TIME	TIME	TIME	TIME
RESPIRATIONS						
BP						
PULSE						
SpO2						
AVPU						
ABCDE						
Temp						
CRT						

Other actions	Time	Details	Performed by
Arterial blood gas			
Drugs			
Chest auscultation			
Chest X-ray			
Blood glucose			
IV Fluids			
Blood			

Staff in attendance	Names	Time arrived
Rapid response team		
Cardiac arrest team		
Senior Midwives		
Midwives		
Registrar		
SHO		
Anaesthetist		
ODP		
Paediatrician		
Consultant Obstetrician		
Scribe		
Medical registrar		
Haematologist/Biochemist		
Others (Please list)		

☐ **RADAR** completed by:…… Incident Number:……

☐ Document on ECare

Debrief: Staff ☐ Patient/family ☐