Mid Essex Hospital Services NHS

NHS Trust

MANAGEMENT OF RUPTURED UTERUS	CLINICAL GUIDELINES Register No: 04243 Status: Public

Developed in response to:	Intrapartum NICE Guidelines RCOG guideline
Contributes to CQC Outcome	9,12

Consulted With	Post/Committee/Group	Date
Anita Rao/ Alison Cuthbertson Chris Spencer Sam Brayshaw Alison Cuthbertson Paula Hollis Chris Berner Ros Bullen- Bell Wendy Patarou Sarah Moon Deborah Lepley	Clinical Director for Women's, Children's and Sexual Health Directorate Consultant for Obstetrics and Gynaecology Anaesthetic Consultant Head of Midwifery Lead Midwife Acute Inpatient Services Lead Midwife Clinical Governance Lead Midwife Community Services Labour Ward Team Leader Specialist Midwife for Guidelines and Audit Senior Librarian, Warner Library	May 2017
Professionally Approved By		
Anita Rao	Lead Consultant for Obstetrics & Gynaecology	May 2017

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Author/Contact for Information	Anita Dutta, Consultant Anaesthetist
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Related Trust Policies (to be read in conjunction with)	04071 Standard Infection Prevention 04072 Hand Hygiene 06036 Guideline for Maternity Record Keeping including Documentation in Handheld Records 07072 Management of a Patient Reporting an Antepartum Haemorrhage 04234 Management of Postpartum Haemorrhage 04252 Peripartum Collapse 07024 Emergency transport of blood and specimens in the event of major obstetric haemorrhage 09007 Guideline for the management of bladder care in pregnancy 04232 Guideline to assist medical and midwifery staff in the provision of high dependency care and arrangements for safe and timely transfer to ITU 09095 Guideline for the severely ill pregnant patient 09043 Administration of antibiotics in Maternity

Document History Review:

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1.0	Clinical Effectiveness Committee	
2.1	Judy Evans	December 2007
2.2	Sarah Moon – Front sheet, equality and diversity; audit and monitoring update	April 2010
3.0	Sarah Moon	April 2011
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5.0	Anita Dutta, Consultant Anaesthetist	11 July 2017

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1.0 Purpose

1.1 The purpose is to ensure that staff have the necessary information to be able to manage this rare but serious obstetric emergency.

1.2 Uterine rupture occurs at a frequency of 0.2% in women with previous caesarean (UKOSS). Overall rupture uterus incidence in UK is 2 in 10,000 maternities (UKOSS). The fifth CESDI Report (Confidential Enquiry into Sudden Death of Infancy) highlighted two key issues:

- The requirement for senior experienced involvement in antenatal and intrapartum management.
- There was a link between the use of prostaglandin and patients with a pre-existing uterine scar

2.0 Background

2.1 Uterine rupture is an acute obstetric emergency, which can result in fetal and/or maternal death. Uterine rupture occurs at a frequency of 0.2% in women with previous caesarean (UKOSS). Overall rupture uterus incidence in UK is 2 in 10,000 maternities (UKOSS). Uterine rupture can occur spontaneously in an unscarred uterus but is more likely to occur in women with previous uterine surgery e.g. caesarean section, hysterotomy, myomectomy, mid trimester uterine perforation. It commonly occurs in labour but can occur in late pregnancy.

2.2 CESDI made recommendations for the management of patients with a previous uterine scar. They reiterated that all staff involved in intrapartum care must be aware of the factors that can lead to uterine rupture.

3.0 Risk Factors

During pregnancy:

- Previous classical caesarean section
- Previous hysterotomy (very rare)
- Previous myomectomy
- Placenta accreta
- Motor vehicle accidents
- Müllerian anomalies of uterus
- Hysteroscopic metroplasty
- Difficult curettage for miscarriage

Rare causes described in primigravida women:

- Ehler–Danlos syndrome
- Chronic steroid use
- Use of cocaine

During labour:

- Previous caesarean section
- Previous myomectomy
- Grand multiparity
- Malpresentation: unrecognised brow, face and shoulder presentation
- Obstructed labour
- Prostaglandin and oxytocin augmentation in women with high parity and previous caesarean section
- Use of high doses of misoprostol in parous women
- Instrumental delivery (injudicious use of Kielland forceps)
- Assisted breech deliveries

Rare causes:

- Tumours obstructing the birth canal
- Pelvic deformity
- Post delivery
- Precipitate labour
- Manual removal of placenta
- Uterine manipulation (intrauterine balloon)
- Placenta accreta

5.0 Types of Rupture

5.1 **Complete / true rupture** – involves the full thickness of the uterine wall and pelvic peritoneum.

5.2 Incomplete **rupture / dehiscence / uterine window** – involves the myometrium but not the pelvic peritoneum.

6.0 Warning Signs

6.1 **Clinical features** - high fetal presenting part on vaginal palpation

6.1.1 Complete rupture

- Severe, constant abdominal pain
- Sudden cessation of uterine contractions
- Vaginal bleeding – may be severe
- Maternal tachycardia
- Hypotension – shock may be out disproportionate to vaginal bleeding
- Haematuria – bladder injury in 25% of cases of rupture
- Fetus may be palpable in the abdomen
- Severe fetal distress/ intrauterine death
- May complain of shoulder tip pain

6.2 **Incomplete rupture**

6.2.1 Constant abdominal pain

- Slowing or cessation of contractions
- Fetal distress
- Increased maternal pulse rate
- Possibly vaginal bleeding
- Gradual deterioration in maternal condition

7.0 Management of Ruptured Uterus
(Refer to Appendix A)
(Refer to the guideline entitled 'Peripartum Collapse' 04252)
(Refer to the guideline for the management of the severely ill pregnant patient (09095)

7.1 **Management -** dependent on the degree of maternal shock and fetal condition

7.2 Call **Code Red** to summon appropriate staff to deal with this obstetric emergency
(Refer to Appendix B)

7.3 Management is supportive and should follow an ABC approach:

- **AIRWAY:** check the airway is open, apply 100% oxygen, consider intubation if the patient is unconscious

- **BREATHING:** check the patient is breathing and oxygen is being given, if intubated ventilate with 100% oxygen

- **CIRCULATION:** check for a pulse, insert 2 large bore venflons (16G or above) take blood for cross match (4 to 6 units), FBC, U&E, LFTs & clotting screen. Administer rapid IV fluids such as hartmans or volplex in an initial bolus of 20ml/kg. Administer further fluids, blood and blood products as required. Administer inotropes as required.
(Refer to the guideline for 'Emergency transport of blood and specimens in the event of major obstetric haemorrhage'; register number 07024)

7.5 Preparation for immediate delivery or laparotomy if already delivered.

7.6 Surgical repair of damage (including bladder trauma) – ultimately hysterectomy may be necessary – decision made by Consultant Obstetrician and will be dependent on site and severity of the rupture, the extent of the bleeding and the ease of control.

7.7 Intraoperative and postoperative antibiotic therapy should be given as per protocol.
(Refer to the guideline entitled 'Administration of antibiotics in Maternity'; register number 09043)

7.8 Foley's catheter to remain in situ as indicated by surgeon/ hourly measurement with urometer initially.

7.9 Replacement of fluid loss as per haematological requirements.

7.10 Monitor vital signs as maternal condition dictates to include: blood pressure, pulse (attach pulse oximeter) respirations and temperature; to be recorded on the MEOWS chart. These observations should be undertaken every 5 minutes initially. Observe PV blood loss.

7.11 Assess the airway and apply high flow oxygen 15 litres per minute via a reservoir face mask.

7.12 Consider CVP – discussion with anaesthetic team to decide if needs transfer to ITU / HDU.

7.13 Check coagulation status and renal function.

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7.14 Commence an intravenous infusion of 1 litre of Hartmanns solution, titrate as necessary depending on cause for collapse (i.e. give rapidly for hypovolaemic / hypotensive patient but with caution in cases with raised blood pressure and suspected heart failure)
(Refer to the guideline entitled 'Peripartum Collapse' 04252)

7.15 Assess neurological status using CAVPU score or Glasgow coma scale if able.

7.16 Treat peri-arrest arrythmias.
(Refer to the guideline entitled 'Peripartum Collapse' 04252)

7.17 If the baby is alive, the head fully engaged and the cervix fully dilated, instrumental delivery may be carried out.

7.18 Document events on maternal collapse proforma and in the maternal notes. Counsel the patient, family and staff.
(Refer to Appendix C)

7.19 The delivery midwife should complete a risk event form and a 24 hour serious incident (SIRI) report should be completed by the designated senior midwife.

7.20 The Labour Ward Co-ordinator should inform the Maternity Risk Manager and Head of Midwifery regarding the SIRI.

8.0 Potential complications / Risk Management

8.1 Hysterectomy may be necessary – decision made by Consultant Obstetrician and will be dependent on site and severity of the rupture, the extent of the bleeding and the ease of control.

8.2 In the event that a laparotomy and hysterectomy is required, the obstetric registrar/ consultant on call should explain the procedures fully, outline any risks involved and obtain patient consent.

9.0 Counselling for Future Pregnancies

9.1 If tubal ligation was not performed at the time of laparotomy, explain the increased risk of rupture with subsequent pregnancies, and discuss the option of permanent contraception.

9.2 If the defect is confined to the lower segment the risk of rupture in a subsequent pregnancy is similar to that of someone with a previous caesarean section.

9.3 If there are extensive tears involving the upper segment, future pregnancy may be contraindicated.

9.4 Women with a history of uterine rupture should have a planned elective caesarean section (37 to 38 weeks' gestation) in their next pregnancy.

10.0 Staffing and Training

10.1 All midwifery and obstetric staff should attend yearly mandatory training which includes skills and drills training, including the management of PPH (post-partum haemorrhage), maternal resuscitation and early recognition of the ill patient.
(Refer to 'Mandatory training policy for Maternity Services (incorporating training needs analysis. Register number 09062)

10.2 All midwifery and obstetric staff are to ensure that their knowledge and skills are up-to date in order to complete their portfolio for appraisal.

11.0 Professional Midwifery Advocates

11.1 Professional Midwifery Advocates provide a mechanism of support and guidance to women and midwives. Professional Midwifery Advocates are experienced practising midwives who have undertaken further education in order to supervise midwifery services and to advise and support midwives and women in their care choices.

12.0 Infection Prevention

12.1 All staff should follow Trust guidelines on infection control by ensuring that they effectively 'decontaminate their hands' before and after each procedure.

12.2 All staff should ensure that they follow Trust guidelines on infection prevention. All invasive devices must be inserted and cared for using High Impact Intervention guidelines to reduce the risk of infection and deliver safe care. This care should be recorded in the Saving Lives High Impact Intervention Monitoring Tool Paperwork (Medical Devices).

13.0 Audit and Monitoring

13.1 Audit of compliance with this guideline will be considered on an annual audit basis in accordance with the Clinical Audit Strategy and Policy (register number 08076), the Corporate Clinical Audit and Quality Improvement Project Plan and the Maternity annual audit work plan; to encompass national and local audit and clinical governance identifying key harm themes. The Women's and Children's Clinical Audit Group will identify a lead for the audit.

13.2 The findings of the audit will be reported to and approved by the Multi-disciplinary Risk Management Group (MRMG) and an action plan with named leads and timescales will be developed to address any identified deficiencies. Performance against the action plan will be monitored by this group at subsequent meetings.

13.3 The audit report will be reported to the monthly Directorate Governance

Meeting (DGM) and significant concerns relating to compliance will be entered on the local Risk Assurance Framework.

13.4 Key findings and learning points from the audit will be submitted to the Patient Safety Group within the integrated learning report.

13.5 Key findings and learning points will be disseminated to relevant staff.

14.0 Guideline Management

14.1 As an integral part of the knowledge, skills framework, staff are appraised annually to ensure competency in computer skills and the ability to access the current approved guidelines via the Trust's intranet site.

14.2 Quarterly memos are sent to line managers to disseminate to their staff the most currently approved guidelines available via the intranet and clinical guideline folders, located in each designated clinical area.

14.3 Guideline monitors have been nominated to each clinical area to ensure a system whereby obsolete guidelines are archived and newly approved guidelines are now downloaded from the intranet and filed appropriately in the guideline folders. 'Spot checks' are performed on all clinical guidelines quarterly.

14.4 Quarterly Clinical Practices group meetings are held to discuss 'guidelines'. During this meeting the practice development midwife can highlight any areas for future training needs will be met using methods such as 'workshops' or to be included in future 'skills and drills' mandatory training sessions.

15.0 Communication

15.1 A quarterly 'maternity newsletter' is issued to all staff to highlight key changes in clinical practice to include a list of newly approved guidelines for staff to acknowledge and familiarise themselves with and practice accordingly. Midwives that are on maternity leave or 'bank' staff have letters sent to their home address to update them on current clinical changes.

15.2 Approved guidelines are published monthly in the Trust's Staff Focus that is sent via email to all staff.

15.3 Approved guidelines will be disseminated to appropriate staff quarterly via email.

15.4 Regular memos are posted on the guideline and audit notice boards in each clinical area to notify staff of the latest revised guidelines and how to access guidelines via the intranet or clinical guideline folders.

16.0 References

Managing Obstetric Emergencies and Trauma 2003 RCOG Press

Nursing Midwifery Council (2006) Guidelines for Record Keeping; NMC: London

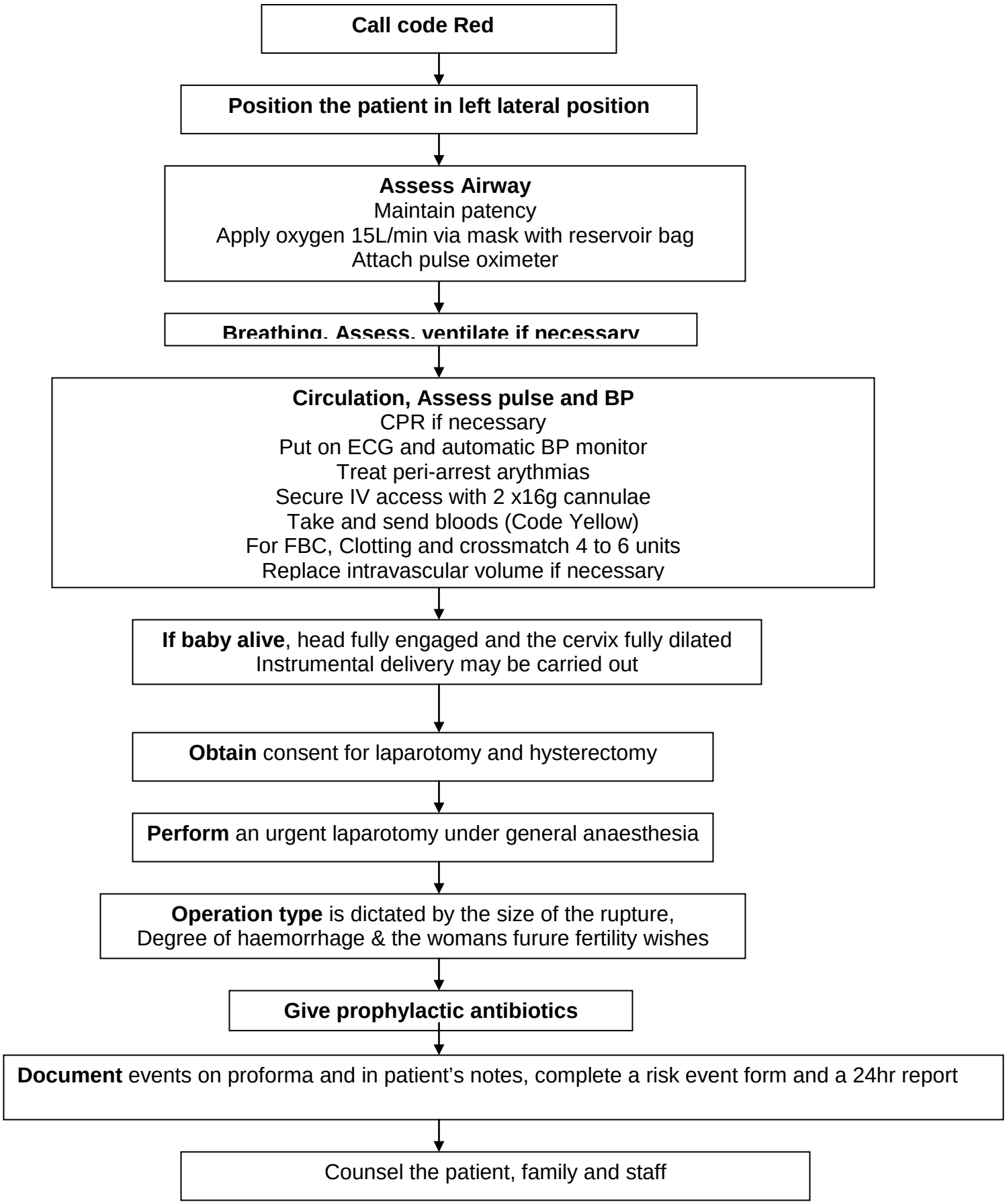
Sheiner E, Levy A, Katz M, Mazor M (2003) Uterine rupture: risk factors and pregnancy outcome. Am J Obstet Gynecol; 189:1042–6.

Green-top Guideline No. 45 February (2007) Birth after previous caesarean section

SA Maternal & Neonatal Clinical Network : 978-1-74243-169-7 :

Appendix A

Management Flowchart for Suspected Uterine Rupture



Mid Essex Hospital Services NHS Trust
Women's, Children's and Sexual Health Directorate

CODE RED

There are two types of emergencies (code RED) that require urgent 'crash call' responses using the new 4444 emergency call number.

Initiating an emergency

- Co-ordinator/senior staff member to initiate code
- Dial 4444
- Specify code **RED**
  (Refer to below criteria)
- Give location to switchboard (i.e. maternity obstetric theatre/delivery room)

Code RED for obstetric emergencies

- Grade 1 emergency section
- Major/ massive haemorrhage
- Maternal fitting

Code RED switchboard will fast bleep the following:

- Labour ward co-ordinator (#6555 2017)
- On call obstetric registrar
- On call obstetric SHO
- On call anaesthetist
- On call anaesthetic assistant
- On call paediatric registrar
- On call paediatric SHO
- Theatre scrub team

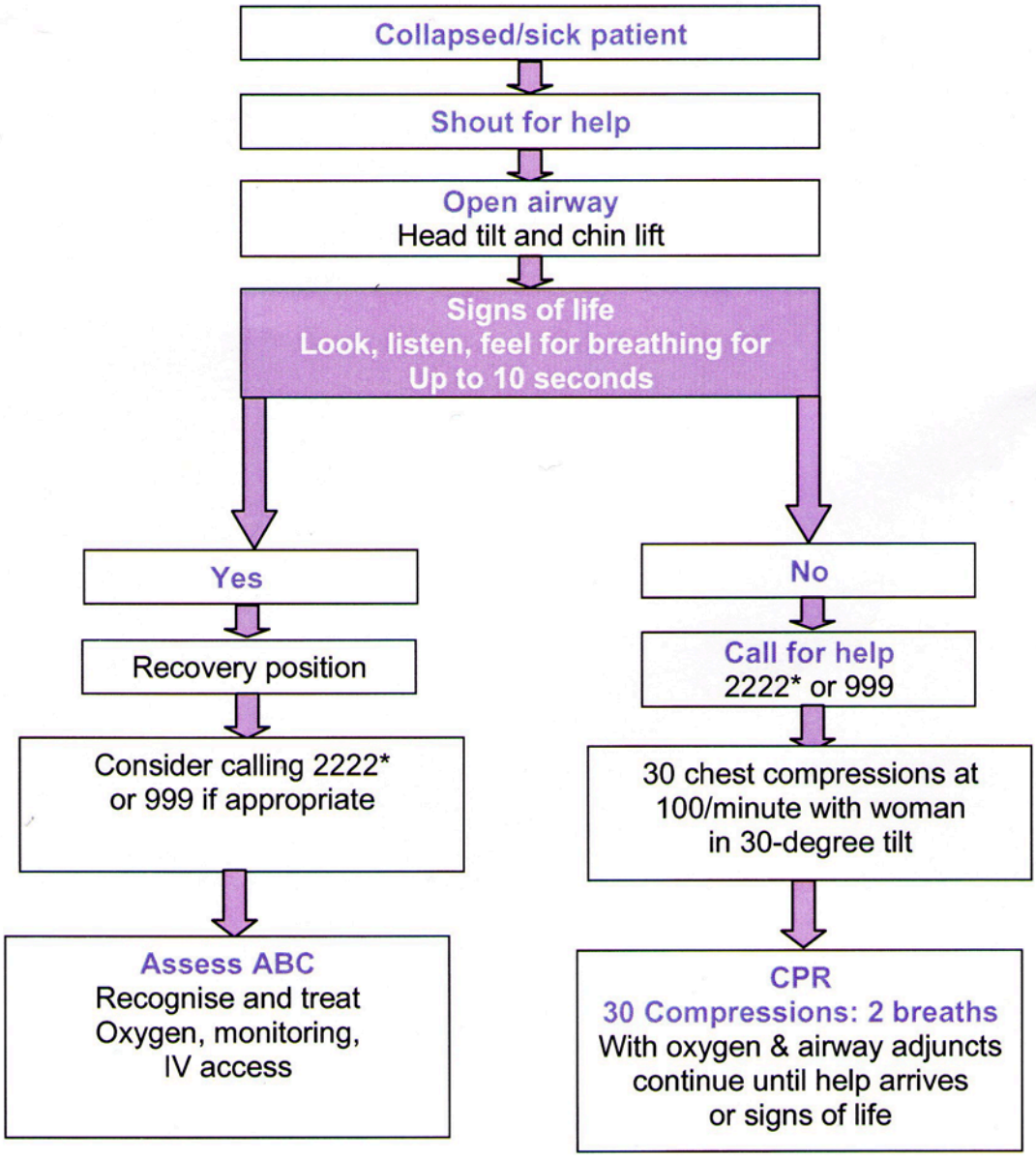
****** In the event of a cardiac arrest you will still need to dial 2222******

MANAGEMENT OF MATERNAL COLLAPSE

Acute Collapse

Sudden unexpected maternal collapse before, during or after delivery constitutes a medical emergency. When this occurs the flow chart 'Basic Life Support and Maternal Collapse' must be followed.

Basic life support and maternal collapse



* In hospital, state: 'maternal cardiac arrest'