Cheshire and Wirral Partnership
NHS Foundation Trust

Document level: Trustwide (TW)
Code: SOP24
Issue number: 1

Medical Emergencies and CPR

Lead executive	Medical Director - Compliance, Quality & Assurance
Authors details	CWP Physical Health and Resuscitation Lead - 01244 385180

Type of document	Standard Operating Procedure
Target audience	All clinical staff
Document purpose	The purpose of this document is to give staff the information required to recognise the signs and symptoms of a medical emergency and respond and treat appropriately to avoid respiratory / cardiac arrest

Approving meeting	Clinical Practice & Standards Sub Committee	Date 25-Jun-20
Implementation date	25-Jun-20	

CWP documents to be read in conjunction with	
CP24	Cardiopulmonary Resuscitation (CPR) Policy
CP30	Do Not Attempt Cardiopulmonary resuscitation (DNACPR)
GR1	Incident management and reporting Policy
CP59	Medical Devices and Equipment Policy
CP35	Physical Health Pathway and Policy
SOP3	Physical Observation assessment and the management of altered levels of consciousness (Including NEWS 2, ACVPU and GCS
CP50	Administration and Use of Oxygen Policy

Document change history	
What is different?	This is a new document
Appendices / electronic forms	
What is the impact of change?	This policy will link into CP24 Cardiopulmonary Resuscitation policy and provides staff with the knowledge and support to recognise and respond to medical emergencies

Training requirements	Training requirements for this policy are in accordance with the CWP Training Needs Analysis (TNA) with Education CWP.

Document consultation	
Clinical Services	Clinical Practice & Standards Sub-Committee, Physical Health Services
Corporate services	Safe Services
External agencies	N/A

Financial resource implications	None

External references
1. Epilepsies: diagnosis and management - https://www.nice.org.uk/guidance/cg137
2. The British Thoracic Society - https://www.brit-thoracic.org.uk/document-library/clinical-

information/asthma/btssign-asthma-guideline-2014/

Equality Impact Assessment (EIA) - Initial assessment	Yes/No	Comments
Does this document affect one group less or more favourably than another on the basis of:		
- Race	No	
- Ethnic origins (including gypsies and travellers)	No	
- Nationality	No	
- Gender	No	
- Culture	No	
- Religion or belief	No	
- Sexual orientation including lesbian, gay and bisexual people	No	
- Age	No	
- Disability - learning disabilities, physical disability, sensory impairment and mental health problems	No	
Is there any evidence that some groups are affected differently?	No	
If you have identified potential discrimination, are there any exceptions valid, legal and/or justifiable?		
Select		
Is the impact of the document likely to be negative? - If so can the impact be avoided? - What alternatives are there to achieving the document without the impact? - Can we reduce the impact by taking different action?	No No No No	
Where an adverse or negative impact on equality group(s) has been identified during the initial screening process a full EIA assessment should be conducted. If you have identified a potential discriminatory impact of this procedural document, please refer it to the human resource department together with any suggestions as to the action required to avoid / reduce this impact. For advice in respect of answering the above questions, please contact the human resource department.		
Was a full impact assessment required?	No	
What is the level of impact?	Low	

Contents

1. Introduction

This Medical Emergency standard operating procedure fully supports the recommendations for Standards of Clinical practice and training in cardiopulmonary resuscitation published by the Resuscitation Council (UK) (2015).

The purpose of the SOP is to provide direction and guidance for the planning and implementation of a high-quality and robust resuscitation training programme, including the recognition of patient deterioration for all Cheshire and Wirral Partnership NHS Foundation Trust (CWP) staff. Also to ensure where resuscitation would not be appropriate for the patient that guidance is in place for trust staff to follow, this may involve a Do Not Attempt Resuscitation (DNAR). When CWP employees are involved in making decisions regarding Resuscitation and DNAR orders for patients in non-inpatient or health settings, they are expected to refer to and adopt the relevant policy for that relevant local health economy provider.

This SOP incorporates a number of medical emergencies including monitoring and treatment and the tools to recognise deterioration and act accordingly thus avoiding both respiratory and cardiac arrest

2. Definitions

Medical Emergency - refers to any situation where an individual's physical health has deteriorated and requires urgent intervention to prevent further deterioration or cardiac arrest**.**

Cardiac arrest - is defined as the abrupt cessation of cardiac function that is potentially reversible.

Respiratory arrest - is a sudden unexpected cessation of breathing producing similar signs although the arterial pulses are still present.

National Early Warning Score (NEWS), Paediatric Early Warning Score (PEWS) and Pregnancy Early Warning Score - are validated bedside "track and trigger" tools used to assess the severity of a patients' physical condition by promoting early recognition of potential critical changes in vital signs.

Cardiopulmonary resuscitation (CPR) - is an attempt to revive the patient whose heartbeat and breathing has effectively stopped by applying chest compressions effectively and artificial respirations.

Respiratory Arrest - is the cessation of spontaneous breathing.

Resuscitation - is the attempt which is made to revive a person who is in cardiac or respiratory arrest (and appears to be dead).

AED - Automated External Defibrillator

Basic Life Support (BLS) - implies that no equipment is required to give cardio-respiratory resuscitation, other than a protective device to allow the responder to give ventilations without the risk of infection transmission. BLS training includes the management of choking.

Immediate Life Support (ILS) skills - includes basic life support, airway management and safe defibrillation (manual or automated external defibrillators) A crash bag or trolley including AED, bag value mask, oxygen, cannulas, fluids, suction and first line medication should be available within 3 minutes in healthcare settings where rapid tranquilization, physical intervention and seclusion might be used. This equipment should be maintained and checked weekly.

Advanced Life Support (ALS) - is the effective management of cardio respiratory arrest or peri-arrest situations by a senior member of the critical care multidisciplinary team until transfer to a critical care area is possible. It is unlikely that this is provided outside of any acute general hospital.

Paediatric - An infant is a child under 1 year of age and/or a child is between 1 year and puberty.

3. Early warning systems in place for the recognition of patients at risk of Cardiorespiratory arrest (Including Positional Asphyxiation)

Signs and Symptoms of cardiac arrest:

- Unconscious;
- Unresponsive;
- Not breathing normally (agonal breathing, gasping or respirations of less than 2 in 10 seconds are abnormal respiratory patterns and will not sustain life).

At this point emergency help is required Ring 999 (in all settings). Commence immediate cardio-respiratory resuscitation and Defibrillation if appropriately trained).

Signs and symptoms of a heart attack:

- Persistent vice-like central pain often spreading to the jaw and down one or both arms;
- Breathlessness but still breathing;
- Discomfort occurring high in the abdomen, which may feel similar to severe indigestion;
- Collapse often without warning;
- Sudden faintness or dizziness;
- Patient feels a sense of impending doom;
- Ashen skin and blueness at the lips;
- A rapid weak or irregular pulse;
- Profuse sweating;
- Extreme gasping for air.

Immediate actions if you suspect a heart attack:

- Make the patient as comfortable as possible to ease the strain on their heart. A half-sitting position with their head and shoulders supported and their knees bent is often best. Place cushions behind and under casualty knees.
- Call 999 for emergency Paramedics firstly, tell ambulance control that you suspect a heart attack and then call 2222 and ask the operator to bleep the on call medic and nursing Bleep holder and ring the patient's doctor if they ask you to.
- Assist the patient to take one full dose aspirin tablet (300mg in total). Advise them to chew it slowly (only if prescribed).
- If the patient has angina medication such as tablets or a pump-action or aerosol spray (GTN) let them administer it; help them if necessary. Encourage them to rest.
- Monitor and record vital signs – level of response breathing and pulse – while waiting for help to arrive.
- Avoid undue stress by staying calm.

4. The ABCDE Approach to a deteriorating patient

General Principles:
Follow the Airway, Breathing, Circulation, Disability, and Exposure approach (ABCDE) to assess and treat the patient.

- Treat life-threatening problems as they are identified before moving to the next part of the assessment.
- Continually re-assess starting with Airway if there is further deterioration.
- Assess the effects of any treatment given.
- Recognise when you need extra help and call for help early 2222 (9)999
- Use all members of your team appropriately, allows you to do several things at once, e.g. collect emergency drugs and equipment, dial (9)999.
- Organise your team and communicate effectively. Use SBAR principles
- The aims of initial treatment are to keep the patient alive, achieve some clinical improvement and buy time for further treatment whilst waiting for help.
- Remember - it can take a few minutes for treatment to work.
- The ABCDE approach can be used irrespective of your training and experience in clinical assessment or treatment. Individual experience and training will determine which treatments you can give.
- Often only simple measures such as laying the patient down or giving oxygen are needed.

First steps
In an emergency, stay calm. Ensure that you and your colleagues are safe.
Look at the patient generally to see if they 'look unwell'.
In an awake patient ask, "How are you?" If the patient is unresponsive, shake them and ask, "Are you all right?" If they respond normally, they have a clear airway, are breathing and have brain perfusion. If they speak only in short sentences, they may have breathing problems.
Failure of the patient to respond suggests that that are unwell. If they are not breathing and have no signs of life, start CPR according to current resuscitation guidelines

Airway (A) - Airway obstruction is an emergency.
Look for the signs of airway obstruction:
Airway obstruction causes 'paradoxical' chest and abdominal movements ('see-saw' respirations) and the use of the accessory muscles of respiration e.g., neck muscles. Central cyanosis (blue lips and tongue) is a late sign of airway obstruction. In complete airway obstruction, there are no breath sounds at the mouth or nose.

Expiratory 'wheeze' suggests obstruction of the lower airways, which tend to collapse and obstruct during expiration. This is most commonly seen in patients with asthma or chronic obstructive pulmonary disease (COPD).

Gurgling suggests there is liquid or semi-solid foreign material in the upper airway – suction should be attempted.

Snoring arises when the pharynx ls partially occluded by the tongue or palate.
Airway obstruction is an emergency - In most cases, only simple methods of airway clearance are needed Airway opening manoeuvres - **head tilt/ chin lift or jaw thrust.**
Turn the head to one side and remove visible foreign bodies, debris or blood from the airway (use suction or Magill's forceps as necessary).

Consider simple airway adjuncts e.g. Oropharyngeal airway (Guedel Airway).

Give oxygen initially at a high inspired concentration – 100% non-rebreather mask Ensure that the oxygen flow is sufficient (15 litres per minute) to prevent collapse of the reservoir during Inspiration.
Monitor all observations and document on the MEWS chart.

Breathing (B)
During the immediate assessment of breathing, it is vital to diagnose and treat immediately life-threatening breathing problems, e.g. Acute / severe asthma.
Look, listen and feel for the general signs of respiratory distress: sweating, central cyanosis (blue lips and tongue), use of the accessory muscles of respiration (muscles of the neck) and abdominal breathing.

Count the respiratory rate. The normal adult rate is 12 to 20 breaths per minute and a child's rate is between 20 and 30 breaths per minute. A high, or increasing, respiratory rate is a marker of illness and a warning that the patient may deteriorate and further medical help is needed.
Assess the depth of each breath, the pattern (rhythm) of respiration and whether chest expansion is equal and normal on both sides.

Listen to the patient's breath sounds a short distance from their face, gurgling airway noises Indicate airway secretions, usually because the patient cannot cough or take a deep breath. **Stridor** or wheeze suggests partial, but important, airway obstruction.

If the patient's depth or rate of breathing is inadequate, or you cannot detect any breathing, use an Ambu bag / bag and mask. (if trained) or pocket mask ventilation with supplemental oxygen while calling urgently for an ambulance.

Circulation (C)
Simple faints or vasovagal episodes are the most likely cause of circulation problems. These will usually respond to laying the patient flat and if necessary raising the legs. The systematic ABCDE approach to all patients will ensure that other causes are not missed.

Look at the colour of the hands and fingers: are they blue, pink, pale or mottled?
Assess the limb temperature by feeling the patient's hands: are they cool or warm?
Measure the capillary refill time. Apply pressure for six seconds on a fingertip held at heart level (or just above) with enough pressure to cause blanching. Time howling it takes for the skin to return to the colour of the surrounding skin after releasing the pressure, the normal refill time is less than two seconds. A prolonged time suggests poor peripheral perfusion. Other factors (e.g. Cold surroundings, old age) can also prolong the capillary refill time.

Count the patient's pulse rate. It may be easier to feel a central pulse (i.e., carotid pulse} than the radial pulse.

Weak pulses in a patient with a decreased conscious level and slow capillary refill time suggest a low blood pressure. Laying the patient down and raising the legs may be helpful. In patients who do not respond to simple measures urgent help is needed and an ambulance should be summoned.
Cardiac chest pain typically presents as a heaviness, tightness or Indigestion like discomfort in the chest. The pain or discomfort often radiates into the neck or throat, into one or both arms (more commonly the left) and into the back or stomach area. Some patients experience the discomfort in one of these areas more than in the chest. Sometimes pain may be accompanied by belching, which can be misinterpreted as evidence of indigestion as the cause. The patient may have known stable angina and carry their own glyceryl trinitrate (GTN} spray or tablets. If they take these, the episode may resolve. If the patient has sustained chest pain, give GTN spray if the patient has not already taken some. The patient may feel better and should be encouraged to sit upright if possible. Give a single dose of aspirin and consider the use of oxygen.

Disability (D)
Common causes of unconsciousness include profound hypoxia, hypercapnia (raised carbon dioxide levels), cerebral hypo perfusion (low blood pressure), or the recent administration of sedatives or analgesic drugs.

Review and treat the ABCs: exclude hypoxia and low blood pressure.

Check the patient's drug record for reversible drug-induced causes of depressed consciousness.
Examine the pupils (size, equality and reaction to light).
Make a rapid initial assessment of the patient's conscious level using the **AVPU** method:

Alert, responds to **V**ocal stimuli, responds to **P**ainful stimuli or **U**nresponsive to all stimuli.

Measure the blood glucose to exclude hypoglycaemia, using a glucose meter
If below 3.0 mmols per litre give the patient a glucose containing drink to raise the blood sugar or glucose by other means
Consider using the recovery position if their airway is not protected in unconscious patients.

Exposure / Environment / Examination (E)
To assess and treat the patient properly loosening or removal of some of the patient's clothes may be necessary. Respect the patient's dignity and minimise heat loss. This will allow you to see any rashes (e.g., anaphylaxis) or perform procedures (e.g., defibrillation).
Look in the patients notes for any further information
Are there any clues in the environments e.g. cause of the accident, trip hazard. Not been eating food etc.

5. Cardiopulmonary resuscitation and the bariatric patient

CWP staff must ensure suitable equipment is available when dealing with these bariatric patients and that they are trained in its use. This additional guidance must be taken into account to provide safer handling and effective CPR when a bariatric patient has a cardiac arrest.

Airway management and ventilation
Airway manoeuvres and maintaining an adequate airway can be difficult due to the increased size of the head and neck and glottis oedema.

Bariatric patients have a higher risk of regurgitation and aspiration. Inflating the lungs during ventilation can be harder due to the patient's body shape, tissue mass, and because they are lying flat. Sitting the patient up slightly can make airway manoeuvres and ventilation easier but this will make chest compressions more difficult. Identifying chest movement can also be difficult. Adequate ventilation often requires early Tracheal intubation by an individual who is already competent in this skill.

Chest compressions
Identifying landmarks for chest compressions can be difficult. It is important that the rescuer maintains a stable base and minimises the risk of extending their reach when giving compressions.
Chest compression quality may be compromised because of the increased physical effort required to achieve the full compression depth of 5 - 6 cm (for an adult) at a rate of 100 -120 per minute. Adequate staff must be available to rotate rescuers every two minutes, or sooner, to reduce fatigue and ensure effective chest compressions.

Transferring and handling the bariatric patient
If the patient is on the floor with restricted access and has to be moved, use a bariatric sliding sheet with extension straps. When transferring the patient following resuscitation, the hoist and associated sling must be suitable for the bariatric patient's body shape and weight.
Consider the hoist and sling safe working load, wider leg opening, and sling shape in relationship to the patient's body shape and tissue mass.

The use of hoists with stretcher attachments tends not to be appropriate for bariatric patients as the stretcher attachments may not be wide enough or have a suitable safe working load to accommodate the patient. Bariatric patients should be cared for on an appropriate electrically operated bed.

Please note that manual lifts are not recommended with bariatric patients.

6. Signs and symptoms of Opiate overdose:

- Nausea and vomiting.
- Reduced heart rate.
- Pin point pupils (Not universal especially in children).
- Drowsiness.
- Cold clammy bluish skin.
- Bradycardia and hypertensive.
- Respiratory depression/apnoea with a pulse.

Large Dose:

- Breathlessness.
- Respiratory Depression / Apnoea.
- Pulmonary Oedema.
- Convulsions due to hypoxia.
- Respiratory arrest with pulse.
- Death.

Action:

- Contact medical assistance as a matter of urgency i.e. (9)999 / 2222 and ask for the on call medic and nursing bleep to be contacted;
- Ensure patient has their physical observations monitored (NEWS 2);
- Ensure emergency equipment is made available (In-patient areas only);
- Contact the bleep holder / line manager.

7. Treatment of Asthma

The British Thoracic Society - https://www.brit-thoracic.org.uk/document-library/clinical-information/asthma/btssign-asthma-guideline-2014/ provides further guidance on the definition of high risk patients

The quantity of medication used in an asthmatic patient's treatment is often a good guide to the severity of their illness. Those at highest risk of having an asthma emergency include those taking oral medications in addition to inhaled medication and those who regularly use a nebuliser at home.
Those who have required oral steroids for their asthma within the last year and those admitted to hospital with asthma within the last year represent high risk patients with asthma (both adults and children) may have an attack while in our care. Most attacks will respond to a few 'activations' of the patient's own short-acting beta2-adrenoceptor stimulant inhaler such as salbutamol (100 micrograms/actuation).

Repeat doses may be necessary. If the patient does not respond rapidly, or any features of severe asthma are present, an ambulance should be summoned / MEWS protocol for inpatients.
Patients requiring additional doses of bronchodilator should be referred for medical assessment after emergency treatment. If the patient is unable to use the inhaler effectively, additional doses should be given through a large-volume spacer device.

If the response remains unsatisfactory or If the patient develops tachycardia, becomes distressed or cyanosed (blueness around the lips or extremities), arrangements must be made to transfer them urgently to the Emergency Department.

Symptoms and Signs
Clinical features of acute severe asthma In adults include:

- Inability to complete sentences in one breath.
- Respiratory rate > 25 per minute.
- Tachycardia (heart rate > 110 per minute).

Clinical features of life threatening asthma in adults include:

- Cyanosis or respiratory rate < 8 per minute.
- Bradycardia (heart rate < 50 per minute).
- Exhaustion, confusion, decreased conscious level.

Treatment
Encourage the person to take their salbutamol inhaler, whilst awaiting ambulance transfer, oxygen (15 litres per minute) should be given. All emergency ambulances in the UK carry nebulisers, oxygen and appropriate drugs.

If asthma is part of a more generalised anaphylactic reaction or if signs of life threatening asthma are present, an intramuscular injection of adrenaline (see Anaphylaxis) should be given.
The perceived risk of giving patients with chronic obstructive pulmonary disease too much oxygen is often quoted but this should not distract from the reality that **ALL** sick, cyanosed patients with respiratory difficulty should be given high flow oxygen 15 ltrs (100% non-rebreather mask) until the arrival of the ambulance. This short term measure is far more likely to be of benefit to the patient than any risks of causing respiratory depression.

If any patient becomes unresponsive always check for 'signs of life' (breathing and circulation) and start CPR in the absence of signs of life or normal breathing
For further information about the management of the patient with asthma see: http://www. brit-thoracic.orq.uk/clinicalpinformation/asthma/asthma-quidelines.aspx.

8. Cardiac emergencies (Including Positional Asphyxiation)

The signs and symptoms of cardiac emergencies include chest pain, shortness of breath, fast and slow heart rates, increased respiratory rate, low blood pressure, poor peripheral perfusion (indicated by prolonged capillary refill time) and altered mental state.

Angina
If there is a history of angina the patient will probably carry glyceryl trinitrate (GTN) spray or tablets and they should be allowed to use them. Where symptoms are mild and resolve rapidly with the patient's own medication, hospital admission is not normally necessary. Sudden alterations in the patient's heart rate (very fast or very slow) may lead to a sudden reduction in cardiac output with loss of consciousness. Medical assistance should be summoned by dialling (9)999 or 2222.

Myocardial infarction
The pain of myocardial infarction is similar to that of angina but generally more severe and prolonged. There may only be a partial response to GTN.

Symptoms and signs of myocardial infarction

- Progressive onset of severe, crushing pain in the centre and across the front of chest. The pain may radiate to the shoulders and down the arms (more commonly the left), into the neck and jaw or through to the back.
- Skin becomes pale and clammy.
- Shortness of breath
- Nausea and vomiting are common.
- Pulse may be weak and blood pressure may fall.

Initial management of chest pain (myocardial infarction)

- Summon appropriate help immediately which may include calling (9)999 or 2222 immediately for an ambulance.
- Allow the patient to rest in the position that feels most comfortable; in the presence of breathlessness this is likely to be the sitting position. Patients who faint or feel faint should be laid flat; often comfortable position (dictated by the patient) will be most appropriate.
- Give sublingual GTN spray if this has not already been given.
- Reassure the patient as far as possible to relieve further anxiety. Give aspirin in a single dose of 300 mg orally, crushed or chewed. Ambulance staff should be made aware that aspirin has already been given as should the hospital. High flow oxygen may be administered (15 litres per minute) if the patient is cyanosed (blue lips) or conscious level deteriorates.
- If the patient becomes unresponsive always check for 'signs of life' (breathing and circulation) and start
- CPR in the absence of signs of life or normal breathing (ignore occasional 'gasps').

9. Treatment of Seizures

Where a person has a "seizure plan or similar titled document" please follow that specific guidance for that person. Where there is no specific plan please follow guidance below.

Epileptic patients may not volunteer the information that they are epileptic, but there should be little difficulty in recognising a tonlc-clonlc (grand mal) seizure.

Symptoms and signs

- There may be a brief warning or 'aura'.
- Sudden loss of consciousness, the patient becomes rigid, falls, may give a cry and becomes cyanosed (tonic phase).After a few seconds, there are jerking movements of the limbs, the tongue may be bitten (tonic-Clonic phase).
- There may be frothing from the mouth and urinary incontinence.
- The seizure typically lasts a few minutes; the patient may then become floppy but remain unconscious.
- After a variable time the patient regains consciousness but may remain confused.
- Fitting may be a presenting sign of Hypoglycaemia and should be considered in all patients, especially known diabetics and children. An early blood glucose measurement is essential in all actively fitting patients (including known epileptics).
- Check for the presence of a very slow heart rate (<40 per minute) which may drop the blood pressure. This is usually caused by a vasovagal episode (see Syncope section below).The drop In blood pressure may cause transient cerebral hypoxia and give rise to a brief seizure.

Treatment

- During a seizure try to ensure that the patient is not at risk from injury but make no attempt to put anything in the mouth or between the teeth (in the mistaken belief that this will protect the tongue). Do not attempt to insert an oropharyngeal airway or other airway adjunct while the patient is actively fitting. Give high flow oxygen (**15 litres per minute – 100% non-rebreather mask).**
- Do not attempt to restrain convulsive movements.
- After convulsive movements have subsided place the patient in the recovery position and reassess checking for any injuries sustained.
- If the patient remains unresponsive always check for 'signs of life' (breathing and circulation) and start CPR in the absence of signs of life or normal breathing (ignore occasional 'gasps').
- Check blood glucose level to exclude hypoglycaemia. If blood glucose <4.0 mmols per litre or hypoglycaemia is clinically suspected, give oral/buccal glucose, or glucagon (see Hypoglycaemia section below).
- After the seizure the patient may be confused ('post-ictal confusion') and may need reassurance and sympathy. The patient should not be sent home until fully recovered and they should be accompanied. It may not always be necessary to seek medical attention or transfer to hospital unless the convulsion was atypical,
- Prolonged (or repeated), or if injury occurred. The National Institute for Clinical Excellence (NICE 2020) guidelines suggest the indications for sending to hospital are:
- Status epilepticus.
- High risk of recurrence.
- First episode.
- Difficulty monitoring the individual's condition.

Medication should only be given if seizures are prolonged (convulsive movements lasting 5 minutes or longer) or recur in quick succession. In this situation an ambulance (9)999 should be summoned urgently.

With prolonged or recurrent seizures, midazolam is given via the buccal route in a single dose of 10mg for adults. For children the dose can be simplified as follows:

- Child 1-5 years 5mg,

- Child 5-10 years 7.5mg,
- Above 10 years 1Omg.

10. Treatment of Syncope

Inadequate cerebral perfusion (and oxygenation) results In loss of consciousness. This most commonly occurs with low blood pressure caused by vagal over activity (a vasovagal attack, simple faint, or syncope). This in turn may follow emotional stress or pain. Some patients are more prone to this and have a history of repeated faints.

Symptoms and signs

- Patient feels faint I dizzy / light headed.
- Slow pulse rate.
- Low blood pressure.
- Pallor and sweating.
- Nausea and vomiting.
- Loss of consciousness.

Treatment

- Lay the patient flat as soon as possible and raise the legs to improve venous return.
- Loosen any tight clothing, especially around the neck and give oxygen (**15 litres per minute – 100% non-re-breather mask**).
- If any patient becomes unresponsive, always check for 'signs of life' (breathing, circulation) and start CPR in the absence of signs of life or normal breathing (ignore occasional 'gasps').
- Unresponsive patients may require airway management by manual manoeuvre or use of the recovery position other possible causes.
- Postural hypotension can be a consequence of rising abruptly or of standing upright for too long.
- Several medical conditions predispose patients to hypotension (low blood pressure) with the risk of syncope. The most common culprits are drugs used in the treatment of high blood pressure, especially the ACE inhibitors and angiotensin antagonists.
- When rising, patients should take their time. Treatment is the same as for a vasovagal attack. Under stressful circumstances, many anxious patients hyperventilate. This may give rise to feelings of light headedness or faintness but does not usually result in syncope. It may result in spasm of muscles around the face and of the hands. In most cases reassurance is all that is necessary.

11. Treatment of Hypoglycaemia

(Flowchart 8 – CP24 CPR policy**)**

Diabetes
Insulin treated diabetics (Type 1) are those most likely to become hypoglycaemic. Diet or tablet controlled diabetics (Type 2) are a much lower risk. Diabetics with poor control or poor awareness of their hypoglycaemic episodes have a greater chance of developing problems.
Patients with diabetes should eat normally and take their usual dose of insulin or oral hypoglycaemic agent. If food is omitted after having insulin, the blood glucose will fall to a low level (hypoglycaemia). This is usually defined as blood glucose <3.0 mmols per litre, but some patients may show symptoms at higher blood sugar levels. Patients may recognise the symptoms themselves and will usually respond quickly to glucose.

Symptoms and signs
- Shaking and trembling.
- Sweating.
- Headache.
- Difficulty in concentration I vagueness.
- Slurring of speech.
- Aggression and confusion.
- Fitting I seizures.
- Unconsciousness.

Treatment
- The following staged treatment protocol is a suggested depending on the status of the patient. If any difficulty is experienced or the patient does not respond, the doctor or ambulance service should be summoned immediately; confirm the diagnosis by measuring the blood glucose.
- **Early stages** - where the patient is co-operative and conscious with an intact gag reflex, give oral glucose (sugar, milk with added sugar, glucose tablets or gel). If necessary this may be repeated in 10 -15 minutes.
- **In more severe cases** - where the patient has impaired consciousness, is uncooperative or is unable to swallow safely, buccal glucose gel and or glucagon should be given.
- Glucagon should be given via the IM route (1mg in adults and children >8years old or >25 kg, 0.5mg if <8 years old or <25 kg).
- Remember it may take 5-10 minutes for glucagon to work and it requires the patient to have adequate glucose stores. Thus, it may be Ineffective in anorexic patients, alcoholics or some non-diabetic patients.
- Re-check blood glucose after 10 minutes to ensure that it has risen to a level of 5.0 mmols per litre or more, in conjunction with an improvement in the patient's mental status.
- If any patient becomes unconscious, always check for 'signs of life' (breathing and circulation) and start CPR in the absence of signs of life or normal breathing (ignore occasional 'gasps').
- It is important, especially in patients who have been given glucagon, that once they are alert and able to swallow, they are given a drink containing glucose and if possible some food high in carbohydrate.

12. Treatment of Hyperglycaemia (Hyper)

At the other end of the scale is hyperglycaemia or hypers. This happens when blood glucose levels are too high – usually above 7mmol/l before a meal and above 8.5mmol/l two hours after a meal. There are several reasons why this may happen. It may be that:

- Have missed a dose of medication
- Have eaten more carbohydrate than the body and/or medication can cope with
- Are stressed
- Are unwell from an infection
- Or from over-treating a hypo

Symptoms may include:

- Passing more urine than normal, especially at night
- Being very thirsty
- Headaches
- Tiredness and lethargy.

Treating hyperglycaemia:

- Treatment of hypers will depend on what caused them. If they are a regular occurrence, contact the Patients diabetes healthcare team for a review of any medications and / or lifestyle. If the blood glucose level is high for a short time, emergency treatment won't be necessary. But if it stays high then action nerds to be taken, (Medical review, (9)999).
- Drink plenty of sugar-free fluids.
- If prescribed insulin, may need to take extra insulin.
- If you are feeling unwell, especially if you are vomiting, you must contact your diabetes healthcare team for advice.

How to prevent a hyper

- Be aware of carbohydrate portions and how they may be affecting blood glucose levels.
- During illness, continue taking prescribed diabetic medication even if the patient isn't eating, and refer for a medical review and contact the patient's diabetes healthcare team if you need more information.
- Promote the patient to be as active as possible.
- Encourage the patient to take their insulin and diabetes medication, and always take them correctly.
- May need more medication – discuss this with the patients' medical team and their diabetes healthcare team.

Treatment

- If blood glucose level is high for just a short time, emergency treatment won't be necessary. But if it stays high action will need to be taken to avoid developing diabetic ketoacidosis.
- Check blood sugar or urine for ketones Urine Dipstick), if blood glucose level is 15mmol/l or more. If ketones are present it is likely that there is not enough insulin in the body, so the dose may need to be increased or give an extra dose.
- Disuses with the patient's diabetes team about how to do this.
- Make sure the patient drink plenty of sugar-free fluids. If you have ketones and are unwell, especially if you are vomiting, you must refer for medical review or (9)999.

The best way to avoid hypos and hypers is by checking blood glucose levels regularly and even more closely if:

- Patient has a reduced dietary intake.
- Patient has increased levels of physical activity
- Patient appears Unwell.
- There has been any change in the routine that might upset the patient's diabetes management.

13. Treatment of Choking and Aspiration

Symptoms and Signs

- The patient may cough and splutter.
- They may complain of difficulty breathing.
- Breathing may become noisy with wheeze (usually aspiration) or strider (usually upper airway obstruction).
- They may develop 'paradoxical' chest or abdominal movements.
- They may become cyanosed and lose consciousness.

Treatment

Event in non-hospital environment

- If any large pieces of foreign material have been aspirated, e.g. Teeth, the patient should be referred to hospital for a chest x-ray and possible removal.
- Where the patient is symptomatic following aspiration they should be referred to the Emergency Department.
- The treatment of the choking patient involves removing any visible foreign bodies from the mouth and pharynx.

Event in hospital environment

- The treatment of the choking patient involves removing any visible foreign bodies from the mouth and pharynx.
- Suction is of value for semi solids or liquids but has no immediate value in the management of solid particle obstruction.
- Management should follow the algorithms reproduced below.
- Medical support obtained urgently use clinical escalation algorithm (NEWS 2 protocol) as appropriate. Be aware that following the successful management of choking the patient may require supplemental oxygen to regain normal saturation, medical review to exclude injury and assessment of the risk of aspiration of gastric content.
- If the choking episode was related to eating a swallowing assessment may be indicated.
- Where ever patient with reduced swallowing ability are offered meals they must be under direct supervision and a suction unit must be readily available.
- If breathing I circulation is compromised appropriate life support measures must be instigated. The management of choking episodes is considered a reversible event and a DNACPR order may be suspended until the choking episode is reversed. Example the patient can now breathe or you can ventilate them.