Welcome to the Isle of Wight,

On behalf of everyone here at St Mary’s Hospital I would like to say welcome to you. First and foremost I hope you have a happy time here, St Mary’s offers a great mix of clinical experience and a strong culture of support and education, which, like those before you, I hope you will benefit from, and enjoy. The Education Centre is your resource and I hope you will make contact with us as soon as possible. Don’t just think we are there to support your continuing professional development we are also there to offer more general advice and support if you are in difficulty.

I would like to thank everyone who has contributed to this handbook. We would welcome your feedback, especially if you have any suggestions for future versions.

Dr Oliver Cramer
Associate Director of Medical Education

July 2015
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*This version was correct at the time of going to print*
ACCOMMODATION

STAFF RESIDENTIAL ACCOMMODATION

The accommodation for the Trust is provided by Spectrum Housing Group. This consists of single en-suite accommodation on site and limited family accommodation on the nearby Parkhurst Estate.

Specific information regarding the type of accommodation available can be obtained from the Spectrum Housing Group Accommodation Officer on 01983 534561.

Overnight or long term visitors are not permitted in the single accommodation.

Maintenance – Contact Spectrum Housing Group Caretaker on extension 4613 during normal working hours for maintenance or repairs. Outside of working hours and weekends in an emergency only, please contact Centra on 0800 783 7837. If you lock yourself out, out of hours, a key is available from switchboard to gain entry but must be returned immediately.

Cleaning – communal areas are cleaned weekly, but it is the residents responsibility to do their own washing up and empty kitchen bins.

TELEPHONE, T.V. & BROADBAND

Each room has a free telephone link via Wight Fibre for access to the hospitals internal extension numbers. If you require access to make external calls, receive incoming calls from outside the hospital, WI-FI or cable television please contact Wight Fibre on 01983 240240 to obtain details or subscribe to one of their reasonably priced monthly packages.

TELEVISIONS

Televisions are not provided in any Spectrum Housing Group accommodation. Residents can provide their own sets but a separate licence will be required for each set. Subscription to Wight Fibre is required to obtain a signal via the aerial socket.
ELECTRICAL APPLIANCES

Please ensure that electrical appliances are used in a safe manner. Personal electrical appliances should be checked for safety by the Estates Department. Do not run electrical leads into the bathroom area.

LAUNDRY

There is a free to use on site launderette. A weekly exchange of bed linen and towel is available free of charge.

COUNCIL TAX

The Council Tax and all utility costs are included in the rent of all single accommodation.

PETS

No pets are allowed in any accommodation.
BLEEPS – PHONE CALLS – EMAILS

BLEEP POLICY

Introduction

Whilst the immediate availability of doctors is important for good patient care, repetitive bleeping is extremely stressful and may take the doctor away from other urgent needs. No doctor of any grade should be bleeped without careful consideration of the necessity. The following guidelines apply mainly to the general and rehabilitation wards and are specifically written for the bleeping of (Foundation Year 1). The same principles apply to the bleeping of other doctors, but special conditions pertain in many of the specialist areas and specific local policies should be adopted in these areas, particularly the Children’s Ward, Neonatal and Adult Intensive Care Units, the Maternity Unit, Accident and Emergency Department and the Medical Admissions Assessment Unit.

During the day

Doctors should only be bleeped by the nurse in charge of the ward or by a staff nurse who knows the patient concerned (e.g. named nurse, primary nurse, team leader).

There should be a designated, clearly labelled, book on each ward into which non-urgent messages can be written (including the time of the message and the time at which it is dealt with). The doctor concerned can deal with these when he/she comes onto the ward rather than having to be bleeped for each request. This book should also include, for each of the Junior Doctors concerned, the times when bleeping should then be avoided e.g. protected teaching sessions and lunchtime.

The times when the doctors would normally expect to be on the ward should also be noted in the book. The Junior Doctor must have planned times per day to visit the wards and check the message book. The Ward Sister or designated nurse in charge must also review the book at least once a day to ensure that all messages have been dealt with.
Protected Teaching Sessions – Prior to protected teaching time, doctors must check with their wards that there are no urgent issues requiring attention. A nominated doctor should be responsible for responding to emergency calls during protected teaching sessions and switchboard should be informed accordingly. If the protected teaching sessions occur in the Education Centre, the bleeps of all other doctors should be handed in to a member of the Centre staff.

Protected teaching times for Junior Doctors in medicine and surgery is 12.30 – 13.45 every Monday [known as core teaching].

Policy for Bleeping at night (Midnight to 8:00)

Doctors should only be bleeped by the senior nurse on the ward, after discussion with the night sister/coordinator. Exceptions – CCU and MAAU may bleep directly.

Doctors will not normally be called to verify or certify expected deaths as long as this expectation is documented in the notes and has been discussed and agreed with the senior nurse on the ward (as per Verification of Death Policy July 1997). There may, however, be occasions when the night coordinator/sister considers that a junior doctor should be called.

It is strongly advised that junior doctors undertake a ward round shortly before they go to bed. Simple problems such as the writing up of intravenous fluids and analgesia could be sorted out and would remove the necessity for some of the night-time bleeping.

General

When a doctor is bleeped for an emergency, an acute admission or because a patient has deteriorated, the person who bleeps them should be able to give the results of the main observations and investigations in order that the doctor may prioritise the degree of urgency.
Junior Doctors will be encouraged to record the bleeps, which they consider to be unnecessary and the Ward will be encouraged to feedback situations where junior doctors have not attended urgent requests or not followed protocol. The Medical Education Committee will review these with the appropriate managers.

**USING THE HOSPITAL PAGER SYSTEM**

To use the hospital pager system dial 88 from an internal phone, enter the bleep number your wish to page followed by your extension number, wait for acknowledgement and hang up.

A list of bleep numbers can be obtained via switchboard.

**USING THE HOSPITAL PHONE SYSTEM**

Telephone numbers can be found via the hospital intranet site.

Operator: Dial 0
Outside Line: Dial 9 (not available from every extension)
Emergency: Dial 2222
(including Arrest and Fire)

**USING EMAIL**

Staff email addresses are the persons first name.surname followed by @iow.nhs.uk

For example… john.jackson@iow.nhs.uk

You can access email addresses via the outlook address book.

**SECURITY DOOR ENTRY CODES**

Many entrance doors to the Organisation are coded locks. These are activated from 17:00. There is one code which operates most of these and it changes from time to time. These can be obtained from Medical HR or your Line-Manager.
ACUTE CORONARY SYNDROMES (ACS)

ACS covers non-STEMI, unstable angina and crescendo angina but not ST elevation MI.

CCU will accept all patients meeting the following criteria for chest pain consistent with myocardial ischaemia (‘cardiac pain’):

1. Chest pain of greater than 15 minutes duration
2. Chest pain that does not respond to three doses of sub lingual nitrate
3. Worsening of angina such that it occurs at rest or on minimal exertion

“ACS” or similar diagnosis is not sufficient in itself to admit to CCU.

All patients admitted to CCU with chest pain should be seen by a FY2 or more senior doctor within 15 minutes. The patient becomes the responsibility of the admitting Physician of the day on arrival in the CCU.

Resuscitate the patient if they are unstable.

If stable, attach ECG and BP monitor, perform history and examination. Obtain 12 lead ECG and insert/check adequate IV line. Take blood for urea and electrolytes/FBC/Troponin I/glucose/cholesterol.

These measures should take no longer than 10–15 minutes.

Continue oxygen and pain relief. If the initial ECG is not diagnostic, and there remains clinical suspicion of an acute coronary syndrome, repeat ECG every 15 minutes for 60–90 mins. Complete admission documentation, including admission clerking, prescription chart, and risk assessment scores.

Initial treatment should include: aspirin 300 mg to load (may have been given by paramedics), then 75 mg/d; clopidogrel 300 mg to load, then 75 mg/day; beta blocker unless contra-indicated (first choices atenolol or metoprolol); enoxaparin 1mg/kg (dose reduced in renal failure); statin (first choice simvastatin 40 mg).
If ongoing pain despite opiates, oxygen and beta blocker use IV GTN. Treat any relevant co-morbidity, e.g. diabetes, significant anaemia. Discontinue any hormone replacement therapy (HRT) preparations. Repeat Troponin I sample at 12 hr post symptom onset unless first sample unequivocally raised.

High risk patients should be identified on clinical grounds, ECG and Troponin evidence, and by using available scoring systems e.g TIMI/GRACE. Patients with evidence of haemodynamic instability should be discussed with cardiologists or with Southampton. Patients with ongoing pain who are haemodynamically stable should have their history, clinical data and the diagnosis reviewed. Anti-anginal agents should be at maximum tolerated dose. If necessary a second line agent e.g. nicorandil or calcium antagonist, can be added. IV GTN may be required. If pain does not settle despite optimised medical therapy, consult cardiologists or Southampton.

The default position is to refer all patients with confirmed ACS for in-patient angiography. Proforma should be faxed to Southampton. Reasons for non-referral include poor functional capacity, limited life expectancy from non-cardiac pathology and patient preference.

Cardiologists will see all CCU patients Mon–Fri and the duty medical SpR Sat–Sun. Patients should stay on CCU 48hr for monitoring where possible. LMWH should continue for 2–5 days depending on condition/mobility. Aspirin/Clopidogrel should continue for 12 months, then lifelong aspirin.

Document treatment at discharge/transfer on discharge summary.

All patients should be offered outpatient follow-up.

Guidelines are available via the intranet.
GENERAL APPROACH TO A PATIENT WITH TACHYCARDIA

Patients with tachycardia often cause much anxiety amongst junior medical staff, partly because such patients are often unwell and partly because the differential diagnosis and management of tachycardia can be challenging.

This contribution aims to provide some basic guidance about how to deal with patients with tachycardia but is by no means comprehensive and it will often be appropriate to seek senior help.

Always use the ABC approach – ensure patent airway, adequate breathing, and check circulation.

- Give oxygen and ensure iv access.
- Monitor the ECG continuously, oxygen saturation and frequent BP.
- Record a 12 lead ECG if possible as this can be invaluable in diagnosis.

Is the patient stable or unstable (haemodynamically compromised)?

Signs of instability include; BP < 90 mmHg, chest pain, heart failure, hypoxia, reduced conscious level.

- If unstable, consider urgent electrical cardioversion (ECV) with anaesthetist assistance.
- If stable, then you have more time to refine the diagnosis and treatment approach and/or to seek senior help.

Consider reversal causes in all patients with tachycardia. Dysrhythmias occurring in acute myocardial infarction may respond to reperfusion therapy if indicated (e.g. thrombolysis in STEMI), treatment of ischaemia or improved oxygenation, or correction of electrolyte disturbances.

READING ECGS IN TACHYCARDIA

It is usually helpful to classify tachycardias according to whether the QRS complex is of normal width (<120 ms, or 3 small squares on standard ECG paper) or whether it is broad (>120 ms). The terms narrow complex tachycardia
(NCT) and broad complex tachycardia (BCT) are then used. It is also particularly useful to know whether the tachycardia is regular or irregular.

A systematic approach to reading ECGs focusing on the following 6 steps is recommended, as this should help to guide differential diagnosis;

1. Is there ventricular activity (QRS complexes)?
2. If so, what is the ventricular rate?
3. Is the ventricular rhythm regular or irregular?
4. Are the QRS complexes narrow or broad?
5. Is there evidence of atrial activity (e.g. P or flutter waves)?
6. If so, what is the relationship between P waves and QRS complexes?

**DIAGNOSTIC MANOEUVRES IN TACHYCARDIA**

In some tachycardias, clinical manoeuvres or drugs which affect AV conduction may be helpful in diagnosis or may even terminate the tachycardia.

Tachycardias originating in the atria (atrial fibrillation, atrial flutter, atrial tachycardia) will conduct to the ventricles through the AV node, such that transient AV block may ‘reveal’ the atrial rhythm on ECG hence aiding diagnosis if this is not already clear. Once AV block recovers however the tachycardia will continue, because the mechanism will not have been affected.

In contrast, tachycardias in which the AV node participates in a re-entrant circuit (AVNRT or AVRT – see below) may be terminated by transient AV block, as this will interrupt the electrical circuit which causes the tachycardia.

Vagal manoeuvres such as **carotid sinus massage** (CSM) and the **Valsalva manoeuvre** (forced expiration against a closed glottis) may enhance vagal tone sufficiently to cause transient AV block and are worth considering particularly in narrow complex tachycardias (NCTs). If there is no response to these bedside manoeuvres then drugs can be used to effect AV block; iv adenosine is most often used but iv verapamil is an alternative if adenosine contraindicated.
Tachycardias originating in the ventricles (e.g. ventricular tachycardia, VT) will not be affected even transiently by AV block, as the mechanism is usually a circuit confined to the ventricles and thus does not require conduction through the AV node. These will usually be broad complex tachycardias (BCTs) so in general vagal manoeuvres are less likely to be helpful in BCT.

**ATRIAL FIBRILLATION**

Atrial fibrillation (AF) is the commonest sustained cardiac dysrhythmia, with up to 10% of patients >80 yrs old affected. Other common causes include hypertension, ischaemic heart disease (IHD), valve disease and chronic airways disease.

AF is characterised clinically by an irregularly irregular pulse rhythm and a variable pulse volume. ECG characteristics are a lack of co-ordinated atrial activity (i.e. no consistent P waves) and widely variable RR intervals (i.e. interval between QRS complexes). The QRS complexes themselves may be normal and narrow, or may be broad e.g. if pre-existing bundle branch block is present.

Clinical manifestations of AF vary and range from no symptoms at all, to severe haemodynamic compromise, depending on factors such as ventricular response rate and underlying cardiac function.

AF may be an incidental finding in patients presenting for another reason, may be triggered acutely by other common conditions such as myocardial infarction, pneumonia or pulmonary embolism, or may itself be responsible for triggering chest pain, heart failure or thromboembolic stroke.

AF may be **paroxysmal**, when episodes terminate spontaneously, **persistent** when episodes continue until electrical or chemical cardioversion restores sinus rhythm (SR), or **permanent** when SR cannot be restored despite attempted cardioversion.
Treatment objectives

The 4 main issues in managing AF, whether acute or chronic, are as follows;

i) control of ventricular response (heart rate)
ii) prevention of thromboembolism
iii) restoration of sinus rhythm, if appropriate
iv) identification and treatment of underlying cause, if possible

i) Many of the adverse consequences of AF are due to the rapid heart rate which often accompanies this rhythm, especially if AF is of sudden onset. The ventricular response to AF is variable between and within patients and depends on factors such as sympathetic tone, underlying conduction system disease and presence of drugs which affect atrioventricular conduction.

Acute control of heart rate can usually be achieved with drugs such as beta blockers, rate-limiting calcium channel blockers (diltiazem or verapamil) or digoxin. The most effective agents for rate control are beta blockers and diltiazem, but in patients with heart failure or with impaired LV function digoxin may be safest as unlike the others it is not negatively inotropic. Combinations of these agents may be required in some patients.

ii) Thrombus formation in the left atrial appendage and subsequent embolism to the systemic circulation is a recognised risk in AF. The risk varies between patients and depends on factors such as duration of AF (thrombus unlikely if less than 48 hrs), increasing age, hypertension, LV dysfunction, valve disease and history of stroke. All patients with AF should be considered for anticoagulation with heparin or warfarin to reduce the risk of thromboembolism.

iii) An important consideration for patients in persistent AF is whether an attempt should be made to restore SR or whether AF should be accepted long-term. In many patients with AF, especially if due to underlying structural heart disease, SR may be very
difficult to restore and maintain so a management strategy of rate control and anticoagulation may be appropriate. In those with a reversible cause such as pneumonia or hyperthyroidism it is usually worth trying to restore SR by electrical or chemical cardioversion if SR does not return spontaneously.

In view of the risk of thromboembolism in patients with AF for more than 48 hrs anticoagulation is recommended for at least 3 weeks before cardioversion (CV), but if anticoagulation is commenced within 48 hrs of onset then CV can be considered earlier if appropriate.

In patients with acute AF and resultant severe haemodynamic compromise (usually a combination of very rapid HR, hypotension, chest pain or heart failure) it may be appropriate to consider emergency electrical cardioversion, for which an anaesthetist will be required to give a short general anaesthetic. This is seldom necessary however, as drugs can usually control HR sufficiently to enable some clinical improvement and general anaesthesia under these circumstances is high risk.

iv) AF is often triggered by other acute conditions such as acute coronary syndromes (ACS) or pneumonia which will require treatment in their own right. Chronic conditions associated with AF such as stable coronary disease, heart failure, hypertension and valvular disease will often require further investigation and treatment.

This short contribution is intended only as a guide to management of AF and is not comprehensive. Many patients with AF will benefit from specialist cardiological assessment, as issues such as antidysrhythmic drug treatment of paroxysmal AF and whether elective cardioversion is appropriate can be complex. Always seek senior advice if in doubt.
NARROW COMPLEX TACHYCARDIA

Narrow complex tachycardias (NCTs) are common in acute medical patients, but are also often seen in other patient groups such as post-surgery. This contribution is intended to provide a simple guide to diagnosis and management.

DIFFERENTIAL DIAGNOSIS OF NCT

NCT can be divided into regular or irregular forms; irregular NCT is usually due to atrial fibrillation – see separate section on AF.

In most cases, a regular NCT is one of the following;

i) Sinus tachycardia
ii) Atrial flutter
iii) Atrial tachycardia
iv) AV nodal re-entrant (AVNRT) or AV re-entrant (AVRT) tachycardia

The term “SVT” is often used to refer to a regular NCT, usually of the re-entrant type, but as the diagnosis is often not clear at presentation it is best avoided and the term NCT is preferred.

i) The commonest cause of a regular NCT is simply sinus tachycardia; this is usually suggested by the ECG and the clinical circumstances.

ECG normally shows a clear P wave before each QRS complex, though at high heart rates the P waves can merge with the T wave of the preceding complex making recognition more difficult. Some atrial dysrhythmias (e.g. atrial flutter, atrial tachycardia) can resemble sinus tachycardia on ECG if co-ordinated atrial activity is present before each QRS complex – see below.

The usual clue to a diagnosis of sinus tachycardia, if uncertain on ECG, is the patient’s clinical context; acute illness such as infection, hypovolaemia or heart failure, post-operative pain or even anxiety may all cause sinus tachycardia. Younger patients are likely to have higher rates than the elderly during sinus tachycardia in comparable circumstances, but
sinus tachycardia is a less likely diagnosis if resting heart rate is above 140 (in adults). Management of sinus tachycardia is usually directed at treating the cause in each case.

ii) **Atrial flutter** is a common cause of regular NCT, though if the degree of AV block varies from beat to beat the ventricular response may be irregular in which case it may be mistaken for AF.

The mechanism of A Flutter is a re-entrant circuit within the right atrium, with an atrial rate typically of about 300/min. The AV node however is not capable of conducting at this rate, so typically 2:1 AV block occurs giving a QRS rate of about 150/min.

The atrial activity on ECG during A Flutter causes ‘flutter waves’ at about 300 per minute (one for every large square on standard ECG paper) and often looks like the edge of a saw – the so-called ‘saw-tooth’ pattern. This appearance is easier to recognise with higher degrees of AV block i.e. 3:1 or 4:1, when QRS rates are slower and RR intervals longer.

A Flutter with 2:1 AV block can be mistaken for sinus tachycardia as there can appear to be a P wave before each QRS, but in fact this is usually inverted, i.e. different to P waves during SR, and a sinus tachycardia of 150/min may not be consistent with the patient’s clinical status so always consider A Flutter in NCTs with a rate of 150/min.

Ventricular rates faster than 150/min are unlikely with A Flutter, so acute haemodynamic compromise requiring emergency cardioversion is seldom necessary with this rhythm. As with AF though, the main considerations with A Flutter are ventricular rate control, anticoagulation to prevent thromboembolism (similar risk to AF) and restoration and maintenance of SR if appropriate. Drugs used for these aims are similar to those in AF, though rate control in A Flutter can be more resistant to drugs and combination therapy is often required. Specialist advice may be appropriate with A Flutter, particularly if symptomatic, and in some cases referral to an Electrophysiologist with a view to curative ablation of the flutter circuit is considered.
iii) **Atrial tachycardia** (AT) may originate from either the right or left atrium and usually occurs with structural heart disease, acute illness or drug toxicity. Short runs of AT are very common during 24 hour ECG monitoring, particularly in the elderly, and may be clinically insignificant. Sustained AT may cause palpitations and dyspnoea but like other tachycardias the clinical manifestations depend on factors such as heart rate and underlying cardiac function.

ECG in AT often shows what appear to be P waves preceding each QRS complex, but when compared to SR the P waves in AT are often of different morphology and axis, reflecting their different origin within the atria.

Management of AT depends on the consequences of the tachycardia and on the likely cause in the individual case. Correction of metabolic disturbance such as hypoxia, ischaemia or electrolyte abnormalities is important as these can often trigger AT. Electrical cardioversion is seldom of value as AT tends to recur if the underlying cause cannot be easily treated. If AT is symptomatic or prolonged, and if no reversible cause can be identified, then control of ventricular rate with AV-blocking drugs may be helpful. The same drugs used for QRS rate control in AF can be used to effect AV block in other rapid atrial dysrhythmias i.e. beta blockers, diltiazem or digoxin (unless AT is due to digoxin toxicity). Combinations of agents may be required, and expert help regarding long-term management may be appropriate if a reversible cause is not identified.

iv) **Atrio-ventricular nodal re-entrant tachycardia** (AVNRT) and atrio-ventricular re-entrant tachycardia (AVRT) are less common causes of regular NCT than the above, though they are more likely in younger patients presenting with NCT in the absence of other cardiac disease. The mechanism of these dysrhythmias is a re-entrant circuit involving the AV node as one limb of the circuit and an ‘accessory pathway’ as the other. The accessory pathway
(AP) lies close to the AV node in AVNRT, and in AVRT lies elsewhere along the AV ring. The AP is a congenital anomaly, but by being an extra electrical connection between the atrium and ventricles it allows for the possibility of an electrical circuit to develop and hence a re-entrant tachycardia.

Clinically these dysrhythmias usually present with palpitations i.e. an awareness of heartbeat (usually rapid), which can be self-terminating or may require intervention of some sort (see below).

ECG in AVNRT or AVRT will show a NCT (unless there is pre-existing conduction abnormality such as bundle branch block) with QRS rates typically from 140 – 200 /min. Atrial activity is often difficult to identify, as the P waves are usually inverted (because the atria are depolarised retrogradely) and often superimposed on the QRS complex.

Acute management of AVNRT or AVRT is aimed at interrupting the re-entrant circuit, which is achieved by causing transient AV block. This can sometimes be effected by vagal manoeuvres such as Valsalva or carotid sinus massage (CSM), or by drugs such as adenosine or verapamil. If drugs are required iv adenosine is usually first choice agent; this has a half-life of seconds so must be given as a rapid bolus into a large vein (at least antecubital fossa) and followed immediately by a saline flush. Start with a dose of 6mg, then 12 mg and 18mg if necessary; if given properly and in sufficient dose there should always be an effect on heart rate (even transiently) in NCT. There will be no effect in ventricular tachycardia.

Longer term management of AVNRT and AVRT require specialist input, and may include no treatment if episodes are very infrequent and well-tolerated, regular antidysrhythmic drugs or electrophysiological study with a view to curative ablation of the AP.
BROAD COMPLEX TACHYCARDIA

A tachycardia with a broad QRS complex (more than 120 ms or 3 small squares) is usually either ventricular in origin or is a tachycardia from the atria but conducted to the ventricles abnormally e.g. due to bundle branch block. It is important to recognise that BCT does not always mean ventricular tachycardia, though in practice there is a 95% chance that BCT is ventricular in origin if the patient has known ischaemic heart disease.

Knowledge of the ECG during sinus rhythm can be invaluable in diagnosing BCT, as for example if the patient is known to have chronic left bundle branch block (LBBB), then in that patient atrial tachycardias will also be conducted with LBBB, hence resulting in a BCT on ECG.

There are features on ECG during BCT which can reliably indicate a ventricular origin (i.e. VT) but these are often not present and can be difficult to recognise. The key feature is evidence of AV dissociation, which manifests as P waves unrelated to the QRS complexes, fusion beats or capture beats. These are difficult concepts and detailed explanation is beyond the scope of this guide.

In practical terms it is reasonable to treat BCT as ventricular in origin until proved otherwise, unless the patient is known to have a broad QRS even in sinus rhythm.

Pulseless BCT is a cardiac arrest rhythm and requires immediate electrical cardioversion. If the BCT is associated with a palpable pulse but the patient is haemodynamically compromised (see GENERAL APPROACH TO PATIENT WITH TACHYCARDIA) then early cardioversion should be considered. If the tachycardia is well-tolerated and if VT is thought likely, then give Amiodarone 300mg iv via a large vein (at least antecubital fossa) over 10 to 20 minutes. If this fails to restore SR then in general do not try multiple other antidysrhythmic drugs but seek senior advice. Even if well tolerated, electrical cardioversion of VT may be required. Most patients who have had BCT will need referral to a cardiologist, unless the rhythm occurred during the acute phase of myocardial infarction (<48 hrs) when VT is relatively common.
ACUTE HEART FAILURE

Heart failure (HF) is very common in acute medical patients, but also occurs in other circumstances e.g. post-surgery.

HF can be difficult to diagnose reliably, partly because many of the clinical features are non-specific and found in other conditions, and partly because there is no completely specific diagnostic test.

Heart failure is also difficult to define, with definitions varying from “the presence of a combination of symptoms and signs of HF with evidence of cardiac dysfunction at rest” to the more general “the constellation of symptoms and signs due to inadequate performance of the heart”.

HF can be due to either left or right ventricular dysfunction, or both, or may instead be due to valve disease, dysrhythmia or pericardial disease. In practice the commonest cause is predominant LV systolic dysfunction, in turn usually due to ischaemic heart disease.

Left ventricular failure is common in acute medical patients, and presents most often with dyspnoea. This may range from mild dyspnoea on exertion only, where there may be no abnormal physical signs, to severe dyspnoea at rest with evidence of frank pulmonary oedema, pleural effusions, hypotension or shock.

HF is not a complete diagnosis by itself, and consideration should be given to treatment of the cause if possible. Acute HF is often triggered by another acute condition such as MI, dysrhythmia, or an intercurrent illness such as pneumonia causing decompensation in someone with otherwise chronic but compensated LV impairment.

There are no completely specific clinical features of acute HF but usually such patients are tachypnoeic, tachycardic, hypoxaemic and often sweaty and peripherally shut down, even if BP is normal or high. Engorged veins are seen in right HF or biventricular failure, and bibasal inspiratory crackles are common if there is pulmonary oedema (though crackles are non-specific and often seen in other conditions such as COPD).
ECG is usually abnormal in some way in patients with HF and although there are no specific findings, evidence of previous MI or of LVH makes HF more likely.

CXR can be helpful in demonstrating cardiomegaly or pulmonary oedema.

In treating patients with HF adopt the ABC approach as usual, ensuring adequate airway and oxygenation and sit the patient upright. In addition to treating any obvious cause, treatment for acute left HF usually includes iv diuretics, iv or buccal nitrates, and possibly iv morphine. In severe cases if there is inadequate response to these measures then consider requesting assessment by an anaesthetist regarding the need for invasive ventilation. Avoid drugs with negative inotropic action in acute HF, such as beta-blockers and most calcium channel blockers. Positive inotropes are usually reserved for patients requiring admission to ITU and are given under anaesthetic or cardiology guidance.
CATERING

GETTING SOMETHING TO EAT

The main hospital restaurant is called The Full Circle and it is usually open from 7am to 7pm. It offers a number of hot food choices as well as a salad bar and a baguette bar. Out of hours there is a vending machine service just outside the main restaurant, which includes a microwave oven and a range of food, which can be heated. The WRVS also runs several shops on the St. Mary’s site, which between 10am and 4pm sell sandwiches and snacks.

Sainsbury’s supermarket is about 5 minutes away by car from St. Mary’s and offers a full range of groceries including ready meals. The Bargeman’s Rest is also about 5 minutes by car from the hospital, about 15 minutes by foot, and offers a range of meals.

Finally it is possible to get food delivered to the hospital by take out restaurants. We suggest consulting other junior doctors about what they found good and using the Yellow Pages phone directory for the names of local services.
CLINICAL AUDIT

The audit team are part of the Patient Safety, Experience and Clinical Effectiveness (SEE) Team and can be found in South Block (number 84 on the map at the start of the booklet).

Services offered by the team:

- Patient lists
- Note pulling
- Proforma design and analysis
- Report writing support
- Presentation support

A list of NICE audits, national audits and re-audits due is held by the team if you require assistance with a subject. Before undertaking an audit, teams/leads should complete the audit registration form which can be found on the intranet: http://it-intranet/Home/Corporate-Support/Patient-Safety-Experience-Clinical-Effectiveness/Effectiveness/Clinical-Audit

Please ensure that the correct form is filled in and that every section is completed as any incomplete forms will be returned. This page also has the templates for reports and action plans.

If you take part in a clinical audit it is your responsibility to ensure a copy of the presentation, report and action plan is provided to the Patient Safety, Experience & Effectiveness Team to be held on central database. Certificates will not be supplied if the report and the action plan have not been provided.
### ISLE OF WIGHT NHS TRUST CONSULTANT LIST

<table>
<thead>
<tr>
<th>NAME</th>
<th>SPECIALITY</th>
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<tbody>
<tr>
<td>Dr Ali Al-Bahrani</td>
<td>Consultant Metabolic Medicine</td>
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<tr>
<td>Dr Sabeena Allahdin</td>
<td>Consultant in Obstetrics and Gynaecology</td>
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<tr>
<td>Dr Ma’en Al-Mrayat</td>
<td>Consultant Physician/Diabetes &amp; Endocrinology</td>
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<tr>
<td>Dr Robert Andrews</td>
<td>Consultant in Accident and Emergency</td>
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<tr>
<td>Mr Sreeshyla Basavaraj</td>
<td>Consultant in ENT</td>
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<td>Mr Robin Beal</td>
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<td>Dr Emma Blake</td>
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<td>Dr Alexis Bowers</td>
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<td>Dr Richard Braithwaite</td>
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<td>Dr Sian Butterworth</td>
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<td>Dr Oliver Cramer</td>
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<td>Dr Gabor Debreceni</td>
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<td>Dr Sandeep Deshmukh</td>
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<td>Mr Maher El Alami</td>
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<td>Mr Steven Elsmore</td>
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<td>Dr Prashanth Wight</td>
<td>Specialty Doctor Accident and Emergency</td>
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<tr>
<td>Dr Patrick Wills</td>
<td>Associate Specialist</td>
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</table>
DIRECTORS AND LEAD CLINICIANS 2015

Executive Medical Director – Dr M Pugh
Lead Clinician for Acute Oncology – Mr M Nelson
Lead Clinician for Ambulance – Dr R Andrews
Lead Clinician for Emergency Medicine – Mr R Beal
Lead Clinician for General Medicine – Dr A Woolley
Lead Clinician Pathology – Dr S Themimulle
Lead Clinician Radiology – Dr P Close
Hospital and Ambulance Clinical Director - Mrs S Allahdin
Lead Clinician for ENT – Mr R Tasca
Lead Clinician for General Surgery – Mr S Parker
Lead Clinician for Ophthalmology – Mr J Khan
Lead Clinician for Anaesthetics/ITU – Dr S Maternik
Lead Clinician Oral and Maxillofacial Surgery – Mr R Anand
Lead Clinician Orthopaedics – Mr J Gardiner
Lead Clinician Obstetrics and Gynaecology – Mr A Green
Lead Clinician Urology – Mr J Makunde
Lead Clinician Paediatrics - Dr B Harms
Community Clinical Director – K Marriott and Dr A Bowers
Lead Clinician Palliative Medicine – vacant
Lead Clinician Psychiatry – Dr R Braithwaite

A large number of consultants represent their sub-specialty interests and act as lead clinicians for administrative and clinical purposes within their own specialties.
ASSOCIATE SPECIALISTS

Mr Martin Atine-Okello  Associate Specialist in Orthopaedics
Dr Ramesh Chandrabhan Singh  Associate Specialist in Surgery
Dr Gay Francis  Associate Specialist in Anaesthetics
Dr Arun Gulati  Associate Specialist Paediatrics
Dr Fiona Henderson  Associate Specialist in Anaesthetics
Mr Julio Lopez  Associate Specialist in Orthopaedics
Dr Dariusz Lutek  Associate Specialist A&E
Mr John Ochai  Associate Specialist Urology
Mr Nitin Pradhan  Associate Specialist in Orthopaedics
Dr Sally Ridout  Associate Specialist
Dr Sunil Saxena  Associate Specialist in Anaesthetics
Dr Tsilden Sherpa  Associate Specialist in Anaesthetics
Dr Marguerite Sherpa  Associate Specialist in Ophthalmology
Dr Jawad Shubber  Associate Specialist in Orthopaedics
Dr Thomas Whaley  Associate Specialist Paediatrics
Dr Patrick Wills  Associate Specialist
Dr Alasdair Gove  Clinical Assistant
Dr David Isaac  Clinical Assistant

SPECIALTY DOCTORS

Dr Anand Abraham  Specialty Doctor Psychiatry
Dr David Aitchison  Specialty Doctor A&E
Dr Georgios Choutas  Specialty Doctor Anaesthetics
Dr Jennifer Collier  Specialty Doctor Palliative Care
Dr Andrew Crofts  Specialty Doctor A&E
Dr Raymond Foster  Specialty Doctor Anaesthetics
Dr Ahmed Hassan  Specialty Doctor Obs & Gynae
Dr Tin Tin Htwe          Specialty Doctor Obs & Gynaecology
Dr Sharon Johnson       Specialty Doctor Psychiatry
Dr Yousry Kamel         Specialty Doctor Anaesthetics
Dr Vasil Kiryazov       Specialty Doctor Anaesthetics
Dr Agnes Kun            Specialty Doctor Anaesthetics
Dr Sein Lwin            Specialty Doctor Obs & Gynaecology
Dr Asta Makauskaite     Specialty Doctor Anaesthetics
Ms Anett Marton         Specialty Doctor Ophthalmology
Dr Tichafasey Mtetwa   Specialty Doctor Oncology
Dr Naing Tun Oo         Specialty Doctor Obs & Gynaecology
Dr Laszlo Ordog         Specialty Doctor Anaesthetics
Mr Ambil Rajagopal      Specialty Doctor Surgery
Mr Kumariah Rajasekar   Specialty Doctor Orthopaedics
Dr Souvik Sanyal        Specialty Doctor Anaesthetics
Mr Zoltan Sipos         Specialty Doctor Ophthalmology
Dr Gbolahan Somoye     Specialty Doctor Obs & Gynaecology
Dr Obaid Tarin          Specialty Doctor Anaesthetics
Dr Ivaylo Tsonev        Specialty Doctor Surgery
Dr Magdalena Tsoneva    Specialty Doctor Anaesthetics
Mr Michal Turjanica     Specialty Doctor Urology
Dr Virag Varga          Specialty Doctor Ophthalmology
Dr Shan Shan Susan Vijeratnam Specialty Doctor Palliative Care
Dr Prashanth Wight      Specialty Doctor A&E
DEATHS IN HOSPITAL

A. PROCEDURES

If a patient under your care should die, you should:

1. Make a record of the time and manner of death in clinical notes.

2. Either:

   Complete a death certificate, having read the instructions in the book of certificates, which is held by the Bereavement Officer, Ext: 4615.

   or

   If the death is one which should be reported to the Coroner, you should report it to the Coroner’s Officer. When a death has been reported to the Coroner, you do **not**, without the express permission of the Coroner, issue a Death or Cremation Certificate. The relatives should be told that the Coroner’s Officer will inform them when and where to register the death.

B. AUTOPSY

If your consultant or his deputy wants an autopsy, and if the case is one which does not need to be reported to the Coroner, you should ask the next of kin for written permission on the form provided. The right of the next of kin to refuse this permission must be acknowledged and respected. The doctor who requests the autopsy should contact the mortuary and the Pathologist to inform them that they would like the autopsy to take place. When completed, the form and the clinical notes must then be sent to the Pathologist so that arrangements can be made. You should also try to attend the autopsy yourself. If there is no next of kin, the Chief Executive can be asked to authorise the autopsy. A hospital autopsy is not a substitute for knowing the cause of death at the time of death.
C. CREMATIONS

When the body of one of your patients is to be cremated, you will be asked by the Bereavement Officer to complete Form 4 of a form which he will provide, and this must be done without delay. Failure to complete the certificate may result in the cremation being postponed, causing the relatives further grief. If, as sometimes happens, the relevant junior doctor is away, every effort must be made to ensure that someone signs the form with regard to the statutory regulations which requires that this must be a registered medical practitioner who has attended the deceased during his or her last illness and who, having seen and identified the body after death can certify the cause of death.

Whenever difficulty finding a doctor to complete the certificate is experienced, you should refer the matter to the Clinical Director. Once Part 4 has been signed, Part 5 of the form must then be completed by a doctor from another firm who has been qualified and registered with the General Medical Council for at least five years and who must see the body.

REPORTING DEATHS TO THE CORONER

All deaths of which the cause is, or may be;

UN natural;
UN expected; or
UN known (at the time of death).

Should be reported to the (Coroner’s Officer) see Appendix A.

“Cause” in this context means the underlying or possible underlying cause.

If in doubt, report.

The following deaths are amongst those that should be reported:

a. Death occurring within 24 hours of the patient being admitted to hospital.
b. Death occurring during surgical operation or before recovery from anaesthesia, and death within twenty-four hours of operation or recovery from an anaesthetic.

c. Death occurring within 30 days of surgery.

d. Death occurring where you are not able, for whatever reason, to complete the death certificate.

e. Death due to criminal or possible criminal acts.

f. Suicide.

g. Death of a person serving a prison sentence or when in police custody.

h. Death apparently due directly or indirectly to some traumatic event whether accidental or non-accidental.

i. Death due to poisoning or drugs whether given therapeutically or due to drug addiction or abuse.

j. Death associated with medical treatment, or the lack of it, whether surgical or medical.

k. Death in which a relative alleges that medical, nursing or other hospital or general practice treatment has been negligent or inappropriate.

l. Death associated with a prescribed occupational disease. Also death in any person receiving a pension for a military or industrial disability.

m. Death possible due to self-neglect, e.g. hypothermia or dehydration.

n. Death due to hepatitis or HIV or similar. MRSA or death where Clostridium difficile* (if in part 1 of the death certificate).

o. The deceased was detained under the Mental Health Act.

p. Those cases, which, in the terms of paragraph 7 of the directive dated May 1990 from the Office of Population Consensus and Surveys (copy annexed), ought to be reported to the Coroner (via the Coroner’s Officer).
Note from Deputy Chief Medical Statistician

Dear Doctor,

**COMPLETION OF MEDICAL CERTIFICATE OF CAUSE OF DEATH**

As you are aware the medical certificates of cause of death which you complete, for transmission to the Registrar of Births and Deaths, service both legal and statistical purposes. Our general experience in the handling of death certificates shows that most certifying doctors are punctilious and precise in completing them. However, we have identified certain aspects of certificate completion where ambiguities in our advice may have contributed to our receiving a number of less than satisfactory certificates. We thus wish to draw the attention of doctors to these aspects, which cover the recording of modes of dying, the recording disease which might have been due to previous employment and the use of abbreviating.

**MODES OF DYING**

Under current regulations Registrars of Births and Deaths are required to report to the Coroner any death the cause of which appears to be unknown, and a death where the Medical Certificate of Cause of Death shows only the mode of dying is usually deemed to fall within this requirement.

Present guidance to certifiers regarding the nature and status of conditions which may be considered as modes of dying states:

“... there is no need to record the mode of dying (such as heart failure or asphyxia). Addition of a statement of the mode of dying does not assist in deriving mortality statistics, where the underlying cause of death is explicitly stated (e.g. Cardiac Arrest following Myocardial Infarct). Even more important is the need to avoid completing a certificate with the mode of dying as the only entry; this should be the subject of further enquiry if the disease process involved is genuinely not known”.
The guidance to advisable practice summarised as “avoid completing a certificate with the mode of dying as the only entry” is generally taken in the context of the statistical, rather than the legal consequences of non-adherence; you are reminded that, for the reasons given above, non-compliance may well result in the referral of the case to the Coroner.

Statements, which imply a mode of dying rather than a cause of death.

I would like you to know that a more comprehensive list of ‘unacceptable’ statements has been constructed, and is reproduced here for your information.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphyxia</td>
<td>Hepatorenal Failure</td>
</tr>
<tr>
<td>Asthenia</td>
<td>Kidney Failure</td>
</tr>
<tr>
<td>Brain Failure</td>
<td>Liver Failure</td>
</tr>
<tr>
<td>Cachexia</td>
<td>Liver and Kidney Failure</td>
</tr>
<tr>
<td>Cardiac Arrest</td>
<td>Renal Failure</td>
</tr>
<tr>
<td>Cardiac Failure (not further qualified)</td>
<td>Respiratory Arrest</td>
</tr>
<tr>
<td>Coma</td>
<td>Shock</td>
</tr>
<tr>
<td>Debility (general)</td>
<td>Syncope</td>
</tr>
<tr>
<td>Exhaustion</td>
<td>Uraemia</td>
</tr>
<tr>
<td>Heart Failure (not further qualified)</td>
<td>Vagal Inhibition</td>
</tr>
<tr>
<td>Hepatic Failure</td>
<td>Vasovagal Attack</td>
</tr>
</tbody>
</table>

The primary purpose of the provision of this detailed list is to assist you in completion of Medical Certificate of Cause of Death. However, this list is also being supplied to all Registrars of Births and Deaths, with instructions that when any of these statements is used alone on a Medical Certificate it should be interpreted by them as a mode of dying rather than as a definitive cause of death, and normally referred to the Coroner. It should be further noted that, except where specified, the simple qualifications of the terms in this list be such words as ‘acute’ or ‘chronic’ is not sufficient to make them acceptable.

Whenever certifiers have insufficient knowledge regarding the cause of death over and above an awareness of the mode of dying, it is, of course, a requirement for such
deaths to be reported to the Coroner. However, this course of action should not normally be necessary in a situation in which the certifying doctor has knowledge of a relevant natural underlying cause, but merely fails to record it. I would thus like to remind you of your statutory responsibilities regarding the provision of a cause of death (as specified on page 1 of the notes), and which require in all cases that it be to the best of your knowledge and belief.

DEATHS THAT MIGHT BE DUE TO PREVIOUS EMPLOYMENT

I should further like to remind you of your obligations, regarding the completion of medical certificates, and the reporting to Coroners of deaths which might be due or contributed to by the employment followed at some time by the deceased. Some diseases, such as tuberculosis, which in some circumstances may be employment-related are often known not to be so in the case of a particular deceased person. In these instances qualification on the death certificate by a form of words such as 'non-industrial' can preclude enquiries by the Registrar of Births and Deaths.

ABBREVIATIONS

All doctors will be aware of the misunderstandings that can arise by the recording of even the most commonly used abbreviations. It is thus important that certifiers should refrain from this practice when completing certificate of cause of death. Failure to do so may also generate further enquiries by Registrar of Births and Deaths.
DEPARTMENT OF ANAESTHESIA, CRITICAL CARE
AND PAIN MANAGEMENT

Junior doctors, despite not currently trained on the Isle of Wight in anaesthetics come in contact with our department quite frequently, mostly during rotations in the surgical specialities or obstetrics or Emergency Medicine, on call or in transfers. To tell you more about our department, the services we provide and the expectations we have regarding collegial working relationships we produced this paper.

This does not work without including some of our departmental policies and guidelines – should you wish for more information, these are all available on the intranet or the Anaesthetic department.

July 2010
Dr Oliver Cramer, Associate Director of Medical Education
Consultant Anaesthetist Intensive Care

ANAESTHESIA
Dr Mariam Rice, Consultant Anaesthetist Lead Clinician

The “Core” of the department provides cover for all surgical specialties (see below), trauma, in A&E, for cardioversions, endoscopies, ECTs and sedation for Diagnostic Imaging. All modern forms of Anaesthesia, including TIVA, neuroaxial and peripheral blocks with and without catheter techniques are practised. Ultrasound machines for vascular access and regional anaesthesia are available as well as equipment and expertise in fibre optic intubation and bronchoscopy.

A high proportion of Day Case Anaesthesia is carried out. There is a local Clinical Simulation team providing clinical simulation scenarios for the department and the Trust. Simulation will feature in more and more clinical education trustwide. The team is lead by Dr M Luckman.
Staffing
The department is one of the biggest in the hospital, comprising 12 Consultant Anaesthetists, 13 Speciality Doctors in Anaesthesia and Critical Care. Currently there are no Anaesthetic Speciality Trainees on the Island, there is however an FY2 assigned to the Intensive Care Unit, above that we also provide taster weeks for FY2s (on request after discussion with the Associate Director of Medical Education and within study leave allowance of the applicant) and Clinical Attachments. The consultants provide on-call cover from home, the associate specialists, specialty doctors and staff grades are resident when on duty and undertake two separate rotas; first on-call for anaesthetics with duties on the Cardiac Arrest Team, second on-call for ICU with cover for maternity out-of-hours.

Referrals for Anaesthetic Input
Generally Anaesthetic Referrals, unless in vital emergencies or within established Care Pathways (PAAU/Theatres) should be Registrar to Speciality Doctor or Consultant to Consultant.
Bleep 1st on call – via switchboard
Bleep ICU on call – via switchboard

DEPARTMENTS

PRE-ASSESSMENT
Dr Muriel Prager, Consultant Anaesthetist Clinical Lead
The Department runs a well-established pre-assessment service provided by consultants and nurses, which has significantly improved pre-operative preparation and optimization of surgical patients.

Aims of Pre-assessment
The role of pre-assessment is to gather information about the patient and make alterations in their medication/physiological state so that they are optimally prepared for surgery and anaesthesia. This means taking a really good history, examining the patient and studying the notes to look for past investigation results etc. Patients with problems that may affect surgery should be referred to a senior anaesthetist or surgeon BUT please remember that
the senior doctor assessing these patients will usually have to make a judgement from the notes alone, so will rely totally on the information you have collected! Many of our patients will have had previous operations so examining the old anaesthetic record will help you work out what that ‘funny turn last time’ really means. In each clinic room is a yellow folder with all the guidelines for the department. Importantly there is information about which tests are (and are NOT) necessary for each type of surgical procedure. Please read and stick to these rules.

The Pre-assessment nurses are a most valuable resource and will undoubtedly know what to do, so please ask them if confused.

Effective communication is part of the main GMC Good Medical Practise domains. It is particularly important during the pre-assessment process. When you approach the senior nurses or anaesthetists always greet the staff, introduce yourself, be polite, summarise carefully the clinical problem and do not forget to say thank you.

The notes of the following group of patients will need to be reviewed by an anaesthetist before proceeding to surgery.

- Angina more than once monthly
- MI in the last year
- Previous heart surgery
- Cardiac arrhythmia requiring treatment (other than AF)
- Asthma attacks more than once monthly
- CVA in the last 6 months
- Renal replacement therapy
- A history of problems with anaesthesia (other than vomiting)
- A family history of problems with anaesthesia (other than vomiting)
- Limited mouthy opening/neck movement either congenital or acquired (due to surgery/radiotherapy)
- Morbid obesity(BMI>35)
- Uncontrolled hypertension
- Poorly controlled diabetes
## Elective Preoperative tests

<table>
<thead>
<tr>
<th>Grade 1 (Minor):</th>
<th>Grade 2 (Intermediate):</th>
<th>Grade 3 (Major):</th>
<th>Grade 4 (Major +):</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Surgery grades and examples</strong></td>
<td><strong>Surgery grades and examples</strong></td>
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<tr>
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<td><strong>Surgery grades and examples</strong></td>
<td><strong>Surgery grades and examples</strong></td>
</tr>
<tr>
<td>Excision of skin lesion, hysteroscopy, drainage of breast abscess</td>
<td>Inguinal hernia, varicose veins, gynae laparoscopy, arthroscopy, adenotonsillectomy</td>
<td>Total abdominal hysterectomy, TURP, lap chole, thyroidectomy</td>
<td>Joint replacement, colonic resection, nephrectomy</td>
</tr>
</tbody>
</table>

### Grade 1

- **ECG**
  - Age > 80
  - Cardiovascular disease*
- **FBC**
  - Renal disease
  - Cardiovascular disease* & age > 60
- **U&E**
  - Renal disease
  - Cardiovascular disease*
- **CXR**
  - Significant history or signs and symptoms of lung disease

### Grade 2

- **ECG**
  - Age > 80
  - Cardiovascular disease*
  - Renal disease & age > 60
- **FBC**
  - Age > 60
  - Renal disease
  - Cardiovascular disease*
- **U&E**
  - Renal disease
  - Cardiovascular disease*
- **CXR**
  - Significant history or signs and symptoms of lung disease

### Grade 3

- **ECG**
  - Age > 60
  - Cardiovascular disease*
  - Renal disease
- **FBC**
  - All patients
  - Renal disease
  - Cardiovascular disease*
  - Age > 60
- **U&E**
  - All patients
  - Renal disease
  - Cardiovascular disease*
  - Age > 60
- **CXR**
  - Significant history or signs and symptoms of lung disease

### Grade 4

- **ECG**
  - Age > 60
  - Cardiovascular disease*
  - Renal disease
- **FBC**
  - All patients
  - Renal disease
  - Cardiovascular disease*
  - All patients
- **U&E**
  - All patients
  - Renal disease
  - Cardiovascular disease*
  - All patients
- **CXR**
  - Significant history or signs and symptoms of lung disease

### CLOTTING STUDIES

- Anticoagulant medication
- Personal or family history of bleeding disorders
- Excessive alcohol intake

---

**Sickle test:** All previously untested patients of Afro Caribbean descent

**Pregnancy tests:** All women who say that they may be pregnant (with verbal consent)

**Diabetics:** All need FBC, U&E, ECG and HbA1C

**LFTs:** Consider if medical or drug history indicate – i.e., gallstones, excess alcohol known liver disease, anticonvulsants

* cardiovascular disease includes treated hypertension
MANAGEMENT OF HYPERTENSION AT PRE-ASSESSMENT

ROUTINE CASES ONLY

- Systolic above 160 mmHg and/or Diastolic above 100 mmHg
  - Contact GP. Does GP have 2 recent BP’s (within last 9 months)?
    - Yes
      - Normal
      - BP high (above 160/90)
        - Request treatment
        - Review
    - NO
      - If surgery is scheduled within next 2 weeks suspend for 6 weeks.
      - Refer to Gp for readings appropriate treatment
      - Surgery scheduled beyond next 2 weeks
Management of anticoagulation in warfarinised elective surgical patients

This guideline describes the perioperative anticoagulation management of all non pregnant adults receiving chronic warfarin therapy undergoing elective surgery.

1. Dental patients
   Remain on warfarin with no adjustment necessary.

2. Eye Patients
   i. Cataract patients. If target INR <2.5 proceed with no change to anticoagulation.
   ii. Vitreoretinal and Oculoplastic patients. If target INR <2 proceed with no change to anticoagulation.

   If target INR is higher discuss case with relevant consultant.

3. All other patients
   Patients at high risk of developing clot if not anticoagulated need to stop their warfarin and have replacement bridging anticoagulation with weight adjusted low molecular weight heparin (LMWH).

   Low risk patients should stop their warfarin and do NOT need weight adjusted LMWH.

   Low risk patients should receive DVT prophylaxis dose LMWH if indicated.

**How to manage stopping warfarin**

1. Determine if patient is at high or low risk for developing a clot when warfarin stopped.

   High risk patients should receive Enoxaparin (Clexane) at home, given by district nurses.

   Low risk patients can stop Warfarin without replacement anticoagulation.
<table>
<thead>
<tr>
<th>Indication for Warfarinisation</th>
<th>Low risk</th>
<th>High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve replacement (if unsure discuss with cardiologist)</td>
<td>Tissue valve.</td>
<td>Metal aortic or mitral valve replacement. Stroke in last month.</td>
</tr>
<tr>
<td>DVT/PE</td>
<td>More than 3 months since DVT/PE. No cancer/ thrombophilia.</td>
<td>DVT/PE in last 3 months. Active cancer. Thrombophilia. (i.e. lupus anticoagulant, factor V leiden).</td>
</tr>
</tbody>
</table>

2. If target INR is 2.0–3.0 stop warfarin 5 days before operation (i.e. operation 15th last dose on 10th).
   If target INR is 3.0–4.0 stop warfarin 6 days before op.

3. If **high risk** start Enoxaparin at a dose of **1mg/kg BD** (every 12 hours) 3 days prior to surgery (i.e. op on 15th give first dose of Enoxaparin on 12th).
   Can be given at home by district nurses.
   Low risk patients need no anticoagulation.

4. On day of Operation.
   Check INR <1.4.
   No Enoxaparin on day of operation.
   All patients (low and high risk) restart warfarin at usual dose on evening of operation unless active bleeding. (Check with consultant surgeon if unsure about bleeding status).

5. Restart Enoxaparin in high risk patients on day after surgery and continue till pre op target INR achieved, this usually takes 3–5 days.

**Special considerations**

1. Epidural patients
   No Enoxaparin in 12 hours prior to surgery.
   Remove epidural at least 12 hours after last dose of Enoxaparin (i.e. just before next dose due).
2. Monitoring

INR monitoring and Enoxaparin administration can be managed outside hospital. Contact district nurses and anticoagulation clinic.

References

Periprocedural thromboprophylaxis in patients receiving chronic anticoagulation therapy.

The clinical challenge of bridging anticoagulation with low-molecular-weight heparin in patients with mechanical prosthetic heart valves: an evidence-based comparative review focusing on anticoagulation options in pregnant and nonpregnant patients.

“Bridging” therapy with LMWH in pregnant patients and patients with mechanical heart valves.

Perioperative management of the chronically anticoagulated patient.
Heit. J. Journal of Thrombosis and Thrombolysis; Sep 2001:12(1):81-87

Bridging of oral anticoagulation therapy for invasive procedures.
Spyropoulos. A. Current Haematology Reports 2005;4:405-413

Perioperative anticoagulation management in patients receiving oral anticoagulation therapy. A practical guide for clinicians.
Douketis.J. Thrombosis Research 108;2003:3-13

Tranexamic acid versus autologous fibrin glue in patients taking warfarin undergoing dental extraction.

American College of Cardiologists/American Heart Association 2006. Practice guidelines for the management of patients with valvular heart disease.
ASPIRIN, CLOPIDOGREL AND DYPIRIDAMOL

Guidelines are notoriously difficult to produce due to differences between surgical specialities and individual preference of surgeons. Ask the anaesthetist to decide.

ACE INHIBITORS, ANGIOTENSIN RECEPTOR BLOCKERS AND ANAESTHESIA

All patients taking ACE inhibitors and ARBs must omit one dose before surgery.

For patients taking ACE inhibitors or ARBs once daily (Most common)
If patient usually takes their ACE or ARB in the evening they miss the dose the day before surgery.
If they usually take it in the morning they miss the dose on the day of surgery.

For patients taking ACE inhibitors twice daily (Less common)
Miss the dose of ACE inhibitor on the morning before surgery.

These are the most commonly used ACE inhibitors: “prils”
Enalapril (Innovace)
Lisinopril (Zestril, Carace, Liscostad, Zesoretic)
Ramipril (Tritace, Triapin)
Captopril (Capoten, Capozide)
Perindopril (Coversyl)

These are the most commonly used ARBs: “sartans”
Valsartan, Losartan, Candesartan, Irbesartan

Less common:
Cilazapril
Fosinopril
Imidapril
Moexipril
Quinapril
Trandolapril
If unsure check in BNF or with anaesthetist.

Mariam Rice, June 2010
THE INTENSIVE CARE UNIT
Dr Szymon Maternik
Consultant Anaesthetist – Director of the Unit

The ICU has been developed and expanded to incorporate six Level III beds with the equipment in place to support a seventh Level III bed on an ad hoc basis. In a mixed Level II and III setting seven beds can be staffed. The Unit deals with emergency and elective surgical patients and critically ill adult medical patients and admits and treats between 350 and 400 patients per annum. Paediatric ICU services and the regional Neurological Unit are based in Southampton.

Ward Rounds
Intensive Care Medicine is by definition multi-professional and multi-disciplinary, there is a Consultant Lead Ward round every working day, the referring specialities are expected to contribute to those by regular input and review – junior doctors are encouraged to follow “their” patients through to the unit and get involved in their treatment – as ICU ward rounds can be lengthy, attendance after the daily handover at 8.30 can give a good impression of when “your” patient is likely to be seen.

Good communication at ICU referrals are a vital part of the patients’ management. When you attend the ICU for the first time and you are seeking advice or help: greet the staff, introduce yourself, summarise the clinical scenario carefully making attention to the details, respect not just the medical but the nursing staff as well and do not forget to say thank you. Always document the discussion in the patient’s notes. If you attend the ICU regularly following one of your patients do not forget to share the results of your assessment with the ICU medical team.

Critical Care Outreach team

In April 1999 the Department of Health set up a Review of Adult Critical Care services in England. An expert group was established to develop a framework for the future organization and delivery of critical care. The report produced by the group, ‘Comprehensive Critical Care’ (DoH, 2000), made a number of recommendations
for the modernization of the Critical Care service. One of these recommendations was the establishment of Critical Care Outreach Services (CCOSs) to support the care of patients on general wards. This has since been endorsed by a number of DoH reports, the ICS and the NCEPOD report ‘An Acute Problem’ (2005).

This service was developed locally in response to a number of serious untoward incidents within acute care areas of NHS IOW, where deteriorating patients were either not recognised or not responded to.

This service has been developed within the existing budget for the Intensive Care Unit and is a nurse led service. The service provision currently is 08:30–16:30 Monday–Friday.

The CCOS is an adjunct for the Ward Based teams to support them in caring for patients who have an actual or potential to develop a critical Illness. As such the CCOS is there to support, educate and empower ward based teams and not to take over or take responsibility away from the ward based teams for their patients. If appropriate the CCOS Nurse will undertake interventions for at risk patients if this is indicated and will refer directly to ICU if the patient is not safe and needs immediate intervention in order to prevent further deteriorating or death.

The Standard Operating Procedure for the service can be found on the intranet on the following link: http://intranet/guidelines/SOP%20CCOS%2020120110.pdf
CHRONIC PAIN SERVICE
Dr Isobel Rice, Consultant Anaesthetist Clinical Lead

This is an outpatient service open to GPs for malignant and non-malignant pain syndromes. It is provided by a team of three Consultants from the Department, two Clinical Psychologists, a part-time Nurse Specialist, as well as a Specialist Physiotherapist providing Physical Therapy and Acupuncture sessions. The service runs a Functional Restoration and Outpatient Pain Management Programme.

The Earl Mountbatten Hospice provides malignant pain control, respite services and terminal care and cooperates closely with the Hospital CPS.

A wide range of pain relief procedures are performed in theatre and minor intervention rooms. There is access to an Image Intensifier, Ultrasound and a Radiofrequency Generator.

Chronic Pain Office
Ext. 4722
www.nhs.iow.uk/trust/departments/chronicpain

- Chronic Pain Medicine encompasses the treatment of cancer pain, pain originating from nerve lesions, and the management of patients with long-term musculoskeletal pain.

- For many patients with long-term pain the total alleviation of pain is not a realistic goal. These patients obviously present a management challenge.

- Make sure the presenting pain is not a new problem!
  Look in the notes – there are often extensive Pain Clinic notes with suggested management plans.

- Pain management is a multi-professional long-term care package that we offer in the Chronic Pain Clinic, using a bio-psycho-social model of care, to enable patients to self-manage their pain, including “flare-ups”.

www.nhs.iow.uk/trust/departments/chronicpain
• Pain Management is difficult – patients may occasionally be admitted to hospital during pain “flare-ups”. It is important that during their hospital admission the aim remains self-management of pain.

• Guidelines for the management of chronic pain are on the intranet and our website. These include:
  ○ When to refer to the Pain Clinic
  ○ Use of strong opiates for acute on chronic pain relief
  ○ Opiate Dose conversion
  ○ Basic psychological management
  ○ Neuropathic Pain

**NEUROPATHIC PAIN = “NERVE PAIN”**

Common neuropathic pains:
Post herpetic neuralgia, diabetic neuropathy, after traumatic nerve injury, after certain operations (inguinal hernia repair, thoracotomy, mastectomy).

• Described as: “burning”, “electric shocks” or other unpleasant sensations
• Skin in affected areas abnormally sensitive to pain (Hyperaesthesia), touch (Alldynia) or even numb
• Skin in painful areas looks different from normal e.g. atrophic or cyanosed
• May have dermatomal pattern or follow known nerve injury or ischaemia
• Often not responsive to conventional analgesics

Initial Treatment:
  ○ Start amitriptyline (10mg nocte initially)
  ○ If not tolerated use Gabapentin (300mg nocte initially)
  ○ Look at guidelines & refer to Pain Clinic
WHO pain ladder

STEP 1  Paracetamol 1g qds (parenteral application available) +

**NSAIDs**
- If no GI* and CV* risk factors;
  - Ibuprofen 400mg qds or Diclofenac 50mg tds.
- If no GI but CV risk factors;
  - Ibuprofen 400mg qds or Diclofenac 50mg tds.
- If GI risk factors and no CV risk factors;
  - Celecoxib 100–200mg bd or Valdecoxib 40mg bd. (parenteral) + PPI.
- If GI and CV risk factors;
  - Avoid NSAIDs or if essential Ibuprofen + PPI or Arthrotec (short-term course).

STEP 2  weak opioids
- Dihydrocodeine 30–60mg qds.
- Tramadol 50–100mg qds.

STEP 3  strong opioids to replace weak opioids
- Morphine
- Oxycodone
- Fentanyl t.c. patches

ADJUVANTS

*Anti-depressants*
(if neuropathic/burning pain or insomnia because of pain)
- Amitriptyline 25–75mg od (nocte) Nortriptyline 25–75mg od (nocte) instead of Amitriptyline in elderly or sedated patients
- Mirtazapine 15mg od (nocte) if cardiovascular contra-indications for TCA

*Anticonvulsants*
(if neuropathic/electric/lancinating pain attacks)
- Gabapentin 300–600mg tds
- Carbamazepine 100–400mg tds–qds for Trigeminal neuralgia
- Clonazepam 1–4mg od–bd
Diazepam for muscle spasms 5–10mg od–bd (short-term 7–10 days)

*GI (gastrointestinal) risk factors
History of peptic ulcer, gastritis, GI haemorrhage, hiatus hernia, especially in connection with previous NSAID medication.

CV (cardio and cerebro-vascular risk factors)
CHF NYHA II/III/IV, CAD/cardiac angina, poorly controlled hypertension; history of ischaemic heart disease, stroke or TIA.

Finally:

- Chronic Pain is not an acute life-threatening problem, but can be extremely challenging to treat.
- There is a lot of information on the intranet to help you.
- Contact us & we will advise and manage any problems as appropriate for that patient – this may not involve an acute visit to the ward.

To gain further experience in Pain Management please contact: Isobel.rice@iow.nhs.uk
ACUTE PAIN SERVICE

Dr Martin Gagel, Consultant Anaesthetist, Clinical Lead

“Routine” postoperative pain relief prescriptions carry the risk of life threatening errors. Every patient needs careful assessment before prescribing pain killers. Always consider the following factors: age, allergies and sensitivities, bodyweight, intercurrent diseases, patients’ history, need of anti-emetics, need of gastric mucosal protection and intercurrent medications (particularly Paracetamol containing “over the counter” medications, SSRIs (risk of serotonin syndrome) and chronic NSAID abuse).

The service develops and oversees acute pain control throughout St. Mary’s Hospital. Post-operative Pain control techniques include PCA (patient controlled analgesia with programmed syringe drivers) and PCEA (patient controlled epidural analgesia). Ultrasound-guided plexus or peripheral nerve catheter techniques are being established. The service has been highly successful in improving pain scores and patient satisfaction.

The APS is provided by a Consultant Anaesthetist and a full-time Nurse, supported by ward based Link Nurses. Apart from the clinical service it provides teaching and education from medical and nursing staff.

OBSTETRIC ANAESTHESIA

Dr Mike Pearson, Consultant Anaesthetist, Clinical Lead
INTRANET SITE

The information in this section of the Handbook is stored within the intranet site, along with more detailed information on the workings of the department, policies and protocols etc. All staff in the Surgery department should review and refer to the site.

STRUCTURE OF THE DEPARTMENT

Team 1
Mr S Elsmore  General & colorectal surgery
Mr T Nelson  General & colorectal surgery
Mr I Tsoney  Specialty Doctor
SpR (rotating)
Core surgical trainee (rotating)
FY1 x 1

Team 2
Mr M Terry  General & colorectal surgery
Mr M Shinkfield  General & upper GI Surgery
Mr A Rajagopal  Specialty Doctor
SpR (rotating)
FY1 x 1

Team 3
Miss E Cook  General & colorectal surgery
Mr S Parker  Breast and Paediatric surgery
Mr R Babu  Associate Specialist
SpR (rotating)
Core surgical trainee (rotating)
FY1
Team 4
Mr Makunde  Urology Consultant
Mr Ochai    Associate Specialist in Urology
Mr Tujanica Specialty Doctor in Urology
FY2
FY1 x 2

VASCULAR SURGERY

A visiting vascular surgeon from Southampton (Mr Baxter or Prof Shearman) undertakes an out patient clinic on Thursdays at 0830 followed by a DSU list at 1300. Referrals can be made for ward patients to be seen by the visiting vascular team, or to the vascular out-patient clinic. Vascular emergencies are managed in consultation with the on-call vascular team in Southampton and transferred as necessary.

USEFUL TELEPHONE NUMBERS

<table>
<thead>
<tr>
<th>Consultants</th>
<th>PAAU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr M Terry</td>
<td>Nurses Station</td>
</tr>
<tr>
<td></td>
<td>4791</td>
</tr>
<tr>
<td>Mr M Shinkfield</td>
<td>Reception</td>
</tr>
<tr>
<td></td>
<td>4791</td>
</tr>
<tr>
<td>Mr S Elsmore</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2042</td>
</tr>
<tr>
<td>Mr M Nelson</td>
<td>Reception</td>
</tr>
<tr>
<td></td>
<td>2042</td>
</tr>
<tr>
<td>Mr S Parker</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4788</td>
</tr>
<tr>
<td>Mr Makunde</td>
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<thead>
<tr>
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<td></td>
<td>4706</td>
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<tr>
<td>St Helens</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4701</td>
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<td>ITU</td>
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<table>
<thead>
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<th>Theatres</th>
<th>Endoscopy</th>
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<td>Main theatre office</td>
<td>Office</td>
</tr>
<tr>
<td></td>
<td>4737</td>
</tr>
<tr>
<td>Coffee room</td>
<td>Nurses Station</td>
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<tr>
<td></td>
<td>4738</td>
</tr>
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<td>Theatre 1</td>
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<tr>
<td></td>
<td>4739</td>
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<tr>
<td>Theatre 2</td>
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<td>4733</td>
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<tr>
<td>DSU reception</td>
<td>Diagnostic Imaging</td>
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<td>DSU nurses station</td>
<td>Reception</td>
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<tr>
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<tr>
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</tr>
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<tbody>
<tr>
<td>Reception</td>
</tr>
<tr>
<td>4674</td>
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</table>
ADMINISTRATION

Administrative duties are a team responsibility, and it is usual for this to be shared out among the members and overseen by the consultant’s secretaries. It is important that these tasks are completed in a timely and effective manner, to avoid delays and errors in patient management. Adequate provision must be made for administrative duties to be covered in the event of absence on leave. See separate guidance on completion of discharge summaries.

ADMISSIONS

Elective surgical admissions are co-ordinated by a centralised Pre-Assessment and Admissions Unit (PAAU). This includes calling patients from the waiting list, arranging pre-assessment appointments, allocating beds and admission times.

Emergency admissions from GPs are currently referred by telephone to the on call F1/F2 or middle grade. Once accepted, the GP should be advised to send the patient to the A&E department, and the Bed Manager should be notified of the patient’s details. Referrals from A&E for admission or a surgical opinion are made to the on-call middle grade surgeon. If, after assessment, the patient does indeed require admission, this is arranged through the bed manager. It is often possible for the middle grade surgeon to agree that admission is required by telephone discussion with the A&E staff, in which case the A&E staff can arrange admission direct with the bed manager. F1/F2 doctors should clerk stable patients for whom admission has been agreed, but should not be made responsible for assessment of patients referred for a surgical opinion.

REFERRALS

Referrals for opinions, management advice or transfer of care may be received from other teams within the general surgery department or from other specialties. This process is nominally performed between consultants, but in practice it often occurs at a junior staff level particularly in emergencies. Referrals from other specialties are often documented on an official inter-consultant referral form, Direct liaison, especially in emergency situations, and clear documentation in the case notes is therefore to be encouraged.
A common form of internal referral between teams in the general surgery department is the so-called “handback” of a patient admitted as an emergency who is or has been under the care of another consultant. This should not occur informally at junior staff level without the notification and agreement of the consultants concerned. These referrals should occur for justifiable clinical reasons, and not be assumed because another consultant has had some tentative connection with the patient in the past.

It is an established principle that patients who are referred remain the responsibility of the originating team unless or until the referral is accepted by another consultant. Active management must therefore not cease because a referral has been made.

EDUCATIONAL SUPERVISION & APPRAISAL

Individuals are advised to liaise with the Postgraduate Medical Centre at the beginning of their post to ascertain the following:

- Identity of their educational and clinical supervisors.
- Requirements and documentation for educational supervision, including an educational agreement if relevant.
- Requirements and documentation for appraisal.

An early meeting with educational supervisors to make plans for these processes is essential.

AUDIT MEETINGS

Monthly audit/clinical governance meetings are held on the first Friday of each calendar month. These are a timetabled and protected commitment for all our medical staff.

During the meeting patients are considered who were discharged or deceased under the care of the surgical department during the one month period ending on the 20th of the month before the date of the meeting.
Medical staff on each consultant firm should maintain a contemporaneous written record of all mortality and morbidity. This information is then collated and summarised for all patients discharged during the audit month and submitted to the chair of the forthcoming meeting, agreed in advance at the preceding meeting. He will select those cases which, in his opinion, should be presented and discussed in detail at the forthcoming meeting. The selected cases are notified to the relevant firms, who work them up as formal case presentations with all relevant clinical, pathology and imaging information. The number and complexity of cases selected for presentation will be influenced by any other agenda items for the meeting, but the chair has authority to change the agenda to accommodate important case discussions if required.

Each consultant firm should have a designated “audit officer” to have overall responsibility for the ongoing audit process described above. This may be a registrar, staff grade or consultant, and may vary from firm to firm according to interest and ability. The audit officer is in charge of the audit activity and must be professionally committed to ensuring its accurate completion on a monthly basis. It follows that the audit officer should have appropriate allowance for the role in their timetable or job plan. However, other members of the firm should still participate in aspects of the process by delegation, as part of their own professional development.

OUT-PATIENT CLINICS

Most clinics are held in the Out-Patient Department at St Mary’s Hospital. Some surgical clinics are also held in the Fracture Clinic. All are run under the name of the responsible consultant, who will normally, but not necessarily be present. Separate lists of appointments are allocated to the consultant and one or more middle grade staff, although there may be some interchange.

The layout and procedures in the clinics will inevitably vary between consultants and according to subspeciality. It is important to be familiar with any policies and protocols which apply to a particular clinic e.g. concerning follow up or investigations. New patients tend to be allocated to the consultant list and follow ups to the middle grade; this is often the result of unofficial policies operated by
the booking staff and does not have to be adhered to, indeed it is important that trainees see a proportion of the new patients. It is considered good practice for trainees to discuss cases they are seeing with the consultant, and this is essential if the case is complicated or there are options for management. Patients who are seeing a middle grade for the third (or more) consecutive clinic visit must be reviewed with the consultant before arranging further follow up.

It is customary to dictate a letter to the GP and/or any other relevant clinician when a patient is seen in the outpatient clinic. However, this is only necessary if there has been a change in the patient’s condition or if a change in management is required. Dictating a letter does not remove the requirement for adequate medical notes to be written in the patient file. Letters dictated on tape should be relevant, succinct, audible and comprehensible.

Revised 28/05/2014, MS
DIAGNOSTIC IMAGING

INFORMATION BOOKLET

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   Employer
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   The Royal College Guidelines

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1. INTRODUCTION

All procedures undertaken within the Diagnostic Imaging Service are required to be compliant under IRMER. These regulations provide definitions of who is able to request, justify and undertake Diagnostic imaging procedures. These definitions are listed below:

Employer: In the context of the Ionising Radiation (Medical Exposure) Regulations 2000, the employer is considered to be Isle of Wight Healthcare NHS Trust. If the Trust contracts a third party to provide services then the Trust will be the employer as regards the operators for the purpose of the Regulations, but the third party is the employer of the operators for employment law purposes.

Equipment ownership has no impact on the employer responsibilities under these Regulations.

Operator: The operator is any person who is entitled, in accordance with the Trust’s written procedures, to undertake the practical aspects of a medical exposure and is adequately trained. Operators may include radiographers, doctors, dentists, medical physicists, medical physics technicians, assistant practitioners.

Practitioner: The practitioner is a registered medical practitioner, dental practitioner or Radiographic practitioner. Other health professional who may be entitled in accordance with the Trust’s written procedures to take responsibility for an individual medical exposure. The primary responsibility of the practitioner is to justify medical exposures.

The practitioner may also undertake practical aspects of an exposure and so becomes an operator with regard to these specific functions.
**Referrer:** The referrer is a registered medical practitioner, dental practitioner or other health professional who is entitled in accordance with the employer’s procedures to refer individuals for medical exposure to a practitioner.

All requests made by a referrer should be in done so in accordance with:

The Royal College Guidelines – Making the best use of a Department of Clinical Radiology and Local Guidelines/Protocols. These documents are available via the intranet under following:

Intranet Homepage > Clinical Zone > **Diagnostic Imaging.**

The referrer requesting an examination must include the following information or the form will be returned.

a) the patient must be uniquely identified
b) the clinical information to justify medical exposure
c) information on pregnancy, last menstrual period
d) a signature uniquely identifying the referrer (electronic if through a Radiology Information System (RIS)).
2. GENERAL RADIOLOGY DEPARTMENT

Useful Numbers

Superintendent Radiographer / PACS Manager
Amanda Shaw 4669

PACS administration pacsadmin@iow.nhs.uk

Main department viewing area 4666

North X-ray 2027

Introduction to the General Department

The General Radiology Department is made up of two areas – Main X-Ray department which situated in the southern part of the hospital and The North and Dental Department situated in the older North part of the Hospital.

The Main department consist of 3 x new digital X-ray rooms and 1 x Digital Fluoroscopy room. The service covers Trauma, Outpatient Inpatient and GP patients.

The North Department has 1 x General X-ray digital room and a 3D digital dental room. The service covers Outpatient, Inpatient, GP and GDP patients. This department is only open between 9am and 5pm.

Mobile Intensifier fluoroscopy is available in 3 x theatres – Main, DSU and CCU.

Portable radiography is available to CCU, ITU, NICU and Resus. For any other clinical area a specialised portable request form will need to be completed.

Completed request forms for patients should be forwarded to Diagnostic Imaging.

PACS Service

All new starters at the Trust must be able to prove competency or undertake training in the centricity Web. In order to do this you must book onto a training course run by PAS training team. Once you have had your training the PAS team will notify IT to add your name to the necessary directory to allow you to log onto PACS.

Should you have any problems with the PACS system or visualizing images please contact PACS admin team who should be able help you.
The following table identifies a quick guide to the service and times when it is provided within the General Radiology department.

<table>
<thead>
<tr>
<th>Type service and hours provided</th>
<th>Normal working hours</th>
<th>Service provided</th>
<th>On Call emergency service</th>
<th>Service provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trauma Service</td>
<td>8am – 5pm</td>
<td>All patients requiring imaging are seen immediately.</td>
<td>5pm until 8am and over the weekend.</td>
<td>During On-call hours the radiographer must be contacted for all patient requests.</td>
</tr>
<tr>
<td>In-Patient Service</td>
<td>8am – 5pm</td>
<td>All patients requiring imaging are seen on a non-appointment service. The ward arranges for porters to bring patient down at a convenient time for the ward and nursing staff.</td>
<td>5pm until 8am and over the weekend.</td>
<td>Only In-patients who require clinical intervention should be imaged during these hour. All non-urgent requests should be done during normal working hours. During On-call hours the radiographer must be contacted for all patient requests.</td>
</tr>
<tr>
<td>O.P.D Service</td>
<td>8am – 5pm</td>
<td>All patients requiring imaging are seen as a walk in service.</td>
<td>No service</td>
<td></td>
</tr>
<tr>
<td>G.P Service</td>
<td>8am – 6pm</td>
<td>All patients requiring imaging are seen as a walk in service.</td>
<td>No service – this includes Beacon Health Centre patients.</td>
<td></td>
</tr>
</tbody>
</table>
3. **CT DEPARTMENT**

**Useful Numbers**

*CT Superintendent Radiographer Graeham Mann*

CT Scanner Control Room 4665 / 4670

**Introduction to CT**

CT has a two scanner service. A newly installed Toshiba Aquillon 64 (128) slice scanner situated adjacent to the main waiting area and a Siemens 128 slice definition A+ located opposite the MR scanner.

Completed request forms for patients should be forwarded to Diagnostic Imaging.

**Hours of Operation**

The CT service operates between 8.30am – 5.00pm, Monday to Friday.

An on-call service is provided 365 days of the year between 17.00 – 08.00 hours Monday to Friday and 24 hours over the weekend. It is only available for urgent emergency scans that cannot wait until normal opening hours.

Out of hours scans are authorised and reported by an external contractor. To request an out of hours CT scan please consult with the contracted Teleradiology company’s out of hours CT referral document.

CT staff will be on site at 8.15 and will be preparing the scanner for the days work but will be able to action any emergency requests from 08.15 am Monday – Friday.

**Outpatient Referrals**

The current waiting time for all outpatient referrals is 2 – 3 weeks. Cancer outpatient referrals will be scanned within 10 working days. Urgent outpatient scans can be performed more quickly but only on request to the department.
Inpatient Referrals

All requests other than CT brain scans and Poly-trauma will be vetted and verified by a Radiologist. Where a scan is extremely urgent (necessary to be performed within 1 hour) referrers should discuss the case face to face with one of the Radiologists. Scans and reports will be put onto the PACS system.

Inpatient requests will be scanned as soon as possible, but cannot be guaranteed to be scanned on the same day as referral.

Referrals for CT brain requests and Poly-Trauma scans should be taken to the Radiography staff in the New CT scanner in order that they can be fast tracked. All other scans other than those which need to be discussed with a Radiologist should be handed in to or podded to x-ray main reception.

Renal function

All requests for CT scans of the neck chest, abdomen and pelvis unless otherwise stated will be assumed to require Intravenous contrast. It is therefore essential that information concerning the patients renal and function is recorded on the request form. The latest version of CT request forms will have a section where creatinine and or eGFR should be recorded, if you are using an old version of the request form please comment on the patient’s renal function in the clinical history section.

The CT staff are available throughout the day regarding any queries related to your patients.
4. ULTRASOUND DEPARTMENT

Superintendent Sonographer Debbie Beare

Useful numbers

Enquiries please contact the Hot Desk 4679

In-patient ultrasound service

The main ultrasound department has two ultrasound rooms which both run on a 9.00am – 5.00pm basis allowing for 10 sessions of ultrasound each week.

The sessions are staffed by a mix of Consultant Radiologists and Sonographers.

A portable ward service operates for in-patient scans each weekday.

Once the request is received in the ultrasound department we will contact the ward as soon as possible and allocate an appointment time for the patient. We will inform the ward at the same time of any preparation the need prior to the scan.

Any request forms brought by hand may be left at the reception desk in Diagnostic Imaging who will forward it to ultrasound.

If the request is VERY URGENT or you wish to discuss the case with a Consultant Radiologist please enquire at Diagnostic Imaging reception before 10.00am each weekday.
5. MRI DEPARTMENT

MR Superintendent Radiographer Alistair Day

Useful Numbers

Scanner Control Room 4607

Introduction to MRI
The MRI scanner is a Philips Achieva 1.5 Tesla system. This system was installed at the end of 2007, and is situated at the far end of the Diagnostic Imaging Department. Completed request forms for patients should be forwarded to Diagnostic Imaging.

Hours of Operation
The MRI service operates between 9.00am – 5.00pm, Monday to Friday.

There is no out of hours, or weekend service available. Urgent requests, out of hours would need referring to Southampton General, or wait till the next scanning session.

Outpatient Referrals
Outpatient referrals will be added to the routine waiting list. Cancer or urgent outpatient referrals will be scanned within two weeks.

Inpatient Referrals
All urgent requests must be discussed and verified with a Radiologist and these will then be raised to the MRI staff. Scans and reports will be put onto the PACS system.

Inpatient requests will be scanned as soon as possible, but cannot be guaranteed to be scanned on the same day as referral.

The MRI staff are available throughout the day regarding any queries regarding compatibility and safety of any referrals.
6. CONSULTANT RADIOLOGISTS

There are 5 consultants in the department. No juniors.
Dr Peter Close
Dr Tony Cave
Dr Stephan Voigt
Dr T Olejinik
Dr P Wilson
Dr E Whittington \textit{(start date November 2014)}
Dr William King

There is a Radiologist of the day available from 8am to 5pm for consultation.

Please ensure that all request forms contain succinct and relevant clinical information.

They must be legible and signed.

Please do not request investigations unless you understand the purpose of the test.

Arm yourself with appropriate knowledge and detail regarding your patient if you come to the dept. for consultation.
EDUCATION CENTRE

THE MEDICAL EDUCATION DEPARTMENT

The Medical Education Department is situated within the Education Centre on the North East side of the hospital.

The offices are open: Monday – Thursday 08:30 – 17:00  
Friday 08:30 – 16:30

Telephone: 01983 534231  
Fax: 01983 521963

The Centre can be accessed out of hours using the standard door entry code.

<table>
<thead>
<tr>
<th>Names</th>
<th>Contact Number</th>
<th>Email Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr Oliver Cramer</td>
<td>534231</td>
<td><a href="mailto:oliver.cramer@iow.nhs.uk">oliver.cramer@iow.nhs.uk</a></td>
</tr>
<tr>
<td>Associate Director of Medical Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr Maria Lynch</td>
<td>534231</td>
<td><a href="mailto:maria.Lynch@iow.nhs.uk">maria.Lynch@iow.nhs.uk</a></td>
</tr>
<tr>
<td>Associate Medical Director / Foundation Programme Director</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr Chandrabhan Singh</td>
<td>524231</td>
<td><a href="mailto:chandrabhan.singh@iow.nhs.uk">chandrabhan.singh@iow.nhs.uk</a></td>
</tr>
<tr>
<td>SAS Tutor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miss Allison Harries</td>
<td>534231</td>
<td><a href="mailto:allison.harries@iow.nhs.uk">allison.harries@iow.nhs.uk</a></td>
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<tr>
<td>Medical Education and Centre Manager</td>
<td></td>
<td></td>
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<tr>
<td>Mrs Joanne Helliwell</td>
<td>533024</td>
<td><a href="mailto:Joanne.helliwell@iow.nhs.uk">Joanne.helliwell@iow.nhs.uk</a></td>
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<tr>
<td>Medical Education Senior Administrator</td>
<td></td>
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</tr>
<tr>
<td>Mrs Trudie Little</td>
<td>534518</td>
<td><a href="mailto:trudie.little@iow.nhs.uk">trudie.little@iow.nhs.uk</a></td>
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<tr>
<td>Medical Education Administrator</td>
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<td></td>
</tr>
<tr>
<td>Miss Meghann Hickmann</td>
<td>535451</td>
<td><a href="mailto:meghan.hickman@iow.nhs.uk">meghan.hickman@iow.nhs.uk</a></td>
</tr>
<tr>
<td>Education Receptionist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mrs Francis Friend</td>
<td>535451</td>
<td><a href="mailto:francis.friend@iow.nhs.uk">francis.friend@iow.nhs.uk</a></td>
</tr>
<tr>
<td>Education Receptionist</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
LIST OF COLLEGE TUTORS & MEDICAL EDUCATION LEADS

Faculty Tutors

Associate Medical Director for Education  Dr O Cramer
Associate Medical Director/Foundation Programme Director  Dr M Lynch
Surgical Tutor  Mr M Nelson
Obstetrics & Gynaecology Tutor  Mr N Kenney
Radiology Tutor  Dr P Close
Anaesthetics Tutor  Dr M Pearson
Psychiatry Tutor  Dr N Yoganathan
Associate Clinical Sub-Dean  Mr Steve Elsmore
Royal College of Physicians Tutor  Dr M Connaughton
Child Health Tutor  Dr C Magier
Orthopaedic Tutor  Mr N Hobbs
GP Tutor  Dr S Jinka
GP VTS Course Organiser  Dr S Giles
SAS Tutor  Mr R Babu
Dental Tutor  Mr S Ahmed
Medical Education Manager  Miss A Harries
Medical Education Senior Administrator  Mrs J Helliwell
Medical Education Administrator  Mrs T Little
Executive Medical Director  Dr M Pugh

COURSES

In addition to the Department Teaching Programmes, a number of courses are held in the Education Centre during the year, including AIM (acute illness management), ATLS, MRCP Paces, International Medical Graduate Course, ALS. If you are interested in attending any of these courses, please discuss this with the Education Centre Team. Additionally the Health Education Wessex run a number of very good programmes to doctors training in Wessex. For more information on these, I would recommend you access NHS South Centre Intrepid Course Manager via:

https://secure.intrepidonline.co.uk/coursemanager/nesc/sys_pages/course/courselist.aspx?firstattemt=true&Req uestId=1854dfc8
<table>
<thead>
<tr>
<th>Specialty</th>
<th>Day</th>
<th>Time</th>
<th>Venue</th>
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</thead>
<tbody>
<tr>
<td>Dept. of Medicine</td>
<td>Wednesday</td>
<td>13:00 to 15:30</td>
<td>Education Centre</td>
</tr>
<tr>
<td>Dept. of Surgery Audit</td>
<td>First Friday of Month</td>
<td>13:30 to 15:00</td>
<td>Education Centre</td>
</tr>
<tr>
<td>Dept. of Orthopaedics</td>
<td>Thursday</td>
<td>14:00 to 16:00</td>
<td>Education Centre</td>
</tr>
<tr>
<td>Dept. of Psychiatry</td>
<td>Wednesday</td>
<td>13:00 to 15:00</td>
<td>Education Centre</td>
</tr>
<tr>
<td>MDT Meetings</td>
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</tr>
<tr>
<td>Upper GI</td>
<td>Tuesday</td>
<td>12:30 to 13:30</td>
<td>Education Centre</td>
</tr>
<tr>
<td>Colorectal</td>
<td>Thursday</td>
<td>13:00 to 13:30</td>
<td>Education Centre</td>
</tr>
<tr>
<td>Lung V/C with UHS</td>
<td>Tuesday</td>
<td>13:00 to 14:00</td>
<td>Pathology Meetings Room</td>
</tr>
<tr>
<td>Urology local and V/C with QA</td>
<td>Thursday</td>
<td>12:00 to 14:00</td>
<td>Pathology Meetings Room</td>
</tr>
<tr>
<td>Breast</td>
<td>Wednesday</td>
<td>08:30 to 09:30</td>
<td>Education Centre</td>
</tr>
<tr>
<td>Lymphoma V/C with UHS</td>
<td>Tuesday</td>
<td>08:30 to 09:30</td>
<td>Pathology Meetings Room</td>
</tr>
<tr>
<td>Gynae V/C with UHS</td>
<td>Friday</td>
<td>08:30 to 09:30</td>
<td>Pathology Meetings Room</td>
</tr>
<tr>
<td>Skin</td>
<td>Wednesday</td>
<td>12:45 to 13:30</td>
<td>Pathology Meetings Room</td>
</tr>
<tr>
<td>Skin V/C with QA</td>
<td>Alternate Weeks Tuesday</td>
<td>08:15 to 09:00</td>
<td>Pathology Meetings Room</td>
</tr>
<tr>
<td>Haematology V/C with UHS</td>
<td>Thursday</td>
<td>08:30 to 09:15</td>
<td>Pathology Meetings Room</td>
</tr>
<tr>
<td>Thyroid V/C with UHS</td>
<td>1st and 3rd Month Tuesday</td>
<td>12:30 to 13:00</td>
<td>Room to be confirmed</td>
</tr>
<tr>
<td>Obs and Gynaecology</td>
<td>Every other Monday</td>
<td>14:00 to 16:00</td>
<td>Education Centre</td>
</tr>
<tr>
<td>Paediatric Teaching</td>
<td>Wednesday</td>
<td>08:30 to 09:30</td>
<td>Newcroft Seminar Room</td>
</tr>
<tr>
<td>Grand Round</td>
<td>Monday</td>
<td>08:30 to 10:00</td>
<td>Childrens Ward</td>
</tr>
<tr>
<td>Respiratory</td>
<td>Friday</td>
<td>12:30 to 15:00</td>
<td>Respiratory Department</td>
</tr>
</tbody>
</table>
ENDOCRINOLOGY

ENDOCRINOLOGY AND DIABETES MELLITUS

The following is a general guide to the recognition and management of acute metabolic disturbance in diabetes and to the management of patients with diabetes in the peri-operative period. For up to date guidelines, please check the intranet guidelines or discuss with the specialist team who are here to help.

Please contact the endocrine team (Dr. Al-Mrayat/Dr Lawrence or the Endocrinology SpR) at an early stage in the management of complex diabetic or endocrine emergencies or when further follow up is required.

The Diabetes Specialist Nurses and Inpatient Diabetes Specialist Nurse, Phil Mannel, provide in-hospital care for diabetes in-patients who require insulin therapy, adjustment of their oral medication, or further education. Please do not hesitate to contact them or a member of the diabetes/endocrine medical team for advice at the Diabetes Centre.

DIAGNOSING DIABETES

1. Symptoms of diabetes plus casual plasma glucose concentration >11.1mmol/l. Casual is defined as any time of day without regard to time since last meal. The classic symptoms of diabetes include polyuria, polydipsia and unexplained weight loss.

OR

2. Fasting plasma glucose (FPG) >7.0mmol/l. Fasting is defined as no caloric intake for at least 8h.

OR

3. 2h post-load glucose 11.1mmol/l during an OGTT. The test should be performed as described by WHO, using a glucose load containing the equivalent of 75g anhydrous glucose dissolved in water.

In the absence of unequivocal hyperglycaemia, these criteria should be confirmed by repeat testing on a different day. The third measure (OGTT) is not recommended for routine clinical use. The patient should be free from intercurrent illness at the time of the test and should have eaten normally for the preceding 3 days. Smoking must be avoided on the day of the test.
MANAGEMENT OF DIABETIC KETOACIDOSIS

History

New diagnosis OR established Diabetes Mellitus with a precipitant, e.g. infection, missed insulin.

2. Examination: Tachycardia, acidic Kussmaul breathing (deep rapid breathing), smell of ketones, dehydration, reduced alertness, hypotension.
3. Bedside/Lab tests Ketonuria (> ketones) and Metabolic Acidosis (pH<7.30) and hyperglycaemia (usually plasma glucose >12mmols/l where the blood glucose is not elevated.

If the patient is pregnant please refer to the pregnancy guidelines in conjunction with these guidelines and seek senior help immediately.

Treatment

1. Initial clinical assessment and treatment
   - Protect and maintain the airway. Give oxygen and monitor respirations.
   - Assess Circulation. Blood pressure, heart rate, peripheral perfusion and degree of dehydration. Put on heart monitor. Secure IV access (2 peripheral IV access if possible) and start fluid replacement as soon as possible. Give normal saline 1 litre over 1 hour with no potassium supplement whilst waiting for lab results.
   - Assess conscious level – A.V.P.U. (Alert, responds to Verbal stimuli, responds to Pain, or is Unresponsive). Make nil by mouth if vomiting or altered conscious level or suspected gastric dilatation.

2. To confirm diagnosis
   - Arterial blood gases
   - Urine ketone dipstick
3. Initial investigations

- Capillary blood glucose
- FBC
- U&E
- Venous blood glucose
- LFT
- Bone profile
- ECG
- INR

4. Investigations for underlying precipitating cause as clinically indicated

- Chest x-ray
- MSU for urine culture
- Blood cultures
- Cardiac enzymes
- Urine drug screen
- X-ray of abdomen (e.g. suspected gastric dilatation, acute abdomen) and amylase
- CSF examination (if meningitis/encephalitis is suspected)
- Other tests as clinically indicated

5. Ongoing treatment determined once blood gas results are known

- Normal saline 1 litre over 1 hour (see below for potassium supplement)
- Adjust subsequent infusion rates according to dehydration and co-morbidity (e.g. history of LVF or elderly).
- Typically a young adult might require in order of 4–6 litres fluid replacement in the first 24 hours.
Potassium Supplement once U&E known and urine output established (Refer to Potassium policy).

<table>
<thead>
<tr>
<th>Plasma K (mmol/l)</th>
<th>mmol of KCl in each litre of fluids</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 3.5</td>
<td>40</td>
</tr>
<tr>
<td>3.5 – 5.5</td>
<td>20</td>
</tr>
<tr>
<td>More than 5.5</td>
<td>Nil. Recheck plasma K in 2 hours</td>
</tr>
</tbody>
</table>

Commence intravenous insulin infusion 50 units of Human Actrapid in 50mls of normal saline as per sliding scale.

- When blood glucose has reached 12mmol/l, stop IVI normal saline & commence glucose 5%.
- Higher insulin infusion rate is needed if acidosis persists and in this situation, an increased rate of glucose 5% (or glucose 10%) IVI infusion may then be needed to avoid hypoglycaemia.

Monitoring/Observation/Further management

- Level of consciousness (Glasgow coma scale)
- ECG & cardiac monitor
- Hourly temp BP pulse
- Hourly capillary blood glucose
- Urine output (hourly if catheterised otherwise as passes urine)
- Antibiotics if indicated
- Action on laboratory results
- NG tube if abdomen is distended or altered consciousness or patient is vomiting persistently
- Assess indications for a CVP line
- Prophylactic Enoxaparin 40mg S/C od (unless contra-indicated)
- If acidosis persists check infusion site, change sliding scale to higher insulin infusion rate (& higher glucose infusion if required – see above) and consider other causes for acidosis. Refer to Diabetologists if acidosis persists.
- Repeat venous blood gases until acidosis is resolved (this may need to be hourly initially)
Check U&E and bicarbonate 2 hourly until serum K is within normal limits and regularly thereafter until sliding scale discontinued

6. Other considerations

- If conscious levels deteriorate, consider cerebral oedema amongst a wide differential diagnosis that includes hypoglycaemia, electrolyte disturbances, CNS infection, cerebrovascular accidents, the effects of acidosis etc). Call the adult emergency support team. If cerebral oedema is suspected refer to ITU, where the use of Mannitol may be considered. Discuss urgent CT scan and further management with senior members of ITU and/or diabetes team. If in refractory shock or airway compromise refer to ITU.

- There is no experimental evidence to support the routine use of bicarbonate in the treatment of Diabetic Ketoacidosis. If felt it is essential in a specific circumstance, then please discuss with senior clinician ideally an ITU Consultant or Consultant Diabetologist before administration.

- Refer to In-patient Diabetes Specialist Nurse and to Dietician.

- Ascertain the cause of Diabetic Ketoacidosis & educate to prevent reoccurrence.

- Blood test for HbA1C and TFT.

7. Continuing Care – stopping the sliding scale

- Once the patient is no longer acidotic (Bicarbonate greater than 18–20mmol/l) and able to tolerate fluid and diet commence s/c insulin regime. It is not necessary to wait for complete clearance of ketones if the patient is well and these criteria are met.

- If the patient has pre-existing diabetes, return to previous regime.

- If the patient has newly diagnosed diabetes, commence on Novorapid 4 units before each meal and Levemir 4 units before bed. Alternative regimens can be used after discussion with the Diabetes Nurse Specialist.
Short acting insulin administration (basal-bolus regimes):

- Stop the sliding scale at a mealtime and give analogue insulin (e.g. Novorapid, lispro) immediately before the meal. If the patient is on Humulin S or actrapid insulin, give this 15 minutes before the meal. Also give intermediate/long acting (‘basal’) insulin as detailed below.

Intermediate/long acting (‘basal’) insulin (basal-bolus regimes)

- If the short acting insulin is humulin S or actrapid, no need to give basal insulin until the next dose is ordinarily due.
- If the short acting insulin is an analog (e.g. Novorapid, lispro), give a proportion of the usual basal insulin to last until the next dose is due. For example, where the patient usually takes their basal insulin at 10 pm in the evening.

a) Sliding scale is being stopped at breakfast

- also give ½ the dose of the basal insulin (Lantus or Levemir) but into a different injection site.

b) Sliding scale is being stopped at lunchtime

- also give ⅓ the dose of the basal insulin but into a different injection site.

c) Sliding scale is being stopped with the evening meal

- give the basal insulin at 10pm or at the usual time in the evening.

If the patient usually takes the basal insulin in the morning then adjust accordingly.

Twice daily (‘insulin mix’) regimes

- These will only apply to pre-existing regimes as patients will not generally be newly started on twice daily insulin mix regimes.
● Sliding scale should only be stopped at breakfast or evening meal when the usual s/c insulin injection is due.
● Discontinue sliding scale insulin and IVI once the insulin has been given and the meal is served.

MANAGEMENT OF HYPOGLYCAEMIA IN DIABETES MELLITUS IN ADULTS

PRESENTS AS: Blood Glucose level of less than 4mmol/l with or without symptoms OR a Blood Glucose level of less than 6mmol/l but with symptoms.

SIGNS & SYMPTOMS: Shakiness, irritability, palpitations, tremor, hunger, pallor, tingling in lips, tongue and fingers, perspiration, anxiety, drowsiness, headaches, lack of concentration, slurred speech, blurred vision, confusion, irrational behaviour, unsteady gait, dizziness, weakness, fits, coma.

CAUSES: Missed or late meals, not enough food containing carbohydrate, too much insulin or oral hypoglycaemic agents, unplanned/sustained exercise, alcohol, hot weather.

TREATMENT

MILD HYPOGLYCAEMIA: i.e. Patient able to self treat with e.g. 3 Dextrose tablets or a glass of orange juice or 50mls of Lucozade.

MODERATE HYPOGLYCAEMIA: i.e. Patient may not be able to self-treat due to confusion, assistance may be required to treat the hypoglycaemic episode. Treat with a glass of orange juice, 50mls of Lucozade, or Hypostop (available from pharmacy).

SEVERE HYPOGLYCAEMIA: i.e. Patient experiencing a reduced level of consciousness or fitting i.e. unable to swallow. Treat with caution, with an IV bolus of 50mls of 20% Dextrose (available through pharmacy in the purple hypo bags) through a large vein through a large gauge venflon and repeat if necessary or if no IV access give I.M GlucoGen HypoKit.
CONTINUED TREATMENT: Once the patient is able to eat, give a longer acting carbohydrate, e.g. biscuits, a slice of bread.

RETEST: In the case of a mild or moderate hypoglycaemic episode, retest within 15 minutes. If hypoglycaemia severe retest within 10 minutes.

RE-TREAT: If blood glucose remains less than 4mmol/l retreat as above.

NEVER WITHHOLD INSULIN OR TABLETS IN ORDER TO TREAT HYPOGLYCAEMIA.

CONTINUING CARE: Establish cause i.e. delayed/missed meal and address any problems to prevent any reoccurrence. Refer to the Diabetes Nurse Specialist as per referral protocol, for education to prevent recurrence.
GUIDELINES FOR THE GLYCAEMIC MANAGEMENT OF ADULT DIABETES MELLITUS IN THE PERI-OPERATIVE PERIOD

How to manage my Patient?
4 Questions to answer:

1. Minor (will eat normally within 4 hours of procedure, only miss one meal) or Major surgery?

2. Insulin or tablet treated? If insulin what type? (see below to help)

3. Morning (or all day) or afternoon list?

4. Well or poorly controlled? Poorly-controlled if HbA1c >9.0%. If poor control then delay surgery (if not urgent) and refer to diabetes centre for improving glycaemic control. If poorly controlled and surgery urgent treat as major surgery.

Follow the Chart to find which table of instructions to follow

General Measures for all patients with Diabetes

- Screen for complications in PAAU (Renal, cardiac, nerve damage)
- Check HbA1C
- Place first on theatre list
- Peri-operatively aim for blood glucose of 6–10mmol/l

Insulin Types
Check BNF if unsure.

Short acting: Actrapid, Humulin S, Velosulin, Novorapid, Humalog
Mixed: (Combination of short and long acting) Novomix, Humalog Mix, Mixtard

Intermediate/Long acting: Lantus (Glarigne), Insulatard, Humulin I, Levemir (Detemir).

### TABLE A
MINOR SURGERY (Expected to miss 1 meal only)
TABLET CONTROLLED

<table>
<thead>
<tr>
<th>AM List</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Day before:</strong></td>
</tr>
<tr>
<td><strong>Day of surgery:</strong></td>
</tr>
<tr>
<td><strong>Post operatively:</strong></td>
</tr>
</tbody>
</table>

### TABLE B
MINOR SURGERY (Expected to miss 1 meal only)
TABLET CONTROLLED

<table>
<thead>
<tr>
<th>PM List</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Day before:</strong></td>
</tr>
<tr>
<td><strong>Day of surgery:</strong></td>
</tr>
<tr>
<td><strong>Post operatively:</strong></td>
</tr>
</tbody>
</table>

### TABLE C
MINOR SURGERY
INSULIN TREATED

<table>
<thead>
<tr>
<th>AM List</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Day before procedure:</strong></td>
</tr>
<tr>
<td><strong>Day of procedure:</strong></td>
</tr>
<tr>
<td><strong>Post operatively:</strong></td>
</tr>
</tbody>
</table>
### TABLE D
**MINOR SURGERY**
**INSULIN TREATED**
**PM List**

<table>
<thead>
<tr>
<th>Day before procedure:</th>
<th>Give all normal insulin.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day of procedure:</td>
<td>Fast as usual.</td>
</tr>
<tr>
<td>Morning of operation:</td>
<td>Give normal dose of short acting insulin with breakfast.</td>
</tr>
<tr>
<td></td>
<td>Give ½ of usual dose of morning long acting insulin with breakfast.</td>
</tr>
<tr>
<td></td>
<td>Give ⅔ of usual morning dose of mixed insulin with breakfast.</td>
</tr>
<tr>
<td></td>
<td>Check BM: 1 hour pre-op and once during procedure.</td>
</tr>
<tr>
<td></td>
<td>Post-op: 2 hourly until eating, then 4 hourly.</td>
</tr>
<tr>
<td></td>
<td>If BM &gt;15mmol/l at any stage commence insulin sliding scale.</td>
</tr>
</tbody>
</table>

**Post operatively:**
- Restart normal s/c insulin regime. Patient should be ready to eat by lunch.
- Give normal supper insulin with first meal.

### TABLE E
**MAJOR SURGERY**
**TABLET TREATED**
**AM List**

<table>
<thead>
<tr>
<th>Day before procedure:</th>
<th>Give all normal oral hypoglycaemics.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day of procedure:</td>
<td>Fast as usual. Admit on day of surgery.</td>
</tr>
<tr>
<td></td>
<td>Omit all insulin on morning of operation.</td>
</tr>
<tr>
<td></td>
<td>Start sliding scale insulin/dextrose on admission at 7.30.</td>
</tr>
<tr>
<td></td>
<td>Check BM: 1 hour pre-op and 2 hourly from start of infusion.</td>
</tr>
<tr>
<td></td>
<td>Check at least once during procedure and once in recovery.</td>
</tr>
</tbody>
</table>

**Post operatively:**
- Stop infusion and restart oral hypoglycaemics when eating and drinking normally.

### TABLE F
**MAJOR SURGERY**
**TABLET TREATED**
**PM List**

<table>
<thead>
<tr>
<th>Day before procedure:</th>
<th>Give all normal oral hypoglycaemics.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day of procedure:</td>
<td>Omit AM metformin. Take all other oral hypoglycaemics.</td>
</tr>
<tr>
<td></td>
<td>Fast as usual. Admit on day of surgery.</td>
</tr>
<tr>
<td></td>
<td>Start sliding scale insulin/dextrose on admission at 10.30.</td>
</tr>
<tr>
<td></td>
<td>Check BM: 1 hour pre-op and 2 hourly from start of infusion.</td>
</tr>
<tr>
<td></td>
<td>Check at least once during procedure and once in recovery.</td>
</tr>
</tbody>
</table>

**Post operatively:**
- Stop infusion and restart oral hypoglycaemics.
### TABLE G
**MAJOR SURGERY**  
**INSULIN TREATED**  
**AM List**

**Day before procedure:** Give all normal insulin doses apart from bedtime long acting.  
Instead give only ⅔ of normal dose of bedtime long acting insulin.  
Give normal dinner dose of mixed insulin.

**Day of procedure:**  
Fast as usual. Admit on day of surgery.  
Omit all insulin on morning of operation.  
Start sliding scale insulin/dextrose on admission at 7.30.  
Check BM: 1 hour pre-op and 2 hourly from start of infusion.  
Check at least once during procedure and once in recovery.

**Post operatively:**  
Stop infusion when eating and drinking normally.  
(Keep infusion going for 20–30 minutes after giving first does s/c insulin).  
Restart regular insulin regimen. This may need to be adjusted up or down until blood sugar levels stable.

**Encourage supervised self-management while in hospital.**

### TABLE H
**MAJOR SURGERY**  
**INSULIN TREATED**  
**PM List**

**Day before procedure:** Give all normal insulin doses.

**Day of procedure:**  
Fast as usual. Admit on day of surgery.  
Take usual short acting insulin with breakfast.  
Omit long acting AM insulin (if any).  
Give ⅔ of usual morning dose of mixed insulin with breakfast.  
Start sliding scale insulin/dextrose on admission at 10.30.  
Check BM: 1 hour pre-op and 2 hourly from start of infusion.  
Check at least once during procedure and once in recovery.

**Post operatively:**  
Stop infusion when eating and drinking normally.  
(Keep infusion going for 20–30 minutes after giving first does s/c insulin).  
Restart regular insulin regimen. This may need to be adjusted up or down until blood sugar levels stable.

**Encourage supervised self-management while in hospital.**
1. **Intravenous Insulin Sliding Scale**

Infusate is made up to 50ml of normal saline (0.9%) by adding 50 units of Soluble Human Insulin (Actrapid) and given IV at a rate shown by the sliding scale below.

**Capillary blood glucose** should be checked at least every 2 hours.

2. **Fluids and Potassium**

Give 1 litre of either N/saline (when glucose above 12 mmol/l) or dextrose 5% (when glucose less than 12mmol/l) over 8 hrs.

**Fluid requirements will be less in the frail and elderly and more in those with ongoing fluid losses. Think about volume of fluid needed.**

Only start Potassium supplements once plasma level is known. Replace as follows:

<table>
<thead>
<tr>
<th>Plasma K⁺ (mmol/l)</th>
<th>mmol of KCl in each litre of fluids—over 8 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 3.5</td>
<td>40</td>
</tr>
<tr>
<td>3.5 – 5.5</td>
<td>20</td>
</tr>
<tr>
<td>&gt; 5.5</td>
<td>Nil. Recheck plasma K⁺ in 2 hours</td>
</tr>
</tbody>
</table>

Remember if in doubt please contact a member of the diabetes care team via Switchboard.
ENT

The ENT department has three full time consultants, Mr El Alami (General ENT, Paediatrics, Head and Neck Surgery), Mr Basavaraj (General ENT, Otology), Mr Tasca (General ENT, Paediatrics, Rhinology, Otology). There are no designated ENT junior staff.

Most of our elective workload will be treated via the Day Surgery Unit. The general surgical FY1 & FY2 at St Mary’s cover the day-to-day inpatient care of ENT patients. Inpatients are generally located on St Helens Ward and Whippingham Ward. Children for elective and emergency treatment in Children’s Ward are usually under the combined care of ENT and the Paediatric Department.

The ENT Department is located in the North Block of St Mary’s Hospital adjoining the Maxillofacial (MFU) and Eye Departments. The Audiology and Hearing aid sections are within the ENT department. Outpatient clinics and theatre sessions are held morning and/or afternoons Monday to Friday and both outpatient and inpatients can be reviewed there after discussion with ENT.

EMERGENCY ENT PROBLEMS

An ENT Consultant should always be available immediately for practical help or advice regarding all ENT emergencies. Please contact us through the departmental secretary on extension 4473 or switchboard. You can also contact or see us directly in the ENT department. We offer a 24 hour service for all aspects of specialist advice and care.

Please note we do not have any junior or middle grade cover and are not resident on site. We will therefore call on the help of the junior surgical team covering wards or emergencies to help with general clerking and basic investigations as well as first line emergency treatment if necessary. This system has been working very well in the past and is necessary to provide adequate care for our patients. All patients admitted under ENT will have been given clear treatment instructions documented in the notes either by ENT directly or after discussion with ENT by the
admitting doctor. The patients are often taken to the clinic for treatment and investigations.

There is a list of special instructions regarding the management of common ENT problems for casualty officers, which is available in the doctor’s office in A&E.

ENT Admissions

ENT admissions are admitted under the care of the ENT Consultant. Clerking and carrying out of relevant investigations and treatments as instructed by the ENT Specialist are done by the FY1 or FY2 doctor. For non-elective ENT admissions you are asked to keep careful notes of patients progress on a daily basis. You are not expected to do consenting and surgical discharge letters/summaries will usually be done by ENT.

Teaching

Foundation year doctors are encouraged to attend ENT clinics whenever possible. They are also encouraged to attend ENT theatre lists to see the range of operations available.
FIRE PRECAUTIONS

FIRE

1. If you discover a fire or suspect there is a fire carry out the following:
   ● Close the door to the fire.
   ● Operate the fire alarm by ‘breaking the glass’ at the nearest call point.
   ● Contact switchboard via the emergency telephone number ‘2222’ (internal phone), ‘999 or 112’ (external phone).
   ● Ensure that all persons are removed from danger. Safety must come first.
   ● Fight the fire using the appropriate fire extinguisher (only if it is safe to do so and you have been taught how to use the fire extinguishers).
   ● Proceed to your assembly point.

2. In the single staff accommodation the smoke detectors are connected to the fire alarm system once activated an automated message is sent to the switchboard and they call the Fire brigade. No smoking is allowed in any of the communal areas i.e. lounges, hallways, passageways or staircases. Smoking is only allowed in your own bedroom. The smoke detector in this room is not connected to the main fire alarm system, but excess smoke will set it off, however, the detectors in the communal areas are attached to the main fire alarm system and will attract full fire brigade attendance.

FIRE PRECAUTIONS

1. Carry out fire training, part 1 & part 2 annually.

2. Study Fire Instruction Notices, and the types of fire extinguishers. Get to know how they work and for what type of fire they are suitable. All extinguishers have instructions on them.
3. A fire blanket is provided in each kitchen area for use in the event of a cooker fire. Please follow the instructions on the blanket body.

You can contact the Fire Safety Manager via the St Mary’s Hospital switchboard if you have a particular problem or query.

**SECURITY**

1. It is your responsibility to safeguard your own possessions and neither the Trust nor Western Challenge can be responsible for them. Always ensure that you have adequate personal insurance and that you have recorded details of property, i.e. model and serial numbers etc.

2. Always keep your accommodation locked.

3. It is everyone’s responsibility to safeguard property and that of other staff, patients and visitors. Any such crime in respect of staff residential accommodation must be reported to the Accommodation Manager of Western Challenge.
GASTROENTEROLOGY

SUMMARY GUIDELINES FOR THE MANAGEMENT OF ACUTE UPPER GASTROINTESTINAL HAEMORRHAGE

Course of action:

It is important to differentiate haemorrhage due to variceal bleeding from that of other causes as the management differs. However, the following history, examination and basic investigations apply to all causes.

History: NSAID / aspirin ingestion / Steroids / antiplatelets / anticoagulants / use of iron salts
Alcohol consumption
Dyspepsia
Liver/Cardiac/Arterial disease/renal disease/malignancy.

Examination: Cardiovascular status
- postural drop in blood pressure
- tachycardia
- shock
Stigmata of chronic liver disease
Rectal: melaena (differentiate from iron stained stool)

Investigations: FBC, U&Es, clotting, LFTs, glucose
ECG: if age >60
shocked patients
known ischaemic heart disease
Daily Hb / U&E until stable
Group and Save / Crossmatch

Blood requirements: Cross-match
4 units:
- Tachycardic (Pulse >100)
- postural drop in systolic BP >15 mmHg
● shocked (BP <100)
● Hb <100g/dl

6 units:
● suspected varices

Otherwise: Group and Save

**Diagnosis Decision:** Variceal bleeding should be suspected if;
– Profuse painless bleeding
– Stigmata of chronic liver disease

**FOR NON VARICEAL HAEMORRHAGE**

**Treatment:**

● Give Oxygen.
● Large bore Venflon (14 or 16 gauge) into antecubital fossa – all patients.
● (2 Venflons if shocked).
● Resuscitate if shocked – plasma expanders, blood.
● Transfuse if Hb <100 g/l.
● Pharmacological: IV Omeprazole (80mg stat then 8mg/hour for 72 hours) if shocked, if pre-endoscopy Rockall Score (see below for details) is 2 or more, or if ulcer with stigmata seen at endoscopy.
  (NB This is a non-licensed use of omeprazole but it is accepted for use by the Trust in these circumstances).
● Otherwise an oral PPI should be commenced.
● Indications for central venous pressure monitoring:
  ● admitted hypotensive and age >60 or those who do not respond rapidly to iv fluids.
  ● re-bleed.
- transfusion requirements >4 units.
- severe cardio-respiratory disease or other severe co-morbid disease.

INDICATIONS FOR SURGERY

1. If a patient rebleeds after endoscopy then surgery MUST be considered.

2. Repeat endoscopy may be considered but this must be decided in discussion with the surgeon and endoscopist.

Pre Endoscopy Management
Management may be guided by the pre-endoscopy Rockall Score;

PRE ENDOSCOPY ROCKALL SCORE

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>&lt;60</td>
<td>60 – 79</td>
<td>&gt;80</td>
<td></td>
</tr>
<tr>
<td>Shock</td>
<td>Systolic BP &gt;100</td>
<td>Systolic BP &gt;100</td>
<td>Systolic BP &lt;100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pulse &lt;100</td>
<td>Pulse &gt;100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-Morbidity</td>
<td></td>
<td></td>
<td>Heart Failure</td>
<td>Renal Failure</td>
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<td></td>
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<td></td>
<td>IHD</td>
<td>Liver Failure</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Major Comorbidity</td>
<td>Disseminated</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>malignancy</td>
</tr>
</tbody>
</table>

Score 0 or 1 – low risk
Admit to medical ward
If stable may have fluids to drink
Hourly observations of pulse, BP and urine output
Endoscopy on next routine list if possible (NBM 4 hours prior to endoscopy)

SCORE >1 – HIGHER RISK
NIL BY MOUTH (EXCEPT FOR ORAL PPI)
REQUIRE CLOSE MONITORING
In a Bed where they can be seen/GI bleeding unit/HDU (depending on stability)
Frequent pulse and BP
Catheterise
Measure hourly urine output
Endoscopy within 24 hours
Endoscopy: Next working day if stable (i.e. generally within 24 hours of admission)

(Contact Endoscopy Unit – prior to 9am and leave a message on the answer phone and send request in POD to Endoscopy).

Keep nil by mouth 4 hours before endoscopy or from midnight if unsure as to when procedure can be performed. Remember the patient may require intravenous hydration).

Post Endoscopy Risk: Use Total Rockall Score to highlight rebleed Stratification risk and the need to start/continue/stop pharmacological therapy, monitoring needs and timing of discharge.

**RISK STRATIFICATION**

Patients may be stratified as to risk of rebleeding by reference to the Rockall score;

**FOR NON-VARICEAL BLEED**

<table>
<thead>
<tr>
<th>Age</th>
<th>0</th>
<th>1</th>
<th>2</th>
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<td>All other non-malignant diagnoses</td>
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<td>None (or dark spot only)</td>
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<tr>
<td>Fresh Blood Adherent Clot Visible Vessel Spurting Vessel</td>
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If score 2 on “stigmata of haemorrhage” then start IV OMEPRAZOLE

80mg stat followed by an infusion of 8mg/hour for 72 hours

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<th>Score &gt; 1 – higher risk</th>
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<tr>
<td>If no other source of bleeding suspected</td>
<td>Close monitoring – pulse, BP, urine output</td>
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<td>If no other medical problems</td>
<td>WATCH FOR REBLEEDING</td>
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<tr>
<td>Early discharge</td>
<td>● Fresh haematemesis/melaena associated with development of shock</td>
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<td>● Fall in CVP &gt; 5cmH2O</td>
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<td>● Fall in Hb &gt; 20g/l over 24 hours</td>
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<td>Discharge when observations, Hb stable for 48 hours</td>
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SUSPECTED OESOPHAGEAL VARICES:

Suspect if – Profuse painless bleeding
– Stigmata of chronic liver disease

If life threatening variceal bleeding – prior endotracheal intubation recommended – enlist Anaesthetic help if necessary.

Treatment:

1. Basic management
   ● Give Oxygen
   ● 2 Large bore Venflon (14 or 16 gauge) into antecubital fossae
   ● Resuscitate if shocked – plasma expanders, blood
   ● Transfuse if Hb <100 g/l (transfer to a target Hb g 10g/l. Over transfusing can lead to further bleeding).

2. Correct clotting disorders
   ● Vitamin K – 10mg IV (bolus injection)
   ● If INR or APTR >1.5 – give 4 to 6 units of Fresh Frozen Plasma
   ● If Fibrinogen <0.8g/l – give 6 to 20 Cryoprecipitate bags
   ● If Platelet count <50 x 10⁹/l – give 1 to 2 adult doses Platelets
3. Administer terlipressin 2mg IV. bolus 6 hourly for 36 hours (Monitor BP, U&E, Fluid balance, & glucose) as soon as variceal bleeding suspected.

4. Antibiotics (Augmentin or Tazocin).

**BUT**

5. Endoscopic sclerotherapy or variceal banding is the treatment of choice.

6. If bleeding continues after endoscopic management –
   - Continue Terlipressin
   - Consider Sengstaken Blakemore tube

Contact duty Endoscopist for further advice

7. Further treatment  Lactulose 20mls QDS  Pabrinex IV

**CRITERIA FOR EMERGENCY ENDOSCOPY:**

1. Variceal Bleeding

2. Transfusion requirements:
   - >4 units to stabilise

3. If age >60 together with compromising cardiac/respiratory/hepatic/renal disease: discuss with Endoscopist if continues to be unstable after 2 units of blood

4. Re-bleed prior to routine endoscopy

If emergency endoscopy required:
   - Fully resuscitate
   - Medical Registrar to contact on-call Endoscopist (rota in switchboard) and to arrange for a doctor and nurse to escort the patient during endoscopy.

The Endoscopist will assess re-bleed risk and advise on treatment plan and necessity of surgical intervention.
Please note;

The above guidelines are the ideal and should be followed as closely as possible. However, currently the Hospital Primary Care Trust does not support an out of hours gastrointestinal bleeding service. Any out of hours need for endoscopy will need to be discussed with your consultant.

ENDOSCOPY

Due to workload pressures in endoscopy we cannot always perform procedures on the day of referral. However, if a procedure such as a gastroscopy is urgent, for instance due to on going GI bleeding, we will do our best to fit it in. However, if you make a referral at 4:30 pm do not expect a sympathetic response or expect the procedure to be done!

ABNORMAL LIVER FUNCTION TESTS AND JAUNDICE

Abnormal LFTs are frequent and the causes are legion, however the approach to them is straightforward.

In general terms, Alkaline Phosphatase (ALP) represents a biliary/cholestatic/obstructive problem and Alanine Transaminase (ALT) reflects inflammation/hepatitic problems.

A jaundiced patient always needs an ultrasound to exclude obstruction or other liver lesion such as metastases. The report can often suggest if there is cirrhosis or other complications reflecting chronic liver disease such as ascites or varices.

As with all patients a careful history and examination is always required. For example;

**History**

- Obesity, hypertension (metabolic syndrome)
- Alcohol intake – Amount and duration
- Drugs – Illicit, prescribed (e.g. augmentin, flucloxacillin etc) and overdose (e.g. paracetamol)
- Blood Transfusions
- Travel, Hospital treatment abroad
- Sexual behaviour
- Tattoos and piercings
- Family History
Examination Stigmata of Chronic liver disease  
- Palpable liver, spleen or other masses  
- Ascites, Encephalopathy

A liver screen is useful to look for causes of chronic liver disease and even if a cause is suspected is helpful to exclude other unexpected reasons.

**Ultrasound of liver**

- Hepatitis B (Hep B s Ag)  
- Hepatitis C (Hep C Ab)  
- Ferritin and Iron and transferrin saturation  
- Alpha-1 Antitrypsin  
- Caeruloplasmin (if under 40)  
- Immunoglobulin levels  
- Anti Smooth Muscle Antibody, Antinuclear Antibody  
- Anti Mitochondrial Antibody  
- INR  
- Repeat LFT  
- FBC

Patients with Ascites should always have this tapped and sent for protein albumin white cell count, and culture (and cytology if malignancy suspected).

**Sick patients with deteriorating liver function and jaundice can become extremely unwell very rapidly and need very close monitoring.** Unless metastases are the cause of liver dysfunction early involvement of the gastroenterology team is recommended.

**COLITIS AND DIARRHOEA**

Diarrhoea is a common reason for admission and is often due to infection.
As always a good history and examination (including a rectal examination) is required. Always ask about recent hospital admissions or antibiotic use.

Investigations should include:

FBC
U&E
LFT
CRP

Stool MCS
Blood culture (if pyrexial)

Stool for Clostridium Toxin if recent antibiotic use or if known to have ulcerative colitis or Crohn's – In cases of suspected and confirmed Clostridium Difficile infection please follow specific policy.

AXR

Management:

1. Consider the need for a side room.
2. Basic resuscitation with fluids may be needed.
3. Stool chart.

Bowel rest (clear fluids only) is often all that is needed to treat gastroenteritis. Antibiotics do have their place but guidance from the microbiologist is recommended.

Remember to stop any laxatives they may be taking!

If there is a concern about inflammatory bowel disease then gastroenterology advice will be needed.
GENERAL PRACTICE

The local GPs would like to take the opportunity to welcome you to St Mary’s Hospital, Isle of Wight. We have been fortunate over the years in having an excellent working relationship between primary and secondary care on the Island. We include a list of local GPs later in the booklet to assist you and we look forward to any opportunity to meet.

There are twelve training practices on the Island. Lots of practices also are involved with teaching students. We also often invite the junior doctors to GP educational events that are held at the education centre, St. Mary’s in the evenings.

Dr Richard Williams is the course organiser for GP registrars on the Island and he has links with Portsmouth day release scheme. Dr John Partridge is the GP Tutor in charge of organising education for established Practitioners. Both would welcome any questions and can be contacted through the education centre on 534518.

Good communication during the working day is important for patients care and be assured GPs understand pressures that hospital doctors work under. Referrals into hospital will almost always have a significant reason prompting a request for admission. The GPs would ask you to bear in mind that occasionally these reasons include social problems or a combination of several medical problems.

It is a habit of Junior medical staff to inform Practices when a patient has died in hospital and it is very much appreciated by GPs who may quite quickly have to deal with grieving relatives. We also have systems for recalling patients routinely which need to be adjusted when a patient dies.

GPs also are highly dependent on essential early information about a patient’s care and outcome whilst in hospital following discharge. All your efforts to keep us fully informed through a prompt discharge summary are again appreciated.
The out-of-hours service for emergency care is provided by a combination of General Practitioners and the Ambulance Service for the Island as well as A&E. The out-of-hours service operates at weekends and weekday evenings from 6:30pm to 8:00am. To date all GPs involved are local to the Island.

Finally a small but important plea from the patient’s perspective. In general practice we often meet patients who have not retained the information given to them in hospital and it is always worth repeating such information, checking that they understand or giving them an appropriate leaflet.

I hope you enjoy your stay on the Island and can see more of it than the confines of St. Mary’s Hospital.

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<td>ANDREWS Christopher J A</td>
<td>East Cowes Health Centre</td>
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<td>MARTIN Avril  POOLE Adam C S  SEIGER Christine P</td>
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<td>PARTRIDGE John  DE BELDER Matthew J K  HAZELL Yvonne E  COONEY Kieron D  HUEPPE Mira E</td>
<td>St Helens Medical Centre  Upper Green Road  ST HELENS  Isle of Wight  PO33 1UG  Tel: 0844 477 2454  Fax: 01983 874800  Bembridge Branch Surgery  55A Foreland Road  BEMBRIDGE  Isle of Wight  PO33 5UA  Tel: 0844 477 2454  Fax: 01983 874800</td>
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<td>RANDALL Peter G  TROWELL Hugh M  WALTERS Gerhard  HENDERSON David J  BATEMAN Kirsty M  ANDERSON David B</td>
<td>Sandown Health Centre  Broadway  SANDOWN  Isle of Wight  PO36 9GA  Tel: 0844 477 3001  Fax: 0844 477 3009</td>
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<td>STAINER Gordon  STAINER M Ruth  FINCH Eileen A  FREYTAG Christine U  CHOPRA Rakesh  PARSONS Beate E A  BOORLE Jagannadha R  FORDHAM Simon E  NAYUNI Prassana K  SALTER Cabrini</td>
<td>Cowes Medical Centre  200 Newport Road  COWES  Isle of Wight  PO31 7ER  Tel: 01983 295251  Fax: 01983 290922</td>
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<tr>
<td>WALKER Gordon M</td>
<td>FRESHWATER</td>
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<tr>
<td>SCIVIER Annette</td>
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<tr>
<td>WHITE Dawn H</td>
<td>PO40 9DT</td>
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<tr>
<td>FOSTER Richard J</td>
<td>Tel: 0844 815 1428</td>
<td></td>
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<tr>
<td>MARSHALL Joy C</td>
<td>Fax: 0844 815 1429</td>
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<td>The Surgery</td>
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<tr>
<td>WHELAN Timothy R</td>
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<td>John Pepper</td>
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<tr>
<td>CLARKE Hester L</td>
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<td>SIMMONS Maureen H</td>
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<tr>
<td>LEMM Christian</td>
<td>PO30 1JW</td>
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<tr>
<td>DEXTER Emma L S</td>
<td>Tel: 01983 523525</td>
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<tr>
<td>KAKURLA Shanti D S</td>
<td>Fax: 01983 535710</td>
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<tr>
<td>SELBY Stephen B</td>
<td>WILLIAMS Richard C</td>
<td>Clive Oliver</td>
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<td>Tel: 01983 811431</td>
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<td>Fax: 01983 817215</td>
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GUIDELINES

ACUTE LIMB ISCHAEMIA
THE VASCULAR SOCIETY OF GREAT BRITAIN AND IRELAND

Description

When the blood supply to a limb is suddenly reduced damage and death of the nerves and muscles can occur within hours. This is termed **acute limb ischaemia**.

Diagnosis and treatment must be instigated immediately otherwise the limb may die and amputation or death of the patient occurs.

There are three main causes of acute limb ischaemia:

1. **Embolic** (blood clots travelling from other parts of the circulation and blocking the arteries).
2. **Thrombotic** (blood clots forming in a diseased or damaged artery and occluding it or forming spontaneously due to increased tendency for patient to clot).
3. **Interruption or compression** of the artery (as can occur in trauma when the artery is severed or compressed by other damaged tissues).

The diagnosis of acute limb ischaemia should be considered for any patient who develops sudden pain or rapid deterioration in previous symptoms.

Who is at risk?

Patients who are at risk of acute limb ischaemia often demonstrate:

1. **Arterial fibrillation** or recent heart attack.
2. Known **peripheral arterial disease** including previous interventions such as **bypass** or **angioplasty** and **popliteal aneurysms**.
3. Recent **limb surgery** especially knee replacement or if a tourniquet was used.
4. **Lower limb trauma;** fracture dislocation of the knee, high energy long bone fracture or seven soft tissue injury.

5. Patients with **malignancies** who are more prone to thrombosis especially if generally unwell and dehydrated.

6. **Aortic dissection** can result in impairment of limb blood flow.

**Diagnosis**

The ‘6 Ps’ will aid diagnosis of acute limb ischaemia:

- **PAIN** sudden onset, severe, may diminish over 1–2 hours due to nerve ischaemia. Pain on passive dorsi-flexion of the foot suggests muscle ischaemia of the leg.

- **PALLOR** the limb appears pale, especially compared to other limb. There will be no, or very delayed, capillary refilling.

- **PERISHINGLY COLD** the limb will feel cold compared to other limb, especially peripherally.

- **PULSELESS** peripheral pulses will not be felt pedal, popliteal and possibly femoral depending on level of block. Doppler signals may be heard but will be damped and pressures unobtainable or very low.

- **PARESTHESIA** reduced sensation to touch, especially distally.

- **PARALYSIS** the patient is unable to move the toes, foot and eventually the whole limb.

**Management**

Immediate referral to a vascular surgeon must be made for any patient with suspected acute limb ischaemia. Intravenous fluids, oxygen and pain relief may be given. Blood flow may be marginally improved by placing the foot in dependency (patient sitting in a chair or lowering foot of bed).
Further reading


HOSPITAL AT NIGHT

INTRODUCTION AND BACKGROUND

The Hospital at Night model proposes that the way to achieve effective clinical care at night is to have one or more multidisciplinary teams working in the hospital, who between them have the full range of skills and competencies to meet patients’ immediate needs.

The model was born out of an original idea by Dr Elizabeth Paice, Postgraduate Dean Director for London, who was concerned by the deleterious effects on patients and junior medical staff of traditional models of night time working.

Since then, the imperative to reduce the working hours of junior doctors and the subsequent move to full shift working, in order to comply with the New Deal Contract and the European Working Time Directive, has provided added impetus to change traditional medical working practices out of hours.

Isle of Wight NHS Trust has adopted the Hospital at Night Model to achieve the necessary clinical care at night. The Hospital at Night team is a multidisciplinary team working in the hospital, who between them have the full range of skills and competencies to meet the patient’s immediate needs.

Medical staff in the hospital at night are working on full shift work patterns and are therefore available to work rather than sleep. Whilst working within the Hospital at Night team, medical staff are expected to be proactive rather than reactive and seek out problems as well as responding to emergencies. If they are not too busy in their own discipline, they should be available to help in other clinical areas that are under pressure (The Academy of Colleges 2003). There is an emphasis upon team working and flexibility across specialities.

Effective handover supports continuity of information which is essential to good clinical care.
Teams should handover and identify the sickest patients and any outstanding minor tasks to the Hospital at Night team. Early review of sick patients can prevent their subsequent deterioration overnight and reduces critical incidents as well as overall workload. The Academy of Medical Colleges paper on the Out of Hours Medical Team (September 2003) says:

*Handover arrangements must improve – before leaving the hospital in the evening, every junior doctor should have identified each patient’s active clinical problems*.

The handover takes place in the Out-Patients Department waiting room and starts promptly at 20:00 hours. The handover is coordinated by the Clinical Site Coordinator and the Medical Registrar. This approach integrates medical and nursing handover and results in clearer management plans for patients. *(Full Handover Procedure is found in Appendix B)*

The handover provides a greater overview of the workload in the hospital and enables the Clinical Site Coordinator to begin to coordinate tasks and field non urgent bleeps appropriately.

It is the aim of Isle of Wight NHS Trust to ensure that the team coming on at night participates in an effective handover process. Evidence from other sites shows this should improve clinical care and outcomes *(Hospital at Night – Modernisation Agency 2004)*.

**BENEFITS FOR CLINICAL STAFF**

The ability to spend more time on clinical care:

- To provide better information on which to base clinical decision making and risk assessments as a consequence of improved handover
- To work as a team – thereby decreasing the sense of isolation, improving working relationships and boosting morale
- Greater fairness and appropriateness in task allocation and responsibility
● More and higher quality training and development opportunities
● Competency levels extended and enhanced
● The “Doctors” working ‘hours culture’ changed and improved

BENEFITS FOR PATIENTS

● More timely care
● Higher quality of clinical care
● Better co-ordinated care
● Decrease in the repetition of tasks and questions
● Improved risk assessment
● Improved patient experience of being in hospital at night

STRUCTURE OF THE HOSPITAL AT NIGHT TEAM

<table>
<thead>
<tr>
<th>Members of the team to attend handover</th>
<th>Staff on site but not part of the team</th>
<th>Staff non-residential on-call</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Clinical Site Co-ordinator (Joint Lead)</td>
<td>• A&amp;E Middle Grade</td>
<td>• Executive Director On-call</td>
</tr>
<tr>
<td>• Medical SpR (day) (Joint Lead)</td>
<td>• A&amp;E FY2/CT ½</td>
<td>• Senior Manager On-call</td>
</tr>
<tr>
<td>• Medical SpR (night)</td>
<td>• Paediatric FY2/CT ½ &amp; SpR</td>
<td>• Ophthalmology SpR until 20:00hrs then Portsmouth on-call</td>
</tr>
<tr>
<td>• Medical FY2/CT ½ (day)</td>
<td>• Anaesthetic – Specialty Doctor for ICU and 1st on-call</td>
<td>• Trauma &amp; Orthopaedic SpR</td>
</tr>
<tr>
<td>• Medical FY2/CT ½ (night)</td>
<td></td>
<td>• Other consultants on-call; medicine, surgery, orthopaedic, anaesthesia, ENT, microbiology, haematology, obstetric and gynae, paediatrics, urology</td>
</tr>
<tr>
<td>• Surgical SpR (day) if not in theatre</td>
<td></td>
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<tr>
<td>• Surgical SpR (night)</td>
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<tr>
<td>• Surgical/Obstetric and Gynae FY2/CT ½ (day)</td>
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<tr>
<td>• Trauma &amp; Orthopaedic FY2/CT ½ (day)</td>
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<tr>
<td>• Trauma, Orthopaedic, Obstetric, Gynae, ENT, Surgical FY2/CT ½ (night)</td>
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</tr>
<tr>
<td>• Critical Care Outreach/Advanced Nurse Practitioner (day/night)</td>
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</table>
WORKING ON THE HOSPITAL AT NIGHT TEAM

If you are on the night shift and you are a member of the core operational team in the hospital you must attend the 'Hospital at Night Handover' with the other team members who will be on duty and working with you, or you must handover to an appropriate doctor who is to attend as specified above.

Bleeps

All bleeps from the wards at night should go through the Clinical Site Co-ordinator. If you receive calls directly from the wards, these should be redirected to the Clinical Site Co-ordinator.

Filtering of bleeps will mean that the Clinical Site Co-ordinator can allocate the task to the correct person and have a clear understanding of everyone’s workload and to support effective prioritisation during times of pressure.

A formal bleep system is currently being scoped and developed by the Hospital at Night project steering group.

Non Resident on Call Doctors

See list on Page 113

ROLES OF THE TEAM

Director on Call

To provide Executive level advice to the Senior Manager on call when required. Overall to accept responsibility of the hospital, patient flow and capacity.

Senior Manager on Call

To provide senior leadership and intervention to maximise patient flow during periods of escalation.

Clinical Site Co-ordinator Bleep Holder

The Clinical Site Co-ordinator is the joint Team Leader at night with the Medical Registrar. The role of the Clinical Site Co-ordinator is to manage the hospital at night,
ensuring effective bed management and hospital safety. They provide guidance to all ward staff, as part of the Hospital at Night team.

1. To provide effective management, leadership and support out of hours in relation to:

- **Bed Management** – to support the emergency flow by liaising with wards regarding their ability to receive patients dependent upon patient dependency/staffing. To support A&E / MAU when the ‘flow’ of patients becomes ‘blocked’ by helping to review staffing, or any other issue that may assist e.g. liaising with domestic teams.

- **Staffing** – to have an overall picture of the clinical staffing / skill mix within the hospital, enabling the appropriate movement of staff to respond to areas of high dependency or shortage to maintain safety.

- **Infection Control** – to have an overall picture of any infection control issues affecting the hospital i.e. bay/ ward closures, advise regarding the use of side rooms using the tools available.

- **Electronic Prescribing and Medicines Administration EPMA** – Provide super user information and support to staff to facilitate EPMA.

In order that the Clinical Site Co-ordinator might effectively carry out these duties, it is expected that she/he visit the identified ‘hot spots’ within the clinical areas following a formal handover, and then each clinical area at least once during a shift as necessary.

2. To provide effective leadership and support in the capacity of Clinical Site Coordinator in the following situations:

- **Fire**
- **Trauma**
- **Cardiac arrest**
• Major Incident e.g. to support the ward/department by attending to provide direct assistance or to review available staffing to help. Provide support to staff following the incident.

3. To support staff in the handling of patients / relatives complaints.

4. To support staff when informed of serious incidents requiring investigation, ensuring that the appropriate documentation is completed and any immediate action required is taken.

5. All media queries or issues will be referred to the Senior Manager on call.

6. Provide break cover for the Advanced Nurse Practitioner.

**Advanced Nurse Practitioner**

The role of the Advanced Nurse Practitioner (ANP), provides a partnership of care; aimed at early detection, intervention and prevention of deterioration in the critically ill patient. The ANP is proficient in the care of critically ill patients level 1 to 3 as defined in Comprehensive Critical Care (2000). The additional role at night will relieve the medical staff of all routine clinical work within the ward areas to enable the medical staff to focus on new admissions at night and complex cases.

The main aims are to:

• Provide a comprehensive patient assessment if MEWS Score is 3 or above or staff are worried, and facilitate timely admission to Intensive Care Unit (ICU) if appropriate.

• Review all patients discharged from ICU from the daytime.

• Liaise with the Critical Care Consultant when appropriate as well as the medical / surgical on call team.

• Liaise with multi-professional team to support patient management.
● When available, support teams with the transfer of sick patients throughout the trust.
● Provide ongoing education to ward staff on issues around the management of the critically ill patient.
● Undertake the routine ward based work to release on-call medical teams to focus on the emergency admissions and complex cases.
● Provide break cover for the Clinical Site Co-Ordinator.

The Advanced Nurse Practitioner can undertake the following clinical skills, as required: *(This is not an exhaustive list)*

● Patient reviews
● History taking and physical examination
● Diagnosis based on their assessments
● Team Lead Cardiac Arrests
● Venflons/phlebotomy/PIC and Midline insertion
● ECG’s
● Independent non medical prescribing
● Requesting and interpreting investigations
● Undertake independent transfer of patients requiring a medical escort
● IV drug administration
● Commence oxygen and fluid therapy as per written protocols
● Verification of expected death

**Role of the Medical Registrar**

The role of the Medical Registrar is two fold:

● Clinical
● Joint Leader with the Clinical Site Co-ordinator

Their first priority is to perform their clinical duties as part of the medical rota, accepting patients direct from GPs as well as from the Emergency Department.
Their second role is that of leader of the Hospital at Night Team. This involves making themselves known to the rest of the team at handover and assessing the strengths of the team. Should any team member experience any difficulty then they are at hand to offer support and advice.

Clear leadership involves:

- Creating alignment amongst team members around shared objectives and strategies to attain them
- Increasing enthusiasm and excitement about the work
- Maintaining a sense of optimism and confidence
- Helping those within the team appreciate each others’ contribution
- Helping team members to learn how to confront and resolve differences constructively
- Helping people to co-ordinate activities and continuously improve
- Assisting team members to develop their capabilities
- Encouraging flexibility
- Offering objective analysis of processes
- Encouraging collective learning about better ways to work together
- Positive role model for the team at night

The Medical Registrar will contact team members throughout their shift to see if they require any assistance, that way establishing who is busy and may request those who are not busy to assist others who are.

**Task Allocation**

Wards will phone jobs through to the Clinical Site Co-ordinator and the tasks will be allocated to the appropriate member of the Hospital at Night team.

**HANDOVER**

Effective handover supports continuity of information, essential for good clinical care. It ensures that all the acutely unwell and at risk patients throughout the hospital are known to the senior members of the team.
Early review of these patients can prevent their subsequent deterioration and reduce critical incidents as well as overall workload. Active planning by teams during the weekday shifts can assist in good handover of care. This includes clear documentation of plans for each patient and the completion of a Treatment Escalation Plan where appropriate.

Before leaving the hospital at the end of their shift, (whether it is late afternoon, early evening or at the end of a night shift) every junior Doctor should have identified each patient’s active clinical problems. Remembering to communicate using the patient safety SBAR principles.

Documentation used for admissions / patients in need of review sheet and weekend patient review list sheets can be found on MAU, Whippingham, Luccombe and the Intranet site under Clinical Zone – Hospital at Night. Verbal and written handover must be given to the on call teams prior to leaving your shift. This “task list” will be used to inform the handover for both the Hospital at Day and Hospital at Night teams, but will also be used by specialty teams to review patients who have either been newly admitted or who have been seen by one of the on-call teams and require a review. Where reviews are required at Consultant level, the Consultant should be contacted directly and should also be given a verbal handover.

Within the Hospital at Night team we have a defined group of staff who are required to attend a daily handover at 20:00hrs in the Out-Patient’s Department waiting room for 15 minutes. Appendix A highlights the team members required to be at this meeting on a daily basis, on-coming team and out-going team members and also the record sheet they all need to individually sign. This handover process is supported by a clear standard operating procedure (See Appendix B). In order to maintain and improve the quality of the handover process, it will be audited on a regular basis using a defined audit tool (See Appendix C).
PHONE AND BLEEP POLICY

This policy seeks to consolidate good practice relating to communication between medical and nursing staff. The Hospital at Night co-ordination system has been set up to improve communication between clinicians and enable most effective patient care through the ability of professionals to provide that care without unnecessary interruptions. The system provided through the Clinical Site Co-ordinators ensures that the right message gets through to the right member of the team, creating a list to ensure that all staff are able to see that jobs will be completed within a given time frame and prioritised accordingly.

Where possible, jobs that require completion on the ward should be phoned through to the Clinical Site Co-ordinator.

Where urgent contact is required the bleep policy is a useful device to guide you. The Bleep Policy can be found on the Intranet site under Trust Policies.

Life Threatening Emergencies

This is initiated by the Hospital Cardiac Arrest procedure, upon receipt of a 2222 call dialled by a ward or department. All members of the hospital staff should be familiar with this number and be competent at relaying the necessary information to switchboard from the area that they are in.

Urgent Calls

The decision as to what is urgent will ultimately rest with the nursing and midwifery staff caring for the patients. This decision should be made by the senior nurse on the ward. Should a Doctor be required urgently (but not the cardiac arrest team) – then switchboard should be contacted via 0 and a request made to fast bleep the Doctor required. The Doctor concerned should respond immediately. The Clinical Site Co-ordinator and Advanced Nurse Practitioner should also be informed of the actions taken by the nursing staff as soon as possible.
Contacting Medical Staff Directly

All calls out of hours should be directed to the Clinical Site Co-ordinator. Should the senior nurse on the ward deem that they need to contact a Doctor urgently, they should bleep the Advanced Nurse Practitioner who will attend and contact the Doctor if required.

As much clinical information as possible must be ready when the Advanced Nurse Practitioner/Doctor is contacted, using the patient safety tool SBAR (See Appendix D).

Non-Urgent Tasks

Non-urgent tasks should be phoned through to the Clinical Site Co-ordinator or identified using the on call paper patient review system. Non-urgent tasks that require completion out of hours can be significantly reduced by effective communication between ward and medical staff. This will ensure that routine day work is completed, such as re-writing prescription sheets, prescribing Warfarin and the cannulation of patients.

Ward Doctors are responsible for ensuring that ward jobs are completed as far as possible by the end of their shifts.
## HOSPITAL @ NIGHT SIGN IN SHEET AND TEAM MEMBERS

<table>
<thead>
<tr>
<th>Date</th>
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<th>Incoming role</th>
<th>Name</th>
<th>Signature</th>
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<td>Med Registrar</td>
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<td>Surgical Registrar</td>
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<td>FY2/CT ½ – SOG</td>
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<td>Advanced Nurse Practitioner</td>
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<td>Med FY1</td>
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<td>Gynae Registrar/FY2/CT ½</td>
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<td>Critical Care Outreach Practitioner</td>
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APPENDIX B

NIGHT HANDOVER STANDARD OPERATING PROCEDURE

Aim: Good handover is vital for patient safety

Keeping patients safe by ensuring a structured handover process which will provide effective and efficient clinical care and support a standardised process and handover paperwork.

Meeting Handover Room: Out-Patient Department Waiting Room

Time of Handover: 20:00

Length of meeting: Fifteen minutes.

All on call team members will receive a bleep from switchboard ten minutes prior to the meeting to remind them of the handover meeting.

Hospital at Night handover meeting membership

- Medical registrar (Joint Chair)
- Clinical Site Co-ordinator (Joint chair)
- FY1/FY2 / CT Medicine/Surgical/Ortho/Gynae
- Critical Care Outreach
- Advanced Nurse Practitioner

Documentation: Initially would be paper driven.

- Handover sheets. Held in MAU, Whippingham and Luccombe and Intranet Site.
  - Holding area would be responsible for keeping stock of handover forms.
- Attendance Sheets. Bed Management team will bring to meetings and hold stock of forms.

(Intranet based record sheet will be developed as part of the ongoing ISIS (Logica) project)
**Handover Information:**

Emergency patients still to be seen/or giving concern in emergency areas.

Emergency patients awaiting admission or who are giving cause for concern will be recorded on Handover sheet.

Patients of concern will be discussed at night handover meeting.

Handover sheet will be given to on call team.

**Patients on other areas giving concern:**

Outgoing medical teams will hand over any patients that they have ongoing concerns with to the on call team.

On call teams will log information using agreed handover sheet.

Patients of concern will be discussed at night handover meeting.

Handover sheet will be given to on call team.

**Weekend List**

**Medicine**

- All patients of concern or needing review to be identified by ward team and relayed to on call weekend medical team.
- Written sheet and verbal handover to be given to MAU Registrar on Friday @ 17:00 and kept in a file on MAU.
- On call team will hand information over to the next on call team.

**Surgical specialities (which includes surgery, gynae, ENT & Orthopaedic)**

- Patients of concern are detailed in the notes and will be handed over between teams in the usual way as they are reviewed daily by surgical team.
● Hand over sheets for surgical specialities will be stored in a folder on Whippingham and Luccombe.

**Handover sheet:**

At the end of each shift, handover sheets will be left on MAU, Whippingham & Luccombe for Clinical Site Coordinator to collect.

**Handover sheet safety:**

There have been issues regarding carrying/transporting of handover sheets from area to area.

All handover sheets must be transported in a brown envelope addressed to the Clinical Site Co-ordinator to ensure safe return in the event of misplacement.

All handover sheets will have the name of the person responsible for that sheet recorded at the top.

**Other Handover Details:**

● An attendance log will be maintained and each member will sign in.

● Handover meeting will be chaired by: Clinical Site Co-Ordinator / Registrar Jointly.

● Handover sheets will have been completed at the meeting and handed to the on coming teams for reference.

● Hand over should be a team process and one central meeting will take place and not individual multiple meetings.

● Agenda for handover meeting will consist of:
  ● Medical Handover
  ● Surgical Handover
  ● Orthopaedic
  ● Gynae
  ● Bed Capacity report

● All parties present will respect the process of the meeting and give their undivided attention.
● Information shared by each speciality will consist of patients waiting admission. In patients where concerns are identified.

● Critical Care Outreach will feed back any patients of concern within each area.

● Each clinical group will hand over to their opposite team member in a succinct and timely fashion. Re-arranging order of team handing over shall be decided by the chair.

● Meeting will finish within fifteen minutes.

● All members will remain for the full hand over to avoid disturbing the meeting.

● Completed Attendance Log and handover sheets will be held by/returned to Bed Management team for audit purposes.
## HOSPITAL AT NIGHT AUDIT FORM

<table>
<thead>
<tr>
<th>Date and Time</th>
<th>Clinical Site Co-Ordinator</th>
<th>Number Attending Meeting</th>
<th>No. of Medical Patients Handed Over</th>
<th>No. of Surgical Speciality Patients Handed Over</th>
<th>No. Critical Care Patients Handed Over</th>
<th>Duration of meeting</th>
<th>Any Interruptions</th>
<th>Any other information</th>
</tr>
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</tbody>
</table>
## S B A R Communication Tool

### S Situation

<table>
<thead>
<tr>
<th>Patient name:</th>
<th>Ward:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>Time:</td>
</tr>
<tr>
<td>Nurse reporting:</td>
<td>Doctor being called:</td>
</tr>
<tr>
<td>I am concerned about...</td>
<td></td>
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</tbody>
</table>

### B Background

Admission diagnosis & admission date:

RELEVANT medical history:

Resuscitation status:

Treatment to date: (refer to patient’s notes)

### A Assessment

#### Describe What You See Hear Feel

<table>
<thead>
<tr>
<th><strong>Airway</strong></th>
<th><strong>Breathing</strong></th>
<th><strong>Circulation</strong></th>
<th><strong>Disability</strong></th>
<th><strong>Exposure</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear / patent: YES / NO</td>
<td>Respiratory rate: ________ / min</td>
<td>Pulse rate: ________ / min (regular / irregular / bounding / thready)</td>
<td>AVPU score: ________ (Alert, Voice, Pain, Unresponsive)</td>
<td>Skin rash / Bleeding / Distended Abdomen / Injuries / Swellings / Other</td>
</tr>
<tr>
<td>Oropharyngeal / Nasopharyngeal: YES / NO</td>
<td>Abnormal sounds: YES / NO</td>
<td>BP: ________ / ________ mmHg (manual / automated)</td>
<td>Blood glucose: ________ mmol/l</td>
<td>Relevant social circumstances:</td>
</tr>
<tr>
<td>Tracheostomy: YES / NO</td>
<td>Oxygen saturations: ________ %</td>
<td>Capillary Refill Time (CRT): ________ seconds</td>
<td>Pupils (size and reaction). Right pupil: ________</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oxygen % given: ________ %</td>
<td>Temp: ________ °C</td>
<td>Left pupil: ________</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Accessory muscle use: YES / NO</td>
<td>Urine Output (in last 4 hrs): ________ mls</td>
<td>Pupils (size and reaction). Right pupil: ________</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Talking in sentences: YES / NO</td>
<td></td>
<td>Left pupil: ________</td>
<td></td>
</tr>
</tbody>
</table>

### R Recommendation

What response would you like from doctor:

What time is doctor due to arrive:

Medical advice given:
HOW TO – BREAK BAD NEWS

Nothing tests our communication skills so much as breaking bad news. Such conversations can be extremely emotional for both doctor and patient. The right words said in the right way make a huge difference. Here are some tips:

- Always read the patient’s clinical notes including test results, in detail. Make a mental note of the patient’s resuscitation status and past communications.
- Speak to the nurse in charge of the patient and ask them to be present during the conversation.
- Ensure privacy. Find a quiet area off the ward if possible; try handing your bleep over to someone else.
- Arranging the conversation in advance generally gives a better outcome. Ensure that appropriate family members or carers are present.
- Introduce yourself. Asking questions – such as “What do you understand about your problems so far?” – will give you clues to the patient’s ideas, concerns, and expectations.
- Avoid jargon. Give information slowly and clearly, making sure that the patient has time to understand.
- The crucial point in the conversation is the “bad news” itself. The way you phrase this depends on how the patient has responded so far in the conversation. Most will have an idea as to what’s coming next. Explain the situation in a simple, unambiguous way and let the information sink in.
- Discuss further options (therapeutic or palliative) and make a plan for the future. Remember to give hope. Information leaflets, Macmillan services, support groups, etc, play a vital role.
● In concluding the conversation, ensure that everyone has understood the diagnosis, and the plan. Your job is not complete until you document everything in the patient’s notes and fill out the necessary referrals.

● Contact the patient’s GP and let them know about the diagnosis and any firm treatment plans.

● Watching and learning from seniors handling these situations helps immensely. Ask for feedback from nurses.

Originally published in BMJ
HOW TO – CHAIR A MEETING EFFECTIVELY

Many of you will chair meetings as part of your role and those that don’t may in the future or will in someone’s absence. Here are some points to remember:

GENERAL RUNNING OF A MEETING

a) Before meeting starts

- Have an agenda and make sure everyone knows about it (work with the meeting secretary, if there is one).
- Send out the agenda and papers so everyone can read them in advance (speak to the secretary to ensure this is done).
- Book a room and make sure it is easily found. Give directions if required and arrange sign posts if needed. Sometimes a lot of notice need to be given to book a particular room on a particular date.
- Ensure the room has the necessary aids like audiovisual equipment, to facilitate the meeting.
- Consider the need to put on refreshments or food. If you do this, do you need a sponsor?
- Arrange seating to encourage maximum interaction and contribution. This may involve everyone sitting around a table for reasonable sized groups.

b) Who do you invite to your meeting?

- If you are holding a business meeting you should try and invite everyone who will be effected by your meetings decisions.
- If you are holding an educational meeting consider who in hospital might want to attend it. Meetings are difficult to put on and so it is good to get the maximum value out of the meeting. Often many disciplines could attend meetings.
- Bear in mind though that it might not be appropriate for some people to attend meetings. The general public can not attend drug company sponsored meetings. If you are talking about specific patients, attendees should have an NHS contract.
c) As people arrive

- Ensure everyone has copy of the agenda and any papers for the meeting. It is usually best to bring some extra copies of papers.

d) Starting the meeting

- Make sure the meeting starts on time.
- Introduce yourself and welcome all especially new members. If people do not know each other ask people to introduce themselves starting with yourself.

e) Fun stuff – a meeting doesn’t just have to be about presenting/reading/discussing papers, other things can be done too.

- Presentations about important developments. If a presentation is included may be an idea to have paper copies so these can be taken away and members aren’t too distracted by taking down too many notes.
- Include slides, overheads, videos etc Once again, copies where possible, summaries of the information on the video could be useful/essential.
- Invite outside speakers to talk about issues relevant to the committee.
- Training events – e.g. games.
- Review what has previously been done, congratulating members when things have been accomplished.
- Bring refreshments.

f) Managing the flow of discussion

- The chairperson is a bit like a judge and should try and remain impartial.
- The key to a good meeting is to get as many people to speak as possible as opposed to a few people doing all the talking. Listen to what people say and when they start repeating themselves try to stop them. “OK thank you for that point, now I think it is important to get a different perspective on this”.
● It is also important to try and draw less forward members in to the debate especially if you think their body language suggest they would like to say something. “I feel you would like to say something here”.

g) Finishing

● Always finish on time.
● Talk to other members about what has been discussed/or other issues if they wish.
● Make sure the minutes are written up and circulated to the members well in advance of the next meeting (speak to the Secretary).

h) Outside the meeting

● You may need to represent the meetings conclusions in other meetings remember to represent all the meetings views and not just your own!
● Consider trying to settle any differences between committee members, so they do not bring unfinished business back to the next meeting.
● Ensure you carry out any actions that have fallen to you and chase up others who are meant to be undertaking actions.

There is further information available via the intranet under the Education Centre.
HOW TO – DEAL WITH COMPLAINTS

Patients have a right to make a judgement about the quality of care they have received. In this hospital patients are encouraged to discuss any concerns they have with staff. There are questionnaires that some patients are asked to fill out and there is a specific department, The Patient Advice and Liaison Service (PALS), that is there to deal with any formal patient complaints. Patients may also complain directly to a ward or responsible consultant or write to the Chief Executive.

If a patient asks you to comment on the care they have received from others try to resist the temptation to offer judgement, no matter how much you are invited to do so. Remember you have only heard one side of the story. If a patient is critical of care they have received from you, remain calm and always be prepared to apologise for real mistakes. Always try and hold difficult discussions in private and try and have someone else in the room with you. It is essential to record in the notes this type of meeting.
HOW TO – GET ON WITH WARD STAFF

When you start

- Introduce yourself and encourage people to call you by your first name.
- Write (or preferably type) a weekly timetable showing times when you are available, bleep number, and other useful contact details.
- Offer to provide teaching sessions to junior staff and student nurses.

Every Day

- Try to remember everyone’s name. Don’t shout “Nurse!”
- Avoid criticising others, even those from previous jobs; you’ll be surprised how small the world is.
- Answer bleeps promptly. If you cannot attend immediately, estimate a time of arrival and stick to it.
- Try to pre-empt nurses’ requests. It makes you look on the ball.
- Listen to other ward members e.g. nurses, physiotherapists, and occupational therapists’ thoughts on management. They often have considerable clinical experience and will have invaluable local knowledge of how things are done.
- Apologise. It doesn’t cost you anything and shows that you are not stubborn.

Generally

- Treat your colleagues like you would want to be treated yourself.
- Join into social activities going on in the work place and consider arranging some yourself.
- Remember you part of a team.
- If you are having a bad day tell people and apologise.
HOW TO – MAKE AN INTER CONSULTANT REFERRAL

Patients should not routinely be referred from one team to another, nor outside specialist help sought, without first discussing the case with your consultant. Clearly in an emergency or when the consultant is not easily contactable, a referral can be made without prior discussion with the responsible consultant.

IN PATIENT REFERRAL

Use the available A4 form for this purpose “Inter-Consultant Referral Form For Inpatients”. It is important to fill out as much of the information as possible. Give consideration to the location of the patient, if you know they are about to move wards include the new ward location. If an urgent request is required it is best to discuss the request with the consultant or their team, by phone or at the least take the request by hand to the consultants secretary or have it faxed. The internal post will take at least 24 hours to reach its target. Bear in mind weekends.

The most important section is the “Question(s) to be answered by this assessment”, if it is not filled out, you may find the request returned looking for this information or alternately you might not get the issue you want answering dealt with.

If possible make your self available to be present when the consultation is done, as observing this process is a valuable learning opportunity, put your page number on the request form or ask the ward to inform you when the consultation is about to occur.

*Make sure results relevant to the question being asked are available e.g. blood tests or x-rays.*

OUT PATIENT REFERRAL

This should be made through a formal letter, complete with the patients’ details, including all relevant diagnoses, investigations and medications. It is also helpful to indicate the degree of urgency of the referral.
RECEIVING A REFERRAL

If another doctor seeks your help they are acknowledging that you have greater experience in handling a particular problem. Help will usually be verbal and practical but may involve taking over the continuing management of a patient. Ongoing management may be delayed until you assess the patient please therefore see them in a timely fashion. If you disagree with the stated degree of urgency, please communicate to the referrer, detailing when you will see the patient. If as a referral sender, you feel it is not being dealt with appropriately, discuss the issue with your consultant.
HOW TO – PREVENT AN EMERGENCY ADMISSION

- Don’t assume that patients have to be admitted just because they have presented to the hospital.
- Contact the patients GP early and discuss managing patients in the community. Could the patient be managed by community care teams including nurses and physiotherapists?
- The on-call pharmacist can arrange supplies of medication to take home. There is also an Island wide system of late opening pharmacists who can supply medication for patients who need a new prescription medication.
- There are a number of intermediate care beds which GPs can arrange admission to. Having assessed the patients maybe the patient could be cared for in one of these beds.
- Patients in need of terminal care could be admitted to Earl Mountbatten Hospice directly.
- Could the patient be reviewed in a specialist clinic urgently, perhaps in the next day or two rather than be admitted? This is best arranged ad hoc via the team SpR or secretary. Ensure firm plans are in place before the patient is discharged.
- Ensure patients who are discharged from hospital understand their condition and that they carry with them enough useful information for their GP to be able to offer follow up care.
- Deep Vein Thromboses can be dealt with in the community by managing the patient via MAAU. Contact the ward for details.
- Treatment for conditions like anaemia can be arranged via the Day Case Unit on an urgent basis. Contact MAAU for details.
- Before you arrange admission discuss the case with a more senior colleague.
HOW TO – PRESCRIBE ANTIBIOTICS AND ENSURE GOOD ANTIMICROBIAL STEWARDSHIP

Many ill patients in hospital need antibiotics, yet prescribing of these invaluable agents is often left to the most junior of the team. Antibiotic resistance is gradually increasing over time and with selection pressure caused by antimicrobial use; if not used wisely there is a real future risk of infections caused by bacteria resistant to available antimicrobials. This is particularly relevant to hospital practice where elderly, vulnerable patients may be exposed to more resistant ‘hospital bacteria’.

Hospital care and antibiotic use will also predispose vulnerable patients to risk of *C. difficile* infection (CDI) and antibiotic use may trigger CDI. This is an important patient safety issue. The risk is increased with repeated course of antibiotics, combinations and with use of certain agents. *For this reason cephalosporins and quinolones are restricted in hospital practice* unless there is a specific clinical indication, infection caused by an organism resistant to other agents or on Microbiologist approval.

Use the Antibiotic Guidelines Empiric section when first writing up antibiotics for patients with suspected infection. (Always review and, if cultures subsequently show a significant isolate, change empiric therapy and de-escalate to a more narrow spectrum agent where appropriate). See Trust Intranet for Antibiotic Use in Hospital Practice Policy and Guidelines.

- State the **indication** when writing up an antibiotic.
- Document the **allergy** status on the drug chart.
- State estimated **stop date or a review date** on the drug chart when first writing the prescription (this does not mean it antibiotic can’t be continued beyond that date but does mean you have to review and document why the antibiotic is being continued if it needs to).
- Be aware of **restricted and monitored antibiotics** (see Restricted Antibiotic policy) – if you write up something that does not meet the criteria or specific clinical indication you will need Microbiologist
approval. (This is not to be obstructive but to ensure prudent prescribing and help the patient get the most appropriate agent). An antibiotic pharmacist will also be breathing down your neck to ensure compliance with ‘off guideline’ antibiotic prescribing.

- **Switch from IV to oral** as soon as clinically appropriate. (Don’t leave ‘Venflons’ in any longer than necessary).
- Make sure the **total duration** of antibiotic treatment is no longer than it needs to be for the infection being treated. Normally total duration should be <7 days; however some infections need longer and if so you must document this – e.g. “indication severe CAP: 10 days”).

These are all important standards within the Trust Prudent antibiotic prescribing policy and compliance will be audited each month by ward (using Hospital Antibiotic Prudent Prescribing Indicators ‘HAPPI’ audits). Your role is pivotal to ensuring good antibiotic stewardship. Our role is to facilitate – if you need help contact the Antibiotic Pharmacist (bleep via Switch) or Microbiologist, as appropriate.
The HR Department, are accommodated in Holly House, St. Mary’s Hospital.

The team is here to provide advice, guidance and support during normal working hours of Monday to Friday 8:30a.m. to 5:00p.m. You can contact us in the following ways:

**Resourcing (Medical and non-medical workforce including band and locum)** enquires relating to recruitment of temporary and permanent staff and the management of bank workers please contact;

resourcing@iow.nhs.uk or via telephone ext 6000

**Employee Relations Advice and Guidance (Medical and non-medical workforce)** enquires relating to terms and conditions of employment and employment relation issues please contact;

HROfficers@iow.nhs.uk or via telephone ext 6028

Job Descriptions for job matching should also be forwarded to HROfficers@iow.nhs.uk

**Rostering (Medical and non-medical workforce)** enquires relating to the MAPS, Employee Online system or medical rotas, please contact;

e-rosteringteam@iow.nhs.uk or via telephone ext 5702

**Job Planning and Revalidation (Medical Workforce)** enquires please contact;

workforce-revalidation@iow.nhs.uk or via telephone ext 3113 for Job Planning and ext 6465 for Revalidation.

**Smartcards** if you lock or block your Smartcard please contact informationsystems@iow.nhs.uk or via telephone ext 4592.

If you need your Smartcard Certificates renewed or you haven’t been able to ‘Self Renew’, please contact resourcing@iow.nhs.uk or telephone ext 6000.
For enquiries relating to access control positions to Smartcard enabled systems please contact Liz Nials, Local Registration Authority Manager; liz.Nials@iow.nhs.uk or via telephone ext 6727.

For **Volunteering Opportunities** at the hospital please contact volunteer@iow.nhs.uk or via telephone ext 6246

Any **payroll** queries must be referred directly to the payroll helpdesk on 0303123 1144 or via email sbs.payrolloffice@nhs.net
INFECTION PREVENTION AND CONTROL

Compliance with best infection control practices should minimise the risk of Health Care Acquired Infections for patients, as well as protecting yourself from infection at work. The Health and Social Care Act 2008: Code of Practice for the Prevention and Control of Health Care Associated Infections and related guidance, also known as the ‘Hygiene Code’, makes it a legal requirement for Trusts to have Infection Prevention and Control standards in place, including standards for hand hygiene and aseptic practice.

You have a duty to comply with infection control policies and are crucial in preventing spread of infection.

The Trust has a full range of Infection Control Policies on the intranet:


Infection control doctor 4807
Infection control nurses 4882

To reduce the risk of HCAI in your patients, think about the following on your ward rounds:

- Review the need for any urinary catheter (greatest cause of hospital acquired E. coli bacteraemia) and remove at the earliest opportunity.

- Minimize antibiotic use (and make sure cultures have been sent appropriately to narrow antibiotic spectrum). Don’t start antibiotics without good evidence of bacterial infection.

- Monitor bowel movements, especially on antibiotics.

- Minimize PPI use (increased risk of C. difficile infection).

- Clean your stethoscope between patients!
Alert organisms

Specific infection alerts, including MRSA and C. difficile can be found in the alerts box on ISIS – don’t forget to check for these alerts before prescribing antibiotics.

Infection control precautions are needed for any patient admitted from a health care facility abroad, including CPE (Carbapenemase Producing Enterobacteriaceae) screening (also required for patients admitted from other UK facilities with CPE outbreaks, particularly in London and North West – check with the infection control team if patient transferred).

HAND HYGIENE

Your 5 moments for hand hygiene at the point of care*

Alcohol gel can be used for hand hygiene excepting when hands are physically dirty or enteric pathogens like C. difficile or norovirus are suspected (use soap and water).

You must comply with the “bare below the elbows” policy in clinical areas to facilitate hand and wrist cleaning.
BLOOD CULTURE COLLECTION
Key Points (Full details in policy)

- Take blood cultures when there is clinical indication to do so.
- Use an Aseptic Non Touch Technique (ANTT – see below)
- Clean your hands before and after the procedure.
- Disinfect the skin correctly before doing so: use the Chloraprep® ‘wands’ (chlorhexidine in alcohol), allow enough time for the antiseptic solution to dry and do not touch the area again with a ‘probing finger’ before inserting the needle.
- Always use the Vacutainer® collection kits provided. Only use needle and syringe method if you need to access a Central Venous Catheter (CVC) and are trained and competent in the procedure, using ANTT.
ANTT (ASEPTIC NON-TOUCH TECHNIQUE)

Invasive procedures (including cannulation, venpuncture and catheterisation) are high risk for HCAI and you must use ANTT to minimise this risk. If you have not previously had training on aseptic technique, you should not undertake such procedures until you have done so.

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The diagram illustrates the steps involved in performing aseptic procedures using ANTT:

1. **Key-Part / Key-Site Risk Assessment**
   - To determine Standard or Surgical-ANTT, assess the difficulty of Protecting Key-Part & Key-Site asepsis based on environment, awareness, technical difficulty, number & size of Key-Part & Key-Sites and user competency. Then ask: "To maintain asepsis of Key-Parts and/or Key-Sites, does the main aseptic field need to be Managed Critically?"
   - If yes, proceed to Surgical-ANTT.
   - If no, proceed to Standard-ANTT.

2. **Environmental Management**
   - Surgical-ANTT: Environmental risks removed or avoided.
   - Standard-ANTT: Environmental risks removed or avoided.
   - Working areas/surfaces are disinfected.
   - Contamination is actively prevented.

3. **Decomplementation and Protection**
   - Surgical-ANTT: Hand cleaning.
   - Sterilized gloves, sterile mouth/eye protection.
   - Sterile gown if full barrier precautions.
   - Scrubbing IV hub etc.
   - Standard-ANTT: Hand cleaning.
   - Non-sterilized gloves, sterilized gloves are worn if Key-Parts must be touched.
   - Personal protective equipment.
   - Scrubbing IV hub etc.

4. **Aseptic Field Selection & Management**
   - Surgical-ANTT: Critical Aseptic Field.
   - Sterile gown.
   - Only sterilized equipment can be placed in a Critical Aseptic Field, sterilized gloves are worn to maintain asepsis.
   - The main aseptic field is "Managed Critically".
   - Standard-ANTT: Micro Critical Aseptic Fields (Caps & covers etc.).
   - Sterile empty equipment is placed in the Critical Aseptic Field.
   - General Aseptic Field:
     - Disinfected or disposable items.
     - With Key-Parts protected by MICROFields, essential but non-sterilized equipment may be placed in the aseptic field (i.e. the main General Aseptic Field is "Managed Gently").

5. **Non-Touch Technique**
   - Surgical-ANTT: Non-Touch Technique is desirable.
   - Despite wearing sterilized gloves, Key-Parts & Key-Sites are not touched unless necessary to do so.
   - Standard-ANTT: Non-Touch Technique is essential.

6. **Preventing Cross Infection**
   - Effective decomplementation of the procedure area, equipment and the health professional is essential to break potential 'means of infection'.

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PERSONAL PROTECTIVE EQUIPMENT (PPE)

Appropriate PPE must be used to protect you from exposure to blood and body fluids (secretions and excretions); and to reduce risk for transmission of infection for patients in isolation care (e.g. with enteric infections including C. difficile and norovirus, multi-resistant bacterial infections, respiratory viral infections including influenza).

Ensure you have undertaken **FFP3 (respirator) mask fit test training** if you could be performing aerosol generating procedures (like bronchoscopy) or looking after patients with the following (i.e working in the emergency department, respiratory ward, medical admissions unit, ICU): Severe emerging respiratory viruses (usually associated with foreign travel e.g. pandemic influenza, MERS coronavirus, SARS), multi-drug resistant Tb, Viral haemorrhagic fever; check with the nurse in charge of the area you are working in to find a fit test trainer; contact the infection control team if you have difficulty.
Blood borne viruses (Hepatitis B, Hepatitis C, HIV)

Occupational exposure to BBVs is unnecessarily common and many exposures or sharps injuries are avoidable. Risk can be reduced by good safe practice:

- YOU are responsible for disposal of any sharps you have used; always dispose of used sharps directly into a sharps bin at the point of care.

- Never resheath used needles (unless indication to use a resheathing device). Use safe sharps devices wherever possible.

- Follow policies for safe handling and disposal of needles/syringes and standard precautions, including use of appropriate personal protective equipment (PPE) such as disposable aprons, gloves and eye protection.
### Initial Action Plan

1. **SHARPS INJURY OCCURS**
   Percutaneous exposure e.g. needlestick or exposure to broken skin or mucous membrane (e.g. eye) from blood or blood stained bodily fluid

2. **IMMEDIATELY FOLLOWING EXPOSURE ADMINISTER FIRST AID**
   ENCOURAGE local bleeding of puncture wound by gently squeezing.
   WASH the affected area with soap and warm water. Treat mucosal surfaces such as mouth or conjunctiva by rinsing with warm water or saline. Water used for rinsing the mouth must not be swallowed. **DO NOT USE ANTISEPTICS TO CLEAN WOUND.**

3. **REPORT THE INJURY TO YOUR SUPERVISOR**
   IMMEDIATELY inform either your supervisor in charge of the shift or if not available a senior nurse on duty e.g. clinical site co-ordinator.
   IF THE SOURCE PATIENT IS KNOWN (out of office hours only) Nurse or Duty manager in charge of the area must complete a written risk assessment* of the source patient (see the Trusts Sharps Injury policy) and give a copy of this assessment to the staff member to take to Occupational Health or A&E.
   IF THE SOURCE PATIENT IS NOT KNOWN go straight to 4.

4. **WITHIN ONE HOUR OF THE INJURY OCCURRING**
   DURING OFFICE HOURS (Mon-Fri 0830-1600) Go to Occupational Health or if offsite call 552421 make sure that you take details of the source patient with you.
   OUT OF OFFICE HOURS Go to A&E and inform the Triage Nurse that you have been involved in a contamination incident

5. **COMPLETE ACCIDENT / INCIDENT FORM**
   Form available to complete on the hospital intranet site
   With your supervisor, reflect on the cause of the injury and take steps to ensure the future risk of such incidents is reduced.

6. **FOLLOW-UP**
   If attending A&E out of hours contact Occupational Health on 552421 the next working day for follow-up advice and any required further treatment

*Further details on the risk assessment are available in the Sharps injury policy on the intranet:

http://nww.iow.nhs.uk/guidelines/IC%20MAN%20SHARPS%20INJURY%20POL%202012%20FINAL_update.pdf
DOCTORS WITH SERIOUS COMMUNICABLE DISEASES (BBV & TB)

Doctors with hepatitis B, hepatitis C, HIV or active respiratory TB infection may pose risk to patients. Those with bloodborne virus (BBV) infection, if their work involves performing exposure prone procedures (EPPs).

- Healthcare workers are screened by Occupational Health for markers of infection with serious communicable diseases. If your work involves EPPs you will be tested for markers of infection with BBVs on entry to specialty training or the NHS. This will include being tested for immunity to hepatitis B.

- All doctors need to be aware of their professional responsibilities in relation to serious communicable diseases and of their duty of care to patients. This includes an overriding ethical obligation to seek medical advice and to act upon such advice when given.

- *If you believe you have or may have had exposure to a serious communicable disease, seek confidential advice from Occupational Health.*
Public Health and notifiable diseases

- Confirmed or suspected cases of statutory notifiable disease should be reported to the Local Public Health Team (see box below). This will include notification of cases of suspected or proven meningococcal disease (for which prophylaxis will be required) and respiratory TB. The full list of notifiable diseases and reporting form can be found here: https://www.gov.uk/government/collections/notifications-of-infectious-diseases-noids

- Where a notifiable diagnosis is suspected clinically, the team looking after the patient should notify the case to Public Health. (The microbiologist will only notify cases where the microbiology laboratory has identified a notifiable infective agent).

Public Health England South East
Tel: 0345 055 2022
Out of hours: 0844 9670082
LEAVE AND STUDY LEAVE

TERMS AND CONDITIONS OF SERVICE
National Health Service Terms and Conditions of Service for Hospital Medical and Dental Staff [England and Wales] and the General Whitley Council Terms and Conditions of Service apply. These are amended from time to time. You can view these documents in Medical HR during office hours.

DEFINITIONS OF AUTHORISED ABSENCES
Approval for annual, bank holiday, study/examination and interview leave is subject to the approval by the employing authority. When booking leave you must follow the leave protocols and you are strongly advised not to make any arrangements until you have received the necessary approvals.

No applications for study/examination leave will be considered unless identified as a training objective within your training agreement. Speak to your supervising consultant and clinical tutor.

ANNUAL LEAVE
Para 215 – “Practitioners shall notify their employing authority when they wish to take annual leave, and the granting of such leave shall be subject to approved arrangements having been made for their work to be done during their absence.” Your contract of employment will provide details of your annual leave entitlements.

It is your responsibility to take your leave in accordance with leave protocols and forward planning is essential. Outstanding leave will not normally be paid at the end of your post.

Leave Entitlements:

Six weeks plus 3 days (33 days)
   ► SpRs and StRs on the 3rd or higher incremental point on their salary scale.
Five weeks plus 3 days (28 days)
► SpRs and StRs on the minimum, first or second point on their salary scale.
► Trust [SHO/ST] grades.
► Foundation years 1 and 2.

A minimum of SIX WEEKS notice is required when booking leave and you are strongly encouraged to book your leave within 4 weeks of starting your post. Failure to do this could result in leave dates being given to you.

PUBLIC HOLIDAYS
Para 214 – Medical and Dental Whitley TCS “addition to 10 days (statutory and public holidays)”. Within the Trust the 2 statutory days are included as 3 additional annual leave days, leaving 8 bank holidays per annum.

STUDY LEAVE
Para 250 – “Professional or study leave will normally be granted for postgraduate purposes approved by the employing authority, and includes study (usually, but not exclusively or necessarily on a course) research, teaching, examining or taking examinations, visiting clinics and attending professional conferences”.

Para 251 – “Professional or study leave will normally be granted to the maximum extent consistent with maintaining essential services in accordance with the recommended standards.

SPECIAL LEAVE
Para 260 – “The provisions of paragraph 1 & 2 of Section 3 of the General Council Conditions of Service shall apply”.

MATERNITY/PATERNITY LEAVE/CARER LEAVE
The appropriate policies are available from the Intranet. Once in the Intranet click on non-clinical, then HR, then policies and scroll down.

SICKNESS
SCALE OF ALLOWANCES
Para 225 – “A Practitioner absent from his duty owing to illness, injury or other disability shall, subject to the
provisions of paragraphs 226 to 244, be entitled to receive an allowance in accordance with the following scale:

- During the 1st year of service: 1 month full pay and (after completing 4 months’ service) 2 months ½ pay.
- During the 2nd year of service: 2 months’ full pay and 2 months’ ½ pay.
- During the 3rd year of service: 4 months’ full pay and 4 months’ ½ pay.
- During the 4th and 5th year of service: 5 months’ full pay and 5 months’ ½ pay.
- After completing 5 years of service: 6 months’ full pay and 6 months’ ½ pay.

The Authority shall have discretion to extend the application of the foregoing scale in an exceptional case.

Sickness 1 – 3 days inform employer in accordance with sickness policy.

4 – 6 days in a row counting Saturdays but not Sundays fill in SC1 (self-certificate form).

7 days onwards: Doctors medical certificate.

You are advised to sign on with a GP practice during the period of your attachment on the Isle of Wight. Failure to provide the Trust with the SC1 or medical certificate will result in your salary being withheld until the appropriate certificate is received.

If you are unwell please phone your ward or Consultant and Medical HR as soon as possible before the start of your shift/duty.

All non attendance at work is recorded by Medical HR and management action will be taken if necessary in accordance with the Attendance Management Policy and Procedures.

**STUDY LEAVE (STUDY FUNDS) PROTOCOL**

When applying for study leave, please adhere to the following guidance:

All study leave must be applied for using the Intrepid Online application system. Study leave will not be able to applied for retrospectively.

All study leave is discretionary.
Introduction and scope

The purpose of this protocol is to ensure that doctors in training have access to a standardised system across the Deanery in which applications for study leave are considered on a fair, equitable and consistent basis.

This Protocol applies to trainee doctors only.

Rationale and objectives

All training and teaching activities occurring outside of the workplace can be considered study leave regardless of whether they are internal or external, intra or extra curricular. In order to allocate time and funds this needs to meet agreed educational needs and to be prioritised. Usually these are graded essential, desirable or of low priority, see below.

In general priority will be given to educational courses, opportunities and training not otherwise easily acquired in the workplace. Where considered integral to the training programme e.g. Foundation Programmes or vocational training for general practice, trainees should continue to have access to teaching and training delivered in the work place or department.

Study leave may include participation in courses, programmes, self study, preparation for exams, teaching and training, or preparation thereof. This list is not exhaustive.

Essential

- Essential Study leave comprises time off and/or funding for deanery CORE speciality training days; undertaking courses and exams essential for progress or a successful ARCP; learning and training needs and teaching sessions (delivered or delivering) identified as essential in the applicants PDP; national or international conferences where the trainee is presenting.
Desirable

- Desirable Study Leave comprises time off and/or funding for non-CORE deanery speciality training days in a dual accredited speciality; courses for management; education and development, mandatory training; personal preparation for exams necessary for progress or a successful ARCP as described in the applicants PDP; national or international conferences where the trainee is participating.

Low Priority

- Low priority study leave examples: Preparation and sitting of exams not essential for progress or a successful ARCP; secondary postgraduate degrees i.e. masters, MD, PhD studies; research.

This list is not exhaustive and common sense should prevail – if in doubt and if service allows study leave (up to the individual’s allowance) should be granted rather than denied.

All doctors, apart from those in their first foundation year, who are in educationally approved posts, are entitled to annual study leave. The educational approval for study leave rests with the Trust Directors of Medical Education (DME), working in collaboration with educational supervisors, training programme directors and the specialty schools whilst taking into account service needs within the Organisation.

Applications for study leave must be made to the DME, with the approval of the Consultant Educational Supervisor. Disputes between trainees and departments should be referred to the DME for resolution. If no agreement can be reached or if the dispute is with the DME, appeal to the Head of School and Dean may be appropriate.

Process

The following protocol describes the process for applying for Study leave for the Isle of Wight NHS Trust. Study leave can be attained through this process only and is applied for online on the Intrepid system.
The special leave policy does not apply to any forms of leave normally classified as study leave. It is accepted that once study leave has been declined the individual may seek the time off as annual leave.

1. Study leave will not be granted unless an Educational Learning Agreement has been completed by the trainee and Educational/Clinical Supervisor. The first time a study leave application is made, please submit your portfolio. The following online training modules must be completed before study leave will be granted:

These can be found on the: Intranet Homepage > Learning Zone > Development & Training > E-Learning

Health & Safety Refresher
Fire Safety Theory Module
Occupational Blood Bourne Virus Refresher
Infection Control (Clinical Staff)
Blood transfusion
Information Governance
Consent Training
Hand washing
Safeguarding Children

2. Trainees eligible for study leave and allowances are:

- FY2 £400 per annum
- ST1 – ST6 £600 per annum
- GP ST £300 per annum

3. FY2 and ST1 – ST2 doctors have up to 15 days per annum for study leave to be taken pro-rata during your rotations. ST3 – ST6 doctors have up to 30 days per annum to be taken pro-rata during your rotations. Regional study days count towards study leave and as such the assumed working total is 15. It is necessary to apply for regional study days even if you are not claiming expenses.
4. **FY1** – although there is no formal allowance for study leave at this level, discretionary study leave may be granted (funded or unfunded) in exceptional circumstances after mutual agreement between DME, Educational Supervisor and Lead Clinician.

5. **Study leave for Examinations:**
   Pre examination courses – we will consider granting study leave for pre examination courses (funded or unfunded), only in the case where the course is relevant in order to progress or successfully complete a programme of training/certification within this rotation. A course programme must be submitted with application and will be scrutinised towards quality assurance, cost effectiveness and suitability as identified in the individual learning agreement.

   Examinations – examination expenses, less examination fee will normally be paid for the first two attempts only.

6. All study leave (time and funding/time only/funding only) must be applied for through this process. You must always apply for study approval if you wish to release funds.

   Any applications submitted retrospectively will not be considered and may be classified as unauthorised leave.

7. **Travel Expenses**
   You must attach receipts to the expense claim form (http://intranet/index.asp?record=1341)

   Along with an evaluation form. Expenses must be claimed **within one month of the period of study** or your claim may not be honoured.

   Travel expenses will be reimbursed in line with general accepted practice within the organisation (i.e. cheapest return public transport fare from and to IoW with exceptions for more expensive forms of travel only within discretion – i.e. start date to early to reach with public transport, airfare saving overnight stay or similar).
8. **Deanery/Speciality Mandatory Training sessions**

Study leave for the purposes of attending mandatory training sessions for CT and ST trainees is counted from the internal study leave allowance and any expenses are paid out of the trainees study leave account.

Unfortunately there are no additional funds to take into account the extra travelling costs to and from the IoW from this budget. If you feel you are unable to meet mandatory training requirements due to lack of funding you must discuss with your educational supervisor, or clinical lead at the earliest opportunity, there may be discretionary funding on an individual case basis through the education centre or directorate.

9. **Private Study Leave** – is entirely discretionary and comes out of the study leave allocation. It will normally be granted towards:

- Professional exams in the UK or Ireland.
- Preparation of papers, publications and giving of presentations at regional/national/international meetings.

Private study should be taken within 2 weeks prior to an examination or presentation (where applicable). A plan of your private study leave should be detailed on your application.

10. A minimum of 6 weeks notice is required for study leave

11. Study leave for job interviews is not acceptable as the Organisation normally allows one day of special leave for interviews. Preparation for interviews is an acceptable use of study leave.

**Strong preference will be given to Regional Courses run by the Wessex Courses Centre. Others will only be considered if there is no comparable regional course.**
OLIVEIRA LIBRARY

The library is situated in the Education Centre. You may already have a SWIMS library card if you have worked at another hospital within south west/south central England, but you still need to fill in a registration form with your new local contact details before using the library.

We subscribe to two important online point-of-care tools, UpToDate and DynaMed. There are direct links to UpToDate and DynaMed via the Trust intranet (‘Web based systems’ tab on home page) and these require no login. You can also use the tools via any internet-enabled computer, but when using a non-Trust connection you will need an Isle of Wight OpenAthens password.

Your OpenAthens password also gives access to other electronic resources available to Isle of Wight NHS staff. You can self-register via the NICE Evidence website – please ask for help in the library if unsure of the process.

The library provides a current awareness service called KnowledgeShare; this will identify high-level documents in areas of interest specified by yourself, and send email alerts to you at fortnightly intervals. Ask for a registration form if you are interested in this service.

The library houses a collection of books, journals and a number of NHS computers. Books may be borrowed for four weeks and can usually be renewed twice unless another user has requested them. Books and journal articles may be obtained for you from other libraries if they are not available locally or electronically.

Material may be printed or photocopied in the library (subject to copyright) at a cost of 5p per side.

Training offered:

- brief e-learning module on Training Tracker to introduce searching in healthcare databases
- 1:1 training to use healthcare databases for literature searches
● 1:1 ‘guided tour’ of electronic resources, including point-of-care tools, BMJ Learning, NHS Evidence and others

● workshop – gain points for CME/CPD using electronic resources

● beginners’ critical appraisal mini-workshop

Library staff can undertake literature searches for specific information needed for patient care or CPD/CME.

If you need help to set up your network login or email account, please contact library staff.

The library is staffed from Monday to Friday, 9.00 am – 5.00 pm, but there is 24 hour access using the door code (ask for it when you register).

If you use the library when it is unstaffed, please make sure you record any book loans (self-issue system on library desk) and leave any money paid for copies or prints in one of the envelopes provided.

More information:

email library@iow.nhs.uk
phone 01983 534519 (internal extension 4519)
web pages www.iow.nhs.uk/library
ROLE OF THE MAAU

The aim of the medical assessment and admissions unit (MAAU) is to provide a service to assess the need for investigation and treatment and facilitate admission if required of emergency medical referrals.

Source of referrals

1 Medical Assessment Unit. Services We Have To Offer:

Rapid Assessment
This facility allows for quick assessment initially by nursing staff and followed by Consultant.
Will allow
- Prompt assessment of investigations.
- Swift discharge.
- Organization of follow up as out patient.
- Referral for other multidisciplinary team to follow up e.g. GP, Endoscopy, Xray, CT, DVT Nurse.

Pre Admission Assessment
- Prompt assessment and decision to admit for short stay treatment.
- Prompt assessment and decision to admit for longer stay treatment.

DVT Service
- Diagnosis of DVT.
- Follow OPD treatment and assessment.

Pre arranged Day Case facilities
- Arrange for day treatment.
  - Routine/asymptomatic blood transfusions.
  - Venesection.
  - Pleural Taps/biospsies.
○ CT Guided Biopsies.
○ Inferon and immunoglobulin therapy.
○ Synacthen tests/glucose tolerance tests.

Phone Consultation

- Experienced Nurses with knowledge of other multidisciplinary services.
  ○ Rapid response outreach team.
- Advice from Medical consultant

Return/Review

- Routine prompt follow up to allow early discharge.

You may during your time on the ward receive referrals from other sources such as other hospitals, domiciliary visit, referral from Out Patient clinics. While these patients may well end up travelling through MAAU – these must be discussed with the bed management team to enable direct admission to consultants own ward wherever possible.

The MAAU currently has 22 beds in use and is split into bays, each of these areas have their own staff and notes trolley plus a four-bed rapid access area.

Staff looking after each area are indicated on the staff board. Patient allocation is indicated on Boards.

Bay B is essentially for the admissions, and once seen by you are then transferred to the other areas in the unit to continue their care, await admission or discharge.

MEDICAL ASSESSMENT LIAISON NURSE

Currently a system is running for 9–5 Monday to Friday where senior nurses take the medical admissions. Outside of these times the calls revert to on-call team.

Should the nurse be unavailable to perform this service then you will be notified.
NURSE ASSESSMENT

On arrival an initial personal and social assessment will be taken by the nurse.

- Full personal details.
- Social history.
- Activities of daily living assessment.
- Base line observation – BP, TPR, O2 sats, blood sugar (where appropriate), weight (where able), ECG.
- Blood taking and cannulation can only be undertaken by a small percentage of the nurses at this current time.

DOCTORS ASSESSMENT

You will be notified of the patient’s admission by the ward administrator/nurse, once they have arrived.

Following your assessment, and in discussion with the MAAU consultant you will make, decisions on the necessary treatment and care of your patient and whether admission is necessary.

You will need to inform the nurse looking after that bay of any treatments etc. you wish to commence.

Integrated universal care pathway will be used to carry out your assessment and specialist care pathways are available for certain conditions i.e. DVT, Stroke proforma, (Neutropaenia, currently being devised).

It is the doctor’s responsibility to ensure that all pages have the patients name at the top.

PHARMACY TREATMENT

WARD MEDICINE ADMINISTRATION TIMES (medicine round)

Medicine administration times may vary slightly from ward to ward – it is the prescriber’s responsibility to confirm those times and complete patient prescriptions with appropriate administration times for a particular medicine.
For patients with special requirements (e.g. patients with Parkinson’s disease), their medicine administration time requirements may fall outside of the usual ward medicine administration times. In this event, it is important to prescribe their medicines for administration at the specific times and make the multi-disciplinary team aware (patient notes, team meeting, handover and so on).

**PHLEBOTOMY**

Once bloods have been taken either by yourself or the nurse they should be placed in the box at the entrance of B bay and a porter should be called to collect them.

There is no phlebotomy service for the unit, which means that all bloods and follow up bloods are the responsibility of the doctors to be obtained. (Nurses are being developed to provide this service for the future).

**XRAY REQUESTS**

X-rays once requested should be sent via the POD system to the X-ray department during the hours of 9–5, they will then call for the patients when they have spaces. Any urgent/portable X-rays should be phoned through to the department immediately. Out of hours the X-ray forms should be placed in the appropriate box by B bay’s door and the nurses notified, we will then arrange for the patient to attend X-ray.

**TEA / COFFEE**

The Unit manages a tea and coffee fund and you are welcome to join in. All beverages must be drunk in the office and not in open patient access areas.
MAJOR INCIDENT PLAN

A Major Incident Plan (MIP) covers a range of occurrences, which will or could end up with a lot of injured attending hospital. The MIP provides information to all the emergency services to allow a co-ordinated response to successfully manage the major incident. Every hospital has such a plan which will define your responsibilities. You can be asked to return to St. Mary’s from home in the event of a MIP even if you are not on call.

Make sure that you familiarise yourself with the Major Incident Plan before one arises! Most people’s responsibilities are summarised on Action Cards. You will be told what your role is by the senior doctor in the department. In the event of a major disaster your role will be largely unchanged, in that you will continue to see patients. If alone in the department, call the Staff Grade Doctor and Consultant immediately and follow the Action Card for the Senior Emergency Department Doctor until they arrive.

As a summary, the patients are triaged into four groups:

- **P1** (major) Resuscitation room and majors area
- **P2** (moderate) Minor treatment area
- **P3** (minor) Fracture clinic
- **P4** (expectant) Outpatient area

The dead should be certified in the ambulance and transferred directly to the hospital mortuary.

Medical Incident Officer = usually provided by a local GP.
Chief Triage Officer = Emergency Department consultant.
All patients who are not part of the major incident will be triaged appropriately.
MANDATORY TRAINING

Mandatory training is a legal and contractual requirement for all staff throughout the organisation to complete, and is important to ensure that you are aware of the risks associated with your role, and how to avoid, minimize and report those risks. This will ensure that you and your colleagues are working in a safe environment, and that patients and visitors to the site are protected.

Training Manager Pro4 Online (Pro4 Online) can give you guidance on what mandatory training you require for your role.

Training Manager Pro 4 Online (Pro4 Online)

What is Pro4 Online?

Pro4 Online is linked to the Trust learning management system (Training Manager Pro4) and gives you an online representation of the information stored on the system. In terms of Mandatory Training, Pro4 Online can tell you exactly what you need to do and when it is due. It can also show a full list of all the training you have done (Mandatory and Non-Mandatory) and the dates the courses were completed. We have also developed an online self service booking system through Pro4 Online. This allows you to search courses and request bookings using your Pro4 Online profile.

How can I access Pro4 Online?

To obtain a log in for Pro4 Online you will need to email Pro4Updates@iow.nhs.uk with your name and 8 digit personnel number (this can be found on your payslip or requested from HR). It is possible that new members of staff may not have been assigned their 8 digit number as early as they would like, however it will be noted on your first payslip.

e-Learning – Training Tracker

All Trust e-Learning courses can be accessed via our local e-Learning platform – Training Tracker. Here you can browse all of our mandatory and non-mandatory
online training courses, and any course completions will be automatically uploaded onto Pro4 by the following morning.

**How can I access Training Tracker?**

To obtain a log in for **Training Tracker** you will need to email **Pro4Updates@iow.nhs.uk** or **traininganddevelopment@iow.nhs.uk** with your name and Department.

**Classroom Based Training**

Some mandatory training can only be completed in a face to face/classroom session and will not be available to complete online. Some examples of these are:

- **Induction** – This is arranged through the Postgraduate Education Team – ext 5360.

- **Fire Safety Part 2** – Extinguishers – This can either be booked through **Pro4 Online** or by contacting Development & Training on ext 5409.

- **Hand Hygiene Training** – This training is delivered by Hand Hygiene Champions throughout the Trust, please contact your dept manager for details.

**Portability of Mandatory Training**

We appreciate you may have had mandatory training in previous organisations that you have been working for and some of this will be within its current validation period. Whilst Wessex is working towards making this training transferrable there is at the moment neither a logistic way to do so, nor a governance structure. We are more than happy to look at your mandatory training record and evidence of what you have done and will acknowledge all generic elements if evidence can be provided (like ALS, BLS). Other elements we may acknowledge, some we won’t- please speak to the Medical Education team or the compliance officer for clarification.

If you have any further queries in relation to your training needs please contact the Medical Education team for advice.
MORTUARY

Mortuary enquiries 4214
Lead Anatomical Pathology Technician 5620
On-call mortuary technician contact through switchboard

WORKING HOURS OF MORTUARY
8.15 – 16.15 Core hours

Doctors wishing to attend between 10:00 and 15:00 are asked to telephone first, as this is when Post Mortems are being carried out.

The Chapel of Rest is available for viewings of the deceased by relatives by prior arrangement with the mortuary department. Viewings are not normally arranged outside normal working hours.

POST-MORTEMS
If the cause of death is uncertain the Coroner must be informed.

High risk of infection cases must be highlighted and the body transported in a sealed bag labelled “Risk of Infection”. Details of the risk should be entered on the autopsy form notified to the Coroner’s Officer.

HOSPITAL POST-MORTEMS
Hospital post mortem cases must be discussed with the Pathologist before consent is sought from the relatives.

Medical certificate of death MUST be issued prior to post mortem taking place.

A consent form for a full or partial post-mortem must be signed by the next of kin and a hospital post mortem request form must be completed. The relatives must be given the information booklet on post-mortems to read before signing the consent form. Consent must be sought by a trained individual. The consent form and the patient notes should be sent to the Pathologist. A member of the medical staff is expected to attend the post-mortem. Please contact mortuary staff for scheduled time and date of post mortem.
PAEDIATRIC POST-MORTEMs

Paediatric post-mortems are not performed by St Mary’s mortuary, they are performed at Southampton University Hospital Trust. Contact the mortuary for advice.

HUMAN TISSUE ACT

St Mary’s Mortuary is licensed to perform post mortems and store the deceased and tissues resulting from post mortem procedures.

Under the Act the Designated Individual responsible for compliance is:

Dr Jamil, Consultant Histopathologist 4829

Any queries regarding aspects of the licence should be directed to him.
A complete version of the departmental handbook is available for those working in the Department of O&G.

“WHOs WHO” within the O&G department

<table>
<thead>
<tr>
<th>Position held</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Director Child and Family Health Care Group</td>
<td>Miss S Allahdin</td>
</tr>
<tr>
<td>Associate Director Planned Directorate</td>
<td>Martin Robinson</td>
</tr>
<tr>
<td>Head of Midwifery</td>
<td>Annie Hunter</td>
</tr>
<tr>
<td>Lead Midwife Labour Ward</td>
<td>Dianne Hall</td>
</tr>
<tr>
<td>Lead Midwife Maternity Ward</td>
<td>Ann Stuart</td>
</tr>
<tr>
<td>Lead Midwives Night Duty</td>
<td>Clare Carbonell</td>
</tr>
<tr>
<td></td>
<td>Yvonne Harris</td>
</tr>
<tr>
<td>Supervisors of Midwives</td>
<td>Carole Hewison</td>
</tr>
<tr>
<td></td>
<td>Ann Stuart</td>
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<tr>
<td></td>
<td>Jane Alger</td>
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<tr>
<td></td>
<td>Natalie Dawkins</td>
</tr>
<tr>
<td></td>
<td>Clare Carbonell</td>
</tr>
</tbody>
</table>

Medical Staff

Consultants          Mr A Green
                      Mr P Vandekerckhove
                      Mr N Kenney
                      Miss S Allahdin

Associate Specialist Dr J Vorbachova (locum associate specialist acting up as locum consultant during consultant leave)

Speciality Drs         
                      Dr Tintin Htwe
                      Dr Naing Oo
                      Dr Sein Lwin

Specialist Registrars  
                      Dr A Alchemi
                      Dr E Elkattan

SHOs                  
                      Dr S Brown
                      Dr D Stephenson
                      Dr R Kozlowska
DUTIES OF SHOs IN OBSTETRICS AND GYNAECOLOGY

There are 3 SHOs in O&G; most are on the Isle of Wight GP training scheme and rotation. SHOs alternate on a weekly basis between:

(i). “On call” duties during the daytime
(ii). “Training” week; but also available for clinical cover
(iii). Night duty, holiday or study leave.

If no SHO is on leave or night duty, two SHOs are on training week.

Cross cover with Orthopaedics and General Surgery occurs outside normal working hours. The SHO daytime and out of hours on call rota is issued by Medical Staffing in advance for the full six months so that SHOs are able to arrange their training and leave around their scheduled on call duties.

From Monday to Friday, the on call SHO covers:

<table>
<thead>
<tr>
<th>Time</th>
<th>Services</th>
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</thead>
<tbody>
<tr>
<td>08.00 to 17.00</td>
<td>Gynaecology + Obstetrics (see below)</td>
</tr>
<tr>
<td>17.00 to 21.00</td>
<td>Gynaecology + Obstetrics if Gynae SHO on call (NOT Obstetrics for orthopaedics or general surgery SHOs)</td>
</tr>
<tr>
<td>21.00 to 08.00</td>
<td>Gynaecology + orthopaedics + general surgery (NOT Obstetrics)</td>
</tr>
</tbody>
</table>

On Saturday and Sunday the on call SHO covers:

<table>
<thead>
<tr>
<th>Time</th>
<th>Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>08.00 to 21.00</td>
<td>Gynaecology + orthopaedics (NOT general surgery or Obstetrics)</td>
</tr>
<tr>
<td>21.00 to 08.00</td>
<td>Gynaecology + orthopaedics + general surgery (NOT Obstetrics)</td>
</tr>
</tbody>
</table>

(i) Daytime work during the “on Call” week (Mon–Fri) includes:

1. Handover from night SHO re Gynae admissions or problems.
2. Clerking/checking patients for theatre 08.00 – 08.30am (patients who have not been through Pre-assessment Clinic, omitted or missing blood samples or results etc). Most Gynae patients are on St Helens and Whippingham wards but they may also be on other wards, please check.
3. All gynae inpatients (postoperative and emergency admissions) need to be seen by the SHO on a daily basis, and this needs to be documented in the notes. Often specific instructions are left in the theatre notes for postoperative patients. Discuss any problems with, or ask for clinical review by the registrar.

4. Gynae ward around 08.30–09.00am with registrar/consultant to cover gynaecology patients, followed by ward round on maternity unit.

5. Ward work resulting from ward round (gynaecology and obstetrics).

6. Check outstanding investigative results; if results appear abnormal, discuss with registrar and initiate management plan.

7. Ensure all immediate written discharge summaries ("flimsies") and drugs to take home (TTOs) are completed. Use the British National Formulary (BNF, also available on the intranet) if unsure about drug dosage. Recently, electronic discharge summaries have been introduced using the PatientCentre software package. You should have received training and a password to use PatientCentre. The flimsies will eventually be phased out but in some areas both are still being used. The electronic discharge form should be created automatically by the ward clerk on admission, be partially completed in theatre by the operating team (if the patient undergoes surgery), and finalised by the SHO/Registrar at the time of patient discharge. On completion of the document it should be e-mailed to the GP and 3 copies need to be printed out: One for filing in the patient notes, one to be given to the patient on discharge, and one to be sent to Clinical Coding. If unable to e-mail the GP, print out a 4th copy and ask the ward clerk for it to be sent by standard mail. Ensure the requested follow up for the patient is arranged.

8. The SHOs are responsible to produce formal Discharge letters for emergency admissions after discharge of the patients from hospital. The secretaries will leave case notes in your doctor pigeon holes (located in the ‘doctors’ cupboard in the corridor outside the Gynae secretaries’ offices) for typed discharge summaries.
A proforma is available for use. Please do not leave the case notes to build up, do not reallocate them and check your pigeon hole on a daily basis. Letters for elective admissions are done by the Consultants. If, however, an electronic discharge form has been sent from the ward to the GP, it is no longer necessary to do a further letter.

9. If called by A & E to see a patient, review and clerk the patient(s) prior to the registrar so that you can present the case and management to the registrar when they arrive. If you cannot review the patient prior to the registrar you must inform the registrar personally why you cannot see the patient first. **Patients should not be discharged from the hospital until a registrar has seen the patient.** If required, arrange admission of Gynae emergencies onto St Helens or Whippingham ward.

10. Early pregnancy assessment unit (EPAU) – EPAU clinic takes place every am Monday to Friday. When called, review and clerk the patient(s) so that you can present the case and discuss management with the registrar when they arrive. If you cannot review the patient prior to the registrar you must inform the registrar personally why you cannot see the patient first. The ultimate decision about management is to be made by the registrar. Please familiarise yourself with the EPAU guidelines.

11. Emergency Gynae theatre – The SHO books emergency cases for theatre by taking patient details to theatre and writing them clearly in the book as soon as possible after the decision for surgery has been made. There is a first come, first served system so any delays in booking cases often means gynaecology patients have to wait until late evening to have their surgery performed. Sometimes patients can be added onto routine elective lists (check with surgeon and anaesthetist in theatre!) but do not assume this to be the case automatically. Patients requiring ERPC in the 2nd half of the week can often be added to the Friday pm TOP list in the Day unit. Ensure that the consent, clerking and appropriate bloods have been taken and that the results are available.
12. Obstetric emergencies – you will be called to assist the registrar if an Obstetric emergency arises on the labour ward or antenatal ward.

13. Elective Caesarean Sections (CS) – most are performed on Wednesday and Thursday mornings (occasionally also Tuesday or Friday am) – you will often be called to assist. You may also be called to the ANC to clerk such patients when they attend clinic in advance of their planned CS.

14. PAAU: Wednesday and Thursday afternoons and alternate Friday mornings the on call SHO will see patients attending for pre-operative assessment, together with the nurses, in PAAU.

The on call SHO is responsible to the on call registrar in O&G at all times.

If matters are busy, please call upon your colleague SHO(s) on “training week” to come and help you for a while.

(ii) Training week

Training week is a normal working week but (mostly) without regular daytime on call commitments. You are required to be present in the Hospital during your full normal working hours and to respond to any calls on your pager. The only exception to this is attendance to the Isle of Wight/Portsmouth GP VTS training sessions on Wednesday once a month (see below).

If matters are busy, you will be expected to help the SHO who is on “daytime call” for that week. Equally, you may be required to cover in case of unexpected absence (sickness) of the on call SHO. Please cooperate with your fellow SHOs.

Training opportunities should be taken by the SHO during these training weeks. Arrangements should be made by the SHO so that they attend the appropriate numbers of different sessions. A departmental timetable outlining training opportunities and a guide towards the number of
expected clinic, theatre, etc. attendances is enclosed in this booklet. Please keep a record of your attendances on the enclosed form at the end of this document.

During training weeks you should also have the opportunity to work on your audit and/or guideline projects, and to prepare for the Monday afternoon teaching session. It also provides the opportunity for you to organise any workplace based assessments required for your portfolio.

DUTIES OF THE MIDDLE GRADE DOCTORS (SPECIALIST REGISTRAR, STAFF GRADE) IN OBSTETRICS AND GYNAECOLOGY

The on call middle grade doctor starting daytime duties should meet the outgoing registrar on labour ward for handover at 08.15; both incoming and outgoing doctor need to sign the handover register in the labour ward diary.

The incoming consultant on call usually joins the handover at 08.30 (sometimes 08.45 if fertility scans are to be done). Then start the ward round: review patients on labour ward as requested by the midwives, all antenatal patients on the maternity unit, all early postoperative patients and any other postnatal patients the midwife requests you to see, and all gynaecology patients on the gynae ward. Ensure that the on call SHO (and any Medical students on his/her labour ward week) accompanies you. Any remaining clinical queries should be directed to the consultant of that patient. If the consultant concerned is absent, contact the on call consultant. Midwifery led care (MLC) and new gynaecology emergency patients are registered under the care of the consultant on call at the time of admission. If any emergency arises then the ward round should be completed after dealing with the emergency.

Please join the consultant on call for the day for his/her ward round before reviewing the remainder of the obstetric and gynaecology patients. Separate consultant reviews of their own patients may take place during the day.

Gynaecological surgical emergencies are usually carried out from 17.00 onwards on the emergency list in main theatres rather than being added to routine gynae lists taking place. Consider interruption of routine lists for
life-threatening emergencies. See patients whom you operate upon preoperatively and postoperatively.

Decisions about EPAU and A&E patients must be made by the on call middle grade doctor and patients should not be discharged from the hospital until a middle grade doctor has seen the patient. Patients in A&E MUST be seen and either discharged or admitted within 4 hours of admission to casualty.

Formal handover between the middle grade doctors is also to occur at 20.15 on labour ward; patients on labour ward and outstanding obstetric and gynaecology patients are to be reviewed after the handover as necessary. The on call middle grade doctor should inform the on call consultant of any possible problems – a phone call at around 21.00 should suffice.

Middle grade doctors who are not on call are scheduled to go to theatre or outpatient clinics, or allocated other duties. Your daytime rota and duties (together with weekend and night duties) are circulated by Mr Rezk in 6 weekly blocks. It is only acceptable to swap daytime duties for genuine emergencies and not for personal convenience or preference. Mr Rezk needs to approve any swaps.

Middle grade doctors may be asked to help the SHOs in busy circumstances.

The secretaries will leave case notes in the middle grade doctor pigeon holes (located in the cupboard outside the secretaries’ offices) occasionally for typed discharge summaries if electronic discharge summaries have not been done or need to be completed, certain lab results or other queries. Please do not leave them to build up and do not reallocate the case notes. Please check your pigeon holes on a daily basis.

Recently, electronic discharge summaries have been introduced using the PatientCentre software package. You should have received training and a password to use PatientCentre. The electronic discharge form should be created electronically by the ward clerk on admission, be partially completed in theatre by the operating team (if the patient undergoes surgery), and finalised by the SHO/registrar at the time of patient discharge. On completion of the document it should be e-mailed to
the GP and 3 copies need to be printed out: One for filing in the patient notes, one to be given to the patient on discharge, and one to be sent to clinical coding. If unable to e-mail the GP, print out a 4th copy and ask the ward clerk for it to be sent by standard mail. Ensure the requested follow up for the patient is arranged.

DEPARTMENTAL EDUCATIONAL MEETINGS

**Monday** 14.00–17.00 (now every 2nd week): educational session for SHOs and Med Students, organised and led by Mr Vandekerckhove (Postgrad Centre). Separate program circulated on a 6 monthly basis.

**Wednesday lunchtime** 12.30–13.30 departmental meeting: topical O&G subjects, recent advances or innovations, obstetric and gynaecology unexpected outcomes meeting (Maternity Classroom). Separate program circulated on a 3–6 monthly basis.

**Thursday lunchtime** 12.30–13.30 departmental meeting: including Perinatal mortality/morbidity meetings (1st Thursday each month), Obstetric and Gynaecology case reviews, Journal club, protocol/guideline discussions and updates (Maternity Classroom). Separate program circulated on a 3–6 monthly basis.

**Friday** 13.30–14.30 (alt weeks): CTG teaching and discussion, together with midwifery staff (Maternity ward, Dayroom). Coordinated by Dr Lwin.

**4th Monday each month** 12.30: Multidisciplinary MDT meeting (Postgrad Centre).

**Two day local clinical skills update course** (once every 2 months): Multidisciplinary with midwives and anaesthetist. Mandatory attendance once a year. Mandatory to take part once a year. Study leave should be booked for this local in-house course. Separate programme/allocation circulated on a regular basis.

**Friday afternoons (ad hoc):** Clinical workshops/outside speaker. Details of individual meetings circulated.
**Monday afternoons (4 monthly):** Audit presentations. 
*Programme distributed separately for each audit meeting.*

**Fire drills** (mandatory, once a year): Build into lunchtime teaching sessions.

Child protection (mandatory, once a year): Build into lunchtime teaching sessions.

Adult basic life support, maternal and neonatal life support: Mandatory attendance once a year. Build into the clinical skills update course.

In addition: for grades in training programmes:

- **MIDDLE GRADE DOCTORS:** Wessex SpR regional Deanery meetings – 1st Friday each month. *(Variable hospital locations within the Deanery).* Attendance record to be kept by trainee. Will be assessed at annual ARCP. Minimum attendance required by Deanery is 60%.

- **SHOs (GP TRAINEES):** monthly GP training session 3rd Wednesday of the month. *(Portsmouth or IOW).*

**DEPARTMENTAL PROTOCOLS/GUIDELINES**

Departmental guidelines are available on the intranet. Each junior doctor will also be handed a full copy of the existing departmental guidelines for their own personal use.

Labour Ward guidelines are also available in hard copy on Labour Ward (apart from the intranet).

Labour ward and other guidelines are continuously in the process of being updated.

Each junior doctor is expected to prepare (create or update) and present a departmental protocol/guideline or patient information leaflet every 6 months. The local Clinical governance format needs to be followed. Coordinated by Mr Vandekerckhove.
Topics covered include:

Labour Ward Guidelines – Accidental Dural Puncture (ADP) management
Labour Ward Guidelines – Acute Antepartum Haemorrhage (APH)
Labour Ward Guidelines – Advice on place of birth
Labour Ward Guidelines – Amniotic fluid embolism (AFE)
Labour Ward Guidelines – Antenatal care for women with uncomplicated pregnancies
Labour Ward Guidelines – Bottle feeding of Newborn healthy infant
Labour Ward Guidelines – Breastfeeding of full term healthy infant
Labour Ward Guidelines – Breech presentation management (including External Cephalic Version) (ECV)
Labour Ward Guidelines – Caesarean section (CS)
Labour Ward Guidelines – Care in recovery following regional or general anaesthetic in obstetric theatre
Labour Ward Guidelines – Care of the Newborn infant
Labour Ward Guidelines – Cord prolapse
Labour Ward Guidelines – Disinfection of infant feeding equipment (protocol)
Labour Ward Guidelines – Eclampsia and severe hypertension
Labour Ward Guidelines – Epidural infusion management
Labour Ward Guidelines – Failed adult intubation
Labour Ward Guidelines – Fetal Monitoring (including fetal blood sampling)
Labour Ward Guidelines – Gestational diabetes management
Labour Ward Guidelines – Haemoglobinopathy management
Labour Ward Guidelines – Induction of labour
Labour Ward Guidelines – Labour and birth in water
Labour Ward Guidelines – Maternal collapse
Labour Ward Guidelines – Maternal death
Labour Ward Guidelines – Maternity handheld records
Labour Ward Guidelines – Meconium stained liquor management in labour
Labour Ward Guidelines – Multiple pregnancy management
Labour Ward Guidelines – Neonatal Gp B streptococcal disease prevention
Labour Ward Guidelines – Neonatal Hypoglycaemia management
Labour Ward Guidelines – Neonatal transfer to mainland hospital
Labour Ward Guidelines – Perineal Trauma
Labour Ward Guidelines – Philosophy of care
Labour Ward Guidelines – Planned home birth
Labour Ward Guidelines – Post Partum Haemorrhage (PPH)
Labour Ward Guidelines – Post partum thromboprophylaxis
Labour Ward Guidelines – Pre-existing diabetes management in pregnancy
Labour Ward Guidelines – Pregnancy loss. Management of women with loss following termination for abnormality or intrauterine death
Labour Ward Guidelines – Reduced fetal movements
Labour Ward Guidelines – Shoulder Dystocia management
Labour Ward Guidelines – Transfer in of home births to hospital
Labour Ward Guidelines – Transfer of mother to mainland hospital
Labour Ward Guidelines – Umbilical cord care in healthy babies
Labour Ward Guidelines – Vaginal birth after caesarean section (VBAC)
Labour Ward Guidelines – Women who refuse a blood transfusion
Pregnancy – Early pregnancy ultrasound screening
Pregnancy – Exposure/management of Varicella zoster (VZ) virus
Pregnancy – Gestational Diabetes – About the Modified glucose tolerance test
Pregnancy – Termination for medical reasons
Pregnancy loss – Guidance for parents who have had a miscarriage
Pregnancy loss – Having photographs of your baby
Rubella Immunisation of Sero-Negative Women Using MMR Vaccine Guidelines
Stillbirth or neonatal death
LABORATORY REQUESTS

Group and Save requests in O&G (Maximum surgical blood order schedule–MSBO)
The following O&G conditions require group and save unless a crossmatch is specified by the surgeon pre-operatively and the reason for this is indicated on the request form:

- ERPOC/TOP
- Laparoscopy
- hysterectomy (abdominal or vaginal)
- oophorectomy
- laparotomy
- colposuspension
- caesarean section

PREGNANCY TESTS

For pregnancy test requests always state date of the last menstrual period (LMP).

Urine specimens
Use a 30ml plain universal container. A sensitive test is now routinely performed on all urinary pregnancy test requested (for both in and out patients). This detects urinary hCG at a level of 25 IU/l and above. This test is usually positive by the first day after the missed menstrual period. The results are available on the same day as receipt of sample.

Serum specimens
Use yellow plain serum tube. This test is performed when quantitative HCG tests are requested.

MICROBIOLOGY

Genital swabs for isolation of bacteria ‘routine’ culture & sensitivity
Use blue topped ‘Transwabs’ which contain Amies transport media. Swabs without transport media should not be used as the sample will quickly dehydrate & dry out. Note that actual pus (or exudate) in a plain sterile container normally yields better results than a ‘swab’ of pus.
If examination specifically for *Neisseria gonorrhoeae* is indicated, cervical and urethral swabs should be carefully collected (not HVS). Transport to laboratory should be rapid & the same working day.

For the majority of samples sent for culture, a preliminary report will be available the day after receipt of sample. Sensitivity test results will take a further 24hrs. Most samples require a total of 48hrs incubation; therefore a final authorised negative result will only be available 48hrs after specimen receipt (preliminary negative culture results will be issued on samples taken from normally sterile sites).

**Swabs for Chlamydia antigen by NAATS**

Use special ‘chlamydia’ swab kits or urine collection kit (available on request from Pathology Dept).

‘Routine’ swabs and ‘Virocult’ swabs are not suitable for this purpose.

Follow the kit directions for specimen collection.

**HISTOPATHOLOGY**

Request forms and formalin filled containers are available from Pathology stores. Use black/yellow print on white forms for histology and for gynae cytology (but not cervical smears – see below). Turnaround time is approximately 14 days. Specimens are kept for 6 weeks before disposal.

**Routine histopathology specimens**

These should be placed in an appropriately sized container of 10% formalin, labelled, and sent to the laboratory with a fully completed request card. The specimen should not be refrigerated. Tissue should not be placed in saline or allowed to dry prior to being placed in formalin. Specimens will be returned to the sender if unlabelled or received without a correctly completed form.

**Urgent requests**

Urgent requests should be clearly identified. Results or an interim report (if further investigations are required) will be telephoned within one hour of the result being available.
CERVICAL SMEARS

Materials for taking a cervical smear are obtained from pathology stores, and should be available on wards and in clinics. The request form is individualised and computer generated. Liquid Based Cytology has recently been introduced. Please make sure all the patient’s details are written on the request form.

SEMINAL FLUID ANALYSIS (SFA)

*Use plain sterile containers (60ml or ‘Universal’).*

Instructions for the collection of seminal fluid:

The patient should refrain from sexual intercourse and/or masturbation for 2–7 days prior to specimen collection. The sample should be collected into a clean plastic wide-mouthed container. Samples must not be collected into a condom. The sample should be produced (into the plastic container) by masturbation without artificial lubrication. Interrupted intercourse is not suitable as a means of collection. It is important that the whole ejaculate is collected; if not, the sample should be labelled ‘incomplete’. The container should be labelled with the patient's name and I.W. number (if known), and the date and time the sample was collected. The sample and request form should be delivered to the laboratory (Pathology Reception) within 1 hour of collection. It should be kept warm (body temperature) for example in a pocket near the body.

**Reference values of semen parameters:**

- Volume: > 2.0ml
- Sperm concentration: > 15 x 10^6 spermatozoa per ml
- Total sperm number: > 40 x 10^6 spermatozoa per ejaculate
- Motility: > 50% motile within 60 minutes of ejaculation
- Morphology: >5% normal forms

CYTOGENETICS

Refer to the specimen protocols available in Maternity/Gynae Ward. There is a time limit on the suitability of tissue for genetic studies. Packing and delivery is arranged by the Clinical Chemistry Department (ext. 4822).
The requesting doctor or the Chemistry department should liaise with the cytogenetics laboratory at Salisbury (Tel. 01722 336262 x 4080).

**USEFUL TELEPHONE NUMBERS IN O&G**

All emergencies (inc cardiac arrest) 2222
Switchboard 0
O&G departmental fax number (01983) 534196
Secretaries:
Mr Vandekerckhove/Ms Allahdin 4347
Mr Green/Mr Kenney 4348

**Appointments**

Gynae 4327/4876/4197
Obstetrics 4326
Colposcopy 4327/4876
Outpatient Clinic (Antenatal-Gynae) 4342/4332
Obstetric USS Room 4591
Labour ward nursing station 4334
Labour ward office 4328
Labour ward theatre 4574
Maternity ward 4392/4299
Colposcopy/Hysteroscopy Clinic 4338
Neonatal Intensive Care Unit 4337
St Helen’s Ward 4701/2
Whippingham Ward 4706/7
General (Main) theatre office 4737
General (Main) theatre Theatre 2 4733
General (Main) theatre Staff room 4738
Surgical Day Unit 4320/4321
Family Planning clinic 4202
GUM clinic 4571/4202
ONCOLOGY

DEALING WITH ADULT CHEMOTHERAPY AND RADIOTHERAPY PATIENTS

What to do if an oncology patient is admitted

1. Please let us know as early as possible. Ring the Acute Oncology Service (AOS) on ext. 5730, the oncology staff grade bleep 059 or the acute oncology CNS bleep 070.

2. Find out what treatment the patient has had via chemotherapy suite ext. 4916, pharmacy ext. 4181, AOS ext. 5730. For radiotherapy out of hours please call Southampton on 02380 798568 or Portsmouth on 02392 286000 ext 2139. Urology and head and neck cancers are dealt with at QA hospital in Portsmouth. All other tumours sites are dealt with at Southampton. St. Mary’s Hospital, Isle of Wight has its own Haematology service.

3. Satisfy yourself that you are not dealing with neutropenic sepsis, metastatic spinal cord compression or superior vena cava obstruction (ALL MEDICAL EMERGENCIES).

4. Contact the consultant, staff grade oncologist or the AOS CNS for any advice you need. If you need advice out of hours please leave a message on ext. 5730.

Neutropenic Sepsis

Needs to be acted on rapidly. Any chemotherapy patient who becomes unwell or febrile should have an urgent full blood count, blood cultures from all lines and IVABs within 60 minutes of presentation. Always assume patient is neutropenic until neutropenic sepsis is ruled out.

- Clinical signs: fever – temperature more than 38 degrees or less than 36 degrees, hypotension, focal infection, rigors or just generally not feeling well.

- Investigations: full blood count, clotting, U&E, LFT, CRP, blood (from all lines) and urine cultures, CXR (if indicated), and any other swabs and stool cultures if appropriate.
Metastatic Spinal Cord Compression

Early intervention can restore or stabilise function. Patients who are reasonably fit may be suitable for surgery. Have a high index of suspicion for metastatic spinal cord compression in any patient with malignancy.

- Symptoms: include back, girdle or radicular pain, weakness or heaviness in the legs, ataxia, falls, paraesthesia or sphincter disturbance.
- Management: dexamethasone 16mg daily with PPI cover and MRI of the spine as soon as possible.
- Contact the AOS team.

Referrals

Most referrals to oncology will naturally occur through MDT. If you have admitted an oncology patient please leave a message on ext. 5730.

Training

Junior staff and medical students are welcome to attend oncology clinics. Please arrange through Dr Cave’s secretary on 02380 798476. AOS also invite junior staff and medical students to spend time with them.
### Oncology consultants and clinical nurse specialists

<table>
<thead>
<tr>
<th>Tumour type</th>
<th>Consultant</th>
<th>Nurse specialists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Oncology Service</td>
<td>Staff Grade 02380 798476</td>
<td>Joanne Ballington ext. 5730, bleep 070</td>
</tr>
<tr>
<td>Chemotherapy Department</td>
<td>D J Cave 02380 798476</td>
<td>Chemotherapy Dept. ext. 4916</td>
</tr>
<tr>
<td>Breast</td>
<td>Dr J Marshall 02380 794266</td>
<td>Jasmine Light, Claire Hocknull or Alana Bell* 534562</td>
</tr>
<tr>
<td>Colorectal</td>
<td>Dr C Baughan 02380 798597</td>
<td>Helen Fulford 534180</td>
</tr>
<tr>
<td>Gynaecology</td>
<td>Dr V McFarlane 02380 798597</td>
<td>Pat Reynard* 07876 146377</td>
</tr>
<tr>
<td>Haematology</td>
<td>Locum cover ext. 4767</td>
<td>Simone Wells* ext. 5372/07920 767120</td>
</tr>
<tr>
<td>Urology</td>
<td>Dr Boote</td>
<td>Sonya Allen 534163/bleep 082</td>
</tr>
<tr>
<td>Head and Neck</td>
<td>Dr El-Alami ext. 4453</td>
<td>Angela DeOliveira* ext. 5306</td>
</tr>
<tr>
<td>Lung</td>
<td>Dr J Cave 02380 798476</td>
<td>Anne Snow or Emi Cornwall ext. 4379</td>
</tr>
<tr>
<td>Hospital Palliative Care</td>
<td>Awaiting consultant</td>
<td>Amanda Pushparajah, Natalie Sayer or Tricia Reeves ext. 4177</td>
</tr>
<tr>
<td>Sarcoma</td>
<td>Dr P Simmonds 02380 794192</td>
<td>–</td>
</tr>
<tr>
<td>Skin</td>
<td>Dr Howarth</td>
<td>Minna Eriksson-Cullen* ext. 5407, bleep via switch</td>
</tr>
<tr>
<td>Upper GI</td>
<td>Dr J Cave 02380 798476</td>
<td>Gill Jones ext. 4195 or 07879 818352</td>
</tr>
</tbody>
</table>

*Indicates Part Time
**ORGAN DONATION**

**Donation after Brain-stem Death (DBD)**

- **Notification of potential donor to Specialist Nurse Organ Donation (SN-OD)**
  - Pager: 07659183499

- **Maintain therapy and physiological stability:**
  - (Perform BSD Testing)

- **Check Organ Donor Register:**
  - Duty Office at the Directorate of Organ Donation and Transplantation in Bristol on 0117 9757580 or 0117 9757581

- **Patient has a confirmed diagnosis of BSD**

- **Patient does NOT have a diagnosis of BSD.**

- **Discuss the case with the coroner. Record any coroner’s restrictions to donation**

- **Patient is not BSD Consider DCD pathway**

- **Notification of potential donor to Specialist Nurse Organ Donation (SN-OD).**
  - Pager: 07659183499

- **Check Organ Donor Register:**
  - Duty Office at the Directorate of Organ Donation and Transplantation in Bristol on 0117 9757580 or 0117 9757581

- **Assessment of patient for donation by the SN-OD & clinician**

- **Patient potentially suitable for organ donation?**

- **Patient NOT potentially suitable for organ donation?**

- **Maintain therapy and physiological stability**

- **End of life care pathway**

- **Consider tissue donation pathway**

- **Family object to donation**

- **Family agree or consent to donation**

- **Obtain blood samples for tissue typing and virology**

- **SN-OD will co-ordinate organ offering, theatre, retrieval teams & family follow up**

- **NOK / clinicians / nurses will be kept informed of the process**

- **Patient will require the following tests:**
  - CXR, ECG, FBC, U&E’s, LFT’s (including GGT, & amylase), Clotting studies, Blood group, ECHO (if cardiothoracic organs considered)

- **Maintain therapy and physiological stability**

- **End of life care pathway**

The patient remains physiologically supported and ventilated until post cross clamp in theatre. The hospital will provide an anaesthetist. The SNOD attends theatre with the patient. The SN-OD will arrange for staff and NOK to receive information following the donation process.
Donation after circulatory death (DCD)

Decision made that to continue treatment would not be of overall benefit to the patient

Maintain therapy and physiological stability

Check Organ Donor Register: Duty Office at the Directorate of Organ Donation and Transplantation in Bristol on 0117 9757580 or 0117 9757581

Discussion with the coroner. Record any coroner’s restrictions to donation.

Notification of potential donor to Specialist Nurse Organ Donation (SN-OD), Pager: 07659183499

Assessment of patient for donation by the SN-OD & clinician *

Patient potentially suitable for organ donation?

Planned approach for donation to include SN-OD, clinician & nurse.

Maintain therapy and physiological stability

End of life care pathway

Patient NOT potentially suitable for organ donation

End of life care pathway

Consider tissue donation pathway

Family object to donation

Family agree or consent to donation

Obtain blood samples for tissue typing

Formal consent and patient assessment

SN-OD will co-ordinate organ offering, theatre, retrieval teams & family follow up

Family / clinicians / nurses will be kept informed of the process.

Patient will require the following tests: CXR, ECG, FBC, U&E’s, LFT’s (including GGT, & amylase), Clotting studies, Blood group.

The patient is taken to theatre immediately following certification of death. The SNOD attends theatre with the patient. The SN-OD will arrange for staff and NOK to receive information following donation.

Reference: IOW Organ and Tissue Donation Policy: May 2011
ORTHOPAEDICS

GUIDELINES FOR ORDERING PRE AND POST OPERATIVE JOINT REPLACEMENT X RAYS

PRE-OPERATIVE

1. Spine

- LATERAL CERVICAL SPINE IN FLEXION AND EXTENSION POSITION FOR PATIENTS WITH RHEUMATOID ARTHRITIS.

Request
C/Spine lateral in flexion/extension and state “RA for surgery”.

2. Shoulder

- TOTAL SHOULDER REPLACEMENT (TSR) OR HEMIARTROPLASTY, IF NOT DONE IN THE LAST 6 MONTHS.

Request
AP Glenohumeral Joint and Axillary and state “for TSR/Hemiarthroplasty”.

- ROTATOR CUFF REPAIR, IF NOT DONE IN THE LAST 6 MONTHS.

Request
AP shoulder in ER/Neutral/IR (A.K.A. “rotator cuff views”) and state “for rotator cuff repair”.

- SHOULDER DECOMPRESSION OR ARTHROSCOPIC DECOMPRESSION (A.S.D.) IF NOT DONE IN THE LAST 12 MONTHS.

Request
AP shoulder and supraspinatus outlet view and state “for decompression”.

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3. Elbow

- TOTAL ELBOW REPLACEMENT (TER) AND MORREY PROCEDURE OF ELBOW IF NOT DONE IN THE LAST 6 MONTHS.

Request
AP and lateral of elbow and state “for TER/Morrey procedure”.

4. Hip

- PRIMARY THR IF NOT DONE IN THE LAST 6 MONTHS.

Request
Pelvis for hips and state “for THR”.

- REVISION THR IF NOT DONE IN THE LAST 6 MONTHS.

Request
Pelvis for hips and lateral of left/right and state “for Revision THR”.

5. Knee

- PRIMARY TKR, REVISION TKR, AND HIGH (PROXIMAL) TIBIAL OSTEOTOMY, IF NOT DONE IN THE LAST 6 MONTHS.

Request
Right/Left knee – TKR views and state “for TKR/Revision TKR/Tibial Osteotomy”.

6. Ankle

- Ankle arthrodesis (fusion) if not done in the last 6 months.

Request
AP and lateral ankle and state “for arthrodesis”.

- SUBTALAR ARTHRODESIS IF NOT DONE IN THE LAST 6 MONTHS.
Request
Subtalar Joints Views and state "for subtalar arthrodesis".

POST OPERATIVE REQUESTS

1. THR (primary)

   Request
   Pelvis for hips (+/- lateral of operated side if any suggestion of loosening or osteolysis).

2. TKR (primary)

   Request
   TKR views. (Skyline view to be done only once during follow-up unless there is a suggestion of patellar maltracking).

PRE-OPERATIVE PREPARATION AND ANAESTHETIC CONSIDERATIONS ON THE ORTHOPAEDIC WARDS

To be used in conjunction with the following guidelines:

- Prevention & Control Of Pain In Surgical Paediatric Patients (Dr M. Hof)
- Protocol for the Administration of Morphine Sulphate Oral Liquid for Adult Patients in Acute Pain

PRE-OPERATIVE PREPARATION

The historical problem:

All busy acute units face the same problem in that Orthopaedic trauma patients, many of whom are old and frail, present to the hospital ‘out of hours’. Previously patients were immediately managed ‘nil-by-mouth’ and starved regardless of when they were likely to be operated on. In many cases intravenous fluids were not administered. This resulted in many already vulnerable patients becoming dehydrated and in some cases nutritionally compromised. The former results in gross haemodynamic collapse with induction of anaesthesia, the later significantly impairs immune function, wound healing
and post-operative recovery. The very nature of trauma work means that the anaesthetist often sees the patients just before the list start time. If they are considered unfit they are cancelled. This can occur several days in a row. We have worked hard to minimise this occurrence through the introduction of early preparation and electronic distribution of the trauma lists. A system of fast tracking these patients from Accident and Emergency Department to the ward (which incorporates the Nurse prescription of immediate intravenous fluids) is also underway.

The big question:

Is the patient fit for a general anaesthetic?

YES. Clearly if the patient is otherwise in good health with no significant intercurrent illness, then they can be listed according to surgical priority and convenience. It is worth bearing in mind that anyone undergoing a particularly complicated or unusual operation may still however require an experienced anaesthetist. The staff co-ordinating the trauma list should check against the anaesthetic weekly rota and inform the necessary anaesthetist or call the anaesthetic office where indicated.

NO. If the patient appears unfit or has significant medical co-morbidity the bigger question is:

Can the patient’s condition be improved?

NO, BUT STABLE. Many orthopaedic patients will be found to have significant medical problems such as angina, AF, asthma, COPD, chronic renal failure etc. They may be entirely stable and already medically optimised. It is important to ensure that their condition does not deteriorate; routine medication should be continued unless contraindicated. They should be starved no longer than necessary. The majority of these patients will require anaesthesia and surgery in the face of these problems. It is important to match these patients with a suitably experienced anaesthetist. This can only be done through co-ordination with the anaesthetic rota/office. A patient may not be in optimal condition and appropriate for a Consultant anaesthetist, but would still quite rightly be cancelled if placed on another list. Please give as much
notice as possible to the anaesthetist who is covering the list, don’t just wait for them to find out when the list is published!

**YES.** Some patients will be found to have an associated medical condition that needs treating. It may have been responsible for precipitating their accident, e.g. chest infection, unstable angina, myocardial infarction, cardiac arrhythmia etc. These patients will require input from the physicians covering the Orthopaedic wards. Together we will need to determine the optimum time for surgery. This may not be after complete resolution of the problem. We will try to ensure that a suitably experienced colleague is involved with the anaesthetic.

**NO, MORIBUND.** Unfortunately some patients are too ill for surgery and the focus of their care should be entirely palliative. This is a multi-disciplinary decision that should also involve the patient’s family.

**GENERAL PRINCIPLES**

- A thorough history and examination is mandatory.
- Maintain the patients routine medicines unless contra-indicated along with new therapies such as antibiotics & analgesia.
- Feed and water (oral/iv) appropriately (see below).
- Liase with anaesthetic office or rota where required.
- If in doubt, ask someone.

**SIGNIFICANT CO-MORBIDITY: POTENTIAL PROBLEM PATIENTS**

Those with significant intercurrent disease that is likely to complicate anaesthesia and the post-operative period; or require special skills such as fibre-optic intubation. Some examples of which are as follows:

**Respiratory system:** Chest infection, COPD requiring nebulisers/steroids, home oxygen therapy or disease severely limiting activity. Patients with # ribs, pneumothorax or other chest injury.
Consider: recent CXR, blood gases, PEFR and if possible pulmonary function tests for those with COPD.

Please ensure good pain relief and chest physiotherapy has been commenced.

**Cardiovascular system:** Patients with unstable angina, recent MI, LVF, heart block, arrhythmia’s and any other significant ECG abnormality. If there is a heart murmur that is associated with LVF, arrhythmia e.g. AF, cardiomegaly or angina please organise a myocardial echo. Patients who are on Warfarin may require transfer to intravenous heparin.

**CNS:** Patients with recent head injury, recent stroke and spinal disease/injury.

**Multiple trauma:** We would like to know about these patients before the time of operation.

**Critical care patients:** Those patients on the ITU/HDU or are usually an anaesthetic challenge. Please let us know about them well in advance (at least the day before if possible).

**REMEMBER:** Proper preoperative assessment before patients are listed can reduce the number of cancellations, prevent the starve/cancel trap and assist in better, more cost effective use of operating lists.

**PREOPERATIVE INVESTIGATIONS**

- **FBC** Major surgery and as clinically indicated (essentially all except young minor cases). If Hb <10, discuss with us.

- **X-match, G&S** G&S needed for all major cases, X-match if significant blood loss likely.

- **U&Es** D&V, CVS, renal or metabolic disease, diabetes, poor Nutrition. Patients on diuretics, digoxin, anti hypertensives and steroids, those on IV fluid therapy (most patients
over 60 and those with the above conditions). Can any abnormality be corrected?

**LFTs**  
Poor nutrition, liver disease and excessive alcohol intake.

**CXR**  
Acute respiratory distress, established CVS/respiratory disease or hypertension that have not had a CXR for >12 months. Possible malignancy or TB.

**ECG**  
>50 years, hypertension, CVS/respiratory disease, heavy Smokers. Arrhythmia may need treatment e.g. fast AF.

**Blood glucose**  
Diabetes, steroids, CVS disease. Sliding scale insulin may be required, see diabetes protocol.

**Sickle Status**  
In Afro-Caribbean patients if sickle status unknown, check Hb and Hb electrophoresis. In an emergency perform a Sickledex test. If +ve, proceed to haemoglobin electrophoresis as soon as possible, but this should not delay emergency surgery.

**Blood gase**  
Breathlessness at rest or minimal exertion.

**Lung function tests**  
Dyspnoea on mild to moderate exercise.

**Cervical Spine XRs**  
Unstable cervical spine, e.g. severe rheumatoid arthritis, Down’s syndrome, multiple trauma, head injury.

**INR + APTR**  
Bleeding disorders on anticoagulants, liver disease.

If significant abnormalities are found in any of the above, please discuss before the patient is listed and starved. Try to avoid a cancellation.
FASTING

Children: 2 hours for clear fluids
6 hours after light meal or milk feed
Give oralyte drinks if starvation likely to exceed 6 hours

Adults: 2 hours for clear fluids
6 hours for food

Emergency: starve as above where possible.

Intravenous drip

All elderly patients with fractured hips if unable to drink independently or those who are nil by mouth but do not have a planned theatre time (emergency list patients). Usually give 2–3 litres dextrose/saline (4%/0.18%) over 24 hours. Potassium may need to be added (20 – 40 mmol/L, daily U&E required). Will need a fluid balance chart. Beware of fluid overload in patients with congestive heart failure or renal impairment.

Cancellation: If the patient is not going to theatre within 6 hours please give fluid and food as soon as possible as this fact is known. Ensure good analgesia.

ANALGESIA

Principles

All patients with pain must be offered analgesia.

The pain experience in patients following trauma and surgery can be severe. There are several sources of pain:

- The broken bone/bones
- Muscular spasm around the affected limb
- The inflammatory reaction
- Pain induced by movement
- The Surgery
- A patient’s belief and expectation of pain
In elective procedures pre-emptive analgesia is beneficial. The principle is: analgesia should be administered and working before the pain stimulus.

The regime prescribed should include a pre-emptive element, a regular element and an element for breakthrough pain.

Failure to administer prescribed regular analgesia is a serious offence and may lead to disciplinary action. If you are concerned about a prescription contact the prescriber.

Good pain relief is mandatory and apart from ethical considerations bear in mind it allows:

- Better respiratory function, fewer chest infections
- Earlier mobilisation
- Less thrombo-embolic complications
- Less cardiovascular complications
- Less catabolic metabolism
- Better gastric emptying
- Improved wound healing
- Etc.

No one should be in severe pain following trauma or surgery; there is always something that can be done. A constant level of analgesia is far superior to peaks and troughs of pain relief. This can be provided by regular medication given on the drug round so patients do not need to ask for analgesia. The prescribing of post-operative analgesia is the responsibility of the anaesthetist, for adult patients presenting with acute pain on admission, the regimen should be:

- Paracetamol 1 gram given regularly 4 times daily unless contraindicated.
- A regular Non Steroidal Anti-inflammatory Drug (NSAID) unless contraindicated, Diclofenac 50 mg regularly 3 times daily, orally is the drug of choice. High risk patients should also be given Lansoprazole for gastric protection). Also note that the dose should be reduced in patients >65 years or <50kg.
- An opioid prescribed in adequate doses for breakthrough pain.
Severe pain
An opioid must be titrated intravenously to the patient’s individual need then analgesia maintained with regular oral opioid.

Morphine – Intravenously
- Diluted to 1 mg/ml with 0.9% sodium chloride.
- See IV opioid algorithm for dose (Appendix One Taken from ‘Protocol for the Bolus Administration of IV Opioids to Adult Patients’ and the ‘Protocol for the Bolus Administration of IV Opioids to Children Between the ages of 1 month and 16 years’).

Pethidine and Tramadol IV
There is no proven benefit over Morphine.

Patient Controlled Analgesia (PCA)
Are available from theatre recovery. Standard setting – Morphine 1 mg bolus, lockout 5 minutes and no background infusion. Used for patients with severe pain who will require regular intravenous opioids for a longer period of time. The technique is suitable for most adult and school age children.

(See Guideline “Prevention & Control of Pain in Surgical Paediatric Patients” by Dr M. Hof and Mr S. Wibberley).

Moderate Pain or when the patient’s pain has been brought under control with IV morphine

Morphine Sulphate (Oramorph) orally
Average dose range 0.2 to 0.4 mg/kg every 1–4 hours. Again titrate to individual need, as some patients will require more. (Refer to protocol for the administration of Morphine Sulphate Oral Liquid for Adults in Acute Pain).

Cocodamol and Coproxamol
Have no benefit over Paracetamol but more side-effects.

Codeine/DHC
Has no benefit over oral morphine and should be avoided where possible.
Anti-emetics

**Cyclizine** 25 – 50 mg IV or PO 8 hourly

**Ondansetron** 4 – 8 mg IV

Regional & Local Anaesthesia

Regional blocks, e.g. femoral nerve blocks can be very beneficial to the patient providing excellent analgesia with minimal side-effect. The anaesthetic team, will be very happy to teach some of these techniques to other interested doctors.

**Oxygen:** Major surgery and opioids can cause hypoxaemia, especially when asleep even more so in the elderly. This can occur for at least 3 days post-operatively. Consider Oxygen for most patients 4 litres/min via ordinary facemask or 2 litres/min via nasal cannula.

Basic Principles of Prescribing

- Do not mix different opioids for one patient at the same time, e.g. do not administer Tramadol and Oramorph or Codeine etc., at the same time.
- Give mono-substances (opioids) in adequate doses.
- Do not administer opioids intravenously and orally at the same time.
- The principal mode of administration for opioids should be oral or intravenous.
- Peripheral analgesia, e.g. Paracetamol and an NSAID should be prescribed to be given regularly together if not contraindicated.
- Do not mix NSAIDs.
- Routine analgesia should consist of regular Paracetamol and an NSAID if not contraindicated in adequate doses with an as required (PRN) opioid prescribed for breakthrough pain.
- Do not prescribe intramuscular injections of analgesics.
- Remember that the right dose of analgesia must be found for each individual patient.
- Unless contraindicated NSAIDS should always be co-prescribed with a proton pump inhibitor e.g. omeprizole 20 mg.
GUIDELINES FOR ANTIBIOTIC PROPHYLAXIS IN JOINT REPLACEMENT SURGERY

Purpose of the document

To reduce risk for prosthetic device associated infection by ensuring appropriate antibiotic prophylaxis is given intra-operatively to all patients undergoing joint replacement surgery; to ensure a unified approach to prescribing of antibiotic prophylaxis for this patient group, in accordance with evidence based practice.

Scope of the document

Applies to the management of all patients undergoing joint replacement surgery (hip, knee and shoulder replacement) without exception. Hospital doctors and anaesthetists responsible for the prescribing of intra-operative antibiotic prophylaxis for patients undergoing these procedures should follow the guidelines or should otherwise seek expert advice; nursing staff and ward pharmacists also have a responsibility to ensure consistency of their application in orthopaedic patients undergoing the procedures specified. This guideline is for use in conjunction with the Consultant whose care the patient is under.

Background

Administration of intra-operative antibiotic therapy to patients undergoing joint replacement has a significant effect in preventing postoperative sepsis 1 and antibiotic prophylaxis is strongly recommended for this type of surgery 1, 2, 3. The timing of antibiotic administration is important (therapeutic serum levels should be achieved at the time of joint prosthesis insertion); similarly the spectrum and pharmacokinetic properties of the antimicrobial agent(s) should be appropriate for potential infecting organism(s) and dose regimen used 3, 4. The aim of the guideline is to ensure that all patients undergoing joint replacement surgery receive timely delivery of a standardised regimen for antibiotic prophylaxis, with a glycopeptide containing regimen in selected patients identified as having risk factors for resistance 4, 5, 6 or adverse reaction to beta-lactam antibiotics.
Documentation

- Antibiotics prescribed for operative prophylaxis should be documented on the front of the patient drug chart.
- Those given in theatre should **ALSO** be documented in the anaesthetic record and annotated with a signature, date and time of administration.
GUIDELINES FOR ANTIBIOTIC PROPHYLAXIS
See algorithm (appendix)

PRIMARY JOINT REPLACEMENT AND HIP FIXATION

1. Check if patient has history of adverse reaction to beta-lactam or other antibiotic.

2. Check results of pre-operative MRSA screen.

3. Prescribe antibiotic regimen on front of drug chart:
   - If no history of flucloxacillin allergy* AND pre op MRSA screen negative, prescribe antibiotic prophylaxis according to regimen in Box 1.
   - If pre-op MRSA screen is positive OR if contra-indication to flucloxacillin, prescribe antibiotic prophylaxis according to regimen in Box 2.

*If patient has definite history of penicillin anaphylaxis allergy use regimen in box 2. Seek expert advice if a patient has a documented history of adverse reaction to glycopeptide antibiotics.

Box 1 Recommended regimen: MRSA screen negative patients

**Flucloxacillin 2g** intravenously (IV) with induction of anaesthesia

+ **Gentamicin 2mg/kg** single dose with induction

If surgery is over 4 hrs duration or if blood loss up to 1500ml, give a further dose of Flucloxacillin 1g IV before the patient leaves theatre.

After surgery give three further doses of **Flucloxacillin 1g** IV: one 4-6 hrs after the procedure and final dose 10-12 hours later.
Box 2 Recommended regimen: MRSA positive or contraindication to flucloxacillin

**Teicoplanin 400mg – 600mg (give 600mg if pt >85kg)**

**Gentamicin 2mg/kg**

Both intravenously (IV) with induction of anaesthesia. If surgery over 3 hrs duration it is not necessary to give a further dose in theatre. After surgery give one further dose of **teicoplanin 400mgs** IV: 6-8hrs after the procedure (no further gentamicin).

The above regimens are for operative prophylaxis only and should be confined to the per-operative period (up to a maximum 3 doses). Where the surgeon considers an antibiotic is indicated postoperatively, any subsequent antibiotic prescribed (i.e. >3 doses) should be written up inside the drug chart and the indication considered as treatment.
JOINT REPLACEMENT REVISION SURGERY
See algorithm (appendix)

Check if revision is for aseptic loosening or because of prosthetic joint infection.

If revision is for aseptic loosening, follow the same recommendations as for primary joint replacement (see page 1).

If revision is a 1st stage or a 2nd stage procedure

If joint is being replaced because of infection or suspected infection, the patient may have received antibiotic therapy during the immediate pre-operative period (e.g. before 2nd stage procedure). Operative prophylaxis should normally be with a different agent to antibiotics used for treatment prior to revision surgery.

1. Where patient is on antibiotic therapy, stop the antibiotic treatment 2 – 4 days prior to the proposed date for revision surgery (unless otherwise advised by the Consultant responsible for the patient).

Also check results of repeat pre-op MRSA screen, which should be performed 10 - 14 days before revision surgery. For patients undergoing revision surgery (other than aseptic loosening) this will not normally affect the regimen for operative prophylaxis but will indicate whether or not skin/nasal decolonisation is indicated during the 3 - 5 days immediately before the planned surgery.

2. Check which antibiotic (if any) the patient was on during the immediate 4 weeks before revision surgery. Prescribe appropriate antibiotic regimen for prophylaxis on front of drug chart:

1. If no recent antibiotic or if a beta-lactam antibiotic (e.g. a penicillin or cephalosporin) given in past 4 weeks follow recommendations in Box 3.

2. If teicoplanin given during past 4 weeks follow recommendations in Box 4.
Box 3 Recommended regimen for revision surgery (1\textsuperscript{st} stage or 2\textsuperscript{nd} stage)

\textbf{Teicoplanin 400mg - 600mg IV} (give 600mg if pt >85kg)
+ \textbf{Gentamicin 2mg/kg IV}

With induction of anaesthesia for revision TKR because of tourniquet use; \textit{after specimen collection for revision THR}.

After surgery, give one further dose of \textbf{teicoplanin 400mg} 8hrs after procedure.

Box 4 Recommended regimen for patients who have received teicoplanin

\textbf{Vancomycin 1g} (IV by \textit{slow} infusion at maximum rate of 10mg/minute)
+ \textbf{Gentamicin 4mg/kg IV}

With induction of anaesthesia for revision TKR because of tourniquet use; \textit{after specimen collection for revision THR}.

After surgery, give one further dose of \textbf{vancomycin 500mg} 8hrs after procedure.

If patient has history of glycopeptide intolerance or is known to have infection caused by an unusually resistant organism (e.g. GRE) the regimen for antibiotic prophylaxis may exceptionally need to differ from recommendations in this guideline: seek expert advice from Consultant Microbiologist or deputy.

\textbf{Additional points (revision surgery)}

- \textbf{Samples for culture should be taken before the first dose of antibiotic given,} where infection is suspected. The anaesthetist should be advised accordingly to delay administration of antibiotics until theatre specimens collected (or advised by surgeon responsible). Exception: TKR revision where dose needs to be given before tourniquet applied.

- \textbf{Antibiotic prophylaxis should normally be confined to the perioperative period.} The surgeon may however wish to continue antibiotic beyond the perioperative prophylaxis regimen (see boxes 3,4) until results of
cultures are known. Where this is the case, it should be documented that antibiotic treatment will continue and any further dose(s) of antibiotic prescribed on the inside of the drug chart.

- **If antibiotic treatment indicated following surgery** and the patient received teicoplanin for operative prophylaxis, teicoplanin (alone or in combination) may be given 24hrs after the last dose of the operative prophylaxis regimen. If the patient received vancomycin for surgical prophylaxis DO NOT GIVE FURTHER DOSES OF VANCOMYCIN (beyond prophylaxis regimen) unless discussed with Consultant Microbiologist or deputy. This agent requires serum monitoring (by arrangement) & should only be used for treatment on Microbiologist advice. Antibiotic treatment should be reviewed and altered in light of any positive culture results from operative samples (advice on antibiotic treatment should be sought where necessary and is beyond the scope of this guideline).

**Authors**
- Dr Suzanne Chapman (Consultant Medical Microbiologist)
- Ms Debbie Cumming (Antibiotic liaison Pharmacist)
- Mr Jonathan Gardiner (Consultant Orthopaedic Surgeon)
- Clare Louise Sandell (Orthopaedic Nurse Specialist)

**Date**
- September 2005

**Review date**
- 2008
APPENDIX

ALGORITHM: ANTIBIOTIC PROPHYLAXIS IN JOINT REPLACEMENT SURGERY

PRIMARY JOINT REPLACEMENT AND REVISION FOR ASEPTIC LOOSENING

**MRSA**

- **Flucloxacinill contraindicated/allergy?**
  - **No**
  - **Yes**

- **Previous adverse reaction to aminoglycoside or glycopeptide?**
  - **No**
  - **Yes**
    - **Seek advice**

**Flucloxacinill 2 Gr IV with induction of anaesthesia.**

- **After surgery give three further doses Flucloxacinill 1Gr IV**

**Teicoplanin 400mg IV**

- **+ Gentamicin 4mg/kg IV both with induction of anaesthesia.**
  - **After surgery give one further dose teicoplanin 400mg IV 8hrs after the procedure (no further gentamicin).**

REVISION JOINT REPLACEMENT SURGERY FOR INFECTION OR SUSPECTED INFECTION

- **Check pre-op MRSA screen results (should be performed 10-14 days prior to surgery). Result will not affect antibiotic prophylaxis regimen for revision surgery (for infection) but will indicate whether pre-op topical decolonisation treatment is indicated.**
- **Stop any antibiotic treatment 2-4 days prior to surgery.**

- **Teicoplanin given within last 4 wks?**
  - **No**
  - **Yes**

**Teicoplanin 400mg**

- **+ Gentamicin 4mg/kg IV with induction in TKR; after collection of specimens in THR.**
  - **After surgery give one further dose teicoplanin 400mg IV 8hrs after procedure (no further gentamicin).**

**Vancomycin 1g (by slow IV infusion)**

- **+ Gentamicin 4mg/kg IV with induction in TKR; after collection of specimens in THR.**
  - **After surgery give one further dose vancomycin 500mg (slow infusion) 8hrs after procedure (no further gentamicin).**
Isle of Wight
Palliative Medicine Symptom Advice Guidelines

Produced by
Dr Graham Grove
Dr Paul Howard
The Earl Mountbatten Hospice, Isle of Wight
Written October 2014, revision due October 2017

This book has drawn significantly from the "Wessex Specialist Palliative Care Handbook: Advice on Clinical Management" with modifications to reflect local practices and service design.

The authors also greatly appreciate the comments and suggestions from Dr Teena Silakong, Dr Mil Chan, Dr David Isaac, Dr Alaisdair Gove, Dr Jenny Collier, Sandra Clawson, Liz Harrison, Tracey Green, Odran Farrell, Dr David Grove and Dr Nicole Grove, and from colleagues in other specialties relevant to specific symptoms.

This guideline is also available as an app and a paper pocketbook:
- Android, iOS, WP8 and Windows 8 apps available via their respective app stores
- Paper pocketbook (available to all IoW clinical staff) – ask your palliative care CNS
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Introductory Comments

“There is a time for everything, and a season for every activity under the heavens: a time to be born and a time to die, a time to plant and a time to uproot, a time to kill and a time to heal, a time to tear down and a time to build, a time to weep and a time to laugh, a time to mourn and a time to dance, a time to scatter stones and a time to gather them, a time to embrace and a time to refrain from embracing, a time to search and a time to give up…” - Ecclesiastes 1

This guideline is intended to support symptom management for all patients receiving palliative care

Palliative care is the care of patients who have an advanced, progressive illness that is not curable, and in general, will probably result in death within weeks or months (as opposed to many years). As such there is an emphasis on quality of life and symptom control. At times there will also be a focus on active interventions to reverse acute complications of illness and, in doing so, prolong a person’s life. At other times there will be a focus on maintaining comfort and so avoiding interventions and instead allowing a natural death. Palliative care extends past the physical and into the care of a person’s emotional and psychological well-being. Good palliative care also takes note of the well-being of a dying person’s family and friends. It is an art as well a science.

This book is intended for use by primary and secondary care clinicians throughout the Isle of Wight

It is not meant to be a replacement of other textbooks – how could a book this small ever do that! Nor is it intended as a set of strict protocols that should always be followed. Rather, this book is intended for health professionals who have a good background knowledge of general medicine and pharmacology and can use that background knowledge and their experience in conjunction with the advice found on these pages.

Roles and responsibilities

The treatments suggested in this book will not be appropriate in all circumstances. It supplements, but doesn’t replace, other sources (e.g. the BNF and SPC; education and training; seeking advice from the palliative care team). Medication adverse effects, contra-indications and drug-drug interactions are not discussed in any significant detail in this book. This means that the usual competencies of clinicians and prescribers are assumed: users of this book need to use their clinical judgement with regards to the appropriateness of any suggestions, and if in doubt, seek advice from other sources.

Getting advice from the Palliative Care Service

For patients at St Mary’s Hospital

To ask a palliative care nurse or doctor for advice, to review, or to transfer a patient to the hospice:
- Fax a referral form to extension 4265
- If urgent, please also call extension 4177
- If you wish to speak to the palliative care nurse about a patient call extension 4177

For patients in the community

To ask a palliative care nurse or doctor for advice, to review, or to admit a patient to the hospice:
- For a new referral, download a referral form from the EMH website and fax it to 535 314
- For a patient known to the EMH team, call 533 331 and ask to speak to the patient’s community nurse

To speak specifically to a palliative care doctor:
Call 529 511 and ask to speak to a senior palliative care doctor
Further Reading and Guidelines

The following sources give additional guidance and information on palliative illnesses, their treatment and specific medications:

- Palliative Medicine Handbooks
  - The Oxford Handbook of Palliative Medicine by Max Watson, Caroline Lucas, Andrew Hoy and Jo Wells
- Palliative Medicine Textbooks
  - Palliative Medicine edited by Declan Walsh
  - The Oxford Textbook of Palliative Medicine edited by Geoffery Hanks, Nathan Cherny, Nicholas Christakis, Marie Fallon, Stein Kaasa and Russell Portenoy
- Palliative Care Medication Books
  - Palliative Care Formulary by Robert Twycross and Andrew Wilcock
  - The Syringe Driver: Continuous Subcutaneous Infusions in Palliative Care by Andrew Dickman and Jennifer Schneider
- Online Sources
  - UpToDate at www.uptodate.com (available to NHS staff via their OpenAthens login)

Abbreviations and Symbols Used

Abbreviations are not used frequently in this book, but where they are used, they are consistent with ones in common usage (e.g. DVT stands for deep venous thrombosis). The following abbreviations and symbols are relatively frequent in this book:

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<td>PRN</td>
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<tr>
<td>†</td>
<td>Off-label route or use</td>
</tr>
<tr>
<td>††</td>
<td>Unlicensed ‘special’</td>
</tr>
<tr>
<td>#</td>
<td>Specialist-initiated for this indication</td>
</tr>
</tbody>
</table>

References, process and approval used in creating this guidance

The palliative care service used the following reference sources in compiling this guidance:

- The Palliative Care Formulary 5th edition (in press)
- The Electronic Medicines Compendium
- NICE clinical guidelines 140 (opioids) and 173 (neuropathic pain)
- The Oxford Textbook of Palliative Medicine (4th edition)

We gratefully acknowledge the advice and suggestions from primary and secondary care colleagues at all stages of consultation and development, with final approval from the Isle of Wight NHS trust’s Clinical Standards Group.
Care in the Last Few Days of Life

This page, used with the “Just-In-Case Drugs” sheet, is intended to offer advice and help to doctors and health professionals providing care for people who they believe are in their last few days of life and a decision has been made that the clear focus of care is ensuring patient comfort and family support.

- It is usually very hard to be 100% sure that a person is dying, especially in non-cancer patients with multiple general medical co-morbidities
- Remain flexible. Sometimes it is reasonable to be giving basic ward treatments whilst also giving palliative-type symptom control medications
- Communicate clearly with the family about the expected prognosis and any uncertainty and document both your thoughts on prognosis and the contents of any discussion with family.
- Anticipate symptoms and write up PRN medications before they are needed (see “Just in Case Drugs” sheet). Ensure all PRN medications have a clear indication documented on the drug chart. Seek advice if 2 or more doses are ineffective, or if benefit lasts less than 1 hour.

### Analgesia

- For opioid naïve patients, dose is age dependent.
  - For the elderly – half the dose
  - For young adults – increase dose by 50%
- In renal failure, consider avoiding morphine
  - Use oxycodone in mild renal impairment
  - Use fentanyl in severe renal impairment

<table>
<thead>
<tr>
<th>Initial doses for opioid-naive patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine 5mg hourly SC PRN - 1st line</td>
</tr>
<tr>
<td>OR Oxycodeine 2.5-5mg hourly SC PRN –</td>
</tr>
<tr>
<td>if morphine intolerant</td>
</tr>
<tr>
<td>OR† Fentanyl 25-50micrograms hourly SC PRN –</td>
</tr>
<tr>
<td>if severe renal impairment</td>
</tr>
</tbody>
</table>

In opioid tolerant patients, these doses will be inadequate. In these patients, change oral background opioids to CSCI pump and ensure appropriate SC PRN doses (pages 9-11)

### Restlessness and Agitation (see also page 21)

- Relieve reversible causes (e.g. urinary retention with catheterization)
- Benzodiazepines are ideal for anxiety and restlessness
- Anti-psychotics are ideal for hallucinations
- In refractory terminal restlessness, specialist-initiated options include #phenobarbital (see page 30 - seek advice)

### Respiratory Secretions

- Can be very distressing for relatives although unlikely to distress drowsy patients
- Once too weak to expectorate, give †hyoscine butylbromide (Buscopan) 20 mg SC 4-hourly PRN and 60mg via CSCI over 24 hours
- Persisting noisy secretions can be treated with a regular dose +/- PRN doses

### Nausea and Vomiting

- If already on an effective anti-emetic, continue this SC if possible (see page 5)
- Otherwise, †haloperidol is a good first line option

<table>
<thead>
<tr>
<th>First line agents and doses:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midazolam 2.5-5mg hourly SC PRN</td>
</tr>
<tr>
<td>†Haloperidol 0.5-2.5mg hourly SC PRN</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second-line agent and dose:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levomepromazine 12.5-25mg hourly SC PRN</td>
</tr>
</tbody>
</table>

† Seek advice if 2 or more doses are ineffective, or if benefit lasts less than 1 hour

† = off-label route or use
†† = unlicensed ‘special’
# = specialist-initiated
Dyspnoea

- Dyspnoea often improves with opioids
- Benzodiazepines also help dyspnoea, especially when anxiety plays a role

Starting and Using a Continuous Subcutaneous Infusion (CSCI or Syringe Pump): see pages 6 and 11

Nutrition and Fluids

- Allow an awake patient to take sips of fluids and small mouthfuls of food if the patient requests it
- Keeping the mouth moist is believed to minimize thirst
- Parenteral fluids are usually ineffective for thirst and may worsen distressing respiratory secretions. Reserve for severe thirst refractory to optimal mouth care, or where oral route is lost before the desire to drink has reduced (e.g. due to an occluding oesophageal tumour)
- Taper any supplemental nutrition (e.g. via a PEG) as this is usually inappropriate

Long-term Medications

- Long-term medications (e.g. oral hypoglycaemic drugs) should usually be ceased unless they reduce symptoms (e.g. a GTN patch)
- To reduce seizure risk in patients with epilepsy, give midazolam 20mg over 24 hours via CSCI
- For patients with type 1 diabetes, to reduce symptoms of diabetic ketoacidosis, give half the previous total daily dose of insulin as a single daily dose of glargine insulin, checking blood glucose levels once daily, and modifying glargine insulin dose to maintain glucose levels between 6 and 15mmol/l
- Steroids should be continued if used for symptom control. Dexamethasone can be given subcutaneously (3.3mg SC dexamethasone = 4mg oral dexamethasone = 30mg oral prednisolone)
- Continue anti-Parkinsonians until oral route lost. In the imminently dying, give midazolam 20mg over 24 hours via CSCI for rigidity. If it is desirable to avoid midazolam’s sedating effects, alternatives include continuing existing medications via a PEG or NG (in hospital only) or transdermal rotigotine (but seek specialist advice: can exacerbate delirium and hallucinations)

Implanted Cardiac Defibrillators (ICDs)

- If a patient has one, implanted cardiac defibrillators should be turned off if this has not already been done: call the Cardiology Unit at St Mary’s Hospital (552 182) to arrange switching the ICD off.
- In urgent situations, a strong magnet placed on the chest over the defibrillator temporarily deactivates the defibrillator (once the magnet is removed, the defibrillator will be active again): magnets are kept in the Earl Mountbatten Hospice and St Mary’s CCU Resus Trolleys or can be loaned from the Community Palliative Care Team Office (533 331).

Place of Care

- Asking about wishes ahead of time allows plans and preparations to be made. Record them using the island-wide Adastra advance care plan
- If a patient is not where they want to be cared for, or you need help coordinating their care, speak to the palliative care team
- The hospice will always endeavour to admit people in their last days of life if they wish to die there but is not able to offer long term placement as an alternative to nursing homes. Promising hospice admission when no bed is available can cause further distress - if in doubt, please seek advice first.
### Subcutaneous Medications and Syringe Drivers

The *injectable preparations* of the following medicines can be given subcutaneously (SC). Many are only licensed for IV or IM use and thus the ampoule will be labelled ‘for IV or IM use only’. Note that syrups or solutions intended for oral use cannot be given by injection.

<table>
<thead>
<tr>
<th>Medication</th>
<th>Comparative dosing</th>
<th>Diluent/Flush*</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alfentanil†</td>
<td>N/A</td>
<td>WFI/NaCl</td>
<td></td>
</tr>
<tr>
<td>Clonidine†</td>
<td>50mcg oral = 50mcg SC</td>
<td>NaCl</td>
<td></td>
</tr>
<tr>
<td>Cyclazine†</td>
<td>50mg oral = 50mg SC</td>
<td>WFI</td>
<td></td>
</tr>
<tr>
<td>Dexamethasone</td>
<td>4mg oral = 3.3mg SC</td>
<td>WFI/NaCl</td>
<td>Generally given as a stat morning dose rather than via CSCI to avoid sleep disturbance</td>
</tr>
<tr>
<td>Diamorphine</td>
<td>N/A</td>
<td>WFI/NaCl</td>
<td>Morphone sulphate is generally preferred</td>
</tr>
<tr>
<td>Diclofenac†</td>
<td>150mg oral = 75mg SC</td>
<td>NaCl</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>By SC infusion only (i.e. via CSCI). Do not give stat SC injections (tissue necrosis reported)</td>
</tr>
<tr>
<td>Fentanyl†</td>
<td>N/A</td>
<td>WFI/NaCl</td>
<td></td>
</tr>
<tr>
<td>Furosemide†</td>
<td>40mg oral = 20mg SC</td>
<td>WFI/NaCl</td>
<td>Either SC infusion or stat SC injection (but the overnight diuresis from CSCI can be problematic unless catheterized)</td>
</tr>
<tr>
<td>Glycopyrronium†</td>
<td>Seek advice</td>
<td>WFI/NaCl</td>
<td></td>
</tr>
<tr>
<td>Granisetron†</td>
<td>2mg oral = 1mg SC</td>
<td>WFI/NaCl</td>
<td></td>
</tr>
<tr>
<td>Haloperidol†</td>
<td>2mg oral = 1mg SC</td>
<td>WFI/NaCl</td>
<td></td>
</tr>
<tr>
<td>Hydromorphone§</td>
<td>5mg oral = 1mg SC</td>
<td>WFI/NaCl</td>
<td></td>
</tr>
<tr>
<td>Hyoscine butylbromide</td>
<td>20mg oral = 20mg SC</td>
<td>WFI/NaCl</td>
<td></td>
</tr>
<tr>
<td>Hyoscine hydrobromide</td>
<td>N/A</td>
<td>WFI/NaCl</td>
<td>Hyoscine butylbromide is generally preferred</td>
</tr>
<tr>
<td>Ketamine†</td>
<td>10mg oral = 10mg SC</td>
<td>NaCl</td>
<td></td>
</tr>
<tr>
<td>Ketonolac†</td>
<td>10mg oral = 10mg SC</td>
<td>WFI/NaCl</td>
<td></td>
</tr>
<tr>
<td>Levetiracetam†</td>
<td>250mg oral = 250mg SC</td>
<td>WFI</td>
<td>By SC infusion only (i.e. CSCI) diluting IV preparation with water</td>
</tr>
<tr>
<td>Levomepromazine†</td>
<td>25mg oral = 12.5mg SC</td>
<td>WFI/NaCl</td>
<td></td>
</tr>
<tr>
<td>Lidocaine†</td>
<td>N/A</td>
<td>NaCl</td>
<td>See page 27 for CSCI administration*</td>
</tr>
<tr>
<td>Methadone†</td>
<td>10mg oral = 5mg SC</td>
<td>WFI/NaCl</td>
<td></td>
</tr>
<tr>
<td>Methoclopramide†</td>
<td>10mg oral = 10mg SC</td>
<td>WFI/NaCl</td>
<td></td>
</tr>
<tr>
<td>Midazolam†</td>
<td>N/A</td>
<td>WFI/NaCl</td>
<td></td>
</tr>
<tr>
<td>Morphine sulphate</td>
<td>10mg oral = 5mg SC</td>
<td>WFI/NaCl</td>
<td></td>
</tr>
<tr>
<td>Octreotide†</td>
<td>N/A</td>
<td>WFI/NaCl</td>
<td></td>
</tr>
<tr>
<td>Ondansetron</td>
<td>8mg oral = 4mg SC</td>
<td>WFI/NaCl</td>
<td></td>
</tr>
<tr>
<td>Oxycodone</td>
<td>10mg oral = 5mg SC</td>
<td>WFI/NaCl</td>
<td></td>
</tr>
<tr>
<td>Phenobarbital†</td>
<td>100mg oral = 100mg SC</td>
<td>WFI</td>
<td>By SC infusion only (i.e. CSCI). Bolus doses are given undiluted IM. Do not give stat SC injections (tissue necrosis reported) – see p30</td>
</tr>
<tr>
<td>Ranitidine†</td>
<td>100mg oral = 50mg SC</td>
<td>WFI/NaCl</td>
<td></td>
</tr>
<tr>
<td>Valproate†</td>
<td>200mg oral = 200mg SC</td>
<td>WFI</td>
<td>By SC infusion only (i.e. CSCI) diluting IV preparation with 30ml water. Do not give stat SC injections.</td>
</tr>
</tbody>
</table>

* WFI = water for injections; NaCl = sodium chloride 0.9%

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† = off-label route or use
†† = unlicensed ‘special’
# = specialist-initiated
Subcutaneous Infusions and Medication Compatibilities

Mixing medications in subcutaneous infusions can cause problems if there are drug incompatibilities that cause reactions. Always use caution when mixing medications looking especially for crystallization. The following small table lists some compatible combinations - it is not an exhaustive list. If unsure about a combination, speak to a palliative care pharmacist, physician or nurse specialist.

<table>
<thead>
<tr>
<th>Compatible combinations</th>
<th>Diluent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyclizine (avoid if oxycodone dose &gt;100mg – may precipitate)</td>
<td>Water</td>
</tr>
<tr>
<td>Haloperidol</td>
<td>Water</td>
</tr>
<tr>
<td>Hyoscine butylbromide</td>
<td>Water</td>
</tr>
<tr>
<td>Levomepromazine</td>
<td>Water</td>
</tr>
<tr>
<td>Metoclopramide</td>
<td>Water</td>
</tr>
<tr>
<td>Midazolam</td>
<td>Water</td>
</tr>
<tr>
<td>Cyclizine and haloperidol</td>
<td>Water</td>
</tr>
<tr>
<td>Cyclizine and midazolam</td>
<td>Water</td>
</tr>
<tr>
<td>Haloperidol and hyoscine butylbromide</td>
<td>Water</td>
</tr>
<tr>
<td>Haloperidol and midazolam</td>
<td>Water</td>
</tr>
<tr>
<td>Haloperidol and octreotide</td>
<td>Sodium chloride 0.9%</td>
</tr>
<tr>
<td>Midazolam and hyoscine butylbromide</td>
<td>Water</td>
</tr>
<tr>
<td>Midazolam and levomepromazine</td>
<td>Water</td>
</tr>
<tr>
<td>Midazolam and metoclopramide</td>
<td>Water</td>
</tr>
<tr>
<td>Midazolam and octreotide</td>
<td>Sodium chloride 0.9%</td>
</tr>
<tr>
<td>Levomepromazine and hyoscine butylbromide</td>
<td>Water</td>
</tr>
<tr>
<td>Levomepromazine and ondansetron</td>
<td>Sodium chloride 0.9%</td>
</tr>
<tr>
<td>Haloperidol and midazolam and hyoscine butylbromide</td>
<td>Water</td>
</tr>
<tr>
<td>Levomepromazine and midazolam and hyoscine butylbromide</td>
<td>Water</td>
</tr>
<tr>
<td>Haloperidol</td>
<td>Water</td>
</tr>
<tr>
<td>Hyoscine butylbromide</td>
<td>Water</td>
</tr>
<tr>
<td>Levomepromazine</td>
<td>Water</td>
</tr>
<tr>
<td>Metoclopramide</td>
<td>Water</td>
</tr>
<tr>
<td>Midazolam</td>
<td>Water</td>
</tr>
<tr>
<td>Haloperidol and midazolam</td>
<td>Water</td>
</tr>
<tr>
<td>Levomepromazine and metoclopramide</td>
<td>Water</td>
</tr>
<tr>
<td>Levomepromazine and midazolam</td>
<td>Water</td>
</tr>
<tr>
<td>Haloperidol and hyoscine butylbromide and midazolam</td>
<td>Water</td>
</tr>
<tr>
<td>Levomepromazine and ondansetron</td>
<td>Sodium chloride 0.9%</td>
</tr>
<tr>
<td>Haloperidol and octreotide and hyoscine butylbromide</td>
<td>Sodium chloride 0.9%</td>
</tr>
</tbody>
</table>

**Either MORPHINE or OXYCODONE with:**

**FENTANYL with:**

**OPIOID-FREE combinations:**

| Specialist-initiated medicines: | Ketamine – see page 28 for compatible combinations |
|                                | Methadone – see page 28 for compatible combinations |
|                                | Ketorolac is compatible with ranitidine and/or oxycodone | Sodium chloride 0.9% |

The following drugs cannot be combined in the same syringe with other drugs:

<table>
<thead>
<tr>
<th>Diclofenac</th>
<th>Furosemide</th>
<th>Levetiracetam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenobarbital</td>
<td>Lidocaine</td>
<td>Valproate</td>
</tr>
</tbody>
</table>

† = off-label route or use  †† = unlicensed ‘special’  # = specialist-initiated
Prognostication

Predicting life expectancy is not easy and it is as much an art as a science. Of course none of us know the future and so it is not helpful to be too definite about a patient’s prognosis. None-the-less, being able to make a reasonable, educated guess about a patient’s illness trajectory and the likely prognosis is important because:

- Some patients (and their relatives) want to know this (although it is equally true that some do not)
- It helps inform decisions regarding how aggressively to treat complications as they arise

If discussing prognosis and life expectancy with a patient, be sensitive, compassionate and honest in your approach. Do not be afraid to be unsure and to defer to other doctors and specialists who have more experience in treating the patient’s particular illness.

A key element to determining prognosis is to understand the natural history of the particular disease that the patient suffers from. It is helpful to remember that new treatments are changing the trajectory and course of many illnesses.

The following information boxes, tools and rules of thumb may be helpful in determining prognosis. None of them is perfect, however, so use them in conjunction with common sense.

### Palliative Prognostic Index (PPI)

- If the PPI > 6 \(\rightarrow\) death is likely within a month

### Specific complications and scenarios

- If a patient develops acute renal failure with anuria due to obstructive uropathy and this is not relieved via stenting \(\rightarrow\) creatinine will typically rise 50-100µmol/l daily with death likely within weeks, especially once creatinine passes 1,000µmol/l
- If a patient develops bile duct obstruction due to tumour and this is not relieved via stenting \(\rightarrow\) bilirubin will typically rise 15-30µmol/l daily with death is likely within weeks, especially once bilirubin passes 400µmol/l
- If a patient has a rapidly rising white cell count and a short doubling time of a few days in the context of untreated acute myeloid leukaemia \(\rightarrow\) death likely within weeks, especially once the total white cell count passes 400 \(\times\) 10^9/L

*Add the scores together to determine the total*
Prognostication in end-stage organ failure

The course and natural history of end-stage organ failure (e.g. liver failure due to cirrhosis) is very variable and it is harder to be reasonably sure about the prognosis when compared to advanced metastatic cancer. Acute deteriorations are more often reversible and so knowing when to withdraw (or not offer) treatment can be quite difficult.

The following categories and classification systems should be used as a very broad and general guide only.

**Cirrhosis:** The Child-Pugh scoring system is helpful in determining prognosis:

- Child’s A (Score < 7) cirrhosis  $\rightarrow$ 80% 1-year survival
- Child’s B (Score 7-9) cirrhosis  $\rightarrow$ 60% 1-year survival
- Child’s C (Score > 9) cirrhosis  $\rightarrow$ 40% 1 year survival

Special cases:
- Hepatorenal syndrome is associated with a particularly poor prognosis with a 50% death rate within 1-month. There are treatments available so seek specialist advice regarding this.

**Chronic Kidney Disease:** The GFR is helpful in determining prognosis:

- Stage 5  $\rightarrow$ 70% 1-year survival for patients who elect to not have dialysis

Special cases:
- Anuria is associated with a particularly poor prognosis (when compared to oliguria)
- Severe hyperkalaemia may cause fatal cardiac arrhythmias and sudden death

**Congestive Cardiac Failure:** The New York Heart Association Classification is helpful in determining prognosis:

- NYHA Class 4 with a hospital admission due to cardiac failure within the last 6-months  $\rightarrow$ 50% 1-year survival

Special cases:
- Hypotension and a raised creatinine is associated with a particularly poor prognosis

**Chronic Obstructive Pulmonary Disease:** Frequent admissions for acute exacerbations is helpful in determining prognosis:

- Patients admitted at least twice for exacerbations of COPD in the last 12 months  $\rightarrow$ 80% 1-year survival

### Score for:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ascents</td>
<td>None</td>
<td>Mild</td>
<td>Severe</td>
</tr>
<tr>
<td>Encephalopathy</td>
<td>None</td>
<td>Mild</td>
<td>Severe</td>
</tr>
<tr>
<td>Bilirubin (µmol/l)</td>
<td>&lt; 34</td>
<td>35-49</td>
<td>&gt; 50</td>
</tr>
<tr>
<td>Albumin (g/L)</td>
<td>&gt; 35</td>
<td>29-34</td>
<td>&lt; 28</td>
</tr>
<tr>
<td>INR</td>
<td>≤ 1.7</td>
<td>1.8-2.3</td>
<td>&gt; 2.4</td>
</tr>
</tbody>
</table>

### Stage  eGFR  Impairment

1  $>$ 90  Normal function
2  60-90  Mild
3  30-60  Moderate
4  15-30  Severe
5  < 15  End-stage

### Class  Symptoms

1  None
2  Mild dyspnoea on ordinary activities
3  Marked limitation in activity
4  Almost bed-bound due to symptoms

### Negative prognostic factors for COPD

- FEV1 < 35% predicted
- Frequent admissions for exacerbations
- Hypercapnia
- Home oxygen
- Cor pulmonale
- Multiple medical comorbidities
Opioids – Starting, Titrating and Troubleshooting

Before starting opioids

- Is there a treatment (e.g. radiotherapy) to target the cause specifically?
- Should a non-opioid be tried first?
  - Is the patient’s prognosis many months or years? If so, exhaust non-opioid options first (long-term opioids have endocrine and immune adverse effects)
  - Is the pain unlikely to respond fully to an opioid? (See table below)

### Opioid choice

<table>
<thead>
<tr>
<th>Renal Impairment</th>
<th>Opioid choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Morphine</td>
</tr>
<tr>
<td>Mild</td>
<td>*Fentanyl or oxycodone</td>
</tr>
<tr>
<td>Severe</td>
<td>*Fentanyl</td>
</tr>
<tr>
<td></td>
<td>*= Less likely to accumulate</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of pain</th>
<th>Helpful adjuvant agents include:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuropathic</td>
<td>Gabapentin or amitriptyline</td>
</tr>
<tr>
<td>Muscular spasms</td>
<td>Baclofen</td>
</tr>
<tr>
<td>Colicky abdominal pain</td>
<td>Hyoscine butylpromide (Buscopan)</td>
</tr>
<tr>
<td>Bone pain</td>
<td>Non-steroid anti-inflammatory drugs Bisphosphonates</td>
</tr>
</tbody>
</table>

Starting opioids

- All opioids have similar efficacy and side-effects
- Morphine is a good first choice except in renal failure or if a patch is preferable
- Start with low doses and titrate up as needed using both a regular long acting opioid and a PRN immediate release formulation (see below). Initial doses are based on age and frailty

<table>
<thead>
<tr>
<th>For young adults</th>
<th>Oramorph (morphine immediate release) 5-10mg 2-hourly PRN +/- Zomorph (morphine slow release) 10mg twice daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>For elderly, frail adults</td>
<td>Oramorph (morphine immediate release) 2.5-5mg 2-hourly PRN +/- MST Continus (Morphine slow release) 5mg twice daily</td>
</tr>
</tbody>
</table>

- Always follow-up patients closely to avoid toxicity when starting and changing doses. Advise patients to seek medical advice if they are requiring ≥ 3 break-through (PRN) doses of opioid a day.
- Prophylactic laxatives are almost always indicated (e.g. bisacodyl)

Side-effects

- If problematic side effects develop, consider these two options:
  - Is a non-opioid more appropriate (e.g. neuropathic)? → Reduce opioid dose + add a non-opioid agent
  - Is it worth trying a different opioid? → Opioid switch (e.g. from morphine to oxycodone)
- Helpful treatments for adverse effects include:

<table>
<thead>
<tr>
<th>Adverse effect</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nausea</td>
<td>PRN anti-emetics, e.g. metoclopramide</td>
</tr>
<tr>
<td>Constipation</td>
<td>Increase or combine laxatives (e.g. add a softener if colicky pain)</td>
</tr>
<tr>
<td>Confusion</td>
<td>Reduce opioid dose. If significant agitation, haloperidol may be necessary.</td>
</tr>
</tbody>
</table>

- Drowsiness and respiratory depression are very serious and are dose-related
Long-acting opioids (e.g. modified release morphine and oxycodone, transdermal fentanyl)

- Are given to provide continuous background pain relief
- Can be given orally (via slow released tablets), topically (via patches) or subcutaneously (via continuous infusions) (or via any combination of these)

Short-acting opioids (e.g. oral solutions of morphine or oxycodone)

- Are given to provide analgesia for breakthrough pain
- For patients on long-acting opioids, a dose of one-sixth to one-tenth of the total daily dose of opioid is usually required as the PRN dose (e.g. a person taking twice daily 60 mg of slow-release oral morphine will probably require breakthrough doses of 20 mg immediate-release oral morphine 2-hourly PRN)

Approximate Equianalgesic Doses

<table>
<thead>
<tr>
<th>Morphine (milligrams)</th>
<th>Oxycodone (milligrams)</th>
<th>Fentanyl (micrograms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral SC</td>
<td>Oral SC</td>
<td>SC Patch</td>
</tr>
<tr>
<td>5</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>10</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>15</td>
<td>7.5</td>
<td>5</td>
</tr>
<tr>
<td>30</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>60</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>90</td>
<td>45</td>
<td>60</td>
</tr>
<tr>
<td>120</td>
<td>60</td>
<td>80</td>
</tr>
</tbody>
</table>

- Consider seeking specialist advice if titrating above 120mg of morphine daily or equivalent, particularly if anticipating longer term (≥months) use: alternatives could limit longer term adverse effects

| Approximates at a glance
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>For Morphine</td>
</tr>
<tr>
<td>1mg SC morphine</td>
</tr>
<tr>
<td>= 2mg oral morphine</td>
</tr>
<tr>
<td>= 0.66mg SC oxycodone</td>
</tr>
<tr>
<td>= 1.33mg oral oxycodone</td>
</tr>
<tr>
<td>= 15microgram SC fentanyl</td>
</tr>
<tr>
<td>1mg oral morphine</td>
</tr>
<tr>
<td>= 0.5mg SC morphine</td>
</tr>
<tr>
<td>= 0.33mg SC oxycodone</td>
</tr>
<tr>
<td>= 0.66mg oral oxycodone</td>
</tr>
<tr>
<td>= 7.5microgram SC fentanyl</td>
</tr>
</tbody>
</table>

- For Oxycodone

| 1mg SC oxycodone       |
| = 1.5mg SC morphine    |
| = 3mg oral morphine    |
| = 2mg oral oxycodone   |
| =22microgram SC fentanyl |

| 1mg oral oxycodone     |
| = 0.75mg SC morphine   |
| = 1.5mg oral morphine  |
| = 0.5mg SC oxycodone   |
| =11microgram SC fentanyl |

- For Fentanyl

| 1microgram SC fentanyl |
| = 0.067mg SC morphine  |
| = 0.13mg oral morphine |
| = 0.05mg SC oxycodone  |
| = 0.1mg oral oxycodone |

| A 25 microgram/hour patch of fentanyl = a daily dose of 24x25 = 600 microgram of fentanyl |

Use the tabled information to determine the approximate dose when converting one opioid to another. Choosing a dose a little lower than the converted dose is generally the safest option. For example, a patient receiving doses of 10mg of oral oxycodone could change to 5-7.5mg of SC morphine.

Titrating Doses

If pain is poorly controlled but the opioids are having some benefit, the long-acting background opioid dose can be gradually increased taking the previous 24-hour breakthrough requirements into account. In general it is safest to increase the background dose of opioid by no more than 33% in one go. If increasing doses of opioids are not helping, think about other analgesic options.

For example, if a patient on 100mg of daily long-acting oral morphine has 3 breakthroughs of 10mg oral morphine in 24-hours, the oral long-acting dose could be increased to 130mg daily.

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† = off-label route or use  †† = unlicensed ‘special’  # = specialist-initiated
Starting and titrating a continuous subcutaneous infusion (CSCI)

In patients who are unable to swallow (e.g. near the end of life) or who are not absorbing oral medications (e.g. vomiting), it is often helpful to give medications via a continuous subcutaneous infusion.

**In an opioid-tolerant patient who can no longer take oral opioids:**

Convert the total daily oral dose of opioid to its subcutaneous equivalent and reduce the dose by a small amount (e.g. 25%) for safety.

Do the same for any other medications required for symptom control.

Write up the infusion.

Ensure any PRN medications are also written up SC.

**Worked Example:**

A patient on 30mg oral twice daily MR oxycodone

= 60mg total daily dose of oral oxycodone

= 30mg total daily dose of SC oxycodone

→ Reduce to 20mg daily SC oxycodone

The patient is also on 10mg oral three times a day metoclopramide

= 30mg total daily dose of oral metoclopramide

= 30mg total daily dose of SC metoclopramide

Write up the infusion as:

Oxycodone 20mg via CSCI over 24 hours and "Metoclopramide 30mg via CSCI over 24 hours [using water as diluent - see page 6]

Write up any PRN analgesia:

Oxycodone 5mg SC 2-hourly PRN

**In an opioid-naïve patient for whom opioids via CSCI are appropriate:**

Start the infusion at a low dose (e.g. 10mg of daily SC morphine).

Determine if any other medications are needed via CSCI.

Write up the infusion.

Ensure any PRN medications are also written up.

**Worked Example:**

In an opioid-naïve elderly patient entering the terminal phase of an illness who has agitation and grimacing, write up the infusion as:

Morphine 10mg via CSCI over 24 hours

Midazolam 10mg via CSCI over 24 hours

[using water as diluent - see page 6]

Write up appropriate PRN medications:

Morphine 2.5mg 1-hourly SC PRN for pain

Midazolam 2.5mg 1-hourly SC PRN for agitation

**Worked Example:**

In an opioid-tolerant patient who can no longer take oral opioids:

Ensure the PRN doses of opioid are having some effect (if not, this may be an opioid-resistant pain), then determine the total dose of PRN opioid over the last 24 hours.

Increase the dose of the CSCI by a maximum of either the total dose of PRN opioid over the last 24 hours OR 33% of the total daily CSCI dose (whichever is lower)

Ensure the new PRN opioid dose remains between about one-sixth to one-tenth of the 24-hour CSCI dose of opioid.

**Worked Example:**

A patient is on 100mg of morphine via CSCI over 24 hours. He used 3 x PRN doses of 10mg of SC morphine yesterday

= 30mg of PRN morphine in 24 hours

Rewrite the new morphine infusion

Morphine 130mg over 24 hours via CSCI

Rewrite the new PRN morphine dose

Morphine 15-20mg hourly SC PRN for pain
Difficult Pains – Incident, Neuropathic, Bony and Muscular

Incident Pain

This is pain that occurs predictably on specific activities (e.g. pain that occurs when standing up and walking).

Aim to reduce underlying causes and triggers if possible, e.g.
- Bony instability (e.g. splints, orthopaedic surgery)
- Painful ulcers (e.g. treat infection)
- Movement induced pain (e.g. an OT and physiotherapy review to assess suitability for equipment)

Optimise regular analgesia for background pain, remembering that neuropathic pain and muscular spasms are common.

Treatment with a short acting (immediate release) opioid 15 to 30 minutes prior to any activity that causes pain can be particularly helpful.

Neuropathic Pain

This is pain that occurs due to direct damage to the peripheral or central nervous system (e.g. due to a tumour invading the nerve). Common characteristics include shooting, stabbing or burning style pain. Allodynia (pain on light touch) is sometimes also present.

If neuropathic-sounding pain is not responding to simple analgesia, consider adding an adjuvant agent:

Common first-line agent: Amitriptyline or gabapentin

Common second-line approach:
If partial response to first-line, combine both amitriptyline and gabapentin together.
If first line brought no benefit, switch to the other agent.

Typical third-line approach: add an alternative anti-epileptic drug (e.g. valproate, carbamazepine) and withdraw the gabapentin

If pain control remains poor, refer to the palliative care team.
Specialist options include:
- Methadone via CSCI or orally (page 26)
- Lidocaine via CSCI (page 27)
- Ketamine via CSCI or orally (page 28)

Example treatment for incident pain:
Oramorph PRN dose 30 minutes prior to getting out of bed for a shower in the morning

If pain persists, specialist-initiated options include:
rapid onset opioids; topical opioids; interventional anaesthesia; identifying additional targets for non-opioid adjuvants

Amitriptyline†
Starting dose: 10mg at night
Titrate if necessary: up to 50mg at night over 2 weeks. Only increase further if partial benefit already seen

Gabapentin
Starting dose: 300mg at night (or 100mg at night if frail)
Titrate if necessary: up to a maximum of 900mg three times daily over 3 weeks (or lower if frail or renal impairment)

Valproate†
Starting dose: 200mg MR at night
Titrate in 200mg steps if necessary: up to a maximum of 800mg MR at night over 2 weeks
Painful Bony Metastases

Bony metastases often respond well to anti-inflammatory medications such as NSAIDs and steroids (e.g. dexamethasone 4mg orally each morning with a proton pump inhibitor).

Both NSAIDs and steroids have their difficulties in terms of side effects, so consider these carefully prior to initiating. Consider using a proton pump inhibitor when commencing an NSAID or steroid.

For incident pain (e.g. pain on walking) → consider a PRN quick-acting opioid prior to exertion (see pages 10 and 11).

For pain unresponsive to medications → consider referring for radiotherapy (speak to the patient’s own oncologist if possible; otherwise, discuss with the on-call clinical oncologist at Southampton Hospital on 023 8077 7222 bleep 1414).

Think about the fracture risk
- Helpful guides for fracture risk:
  - Limbs: Mirel’s score ≥ 9 associated with ≈ 33% fracture risk
  - Spine: SINS ≥ 7 is considered to define high fracture risk
- In cases of high fracture risk → consider referral to an orthopaedic surgeon for prophylactic pinning (for non-spinal surgery ask for the on-call orthopaedic surgeon via St Mary’s Hospital switchboard – 524 081; for spinal surgery, ask for the on-call spinal surgeon via Southampton Hospital switchboard – 023 8077 7222).

If there is worsening back pain or reduced mobility → think about the possibility of spinal cord compression.

<table>
<thead>
<tr>
<th>Spine Instability Neoplastic Score (SINS)</th>
<th>Spine location</th>
<th>Pain with movement / loading</th>
<th>Bone lesion type</th>
<th>Radiographic spinal alignment</th>
<th>Vertebral body collapse</th>
<th>Posterolateral involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1-2, C7-T2, T11-L1, L5-S1</td>
<td></td>
<td>Yes</td>
<td>Lytic</td>
<td>Subluxation</td>
<td>&gt; 50% collapse</td>
<td>Bilateral</td>
</tr>
<tr>
<td>C3-C6, L2-L4</td>
<td></td>
<td>No</td>
<td>Mixed</td>
<td>De novo deformity</td>
<td>&lt; 50% collapse</td>
<td>Unilateral</td>
</tr>
<tr>
<td>T3-T10</td>
<td></td>
<td>Pain-free at all times</td>
<td>Blastic</td>
<td>Normal alignment</td>
<td>&gt; 50% of body involved</td>
<td>None</td>
</tr>
<tr>
<td>S2-S5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mirel’s Scoring System (for upper and lower limbs)</th>
<th>Score</th>
<th>Size</th>
<th>Site</th>
<th>Radiographic nature</th>
<th>Pain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>&lt; 1/3 of cortex</td>
<td>Upper limb</td>
<td>Osteoblastic</td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>1/3 - 2/3 of cortex</td>
<td>Lower limb</td>
<td>Mixed</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>&gt; 2/3 of cortex</td>
<td>Peritrochanteric region</td>
<td>Osteolytic</td>
<td>Severe</td>
</tr>
</tbody>
</table>
Muscular spasms

Are relatively common in advanced neurological conditions (such as motor neuron disease) as well as in patients with recent soft tissue injury.

Consider trialling regular baclofen (which is a muscle relaxant)
- Initial dose of baclofen is 5mg orally, three times a day
- Titrate up if necessary by 5mg orally three times a day every 3 days to 20mg orally three times a day
- When stopping baclofen, do so slowly over 2 weeks to avoid withdrawal symptoms
- Baclofen is renally cleared and dose reduction is required in renal failure

In muscular spasms associated with soft tissue injury, NSAIDs are a good first choice

Consider referring for a palliative care opinion in difficult cases of pain. Options that may be considered include neuropathic medications (e.g. gabapentin) and acupuncture.

Colicky abdominal pain

Consider trialling hyoscine butylbromide (Buscopan)
- 20mg four times daily orally or SC, regularly or PRN
- Can be given by CSC (60mg over 24 hours via CSC); titrate to 120mg over 24 hours if necessary
- Avoid using with prokinetic agents such as metoclopramide as they have opposing actions

If constipation is contributing → reduce stimulant laxatives and increase softer laxatives

If bowel obstruction might be contributing → investigate and treat this as appropriate (page 24)

Rectal pain

Refer early as this is often difficult to treat. Options include:

First-line:
- Opioids (page 9-10)
- Steroids or NSAIDs

If pain persists, consider:
- Neuropathic agents (e.g. gabapentin)
- GTN (try sublingually initially, or topically if sphincter spasm suspected)
- Topical anaesthetics
- Specialist referral (options include nifedipine, methadone or ketamine)

Refractory pain

Pain that remains severe despite simple analgesia, opioids and adjuvant agents may require specialist medications or procedural interventions. Seek specialist advice in these instances, but options may include:
- Psychological support and counselling
- Specialist medications (e.g. methadone or lidocaine)
- Procedural interventions (e.g. coeliac plexus block or intra-thecal analgesia)
Systemic Symptoms

Fatigue
Is often a sign of progressive disease. Causes are usually multiple. Consider reversible causes and treat these if they appear to be playing a significant role in fatigue.

Non-pharmacological management may include:
- Mild exercise programs and routines
  - Education and counselling
    - Accepting fatigue as part of the illness
    - Modifying activities and goals appropriately

Pharmacological management:
- Steroids improve energy and appetite in some patients
  - Trial dexamethasone† for 1 week at 4mg orally daily
  - If no improvement, cease dexamethasone
  - If significant improvement, continue dexamethasone. Consider use in short courses (e.g. 2-4 weeks) and/or reducing dose to 2mg daily to reduce risk of side effects. Consider a proton pump inhibitor.
- Consider referral. Specialist options include psychostimulants#

Anorexia (poor appetite)
Is a sign of advanced disease that is often more distressing to relatives than it is to patients. Before treating with medications, try exploring the patient’s and family’s concerns. If depression is playing a role, consider an antidepressant (NB mirtazapine has appetite-stimulant effects)

A trial of steroids† as described above in the “Fatigue” section may be worthwhile where appetite rather than weight loss is the primary concern (steroids do not improve muscle mass or strength).

Peripheral oedema and lymphoedema
Swollen lower limbs often reflect multiple underlying aetiologies.

In patients with acutely worsened oedema (especially if unilateral)
- Consider a DVT (even when bilateral) and investigate with ultrasound if appropriate. The presence of a PICC line in a swollen upper limb should raise the suspicion of an upper limb DVT
- Consider cellulitis and treat with antibiotics (for a 14-day course if associated with lymphoedema)

In patients where peripheral oedema may be connected to right heart failure or hypoalbuminaemia (usually bilateral)
- Consider a trial of diuretics (e.g. furosemide 40 mg orally in the morning).

Refer patients early if thought to have lymphoedema due to lymphatics obstruction (often unilateral)
- In addition to hosiery, manual lymphatic drainage and compression bandaging, patient education is important [EMH lymphoedema team: 529 511, ext: 127]

Anaemia and transfusions
For people in the community with palliative care needs, transfusions can be arranged via EMH (533 331).

Be clear about the intended aim of blood transfusions. If symptoms don’t improve as hoped, it may be that anaemia is not the main cause of the dyspnoea or fatigue. Future transfusions are thus unlikely to help.

<table>
<thead>
<tr>
<th>Cause</th>
<th>Potential treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaemia of chronic disease</td>
<td>Transfusion</td>
</tr>
<tr>
<td>Hypercalcaemia of malignancy</td>
<td>Zoledronic acid Parenteral fluids</td>
</tr>
<tr>
<td>Steroid-induced diabetes</td>
<td>Reduce steroid dose</td>
</tr>
<tr>
<td>mellitus</td>
<td>Insulin</td>
</tr>
<tr>
<td>Infection</td>
<td>Antibiotics</td>
</tr>
<tr>
<td>Mood and adjustment disorders</td>
<td>Counselling Supportive care (e.g. JCC day services) Antidepressants</td>
</tr>
<tr>
<td>Anaemia of chronic disease</td>
<td>Transfusion</td>
</tr>
</tbody>
</table>

† = off-label route or use
†† = unlicensed ‘special’
# = specialist-initiated
Skin Symptoms

Itch (pruritus)

Pruritus has many causes and in a palliative care patient experiencing an itch, there may be no connection between the itch and the palliative illness. Thinking carefully about the cause often helps guide treatment.

Before trying oral medications, try emollients and other measures

If the itch might be histamine-related \( \Rightarrow \) try a non-sedating anti-histamine, e.g.
- Cetirizine 10mg daily regularly or PRN

If the itch is related to opioid use \( \Rightarrow \) consider one or more of the following options
- Converting to a different opioid
- An anti-histamine, e.g. cetirizine 10mg daily
- An SSRI, e.g. \( ^\dagger \) sertraline 25mg in the morning, increasing to 50mg after 1 week if necessary

If itch is thought due to cholestatic jaundice \( \Rightarrow \) one of the following agents may be tried:
- Cholestyramine 4g orally three times daily
- \( ^\dagger \) sertraline 25mg in the morning, increasing to 50mg after 1 week if necessary
- Specialist options include \( ^\ddagger \) rifampicin 150mg twice daily and \( ^\# \) naltrexone

If itch is associated with dialysis or renal failure despite optimising electrolyte balance \( \Rightarrow \) one of the following agents may be tried:
- \( ^\dagger \) sertraline 25mg in the morning, increasing to 50mg after 1 week if necessary
- A sedating anti-histamine, e.g. chlorphenamine (especially if disturbing sleep)
- Consider referral: Specialist options include \( ^\# \) gabapentin, \( ^\# \) capsaicin cream

Wounds

If a wound related to cancer (e.g. from local invasion of the skin) develops, consider doing both of the following:
1. Discuss with a radiation oncologist to see if radiotherapy may be appropriate
2. Refer to a tissue viability nurse for follow-up and appropriate dressings

<table>
<thead>
<tr>
<th>If pain is an issue</th>
<th>If bleeding is an issue</th>
<th>If malodour is an issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treat secondary infection</td>
<td>Consider referral for radiotherapy opinion as this may control bleeding</td>
<td>Metronidazole gel often reduces smell (e.g. Anabact)</td>
</tr>
<tr>
<td>Systemic analgesia is appropriate</td>
<td>Dress with gauze soaked in</td>
<td>If topical therapy ineffective, try metronidazole 400mg orally twice daily</td>
</tr>
<tr>
<td>Pre-emptive analgesia 30 minutes prior to dressing change may help</td>
<td>- 1:1000 ( ^\dagger ) adrenaline (avoid using at extremities: risk of ischaemic damage) or</td>
<td></td>
</tr>
<tr>
<td>For difficult cases, consider specialist referral: Options include topical opioids# or topical lidocaine#</td>
<td>- ( ^1 ) tranexamic acid (use contents of an ampoule)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tranexamic acid 500mg orally three times a day can reduce bleeding (maximum dose 1.5g three times a day)</td>
<td></td>
</tr>
</tbody>
</table>

If a massive, terminal bleed anticipated, ensure midazolam is available
Gastrointestinal Symptoms

Nausea and Vomiting

Treat, if possible, underlying contributing factors (e.g. hypercalcaemia [page 23], constipation [page 18], bowel obstruction [page 24]).

Parenteral treatment (e.g. via CSI) is typically required in patients who are vomiting. Converting to oral anti-emetics is often then appropriate after the patient has been stable for a few days. Sometimes nausea improves only slightly with mono-therapy and, in these cases, combination therapy with multiple drugs of different classes acting on different receptors is usually effective.

If metabolic or toxic causes are suspected (e.g. uraemia, medication-induced) † Haloperidol is a good first option, e.g.
- Haloperidol 1mg twice daily orally (or 2mg via CSI daily)
- Haloperidol 1mg 4-hourly PRN orally or subcutaneously

If vestibular pathology is the main mechanism (e.g. movement induced or vertigo) † antihistamine-antiemetics are good first options, e.g.
- Cyclizine 50mg three times a day orally or subcutaneously
  either regularly or PRN (or 150mg via CSI daily)

If gastric stasis or distension is probably the main mechanism (or the main mechanism is unclear) † metoclopramide is a good first option (or domperidone if at risk of extrapyramidal symptoms), e.g.
- Metoclopramide 10mg three times daily pre-meals orally (or 30mg/24hrs via CSI)
  AND/OR
- Metoclopramide 10mg three times daily PRN orally or subcutaneously

If nausea persists † consider changing to a drug that acts on multiple receptors, e.g. levomepromazine (NB prescribe a tablet cutter if quartering a 25mg size tablet)
- Levomepromazine † 6.25mg orally or SC nocte PLUS
- Levomepromazine † 6.25mg orally or SC three times a day PRN

If nausea still persists † add a third-line agent, e.g. 5-HT3 antagonist
- Ondansetron 8mg orally or 4mg † subcutaneously twice daily (or 8-16mg via CSI daily)
- 5-HT3 antagonists are also first-line for chemotherapy or radiotherapy induced nausea

Further options for nausea include →
- Steroids, e.g. dexamethasone 8mg orally (especially if nausea related to raised intra-cranial pressure) with a proton pump inhibitor
- Benzodiazepines, e.g. † lorazepam 0.5mg 6-hourly sublingually PRN (especially if anxiety is contributing)

Hiccups

If appropriate, treat the underlying cause if it is known (e.g. dexamethasone for cerebral metastases). For difficult cases, specialist options include † nifedipine, † benzodiazepines and † valproate.

Return to contents page † = off-label route or use †† = unlicensed ‘special’ # = specialist-initiated
Constipation

Anticipate constipation, especially in patients prescribed opioids, and start prophylactic laxatives where appropriate. If appropriate encourage increased fluids and fruit intake and encourage mobilization if appropriate. Avoid ispaghula (e.g. Fybogel) as it worsens constipation if fluid intake is inadequate.

**Initial therapy** → oral therapy with a softener and/or stimulant is appropriate

- Macrogol 1 sachet twice daily regularly (or PRN) (a softener for hard stools) AND/OR
  - Bisacodyl 5-10mg orally at night regularly (or PRN) (a stimulant)
  (Doses can be titrated up or down based on level of constipation. Titrate up the softener if stool hard and/or colic present; titrate stimulants up if patient struggling to expel soft stool)

If constipation continues → consider rectal treatments, e.g.

- Bisacodyl 1 suppository daily PRN (if stools soft)
- Glycerine 1 suppository or Micolette 1 enema daily PRN (if stool hard)

For severe, refractory constipation → options include

- High dose softener (Macrogol 8 sachets over a day)
- High bowel intervention, e.g. Phosphate enema (if stool soft); Arachis oil enema (if stool hard; cannot be given if peanut allergy present)
- Methylnaltrexone if opioid-induced
- Manual evacuation (ensure PRN analgesia / sedation available)
- If obstruction suspected, see page 24

In constipation associated with spinal cord compression →

- Oral laxatives PLUS Bisacodyl suppository each morning (or every second morning)

<table>
<thead>
<tr>
<th>Methylnaltrexone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peripherally acting opioid antagonist</td>
</tr>
<tr>
<td>Used for opioid-induced constipation refractory to appropriately titrated laxatives and enemas</td>
</tr>
<tr>
<td>Dose:</td>
</tr>
<tr>
<td>- 12mg SC (if &gt; 62 kg)</td>
</tr>
<tr>
<td>- 8mg SC (if &lt;62kg and &gt; 38kg)</td>
</tr>
<tr>
<td>Repeat on day 2 if required</td>
</tr>
<tr>
<td>Can result in a massive bowel action within an hour. Is a commode required?</td>
</tr>
<tr>
<td>Can cause severe abdominal cramps. Ensure SC hyoscine butylbromide (Buscopan) +/- opioids available</td>
</tr>
<tr>
<td>Contraindicated in bowel obstruction</td>
</tr>
<tr>
<td>Dose reduction required in renal</td>
</tr>
</tbody>
</table>

Diarrhoea

If constipation with overflow could be the cause → treat the constipation

**Is there a treatable cause** →

- Medication side-effect (e.g. due to antibiotic) require modification of medications
- Infections (e.g. *Clostridium difficile*) may require antibiotics
- Pancreatic insufficiency as suggested by steatorrhoea (e.g. due to pancreas cancer) requires Creon

For diarrhoea requiring symptomatic treatment →

- First-line: Loperamide 2-4mg PRN initially (consider a regular dose based on PRN requirements)
- Second-line: Hyoscine butylbromide (Buscopan) 60-120mg via CSCI over 24 hours

For refractory diarrhoea, refer. Specialist options include "octreotide.

For faecal incontinence → in the home, seek advice from a district nurse in the first instance. To speak to a continence nurse specialist, phone 552 457.
Respiratory Symptoms

Dyspnoea

Consider the aetiologies of dyspnoea and treat these as appropriate, taking the patient’s overall state and prognosis into consideration. Thinking about the diagnosis is especially important when there is dyspnoea that acutely worsens or progresses without good explanation. Of particular relevance in the palliative care patient population are questions to do with reversible causes of dyspnoea:

- **Pulmonary emboli** (think of this especially if dyspnoea out of proportion to extent of disease)
- **Pleural effusion** (or a **pericardial effusion** or massive **ascites**)
- **Acute respiratory infection**
- **Superior vena caval obstruction** (look for oedema and distended veins in the head and upper limbs)

All of these conditions can be diagnosed with appropriate imaging and have specific treatments that can bring significant symptomatic relief and prolong a person’s life. See “Treating Significant Complications” section (pages 23 to 25).

Also think about the particular symptomatic treatments for specific conditions:

Finally consider symptomatic treatments regardless of cause:

Movement of air (e.g. via a fan) usually helps.

If there is dyspnoea at rest → low doses of opioids may help, e.g. for opioid-naïve patients:
- MST (Morphine SR) 5 mg orally twice daily
- Oramorph 2.5 mg orally 2-hourly PRN

(See the pages 9-10 for information on dosing and opioid choice)

If there is significant anxiety and fear associated with dyspnoea → anxiolytics may help; choice partially depends on life expectancy:
- Months → Citalopram 10mg orally daily
- Weeks → Lorazepam 0.5-1mg sublingually up to four times daily PRN

If there is evidence of hypoxia (e.g. SaO2 < 92%) → oxygen may help, e.g.:
- Oxygen continuously for dyspnoea at rest (titrate to symptoms) OR
- Oxygen 2-4 litres on exertion and PRN for exertional dyspnoea (Use oxygen cautiously in patients who are at risk of CO2 retention, e.g. those with COPD)

### Condition specific symptomatic treatments to consider

#### Options for pulmonary oedema:
- Increase diuretic therapy. Furosemide can be given via CSCI (see page 5). Higher doses are needed in severe renal failure
- Control rapid atrial fibrillation (e.g. with digoxin)
- Long-acting nitrates, especially at night (e.g. transdermal GTN patch) if blood pressure permits

#### Options for exacerbation of COPD:
- Short burst of increased dose of steroids, e.g. prednisolone 30mg daily for 1-2 weeks
- Antibiotics
- Optimise bronchodilator therapy (e.g. review inhaler technique; salbutamol more frequently)

#### Options for motor neuron disease:
- Non-invasive ventilation (NIV). Assessment accessed by referral to St Mary’s respiratory team. Deciding to have or not have NIV is a huge decision and involves delicate discussions. NIV may be appropriate if any of these present:
  - Abnormal nocturnal oximetry OR
  - FVC < 50% predicted OR
  - Orthopnoea

#### Options for anaemia:
- Transfusion (e.g. if Hb < 85) → see page 15

#### Options for multiple pulmonary metastases or lymphangitis carcinomatosis:
- Dexamethasone 8mg orally daily plus a proton pump inhibitor

† = off-label route or use
†† = unlicensed ‘special’
# = specialist-initiated
Cough

In a patient with cough, think about the cause and treat any reversible causes (e.g. proton pump inhibition if gastro-oesophageal reflux playing a significant role)

For ongoing troubling productive coughs → aim to aid expectoration by
- Chest physiotherapy
- Nebulized sodium chloride 0.9% 5ml four times daily
- Carboxisteine 750mg three times daily
- If too weak to expectorate (e.g. in a dying person) dry secretions with hyoscine butylbromide and suppress cough with opioids

For ongoing troubling dry coughs → consider cough suppression with low-dose opioids, e.g. for opioid-naive patients
- Oramorph 2.5mg 2-hourly PRN
  (See pages 9-10 for details on opioid dosing and choice)
- If due to large airway irritation (e.g. hilar lymphadenopathy), consider dexamethasone 8mg orally daily with a proton pump inhibitor
- If cough persists, refer: specialist options include sodium cromoglycate, SSRIs and gabapentin.

Haemoptysis

If appropriate, refer for a radiation oncology opinion (if due to malignancy) and/or investigate for other causes (e.g. pulmonary emboli)

If haemoptysis is bothersome, consider:
- Tranexamic acid 500mg orally three times a day (maximum dose 1.5g three times a day)
  (This increases risk of DVT and stroke. Use with caution in renal failure)

In an acute, massive bleed, immediate treatment directed at comfort is usually appropriate (see “Massive, terminal haemorrhage” box below)

In an acute massive bleed where procedural intervention is appropriate, however, consider:
- Referral to a respiratory physician for an opinion regarding bronchoscopic treatment of bleeding source
OR
- Referral to an interventional radiologist for angiogram and bronchial artery embolization

WHILST

Giving supportive care (e.g. oxygen, blood replacement and correcting any clotting defects)

### Bronchorrhoea

= Severe high-volume respiratory secretions occasionally occurring in alveolar cell and other lung cancers

<table>
<thead>
<tr>
<th>Treatment options include:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Octreotide</td>
</tr>
<tr>
<td>- Sedation</td>
</tr>
<tr>
<td>- Erythromycin</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Massive, terminal haemorrhage (e.g. massive haemoptysis with respiratory distress)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Be present with the patient and family</td>
</tr>
<tr>
<td>Use dark coloured towels and sheets (as these make blood less visible)</td>
</tr>
<tr>
<td>If time permits and patient distress is great then give parenteral (IV if easily accessible; otherwise SC):</td>
</tr>
</tbody>
</table>
  - High dose benzodiazepines, e.g. midazolam 10mg immediately, repeated every 10 minutes until comfortable  
  - Opioids, e.g. morphine sulphate 10mg, repeated after 10 minutes if needed |

<table>
<thead>
<tr>
<th>Acute airways obstruction (e.g. due to rapid tumour growth)</th>
</tr>
</thead>
<tbody>
<tr>
<td>If life-saving acute treatment is appropriate</td>
</tr>
</tbody>
</table>
  - Get immediate help to maintain the airway from a paramedic, anaesthetist or ENT specialist  
  - For malignant causes, give high dose steroids [dexamethasone 13.2mg SC or IM (i.e. four 3.3mg ampoules) plus a proton pump inhibitor] and get urgent advice from an oncologist |
| If terminal care is appropriate |
  - Treat with high doses of opioids and benzodiazepines (similar to the treatment for massive, terminal haemorrhages) |

Return to contents page  † = off-label route or use  †† = unlicensed ‘special’  # = specialist-initiated
Neurological Symptoms

Agitated delirium

Agitated delirium is common in advanced illnesses. It is a bad prognostic marker in patients with advanced cancer and, if not caused by an easily reversible aetiology, it may indicate that the patient is entering the last few weeks of life.

Consider the underlying causes and treat these if appropriate and possible.

Non-pharmacological measures such as reassurance, orientation and lighting, close contact by loved ones and a quiet environment are very important.

Short-term low-dose antipsychotics reduce distressing symptoms and may improve outcomes (e.g. the likelihood of returning to live independently). Haloperidol is often a good first-line option:

- Haloperidol 0.5mg at night orally or SC
- Haloperidol 0.5mg PRN three times daily orally

If sleep disturbance is a prominent problem, quetiapine may be preferred to haloperidol

- Quetiapine 12.5mg twice daily orally
- Quetiapine 12.5mg PRN twice daily orally

If anxiety is playing a large role, adding a benzodiazepine may be appropriate (but be aware that benzodiazepines alone can sometimes exacerbate delirium).

Terminal restlessness

Is the term used to describe agitation and delirium in an imminently dying patient. Use of continuous subcutaneous infusions (with additional PRN subcutaneous benzodiazepines and anti-psychotics) is often required. Start with low doses initially and titrate up as needed. A typical starting CSCI order may look like this:

- †Haloperidol 2.5mg via CSCI over 24 hours
- †Midazolam 10mg via CSCI over 24 hours
- PLUS PRN medications:
  - †Midazolam 2.5-5mg hourly PRN for distress or agitation
  - †Haloperidol 0.5 to 2.5mg SC hourly PRN for hallucinations or agitation

For terminal restlessness that is refractory to treatment with high doses of midazolam and haloperidol (e.g. >30mg/day and >10mg/day respectively), consider switching haloperidol to †levomepromazine 12.5 to 25mg SC hourly (seek advice if 2 or more doses ineffective or if benefit lasts less than an hour) or seeking advice (specialist options include ††phenobarbital – see page 30).

<table>
<thead>
<tr>
<th>Cause</th>
<th>Possible treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypercalcaemia</td>
<td>†Zolendronic acid IV or SC fluids</td>
</tr>
<tr>
<td>Hyponatraemia (due to SIADH)</td>
<td>Fluid restriction Oral sodium</td>
</tr>
<tr>
<td></td>
<td>†Dexamethasone</td>
</tr>
<tr>
<td>Cerebral primary or metastases</td>
<td>Increase dexamethasone dose</td>
</tr>
<tr>
<td>Medications (e.g. dexamethasone, morphine)</td>
<td>Reduce dose or change to an alternative</td>
</tr>
<tr>
<td>Sepsis (e.g. UTI)</td>
<td>Antibiotics</td>
</tr>
<tr>
<td>Hepatic encephalopathy</td>
<td>Lactulose</td>
</tr>
</tbody>
</table>

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Seizures

Focal seizures with secondary generalization are a scary complication of brain tumours, both primary and secondary. Primary prophylaxis with anti-epileptics does not reduce the risk so is not recommended in patients with cerebral tumours. However, preventative anti-epileptic medications are usually appropriate after a first seizure because further seizures are likely.

Seizures may also occur because of metabolic disturbances (e.g. hyponatraemia) or as part of a pre-existing epilepsy. As with all problems in palliative care, the management needs to be tailored to the individual patient based on the stage of illness and patient’s function and previously expressed wishes.

**Treating a seizure – the acute setting**

A quick-acting benzodiazepines is usually the best initial treatment.

If outside of hospital ➔
- Midazolam 5-10mg buccally or subcutaneously
- Exclude hypoglycaemia
- Repeat the dose of midazolam 15 minutes later if the seizure is ongoing
- If the cause is known and the seizure has stopped, hospital admission may not be required. The community palliative care team can assist in altering anti-epileptic medicines in the home. If the cause is unknown, hospital admission is appropriate – it may be appropriate to call an ambulance, especially if the seizure is still happening.

If in a hospital setting ➔
- Lorazepam 4 mg slowly IV until seizure stops.
  - Watch SaO₂ and support the airway
  - Exclude hypoglycaemia.
  - If lorazepam is not available, midazolam 5-10mg IV, subcutaneously or buccally is an alternative
- Get help / discuss with an experienced doctor
- If seizure has not settled within 15 minutes ➔
  - Repeat the benzodiazepine dose
- If the seizure continues, further benzodiazepines are unlikely to be effective. Seek urgent advice from a senior doctor regarding the appropriateness of referral to ITU
  - If ITU is appropriate, call ITU whilst giving IV phenytoin
  - If ITU is inappropriate and the patient is thought to be imminently dying, seek advice from the hospital palliative care team. Prepare the family that death may be near. Phenobarbital can be used for seizures refractory to midazolam (see page 30)

**Preventing further seizures**

Treat any underlying precipitants. If already on anti-epileptics, modify dose if appropriate.

For seizures due to cerebral tumours, levetiracetam or sodium valproate are good first-line options:
- Levetiracetam 500mg orally twice daily (maximum dose: 1,500 mg twice daily)
  OR
  - Sodium valproate MR 200mg twice daily (typical maximum 800mg twice daily)

Remember to advise a patient against driving following a seizure.

For seizures in a patient entering the last days of life, replace oral anti-epileptics with:
- Midazolam 20mg over 24 hours via CSCI + Midazolam 5-10mg SC PRN for any further seizures

Return to contents page ➔ † = off-label route or use †† = unlicensed ‘special’ # = specialist-initiated
Treating Complications of Advanced Cancer

Hypercalcaemia

Hypercalcaemia can worsen energy levels, pain, confusion and constipation. Corrected levels > 3.0 mmol/L almost always cause symptoms. Corrected levels > 2.75 mmol/L may contribute to symptoms. The Community Palliative Care Team can treat hypercalcaemia in the home or outpatient setting (phone: 533 331).

Give:
- † Haloperidol 1.5mg SC if nausea or agitated delirium present
- IV or SC fluids if dehydrated (and review need for nephrotoxic medications, e.g. NSAIDs)
- Zolendronic acid 4mg IV over 15 minutes (dose reduce in renal failure; avoid if eGFR < 30)

Recheck calcium 3-5 days later. Repeat doses of zolendronic acid can be given every one to two weeks, but if this is required it suggests the patient is nearing the very end of life and continued attempted treatment may be inappropriate.

Spinal Cord Compression

Suspect this in any patient with advanced malignancy who develops weakness or problems with mobility acutely. Usually also associated with new or worsening back pain.

Investigation of choice is an urgent MRI (that day). Image the entire spine +/- brain. If meningeal metastases are suspected (e.g. multiple unrelated nerve roots affected), image with gadolinium contrast.

Usual treatment:
- Dexamethasone 16mg orally daily (or in divided doses) (also give a proton pump inhibitor)
- Urgent referral for consideration of emergency spinal surgery or radiotherapy (for most cancers, speak to Clinical Oncology at Southampton Hospital – 023 8077 7222, bleep 1414)

Do not delay investigating and treating possible spinal cord compression unless active treatment is inappropriate because early treatment may save a patient from paraplegia or quadriplegia.

Cerebral metastases

Present in a legion of ways (e.g. confusion, drowsiness, headache, vomiting, hiccups, seizures). If symptoms are problematic, give dexamethasone 8-16mg orally daily (plus a proton pump inhibitor). Arrange contrast-enhanced CT or an MRI in patients where treatment would be considered.

Treatment options may include radiotherapy or, for solitary lesions, neurosurgery. Discuss with the patient’s own oncologist if possible in the first instance. Otherwise, speak to the on-call clinical oncologist at Southampton Hospital on 023 8077 7222, bleep 1414. Radiotherapy can improve symptoms and prolong life by a number of months. Wean dexamethasone post-radiotherapy over 4 weeks unless symptoms flare-up. Complications of cerebral irradiation include memory loss and a change in personality.
Malignant Bowel Obstruction

Bowel obstruction in malignancy is complex in aetiology. The underlying pathology may cause a physical, mechanical obstruction. Alternatively there may be pathology causing a predominantly ileus type scenario. This booklet distinguishes between an ileus-type picture (referred to as “pre-bowel obstruction” here) and a mechanical, physical obstructive picture (referred to as “malignant (mechanical) bowel obstruction” here). In practice both mechanisms may be occurring together and the disease varies along a spectrum.

Bowel obstruction is common in pelvic (e.g. ovarian cancer) malignancies with peritoneal spread. It also occurs in gastrointestinal malignancies such as colorectal cancer and pancreas cancer.

“Pre-Bowel Obstruction”

Suspect this in at risk patients with vomiting, abdominal distension, reducing frequency of bowel movement and an absence of colicky abdominal pain.

First-line treatment includes:
- Metoclopramide 30mg CSCI over 24 hours (if colicky pains occurs, stop metoclopramide as this worsens colic and manage as a mechanical bowel obstruction)
- Sodium docusate 200mg twice daily orally

If no improvement after 2-3 days add dexamethasone 6.6mg SC daily and increase metoclopramide to 60mg/24hrs (monitor for evidence of extrapyramidal effects).

If still no improvement after 3-5 days, consider speaking to a palliative care physician

Malignant (Mechanical) Bowel Obstruction

A pre-bowel obstructive picture may progress to a full blown obstruction with colicky abdominal pain, worsened vomiting and distension, and absolute constipation; or this may occur de novo. This often heralds the last few weeks of a person’s life. Consider gaining a surgical opinion if the patient has minimal disease with a good performance status and an otherwise relatively long life-expectancy.

Treat vomiting and distension with anti-secretory agents:
- Hyoscine butylbromide 120mg via CSCI over 24 hours and Ranitidine 150mg via CSCI over 24 hours

Additional symptomatic relief is important, including:
- An opioid for analgesia
- Minimal oral intake: give parenteral fluids (e.g. sodium chloride 0.9% SC 1 litre/day) if maintaining hydration is appropriate

If the aim is to try and restore bowel movements, consider:
- Dexamethasone 6.6mg SC daily may reduce peri-tumour oedema
- Sodium docusate orally and softeners per rectum in case constipation / hard stools are playing a role
- SC fentanyl rather than morphine (less impact on peristalsis)

If vomiting persists:
- If minimal oral intake, add octreotide 600mcg via CSCI over 24 hours (an anti-secretory agent)
- Anti-secretory drugs will be less effective if eating and drinking – consider an NG tube or venting PEG

If nausea persists, switch haloperidol to levomepromazine 6.25mg via CSCI over 24 hours.

To also consider:

Consider investigating with a CT abdomen to (a) confirm the diagnosis (and to distinguish from an ileus) and (b) determine if obstruction is unifocal or multifocal

If unifocal obstruction on CT scan, consider asking for advice if the lesion may be amenable to endoscopic stenting (speak to the colorectal surgeons at St Mary’s; 552 042)

In intractable nausea and vomiting, consider a venting gastrostomy (speak to the gastroenterology physicians at St Mary’s, 534 228)

For oesophageal or pyloric stents, speak to the upper GI CNS; 534915

Return to contents page † = off-label route or use †† = unlicensed ‘special’ # = specialist-initiated
Ascites

Common in both cancer and cirrhosis. Treatment varies depending on the stage and cause of a patient’s illness and may include:

1. Simple measures (e.g. “no added” dietary salt in patients with cirrhosis)
2. Medications (e.g. diuretics)
3. Procedures (e.g. paracentesis – page 29)

Recurrent ascites can be treated with repeat taps or an indwelling drain (e.g. a PleurX catheter – speak to interventional radiology at Southampton Hospital – 023 8120 4331). See page 29 for guidance on ascitic taps.

Pulmonary embolism

When suspected, CT-PA is the investigation of choice. If contraindicated (e.g. raised creatinine or contrast allergy) then a VQ scan +/- US leg of veins is an alternative.

First-line treatment is long-term enoxaparin 1.5mg/kg SC daily. Dose reduction required in renal failure or for thrombocytopaenia. If very high bleeding risk, IVC filter insertion can be used instead of anti-coagulation (speak to interventional radiology at Southampton Hospital – 023 8120 4331).

Superior Vena Cava Obstruction

When suspected, a CT venogram of the chest is warranted if investigating and treating is appropriate.

Dexamethasone 13.2mg SC [i.e. four 3.3mg ampoules] daily plus a proton pump inhibitor and urgent referral to an interventional radiologist for stenting (speak to interventional radiology at Southampton Hospital – 023 8120 4331) and/or a radiation oncologist (speak to Clinical Oncology at Southampton Hospital – 023 8077 7222, bleep 1414) for radiotherapy is the active treatment of choice.

Miscellaneous Problems

<table>
<thead>
<tr>
<th>Problem</th>
<th>Potential intervention</th>
<th>Who to call for advice on interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obstructive uropathy</td>
<td>Ureteric stenting</td>
<td>Urology secretary at St Mary’s Hospital – 552 024</td>
</tr>
<tr>
<td>Obstructive jaundice</td>
<td>ERCP + stent</td>
<td>Gastroenterologists at St Mary’s Hospital – 534 228</td>
</tr>
<tr>
<td>Pericardial effusion</td>
<td>Drainage</td>
<td>Cardiology at St Mary’s Hospital - 552 445 or 534 114</td>
</tr>
</tbody>
</table>

Diuretics for ascites in portal hypertension:

<table>
<thead>
<tr>
<th>Drug</th>
<th>Description</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Spironolactone</strong></td>
<td>First-line agent</td>
<td>Initial dose: 100 mg daily</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum dose: 400 mg daily</td>
</tr>
<tr>
<td><strong>Furosemide</strong></td>
<td>Second-line agent</td>
<td>Initial dose: 40 mg daily</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum dose: 160 mg</td>
</tr>
</tbody>
</table>

Ensure appropriateness of diuretics by first checking creatinine and electrolytes. Reduce dose or stop diuretic therapy if creatinine rises > 150 or sodium < 125 or significant potassium abnormalities develop whilst on therapy.
Methadone Guidelines (Specialist-initiated)

Methadone often provides good analgesia in patients with terminal illnesses. It has unusual pharmacokinetics with a very long half-life of days and toxicity can occur unexpectedly after a week or more of an apparently well tolerated dose regimen. Thus it is only initiated and titrated by palliative care or pain specialists.

**Indication:** Pain refractory to other treatment, especially pain associated with a neuropathic component, opioid-tolerance or central sensitisation

---

### Some advantages of methadone

Unaffected by renal failure. Often brings significant benefits at low doses allowing for major reduction in the dose other opioids. It may also be beneficial in opioid-induced hyperalgesia.

### Commencing methadone

Guidelines for using methadone in the palliative context vary widely. This guideline suggests a conservative approach where low-dose methadone is added on top the patient's current analgesia.

Before starting exclude a prolonged QTc by performing an ECG.

Start at 5mg orally at night. Continue any pre-existing regular and PRN analgesia.

### Increasing the dose

If inadequate analgesia is achieved within 3-5 days, increase the dose to 5mg twice daily. Monitor for adverse effects.

Continue increasing the dose every 5-7 days by 5mg a day if tolerated. Do not exceed 15mg twice daily without seeking advice from a senior palliative care physician.

Recheck the ECG after 2-4 weeks to ensure that the QTc interval remains < 0.5.

Consider gradually reducing the dose of other background opioids such as a fentanyl patch whilst titrating up the methadone, especially if adverse effects or a poor response to these opioids (or opioid-induced hyperalgesia) is suspected.

### Long-term dosing and stopping methadone

If significant side effects occur (e.g. sedation and reduced respiratory rate) then stop the methadone and reduce other opioids. In serious cases naloxone may be needed.

If there is no apparent improvement with methadone cease it.

If there is good analgesia, consider reducing the dose of other long-acting opioids and continuing the methadone longer term.
Subcutaneous Lidocaine Infusion Guidelines (Specialist-initiated)

A subcutaneous infusion of \( \text{lidocaine} \) is a useful treatment option in patients with a terminal illness who have severe pain refractory to other treatments. It requires careful assessment, consent and monitoring by a clinician familiar with its place, use and evidence-base relative to alternatives. Thus it is only initiated and titrated by palliative care or pain specialists.

**Indication:** Pain (especially neuropathic pain) refractory to other analgesia.

Before starting

Exclude contraindications by performing an ECG. Do not use in patients who are on anti-arrhythmics without first discussing with a cardiologist. Exhaust all other available treatment options before using in patients in the “precautions” group.

Check the blood pressure and heart rate.

Communicate and gain consent.

Commencing an infusion

Start at a dose of 500mg via CSCI over 24 hours (500mg = 25ml of lidocaine 2%; no diluent is needed). Consider beginning at 250 mg over 24 hours in those with altered pharmacokinetics (e.g. frailty; renal or hepatic impairment).

Recheck the blood pressure and pulse after 0.5, 1, 1.5, 2, 4 and 8-hours post commencing the infusion and (b) the following day. Discuss with medical team if:

- pulse drops below 60bpm or more than 20bpm below the pre-dose baseline
- systolic blood pressure drops below 100mmHg or more than 20mmHg below the pre-dose baseline

Recheck the ECG after 4 hours and the following day.

Increasing the dose

If inadequate analgesia is achieved, consider increasing the infusion rate by 250-500mg every 24-48 hours to a maximum dose of 2,000mg per day. With each increase in dose, repeat the same blood pressure, pulse and ECG monitoring as when first commenced.

Stopping an infusion

If bradycardia, hypotension, a cardiac arrhythmia or any other significant adverse effects occur, cease the infusion.

If, 24-hours after reaching the maximum dose, there has been no improvement in pain, cease the infusion.

If good analgesia occurs, consider gradually tapering the infusion by reducing in 250-500 mg increments every 24-48 hours. Consider complementing the reduction in lidocaine with a corresponding increase in other analgesic agents, e.g. methadone.
Ketamine for refractory pain (Specialist-initiated)

Ketamine is a useful treatment option in patients with a terminal illness who have severe pain refractory to other treatments. Trials are conflicting, titration requires particular expertise and serious adverse effects can occur. Thus it is only initiated and titrated by palliative care or pain specialists.

**Indication:** Pain (especially neuropathic pain) refractory to other analgesia.

**Before starting**
Check blood pressure, heart rate, respiratory rate and conscious level. Exclude contraindications. If longer term use (>weeks) is anticipated, ensure hepatotoxicity and urotoxicity are considered when obtaining consent and arranging monitoring.

Prescribe PRN haloperidol for hallucinations and PRN midazolam for anxiety.
Continue to check blood pressure, heart and respiratory rate and conscious level three times daily until a stable effective dose is reached.

**Subcutaneous administration regimen**
Commence 100mg via continuous SC infusion over 24 hours. Consider beginning at 50mg over 24 hours in those with altered pharmacokinetics (e.g. frailty; renal or hepatic impairment).
PRN ketamine 25mg 4-hourly can be prescribed in addition to PRN opioids.
If inadequate analgesia is achieved, consider increasing the infusion rate by 100mg every 24-48 hours to a maximum dose of 500mg per day. Continue to monitor blood pressure, heart rate, respiratory rate and conscious level until a stable effective dose is reached.

**Oral administration regimen**
Commence 10mg orally three times daily and 10mg PRN 4 hourly
If inadequate analgesia is achieved, consider increasing in 10mg steps three times daily every 24-48 hours to a maximum dose of 100mg three times daily. Continue to monitor blood pressure, heart rate, respiratory rate and conscious level until a stable effective dose is reached.

**Stopping ketamine**
If significant side effects occur (especially sedation and reduced respiratory rate) then stop the ketamine.
If, 24 hours after reaching the maximum dose, there has been no improvement in pain, stop the ketamine (tapering is not required).
If good analgesia occurs, consider gradually tapering the dose by similar increments and rate as the above titration. If pain recurs, consider either an oral or SC maintenance dose (discuss monitoring arrangements for hepatotoxicity and urotoxicity with a consultant) or another analgesic agent, e.g. methadone.

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**Absolute Contraindications**
- Previous serious reaction
- Recent or poorly controlled seizures
- Raised intracranial pressure
- Uncontrolled hypertension

**Precautions**
- Brain metastases
- Psychosis or delirium
- Previous strokes
- Severe cardiac failure
- Tachyarrhythmias
- History of glaucoma

**Adverse Effects**
- Improved efficacy of other opioids resulting in opioid toxicity
- Sympathomimetic effects – raised blood pressure, tachycardia
- Psychomimetic effects – vivid dreams, agitation, hallucinations, sedation
- Urotoxicity – recurrent UTI-like symptoms
- Hepatotoxicity

**SC Ketamine**
5mg oral = 5mg SC
Compatible with: (use NaCl 0.9% unless otherwise stated):
- Haloperidol
- Methadone (WFI)
- Midazolam
- Morphine
- Haloperidol + midazolam (WFI)
- Morphine + haloperidol
- Morphine + midazolam
- Oxycodone (WFI)
- Oxycodone + haloperidol
- Oxycodone + midazolam

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Ultrasound-guided Abdominal Paracentesis (Hospice Protocol)

**Indication:** To relieve abdominal discomfort (and dyspnoea) due to significant amounts of ascites.

**Technique**
- Exclude contra-indications. Gain consent
- Lie the patient supine with the abdomen exposed
- Select a site where there is shifting dullness. Confirm the presence of a deep pocket of ascites here with an ultrasound. Mark the skin clearly with a pen
- Wash your hands and put on sterile gloves
- Clean the skin with anti-septic solution
- Draw up lidocaine. Using a small-gauge needle, insert the needle at a right-angle to the skin, drawing back as you proceed until you get a flash-back of ascites. If you do not get a flash-back then abandon the procedure (and organize via radiology), otherwise slowly inject the anaesthetic whilst withdrawing the needle. Wait a few minutes.
- Insert the drainage catheter at a right-angle to the skin. On getting flash-back, insert the needle another centimetre and then withdraw the needle whilst inserting the plastic tube fully.
- Ascitic fluid should now be draining. Attach a drainage bag. Ensure the catheter and bag tubing is attached firmly to the abdominal wall (e.g. with sticky-tape).
- Allow drainage to occur. You may need to empty the bag a number of times. Drainage may take several hours. For ascites due to portal hypertension, albumin replacement is recommended if draining more than 5 litres

### Equipment Required
- Sterile gloves
- Basic dressing pack
- Anti-septic skin preparation
- Small gauge needle (e.g. 23 gauge)
- Small syringe (e.g. 5 or 10 ml)
- Local anaesthetic (e.g. 1% lidocaine)
- Large gauge long IV line or equivalent (e.g. 14 gauge Angiocath)
- Drainage bag (e.g. 2 litre drain bag with male connection)
- Surgical-tape (e.g. Micropore)
- Dressing (e.g. Tegaderm)
- Sharps container
- PLUS
- Hand-held or portable ultrasound

### Potential complications include:
- Infection (e.g. cellulitis)
- Bleeding
- Bowel perforation or organ damage
- Hypotension
- Leakage of ascites

The first 4 complications are rare and risk can be minimized by:
1. Using a sterile technique
2. Checking for bleeding risks and INR and platelets prior to procedure
3. Using an ultrasound to confirm a deep pocket of ascites
4. Albumin replacement (for large taps of ascites due to portal hypertension)

### Albumin Replacement Formula:
Give 100ml of 20% albumin for every 2.5 litres drained

### Be cautious if:
- INR > 1.5  Platelets < 100
- INR > 2  Platelets < 50

### Correct as appropriate if:
- INR > 1.5  Platelets < 100
- INR > 2  Platelets < 50
Subcutaneous Phenobarbital Infusion (Specialist-initiated)

Indications:
- Terminal agitation refractory to other treatments (e.g. midazolam > 60mg/day and either haloperidol > 10mg/day or levomepromazine > 100mg/day)
- Status epilepticus or recurrent seizures in an imminently dying patient that has been refractory to benzodiazepine therapy

For Refractory Terminal Restlessness: (see also page 21)

**Initial dose:**
Give 200mg IM
If agitation continues, give up to 2 further doses IM, 30 minutes apart

**Starting a continuous subcutaneous infusion:**
Commence an infusion at a dose of between 800mg and 1,200mg over 24 hours via CSCI (diluent is water). Use the higher dose for large patients or those who required a larger loading dose. Use the lower dose for other patients.

**Additional medications:**
Prescribe phenobarbital 200mg IM 2-hourly PRN for ongoing agitation
Continue antipsychotics and midazolam initially – these can be discontinued once agitation is well controlled.
Do not stop opioids (phenobarbital is not an analgesic).

For Refractory Seizures: (see also page 22)

**Initial dose:**
Give phenobarbital 100mg IM (undiluted) or IV (over 2 minutes, diluted in 5ml of water for injection)

**Starting a continuous subcutaneous infusion:**
Commence an infusion at a dose of 100mg over 24 hours via CSCI.

**For additional seizures:**
Give phenobarbital 100mg IM / IV.
Titrate the infusion up a further 100mg.

Phenobarbital Precautions
- Do not give stat doses of phenobarbital SC as tissue necrosis has been reported
- Phenobarbital is incompatible with other drugs therefore use a separate syringe pump
- Dilute with water (not sodium chloride 0.9%)
- Dilute to the maximum volume possible to reduce site irritation

Return to contents page  † = off-label route or use  †† = unlicensed ‘special’  # = specialist-initiated
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PATHOLOGY LABORATORY
(see also Pathology User Manual on the intranet)
See sections from individual departments for information about service hours & service out of hours.

- Phlebotomy service
- Chemical Pathology
- Haematology & Blood Transfusion
- Cellular Pathology
- Microbiology

SPECIMEN LABELLING AND ENCLOSURE
It is essential to avoid errors and ensure correct patient identification on laboratory samples: *If you take a specimen from a patient it is your responsibility to ensure correct labelling and enclosure:*

- Clearly label all specimens.
- Securely fasten all specimen containers.
- Leaking or unlabelled specimens will normally be discarded by the laboratory without examination.

<table>
<thead>
<tr>
<th>Minimum acceptable labelling requirements:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sample</strong></td>
</tr>
<tr>
<td>Patient’s surname*</td>
</tr>
<tr>
<td>Patient’s forename* (for unnamed infants use MI or FI)</td>
</tr>
<tr>
<td>IW number (or unique “U” or “E” number if/when appropriate)</td>
</tr>
<tr>
<td>Date of Birth</td>
</tr>
<tr>
<td>Date &amp; time of specimen collection*</td>
</tr>
<tr>
<td>Signature of person taking sample*</td>
</tr>
<tr>
<td><em>See Blood Transfusion section for further details on samples for Group &amp; Save and Crossmatching</em></td>
</tr>
</tbody>
</table>

| **Request form**                           |
| Patient’s surname*                        |
| Patient’s forename* (for unnamed infants use MI or FI) |
| Patient’s gender                          |
| IW number (or unique “U” or “E” number if/when appropriate) |
| Date of Birth                             |
| Date & time of specimen collection        |
| Patient’s consultant or GP                |
| Signature of requesting clinician         |
| Location of patient (ward/clinic)         |
| Relevant clinical information             |
| Patient’s address (desirable not essential) |
| *or proper coded identifier               |

If a sample or request form fail to meet minimum labelling requirements the sample may not be processed. The clinician responsible will be contacted and, where necessary, may be asked to take responsibility for patient identification.
If addressograph labels are used on the request form they MUST be attached to both copies of the request form. Addressograph labels MUST NOT be used to label sample tubes. Only labels produced from the BloodTrack system can be used to label tubes.

TRANSPORT TO LABORATORY

Pneumatic Air Tube System All specimens can be sent by this method with the exception of: Blood Gases, CSFs & all Histology samples. Samples must be contained within the plastic bag attached to the request form. Liquid samples (e.g. blood, urine, fluids) must then be placed into a white plastic inner before being put in the Blue Specimen Carrier. No other colour of carrier can be used for Pathology specimens.

By hand Specimens must be contained within the plastic bag attached to the request form. Specimens must then be transported inside a red plastic specimen transport box.

If any queries please contact a member of the relevant Pathology Department staff.

PATHOLOGY COMPUTER

The Pathology service operates a ‘TelePath’ computer system. There are terminals on all wards from which results of pathology tests can be readily accessed once released – please use this facility.

Users are issued with a password and offered training on the system. Contact Frances Smith in Pathology for Telepath access.

For any other computer problems, please contact IT ext. 4401.
PHLEBOTOMY SERVICE

The Phlebotomy Outpatient Department is open between 07:30 – 16:00 Monday to Friday, except for the first Wednesday in every month, when it opens at 08:30. Patients should arrive no later than 15.15 to be sure of being bled.

A ward phlebotomy service attends the following wards Monday to Friday, where staffing permits:

- CCU stepdown
- Newchurch
- General Rehab Unit
- Stroke Unit
- Mottistone suite
- Lucombe
- Alverstone
- Colwell
- Appley
- Whippingham
- St Helens

All request forms for the phlebotomist should be added to the peg situated on all wards serviced by the phlebotomy department by 07:30 on the morning the test is required. Any requests forms not on the peg by 07:30 may not be accepted. Any request forms which are incorrectly completed or do not meet the minimum requirements will be return for the originator to amend / complete. Due to time constraints in such case the phlebotomist may not be able to take the test.
CHEMICAL PATHOLOGY DEPARTMENT

Enquiries

Results: Phone extension 4811
Technical: Chris da Costa, Technical Head of Dept 4812
           Kevin Stafford, Chief Biomedical Scientist 4822
Clinical: Dr Ali Al-Bahrani, Head of Department 4917
Point-of-care Testing (POCT) 4810
Gas Analyser Training 4810

Chemical Pathology is the branch of Pathology dealing with the biochemical basis of disease. It is staffed by Health Profession Council (HPC) registered Biomedical Scientists supported by Medical Laboratory Assistants who provide a high quality 24/7 analytical service to aid with diagnosis, treatment and patient management.

Approximately 2 million tests are performed every year in Chemical Pathology at St Mary’s including renal function, liver function, hormones, drugs and tumour markers. The department operates in accordance with Clinical Pathology Accreditation (CPA) standards and uses extensive quality control procedures to ensure that precise and accurate results are available within an appropriate timeframe.

Clinical advise on investigations and results interpretation is provided by the Consultant Dr Ali Al-Bahrani who also runs Metabolic Bone and Lipid clinics.

The REFERENCE RANGES for analytes measured at the Department of Chemical Pathology are online, check the Pathology handbook on the trust website.
TELEPHONE ACTION LIMIT TABLES

Results that fall outside the departmental action limits are telephoned to the location stated on the request form.

<table>
<thead>
<tr>
<th>BIOCHEMISTRY ACTION LIMITS</th>
<th>Action limits</th>
<th>Delta change within 14 hours from previous results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower limit (mmol/L)</td>
<td>Upper limit (mmol/L)</td>
</tr>
<tr>
<td>Sodium</td>
<td>&lt;120</td>
<td>&gt;150</td>
</tr>
<tr>
<td>Potassium</td>
<td>&lt;2.9</td>
<td>&gt;6.0***</td>
</tr>
<tr>
<td>Bicarbonate</td>
<td>&lt;15</td>
<td>&gt;40</td>
</tr>
<tr>
<td>Adj. Calcium</td>
<td>&lt;2.0</td>
<td>&gt;3.0</td>
</tr>
<tr>
<td>Phosphate</td>
<td>&lt;0.40</td>
<td>&gt;4.00</td>
</tr>
<tr>
<td>Glucose</td>
<td>&lt;2.5</td>
<td>&gt;20.0 or any POSITIVE ketones</td>
</tr>
<tr>
<td>Magnesium</td>
<td>&lt;0.40</td>
<td>&gt;2.0</td>
</tr>
<tr>
<td>Bilirubin</td>
<td>&gt;250 µmol/l (inc paed/ NICU)</td>
<td></td>
</tr>
<tr>
<td>Anion gap</td>
<td>&gt;30</td>
<td></td>
</tr>
<tr>
<td>Cortisol</td>
<td>&lt;50 nmol/l other than over-night dexamethazone suppression test</td>
<td></td>
</tr>
<tr>
<td>TFT</td>
<td>TSH &gt;50 mU/l or TSH &lt;0.03 mU/l and FT4 &gt;30 pmol/l telephone results to Dr Al-Bahrani during working hours (even if on leave). If out of hours, telephone Dr Al-Bahrani the following am. No need to phone mildly low or detectable TSH and FT4 &lt;30</td>
<td></td>
</tr>
</tbody>
</table>

*** Out of hours (from 18:00 hour onwards), phoning cut-off for potassium is >6.3mmol/l
### BIOCHEMISTRY ACTION LIMITS

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Action limits</th>
<th>Optimum sampling time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adj. Calcium</td>
<td>&lt;2.0, &gt;3.0, &gt;0.5, &gt;0.8</td>
<td></td>
</tr>
<tr>
<td>Phosphate</td>
<td>&lt;0.40, &gt;4.00</td>
<td></td>
</tr>
<tr>
<td>Glucose</td>
<td>&lt;2.5, &gt;20.0, or any POSITIVE ketones</td>
<td>&gt;15, &gt;20</td>
</tr>
<tr>
<td>Magnesium</td>
<td>&lt;0.40, &gt;2.0</td>
<td></td>
</tr>
<tr>
<td>Bilirubin</td>
<td>&gt;250 µmol/l (inc paed/NICU)</td>
<td></td>
</tr>
<tr>
<td>Anion gap</td>
<td>&gt;30</td>
<td></td>
</tr>
<tr>
<td>Cortisol</td>
<td>&lt;50 nmol/l other than over-night dexamethazone suppression test</td>
<td></td>
</tr>
<tr>
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<td>TSH &gt;50 mU/l or TSH &lt;0.03 mU/l and FT4 &gt;30 pmol/l telephone results to Dr Al-Bahrani during working hours (even if on leave). If out of hours, telephone Dr Al-Bahrani the following am. No need to phone mildly low or detectable TSH and FT4 &lt;30</td>
<td></td>
</tr>
</tbody>
</table>

**Acute rise in ALT >250 U/l**

Creatinine (a change of >200%) i.e. there is a possibility of acute renal insult superimposed on chronic kidney disease

**Creatine Kinase (CK) >1500 U/l**

**Amylase >1000 U/l**

**Albumin <20 g/l, patient not known to have low albumin**

**Alcohol >250mg/dl**

### DRUG ACTION LIMITS

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Action limits</th>
<th>Optimum sampling time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paracetamol &amp; Salicylate</td>
<td>&gt;10, &gt;40</td>
<td>Check that specimen has been taken &gt;4 hours post ingestion/admission</td>
</tr>
<tr>
<td>Lithium</td>
<td>&gt;1.2 mmol/L</td>
<td>12 hours post dose</td>
</tr>
<tr>
<td>Digoxin</td>
<td>&gt;2.5 ng/ml</td>
<td>At least 6 hours post dose</td>
</tr>
<tr>
<td>Theophylline</td>
<td>&gt;20 mg/l</td>
<td>Pre-dose</td>
</tr>
<tr>
<td>Phenytoin</td>
<td>&gt;20 mg/l</td>
<td>Pre-dose</td>
</tr>
<tr>
<td>Other drugs</td>
<td>&gt; upper limit of therapeutic range</td>
<td></td>
</tr>
</tbody>
</table>
GUIDE TO PHLEBOTOMY SAMPLE REQUIREMENTS

1 FULL SST is sufficient for all of the following:

U&E   LFT   BONE   CALCIUM   CK
LIPIDS  CRP   TFT   MG
HORMONES  CARDIAC MARKERS   B12FOLATE   IRON
FERRITIN   A1AT   CAER   TUMOUR MARKERS (CEA/CA125/CA199/PSA)
CORTISOL   RRHM

REMINDER

DAR (Diabetic Annual Review) requires SST and EDTA for Chemical Pathology but not FLUORIDE OXALATE

TAKE AN EXTRA SST if there are ALSO any of these requested:

VITD   IGS/EP   IGE   ACE   B2MG   F L C
(serum free light chains)
CA15-3   C1EST   THYROGLOBULIN   GH/IGF1
BILE ACIDS
P3NP   S100   OLIGOCLONAL BANDS   MAFP
CHROMOGRANIN A&B   TOXICOLOGY/DRUG SCREEN
ANDROSTENEDIONE   BNP

ALWAYS TAKE AN EXTRA SST IF ANY MICROBIOLOGY TESTS ARE REQUESTED OR AIP/PABU

TAKE AN EXTRA EDTA if the following are requested:

PTH   LEAD   CYCLOSPORIN   TACROLIMUS   G6PD
AMMONIA (must be on ice, so only taken at St Mary’s)
IF IN DOUBT ring Chemical Pathology Reception Desk Ext: 4811

N.B. This is a guide for Chemical Pathology sample requirements only
OUT OF HOURS ON-CALL POLICY FOR USERS

Currently an On-Call service operates outside non-core laboratory hours to provide a 24 hour service to clinicians. The non-core hours are:

Weekdays 19:00 to 08:00
Weekends 19:00 Friday to 08:00 Monday

During the on-call period contact the duty Biomedical Scientist on bleep 161 for all samples requiring urgent analysis.

These samples should be sent to the laboratory via the pneumatic tube system and results will normally be available within 60 minutes of receipt of the sample, or the telephoned request, whichever is the latter.

Samples that are sent to the laboratory, but not requested by telephone as urgent, will be processed as routine samples and therefore may have a longer turnaround time.

Most routine chemistry tests are available outside core laboratory hours including Troponin, HCG, and some therapeutic drugs e.g. digoxin. If in doubt contact the Biomedical Scientist on-call for Chemical Pathology on bleep 161 for advise. Further discussion with the Chemical Pathology consultant may be required.
SAMPLES FOR BLOOD GAS ANALYSIS MUST NOT BE SENT THROUGH THE POD SYSTEM.

THESE SAMPLES SHOULD BE TRANSPORTED TO THE LABORATORY BY HOSPITAL PORTER AND THE DUTY BIOMEDICAL SCIENTIST INFORMED VIA BLEEP 161.

IOW CARDIAC MARKER POLICY AND FLOW-CHART
Management of Electrolyte and water disturbances

In the average normal subject, the body water comprises 60% of the body weight and 73% of the lean mass. Fat and bone being relatively anhydrous, fatter individuals have a lower percentage of body water.

Body water is functionally divided into the extracellular fluid (ECF) and the intracellular fluid (ICF), separated from each other by the cell membrane, which through its sodium potassium ATPase pump, maintains the equilibrium between the two compartments, so that sodium is the main extracellular and potassium the main intracellular cation, the latter balancing the negative charges on protein and other molecules within the cell.

Figure 1 • Body Fluid Compartments – Under normal conditions the total volume of water in the human body (TBW) is about 60% of the body weight. Of TBW, most (⅔) is intracellular fluid (ICF), and ⅓ is extracellular fluid (ECF). The extracellular fluid is made up of plasma and interstitial fluid (ISF).

The water content is maintained by osmo-receptor (sense changes in cell volume and send messages to the thirst centre) and Anti-diuretic hormone (ADH) synthesize in the hypothalamus, stored and released by the post-pituitary gland (which acts on the renal collecting duct by making it permeable to water).
Table 1: Daily water balance in health

<table>
<thead>
<tr>
<th>Intake (ml/day)</th>
<th>Output (ml/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obligatory</td>
<td>Elective</td>
</tr>
<tr>
<td>Water from beverages</td>
<td>400</td>
</tr>
<tr>
<td>Water from solid food</td>
<td>850</td>
</tr>
<tr>
<td>Water from oxidation</td>
<td>350</td>
</tr>
<tr>
<td>Total</td>
<td>1600</td>
</tr>
</tbody>
</table>

The total body sodium is between 3000–4000 mmol, of which 44% is in the ECF, 9% in the ICF and the remaining 47% in bone. A little more than half the bone sodium requires acid for its solution and is osmotically inactive; the rest is water soluble and therefore, exchangeable. The daily sodium intake is variable, but on an average amounts to 1 mmol/kg, which is equivalent to the amount excreted in the urine and faeces. Sodium loss in the sweat is negligible, except in individuals not acclimatised to heat. The large sodium stores readily compensate for abnormal losses.

Table 2: Electrolyte and mineral concentrations in body water compartments

<table>
<thead>
<tr>
<th>Electrolyte</th>
<th>ECF (mmol/L)</th>
<th>ICF (mmol/L)</th>
<th>Total in body (mmol)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium</td>
<td>140–155</td>
<td>10–18</td>
<td>3000–4000</td>
</tr>
<tr>
<td>Potassium</td>
<td>4.0–5.5</td>
<td>120–145</td>
<td>3000–4000</td>
</tr>
<tr>
<td>Calcium</td>
<td>2.2–2.5</td>
<td></td>
<td>25000–27000</td>
</tr>
<tr>
<td>Ionised calcium</td>
<td>0.9–1.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magnesium</td>
<td>0.7–1.2</td>
<td>15–25</td>
<td>900–1200</td>
</tr>
<tr>
<td>Chloride</td>
<td>98–106</td>
<td>2–6</td>
<td>3000–4000</td>
</tr>
<tr>
<td>Phosphate</td>
<td>0.7–1.3</td>
<td>8–20</td>
<td>30000–32000</td>
</tr>
</tbody>
</table>

Almost 98% of potassium is intracellular and 75% of the body potassium stores is in skeletal muscle. Potassium and nitrogen are mobilised when the body needs endogenous protein as an energy source, as in conditions of starvation and stress. This mobilised potassium enters the ECF, but the serum potassium concentration usually remains
unchanged as healthy kidneys rapidly excrete the excess. The normal daily intake of potassium, like the sodium is 1 mmol/kg, and is matched by the urinary excretion.

**Sodium (Na) homeostasis**

Na is the principle particle in the ECF, it is content determine the ECF volume. Serum Na in the ECF reflects tonicity of body fluids and thus the ICF volume because of little change in the number of particles in the ICF and most cells. Hyponatraemia implies swollen cells (e.g. increase intracranial pressure and herniation of the brain) and hypernatraemia reflects shrunken cells (can result in subarachnoid or intra-cerebral hemorrhage). Having said that, the concentration of Na in serum does not indicate the ECF is normal, high or low.

**Hypernatraemia**

Hypernatraemia is not a common problem and defined a serum Na >150mmol/l, occurring in <1% of patients in an acute care hospital. It is serious, as hypernatraemia is correlated with a high mortality rate. Hypernatremia is generally not caused by an excess of sodium, but rather by a relative deficit of free water in the body. For this reason, hypernatremia is often synonymous with the less precise term, dehydration. Hypernatraemia is very rarely due to a gain of Na.

Most of these patients will respond to simple rehydration. An estimate of water deficit can be obtained from the plasma sodium level using the following formula:

\[
\text{Water deficit (L) = 0.6 x body weight (Kg) x } \frac{\text{P}_{\text{Na}}^+ - 140}{140}
\]

\[
\text{P}_{\text{Na}}^+ = \text{the plasma sodium concentration (mmol/l)}
\]

The patient should be rehydrated at first with isotonic saline (0.9%) to restore ECF compartment. As the sodium comes down with isotonic saline alternate with 5% dextrose and 0.45% saline to rehydrate the ICF compartment. It should be advised to reduce the sodium level slowly at the rate of 10–12 mmols in
24 hours in chronic hyponatraemia to avoid central pontine myelinolysis. An accurate input/output chart should be kept.

Think of diabetes insipidus in patients who have a history of head injury, lithium treatment and/or a poor response to adequate intravenous hydration.

Rarely in adults, hypernatraemia with hypervolaemia due to hypertonic saline intoxication, or with normovolaemia due to reset osmostat may occur. In both of the above situations, as long as the patient has normal renal function oral rehydration with water is the appropriate treatment.

**Hyponatraemia**

Defined a serum Na <136 mmol/l. It indicates an increase in water relative to Na content and implies expansion of the ICF compartment/volume. Hyponatraemia without cell swelling indicate the presence of hyperglycaemia or pseudohyponatraemia (laboratory error caused by raised triglycerides or serum proteins as in myeloma).

The key to effective management of hyponatraemia is the correct diagnosis of the cause enabling early institution of the appropriate therapy. Check for the possibility of dextrose drip/water contamination or hyperglycaemia (newly or poorly control diabetes) or pseudohyponatraemia (hypertriglycerideama or hyperproteinaemia as in myeloma usually have normal measurable serum osmolality). Look into the pattern U&Es and compare with previous level if available some time can helpful in directing your attention to the underlying cause.

Think of excess water intake, particularly in postoperative patients on dextrose infusions. Take a good drug history, including drugs recently discontinued, particularly diuretics, phenothiazines, tricyclic antidepressants, SSRI and carbamazepine. Find out about the patient’s blood pressure – high, normo or hypovolaemic states. Postural hypotension is one of the earliest signs of volume contraction. Think of adrenal, pituitary or thyroid disease. It is critical to make a good assessment of the effective circulating volume by clinical examination/assessment, but providing the patient has good cardiac, liver and renal function. Check serum urea can give some pointers.
If volume depleted, the urea tends to be high and if overhydrated, urea will be low. Beware the slightly built, poorly nourished, GI patient who is dehydrated through GI loss (the urea can be deceptively low).

Spot urine can be helpful providing treatment has not already commenced. In hypovolaemic hyponatraemia from non-renal causes, the urine Na will be low (<10mmol/l) and from renal causes it will be high (>20mmol/l). If inappropriate secretion of antidiuretic hormone is the cause of the hyponatraemia, on a normal Na diet, urine Na excretion will be high and the urine osmolality inappropriately high for the plasma osmolality.

Remember syndrome of inappropriate antidiuresis is a diagnosis of exclusion and all other causes of a low Na must be thought of and excluded before this diagnosis is assumed. The following criteria must also be fulfilled:

1. Hyponatraemia with corresponding hypo-osmolality of plasma and extracellular fluid.
3. Absence of clinical evidence of fluid volume depletion or overload.
4. Osmolality of the urine greater than appropriate for the concomitant plasma tonicity.
5. Normal renal, adrenal and thyroid function.

Treatment depends entirely on the patient’s circulating volume. For patients with hypovolaemic hyponatraemia, rehydrate with normal saline. For patients with normovolaemic hyponatraemia, if possible treat the cause (e.g. chest infection), if not possible (e.g. inoperable small cell carcinoma of the lung) commence fluid restriction <1L/day. If unresponsive despite good fluid restriction confirmed by an accurate input/output and daily measurement of the patient’s weight, consider demeclocycline. Patients on long-term demeclocycline may become dehydrated and may develop pre-renal failure. Stress the importance of regular monitoring of U&Es in patients on Demeclocycline. In patients with hypervolaemic hyponatraemia, specific treatment of cardiac output in congestive cardiac failure, of the underlying liver disease
in cirrhosis and of the renal disease responsible for the nephrotic syndrome should be the first approach to the treatment of this oedematous hyponatraemic status. Fluid restriction may also be necessary in these patients.

NOTE: the volume of distribution of Na is equal to the total body water volume. For example, a 50-kg person with acute postoperative hyponatraemia (serum Na is 120 mmol/l) is having seizure 24 hours after surgery. The aim of treatment to shrink the size of brain cell acutely to a level before seizures occurred. A reasonable target is to raise serum Na by 5 mmol/l during the next few hours. To raise the serum Na by 5 mmol/l, 150 mmol of Na must be administered because the total body water is 30 L.

For treatment of severe symptomatic hyponatraemia (seizures or disturbances in consciousness) seek Consultant advice as they may require hypertonic solution replacement.

**Potassium (K)**

In contrast to Na, most (98%) of the K in the body are intra-cellular (40–50 mmol/kg body weight). A steady state is maintained with a K concentration in the ICF that is close to 35-fold greater than the ECF this regulated by the Na-K-ATPase pump. The uneven distribution of $K^+$ across cell membranes means that a mere 1% shift in its distribution can cause a 50% change in serum $K^+$ concentration. K play key role in the generation of resting member potential, which in turn influences many important biological events. Surplus or deficit of K in the ECF may predispose the patient to cardiac arrhythmias. Three main hormones can influence Na-K-ATPase pump which are Insulin, Aldosterone and β-adrenergic agonists.

**Hypokalaemia**

Defined as serum K $< 3.5$ mmol/l. It is one of the communist electrolyte abnormalities we encounter in clinical practice in hospitalized patients, around 3% of unselected hospitalized patients may be hypokalaemic on admission to the hospital. They frequently occur as iatrogenic complications of medications and medical procedures. However, the conditions can be life threatening. A serum $K^+$ level of
2.5–3.0 mmol/l is considered moderate hypokalaemia and a level <2.5 mmol/l is regarded as severe hypokalaemia.

As a rule of thumb, for every decrease in serum K⁺ concentration of 0.3 mmol/l, as much as a ~100 mmol deficit in total body K⁺ levels could exist. A serum K⁺ concentration of <3 mmol/l or <2 mmol/l generally indicates deficits of at least 200 mmol or 500 mmol, respectively.

Extrarenal K⁺ losses from the body are usually small, but can be marked in individuals with chronic diarrhea, DKA, Parenteral nutrition, chronic ethanol intake, severe burns or prolonged sweating. Renal losses of K⁺ ions are often an adverse effect of therapy. Under normal circumstances, the kidney’s distal nephron secretes K⁺ and determines final urinary excretion.

ECG features of hypokalaemia are:

- U waves;
- T wave flattening;
- ST-segment changes;
- Arrhythmias, especially if patient is taking digoxin;
- Cardiopulmonary arrest (PEA, pulseless VT/VF, asystole).

K may be low because of GI loss in the form of diarrhoea and vomiting, diuretics, DKA, parenteral nutrition and alcohol intake.

Optimum treatment of hypokalaemia requires that the cause be established and the underlying disorder alleviated. This strategy is successful in the majority of cases. Establishing whether hypokalaemia is caused by a cellular shift or by a K⁺ deficit is essential. Furthermore, as K⁺ disturbances almost invariably feature acid–base disorders (HPP is an exception), the acid–base status should be investigated.

If the patient has metabolic acidosis (for example, from distal renal tubular acidosis), the hypokalaemia should be treated before the acidosis is addressed. K⁺ can be given orally in liquid or tablet form, or intravenously, usually as KCl. The approximate K⁺ deficit can be estimated from the plasma or serum K⁺ concentration, as stated earlier.
If replacement needs to be given intravenously, it is safer not to exceed a dose of 20 mmol/h, as there is a danger of rebound hyperkalaemia.

If plasma K>2.5mmol/l and patient does not have diarrhoea, advise oral K replacement of up to 80mmol in divided doses over 24hrs.

If K<2.5mmol/l, advise i.v. potassium 40mmol in 1L or 500mls of 0.9% saline over 6 hrs, provided the renal function is normal. If renal function is abnormal, give 10 mmol potassium over 6 hours and re-check potassium.

Also check Mg especially in alcoholics and if low then Mg should be given along with K in the same bag. In order to replace both K and Mg, give 40mmol of K and 5mmol of Mg in 500mls of 0.9% saline over 6 hrs and repeat the same infusion every 6hrs so that in 24 hr, 160mmol of K and 20mmol of Mg is replaced. Check K and Mg after replacement in plasma.

K infusion should not exceed >10mmol/hr and maximum of 160 mmol/day can be replaced.

Monitor K at least daily.

In patients who are symptomatic or have extremely low K, then high dose of K may be given in ITU under ECG monitoring.

**Hyperkalaemia**

Defined as serum K > 5 mmol/l. The reported incidence of hyperkalaemia in hospitalised patients is between 1 and 10%. The vast majority of cases are related to patients prescribed angiotensin converting enzyme inhibitors (ACE) or angiotensin II receptor blockers (ARBs) in conjunction with spironolactone with pre-existing or new renal failure. Most other cases are related to potassium supplementation and prescription of diuretics/drugs with potassium-sparing properties. If plasma K>6.5mmol/l, check for EDTA contamination.

As a rule of thumb, always rule out the possibility of Pseudohyperkalaemia if hyperkalaemia is an unexpected
or isolated finding and there are no ECG signs of hyperkalaemia. Pseudohyperkalaemia is due to prolonged tourniquet time, test tube haemolysis, marked leucocytosis and thrombocytosis (measure plasma not serum concentration in these disease states) or sample taken from a limb infused with IV fluids containing potassium. Lithium heparin samples should be repeated.

Renal causes are acute or chronic renal failure, hyperkalaemic renal tubular acidosis (type IV), mineralocorticoid deficiency (hypoaldosteronism states), drugs that interfere with potassium excretion (amiloride, Spironolactone), drugs that interfere with the renin-angiotensin system (angiotensin converting enzyme inhibitors, angiotensin II receptor blockade, nonsteroidal anti-inflammatory agents, heparin). Other causes include exogenous (potassium supplementation), endogenous (tumour lysis syndrome, rhabdomyolysis, trauma, burns).

Hyperkalaemia is classified as –

• Mild (K⁺ 5.5 – 6.0)
• Moderate (K⁺ 6.1 – 6.9) or
• Severe (K⁺ equal or >7.0) or if ECG changes or symptoms (muscle weakness or flaccid paralysis palpitations, paresthesias) occurring at ANY level or serum potassium >5.5mmol/l especially if associated with hypoxia

The ECG changes associated with hyperkalaemia are usually progressive and include:

• first degree heart block (prolonged PR interval) [>0.2 s];
• flattened or absent P waves;
• tall, peaked (tented) T waves [T wave larger than R wave in more than 1 lead];
• ST-segment depression;
• S and T wave merging (sine wave pattern);
• widened QRS [>0.12 s];
• ventricular tachycardia;
• bradycardia;
• cardiac arrest (pulseless electrical activity [PEA], ventricular fibrillation/pulseless ventricular tachycardia [VF/VT], asystole).

Urgent treatment is required if the serum potassium is > 7 mmol/l OR hyperkalaemia is accompanied by ECG changes or above symptoms – even in the presence of mild hyperkalaemia (K⁺ 5.5 – 6.0 mmol/l).

A 12-lead ECG and cardiac monitoring is mandatory in patients with hyperkalaemia. The ECG does not always demonstrate changes, even in the presence of severe hyperkalaemia, so a normal ECG does not obviate the need for therapy. However, the presence of ECG findings should be a strong impetus for urgent action. The most worrying findings are decreased or absent P-waves, PR prolongation, QRS widening, sine wave QRST, AV dissociation or asystole. It is often difficult to judge if T-waves are truly peaked and this finding on its own should not be an automatic indication for urgent therapy.

Management of hyperkalaemia entails the following:

A) Stop all potentially offending drugs immediately. These include ACE inhibitors, angiotensin receptor blockers, potassium retaining diuretics eg spironolactone, amiloride, AIDs and K⁺ containing laxatives (Movicol®, Klean-Prep®, Fybogel®). Betablockers and digoxin should also be stopped as they prevent intracellular buffering of potassium and reduce the effectiveness of insulin-glucose and beta-2 agonists. Place the patient on a low potassium diet.

B) Protect the cardiac membrane by giving 10ml of calcium gluconate 10% intravenously over 2 minutes, this intervention will not lower the potassium, but if ECG changes are present, there should be improvement seen within 1 to 3 minutes, if improvement does not occur a further 10ml of calcium gluconate 10% can be given intravenously every 10 minutes until the ECG normalises (patients may require up to 50ml). The effect of this intervention is transient (approximately 30 minutes). It is important to note that if the patient is taking digoxin and the decision is made that calcium gluconate is required,
it should be given slowly over 20 minutes mixed in 100ml of glucose 5% as rapid calcium administration may precipitate myocardial digoxin toxicity. Digoxin toxicity can cause hyperkalaemia and arrhythmias and urgent haemodialysis or the administration of digoxin antibody (Fab) fragments may represent the preferred approach. Consult with senior colleagues.

C) Shift the potassium from the blood into the cell, Withdraw 10 units of Actrapid® insulin using an INSULIN syringe. Always obtain a check of volume from a senior nurse before proceeding. Add to 50ml glucose 50% and administer by slow IV injection over 5 minutes (see Appendix 1). The onset of the hypokalaemic action occurs within 15 minutes and lasts at least 60 minutes. The reduction in potassium observed ranges from 0.6 to 1.0mmol/l. If the serum glucose is 15mmol/l or greater, glucose administration with insulin is not required. The effects of administering insulin/glucose are observed in 15 minutes and monitor every 30 minutes for 4–6 hours. Monitoring – blood glucose should be measured 30 minutes after starting the infusion and then hourly up to six hours after completion. If potassium remains high a continuous infusion of insulin and glucose may be required.

D) Administer 10mg of nebulised salbutamol. Salbutamol for nebulisation is normally 2.5mg/2.5ml strength and the nebuliser chamber will hold 10ml i.e. 10mg salbutamol. This will lower the potassium by 0.5 to 1.0mmol/l by 15–30 minutes with the effect lasting at least 2 hours. 20mg of nebulised salbutamol may be more effective than a 10mg dose at 2 hours. The lower dose is preferable in patients with ischaemic heart disease. There is no difference in the maximum hypokalaemic effect when nebulised salbutamol is compared with salbutamol (0.5mg) administered intravenously salbutamol may not lower potassium in all patients and some studies show that up to 40% of dialysis dependent patients are resistant to these agents. The hypokalaemic response is also attenuated in patients taking beta-blockers and digoxin. Therefore salbutamol is not recommended
as a single agent to treat hyperkalaemia. There is evidence that the combination of nebulised salbutamol and insulin/glucose display additive effects in lowering the serum potassium, with attenuation of the hypoglycaemic action of insulin.

E) Removal of potassium from the body by haemodialysis. If despite the above measures the potassium remains greater than 7 mmol/l or if pathological ECG changes/ symptoms persist, the renal team should be contacted to arrange urgent dialysis if appropriate. This is the most effective and definitive but invasive method in treating hyperkalaemia. It is strongly considered if hyperkalaemia is severe (level debated but equal or > 7.0 mmol/l) and other first-line agents have been unsuccessful, or if there is ongoing tissue damage and continued release of intracellular potassium is expected. It is important to enlist the help of nephrology at an early stage in these circumstances.

F) Use the gut to remove potassium using Calcium polystyrene sulphonate resin (Calcium Resonium®) enema 30g followed with 15g orally 4 times daily with regular lactulose will increase gut losses of potassium. When given rectally the calcium resonium must be retained for 9 hours followed by irrigation to remove resin from the colon to prevent faecal impaction. Bowel perforation can be a complication. The onset of action is slow (up to 2 hours) and other measures should be employed in the interim to lower potassium levels. Do not add Calcium Resonium® to fruit juice which has a high potassium content. One gram of resin exchanges 1 mmol/l Na for 1 mmol/k.

**Sodium bicarbonate – not recommended.** While this has been a traditional treatment for hyperkalaemia, many studies show that sodium bicarbonate fails to lower the serum potassium. A reduction in potassium will not occur within 60 minutes of administration. There are also potential risks in giving sodium bicarbonate in terms of volume and sodium overload and tetany in patients with chronic renal failure and co-existent hypocalcaemia. The risks outweigh any potential benefit.
**Calcium Homostasis**

The concentration of calcium in the serum (normal range 2.10–2.60 mmol/l) is regulated by the action of parathyroid hormone and vitamin D on the kidneys, bones, and gastrointestinal tract.

**Hypercalcaemia**

The immediate treatment of any patient with hypercalcaemia must be rehydration. Provided the patient has adequate renal and cardiac function advise at least 3L of 0.9% saline/24hrs with a good input/output chart. Measure PTH prior to treatment. Find out if there is history of malignancy, calcium and vitamin D supplementation or thiazides. If the patient is on calcium and vitamin D supplements, then stop the medications. In malignant hypercalcaemia, once the patient has been adequately rehydrated (at least 24hours) repeat the calcium. If adjusted calcium is >3mmol/L advise 90mg APD (pamidronate), if <3mmol/L and >2.6mmol/L advise 60mg APD. Alternatively you can also advise Zometa 4mg i.v. in 100mls of normal saline over 1hour. Stress the need for continued rehydration.
Hospital based Management (See accompanying table)

1. **For ALL patients**
   1.1 Intravenous fluids: Isotonic saline (0.9% NaCl) at 200 ml/hr (assuming previously normal renal and cardiac function) to obtain euvoletic status.

2. **For hypercalcemia greater than or equal to 4 mmol/L**
   2.1 IM/SC Calcitonin: 4–8 unit/kg q 6h x 2 days
   **PLUS**
   2.2 IV Pamidronate (started concurrently with calcitonin): 90 mg in 250 mL NS over 1 hour
   OR
   2.3 IV Zoledronic acid (started concurrently with calcitonin): 4 mg in 100 mL NS over 1 hour

3. **For hypercalcemia greater than or equal to 3.5 mmol/L**
   3.1 IV Pamidronate: 90 mg in 250 ml 0.9% saline over 1 hour
   OR
   3.2 IV Zoledronic acid: 4 mg in 100 ml 0.9% saline over 1 hour

4. **For hypercalcemia less than 3.5 mmol/L with symptoms**
   4.1 IV Pamidronate 60–90 mg in 250 ml 0.9% saline over 1 hour
   OR
   4.2 IV Zoledronic acid 4 mg in 100 ml 0.9% saline over 1 hour

5. **For hypercalcemia unresponsive to other measures**
   5.1 IV Mithramycin (Plicamycin) 25 mcg/kg repeats in 48 hours if no response; 12.5 mcg/kg if pre-existing renal or hepatic dysfunction
6. Re-treatment

There are patients whose serum calcium concentrations do not completely normalize in the first 48–72 hours after treatment. If needed, patients receiving Pamidronate will often have a second dose of 90 mg IV administered after 96 hours to give sufficient time for the hydration and bisphosphonate to have full action. The data on Zoledronic acid showed that up 45% of patients had normalized their serum calcium concentrations. A second dose of Zoledronic acid after 96 hours seems reasonable in some patients.

For those patients who relapse after initial treatment, or require routine IV therapy to maintain normal serum calcium concentrations it is recommended that the same drug used initially be continued.

7. Zoledronic Acid Dose Modification for Renal Function

<table>
<thead>
<tr>
<th>Baseline Creatinine Clearance (mL/Min)</th>
<th>Zoledronic Acid Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>greater than 60</td>
<td>4 mg</td>
</tr>
<tr>
<td>50–60</td>
<td>3.5 mg</td>
</tr>
<tr>
<td>40–49</td>
<td>3.3 mg</td>
</tr>
<tr>
<td>30–39</td>
<td>3 mg</td>
</tr>
</tbody>
</table>

Single doses of Zoledronic acid should not exceed 4 mg and the duration of infusion should be no less than 15 minutes.
Hypocalcaemia has a prevalence of 18% in all patients in hospital and 85% in the ITU.

If hypocalcaemia is unexpected, check for EDTA contamination (i.e. compare K level with previous results). If calcium is still low on repeat sample check magnesium, 25(OH) vitamin D and PTH levels. If ALP is high think of vitamin D deficiency. If magnesium is <0.5mmol/l think of hypomagnesaemia as a possible cause and treat the hypomagnesaemia. Ask about previous thyroid/parathyroid surgery. If the patient is vitamin D deficient (usually low calcium, raised ALP, raised PTH) treat with calcium and vitamin D. If renal failure is the cause (secondary hyperparathyroidism) treat with calcium and vitamin D. Remember oral therapy takes a couple of days to have an effect. Hypoparathyroid patients should be referred to the metabolic clinic for monitoring.

Neuromuscular irritability with hypocalcaemia requires prompt management in hospital and treatment with intravenous calcium. Asymptomatic patients with corrected serum calcium less than 1.9 mmol/l may develop serious complications and admission should be considered. One
or two 10 ml ampoules of 10% calcium gluconate should be diluted in 50–100 ml of 5% dextrose and infused slowly over 10 minutes. Electrocardiographic monitoring is recommended because dysrhythmias can occur if correction is too rapid.

Hypoparathyroid patients who are nil by mouth should receive an infusion of 80–100mls of 10% Calcium Gluconate in 1 litre of 5% dextrose or 0.9% saline over 24hrs. Plasma calcium should be monitored daily. With the aim of maintaining serum calcium at the lower end of the reference range When the patient can swallow, switch to oral calcium and vitamin D supplements. The calcium requirements usually vary from 1g to 4g per day and vitamin D requirements from 0.25 to 1 micrograms daily.

Do not treat hypocalcaemia of pancreatitis, septicaemia or rhabdomyolysis unless symptomatic. If symptomatic, give IV calcium gluconate cautiously.

If a patient is symptomatic of tetany, advise 10% calcium gluconate IV 10ml (2.25mmol) over a period of 10–15min.

In thyroidectomy patients who should have their parathyroid glands conserved do not give oral vitamin D unless it is confirmed that the patients do not have functioning parathyroid glands i.e. adjusted calcium remains low several days post operatively.
Hypomagnesaemia

Magnesium (Mg) is the second most abundant intra-cellular cation after potassium and the fourth most abundant cation of the body after calcium, potassium, and sodium.

Mg is an important co-factor for many biologic processes, most of which use ATP. Mg is an essential mineral that is important for bone mineralization, muscular relaxation, neurotransmission, and other cell functions.

Mg plays a role in the regulation of parathyroid hormone (PTH) secretion.

Hypomagnesaemia has been noted in up to 12% of hospitalized patients, and the incidence may rise above 60% in patients in ICU.

Mg deficiency produces a variety of clinical manifestations, including positive Chvostek’s and Trousseau’s sign, seizures, muscle cramps, vertigo, nystagmus, and psychiatric manifestations. In addition, cardiac arrhythmias such as supraventricular tachycardia and torsade de pointes may occur.

In addition, the plasma magnesium concentration is often not measured as part of the routine screening blood tests. The possible presence of hypomagnesaemia should be suspected in the following situations: chronic diarrhea, hypocalcaemia, refractory hypokalaemia, and ventricular arrhythmias, particularly during an ischemic event.

Symptomatic magnesium depletion is often associated with multiple biochemical abnormalities such as hypokalaemia, hypocalcaemia, and metabolic alkalosis. As a result, it is often difficult to ascribe specific clinical manifestations solely to hypomagnesaemia.

If a patient with normal renal function has low Mg (equal or < 0.4 mmol/l), check Ca and K. If K is low along with low Mg, then advice both IV K and IV Mg. If Mg is low along with low Ca, then only give IV Mg.
For Mg replacement suggests 20 mmol of Mg sulphate IV in a litre of 5% dextrose or saline 0.9% over 24 hours. The total amount of 100 mmol of Mg over 5 days may be required. In patients with renal impairment reduce the dose to 10 mmol of Mg sulphate over 24 hours. If calcium is low due to hypomagnesaemia, continue to replace Mg until the plasma calcium is within normal range.

For oral supplement Mg aspartate is preferred. Each 6.5g sachet of Mg aspartate® contains magnesium-L-aspartate 10 mmol of magnesium.

Both Mg and K can be replaced in the same bag, 40 mmol of K and 5 mmol of Mg in 500 mls normal saline 6hrly and this should be continued over a period of 24hrs. This will replace 20 mmol of Mg and 160 mmol of K in 24hrs.

Hypophosphataemia

As a rule of thumb: One must keep in mind that serum phosphorus concentration might not be a reliable indicator of total body phosphorus, because most phosphorus is stored intra-cellularly.

The first step in management of the hypophosphataemic patient is therefore to determine whether the low serum phosphorus concentration is the result of a true total body phosphorus deficiency or a reflection of an intracellular shift of phosphorus (as in respiratory alkalosis).

Hypophosphataemia in hospitalized patients is often associated with refeeding, chronic alcohol use, antacid therapy, respiratory alkalosis, correction of chronic respiratory acidosis and diabetic ketoacidosis.

A combination of history taking, physical examination and laboratory tests including serum calcium concentration, arterial blood gases, urinary phosphorus and creatinine concentrations to calculate the renal phosphate threshold can identify the cause of hypophosphataemia in most cases.
Nomogram for derivation of normalized renal threshold phosphate concentration. Reproduced with permission from reference[94] © (1975) Elsevier. CPO4, phosphate clearance; Ccreat, creatinine clearance; GFR, glomerular filtration rate; TmPO4, renal phosphate threshold; TRP, fractional tubular reabsorption of phosphate.

Hypophosphataemia <0.3 mmol/l has significant clinical consequences in humans, at such level, hypophosphataemia can cause respiratory failure, delay weaning from the ventilator, and increase the duration of intensive care and hospitalization. Myocardial contractility is impaired when serum phosphorus concentration falls below 0.3 mmol/l.

It is generally recommended that patients with severe hypophosphataemia 0.3 mmol/l are treated to avoid potential detrimental consequences.

If the phosphate level is below 0.30mmol/l on two consecutive occasions or in alcoholics on one occasion, then replace phosphate IV. Along with low phosphate, check K and Ca. If Ca and K are within the normal range, with normal renal function, advice 10 mmol of potassium phosphate (which contains 10 mmol of phosphate and 10 mmol of potassium) over 12 hours. This can be repeated every 12 hours with monitoring of phosphate, Ca and Potassium.
Hypophosphataemia and hypomagnesaemia may co-exist; check Mg level in patients with low phosphate, particularly if there is a history of GI losses or alcohol abuse. Never give magnesium and phosphate at the same time. If the patient is in renal failure or suffering from pancreatitis do not give phosphate unless the plasma phosphate is persistently low, and even then treat cautiously i.e. advise 10 mmol of phosphate over 24 hours.

**XANTHOCHROMIA**

Analysis for Bilirubin in CSF using the UVIKIN XL Spectrophotometer

**Introduction**

Subarachnoid haemorrhage (SAH) is spontaneous arterial bleeding into the subarachnoid space, usually from a cerebral aneurysm. Patients who have bled and in whom diagnosis is initially missed, often present with a further bleed and in poorer condition – and with a worse outcome – than those in whom the correct diagnosis is promptly made. Ref 1.

Computed tomography (CT) scanning is the investigation of first choice and is positive in up to 98% of patients with SAH presenting within 12 hours, but drops to only 50% presenting within one week.

Xanthochromia, by definition, is the yellow discolouration indicating the presence of Bilirubin in the Cerebrospinal Fluid (CSF). Its presence is used by some to differentiate in vivo haemorrhage from a traumatic lumbar puncture (LP).

In contrast to CT, CSF xanthochromia is present in all patients up to 2 weeks post ictus and at 3 weeks is still present in 70% patients.

The minimum period for CSF bilirubin detection is 12 hours post ictus but is the test of choice for late presentation.

The test is performed to try to identify those patients who have had a SAH but in whom the CT scan is negative. The spectrophotometric scan detects bilirubin in CSF and this finding is consistent with a bleed into the CSF. The
test for Bilirubin, for the 2% without a positive CT scan, can confirm diagnosis or rule out unnecessary invasive surgery.

Following haemorrhage into the CSF, red blood cells undergo lysis and phagocytosis. The liberated oxyhaemoglobin is converted in vivo in a time – dependent manner into bilirubin and sometimes methaemoglobin. Of these 3 pigments only bilirubin arises solely from in vivo conversion. However CSF Bilirubin will also be increased when CSF total protein or serum Bilirubin is increased.

Bilirubin may be detected by spectrophotometry – this is far more reliable than visual inspection (please see national guidelines).

The sample is scanned across between 350 and 600 nm. Oxyhaemoglobin absorbance 410–418 nm.
Bilirubin 450–460 nm.
Methaemoglobin 403–410 (broader peak than oxyhaemoglobin).

The Labpower Software gives an interpretive comment as well as the absolute value.

Sample requirements – revised National Guidelines May 2008

a. During the day, The Biochemistry department should be informed that the sample is coming on Extension 4822 or 4801. Out of hours the on-call Biomedical Scientist in Chemical Pathology MUST be informed that the sample is coming.

b. CSF samples MUST NOT be sent to the laboratory via the pneumatic tube system

c. Protect the samples from light (e.g. use a brown paper envelope or bag) and ensure they are transported RAPIDLY to the laboratory. Samples need to be centrifuged within ONE hour.

d. Samples need to be of sufficient volume to enable the analysis, the minimum volume required is 0.5ml.

e. The specimen designated for spectrophotometry should be the LEAST BLOOD-STAINED fraction – usually the last and ideally the 4th sample.
f. A simultaneous BLOOD SAMPLE should be submitted for Total Protein and Bilirubin.

g. The request form should include timing of the sample relative to the possible haemorrhage. This should be NO LESS THAN 12 HOURS.

h. Results will be telephoned by the Biomedical Scientist carrying out the analysis.

i. Possible interpretative comments are as follows;

1) CSF bilirubin and oxyhaemoglobin not increased. **No evidence to support SAH.**

2) CSF bilirubin not increased, small amount of oxyhaemoglobin. **No evidence to support SAH.**

3) Increased CSF bilirubin. **Consistent with SAH.** (Unusual pattern within the first week of an event)

4) Increased CSF bilirubin but probably accounted by the increase iserum bilirubin. **Not supportive of SAH.**

5) Oxyhaemoglobin is present in sufficient concentration to impair the ability to detect bilirubin. **SAH not excluded.**

6) No significant CSF bilirubin or oxyhaemoglobin present. At this time post the onset of symptoms, **SAH cannot be excluded** by these negative findings.

7) Increased CSF bilirubin with oxyhaemoglobin present. This finding **may be consistent** with: SAH an increase bilirubin accompanying the increased CSF protein; or other source of CSF blood. Interpret results with caution in relation to SAH especially if within the first week of event.

For further help, contact Consultant Chemical Pathologist (Dr Al-Bahrani).

**Acute adrenal insufficiency**

The aim of initial management in adrenal crisis is to treat hypotension, i.e., to correct the blood volume deficit, and to reverse the electrolyte abnormalities and cortisol deficiency. Large volumes of normal saline solution (2–4L) should be given intravenously. The glucocorticoid
deficiency should be treated by immediate intravenous administration of dexamethasone sodium phosphate or hydrocortisone sodium succinate. Dexamethasone is preferred because it has a long-duration of action and does not interfere with the measurements of serum steroids during subsequent ACTH stimulation tests. Once the initial treatment is offered, the cause of the adrenal crisis should be sought and treated. Glucocorticoid should be given parenterally in acute emergency and the dose tapered down over 3–4 days and converted to an oral maintenance dose. The initial dose of dexamethasone is 4 mg IV (equivalent to 100mg Hydrocortisone) given as a start dose and further doses will be tailored according to the clinical condition of the patient and timing of the Short Synacthen Test (SST), bearing in mind, Dexamethasone is longer acting steroid compared to Hydrocortisone. Once the SST carried out the patient should be switched to hydrocortisone.

Table 1. Glucocorticoid comparison

<table>
<thead>
<tr>
<th>AGENT</th>
<th>EQUIVALENT DOSE (MG)</th>
<th>ROUTE OF ADMINISTRATION</th>
<th>RELATIVE ANTI-INFLAMMATORY POTENCY</th>
<th>RELATIVE MINERALOCORTICOID POTENCY</th>
<th>BIOLOGIC HALF-LIFE (HOURS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dexamethasone</td>
<td>0.75</td>
<td>IM, IV, PO</td>
<td>25–30</td>
<td>0</td>
<td>36–54</td>
</tr>
<tr>
<td>Hydrocortisone</td>
<td>20</td>
<td>IM, IV, PO</td>
<td>1</td>
<td>2</td>
<td>8–12</td>
</tr>
</tbody>
</table>
DEPARTMENT OF HAEMATOLOGY & BLOOD TRANSFUSION

Telephone Enquires
Haematology Urgent Requests and Results Ext 4768
Haematology Laboratory – For advice (not results) Ext 4814
Blood Transfusion – Urgent requests and enquiries Ext 4800 / 4802
Dr Rajeev Joshi, Consultant Haematologist Ext 4767 / 4806
Dr Beata Czubakowska, Consultant Haematologist Ext 4767 / 5304
Mr A Robson, Technical Head of Department Ext 4813
Mr A Thompson, Transfusion Practitioner Ext 4818 / Bleep 095
ON CALL BIOMEDICAL SCIENTIST BLEEP 168

HAEMATOLOGY INVESTIGATIONS

All routine specimens for analysis, Monday to Friday, should arrive in the department not later than 16.00 hours. Only urgent investigations will be undertaken out of hours. See out of hours service.

If required urgently, the requesting doctor must contact (during the routine day) Pathology Reception or (out of hours) the duty Biomedical scientist and label the request, URGENT. The sample will then be analysed as soon as possible.

Full Blood Count (FBC) Purple top (EDTA) tube required.

Coagulation Tests (INR, APTR, D-Dimer) Blue top (citrate) tube. It is essential that this tube is fully filled and not haemolysed, otherwise the sample will be unsuitable for analysis.

Patients on warfarin please tick INR ON WARFARIN box on request form.

It is important to indicate on request forms if a patient is on WARFARIN or HEPARIN.

Haemostasis investigations of a more extensive nature, such as Factor assays, etc can be undertaken after discussion with a Consultant Haematologist.

ESR Black top (citrate) tube. It is essential that this tube is correctly filled, using the evacuated tube system of collection, otherwise the sample will be unsuitable for analysis.
Bone Marrow Examination Requests for this service should be referred to the Consultant Haematologist, preferably at least 24 hours in advance.

Autoimmunology Requests can only be processed if relevant clinical data is given.

BLOOD TRANSFUSION

For full details refer to the Trust’s Policy For The Transfusion Of Blood and Blood Products.

Blood Samples – Group and Antibody Screen, Save Sample and Crossmatching Pink top (Blood Transfusion 6 ml) tube.

N.B. Samples must be labelled according to the Trusts’ Policy and National Guidelines.

Samples must be collected and labelled by the same person.

Clinical information regarding the diagnosis together with the reason for the transfusion request MUST be included on the request form.

Handwriting must be clear and addressograph labels MUST NOT be used.

The following points of identification must be on the sample.

- SURNAME
- FORENAME
- DATE OF BIRTH
- IW NUMBER [E (emergency) number or U (unknown) number may be issued and used if appropriate].
- DATE OF COLLECTION
- SIGNATURE of the person collecting/labelling the sample.

Open questioning of the patient must be used, where possible, to verify these details.

Samples that do not conform to the above Trust’s Policy cannot be used and will be discarded.

Samples that are haemolysed and contain less than 4 ml of blood are unsuitable for analysis and saving sample.
Group and Save Requests
Use red and white multi-request form. The same details that appear on the sample must be on the accompanying request form.
48 hours notice must be given for all routine operations. (See MSBOS)
A group and save can be used for 7 days unless the patient has been transfused within the past 2 – 7 days. A new sample will be required as per the following guidelines.

<table>
<thead>
<tr>
<th>Patient is transfused within:</th>
<th>Sample to be collected:</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 – 14 days</td>
<td>24 hours before required</td>
</tr>
<tr>
<td>14 – 28 days</td>
<td>48 hours before required</td>
</tr>
<tr>
<td>28 days – 3 months</td>
<td>1 week before required</td>
</tr>
</tbody>
</table>

Cross-match Requests
Use the specific cross-match request form ensuring all relevant details are given. OR
If a Group and Save sample is reserved then a cross-match may be requested if the doctor concerned directly contacts Blood Bank giving all the relevant information.
48 hours notice must be given for all routine operations and routine anaemia “top-ups”. Blood Bank must be contacted directly for all other requests.

Please notify Blood Bank if an operation is cancelled or postponed or if blood needs to be reserved for a longer period.

EMERGENCIES
It is essential that you directly contact Blood Bank to give warning and information of the situation. Providing the correct requesting procedure is followed and there are no antibodies present blood can usually be cross-matched within 45 minutes of receipt of the sample in the laboratory. If there is a saved blood sample already grouped and antibody screened negative then cross-match blood can be available within 15 minutes.

Emergency O Negative Blood should only be used in an absolute emergency. If taken from the issue fridge, inform Blood Bank or the duty BMS as soon as possible, so that the units can be replaced.
**FFP and Platelets** – Request directly from Blood Bank by telephone. A group and screen request will only be required if the patient’s group is unknown. Refer to the guidelines for instructions on use.

**Transfusion Reactions**
- Suspected haemolytic transfusion – **STOP** transfusion immediately.
- Less serious reactions stop or slow transfusion.
- Refer to the form/guidelines (also in the Trust’s Policy) **Adverse Transfusion Reaction** for full information on action to be taken.
- Inform Blood Bank and Transfusion Nurse Practitioner.

*See Pathology Handbook for MSBOS*

**OUT OF HOURS SERVICE**

After 17.30 on weekdays and at weekends or Bank Holidays, an emergency service is in operation. **It is essential that this service is restricted to urgent investigations only.** This is a minimally staffed service and if non-urgent work is submitted, then the service will be unable to respond to genuine emergencies.

**Cross-match and Blood Product Issues**
The duty BMS must be contacted for all requests.

**FBC, INR, APTR, Group and Screen**
Urgent samples may be sent to the pathology sample drop-off point at set collection times. There is no need to contact the duty BMS for these investigations.

Weekdays: 19.00, 21.00 and 23.00 hours.

Saturdays, Sundays and Bank Holidays: 9.00, 11.00, 13.00, 15.00, 17.00, 19.00, 21.00 and 23.00 hours.

If an investigation cannot wait for these times then the duty BMS must be contacted.
CELLULAR PATHOLOGY

HISTOLOGY AND CYTOLOGY

Use separate forms for histology and non-gynae cytology from the same patient.

ENQUIRIES

<table>
<thead>
<tr>
<th>Results</th>
<th>Histology Office</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical enquiries</td>
<td>Histology</td>
<td>Miss H Tasker</td>
</tr>
<tr>
<td>Clinical enquiries</td>
<td></td>
<td>Dr A Kulla</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dr K Jamil</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dr H Ali</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dr Mounter</td>
</tr>
</tbody>
</table>

HISTOLOGY

Routine specimens

Place in 10% formalin within a specimen container depending on the size of the specimen. The tissue/fixative ratio should be 1:10 where possible. Label with patient details. **Do not refrigerate.** Complete histology request form fully and return with specimen to laboratory.

**NO HISTOLOGY SPECIMENS ARE TO BE PLACED IN THE VACUUM TUBE SYSTEM.**

Urgent Specimens

Requests for urgent results should be clearly identified on the request form or by telephoning the laboratory. Note that the tissue processing takes 24–48 hours from receipt of specimen.

Frozen sections

Please notify the laboratory in advance whenever possible. **The specimen must not be placed in formalin. Frozen sections cannot be performed on any case where there is a risk or suspicion of tuberculosis, hepatitis or HIV.** A bleep number or theatre extension number should be written onto the request card, in order that a report can be phoned through as soon as a diagnosis is known.
Muscle biopsies
Refer to the protocol on the ward or in the laboratory. The laboratory must be given at least 24 hours notice before the biopsy is taken in order that transport can be arranged.

Skin biopsies for Immunofluorescence
Two skin biopsies are needed, one placed in formalin the other in Michel’s fluid (obtained from the lab). One punch biopsy may be divided transversely for this. Specimens are referred by Cellular Pathology to the Histopathology Department at QA Hospital, Portsmouth where immunofluorescence is performed. A minimum of 14 days should be allowed for a report to be received back in the Histology office.

NON GYNAE CYTOLOGY

Routine samples
Place fresh samples in an appropriately sized sterile dry container and fasten the lid securely. Complete the NON GYNAE CYTOLOGY request form and return to the laboratory as soon as possible. If there is a delay in delivering the specimens please refrigerate samples.

CSF samples can not be sent via the vacuum tube system.

Urgent samples
Please indicate on the request form if a report is required urgently.

Sentinel Lymph nodes
These samples are reported immediately and are transported from theatre via the theatre staff and handed directly to laboratory staff. Telephone laboratory prior to delivery.
MICROBIOLOGY DEPARTMENT

(SEE PATHOLOGY USER MANUAL FOR MORE INFORMATION ABOUT DIAGNOSTIC SERVICE)

CONTACT NUMBERS:

<table>
<thead>
<tr>
<th>Number</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>4815</td>
<td>Microbiology laboratory</td>
</tr>
<tr>
<td>4823</td>
<td>Dr Suzanne Chapman - Cons. Medical Microbiologist/Infection Control Doctor</td>
</tr>
<tr>
<td>4186</td>
<td>Dr Sandya Themimimulle - Consultant Microbiologist</td>
</tr>
<tr>
<td>4820</td>
<td>Ms Helen Azzopardi - Technical Head Microbiology</td>
</tr>
<tr>
<td>4807</td>
<td>Ms Tracy Fuller - Secretary</td>
</tr>
</tbody>
</table>

The Microbiology department offers the following services:

- Bacteriology
- Virology (via specialist referral centres)
- Mycology
- Parasitology
- Andrology
- Serology

OPENING HOURS

- Opening hours **08:55 to 17:25 Monday to Friday** (except bank holidays)
- On-call service at all other times (contact duty Biomedical Scientist (BMS) through hospital switchboard)

Please refer to the Pathology User Handbook (on the NHS IOW Trust intranet) for:

- Tests provided
- Turnaround times
- Reference ranges (if appropriate)
- Sample requirements (including container)
- Urgent tests accepted on-call

For best use of the Microbiology diagnostic service:

DO

- Ensure good quality specimens are taken for culture i.e. deep swabs or pus/tissue are better than superficial wound swabs; sputum not saliva.
• Be sure to put relevant clinical information on the request form. This is read! It helps with interpretation of results and antibiotic sensitivity reporting; better information should also help provide you with a more useful report.

• Seek advice if needed. Liaise with Consultant Microbiologist if you have a patient who is seriously ill with suspected infection or with a complex infection. Ask if you need antibiotic advice or guidance on most appropriate diagnostic investigations.

• Give the Microbiology laboratory advance warning of specimens such as CSF, one-off or unusual requests, so sample can be expected and fast-tracked (or referred if necessary). Telephone ext. 4815 when the sample has been taken and inform a BMS that the sample is on its way (it will then be logged and expected).

DON’T

• Ask for culture if the results won’t help patient management. Avoid inappropriate requests. For example, avoid requesting swabs from sites such as venous ulcers (invariably colonised with bacteria) unless there are systemic signs of infection, cellulitis present or rapidly deteriorating ulcer.

• Don’t request urine culture from elderly or catheterised patients with indwelling urinary catheters solely because they have ‘cloudy urine’ or ‘abnormal dipstix’ (this is common and is not an indication for culture in catheterised patients); base the decision for culture request on clinical judgment as well.

• Don’t delay in sending samples to the laboratory. They need to be there as soon as possible after collection. Be aware that samples received in Pathology Reception after 1600hrs may not get put up in Microbiology until the next working day. To avoid delay you need to remember the afternoon deadline.
Don’t forget that important one-off specimens (e.g. CSFs, joint aspirates, peritoneal pus) should be sent straight to the laboratory and this includes out of hours (notify the on-call biomedical scientist BMS). However non-urgent specimens collected out of hours may be refrigerated overnight and processed the next working day.

REQUEST FORMS

Please use BLUE microbiology request forms for all requests to Microbiology. This includes bloods for antibiotic assay and diagnostic serology.

Please ensure the request form is correctly filled with the patient’s details (including hospital number) as per User Manual instructions.

SPECIMEN TRANSPORT TO LAB

Samples should be ‘podded’ to Pathology via the Pneumatic air tube system (fastened securely and put in white plastic inner within ‘pod’) or can be delivered to Pathology by porters using special transport containers. CSFs must NOT be sent via the Pneumatic system – you will need to call a porter.

RESULTS

Use the lab computer system! Results are available on the ‘TelePath’ system once they have been authorised. You will have received a username and password following your induction. If you need any help with Pathology Computer access please contact Frances Smith (Pathology Applications Support Officer) on ext. 4812 or via switchboard.

For Microbiology results, please be aware that the result may cover more than 1 screen page – you may have to scroll down to see all the result and any interpretive comment (to scroll down, press the ‘control’ and ‘+’ keys simultaneously).
CLINICAL MICROBIOLOGIST ADVICE
A Consultant Medical Microbiologist (Dr Suzanne Chapman or Dr Sandya Themimulle) is available for clinical advice during working hours or on-call (available via switchboard).

You must also contact the duty Microbiologist without delay if a patient is admitted to hospital with a suspected serious communicable disease such as meningococcal disease or ‘open’ pulmonary TB. The Microbiologist can help advise on management and rapid diagnosis. The Health Protection Unit may also need to be notified (see Isolation Policy and ‘A–Z’ of infections).
PHARMACY SERVICES

The Pharmacy Department at St Mary’s Hospital is located on the ground floor to the left after entering through the main hospital entrance.

OPENING TIMES
08.30 hrs to 17.00 hrs Monday to Friday
09.00 hrs to 17.00 hrs Saturday and Sunday
09.00 hrs to 17.00 hrs Bank Holidays
Christmas Day - Closed

Outside of these times, advice can be obtained from the on-call pharmacist who can be contacted via switchboard. If medication is required for in patient use, the pharmacist will advise from where this may be obtained within the hospital. There is an Emergency Drug Cupboard, which is located beneath the main staircase next to pharmacy and can only be accessed by the bed manager on duty.

USEFUL TELEPHONE NUMBERS
Dispensary ext 4617
Aseptic Services ext 4181
Medicines Information ext 4622
Clinical Pharmacists ext 4617
Antimicrobial Pharmacist ext 5473
Chief Pharmacist – Gill Honeywell ext 4616

SERVICES AVAILABLE
In addition to the more visible services of dispensing and supply, aseptic manufacture, and OTC sales, support to Junior Medical Staff is offered through prescription monitoring and medicine information services. Pharmacy Technicians and Pharmacists are readily available out on the wards (Mondays – Fridays) to help and advise you if required. Pharmacists are contactable by bleep. (See later).

DRUG HISTORIES AND PATIENTS OWN DRUGS
It is vital that an accurate and complete drug history is recorded on admission. Patients should now bring their own medication into hospital with them and this should be
checked against the drug history as per the GP letter, GP encounter report form, repeat prescription request form, if these are available. Medicine reconciliation should be attained within 24 hours of patient admission.

The pharmacy team on the Medical Admissions and Assessment Unit (MAAU) check the patient’s drug history as far as possible and highlight any problems, using the pharmacy intervention notes on the electronic prescribing medicines administration (EPMA) system. The pharmacy team liaise with nursing and medical staff directly as needed. Any medicines brought in with the patient will be assessed and if suitable, may be used during the patient’s admission. Further supplies of existing medication and supply of any newly prescribed items will be made as appropriate and these should all be transferred with the patient when ward moves occur, using the green bags.

The ward pharmacist makes clinical checks on the in-patient medication list and verify the medicine, create a pharmacy handover note and document appropriate information.

Pharmacists working in medicine are ward based and where possible will attend the regular Consultant ward rounds. There is a pharmacist based in MAAU to enable any problems to be identified and rectified at an early stage.

**PHARMACIST TRANSCRIBING SERVICE**

Pharmacists are now able to take drug histories and transcribe them to the electronic drug chart on the behalf of the prescriber.

The pharmacist works with the prescriber and the patient’s drug history is transcribed to the electronic chart during the patient clerking in process.

The prescribers must then clinically review the electronic chart and make any necessary changes.

This service is most common on MAAU and the Emergency Department (ED), where it is available between 9am and 7pm, Monday to Friday and 9am – 5pm on Saturday to Sunday and may be available in other areas,

Please contact ward pharmacist (or call 3071) if you have a new patient requiring this service.
The pharmacist's in permanent roles are...

<table>
<thead>
<tr>
<th>Pharmacist</th>
<th>Role</th>
<th>Bleep</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael Hislop</td>
<td>Admissions and Discharge Lead Pharmacist</td>
<td>Bleep 137</td>
</tr>
<tr>
<td>Nicola Wright</td>
<td>Emergency Department and Medical Admissions and Assessment Unit Lead Pharmacist.</td>
<td>Bleep 157</td>
</tr>
<tr>
<td>Debbie Cumming</td>
<td>Antimicrobial Pharmacist</td>
<td>Ext 5473</td>
</tr>
<tr>
<td>Kevbe Ziregbe</td>
<td>Specialist Pharmacist Surgical &amp; Orthopaedic</td>
<td>Bleep 129</td>
</tr>
<tr>
<td>Liz Harrison</td>
<td>Lead Pharmacist for Technical Services and Oncology</td>
<td>Bleep 4181</td>
</tr>
<tr>
<td>Tracey Green</td>
<td>Team Leader for Mental Health</td>
<td>Ext 5472 or via switchboard</td>
</tr>
<tr>
<td>Fran Johnson</td>
<td>Specialist Pharmacist for Mental Health</td>
<td>Ext 2455</td>
</tr>
<tr>
<td>Margaret Chan</td>
<td>Medicines Education and Development</td>
<td>Bleep 154</td>
</tr>
<tr>
<td>Fiona Kidd</td>
<td>Medicines Information Lead Pharmacist</td>
<td>Ext 4622</td>
</tr>
<tr>
<td>Sandra Clawson</td>
<td>Palliative Care Lead Pharmacist</td>
<td>Via pharmacy department/e-mail</td>
</tr>
<tr>
<td>Zoe Wells</td>
<td>Lead Pharmacist Medicines use and Safety</td>
<td>Ext 4619</td>
</tr>
</tbody>
</table>

We also have a rotational programme of junior pharmacists who are assigned to individual wards. Please find out who your ward pharmacist is and get to know them and their bleep number! Use them as the first point of call when you have queries about medicines.
PREScribing

A prescribed medicine is the most frequent treatment provided for patients in the NHS. Medicines must be prescribed, dispensed and administered safely and effectively. The right medicine must be given to the right patient at the right time by the right route at the right dose – The Five Rights (see below).

The Isle of Wight NHS Trust requires all personnel involved in the process of prescribing, dispensing, administration and safe storage of medicines to have a working knowledge of The Medicines Policy.

This will link to the new Medicines Policy, http://intranet.iow.nhs.uk/Medicines-Policy-SOPs
WHO MAY PRESCRIBE

The following groups may independently prescribe medicines for the treatment of patients under the care of the Trust:

- Doctors with full registration with the General Medical Council;
- Dentists with full registration with the General Dental Council;
- Pre-registration Foundation Year 1 doctors;
- Independent Nurse Prescribers registered with the Nursing and Midwifery Council;
- Independent Pharmacist Prescribers registered with the General Pharmaceutical Council.

The following groups may supplementary prescribe medicines for the treatment of patients within an agreed care plan under the care of the Trust:

- Supplementary Nurse Prescribers registered with the Nursing and Midwifery Council;
- Supplementary Pharmacist Prescribers registered with the General Pharmaceutical Council;
- Optometrists, physiotherapists, radiographers and chiropodists/podiatrists registered with the HCPC within the specified restrictions.

WHAT CAN BE PRESCRIBED?

Medical Doctors (Full Registration)

Any medicine licensed within the UK, including those within the schedules for the Misuse of Drugs Acts (as amended), listed within the Island electronic formulary for new prescribing. New non-formulary prescribing must be undertaken within the processes outlined in the procedure for formulary management http://www.iow.nhs.uk/Pharmacy/eformulary.htm

Any medicine licensed within the UK, including those within the schedules for the Misuse of Drugs Acts (as amended), when continuing patient care.

Where a product is a “Borderline Substance” the circumstances specified by the Advisory Committee on borderline substances must be complied with.
Unlicensed and “Off licensed” medicines via the Unlicensed medicines procedure Clinical Trials via the Clinical Trials procedure.

**Pre-registration Doctors**

Any medicine licensed with the UK listed within the Island electronic formulary for new prescribing.

Any medicine licensed with the UK when continuing patient care.

Drugs listed within the Schedule 2, 3, 4 or 5 of the Misuse of Drugs Act for in-patient or discharge use.

**WHAT CANNOT BE PRESCRIBED?**

**Pre-registration House Officers (foundation year 1)**

Any medicine in an out-patient environment.

Unlicensed or Borderline Substances unless under the specific direction of a consultant or senior registrar.

**Cytotoxic medicines** may only be prescribed by a Specialist Registrar, Consultant or registered prescriber working within the oncology/urology team. Prescribing of oral chemotherapy drugs for cancer must adhere to the current Central South Coast Cancer Network Policy for the management of oral chemotherapy for cancer patients the Trust fully adopts this policy.

**WHO CAN TRUST EMPLOYEES PRESCRIBE FOR**

Trust employees must only prescribe for patients under the care of the Trust.

Only Occupational Health Staff and Infection Control Staff with prescribing rights may prescribe for a member of staff and this is restricted to where the treatment is resulting from the working environment (e.g. vaccinations, scabies, MRSA & HIV treatments). If a member of staff requires a treatment other than from the conditions described above they must be treated as a patient and admitted via the Emergency Department, Beacon Health Centre or booked in via their own GP.
WHICH TRUST EMPLOYEES MUST NOT PRESCRIBE FOR

Other members of staff unless they are also a patient or described in the previous section.

Friends or family unless they are also a patient themselves.

All health professionals are under an obligation to provide care only within their area of specialist competence. They should have available sufficient information about the patient’s history and condition to be assured that any treatment they may wish to provide is appropriate. They should also be able to act objectively, avoiding conflicts of interest. When self-prescribing, or prescribing for family, friends or colleagues, there is a risk that one or more of these requirements may not be met.

With regard to the specific issue of doctors prescribing for family members, the General Medical Council, in its most recent advice on the subject (September 2008) states that “doctors should avoid treating themselves or those close to you”. This Trust therefore, does not maintain prescribing policies which permit, as routine, an activity which the medical practitioners regulatory body considers to be bad practice.

Private prescriptions for the above groups may be accepted within the above boundaries, full responsibility for care rests with the prescriber.

St Mary’s Hospital changed to the JAC Electronic Prescribing and Medicines Administration system [EPMA] in May 2012.

All wards apart from Intensive Care, Children’s Ward and Maternity ward, are using this system.


http://intranet.iow.nhs.uk/Medicines-Policy-SOPs
Currently, specific paper charts are used to prescribe warfarin, insulins [cross reference to paper prescription on EPMA], intravenous fluids, certain infusions or total parenteral nutrition. These will be phased into the electronic prescribing system at a later date, during JAC system upgrades.

All new prescribers require a password and basic training and are required to read, agree to and sign a JAC security access form before they can access the electronic prescribing system.

Training will be given to new junior doctors during the induction programme.

Please contact the Pharmacy Systems helpdesk on ext 5470 if you have missed this session or require training.

Further information and EPMA training manuals are available on the intranet web links, listed under JAC Medicines Management web page.
PHARMACY INTERVENTIONS

Please acknowledge the “INTERVENTION NOTE”, – see “Action for Doctors” in the electronic “notes” section, in JAC. These notes bring clinical / medical problems to your attention which do not need your immediate action. We will contact you directly as appropriate. Each intervention is given a risk score. It would be helpful to reply to the intervention note by adding your confirmation, date and initials.

We carry out continuous intervention monitoring, using the information we obtain for training.

In the event of a serious breakdown in the JAC electronic prescribing system, paper drug charts will be initiated.

• Intravenous therapy
Intravenous infusions should be prescribed on the intravenous infusion prescription chart. Other intravenous medicines should be prescribed using EPMA. Specify the name of the medicine added, the dose, the rate of administration (unless a bolus) and the date of administration. The volume and type of diluent must also be specified if the medicine is to be administered by infusion.

If a medicine is to be given via a syringe pump and the dose varied according to response, the amount of medicine, the volume of fluid in the syringe and the dose range to be administered should be written on the prescription chart. The volume administered should be recorded hourly on the fluid balance chart by a registered nurse/midwife. If a patient is receiving medicines via a pump/syringe driver when they are admitted these must be prescribed immediately by hospital medical staff.

IV treatment should be converted to oral route at the earliest opportunity, if this is appropriate.

• Variable rate intravenous insulin infusion should be prescribed on the appropriate paper chart.
As stated earlier, intravenous therapy will gradually be phased into the JAC Electronic Prescribing and Medicines Administration system, with system upgrades.

Points to remember when using the EPMA

Select carefully from the drop down menus:

- Correct DRUG, STRENGTH and FORMULATION
- Correct INDICATION for antibiotics and REVIEW dates
- Correct FREQUENCY of administration
- Correct TIME of administration

PRESCRIBING DISCHARGE MEDICINES (TTO) ON EPMA

Discharge medicines should be prescribed, preferably 24 hours before the patient is due to go home. For all wards on EPMA, discharge medication is indicated by selection. Please refer to the doctors guide for writing TTOs on the JAC Medicines Management web page on the intranet. For paediatric and maternity patients, the triplicate TTA form should be completed.

The ward pharmacy team will assemble the TTO on the ward where possible. The electronic discharge summary (or its equivalent) for medical patients MUST be completed and given to the patient before the patient can be discharged. During times of change or pressure on the hospital, operational changes to wards and processes are in force and may affect the patient journey. Please refer to the ward for the current procedure.

If the medicine prescribed, or its dose or frequency of administration, differs on the TTO list from the active medicine list, and the differences are intentional, it is helpful if the prescriber makes a note to Pharmacy, or communicates the intended changes to the ward pharmacy team. This saves Pharmacy having to contact the prescriber to clarify his/her intentions.

Hypnotics started in hospital should not be routinely prescribed on discharge.
If a patient is known to have a sufficient quantity of a particular discharge medicine at home the Pharmacy may not supply the quantity prescribed on the ‘discharge prescription’, but will annotate the discharge medicine list appropriately so as to alert the patient’s general practitioner that the patient should continue to take the medicine.

PATIENT INFORMATION

Compliance with taking medication is improved if patients understand their medication. It is important to discuss patients treatment with them explaining what it is for and the more common side-effects. It may also be helpful to discuss the treatment with carers, with the patients' permission.

ISLAND FORMULARY

- Island Formulary: The Hospital Formulary contains a limited list of approved medicines which are available from the hospital Pharmacy. The formulary seeks to promote the use of the best medicines in each class as determined by the Drugs Advisory Committee, a representative body made up of local clinicians, pharmacists, nurses and finance managers across the health economy. The formulary is mainly applicable to the adult setting, since many medicines used in the paediatric setting are used in an “off label” fashion.
- This situation does not however, exclude the paediatric environment from conforming to the general principles surrounding the system for the managed entry of new drugs onto the island formulary.
- Entry into the formulary will primarily depend on considerations of safety and efficacy in comparison with established treatments.
- Value for money will also be taken into account, particularly when safety and efficacy differences are marginal, and the impact on GP prescribing is significant. Funding considerations will also be an issue, particularly where new drugs have significant revenue consequences (e.g. >£30,000 Islandwide total).
To access the formulary go onto the ‘intranet’ and click on “eformulary” from the featured links or type “eformulary” in the search box – see first page of the document.

The medicines are listed in BNF category order and a traffic light system is used to reflect the responsibility for prescribing the medicine – see first page of the document.

The aims of the Formulary are:

- To provide a list of medicines approved for use in the hospital – allows a new prescriber to identify which medicines are available for prescribing within the Trust.
- To avoid cost and confusion caused by stocking an unnecessarily wide range of medicines – allows reduced stock holding in Pharmacy resulting in improved negotiating position and reduced space requirements both in Pharmacy and on wards.
- To promote safe, effective, appropriate and economic prescribing – taking into consideration, local, regional and national clinical and prescribing guidelines.
- New medicine introductions managed, including identifying new money to pay for them.
- Prescribers and pharmacists more familiar with fewer products handle them better.

PATIENT ADMITTED ON A NON-FORMULARY MEDICINE

If a patient is admitted to hospital on long-standing medicine therapy for a condition unrelated to their admission (and the medicine is not on the formulary), this treatment should not be changed, unless the time involved in obtaining supplies would compromise the patient’s care. If the treatment is for the condition for which the patient has been admitted, review is reasonable.
NEW PRESCRIPTION FOR A NON-FORMULARY MEDICINE

Non-formulary items will not be ordered except, after discussion, on receipt of a prescription signed by a consultant. Pharmacists will ascertain the reason for non-formulary prescribing from the clinical notes or the prescriber. If the pharmacist is satisfied that the non-formulary medicine is the best choice for that patient, the drug will be supplied after confirmation by the Executive Medical Director. If the pharmacist believes that a formulary medicine is an acceptable or superior alternative, they will suggest this to the prescriber and seek to persuade them to change.

If a consultant team prescribes a non-formulary medicine on more than three occasions in any six month period, they will be asked to put a new medicine request to the DAC.

PRESCRIBING CONTROLLED DRUGS

Controlled drug prescriptions must, by law, include the following:

- The patient’s name and address.
- For hospital patients the IW number must be stated.
- State the drug, form, strength and dose to be supplied.

When writing a controlled drug prescription for an outpatient or for a patient being discharged it is also necessary to state the total quantity to be supplied both in WORDS and FIGURES.

PRESCRIBING NHS ‘BLACKLISTED’ MEDICINES

[not available for NHS prescription]

In certain circumstances some NHS ‘blacklisted’ medicines (as specified in the British National Formulary) have been exempted in the Trust and are available for both in and outpatients. The hospital Pharmacy will supply sufficient to last until the next appointment.

If an NHS ‘blacklisted’ medicine, which has not been exempted in the Trust, is required for a patient and there
is no suitable substitute, the Pharmacy will attempt to obtain a supply.

**PRESCRIBING BEFORE AND AFTER SURGERY:** see policy

Implementation and cancellation of the nil by mouth instruction is a joint responsibility of the anaesthetist and the FY1/FY2 caring for the patient and must be undertaken by one or the other.

All medication must be reviewed by the anaesthetist/ surgical team caring for the patient and essential medication determined. The prescription chart must be amended to indicate which doses of which medicines should continue to be administered, and the ward staff must be advised appropriately.

If the appropriate medical staff have not reviewed a patient’s medication, the registered nurse/midwife administering the medicines should confirm which are essential medicines with the FY1/FY2/anaesthetist before administering any medicines.

Patients must receive essential medicines as determined by the anaesthetist/medical team, irrespective of being nil by mouth. Essential medicines may then be administered with sufficient water to ensure that they are adequately swallowed.

Refer to guidelines for stopping and starting medication pre/ post operatively. Restart date of stopped medicines should be indicated on EPMA and confirmed on the electronic TTO discharge notes, if to restart after discharge.

**PRESCRIBING ON THE MENTAL HEALTH WARDS**

Electronic prescribing in use.

**PRESCRIBING PARENTERAL NUTRITION (PN)**

**Adult**

PN may be prescribed for those patients who are unable to eat, and in whom other methods of enteral feeding (such as nasogastric) are inappropriate. The decision to use Parenteral nutrition should be made by a senior clinician. PN prescriptions must be written on the specific PN paper charts, which contain details of the calorie, fat, nitrogen and electrolytes contents of the range of PN bags held in pharmacy.
A basic low nitrogen Parenteral nutrition bag, ‘Triomel 6g’ is available for peripheral infusion, but higher nitrogen bags (Triomel 10 and 14) can only be given via a central line. It is advisable to start PN at a reduced rate in most patients, to prevent re-feeding syndrome.

The standard PN bags are all available with added vitamins and trace elements and it is recommended that these are used in any patients expected to be fed intravenously for more than a few days. For advice on the prescription and availability of PN, contact the pharmacy aseptic service on 4181 or a ward pharmacist.

**Neonatal**

Neonatal parenteral nutrition is normally provided by standard glucose/amino acid electrolyte bags (UCLH2) which are kept as stock on NICU (Neonatal Intensive Care Unit). If tailored PN is required for a specific baby, the Pharmacy Aseptic unit must be informed at least 24 hours before the tailored feed is to start. The neonatal parenteral nutrition prescription must be completed and sent to pharmacy as soon as possible after the decision to prescribe a tailored product. The TPN is made to order by an off-site manufacturer and delivered to pharmacy the day after ordering. Contact the pharmacy aseptic service on 4181 for further advice.

**GUIDELINES ON PRESCRIBING FOR OUTPATIENTS**

Following a consultation, an “Outpatient Consultation Medicines Advice” document is completed and given to the patient, to give to the GP.

The pre-printed advice documents are triplicate pads consisting of white, pink and yellow copies:

- **White** – Retained by Pharmacy, copied to GP within 24 hours
- **Pink** – Patient copy
- **Yellow** – Retained in patient’s casenotes

Prescriptions must be written legibly and the Prescribers name signed and the bleep number added.

A 28 day supply of medicines may be provided in the following situations:
The patient has a condition requiring immediate treatment and/or close monitoring of specialised nature.

The following are in this category:

- Patients newly diagnosed with diabetes and patients with newly prescribed inhalers when training is required in the clinic.
- All drugs in accordance with a shared care agreement when in place.
- ‘Red’ or ‘amber’ drugs, as defined in the formulary.
- Obstetric patients, iron and antacid preparations given in clinic – now under shared care.
- Emergency Department patients.
- (5 to 7 days supply of medicines or a full course of antibiotics are provided).
- All patients where the clinical condition will deteriorate if not treated within 14 days.

A supply of medicines which will last the patient until their next hospital appointment and provided in the situations described in points which follow:

- The patient is receiving a medicine, which is not available outside the hospital.
- Unlicensed medicines where agreement with the GP is not in place.
- Medicines available only on a ‘named patient’ basis.
- Medicines restricted to hospitals.
- NHS ‘blacklisted products’ (not available for NHS prescription) exempted in the Trust.
- Controlled drugs (these are technically available outside hospital but usually only with considerable difficulty). A ‘controlled drug’ form is available to assist with the additional requirements for controlled drug prescribing.
- The patient is participating in a clinical trial approved by the Research and Development Committee (about which the GP should be fully informed).
The patient is receiving therapy, the efficacy or toxicity of which is dependent on knowledge or experience unlikely to be possessed by the GP, e.g.

- Cytotoxic and chemotherapy regimens.
- Complicated steroid regimens.
- Obstetric patients referred for management with essential medicines for e.g. asthma, hypertension, diabetes, toxoplasmosis.
- Tuberculosis.
- Ex tariff specialist medicines requiring ongoing monitoring.

If, exceptionally, there is another reason for prescribing for an outpatient which is not covered in the above points, this should be stated on the prescription.

**FP10(HNC) PRESCRIPTION FORMS FOR OUTPATIENTS (NOT INCLUDING PADS USED BY HEALTH VISITORS)**

FP10(HNC) prescription forms are not for routine use. They are open to misuse and strict security arrangements are in operation. Prescribers issued with prescription pads are responsible for their use, in clinics where prescriptions are held on behalf of the prescribers, registered nurses must follow the procedure for recording use, safe storage, and handling.

FP10(HNC) prescription forms may be obtained from the Pharmacy Department. You will be expected to collect and sign for all forms issued.

The Drugs Tariff cost of medicines dispensed on FP10(HNC)s is charged to the hospital, with additional dispensing fees.

Prescriptions must be for medicines on the Island formulary. Prescribing information is monitored and the adherence to formulary reported.

**PRESCRIBING FOR PRIVATE PATIENTS**

- Most medicine costs are included in the inpatient daily bed rate.
- A 3 days supply of most discharge medicines is included in the inpatient daily bed rate. Extra supplies are reported to Mottistone Suite for inclusion in the total cost of stay.
Some high cost medicines are excluded from the above and charged as for extra discharge supplies.

PRIVATE OUTPATIENTS

- A dispensing service is available from St Mary’s Hospital Pharmacy, Monday to Friday 0830 to 1700.
- Only formulary listed medicines should be prescribed, preferably using hospital headed paper.
- Dispensing charges are similar to those charged by community pharmacies.
- The prescription must specify that the patient is being treated privately. Failure to indicate the status of the patient leads to delays in the provision of medicines.

THERAPEUTIC SUBSTITUTION AND PHARMACIST AMENDMENTS ON EPMA

Pharmacists often have to disturb junior doctors for no other reason than that the Medicines Act 1968 does not legally authorise the pharmacist to change the prescription themselves. The following is a protocol to address this issue, in some basic areas, where there can be little benefit in the prescriber making the change personally. It is fairly common practice for some experienced clinical pharmacists to occasionally make these changes themselves which the junior doctors appreciate, but there is no protocol to cover this and fulfil the legal requirement of ‘under the directions of a Doctor’.

Legal advice confirmed that an enabling document, endorsed by the trust board is sufficient to satisfy the law and facilitate the smooth running of wards without wasting time unnecessarily.

a) Route of administration

   The pharmacist would change the route to the correct one.

b) Timing of administration

   It is common practice to change the timing of administration of medicines such as furosemide to ensure that patients do not have a diuresis at night, or for bisphosphonates to avoid administration within two hours of milk or food.

   Timing of antibiotic doses would be spaced evenly throughout the day.
c) Frequency of administration
Prescribers often prescribe antibiotics such as amoxicillin to be taken four times a day. Pharmacists will normally change this to three times a day as this is the correct dosage.

d) Form of medication
If the pharmacist thought it was more appropriate for a patient to have soluble rather than ordinary tablets, or even sustained release rather than ordinary tablets, they would alter the dosage form, dose and frequency, if necessary.

Where a metered dose inhaler is prescribed but the patient can only manage another type of device, e.g. easyhaler, the prescription would be changed and the appropriate dose written.

e) Duplication of medicines
The same medicine may be prescribed by generic name and trade name or two medicines may be prescribed with a similar therapeutic effect. In these circumstances the pharmacist would automatically stop one of the medications.

e.g. Ipratropium and Atrovent.

e.g. Paracetamol and Co-codamol.

f) Additional items
The pharmacist would supply spacers, peak flow meters and toiletry items, e.g. emollients, aqueous cream, calamine lotion, etc., if appropriate.

g) Writing in paper patient’s notes
Advice on dosage adjustment in renal or hepatic impairment, discussions relating to adverse drug reactions, drug allergies, therapeutic drug monitoring or prescribing outside the product licence would be recorded in the patient’s paper notes by the pharmacist and/or written on an “intervention” note on EPMA.

h) Amendments
○ Multi-ingredient preparations that the pharmacy do not stock may be entered on to the patient’s active medicine list by the Pharmacist as
separate ingredients, so that the patient may continue to receive the medication.

- When medication that must be given regularly is prescribed on the “prn” section of the active medicine list on EPMA, the pharmacist may modify the medicine so that it is prescribed to be administered regularly, with the appropriate frequency indicated.

Any modifications made on EPMA are documented, showing the name of the person making the modification and also the date and time.

It is important to consider the balance between the pharmacist correcting prescriptions in the interest of the patient and the junior doctors being informed of the errors to ensure their training. To this end the pharmacist should inform the doctor appropriately of the changes made to prescriptions when considered necessary.

The above illustrate the common and accepted practice that the Pharmacist operates as an independent practitioner, who has legal responsibility for the appropriateness of medicines taken by patients. A pharmacist’s prime concern must be for the welfare of the patient.

The Isle of Wight NHS Trust operates a policy of substitution for medicines, which have clinical equivalents. Specific medicines will vary according to availability. Other alterations to prescriptions authorised for pharmacists include:

<table>
<thead>
<tr>
<th>Medicine prescribed</th>
<th>Medicine dispensed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amoxicillin 4 times a day (adults only)</td>
<td>Amoxicillin 3 times a day (adults only)</td>
</tr>
<tr>
<td>Ampicillin oral preparations</td>
<td>Amoxicillin preparations</td>
</tr>
<tr>
<td>Micro-enema</td>
<td>Product currently on contract – check with Pharmacy</td>
</tr>
<tr>
<td>Potassium soluble (oral)</td>
<td>Sando K (oral)</td>
</tr>
<tr>
<td>Quinine bisulphate 300mg and quinine sulphate 200mg oral</td>
<td>Oral quinine sulphate 300mg</td>
</tr>
<tr>
<td>Regulan</td>
<td>Fybogel</td>
</tr>
<tr>
<td>Sunscreens</td>
<td>Sun E45 sunblock cream is dispensed unless RoC Total sunblock is specified</td>
</tr>
<tr>
<td>Vitamin B compound tablets</td>
<td>Vitamin B compound strong tablets</td>
</tr>
<tr>
<td>Movicol sachet (adult)</td>
<td>Laxido sachet (same formulation)</td>
</tr>
</tbody>
</table>
UNLICENSED MEDICINES

Unlicensed medicines should be prescribed by senior medical staff, at consultant level. Requests for unlicensed medicines from junior staff will be refused, and referred to the consultant, unless they are covered by PCT policies or protocols.

When using products outside the terms of their current product licence, the responsibility for safety and efficacy will always fall upon the prescriber. Provided the prescriber is following local policy and accepted clinical practice in the course of his or her contract of employment, legal liability will rest with the Trust. Where possible, the Pharmacy department will bring this to the attention of the clinician and they will be asked to sign a written statement that they are aware of the situation, stating details of the medicine, patient(s), indication, reason for use, and dose range. The Executive Medical Director is required to sign on behalf of the Trust Board to ensure awareness of the use, and that legal liability will rest with the Trust.

The decision to use a medicine outside the terms of its product license should be made by a senior clinician. Requests from junior staff to initiate out of license treatments will be refused, and referred to the consultant, unless they are covered by Trust policies or protocols.

Prescribers should ensure that when they intend to use a licensed medicine for an unlicensed use, they draw this to the attention of the patient, and seek their consent. Sufficient information must be given to enable the patient to give informed consent. This should be documented in the patient’s medical record.

SUBSTANCE MISUSE AND DEPENDENCE

Guidelines on clinical management

- Guidelines on clinical management of drug misusers have been produced by the Department of Health: Drug Misuse and Dependence – Guidelines on Clinical Management 1999.
- Guidelines on clinical management of alcohol withdrawal are available in the Guidelines for the Management of Alcohol Withdrawal and Delirium Tremens, produced by the Scottish Office.
- Both publications are available from Pharmacy.
Notification drug misusers

- Medical practitioners are expected to report the treatment demands of local drug misusers by returning their local drug misuse data forms, which provide anonymised data, to the appropriate Regional Drug Misuse Database (RDMD).

- The RDMDs collect data on all drug misusers who present for treatment, not only to medical practitioners but also to a wide variety of other drug treatment agencies. Information is not limited to opiate and cocaine misuse, but includes any misused drug that generates treatment demand i.e. amphetamine, cannabis, benzodiazepines and MDMA.

- Further information can be obtained by contacting the North West Thames Drug Database, 86 Fulham High Street, London SW6 3LF telephone 0208 846 6563.

Prescribing controlled drugs for a new case of suspected case of addiction

- There are no safeguards against the double-scripting of medication. In light of this medical practitioners should be wary about responding to the demands of patients requesting medication for the treatment of their addiction.

- Medical practitioners should either contact the present prescriber to confirm any prescription for continued care whilst an inpatient, or prescribe symptomatically for opiate withdrawal symptoms only.

- Medical practitioners should not routinely initiate opiate substitution treatment for patients during an acute admission unless they feel competent to do so (preferably after seeking specialist advice).

- Medical practitioners should follow recommended guidelines and ensure that on discharge there is continuity of care by either a specialist or the patient’s GP.
Prescribing diamorphine, dipipanone or cocaine for addicts

- Specialist licenses are required for the prescribing of diamorphine, dipipanone or cocaine for the treatment of addiction/dependence.

- If a patient is admitted who is receiving a diamorphine prescription etc., this should be confirmed both verbally and in writing by the usual prescriber. It is then at the discretion of the hospital medical team as to whether or not they continue to prescribe it. Registered medical practitioners may prescribe diamorphine or dipipanone for patients (including addicts) for the relief of pain due to organic disease or injury without a special licence.
PHONE NUMBERS

All emergencies including arrest and fire 2222
Operator 0

A&E
Fax 534194
Reception 4642
Nurses desk (Majors) 4036
Nurses desk (Minors) 4660/4652/4645
Doctors Office 4653

ANAESTHETICS
Fax 534720
Office 4725

CATERING
Office 4775
Restaurant 4782/3

CLINICAL GOVERNANCE/AUDIT 4175/4972

EDUCATION CENTRE
Medical Education Manager (A. Harries) 4231
Medical Education Office 4518
Development & Training Office 5409
Library 4519

Diagnostic Imaging
Ultrasound 4672
CT scan 4665
MRI 4678/4669
Reports/secretaries 4674
Appointments/Inpatient requests 4671

IT HELPDESK 4401
MEDICAL HR
Office 6000

MEDICAL RECORDS 4629

THEATRES (Main)
Theatre Manager 4723
Theatre Office 4737
Reception/Porters 4730
Recovery 4748/4736
Staff Room 4738
Theatre 2 4733
Nurses 4320/4013
Reception 4459

OCCUPATIONAL HEALTH 4209

Main OUTPATIENT CLINICS 4680/4681/4687

PATHOLOGY
Fax 825437
Central Office/Enquiries 4765/6
Urgent requests 4768
Clinical Chemistry 4822
Haematology 4814
Blood Bank 4800
Histopathology 4834
Cytology 4830
Microbiology 4815
Dr Booth 4304/4806
Dr Al-Bahrani 4859/4808
Infection Control Nurse 4882
Dr Chapman 4823/4807

PHARMACY
Main Dispensary 4617/4620

PORTERS 4603
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Newchurch Ward</td>
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<tr>
<td>Coronary Care Unit</td>
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<tr>
<td>Rehab</td>
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<tr>
<td>Maternity</td>
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<td>Medical Assessment Unit</td>
<td>4010</td>
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<td>Sevenacres</td>
<td>4048</td>
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<td>Stroke Unit</td>
<td>4311</td>
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<tr>
<td>St Helen’s Ward</td>
<td>4701/2</td>
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<tr>
<td>Whippingham Ward</td>
<td>4706/7</td>
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<tr>
<td>Luccombe Ward</td>
<td>4717</td>
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<td>Alverstone Ward</td>
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<td>Childrens Ward</td>
<td>4691</td>
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<tr>
<td>Intensive Care Unit</td>
<td>4752/3</td>
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<td>Mottistone</td>
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RECREATION

Island Recreation Brochures can be found in your Induction pack and on the ferries. You will also find useful information regarding recreation at the Reception Area, of Spectrum Western Challenge on Site.

Some useful Contact Details:

**Olivo Restaurant (Bar & Caffeteria)**
Address: 15 St Thomas Square
Newport
Isle of Wight
Tel: 530001

**Cineworld Cinema**
Address: Coppins Bridge
Newport
Isle of Wight
Telephone: 0871 200 2000

**Gurnard Pines Gym and Pool Club** (ask for staff discount)
Address: Cockleton Lane
Gurnard
Isle of Wight
Telephone: 292395

**Medina Recreation Centre** (ask for staff discount)
Address: Fairlee Road
Newport
Isle of Wight
Telephone: 523767
INTRODUCTION

Caring for patients on Rehabilitation wards is significantly different from caring for patients on acute medical wards because the focus on Rehabilitation wards is on alleviation of disability whereas on acute medical wards it is the investigation and treatment of impairment. To understand the concept of rehabilitation, a number of definitions need to be clearly understood from the outset:

- **Rehabilitation** – this is a process of active change by which a person who has become disabled acquires the knowledge and skills needed for optimal physical, psychological and social function.
- **Impairment** – is the lack of a body part (amputated limb), disturbed function or inability to use a paralysed leg or arm.
- **Disability** – is the lack of ability to undertake an activity to a level or in a manner that is considered normal for a human being.
- **Handicap** – is the disadvantage for a given individual resulting from impairment or disability that limits or prevents the fulfilment of a role that is normal for that particular individual (depending on age, sex, social and cultural factors). On the Rehabilitation wards, we aim to achieve successful rehabilitation and minimise handicap through the following mechanisms:
  - reduction of disability.
  - acquisition of new strategies and skills through which the impact of the disability could be minimised.
  - altering the environment (e.g. house, bedsit) including the behaviour of non-disabled people so that the impairments and disability no longer confer a handicap.
1. **The Stroke Unit**

When attached to this 30 bedded combined acute and stroke rehabilitation unit, it is imperative that due attention is paid to the following:

(a) **National Guidelines for Stroke**

Read and understand the key messages in the National Guidelines for the Management of Stroke. A copy of this is available through the Stroke Nurse Specialist or the Sister in charge of the Stroke Unit. You may also buy a copy from the Royal College of Physicians directly.

(b) **Speech and Language Therapy**

Speech and Language Therapists work with both acquired communication and swallowing problems. Familiarise yourself with the role of the Speech and Language Therapist (SLT). This may be via shadowing or discussion with the SLT, attending MDT meetings and progress meetings or literature research.

Please observe either a Swallow Screening Test (carried out by a staff nurse) or a Dysphagia Assessment (carried out either by the Stroke Liaison Nurse or SLT).

Understand the features of dysphasia in a patient with stroke. Follow the progress of a dysphasic patient and the SLT’s input from assessment to treatment.

(c) **Occupational Therapist**

Shadow the Occupational Therapist at work on least two or three occasions and pay due attention to the following:

- Washing and dressing assessment.
- Treatment of hand deformities.
- Cognitive testing and perceptual assessments.
- Assessment for ability to carry out activities of daily Living.
- Making of splints to correct hand deformities.
- Attend a Home Visit during your attachment and make notes on what you think the value of such a visit is.
● Try and determine under what circumstances adaptations to a house are carried out and read about the laws governing the adaptations of Housing Association houses or, indeed, rented accommodation.

● Read about spasticity in a stroke patient and how this is managed;
  (i) medically.
  (ii) through therapy.

(d) Physiotherapy
● Shadow a physiotherapist on the Unit.
● Attend a treatment session in the gym.
● Attend a treatment session in outpatients.
● Focus attention on how physiotherapists achieve the minimisation of disability in patients who have suffered stroke.

(e) Interdisciplinary (IDT) Meeting
● Attend a goal setting meeting.
● Attend a planning meeting which may be a regular meeting while patient is undergoing treatment or a discharge planning meeting prior to discharge.
● Attend a Consultant IDT meeting.

(f) Nursing
● There are generic nursing issues which cut across specialties and this will obviously be offered as part of your attachment to the Rehabilitation Unit.

(g) Orthotics and Prosthetics
● When a patient is referred to Orthotics (to correct limb deformities) and Prosthetics (for possible limb fitting with an artificial limb or limb prosthesis) ask for time to attend the consultation with the Orthotist and Prosthetist on the ward and document the key messages emanating from that consultation.
(h) Nutrition Nurse Specialist (NNS)

- Shadow the Nutrition Nurse Specialist a few times. She is often on the ward seeing patients whose nutritional needs are crucial. Due attention should be paid to the following issues:
  - The indications and complications of percutaneous endoscopic gastrostomy tubes (PEG).
  - Nasogastric tubes.
  - Assessment of nutritional status.
  - The importance of weighing patients at least once during their stay in hospital.

(i) Dieticians

- Shadow the Dieticians on the ward. You may need to know several issues pertaining to the diet of patients on the Rehabilitation Wards. The following are particularly important:
  - Assessment of nutritional status using nutritional assessment tools (e.g. MUST), clinical observation and biochemistry.
  - Awareness of the importance of a good nutritional status in rehabilitation.
  - Awareness of how nutritional requirements are calculated and how these needs are best met.
  - Awareness of nutritional supplements and their use.
  - Awareness of the range of medical conditions where dietary therapy plays a role.
  - Awareness of the indications and contraindications for the use of different diets.
(j) Measuring Progress at Rehabilitation

Learn the value of and how to use the commonly employed validated scales in Rehabilitation Medicine such as:

(i) The MUST.
(ii) The Barthel Score.
(iii) Hodkinson’s mini mental scale.
(iv) Folstein’s mini mental state examination (MMSE).
(v) The depression scale for assessing mood.
(vi) The Berg scale for assessing balance.

(k) Other Specialist Resources available to you

- Shadow the Multiple Sclerosis Nurse Specialist and The Parkinson’s Disease Nurse Specialist when these visit the ward. If a patient with problems pertaining to their specialities is admitted to the ward, do watch their approach in advising the nurses on how these patients should be dealt with.

- The Stroke Nurse Specialist and the Stroke Liaison Nurse play a crucial role in the rehabilitation of patients with stroke. They are always on the Stroke Unit and may be approached for a teaching session or discussion on various aspects of stroke rehabilitation on specific patients.

The Healthcare Professionals referred to above not only work in the Stroke Unit but also in the Rehabilitation Unit. Both units share the therapy facilities, such as the gym.

2. The Rehabilitation Unit

The Rehabilitation Unit is based at St Mary’s and has excellent links with other services on site. It is located in the north part of the hospital site adjacent to the Stroke Unit. There is a total of 26 beds – comprised of 2 six bedded bays and 14 single rooms, 4 of which share en-suite facilities. The Unit also benefits from a lounge and dining room and easy access to a gymnasium, therapy kitchen and a secluded courtyard garden.
The Rehabilitation Unit provides services mainly to patients who have undergone a period of acute hospital care and require further in-patient rehabilitation prior to discharge to enable them to maintain and lead as independent a life as is possible for them. A small number are admitted directly from the community having been accepted by one of the Unit’s Consultant Physicians.

The Unit specialises in the rehabilitation of persons with the following conditions:

- Acquired Brain Injuries
- Parkinson’s disease and other neurodegenerative conditions (for example Huntington’s chorea)
- Multiple Sclerosis
- Subarachnoid haemorrhage
- Guillain-Barre syndrome
- Spinal cord injuries

It also provides services for patients who have undergone hip, knee or other joint replacements and are getting back to independent existence, though other groups of patients are admitted to this ward, for example: following major abdominal surgery, after limb amputation, following pelvic, humeral, trochanteric and vertebral fractures. In addition some are admitted following major medical illness complicated by deterioration in their physical and cognitive function.

**Nursing**

There is 24 hour nursing care on the unit. All patients come under the overall responsibility of a Consultant Physician and have access to Physiotherapy, Occupational Therapy, Dietetics, Speech and Language Therapy and Care Management. Other disciplines may be involved as appropriate.
Telephone
You can contact the Rehabilitation Unit on Tel. (55) 2120.

Whilst on the Rehabilitation Unit, read around the cases on the unit. Find out more about:
(a) Head injuries and their consequences on the individual, family and society at large.
(b) The treatment and rehabilitation of patients with Parkinson’s disease.
(c) The use of the Wessex Head Injury Matrix (WHIM) in the assessment of progress in traumatic brain injury. Mrs Linda Paye, Occupational Therapist, who has input into patients on the Rehabilitation Unit will be able to show you a specimen copy of the WHIM and how it is scored.

EVALUATION
We would like to hear your honest views on the way we run the service and how we have or have not met your learning needs. This will help us improve our approach in the future. You may wish to discuss your experience on our wards directly with us or with your Tutors but we would value a feedback on your experience from your Tutors should you opt for the latter approach.

TRANSIENT ISCHAEMIC ATTACK CLINIC (TIA)
There are weekly T.I.A clinics on Wednesday afternoon and Friday morning.

Transient Ischaemic Attacks are warning signs for a major stroke. Patients attending these clinics are scanned to exclude brain haemorrhage and other conditions which mimic stroke. For those who are clinically fit to undergo surgery, carotid endartrectomy is organised if there is significant internal carotid stenosis (≥70% sterosis) on carotid duplex scanning.

A significant number of referrals to this clinic turn out to be other diagnosis such as primary or secondary brain tumours or vascular malformations.

This is a useful clinic for trainees to attend or see patients on a regular basis to gain vital outpatient clinic experience.
RENAL MEDICINE

WESSEX KIDNEY CENTRE (WKC)

The Renal service for IOW residents is provided by the Wessex Kidney Centre (WKC) based at the Queen Alexandra Hospital, Cosham, Portsmouth (Tel 02392 286000). Consultant care for these patients is provided by Drs Katie Bostock (Mon–Wed) and Anna Sampson (Wed–Fri). Their secretary can be contacted on ext. 1012.

WKC has a satellite Haemodialysis Unit within SMH, IOW (behind Switchboard) for haemodialysis patients living or on holiday on the IOW (Tel 01983 821314). It is Nurse-led and is not able to dialyse patients who are immobile or have cardiovascular instability.

The Peritoneal Dialysis service for the IOW is provided by the Nurse-led PD Team (QAH Ext 6692), who visit Island patients when required, but cannot provide inpatient cover if the patient is unable to do their own PD.

If a patient has been accepted for admission/transfer to QAH WKC the Renal Unit Doctor will inform the Renal Unit Bed Manager who will make the transfer arrangements. The Renal Unit Bed Manager can be contacted via bleep 1572.

On call renal SHO grade Bleep 1975
On call renal registrar grade Bleep 1139

Patients already known to WKC

When dialysis (HD or PD) or Kidney Transplant (Tx) patients known to WKC are admitted to SMH WKC should be informed. Please phone the Renal Registrar On Call at QAH. If the Renal Team think it is more appropriate for the patient to be investigated and/or treated in a Renal Bed at QAH arrangements for transfer will be made. As a general rule, WKC will aim to transfer most patients, whatever the disorder, so that expert renal nursing and medical care can accompany the other specialty care required. Please send hospital record with patient.
WKC would also like to know when other patients already known to their service are admitted to SMH. If there is an acute worsening of the renal problem please contact the on-call Renal Registrar, otherwise contact the consultants secretary, Jan Browning, one ext. 1012 at QAH and inform her of the name, Hospital number, DOB, diagnosis, any change in renal function, ward and caring Consultant and name of the junior doctor to contact for further information.
Renal Problems in patients not yet know to WKC

Acute Renal Failure

a. Recognition
   i. Oligo/anuria.
   ii. Rising serum creatinine.
   iii. eGFR is meaningless when creatinine is changing rapidly.

b. Cause
   i. Pre-renal – hypotension, postural hypotension, tachycardia, shock, clinical dehydration, bleeding.
   ii. Post renal – usually elderly men with prostatic hypertrophy. Confirmed on US which shows dilated collecting system in kidneys. This is a urological problem and should be referred to Urology.
   iii. Renal:
      1. Post pre-renal (usually clear from history or charts).
      2. Glomerulonephritis recognised by blood and protein on urinalysis (pre-catheter sample) – other systems may be involved.
      4. Vascular – e.g renal artery stenosis given ACEI, cholesterol emboli (negative urinalysis), accelerated hypertension (often proteinuria).
      5. Thrombotic microangiopathy – Hb drop, low platelets, fragmented RBCs on film, usually negative urinalysis. E.g. haemolytic uraemic syndrome, accelerated hypertension, scleroderma crisis.

c. Management
   i. If pre-renal immediate resuscitation will prevent progression to established renal failure. (It may only take 20 mins of relative hypotension for an elderly person to get AKI).
   ii. IV fluid replacement if required to restore circulating volume.
1. Aim for normal pulse rate, BP, JVP or CVP >8 cm.

iii. Blood gases to assess acidosis (probably not required within 48 hours of onset).

iv. Control serum potassium to less than 6.5.

v. Urinalysis BEFORE catheterisation.

vi. Phone WKC at QAH and bleep the ‘on call’ Renal Registrar to discuss.

1. Renal Registrar will ask for a lot of information so have all the notes, charts, drug charts to hand when you phone.

2. You may be given advice and asked to phone back. Remember to ask a name to get in touch with later, particularly if it is going to be the next day.

3. Registrar may arrange transfer and/or recommend investigation.

4. If there are doubts about fitness for transfer e.g. ongoing hypotension or breathlessness the Renal Registrar may ask you to get ITU to assess.

vii. Once fluid replete maintain with approx 30mls/hr plus previous hours output minus oral intake (this is too much for many so weigh daily and examine for oedema, raised JVP, crackles etc. to check).

viii. Daily weight, U&E and FBC (if first was abnormal).

Nephrotic Syndrome

1. Recognised by:
   a. Oedema;
   b. Hypoalbuminaemia;
   c. Proteinuria of >3g/24 hours (or urinary ACR >250 or PCR >300);
   d. Hypercholesterolaemia.

2. Initial Investigation
   a. Renal Ultrasound to assess size;
   b. Urine for Bence Jones and serum Igs and electrophoresis (to diagnose myeloma). If highly suspicious urinary and serum light chains.
3. Management
   a. furosemide (40mg) or bumetanide (1mg) orally and work up dose according to effect;
   b. fluid balance chart;
   c. daily weight (to see if your treatment is working);
   d. call QAH Renal Registrar on call who will arrange transfer for investigation.

**Multisystem disease with kidney involvement**
Multisystem disease caused by a small vessel vasculitis is a common cause of AKI, often without renal recovery. It is frequently diagnosed late so is associated with significant mortality and morbidity. It causes a glomerulonephritis (identified by significant proteinuria, ++ or more on urinalysis or ACR >70 (or PCR>100), plus (usually microscopic) haematuria and casts. If you see someone with a condition that started in the last few weeks or months, who has more than one organ involved, new urinalysis abnormalities and evidence of an acute phase response (raised viscosity/CRP, neutrophilia, platelets etc.) please phone the Renal Registrar on call at QAH to discuss. It is likely the patient will be transferred for kidney biopsy. The commonest diagnosis is an ANCA associated microscopic polyangiitis.

Other organs frequently involved:
1. skin:
   a. vasculitic rash usually on legs and feet;
   b. splinter haemorrhages.
2. lungs – pneumonia like changes, pulmonary haemorrhage, cavitating lesions.
3. sinuses.
4. joints – monoarthritis – asymmetrical and flitting.
5. mononeuritis multiplex.
Chronic Renal Failure

Chronic Kidney Disease (CKD) is now classified as:

<table>
<thead>
<tr>
<th>Stage</th>
<th>GFR</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1</td>
<td>GFR &gt;90</td>
<td>Kidney damage but normal function</td>
</tr>
<tr>
<td>Stage 2</td>
<td>GFR 60–89</td>
<td>Mildly reduced kidney function</td>
</tr>
<tr>
<td>Stage 3A</td>
<td>GFR 45–59</td>
<td>Moderately reduced kidney function</td>
</tr>
<tr>
<td>Stage 3B</td>
<td>GFR 30–44</td>
<td>Moderately reduced kidney function</td>
</tr>
<tr>
<td>Stage 4</td>
<td>GFR 15–29</td>
<td>Severely reduced kidney function</td>
</tr>
<tr>
<td>Stage 5</td>
<td>GFR &lt;15</td>
<td>Very severe, or endstage kidney failure</td>
</tr>
</tbody>
</table>

p is added to denote proteinuria e.g. Stage 3Ap.

The UK CKD Guide can be found via the Renal Association website at [www.renal.org](http://www.renal.org). Click on the menu at the bottom leading to UK eCKD guide. It covers investigation, diagnosis, management and referral of patients with CKD.

Estimated GFR (eGFR) reporting by the lab has been introduced because of Part 2 of the Renal National Service Framework (2005). It is calculated from age, sex and serum creatinine. Although it gives a guide to kidney function it is unreliable at high GFRs, is useless if the creatinine is rising or falling, and misclassifies CKD stage in 34%! It seems to be particularly poor at the extremes of age and size. Significant change is 15–20%, less than that is normal day to day or assay variation.

Referral of CKD

Patients with CKD Stage 5, eGFR <15, should be referred to the WKC. If fairly stable by routine referral letter, if acutely symptomatic by Fax or phone. Send to Dr Bostock or Sampson at QAH (Tel 02392 286000 Ext 1012, Fax 02392 28646) or phone the on call Renal Registrar if you think the need for dialysis is imminent.

Patients with CKD Stage 4 can be referred routinely, but they may not all need to attend a renal clinic. GFR falls at up to 1 ml/min/yr from age 30 so a eGFR of 20–25 may be entirely normal in the elderly.

Only refer Stage 1–3 if there is rapid change or other problem e.g. nephrotic syndrome.

In all control BP to 130/80 or less, with ACEI as first choice if protein on urinalysis or PCR>100.
RHEUMATOLOGY

All junior staff are welcome to attend rheumatology clinics. Please arrange this via the Rheumatology Secretary.

DEPARTMENTAL STAFF

Consultant: Dr Mark Pugh  
Ext: 4566  
e-mail: mark.pugh@iow.nhs.uk

Consultant: Dr Ildiko Telegdy  
Ext: 4566  
e-mail: ildiko.telegdy@iow.nhs.uk

Secretary: Mrs Samantha Nicholls  
Ext: 4909  
e-mail: samantha.nicholls@iow.nhs.uk

Rheumatology Specialist  
Sister: Elaine Healey  
e-mail: elaine.healey@iow.nhs.uk

Rheumatology helpline:  
552218

Osteoporosis Nurse Specialist  
Sister: Caroline Sunderland  
e-mail: caroline.sunderland@iow.nhs.uk

Anti-TNF Therapy  
Nurse: Carolyn Goddard  
e-mail: carolyn.goddard@iow.nhs.uk

PROCEDURE FOR WARD REFERRALS

Patients are referred formally, using standard referral sheets. It is advisable to fax the referral in the case of urgent referrals, as the internal post can take some days.

ON-CALL RHEUMATOLOGY OPINION

It may be possible to discuss a case with the Rheumatology SpR if they are on-call. If this is not possible contact either of the consultants via the switchboard. Please be aware this is an informal process and no opinion may be available.

SUGGESTED NEW INFLAMMATORY ARTHRITIS SCREEN

FBC, ESR, U&E, LFT, TFT, RhF, ANA, CRP, aCCP, ENA.

SUGGESTED NEW VASCULITIS SCREEN

FBC, ESR, U&E, LFT, RhF, ANA, ANCA, Immunoglobulins, CRP, Blood Culture, C3–C4 + protein electrophoresis, chest x-ray and urinalysis.
JOINT ASPIRATION

Joint aspiration is a simple technique that should be part of an FY2/ST1s clinical skills. A clear knowledge of surface anatomy is required. This department endorses the “No touch technique” to ensure safety.

- Clinically identify the site to be injected.
- Mark the area to insert the needle (thumb nail).
- Wash hands and dry or use alcohol if recently washed already.
- Sterilise the area with alcohol or chlorhexidene. **Do not touch again.**
- Wait for area to dry.
- Attempt aspiration.

RCP GUIDELINES FOR THE MANAGEMENT OF STEROID INDUCED OSTEOPOROSIS

Any patient over the age of 65 on any dose of prednisolone for 3 months or in whom it is planned they will be on treatment for more than 3 months should be put on alendronic acid 70mg weekly and Ca 1g/Vit D 800iu daily. Under the age of 65 these patients should be referred DEXA scan and the decision to treat based on the results, discuss with Osteoporosis Nurse Specialist.

NICE GUIDELINES FOR SECONDARY FRACTURE PREVENTION

Any patient over the age of 75 presenting with a low trauma fracture, i.e. a fall from standing height fracturing the wrist or femur should be put on alendronic acid 70mg weekly and Ca 1g/Vit D 800iu. Refer other cases in whom there is a risk of osteoporosis to The Osteoporosis Nurse Specialist.
REVALIDATION GUIDANCE FOR DOCTORS IN TRAINING

Since December 2012 all doctors in the UK who are registered with the GMC and hold a licence to practice, have been required to engage in annual appraisal and medical revalidation.

As a doctor in training you will continue to be subject to the annual ARCP or RITA process, both of which have been “enhanced” to include the revalidation domains. Doctors in training are not required to have an additional “enhanced medical appraisal”.

All doctors in Deanery training posts will have a prescribed connection to the Deanery as their designated body and the Postgraduate Dean as their responsible officer for the duration of their training. The Postgraduate Dean will make a recommendation about you at your revalidation due date.

FORM R

You will be asked to complete a Form R, on an annual basis, which has been “enhanced” to form a self declaration which covers all of the GMC revalidation domains.

The additional sections on the enhanced form are:

- **Revalidation data**

  You will be asked for the date of your last revalidation and your expected next revalidation date. For the majority of doctors in training it will be the first revalidation cycle so the previous date field is not applicable. If you do not know your expected date you should log on to your GMC Online account to view it there.
● **Scope of Practice**

You will be asked to declare your ENTIRE scope of practice as a medical professional. If you are undertaking work that is outside of your Trust, Specialty, or EWTR rota you must discuss the work with your Educational Supervisor or Training Programme Director either before commencing the work or when you are allocated a new supervisor. All work that you undertake, as a doctor, must be documented to form part of your evidence portfolio for revalidation. The Wessex Revalidation Team have developed both a guidance document for work outside of training and a reflection form which will be useful if you are working in organisations where formalised appraisal mechanisms do not exist.

● **Significant Events**

You will be asked to state whether you have been involved in any significant events since your last ARCP/RITA. If you have been involved in such an event, you will need to provide details, including any reflective writing that applies to the incident.

● **Complaints**

You will be asked to state whether you have been involved in any complaints since your last ARCP/RITA. If you have been involved in a complaint your will need to provide details including your reflection.

● **Compliments**

The enhanced Form R has a section where you are invited to submit details of any compliments that you have received in the past 12 months.
● **Probity**

You will be asked to state that you understand your obligations under Good Medical Practice with regards to probity and professionalism. You will then be asked to declare whether you have been the subject of any investigations regarding probity and provide any details thereof.

● **Health**

You will be asked to confirm that you understand and accept your responsibilities with regards your personal health under Good Medical Practice.

**REFLECTIVE PRACTICE**

The advice from the Wessex Revalidation Team is that you should be reflecting, contemporaneously, on any incidents or events that fall under any of the above categories. Some of the situations will be minor whilst others may be more comprehensive.

Advice on how to reflect and how to record reflection is available from the Wessex Deanery website: http://www.wessexdeanery.nhs.uk/support/support/trainee_revalidation/reflective_practice.aspx

Many specialty training curricula already include a requirement on reflection and you should ensure that you are continuing with this to satisfy your curriculum as well as satisfying the revalidation requirements.

The format of reflection is not mandated by revalidation but you must ensure that any reflective practice you undertake is available for the ARCP or RITA panel should they request it.
EMPLOYER EXIT REPORTS

As part of the revalidation regulations the Postgraduate Dean is obliged to ask your employing organisation to provide a bi-annual return which covers the domains outlined above. The reason this comes directly from your employer is to avoid every doctor in training requesting the information from their Trust.

This work will be coordinated by the employer and the Wessex Revalidation Team and should have very little impact upon you as a doctor in training.

It is worth noting that the way the various domains are recorded locally may change slightly over the coming years and you may be asked for more information about events from either your educational supervisor or the administrator responsible for supplying the information.

EDUCATIONAL SUPERVISOR REPORTS

As part of the ARCP and RITA processes you are required to provide an educational supervisors report which makes review and comment on your training over the period of your training post. From 2013 your educational supervisor will be asked to make comment on your fitness to practice by answering two additional questions with an area for comment.

These new reports have been agreed by the Academy of Medical Royal Colleges (AoMRC) and have been circulated to the individual Colleges and Faculties, for inclusion into the various ePortfolio systems.

If your College has not included these questions by the time your report is completed you will need to ensure that your supervisor is completing the questions separately and they are available from the Wessex Deanery website.

Doctors in training, who have retained their NTN number and curriculum from pre-2007, i.e. remain SpR trainees rather than StR, will need to ensure they are completing either updated educational supervisor report documents or are having the additional questions completed.
OUT OF PROGRAMME (OOP)

The Wessex Revalidation Team has created documents to support doctors who go out of programme for the four different types of OOP. Further information will be sent to you when you commence OOP and guidance documents can be found on the Wessex Deanery website: http://www.wessexdeanery.nhs.uk/trainee_revalidation-1/work_outside_of_training.aspx

RETURN TO TRAINING SCHEME (RTT)

Wessex Deanery has developed a Return To Training (RTT) Scheme based upon patient safety guidance and research, on returning to medical practice after a period of absence. If you are a doctor returning to training after a period of absence you will need to ensure that you are following this process which includes meeting with your training programme director prior to the start date of your leave period.

The RTT scheme must be engaged with by any doctor who is absent from training for 3 months or more. However if you are absent for a shorter period and feel that you need support in returning please do use the principles of this scheme.

Whilst your time off may or may not involve clinical practise it is important to remember that this scheme is designed to support you in returning to your training programme and “day to day” work in a structured way. This may include Keeping in Touch days (KiT).

Further information on the scheme can be found on the Wessex Deanery website: http://www.wessexdeanery.nhs.uk/policies__procedures/return_to_training_scheme.aspx

FURTHER INFORMATION

For further enquiries on revalidation please refer to the FAQs section on the website: http://www.wessexdeanery.nhs.uk/support/support/trainee_revalidation/faqs.aspx
You can contact the revalidation team via email: HEWRevalidation@wessex.hee.nhs.uk or via telephone: 01962 718413

Your programme management team will also be able to help with your revalidation queries particularly in terms of the administrative processes around ARCP and RITA, details available from the Specialty Schools section of the website: http://www.wessexdeanery.nhs.uk/specialty_schools/specialty_schools.aspx

Trainee Revalidation: Enhanced ARCP

Trainee collects evidence in line with curriculum

Trust completes Collective Exit Report

Within Training Rotation

Trainee reflects on them directly into portfolio or completes an entry as appropriate onto eportfolio

Within Training Rotation

Trust completes Exception Exit Report

If trainee has been involved in any significant event, conduct or capability investigations or named in a complaint:

Outside Training Rotation

Any roles outside of training done in a capacity as a doctor, must be declared for revalidation.

This includes locum work, private practice, voluntary roles etc.

For each role outside of training trainee completes a Reflection on Work Outside of Training form.

Meeting with Educational Supervisor

Trainee discusses training and portfolio with Educational Supervisor

Educational Supervisor completes Educational Supervisor Report

Prior to meeting with Educational Supervisor

Trainee completes Enhanced Form R*

Trainee Submit portfolio alongside ARCP evidence for panel.

Submission of all documentation should be according to the arrangements set out by the programme team.

Form R’s may be required prior to the “standard” ARCP paperwork and the trainee should be advised of the deadlines in advance.

Evidence Submitted to ARCP panel

ARCP panel decide if there are any current known unresolved causes for concern over revalidation.

ARCP panel decide trainees ARCP Outcome

Trainees portfolio is reviewed by ARCP panel

During ARCP

*FORM R

The “enhanced” form R has been agreed with the COPMeD Revalidation Steering Group and is in the process of being ratified with IT suppliers. In the future it should be available via ePortfolio systems, but until such a time the form should be completed on paper.

*EDUCATIONAL SUPERVISORS REPORT:

Educational Supervisors report will be enhanced with a question asking if the trainee has been involved in any significant event, conduct or capability investigations or named in any complaints.
THROMBO-EMBOLISM-PROPHYLAXIS

All patients must be assessed for risk of thrombo-embolic complications, and appropriate prophylaxis prescribed either in the preadmission clinic where elective or immediately on admission where acute. The available methods of prophylaxis are: Low molecular weight heparin, TED stockings, Pneumatic calf compression in theatre +/- continuation into the postoperative period. Please refer to current hospital guidelines for all surgical and medical admissions, available on the intranet and to pre assessment guidelines for bridging therapy.
USEFUL LINKS

www.medicalcareers.co.uk

USEFUL WESSEX DEANERY LINKS

www.wessexdeanery.nhs.uk/guidance_recourses/guidelines_procedures

Wessex Policies and Guidelines:

- Acting Up – Trainees Acting up as Consultants – Guidance
- Acting Up – Trainees Acting up as Consultants – Application Form
- Appeals and Complaints Policy
- Annual Review of Competence Progression (ARCP) – Policy Guidance
- Consent and Marking of an Operative Site – Policy
- Data Protection Act 1988 – Guidance
- Dignity at Work and the Management of Harassment and Bullying
- Diversity and Equality – Policy Guidance
- External (Lay and Clinical) Advisors – Policy Guidance
- Handover – Policy Guidance
- Induction – Policy
- Inter Deanery Transfer – National Policy and Guidelines
- International Medical Graduates (IMG’s) – Guidance
- Less than Full Time Training
- Maternity and Paternity Adoption Leave for Junior Doctors – Guidance
- Out of Programme
● Probity – Issues of Probity – Deanery Statement
● Professional Support – Strategy
● Questionnaire and Survey Policy Guidance
● Record of In-Training Assessment (RITA) – Guidance
● Recruitment Policy
● Visits – Quality Visits Policy
● Whistle Blowing Policy Guidance
● Workplace Based Assessments – Guidance

USEFUL ISLE OF WIGHT NHS LINKS

http://intranet/
The 2008 Consensus Statement on the Role of the Doctor endorsed by the Academy of Medical Royal Colleges, British Medical Association, Medical Schools Council, Conference of Postgraduate Medical Deans, General Medical Council, employers and the four United Kingdom Chief Medical Officers affirms:

To achieve this level of autonomous practice and ensure the continued provision of high quality patient care, the integrity and quality of medical training are fundamental.

Doctors of all grades must make the patient their first concern, behaving in accordance with the values of the National Health Service. Training should be seen as an opportunity to cultivate the skills and attitudes necessary to deliver truly patient centred care. This requires the doctor in training to understand the patient holistically in a way that facilitates shared decision making, the delivery of empathic care, mediated through sensitive communication. Doctors in training should support the right of patients, the public and carers to be involved in decisions on how services are planned and delivered.

Consensus statement on the role of the doctor

Doctors ... must be capable of regularly taking ultimate responsibility for difficult decisions in situations of clinical complexity and uncertainty...

The doctor’s role must be defined by what is in the best interest of patients and of the population served.
Training and service provision are inextricably linked and to ensure excellent and safe patient care, the two cannot and should not be separated. Training must realise doctors' potential to sustain, lead and improve the national healthcare system now and in the future and the working environment must value and facilitate training. Doctors in training are uniquely placed to identify problems in institutions and must be supported to raise concerns about clinical care and training to safeguard patient safety.

Doctors in training are learners, employees and medical professionals. These roles each carry with them particular responsibilities. As medically qualified professionals they must fully comply with all elements of the GMC’s Good Medical Practice and behave as a medical professional in all their actions and relationships. As employees they have legal and contractual responsibilities to comply with local and national employment requirements and be aware of organisational priorities to ensure the effective operation of the whole system. All doctors work in teams and training should enable them to develop the ability to be an effective member of the multi-disciplinary team. As learners doctors in training have to take a personal responsibility for their own professional development in line with the requirements of their training bodies.

Successive independent inquiries and numerous surveys have highlighted the major difficulties within medical training which have the potential to undermine the future provision of high quality and safe patient care. The charter was published as part of the final report of the Shape of Training review of postgraduate medical education and training which was sponsored by the General Medical Council, Conference of Postgraduate Medical Deans of the UK (COPMeD), Health Education England, the Medical Schools Council, NHS Scotland, NHS Wales and the Northern Ireland Department of Health, Social Services and Public Safety.

This Charter has been developed by the Academy Trainee Doctors Group as part of the Shape of Training Review and in line with its aims. It defines the guiding principles for the delivery of and participation in medical training across the four nations of the United Kingdom, building on the Charter for Medical Training, developed by the Royal College of Physicians of Edinburgh.

The charter articulates the wider value of postgraduate medical training, providing a practical foundation to ensure the highest standard of doctors' training and quality of care.

Introduction

- the appropriate balance between service provision and learning
- adequate induction, supervision and continuing support
- freedom from bullying and harassment
- leadership and management experience

Priorities are the need to ensure:
“The Value of the Doctor in Training articulates the wider value of postgraduate medical training, providing a practical foundation to ensure the highest standard of doctors’ training and quality of care.”
Guiding Principles

**A.**
Patient safety and care are paramount

**B.**
The long term delivery of high quality care depends on doctors receiving excellent training

**C.**
Doctors in training must at all times act professionally and within their competence, taking appropriate responsibility for patients under their care

**D.**
Service will be focussed around patient needs, but the work undertaken by doctors in training should support learning wherever possible

**E.**
Doctors in training are equal partners in the training process and should be involved in its design

**F.**
Doctors in training have reciprocal responsibilities to employers, trainers and patients in return for being trained

**G.**
Training should ensure equality of opportunity for all, reflect the diverse needs of doctors in training and be commensurate with a good quality of life
Doctors in training, trainers, employers, Colleges and Faculties, Deans and others concerned with training should make the following nine commitments for medical training.
Doctors in Training should be:

— assigned appropriate duties, workload and work patterns to ensure patient safety and quality care

— directed to work at a level suitable to their competence and experience, seeking assistance and being supervised where appropriate

— actively encouraged to raise concerns about patient care and are protected from victimisation as a result of speaking out\(^5\)

— encouraged to develop and contribute actively to quality assurance and improvement initiatives
Doctors in Training should:

— recognise patients as partners with whom decisions are made on shared basis

— maximise the safety of patients and staff, through appropriate handover, completing mandatory training, following relevant guidelines, reporting incidents, informing employers of any GMC referrals and looking after their own health

— always treat patients, carers and staff with respect and dignity

— be able to work effectively with other professionals to deliver multi-disciplinary care

— ensure that they comply with employment requirements and procedures, providing relevant information promptly to employers where necessary
Doctors in Training should:

— have access to pastoral support, particularly for those in difficulty

— be encouraged to speak out about bullying, with robust and proportionate mechanisms to resolve problems identified and with support for all staff involved

— be provided with access to meaningful career guidance and support through the Colleges and deaneries/Local Education and Training Boards

— establish a training agreement with their educational supervisor, scheduling and attending relevant review meetings in line with an agreed personal development plan

— discuss problems with the training process or their personal development with their accessible educational supervisor or training programme director
Recruitment and induction

- Processes for recruitment, selection and appointment must be open, fair, reliable and cost-effective.
- Detailed information regarding training posts is available at the time of application and up to date information about competition ratios and quality of training should be readily available.
- Training capacity should be based on accurate workforce planning.
- Comprehensive induction both to the hospital and the clinical environment should be completed in a timely way in partnership between employers and doctors in training.
- Doctors in training should be kept informed about upcoming posts as they rotate within a programme and supported with adequate induction to ensure that they are prepared for the transitions between posts.
The relationship between training and service

Working patterns must comply with the European Working Time Directive and should allow a reasonable work-life balance.

Doctors in training should:

- receive adequate time for clinical and non-clinical training
- have their training needs and the needs of the service considered in parallel, recognising the importance of developing clinical competencies through on-the-job training, while maintaining safe, seamless patient care
- have access to sufficient breadth and depth of clinical work to enable them to achieve and maintain the clinical competencies necessary to develop as clinicians
- be supported in actively monitoring and accurately documenting working patterns
Doctors in Training should:

— have their preferences taken into account when assigning rotations, but should recognise it is not always possible to accommodate choices due to the needs of the service or others’ training

— be active partners in reviewing training quality and designing improvements in training provision

— have elected representation in relation to education and service through employers and relevant professional and training bodies, working with them to resolve differences
flexibility

Doctors in Training should:

— be supported to pursue relevant out of programme experience in a way that is coordinated to maintain a safe service and that safeguards others’ training

— be able to gain enhanced competencies across a wide range of non-clinical fields, including research, leadership and education

— have equality of access to less than full time training across all specialities, including job sharing arrangements and additional support if required

— demonstrate professionalism through a flexible and responsive approach to the demands of service, particularly out of hours cover
Ensuring high quality training

Trainers should be selected and appropriately trained, with a job plan designed to support this role.

Doctors in training should:

— engage with the GMC, including completion of the annual National Training Survey and ensuring that they meet revalidation requirements

— proactively participate in the process of training, utilising learning tools, maintaining a portfolio and undertaking the required assessments

— are able to access a range of relevant high quality, targeted educational events, appropriate to their level of training.
Doctors in Training should:

— be assessed using robust, reliable and fair formative and summative assessments developed by the Colleges and approved by the GMC

— progress by achieving defined competencies and standards set by the Colleges and specialist societies, who ensure that curricula are updated to reflect innovations and match clinical practice

— receive regular, constructive feedback during training and at formal appraisal and take forward agreed action plans for development issues with suitable support

— be responsible for registering for training and ensuring that relevant bodies are kept updated about any significant changes in personal circumstance

— seek meaningful feedback from colleagues, patients and carers about their communication skills and attitudes, developing reflective skills to improve practice
## References

   [http://www.medschools.ac.uk/AboutUs/Projects/Documents/Role%20of%20Doctor%20Consensus%20Statement.pdf](http://www.medschools.ac.uk/AboutUs/Projects/Documents/Role%20of%20Doctor%20Consensus%20Statement.pdf)

2. Department of Health (2013)  
The NHS Constitution for England  

3. General Medical Council (2011)  
Trainee Doctor  

4. The Mid Staffordshire NHS Foundation Trust Public Inquiry (2013)  

5. General Medical Council (2013)  
Good Medical Practice  

Charter for Medical Training  
[http://www.rcpe.ac.uk/sites/default/files/files/rcpe_charter-for-medical-training_0.pdf](http://www.rcpe.ac.uk/sites/default/files/files/rcpe_charter-for-medical-training_0.pdf)

[http://www.shapeoftraining.co.uk/review/1728.asp](http://www.shapeoftraining.co.uk/review/1728.asp)

8. Academy of Medical Royal Colleges and NHS Employers (2013)  
Recommendations for safe trainee changeover 2013  