Simulation Scenario

Title	Bacterial meningitis	**Version**	10.1
Target Audience	FY doctors & student nurses	**Run time**	10 -15 mins
Authors	Niamh Feely, Andrew Smith, Udesh Naidoo, Paul Wilder, Mark Loughrey	**Last review**	24/7/18
Faculty comments	Normal faculty requirements	**Necessity**	n/a

Brief Summary

This is a case of a young student who presents with signs of bacterial meningitis. This patient needs timely treatment with iv antibiotics otherwise they will clinically deteriorate and develop seizures.

Educational Rationale

Prioritization is extremely important in the initial assessment and management of patients with acutely altered levels of consciousness and seizures. Where meningitis is the cause, administration of antibiotics is time-critical. FY trainees should be able to work within and lead a team to safely assess and treat in a timely manner.

Learning Objectives: Nurse

- A-E assessment and management of a patient with altered consciousness and seizures
- Appropriate call for help and concise transfer of information using SBAR

Learning Objectives: Doctor

- A-E assessment and initial management of a patient with altered conscious level and seizures
- Early recognition of meningism
- Time-critical prescribing & administration of antibiotics
- Appropriate investigations in suspected meningitis (CT, LP, etc…)

No	CURRICULUM MAPPING	This scenario
1	Acts professionally	✓
2	Delivers patient-centred care and maintains trust	✓
3	Behaves in accordance with ethical and legal requirements	✓
4	Keeps practice up to date through learning and teaching	✓
5	Demonstrates engagement in career planning	
6	Communicates clearly in a variety of settings	✓
7	Works effectively as a team member	✓
8	Demonstrates leadership skills	✓
9	Recognises, assesses and initiates management of the acutely ill patient	✓
10	Recognises, assesses and manages patients with long term conditions	
11	Obtains history, performs clinical examination, formulates differential diagnosis and management plan	✓
12	Request relevant investigations and acts upon results	✓
13	Prescribes safely	✓
14	Performs procedures safely	✓
15	Is trained and manages cardiac and respiratory arrest	
16	Demonstrates understanding of the principles of health promotion and illness prevention	✓
17	Manages palliative and end of life care	
18	Recognises and works within limits of personal competence	✓
19	Makes patient safety a priority in clinical practice	✓
20	Contributes to quality improvement	

Candidate Briefing: Nurse

Setting	Emergency department

You are called to see a 19 year old patient called Keith Williams. He was brought to A&E by friends who found him this morning in his flat. He was agitated, confused and unable to recognize his friends at that time.

Please attend to Keith, take some initial observations and proceed as normal.

Candidate Briefing: Doctor

Setting	Emergency department

You are called to assess a young patient in A&E who has attended with confusion and agitation. You receive an SBAR handover from the attending nurse. Please assess the patient and treat any problems that you find.

Technical set-up

Setting	Emergency department		
Simulator	High-fidelity manikin		
Gender	Male	Age	19

Initial monitor parameters

RR	O2 sats	Pulse (HR)	BP	ECG rhythm
36	96% on air	129	130/90	Sinus tachycardia
Cap Refill Time	**Blood glucose**	**Temp.**		
3 sec	5.6	38.4		

Initial patient set-up

Airway	**Obstruction**	**Airway adjunct**
	None	None

Breathing	**Chest sounds**	**O2 supply**
	Clear	Air

Circulation	**Heart sounds**	**Cannula**	**BP cuff**	**Peripheries / pulses**
	Normal	None	No	Cool

Disability	**Eyelids**	**Pupils**	**AVPU/GCS**
	Closed	PEARL	V / 11

Exposure	**Posture**	**Moulage**	**Bowel sounds**
	Lying flat	None / lower limb rash	Normal

Specific equipment / prop requirements

- Oxygen and a selection of masks including non-rebreathe mask
- Monitoring equipment (sats probe, ECG, BP cuff)
- Syringes, flushes, iv fluids and giving sets
- Simulated drugs
- Blood bottles, culture bottles, request forms
- Obs chart, medical notes, drug chart
- Glucometer

Facilitator Briefing

The main focus of this case is the timely suspicion of bacterial meningitis. If the candidate doesn't recognise this and doesn't give antibiotics then the patient could deteriorate and progress to seizures. However, this may make the scenario too complex. The focus could inadvertently shift to management of status epilepticus. Instead, the medical / ITU senior medical staff may arrive early to continue care.

Telephone advice

- You will be sitting in the control room for the duration
- Answer all calls as "switchboard" in the first instance to allow for realistic delay. Call back after 1 - 2 minutes
- The Medical Registrar should sound busy and state they are tied up with another patient
- They should be helpful but press the candidate hard about what assessment has been performed e.g. nature of pain, findings of physical examination
- If the candidate is not armed with the information, tell them to get the required info and call you back

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How to run scenario with candidates from one discipline

Embedded faculty can include a Sim Nurse.

Sim Nurse briefing:

You are called to see a 19 year old patient called Keith Williams. He was brought to A&E by friends who found him this morning in his flat. He was agitated, confused and unable to recognise his friends at that time.

You are concerned about this patient and have called an FY doctor to assess him.

CONDUCT

Throughout the scenario you should act as a "competent robot" i.e. you should perform all tasks requested to the best of your ability, but should not initiate any treatment on your own. If you are not being effectively instructed by the candidate, you may be prompted via your ear piece by the lead facilitator as to what your next action should be.

If you strongly disagree with management then you are free to question them, stating your reasons.

If asked to give drugs, you should request that they are prescribed on the drug chart. If they are unsure of the dosage please refer them to the BNF or Hospital Guidelines App or via Intranet.

Patient Briefing

Setting	Emergency department
Name	Keith Williams
Age	19
Gender	Male

What has happened to you?

You are a student who didn't turn up to class this morning. Friends found you at your flat, and you were agitated, confused and unable to recognise them. They brought you to A&E.

How you should role-play

- You are initially agitated, confused, and mumbling
- You are not able to properly answer any questions
- You don't tolerate bright lights and you have a stiff neck
- You gradually deteriorate and will have a seizure

Your background

- No past medical history
- No regular medication
- No illicit drugs
- No allergies

Scenario flowchart

INITIAL SETTINGS

A: Clear, mumbling rambling sentences
B: RR 36, sats 96% on air, chest clear
C: HR 129, BP 130/90, CRT 3sec
D: PEARL 3mm, E3V4M4, photophobia, stiff neck
E: No rash / rash, temp 38.4

EXPECTED ACTIONS

- ABCDE assessment
- O2 facemask
- ECG + NIBP monitoring
- Severity of illness: call for seniors
- Detect meningism, take cultures & give antibiotics

DETERIORATION

A: Soft tissue airway obstruction and snoring, incoherent sounds in response to pain
B: RR 48, sats 95% on 15L O2, chest clear
C: HR 140, BP 160/60, CRT 3sec
D: Eyes closed, photophobia worse, E2V2M3
E: Unchanged

EXPECTED ACTIONS

- Recognise deterioration and need for airway protection
- Call for ITU support
- Give antibiotics after cultures if not already done
- Consider differential diagnosis and request relevant Ix (biochem, tox screen, metabolic screen, history of trauma, CT, LP)
- Liaise with microbiology if not already done

FURTHER DETERIORATION

A: Soft tissue airway obstruction and snoring
B: RR 48, sats 95% on 15L O2, chest clear
C: HR 140, BP 90/50, CRT 3sec
D: Eyes closed, pupils sluggish, E1V1M3
E: Unchanged

RESULTS

INITIAL ABG (on room air)
pH 7.22
pO2 10
pCO2 4.5
BE -12
Lact 4

CXR: Normal

ECG: Sinus tachycardia

ABG (after further deterioration)
pH 7.20
pO2 13
pCO2 2.9
BE -14
Lact 6

BLOODS: WBC 24, otherwise normal

EXPECTED OUTCOME

- Recognition of progressive deterioration
- Insert airway adjunct
- Recognition of need for airway protection and controlled ventilation
- Liaise with ITU and medical assessors re next steps

LOW DIFFICULTY

- Medical Registrar arrives early, ensures samples taken, antibiotics given & anticonvulsants prescribed
- ITU Registrar secures airway and arranges on-going care

NORMAL DIFFICULTY

- Seniors not present
- Reassess, fluids, start notes
- Consider further investigations

HIGH DIFFICULTY

- Seizure before seniors arrive: manage as per local protocol
- Consider further investigations
- ITU secures airway and transfers

RESOLUTION

- ITU take over care
- Notes should be written and accompany patient

References

- Local antibiotic guidelines
- NICE Clinical Guideline CG102: Meningitis (bacterial) and meningococcal septicaemia in under 16s: recognition, diagnosis and management. Found at https://www.nice.org.uk/guidance/CG102
- Booklet from Meningitis Research Foundation for doctors in training includes a review of the condition and a number of case presentations. Found at: https://www.meningitis.org/healthcare-professionals/resources

Clinical props

RADIOMETER ABL800 FLEX

Identifications			
Patient ID	789987		
Patient Last Name	Williams		
Patient First Name	Keith		
Sex	male		
Date of birth			
$FO_2(I)$	21.0	%	
T	38.4	C	
Sample type	Arterial		
Operator	TEMPPPH1		

	Blood Gas Values			
↓	pH	7.220		[7.350 - 7.450]
↓	pCO_2	4.50	kPa	[4.70 - 6.00]
↓	pO_2	10.0	kPa	[11.1 - 14.4]
	Hct_C		%	
	Oximetry Values			
	ctHb	10.4	g/L	
	FO_2Hb	91.0	%	[94.0 - 98.0]
	sO_2	96.0	%	
	FCOHb	1.4	%	[0.5 - 1.5]
	FHHb	4.0	%	[0.0 - 5.0]
	FMetHb	0.1	%	[0.0 - 1.5]
	Calculated Values			
	$cBase(Ecf)_C$	-12.0	mmol/L	
	$cHCO_3^-(P)_C$	10.0	mmol/L	
	Electrolyte Values			
	cNa^+	143	mmol/L	[136 - 146]
	cK^+	3.9	mmol/L	[3.4 - 4.5]
	cCl^-	106	mmol/L	[98 - 106]
	cCa^{++}	2.22	mmol/L	[2.2 - 2.45]
	Anion Gap_C		mmol/L	
	Metabolite Values			
	cGlu	5.6	mmol/L	[3.9 - 5.8]
↑	cLac	4.0	mmol/L	[0.5 - 1.6]
↑	cCrea	98	µmol/L	[44 - 97]

Notes	
↑	Value(s) above reference range
↓	Value(s) below reference range
c	Calculated value(s)

RADIOMETER ABL800 FLEX

Identifications			
Patient ID	789987		
Patient Last Name	Williams		
Patient First Name	Keith		
Sex	male		
Date of birth			
$FO_2(I)$	60.0 %		
T	38.4 C		
Sample type	Arterial		
Operator	TEMP PPH 1		

	Blood Gas Values			
↓	pH	7.200		[7.350 - 7.450]
↓	pCO_2	2.90	kPa	[4.70 - 6.00]
	pO_2	13.0	kPa	[11.1 - 14.4]
	Hct_c		%	
	Oximetry Values			
	ctHb	10.4	g/L	
	FO_2Hb	91.0	%	[94.0 - 98.0]
	sO_2	95.0	%	
	FCOHb	1.4	%	[0.5 - 1.5]
	FHHb	4.0	%	[0.0 - 5.0]
	FMetHb	0.1	%	[0.0 - 1.5]
	Calculated Values			
	$cBase(Ecf)_c$	-14.0	mmol/L	
	$cHCO_3^-(P)_c$	8.0	mmol/L	
	Electrolyte Values			
	cNa^+	143	mmol/L	[136 - 146]
	cK^+	3.9	mmol/L	[3.4 - 4.5]
	cCl^-	106	mmol/L	[98 - 106]
	cCa^{2+}	2.22	mmol/L	[2.2 - 2.45]
	$Anion\ Gap_c$		mmol/L	
	Metabolite Values			
	cGlu	5.6	mmol/L	[3.9 - 5.8]
↑	cLac	6.0	mmol/L	[0.5 - 1.6]
↑	cCrea	98	µmol/L	[44 - 97]

Notes	
↑	Value(s) above reference range
↓	Value(s) below reference range
c	Calculated value(s)

NEWS - OBSERVATION CHART

NHS
Frimley Health
NHS Foundation Trust

Surname: Williams		First name: Keith	
Hospital number: 12345	D.O.B: 1.1.2000	Date of admission: Today	

Parameter	Range	Observation	Score
	DATE		
	TIME		
A+B Respirations Breaths/min	≥25	36	3
	21–24		2
	18–20		
	15–17		
	12–14		
	9–11		1
	≤8		3
A+B SpO2 Scale 1 Oxygen saturation (%)	≥96	96	
	94–95		1
	92–93		2
	≤91		3
SpO2 Scale 2† Oxygen saturation (%) Use Scale 2 if target range is 88–92%, eg in hypercapnic respiratory failure	≥97 on O_2		3
	95–96 on O_2		2
	93–94 on O_2		1
	≥93 on air		
	88–92		
† ONLY use Scale 2 under the direction of a qualified clinician	86–87		1
	84–85		2
	≤83%		3
Air or oxygen?	A=Air	A	
	O2 L/min		2
	Device		
C Blood pressure mmHg Score uses systolic BP only	≥220		
	201–219		
	181–200		
	161–180		
	141–160	130	
	121–140	↑	
	111–120		
	101–110		1
	91–100	↓	2
	81–90		3
	71–80		3
	61–70		3
	51–60		3
	≤50		3
C Pulse Beats/min	≥131	129	3
	121–130	•	2
	111–120		2
	101–110		1
	91–100		1
	81–90		
	71–80		
	61–70		
	51–60		
	41–50		1
	31–40		3
	≤30		3
D Consciousness Score for NEW onset of confusion (no score if chronic)	Alert		
	Confusion	C	3
	V		3
	P		3
	U		3
E Temperature °C	≥39.1°	38.4	2
	38.1–39.0°	•	1
	37.1–38.0°		
	36.1–37.0°		
	35.1–36.0°		1
	≤35.0°		3
NEWS TOTAL		6	
	Monitoring frequency		
	Pain score		
	Initials		

National Early Warning Score 2 (NEWS2) © Royal College of Physicians 2017 Version: 201807_004 Product Code:

Frimley Park Hospital

Frimley Health NHS
NHS Foundation Trust

CAPILLARY BLOOD GLUCOSE MONITORING CHART

PATIENT'S NAME	Blood Glucose Level Pre Meals 4-7 mmols/L 2 hrs Post meals 6-9 mmols/L	THINK FEET
HOSPITAL NUMBER	**If blood glucose is high (>15)**, check if the patient is well or unwell.	View heel and toes
DATE OF BIRTH OR PATIENT STICKY LABEL	Check urine ketone status. Push fluids – oral, may need iv if unwell. **If has Type 1 Diabetes and ketone≥2+ (3.9mmol/L), check a VBG and alert seniors.** If ketone <2+ and well, give correction dose of insulin and repeat a CBG in 2 hours. **If has Type2 Diabetes** and is otherwise well or stable, seek DSN advice at next opportunity. If acutely unwell or septic consider a VRIII.	If abnormal see advice below

DATE	PRE-BREAK-FAST	2 HRS POST-BREAK-FAST	PRE LUNCH	2 HRS POST LUNCH	PRE EVENING MEAL	2 HRS POST EVENING MEAL	PRE BED	DURING NIGHT	Foot Check (Initial Daily)
	Signature	Signature	Signature	Signature	Signature	Signature	Signature	Signature	
	Signature	Signature	Signature	Signature	Signature	Signature	Signature	Signature	
	Signature	Signature	Signature	Signature	Signature	Signature	Signature	Signature	
	Signature	Signature	Signature	Signature	Signature	Signature	Signature	Signature	
	Signature	Signature	Signature	Signature	Signature	Signature	Signature	Signature	
	Signature	Signature	Signature	Signature	Signature	Signature	Signature	Signature	
	Signature	Signature	Signature	Signature	Signature	Signature	Signature	Signature	

HYPOGLYCAEMIA MANAGEMENT – Blood Glucose Level below 4mmols/L

If recurrent hypos or a severe hypo requiring IV / IM treatment refer to diabetes team

DATE	TIME	BLOOD GLUCOSE	TREATMENT GIVEN	BLOOD GLUCOSE AFTER 15 MINUTES	TREATMENT GIVEN *If no meal due please remember to give long acting carbohydrate*	SIGNATURE

HYPERGLYCAEMIA MANAGEMENT – Blood Glucose Level above 15mmols/L

If recurrent blood glucose > 11 mmols/L refer to diabetes team

DATE	TIME	BLOOD GLUCOSE	KETONE STATUS	ACTION TAKEN	SIGNATURE	BLOOD GLUCOSE AFTER 2 HOURS	BLOOD GLUCOSE AFTER 4 HOURS	SIGNATURE

FOOT PROTECTION ADVICE

If heels red or skin damaged offload with air mattress or PODUS boots immediately

Refer patient with heel problems to tissue viability and other foot lesions to podiatry

Originated by: Dr E Bingham (Consultant Endocrinology) & Joan Hughes (Diabetes Specialist Nurse)
Implemented Jan 2005/Version 5/ Oct 2015/Review Oct 2017

Product Code FH3217

Frimley Health NHS
NHS Foundation Trust

Frimley Park Hospital

First Name(s): KEITH Surname: WILLIAMS Hospital Number: 789987 NHS Number: Date of Birth:	Ward	Date chart started	Chart number of
	Consultant	Doctor bleep number	Date of admission

Date weighed	Weight (kg)	Date weighed	Weight (kg)	Height (M)	Surface area (M^2)	Ideal Body Weight (IBW)	Body Mass Index (BMI)	Diet

Allergies (write 'none known' and sign if none known). This section must be completed before medication is given.

Drug/substance	Details of reaction

This patient also has the following additional charts (complete and tick relevant box (es))

IV heparin infusion chart		Chemotherapy chart		MRSA Suppression	
PCA		Epidural		Medicines reconciliation	

Reminder: Prescriptions must be rewritten not amended
Unclear prescriptions will be challenged
Care with opioids if elderly, frail and/or renal impairment

Date	Communication for doctors. Messages must be actioned within 24 hours.	Sign and Bleep No.	Actioned sign and date

Smoking		Alcohol	
Is the patient a smoker	Yes / No	Audit C score	
Is NRT currently in use	Yes / No	Full Audit score (if undertaken)	
		Withdrawal medication required	

Is patient self medicating: Yes / No

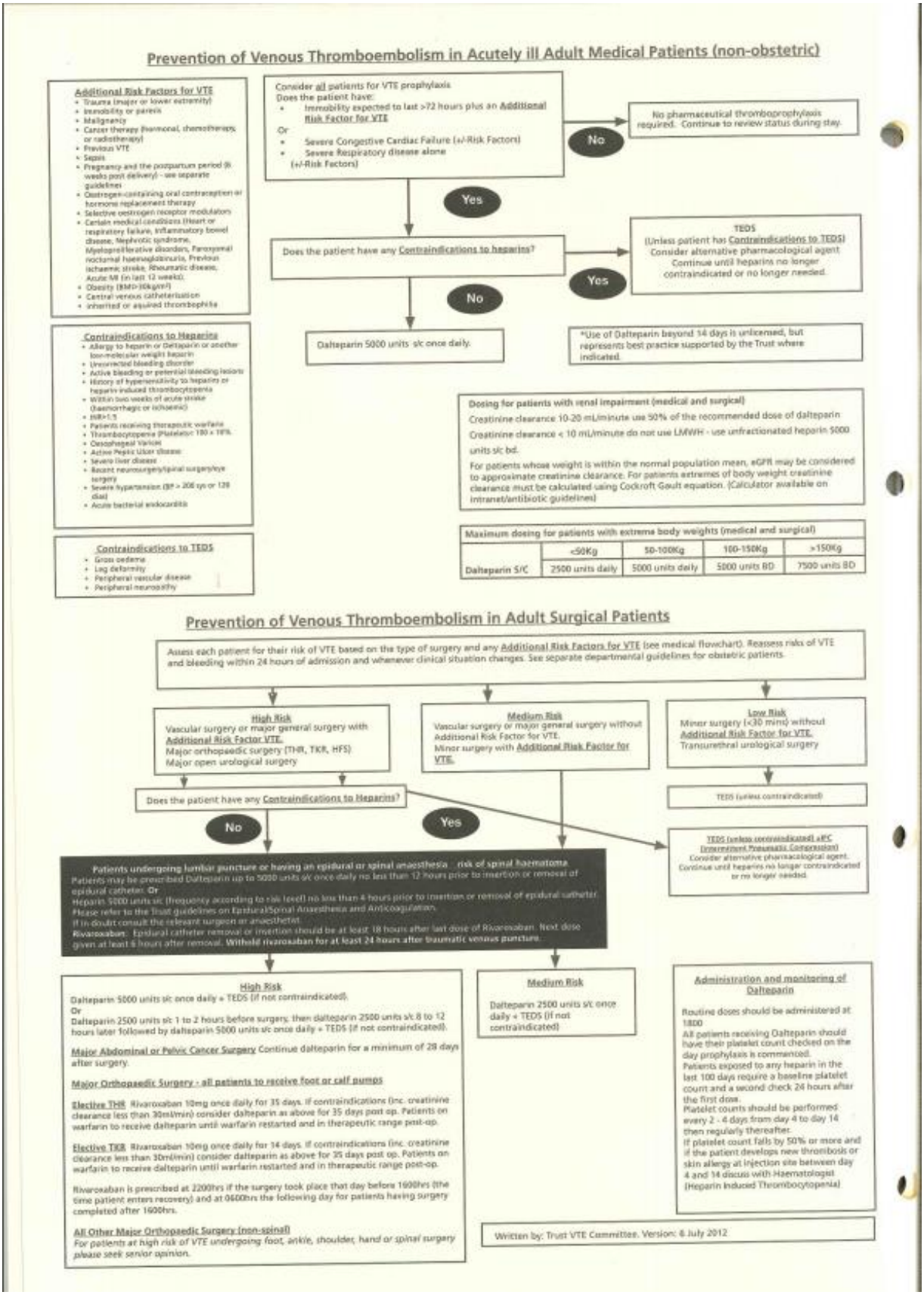
Level 1 / 2 / 3

Date chart rewritten ___/___/___

TTO written ___/___/___

Needs: Large print ☐ PMR card ☐

Product Code FH3159 **February 2016**


Prevention of Venous Thromboembolism in Acutely ill Adult Medical Patients (non-obstetric)
Additional Risk Factors for VTE
Trauma (major or lower extremity)
Immobility or paresis
Malignancy
Cancer therapy (hormonal, chemotherapy, or radiotherapy)
Previous VTE
Sepsis
Pregnancy and the postpartum period (6 weeks post delivery) - see separate guidelines
Oestrogen-containing oral contraception or hormone replacement therapy
Selective oestrogen receptor modulators
Certain medical conditions (Heart or respiratory failure, inflammatory bowel disease, Nephrotic syndrome, Myeloproliferative disorders, Paroxysmal nocturnal haemoglobinuria, Previous ischaemic stroke, Rheumatic disease, Acute MI (in last 12 weeks))
Obesity (BMI>30kg/m²)
Central venous catheterisation
Inherited or aquired thrombophilia
Consider all patients for VTE prophylaxis
Does the patient have:
Immobility expected to last >72 hours plus an Additional Risk Factor for VTE
Or
Severe Congestive Cardiac Failure (+/-Risk Factors)
Severe Respiratory disease alone (+/-Risk Factors)
No
No pharmaceutical thromboprophylaxis required. Continue to review status during stay.
Yes
Does the patient have any Contraindications to heparins?
Yes
TEDS
(Unless patient has Contraindications to TEDS)
Consider alternative pharmacological agent
Continue until heparins no longer contraindicated or no longer needed.
No
Dalteparin 5000 units s/c once daily.
*Use of Dalteparin beyond 14 days is unlicensed, but represents best practice supported by the Trust where indicated.
Contraindications to Heparins
Allergy to heparin or Dalteparin or another low-molecular weight heparin
Uncorrected bleeding disorder
Active bleeding or potential bleeding lesions
History of hypersensitivity to heparin or heparin-induced thrombocytopenia
Within two weeks of acute stroke (haemorrhagic or ischaemic)
INR>1.5
Patients receiving therapeutic warfarin
Thrombocytopenia (Platelets< 100 x 10⁹/L
Oesophageal Varices
Active Peptic Ulcer disease
Severe liver disease
Recent neurosurgery/spinal surgery/eye surgery
Severe hypertension (BP > 200 sys or 120 dias)
Acute bacterial endocarditis
Contraindications to TEDS
Gross oedema
Leg deformity
Peripheral vascular disease
Peripheral neuropathy
Dosing for patients with renal impairment (medical and surgical)
Creatinine clearance 10-20 mL/minute use 50% of the recommended dose of dalteparin
Creatinine clearance < 10 mL/minute do not use LMWH - use unfractionated heparin 5000 units s/c bd.
For patients whose weight is within the normal population mean, eGFR may be considered to approximate creatinine clearance. For patients extremes of body weight creatinine clearance must be calculated using Cockroft Gault equation. (Calculator available on intranet/antibiotic guidelines)
Maximum dosing for patients with extreme body weights (medical and surgical)
<50Kg
50-100Kg
100-150Kg
>150Kg
Dalteparin S/C
2500 units daily
5000 units daily
5000 units BD
7500 units BD
Prevention of Venous Thromboembolism in Adult Surgical Patients
Assess each patient for their risk of VTE based on the type of surgery and any Additional Risk Factors for VTE (see medical flowchart). Reassess risks of VTE and bleeding within 24 hours of admission and whenever clinical situation changes. See separate departmental guidelines for obstetric patients
High Risk
Vascular surgery or major general surgery with Additional Risk Factor VTE.
Major orthopaedic surgery (THR, TKR, HFS)
Major open urological surgery
Medium Risk
Vascular surgery or major general surgery without Additional Risk Factor for VTE.
Minor surgery with Additional Risk Factor for VTE.
Low Risk
Minor surgery (<30 mins) without Additional Risk Factor for VTE.
Transurethral urological surgery
TEDS (unless contraindicated)
Does the patient have any Contraindications to Heparins?
No
Yes
TEDS (unless contraindicated) +IPC (Intermittent Pneumatic Compression)
Consider alternative pharmacological agent.
Continue until heparins no longer contraindicated or no longer needed.
Patients undergoing lumbar puncture or having an epidural or spinal anaesthesia - risk of spinal haematoma
Patients may be prescribed Dalteparin up to 5000 units s/c once daily no less than 12 hours prior to insertion or removal of epidural catheter. Or
Heparin 5000 units s/c (frequency according to risk level) no less than 4 hours prior to insertion or removal of epidural catheter.
Please refer to the Trust guidelines on Epidural/Spinal Anaesthesia and Anticoagulation.
If in doubt consult the relevant surgeon or anaesthetist.
Rivaroxaban: Epidural catheter removal or insertion should be at least 18 hours after last dose of Rivaroxaban. Next dose given at least 6 hours after removal. Withold rivaroxaban for at least 24 hours after traumatic venous puncture.
High Risk
Dalteparin 5000 units s/c once daily + TEDS (if not contraindicated).
Or
Dalteparin 2500 units s/c 1 to 2 hours before surgery, then dalteparin 2500 units s/c 8 to 12 hours later followed by dalteparin 5000 units s/c once daily + TEDS (if not contraindicated).
Major Abdominal or Pelvic Cancer Surgery Continue dalteparin for a minimum of 28 days after surgery.
Major Orthopaedic Surgery - all patients to receive foot or calf pumps
Elective THR Rivaroxaban 10mg once daily for 35 days. If contraindications (inc. creatinine clearance less than 30ml/min) consider dalteparin as above for 35 days post op. Patients on warfarin to receive dalteparin until warfarin restarted and in therapeutic range post-op.
Elective TKR Rivaroxaban 10mg once daily for 14 days. If contraindications (inc. creatinine clearance less than 30ml/min) consider dalteparin as above for 35 days post op. Patients on warfarin to receive dalteparin until warfarin restarted and in therapeutic range post-op.
Rivaroxaban is prescribed at 2200hrs if the surgery took place that day before 1600hrs (the time patient enters recovery) and at 0600hrs the following day for patients having surgery completed after 1600hrs.
All Other Major Orthopaedic Surgery (non-spinal)
For patients at high risk of VTE undergoing foot, ankle, shoulder, hand or spinal surgery please seek senior opinion.
Medium Risk
Dalteparin 2500 units s/c once daily + TEDS (if not contraindicated)
Administration and monitoring of Dalteparin
Routine doses should be administered at 1800
All patients receiving Dalteparin should have their platelet count checked on the day prophylaxis is commenced.
Patients exposed to any heparin in the last 100 days require a baseline platelet count and a second check 24 hours after the first dose.
Platelet counts should be performed every 2 - 4 days from day 4 to day 14 then regularly thereafter.
If platelet count falls by 50% or more and if the patient develops new thrombosis or skin allergy at injection site between day 4 and 14 discuss with Haematologist (Heparin Induced Thrombocytopenia)
Written by: Trust VTE Committee. Version: 6 July 2012

RISK ASSESSMENT RECORD SHEET FOR VENOUS THROMBOEMBOLISM (VTE)

- Please use in conjunction with Trust guidelines overleaf
- Please see separate Trust guidelines for obstetric patients

Thrombosis Risk	Patient Related	Procedure Related	Initial Assessment __/__/__	Assessment at 24 hours __/__/__	Assessment on __/__/__	Assessment on __/__/__
High	Previous VTE					
	Immobility expected to last >72 hours					
	Malignancy					
	Acute or chronic lung disease					
	Acute or chronic inflammatory disease					
	Chronic heart failure					
	Lower limb paralysis (excluding acute stroke)					
	Acute infectious disease, e.g. pneumonia					
	BMI >30kg/m2					
	Inherited or acquired thrombophilia					
	Pregnancy or less than 6 weeks post partum					
		Hip or Knee replacement				
		Hip fracture				
		Other major orthopaedic surgery				
		Surgical procedure lasting >30mins with additional VTE risk factor(s)				
Medium	Oestrogen containing oral contraception or HRT					
	Selective oestrogen receptor modulators					
	Age > 60					
	Dehydration					
	Varicose veins with phlebitis					
		Minor surgical procedure with additional VTE risk factor(s)				
		Surgical procedure lasting >30mins with no additional VTE risk factors				
		Plaster cast immobilisation of lower limb				
Low	None of above	None of above				
Bleeding Risk/ Contraindications	**Patient Related**	**Procedure Related**				
	Haemophilia or other known bleeding disorder					
	Thrombocytopenia (Platelets < 100 x 10^9/L)					
	Within two weeks of acute stroke (haemorrhagic or ischaemic)					
	Severe hypertension (BP > 200 systolic or 120 diastolic)					
	Severe liver disease					
	Oesophageal Varices					
	Active Peptic Ulcer disease					
	Active bleeding or potential bleeding lesions					
	Major bleeding risk, existing anticoagulant therapy					
	Severe renal disease					
		Neurosurgery, spinal surgery or eye surgery				
		Other procedure with high bleeding risk				
		Lumbar puncture/spinal/epidural in previous 4 hours or anticipated in next 12 hours				
Risk assessment performed by						
Signature						
Copy of Patient Information Leaflet given to patient			Yes / No			

ONCE ONLY DRUGS AND PREMEDICATION.

Date	Time	Drug	Dose	Route	Prescriber Sig. GMC no.	Batch number (vaccines only)	Time given	Sig.	Pharm.

DRUGS ADMINISTERED UNDER MIDWIFERY EXEMPTION AND PATIENT GROUP DIRECTIONS.

Date	Time	Drug	Dose	Route	Batch number (vaccines and blood products only)	Print name	Sig.

REASONS FOR DRUGS NOT ADMINISTERED AND ACTIONS TAKEN.

Date	Time	Drug (s)	Nurses signature	Reason(s) for non administration and action(s) taken

FOR DRUGS NOT ADMINISTERED ENTER THE APPROPRIATE CODE IN THE ADMINISTRATION BOX AND SIGN

1 NIL BY MOUTH
2 REFUSED
3 UNABLE (NEEDS

REGULAR PRESCRIPTIONS

MONTH/YEAR
DATE

TIMES

OXYGEN — Circle target saturation. Adjust flow rate to maintain specified oxygen saturation

Target oxygen saturation: 88 to 92% | 94 to 98%

Other: ____________

PRESCRIBERS SIGNATURE	DATE
Home Oxygen Indicated: YES / NO Referral to Respiratory Nurse for HOOP Date:	
Nurse to intial against time to confirm oxygen is being administered and meeting specified target. Flow rate is to be documented to the left of the column, i.e.	2L Sign

Times: 0800, 1200, 1800, 2200, Device

PHARMACOLOGICAL VTE PROPHYLAXIS/TREATMENT INCLUDING NOACS		DOSE		ROUTE
PRESCRIBERS SIGNATURE	GMC No.	START	REVIEW	STOP
INDICATION AND SPECIAL INSTRUCTIONS			Please tick appropriate status ☐ NEW ☐ PRE AD ☐ CHANGE	
PHARMACY POD H POD W			TO CONTINUE ON DISCHARGE ☐ YES ☐ NO	

MECHANICAL VTE PROPHYLAXIS		DOSE		ROUTE
PRESCRIBERS SIGNATURE	GMC No.	START	REVIEW	STOP
INDICATION AND SPECIAL INSTRUCTIONS			Please tick appropriate status ☐ NEW ☐ PRE AD ☐ CHANGE	
PHARMACY POD H POD W			TO CONTINUE ON DISCHARGE ☐ YES ☐ NO	

WARFARIN AND OTHER COUMARIN ANTICOAGULANTS			TIME	INR
PRESCRIBERS SIGNATURE	GMC No.		DATE STARTED	DOSE (mg)
INDICATION	DURATION	TARGET INR	PLEASE TICK APPROPRIATE STATUS ☐ NEW ☐ PREADMISSION	PRESCRIBERS SIGNATURE
PHARMACY POD H POD W	BOOK PROVIDED ON: BY:	DATE COUNSELLED: BY:	TO CONTINUE ON DISCHARGE ☐ YES ☐ NO	GIVEN BY

DRUG (Approved Name)		DOSE		ROUTE
PRESCRIBERS SIGNATURE	GMC No.	START	REVIEW	STOP
INDICATION AND SPECIAL INSTRUCTIONS			Please tick appropriate status ☐ NEW ☐ PRE AD ☐ CHANGE	
PHARMACY POD H POD W			TO CONTINUE ON DISCHARGE ☐ YES ☐ NO	

DRUG (Approved Name)		DOSE		ROUTE
PRESCRIBERS SIGNATURE	GMC No.	START	REVIEW	STOP
INDICATION AND SPECIAL INSTRUCTIONS			Please tick appropriate status ☐ NEW ☐ PRE AD ☐ CHANGE	
PHARMACY POD H POD W			TO CONTINUE ON DISCHARGE ☐ YES ☐ NO	

DRUG (Approved Name)		DOSE		ROUTE
PRESCRIBERS SIGNATURE	GMC No.	START	REVIEW	STOP
INDICATION AND SPECIAL INSTRUCTIONS			Please tick appropriate status ☐ NEW ☐ PRE AD ☐ CHANGE	
PHARMACY POD H POD W			TO CONTINUE ON DISCHARGE ☐ YES ☐ NO	

DRUG (Approved Name)		DOSE		ROUTE
PRESCRIBERS SIGNATURE	GMC No.	START	REVIEW	STOP
INDICATION AND SPECIAL INSTRUCTIONS			Please tick appropriate status ☐ NEW ☐ PRE AD ☐ CHANGE	
PHARMACY POD H POD W			TO CONTINUE ON DISCHARGE ☐ YES ☐ NO	

WHEN REQUIRED MEDICATION

DRUG (Approved name)			Date								
DOSE	ROUTE	FREQUENCY	Time								
PRESCRIBER'S SIGNATURE	GMC No.	DATE	Dose								
INDICATION AND SPECIAL INSTRUCTIONS	☐ NEW ☐ PRE AD		Route								
PHARMACY POD H POD W	TO CONTINUE ON DISCHARGE	☐ YES ☐ NO	Given by								
DRUG (Approved name)			Date								
DOSE	ROUTE	FREQUENCY	Time								
PRESCRIBER'S SIGNATURE	GMC No.	DATE	Dose								
INDICATION AND SPECIAL INSTRUCTIONS	☐ NEW ☐ PRE AD		Route								
PHARMACY POD H POD W	TO CONTINUE ON DISCHARGE	☐ YES ☐ NO	Given by								
DRUG (Approved name)			Date								
DOSE	ROUTE	FREQUENCY	Time								
PRESCRIBER'S SIGNATURE	GMC No.	DATE	Dose								
INDICATION AND SPECIAL INSTRUCTIONS	☐ NEW ☐ PRE AD		Route								
PHARMACY POD H POD W	TO CONTINUE ON DISCHARGE	☐ YES ☐ NO	Given by								
DRUG (Approved name)			Date								
DOSE	ROUTE	FREQUENCY	Time								
PRESCRIBER'S SIGNATURE	GMC No.	DATE	Dose								
INDICATION AND SPECIAL INSTRUCTIONS	☐ NEW ☐ PRE AD		Route								
PHARMACY POD H POD W	TO CONTINUE ON DISCHARGE	☐ YES ☐ NO	Given by								
DRUG (Approved name)			Date								
DOSE	ROUTE	FREQUENCY	Time								
PRESCRIBER'S SIGNATURE	GMC No.	DATE	Dose								
INDICATION AND SPECIAL INSTRUCTIONS	☐ NEW ☐ PRE AD		Route								
PHARMACY POD H POD W	TO CONTINUE ON DISCHARGE	☐ YES ☐ NO	Given by								
DRUG (Approved name)			Date								
DOSE	ROUTE	FREQUENCY	Time								
PRESCRIBER'S SIGNATURE	GMC No.	DATE	Dose								
INDICATION AND SPECIAL INSTRUCTIONS	☐ NEW ☐ PRE AD		Route								
PHARMACY POD H POD W	TO CONTINUE ON DISCHARGE	☐ YES ☐ NO	Given by								
DRUG (Approved name)			Date								
DOSE	ROUTE	FREQUENCY	Time								
PRESCRIBER'S SIGNATURE	GMC No.	DATE	Dose								
INDICATION AND SPECIAL INSTRUCTIONS	☐ NEW ☐ PRE AD		Route								
PHARMACY POD H POD W	TO CONTINUE ON DISCHARGE	☐ YES ☐ NO	Given by								

Reminder: Prescribe on regular prescription and state "see variable prescription"

Insulins - variable dosing

				MONTH/YEAR ⇒ ⇩ DATE	
			SIG ⇒		
			⇩ TIMES	Units / Sig	Units / Sig
DRUG (Approved name)		ROUTE S/C			
PRESCRIBERS SIGNATURE	GMC No.	START	STOP	Breakfast	
DEVICE	Please tick appropriate status ☐ NEW ☐ PRE AD			Lunch	
PHARMACY POD H POD W	TO CONTINUE ON DISCHARGE ☐ YES ☐ NO			Dinner	
				Night	
DRUG (Approved name)		ROUTE S/C			
PRESCRIBERS SIGNATURE	GMC No.	START	STOP	Breakfast	
DEVICE	Please tick appropriate status ☐ NEW ☐ PRE AD			Lunch	
PHARMACY POD H POD W	TO CONTINUE ON DISCHARGE ☐ YES ☐ NO			Dinner	
				Night	
DRUG (Approved name)		ROUTE S/C			
PRESCRIBERS SIGNATURE	GMC No.	START	STOP	Breakfast	
DEVICE	Please tick appropriate status ☐ NEW ☐ PRE AD			Lunch	
PHARMACY POD H POD W	TO CONTINUE ON DISCHARGE ☐ YES ☐ NO			Dinner	
				Night	

WHEN REQUIRED INSULINS

DRUG (Approved name)			Date							
DOSE (UNITS)	ROUTE S/C	FREQUENCY	Time							
PRESCRIBERS SIGNATURE GMC No.		DATE	DOSE (in Units)							
INDICATION AND SPECIAL INSTRUCTIONS			Route							
PHARMACY			Given by							
DRUG (Approved name)			Date							
DOSE (UNITS)	ROUTE S/C	FREQUENCY	Time							
PRESCRIBERS SIGNATURE GMC No.		DATE	DOSE (in Units)							
INDICATION AND SPECIAL INSTRUCTIONS			Route							
PHARMACY			Given by							
DRUG (Approved name)			Date							
DOSE (UNITS)	ROUTE S/C	FREQUENCY	Time							
PRESCRIBERS SIGNATURE GMC No.		DATE	DOSE (in Units)							
INDICATION AND SPECIAL INSTRUCTIONS			Route							
PHARMACY			Given by							

ANTIMICROBIAL PRESCRIPTIONS ONLY

DRUG (Approved name)		DOSE		ROUTE
PRESCRIBER'S SIGNATURE	GMC No.	INDICATION (MANDATORY)		
START	48 HOUR REVIEW	2ND REVIEW DATE / TIME	3RD REVIEW DATE / TIME	STOP
REVIEWED BY ⇨				
PHARMACY POD H POD W				

DATE ⇨ TIMES							

DRUG (Approved name)		DOSE		ROUTE
PRESCRIBER'S SIGNATURE	GMC No.	INDICATION (MANDATORY)		
START	48 HOUR REVIEW	2ND REVIEW DATE / TIME	3RD REVIEW DATE / TIME	STOP
REVIEWED BY ⇨				
PHARMACY POD H POD W				

DATE ⇨ TIMES							

DRUG (Approved name)		DOSE		ROUTE
PRESCRIBER'S SIGNATURE	GMC No.	INDICATION (MANDATORY)		
START	48 HOUR REVIEW	2ND REVIEW DATE / TIME	3RD REVIEW DATE / TIME	STOP
REVIEWED BY ⇨				
PHARMACY POD H POD W				

DATE ⇨ TIMES							

DRUG (Approved name)		DOSE		ROUTE
PRESCRIBER'S SIGNATURE	GMC No.	INDICATION (MANDATORY)		
START	48 HOUR REVIEW	2ND REVIEW DATE / TIME	3RD REVIEW DATE / TIME	STOP
REVIEWED BY ⇨				
PHARMACY POD H POD W				

DATE ⇨ TIMES							

DRUG (Approved name)		DOSE		ROUTE
PRESCRIBER'S SIGNATURE	GMC No.	INDICATION (MANDATORY)		
START	48 HOUR REVIEW	2ND REVIEW DATE / TIME	3RD REVIEW DATE / TIME	STOP
REVIEWED BY ⇨				
PHARMACY POD H POD W				

DATE ⇨ TIMES							

DRUG (Approved name)		DOSE		ROUTE
PRESCRIBER'S SIGNATURE	GMC No.	INDICATION (MANDATORY)		
START	48 HOUR REVIEW	2ND REVIEW DATE / TIME	3RD REVIEW DATE / TIME	STOP
REVIEWED BY ⇨				
PHARMACY POD H POD W				

MRSA Status	New	Previous Admission

C. Diff Status	New	Previous Admission

ONCE DAILY GENTAMICIN PRESCRIPTION
Use gentamicin calculator or intranet to calculate dose.
Level must be taken 6 to 14 hours after the first dose has been given.

Specify Dosing Regime 5mg/kg 3mg/kg Other

Indication:_____

Date to be given	Time to be given	Dose (mg)	Prescribers signature GMC No.	Date of sig.	Start time of infusion	Given by: (sign)	Date and Time blood level taken	sign:	Gentamicin Levels mg/l

General Guidance

- All antimicrobial prescriptions MUST follow the Trust's Antimicrobial Policies or MUST have been agreed by Microbiology. See full up to date policy on intranet.
- **INDICATION, STOP AND REVIEW DATES MUST BE RECORDED ON THE CHART.**
- CURB 65 score **MUST** be recorded for all community acquired pneumonia.
- Check previous relevant microbiology results before prescribing antibiotics and check new microbiology results daily. If a patient is not responding to treatment seek advice from a consultant microbiologist.
- Doses need to be adjusted to suit patient's age, size and renal function. To calculate creatinine clearance use calculator on intranet and see dose adjustments for antibiotics.
- All IV regimes MUST be reviewed at 48 hours and switched to oral if appropriate.

IV SWITCH GUIDELINES

If YES to all, consider change to ORAL	If YES to any, remain on IV
Patient able to swallow and tolerate oral fluids?	Oral route compromised?
Temperature settling and < 38°C for at least 48hrs?	Continuing serious sepsis?
Heart rate <100bpm for last 12hrs? (no unexplained tachycardia)	Febrile with neutropenia?
WCC between 4-12x10^9/L?	Specific indication / deep seated infection. (Meningitis, endocarditis, encephalitis, osteomylitis, neutropenia, cystic fibrosis, septicaemia, haematology/ immunocompromised pts, continuing sepsis, other severe infections as discussed with microbiology.) Seek microbiology advice if unsure.
Oral formulation available?	
Others markers: BP stable Respiratory rate <20 breaths/min CRP returning to normal and less than 100 (adult)	
Absence of mental confusion (when representing symptoms of infection)	No oral formulation available (seek microbiology advice on alternative)

NOTE: DRUGS MUST NOT BE ADDED TO BLOOD PRODUCTS

Does the patient require CMV negative blood? (Indicate as appropriate) **Yes / No?**
Does the patient need irradiated blood? (Indicate as appropriate) **Yes / No?**

Name: _____
Hospital Number: _____
NHS Number: _____
Date of Birth: _____

BLOOD PRODUCTS TO BE ADMINISTERED (INCLUDING INTRAVENOUS IMMUNOGLOBULINS)

Date and Time to be administered	Blood product	Total volume	Route	Drugs required to cover infusion (must be prescribed on once only section of chart)	Duration / rate of infusion	Signature GMC No.	Batch number/Unit number (Attach sticker)	Start time / stop time	Given by/ checked by		Did patient experience adverse reaction? (Yes/No) ◄
											Yes / No
											Yes / No
											Yes / No
											Yes / No
											Yes / No
											Yes / No
											Yes / No
											Yes / No
											Yes / No
											Yes / No

Complete label attached to blood product. Detach and return bottom portion via the pink wallet (if available, if not please post to Blood bank)/

◄IF THE PATIENT EXPERIENCES TRANSFUSION RELATED PROBLEMS THESE MUST BE CONTEMPORANEOUSLY RECORDED IN THE PATIENT'S MEDICAL NOTES, AND A TRANSFUSION REACTION FORM AND INCIDENT FORM COMPLETED.

DRUGS TO BE ADMINISTERED BY INTRAVENOUS / SUBCUTANEOUS INFUSION

Date	Time	Infusion solution	Drugs to be added	Total volume	Route	Complete either or		Signature GMC No.	Start time/stop time	Given by/ checked by	Pharm.
						Rate	Duration of infusion				