QuES for excellence	Simulation Scenario		Frimley Health NHS Foundation Trust	
Title	Exacerbation of COPD	Version	10.2	
Target Audience	FY doctors & student nurses	Run time	10 -15 mins	
Authors	N Feely, U Naidoo, M Loughrey, P Wilder	Last review	4/7/18	
Faculty comments	Normal faculty requirements	Necessity	n/a	

Brief Summary

A 70 year old man attends A&E with a straight-forward exacerbation of COPD which foundation doctor candidates should be able to manage without difficulty.

Educational Rationale

COPD is a common disease in the UK and many patients have stable disease that is managed in the community. Patients may present to hospital with exacerbations characterised by an increased severity of symptoms over and above their usual fluctuations. FY trainees should be able to make the clinical diagnosis of an exacerbation of COPD, investigate and treat appropriately. FY trainees should be able to work within and lead a team to safely assess and treat patients in a timely manner, including those who have already deteriorated.

Learning Objectives: Nurse

- ABCDE assessment and initial management of a deteriorating patient
- Appropriate call for help and concise transfer of information using SBAR handover

Learning Objectives: Doctor

- Clinical diagnosis of exacerbation of COPD, appropriate investigations and use of local treatment protocols (including ABG interpretation, indications for oxygen therapy and NIV)
- Prompt, appropriate administration of oxygen, nebulisers, steroids and antibiotics
- Recognition of severity of illness and appropriate call for senior assistance



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

A&E Majors

You are looking after Mr John Williams, a 70 year old patient with COPD and ischaemic heart disease who has presented with shortness of breath. The observations and drug chart are available.

Please assess the patient and manage them as you would normally.

Candidate Briefing: Doctor

Setting

A&E Majors

You are asked to review a 70 year old man in A&E by the nurse looking after him. They are concerned about his breathlessness and would like you to review him as soon as possible.

	Technical set-	up	
Setting	A&E Majors		
Simulator	High fidelity manikin		
Gender	Male	Age	70

	Initial	monitor	paramete	ers
RR	O2 sats	Pulse (HR)	ВР	ECG rhythm
30	86% on air	90	115/60	Sinus tachycardia
Cap Refill Time	Blood glucose	Temp.		
4s	5.9	37.1		

	Initial patient se	et-up
a improve	Obstruction	Airway adjunct
Airway	No	No

Breathing	Chest sounds	O2 supply
breatiling	Wheeze throughout, no crackles	None initially

Circulation	Cannula	BP cuff	Peripheries / pulses
Circulation	Yes	No	Sweaty

Disability	Eyelids	Pupils	AVPU/GCS
Disability	Closed	Reactive	V / 13

Evnocuro	Posture	Moulage
Exposure	In bed at 45 degrees	None

Specific equipment / prop requirements

- Manikin: On ED trolley, IV Access
- Stocked airway trolley (Specifically airway adjuncts (OPA, NPA))
- O2 and selection of masks incl. non-rebreathe mask
- Monitoring equipment (SpO2, ECG, NIBP)
- Syringes, flushes, IV fluid and giving sets
- Simulated drugs (antibiotics as per local guidelines)
- Blood bottles, culture bottles, request forms
- Observation chart, medical note paper, drug chart
- BNF
- Nebulizer
- Peak flow
- NIV mask and machine (optional)

Facilitator Briefing

If the participant doesn't recognise the exacerbation of COPD and commence appropriate treatment, then the patient should deteriorate. However, this may make the scenario too complex for some participants to manage. Instead, the medical registrar may arrive to continue care, or the faculty could choose to pause for a discussion and then continue with another participant managing the further deterioration.

If the participant is doing really well and faculty wish to expand the clinical challenge, then the patient could deteriorate before the senior medical staff arrive. The participant should then continue with the relevant ward-based treatments and contact the critical care team for support.

CONDUCT

- 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

How to run with candidates from only one discipline

An additional member of faculty can play the role of the nurse in this scenario if needed.

Sim Nurse briefing:

You are looking after Mr John Williams, a 70 year old patient with COPD and ischaemic heart disease who has presented with shortness of breath. The observations and drug chart are available.

You have called the FY doctor to review the patient because you are worried about their breathing. It seems to be getting more rapid and laboured. Please assist the FY doctor who comes to assess the patient.

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	A&E Majors
Name	John Williams
Age	70
Gender	Male

What has happened to you?

You have been becoming more breathless since this morning. You have been feeling "under the weather" for the last few days. You have been coughing, but this is not productive. You don't have any chest pain.

You were diagnosed with COPD ten years ago and have needed to attend A&E twice over the past 3 years with trouble breathing.

How you should role-play

Your breathing has been getting more difficult since this morning. You are wheezy. You are now very short of breath and speak in short sentences. If prompted by the faculty, you will deteriorate and become exhausted.

Your background

Your name is John Williams. You are 70 years old. You have a history of angina for which you take a GTN spray and had a heart attack 5 years ago. You have COPD for which you take nebulisers, inhalers and home oxygen at night. You quit smoking 10 years ago. You have no other medical history and no allergies.

Scenario flowchart

EXPECTED ACTIONS

- Recognise acutely unwell
- ABCDE assessment
- O2 facemask
- ECG + NIBP monitoring
- Consider DDx inc COPD, LVF, CAP
- Ix: ABG, bloods, ECG, CXR
- Consider blood cultures, abx as per local guidelines if suspect HAP
- Consider diuresis +/-GTN +/- CPAP/NIV +/-Ahx
- Review medical notes and drug chart

EXPECTED ACTIONS

- ABG if not already
- Consider other diagnoses inc Exac COPD if not already done
- Contact senior for help

INITIAL SETTINGS

- Clear, speaking in short sentences
- B: RR 30, sats 86% on air, no creps, bilateral wheeze
- C: HR 90, BP 115/60, CRT 4s, sweaty peripheries
- E3V4M6, PERL 3mm, BM 5.9 D:
- No rash, temp 37.1, sweaty

DETERIORATION

- Clear, speaking in single words
- RR 45, sats 95% on 15L O2, widespread wheeze B:
- C: HR 140, BP 100/60, CRT 4s
- D: Eyes half open, responds to pain
- Unchanged

FURTHER DETERIORATION

- Clear, speaking in single words
- B: RR 48, sats 88% on 15L O2, widespread wheeze
- C: HR 140, BP 90/50, CRT 4s
- D: Exhausted
- Unchanged

RESULTS

INITIAL ABG (on room air)

7.32 p02 7.1 pCO2 6.8 ΒE -4 Lact 1.4

CXR: Hyperinflated

ECG: Sinus tachycardia

ABG (after further deterioration) рH 7.24 9.1 p02 pCO2 9.6 -5 Lact 1.9

BLOODS: Normal

EXPECTED OUTCOME

- Recognition of deterioration and need to titrate O2
- Contact seniors/Critical Care for support

LOW DIFFICULTY

- Medical Registrar arrives early and ensures titration of O2, appropriate meds and NIV set up
- Patient stabilises

NORMAL DIFFICULTY

- Seniors not present initially
- Treat wheeze +/- LVF, titrate O2
- Discuss with seniors and follow
- their advice re: NIV

RESOLUTION

Appropriate treatment prescribed, investigations ordered, events discussed with patient, contemporaneous notes, decisions re: ongoing care

HIGH DIFFICULTY

- Deterioration even though treated appropriately: patient becomes exhausted.
- Clear
- B: RR 50, silent chest, sats 80%
- HR 140, BP 90/50, CRT 4s C:
- Eyes half closed, not speaking
- ITU team arrive: assist with intubation

References

• British Thoracic Society guidelines for NIV available at:

http://www.brit-

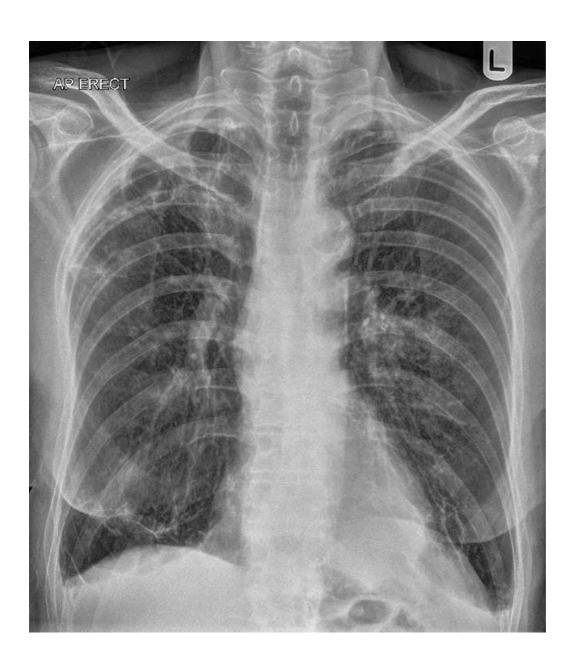
thoracic.org.uk/Portals/0/Clinical%20Information/NIV/Guidelines/NIV.pdf

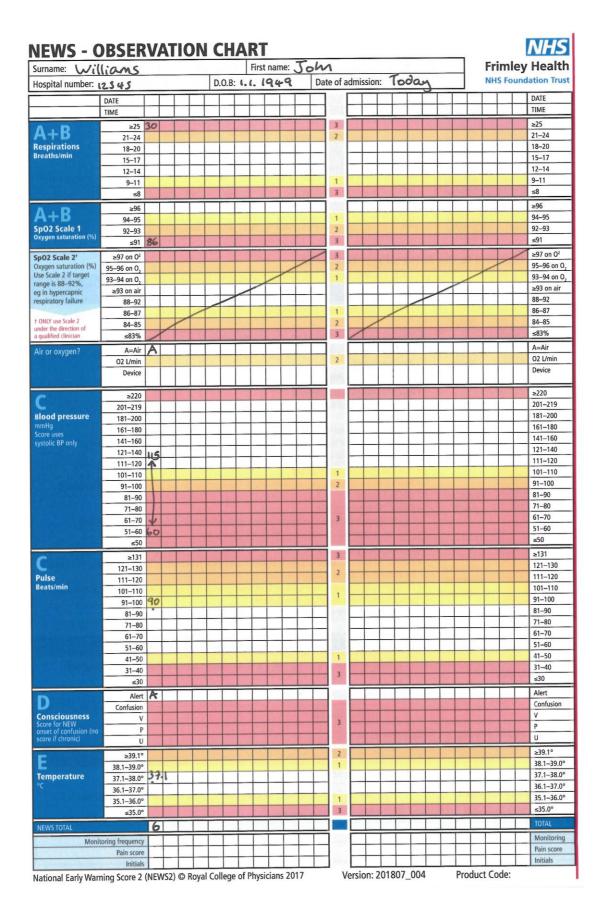
 NICE guideline for COPD available at: http://www.nice.org.uk/nicemedia/live/13029/49397/49397.pdf

Clinical props

Patie Patie Patie Sex	ifications ent ID ent Last Name ent First Name of birth	789987 WILLIAM John	is				
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Bloo	d Gas Value	es					
	pH	7,320		1	7.350	-7.450	1
	pCO,	6.80	kPa	1	4.70	- 6.00	1
	pO,	7.1	kPa	1	11.1	- 14.4	1
	Hctc	0.35	1/6				
Oxin	netry Values						
	ctHb	10.2	g/L				
	FO,Hb	85.0	%	1	94.0	- 98.0	1
	sO,	86.0	%				
	FCOHb	1.0	%	1	0.5	- 1.5	1
	FHHb	3.5	%	1	0.0	- 5.0	1
	FMetHb	1.0	%	1	0.0	- 1.5	1
Calc	ulated Valu	es					
	cBase(Ecf)c	-4.0	mmol/L				
	cHCO, (P)c	29.0	mmol/L				
Elec	trolyte Value	es					
	cNa"	140	mmol/L	1	136	- 146	1
	cK*	4.0	mmol/L	1	3.4	- 4.5	1
	cCl-	100	mmol/L	1	98	- 106	1
	cCair*	1.20	mmol/L	1	2.2	- 2.45	1
	Anion Gap _C		mmol/L	-			- 6
Meta	abolite Value						
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	cLac	1.4	mmol/L		0.5	- 1.6	i
	cCrea	94	µmol/L	1	44	- 97	1
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Identification Patient ID Patient Last N Patient First N Sex Date of birth FO ₂ (I) T Sample type Operator	789987 VILLIA	ж С					
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pO,	9.1	kPa	1	11.1	-	4.4	1
Hctc	0.35	%					
Oximetry Va	alues						
ctHb	10.2	g/L					
FO,Hb	93.0	%	[94.0	-	98.0	1
sO,	94.0	%					
FCOHb	1.0	%	[0.5	-	1.5	1
FHHb	3.5	%	1	0.0	-	5.0	1
FMetHb	1.0	%	1	0.0	-	1.5	1
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cK*	4.0	mmol/L	1	3.4		4.5	1
oCl*	100	mmol/L	1	98	-	106	1
cCa ^{irt}	1.20	mmol/L	1	2.2		2.45	1
Anion G	Sap _C	mmoVL	100				
Metabolite \							
cGlu	4.8	mmol/L	1	3.9		5.8	1
cLac:	1.9	mmol/L	i	0.5		1.6	1
cCrea	94	µmol/L	i	44	-	97	i
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24 Hour Fluid Balance Chart

Frimley Health NHS
NHS Foundation Trust

Patient Name: From Mulms

Date

Hospital No:

NHS No:

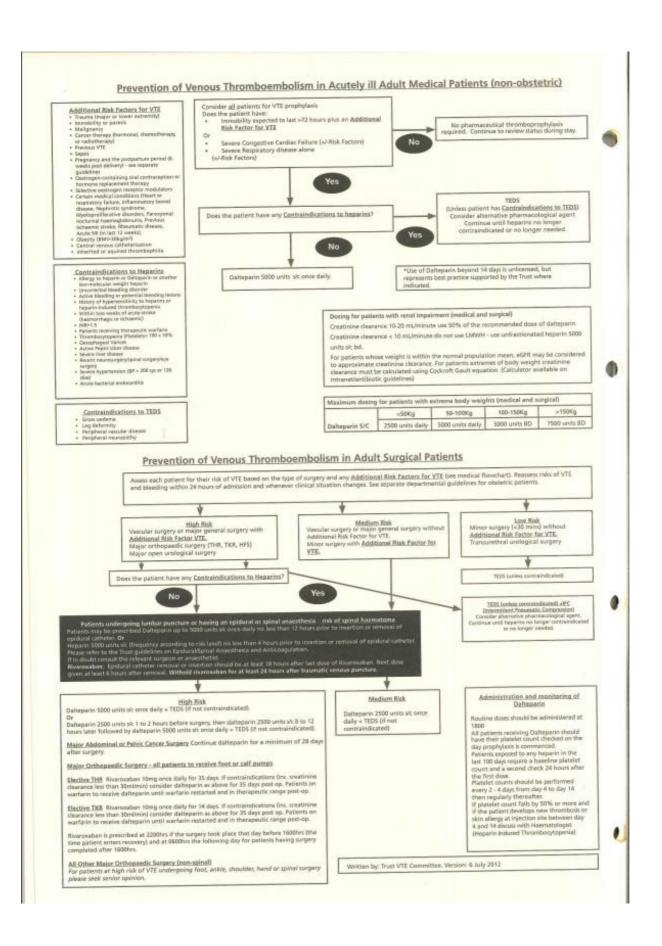
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Product Code: FH1009

Frimley Health	NHS
NUC Equadation Tours	

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Page 16 For Simulation use only



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	Assessment	Assessment at 24 hours	Assessment	Assessmen
High	Previous VTE					
	Immobility expected to test >72 hours		_			
	Malignancy					
	Acute or chronic lung disease	1				
			-	_		
	Acute or chronic inflammatory disease					
	Chronic heart failure Lower limb paralysis (excluding acute					
	stroke) Acute infectious disease, e.g.			_		
	pneumonia BMI >30kg/m2	-	-	_		
	Inharited or acquired thrombophilia	-				
	Pregnancy or less than 6 weeks post					
	parlum					
		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 destrogen receptor					
	modulators					
	Age > 60					
	Dehydration					
	Varicose vains with phiebits					
		Minor surgical procedure with additional VTE risk factor(s)				
		Surgical procedure lasting >30mins with no additional VTE risk factors Plaster cast immobilisation of lower				
Low		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 ⁵ /L)					
	Within two weeks of acute stroke					
	(haemorrhagic or ischaemic) Severe hypertension (BP > 200 systolic			_		
	or 120 diestolic)					
	Severe liver disease					
	Oesophageal Varices					
	Active Peptic Liter disease					
	Active bleeding or potential bleeding lesions					
	Major bleeding risk, existing anticoagulant therepy					
	Severe renal disease					
		Neurosurgery, spinal surgery or				
		Other procedure with high bleeding risk				
		Lumber puncture/spinarepidural in previous 4 hours or anticipated in				
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New	Previous Admission
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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.

Specif Indicat	y Dosin	g Regin	ne 5mg/kg	3	3mg/kg	Other						
Date to be given	Time to be given	Dose (mg)	Prescribers signature GMC No.	Date of sig.	Start time of infusion	Given by: (sign)	Dute and Time blood level taken sign:	Gentamicir Levels mg/				

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,						
Oral formulation available?	neutropenia, cystic fibrosis, septicaemia, haematology/ immunocompromised pts, continuing sepsis, other severe infections as discussed with microbiology.) Seek microbiology advice if unsure.						
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)						

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