

Simulation Scenario – Management of obstructed tracheostomy

INTRODUCTION:

Scenario Goals and Objectives:

Simulation objectives

By the end of this simulation participants will have:

1. Practiced the recognition and management of health status and symptoms during tracheostomy cuff deflation
2. Practice team behaviours in a simulated crisis situation during tracheostomy cuff deflation.
3. Discussed factors that influence the successful functioning of a team in a crisis situation.

Workshop participants:

Students / New Graduates / Grade 1 Clinicians

2 to enter scenario at a time (speech pathologist, physiotherapist)

Nurse confederate in role play.

Setting the Environment:

Resources

- a) General

Setting/Environment	Single room in general medical ward on gen med service, floor 9, bed 2
Patient Attire	Hospital gown, peripheral IV and NG tube in place
Monitoring	Not on monitor initially, can place on portable monitor
Supporting Documentation required	Obs chart (? Ventilation chart) Drug chart
Mannekin	Eg initial set up, position, clothing, medical equipment/monitoring, stats, etc

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b) Equipment

Equipment	Number	Sourced from
Trache tube (partially blocked) inserted in manikin	1 x size 7	Clinical Skills Centre store room for Trache Trev / TCD trolley in Clinical Skills Centre for all other equipment
Fake sputum	1	
Trache emergency pack <ul style="list-style-type: none"> Spare trache tubes (size 7 and 7.5) Gauze / tape Trache dressing 	1	
Trache mask / shield	1	
O2, suction	1	
Suction catheter	X 6	
Goggles	1	
Manikin, gown,	1	
Phone	1	
Paging system		
Gloves	1 box	
Stethoscope	1	
Saline syringes 10 ml	X 5	
IV cannulae	1	
Resus Trolley (is not directly available in the room usually)	1	
Trache dilators	1	
Documentation of met call and resus status	1	
NG tube	1	
Double Lumi Tracheostomy (is routinely used an MH)	1	
Obs chart 24 hrs pre deflation (incl GCS)	1	
De humidifier	1	

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Scenario Introduction /stem:

1. Scenario Design-

Think about how you want to structure the scenario (e.g. pause and discuss or immersion)

1.1 Case History

Patient Details

Patient Details	
Name	<i>Stanley Smith</i>
Sex	<i>Male</i>
Age	<i>65</i>
Past History	<i>COAD –No home O2 FEV1 62% Multiple pneumonias in past Malnourished</i>
Social History	<i>Lives alone, frequent alcohol use, smoker (10 cigarettes per day) independently mobile (>1K) independent with PADL's and ADL's.</i>
History of Present illness	<i>Admitted under trauma unit three weeks ago to ICU following pedestrian versus car with head injury, fractured ribs and pelvis. Attempted extubation unsuccessfully due to altered conscious state and not managing secretions and unable to maintain saturation levels above 92%. Perc trache inserted in ICU (in week 3). Patient admitted to ward one day post trache insertion. Now day 5 on ward, generally more alert, GCS of 10 (eyes opening spontaneously and obeying commands) O2 sats >95% currently on F + P at 30% 5L o2. Initially being seen regularly for chest physio due to copious secretions and poor cough, however appears to now be spontaneously swallowing and there has been minimal white creamy secretions on suction. Therefore, he has been deemed appropriate for initial cuff deflation trial with speech and physio.</i>
Presenting symptoms	<i>Scenario 1: During deflation trial copious secretions, coughing- sudden desaturation when trache tube obstructed by sputum plug with a respiratory rate >30.</i>

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Scenario Script:

Scenario part 1; First TCD is started and runs smoothly initially. Then patient fatigues and TCD is ceased and rescheduled.

Scenario part 2; SP /PT return at agreed time to find pt not coping too well and nurse is suctioning more frequently. Discuss current patient status and decide on some actions

The Physiotherapist and Speech Pathologist and the patient

The PT and the SP check the suitability of the patient for a routine TCD. You have both deemed suitable for the trial (? Level of detail required).

The team

After the trial the Nurse comes to do her routine hourly observations with the PT and SP still present

Roleplayer/s:

Role Play – Facilitator (Ward Nurse)

Voice of patient

Narrator (of results that can't be simulated)

Role playing participant

You are a competent and experienced nurse on the general medical ward who is somewhat familiar with trache care

You are environmentally sound (ie knows the environment / where everything is kept etc)

You follow instructions and are helpful but don't initiate treatment.

Physio and speech have arrived for a trache cuff deflation trial with which you are to assist. You will initially pass the suction catheter successfully at the start of the trial prior to cuff deflation.

If required you will be prompted from control room to call for MET if participants have not suggested that this be done. You may also be requested to prompt recognition of particular vital signs, particularly saturations decreasing.

2.4 Simulator Programming considerations

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Scenario 1 It is 0930 SP & PT enter room, Nurse already in the room

Baseline State	Focussed assessment planning and intervention (Participant actions responses)	Patient Interaction response	Role player actions responses	Guideline for pacing / progressing scenario (Including voice of narrator)
<p>Below vital signs already on monitor</p> <p>CVS HR 80 BP 120/75</p> <p>Resp RR 18 O2 Sats 95% on 30% humidified O2 Trache in situ with cuff inflated. Chest ausc</p> <p>Neuro Awake and consenting to procedure. Obeying commands to swallow, mild delay in swallow. GCS 10 (as described in observation chart)</p> <p>Trache chart 2/24 suction Perc trache 28cmH2o= 8mls</p>	<p>SP /PT to check that all equipment needed for the procedure is present and explain to pt the procedure before starting. Initial suction with cuff inflated by PT Check size of suction catheter and connection</p>	<p>Weak productive cough</p> <p>Swallows on command</p>	<p>Nurse may prompt or state V/Signs if not already identified by PT/SP</p>	<p>Narrator states: Audible crackles on auscultation Min to mod creamy sputum produced on suctioning. Obeying swallow to command, mild delay, effortful initiation</p>
Sim man's	PT to ensure O2 sat	++Coughing	Nurse remains	Narrator says:

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observations are adjusted to: HR 100, RR 26, O2 sats 92% once procedure is commenced	probe is attached to pt Cuff deflated by PT/SP at 0935 Try and settle pt by reassuring, checking sats probe, asking them to take deep breaths and slow their breathing. Patient tolerates finger occlusion after cuff deflated observe 5 breath cycles Suctioned by PT.	Increased WOB	in room and observes and doing own thing Will step in to calm pt if PT & SP not doing so, by getting patient to take deep breaths and reassuring them	Cuff down Mod clear secretions above cuff suctioned on deflation Sats return to 95%, HR 92 RR 18
Sats return to 95%, HR 92, RR 18. (on sim man)	Suctioned again approximately 0940 PT & SP observe pt	Patient settles and relaxes tries to talk	Nurse moves in and out of room doing own thing	Narrator says: Mod effective swallow to command and spont. Voice quality weak and breathy Cough weak but able to cough to trache
No clinical changes only normal variances in V/Signs	Trial of PMV Check swallow Check cough Check voice	Patient tries to talk		tolerates PMV
sats remain above 95%	10 minute suction done by PT PMV removed by SP	Patient coughs		Narrator says: (0950) min back pressure. min clear sputum , strong cough reflex
Sats remain	PMV reapplied	Patient coughs		

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above 95% HR returns slowly to 82 on monitor		then settles		
	PT/SP set parameters, fill trache chart. Handover to nursing staff decide to do trial for 1 hour	Patient looking around and attempting to vocalise, engaging with the staff	To set appropriate parameters and ensure nursing staff clear of mx plan	

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Scenario 2

Change in state	Focussed assessment planning and intervention (Participant actions responses)	Patient Interaction response	Role player actions responses	Guideline for pacing / progressing scenario (Including voice of narrator)
Sim man monitor changes to: HR 115, RR 26, BP 130/70, increase WOB Saturation 92%		Patient appears to be coughing more	1 hour into cuff deflation trial nurse enters room to commence set of next routine obs	Narrator states that it is 1030, 1 hour into trial and it is time to do next patient check, prior to this check no variances seen other than the normal
	Nurse auscultates chest Remove PMV, check sats probe, check positioning,	Coughing but not to mouth, pt appears less engaging, sounds wet when vocalising, slower response to commands	Nurse completes V/Sign check, listens to chest and tries to calm patient	
	suctions, checks inner cannula	Coughs heaps	nurse inspects inner cannula to determine if there is obstruction Replaces inner cannula PMV replaced	Narrator: Right basal crepes Suction- mod amounts of stringy salivary secretions sputum plug in inner cannula
HR 105, BP 150/90, RR 22 Increased WOB Sats fluctuating between 90	Nurse watching parameters	Pt anxious coughing ++, wet voice, restless	PMV off, Cuff up 8mls of air inserted Nurse pages SP/PT	10minutes pass Narrator: SP/PT paged

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and 92%				
HR 90, BP, 140/85, RR 20, sats 94%	PT/SP enter room and reassess pt. Nurse states events and actions PT listens to chest and r/v's vitals Suction	Pt appears more settled	PT/SP reassess pt; discuss pt: problem solve PT/SP agree to come back at 1330	R basal crepes Pt alert, mouthing words, cooperating, less anxious Minimal clear sputum suctioned
Change in state	Focussed assessment planning and intervention (Participant actions responses)	Patient Interaction response	Role player actions responses	Guideline for pacing / progressing scenario (Including voice of narrator)
Sats fluctuating between 92% and 95%. RR between 18-24.	Nursing staff trying to maintain airway patency, frequent suctioning	B/f suction pt coughing. Pt settles post suction	Nursing staff suctioning half hourly	Time frame 1.5hrs (11-1330) Suction: clear mod amounts
1330: Vital signs: HR 92, RR 22, sats 93% on 30% F+P (back to baseline) Neuro status: Alert and cooperative.	PT/SP reassess- talk to nursing. Determine appropriateness for cuff deflation Decide to do cuff check	Pt voicing softly with cuff up Cough,	Cuff check: 6.5mls out with simultaneous suction.	Suction: clear, moderate secretions. Narrator: 6.5 mls out when cuff checked
No improvement from prev vitals/obs. Increased WOB.		Cough freq increases Pt voicing softly	8mls reinserted into cuff PT/SP/Nse stay with pt to monitor	
	Discuss possibility of cuff leak, poor seal, trache size		Inform medical team, nurse in-charge for urgent r/v of pt Contact ICU CNC	

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