

## Scenario A: Pneumothorax

Condition: **Mission Control**

**4:30 – MC Calls**

Trigger	Patient vitals	Patient cues/actions	Expected participant actions	Facilitator notes	Mission Control Notes
<p><b>Single participant</b> enters simulator to find patient complaining of pain and difficulty breathing</p>	None	<p><b>Complaints:</b> difficulty breathing, pain on left side of chest.</p> <p><b>Script:</b> If asked, patient provides basic information about hitting chest on door handle while re-entering module. <b>After 2 minutes</b>, if help has not been called, prompt participant to get others into the room.</p>	<p>Questions patient to determine problem</p> <p>Calls for help from other participants via Walkie Talkie (waiting in conference room)</p>	<p>If participant doesn't call for help, wait <b>2 minutes</b>, then send in remaining participants send other participants in <b>1 minute later</b>.</p>	
<p>All participants enter simulator</p>	None	<p><b>Complaints:</b> difficulty breathing, pain on right side of chest.</p> <p><b>Script:</b> If asked, patient provides basic information about hitting chest on door handle while re-entering module. <b>After 2 minutes</b>, if participants do not ask question about injury, begins telling story.</p>	<p>Questions patient to determine cause, location and type of injury.</p> <p>Refer to checklist to begin diagnostic algorithm.</p>	<p><b>After 2 minutes</b>, prompt patient to provide information to continue conversation and treatment.</p>	

<p><b>After 3 minutes</b> of not moving forward with diagnosis or treatment.</p>	<p>Pulse: 134 RR: 44 SPO2: 79</p>	<p><b>“I can’t breathe”; “It’s getting worse”; “You have to do something” “Please contact MC”</b></p>	<p>Initiate call to MC</p>	<p>Prompt patient to ask participants to call mission control</p>	
<p>MC/FS called</p>	<p>If put on monitor: Pulse: 116 RR: 30 SPO2: 88</p>	<p><b>Complaints:</b> Increasing difficulty breathing.  <b>Actions:</b> Becomes slower to respond to questions; labored breathing.  <b>Script:</b> Answers questions as asked to guide participants through the algorithm.</p>	<p>Participants ask for flight surgeon assistance and follow directions  Unstow equipment according to checklist and instructions</p>		<p>Collect information from participants in order to provide diagnosis. Request cause of injury, SPO2, RR, patient complains.</p>
<p>If using checklist or otherwise moving forward without flight surgeon.</p>	<p>If put on monitor: Pulse: 116 RR: 30 SPO2: 88</p>	<p><b>Complaints:</b> Increasing difficulty breathing.  <b>Actions:</b> Becomes slower to respond to questions; labored breathing.  <b>Script:</b> Answers questions as asked to guide participants through the algorithm. Ask again for participants to call flight surgeon.</p>	<p>Identify chest injury as correct algorithm and evaluate patient for breathing and respiratory distress  Continue to pneumothorax pathway  Unstow equipment and continue using algorithm to guide insertion of needle catheter</p>	<p>Prompts patient as necessary to help with exam.  If the flight surgeon is not contacted, patient can be prompted to suggest calling after <b>3 minutes</b>.  After <b>1.5 minutes</b>, may prompt MC to call into the module to ask about status.</p>	<p>If calling in, request an update as the monitors at MC indicate the patient may be in distress.</p>

Contacts flight surgeon	Pulse: 116 RR: 30 SPO2: 88	<b>Complaints:</b> Increasing difficulty breathing.  <b>Actions:</b> Becomes slower to respond to questions; labored breathing.  <b>Script:</b> Answers questions as asked	Follows directions from flight surgeon to evaluate patient  Unstow required equipment  Prepare for needle decompression		Flight surgeon guides participants through the checklist step-by-step. Asks for clarifying information as necessary.
Inserts needle in incorrect side	Pulse: 116 RR: 30 SPO2: 88	<b>Action:</b> Patient does not recover.	Inserts needle on right side of patient instead of left.  Discusses amongst team for other options. Identify correct side		Asks participants if they are sure about the side of the injury; redirects to other side.
Inserts needle catheter on correct side	Pulse: 105 RR:23 SPO2: 96	<b>Actions:</b> Coughs and slowly begins easier breathing.	Participants continue with direction from FS to adhere drain to chest.	Once participants are through and discussing next steps, scenario ends.	Flight surgeon will prompt participants with follow-up information.

## Scenario A: Pneumothorax

Condition: **No Mission Control**

Trigger	Patient vitals	Patient cues/actions	Expected participant actions	Facilitator notes	Mission Control Notes
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<p><u>Single participant (drawn from hat)</u> enters simulator to find patient complaining of pain and difficulty breathing</p>	<p>None</p>	<p><b>Complaints:</b> difficulty breathing, pain on right side of chest.</p> <p><b>Script:</b> If asked, patient provides basic information about hitting chest on door handle while re-entering module. <u>After 2 minutes</u>, if help has not been called, prompt participant to get others into the room.</p>	<p>Questions patient to determine problem</p> <p>Calls for help from other participants via Walkie Talkie (waiting in conference room)</p>	<p>If participant doesn't call for help after prompt at <u>2 minutes</u>, send other participants in <u>1 minute later</u>.</p>	
<p>All participants enter simulator</p>	<p>None</p>	<p><b>Complaints:</b> difficulty breathing, pain on right side of chest.</p> <p><b>Script:</b> If asked, patient provides basic information about hitting chest on door handle while re-entering module. <u>After 2 minutes</u>, if participants do not ask question about injury,</p>	<p>Questions patient to determine cause, location and type of injury.</p> <p>Refer to checklist to begin diagnostic algorithm.</p>	<p><u>After 2 minutes</u>, prompt patient to provide information to continue conversation and treatment.</p>	

		begins telling story.			
<b>After 3 minutes</b> of not moving forward with diagnosis or treatment.	None	<p><b>Complaints:</b> Increasingly complain of pain and difficulty breathing.</p> <p><b>Script:</b> Requests assistance (“someone do something”) and prompts participants to use of checklist.</p>	Retrieve checklist and begin diagnostic process.	Prompt patient to provide information on checklists.	
If using checklist or otherwise moving forward.	<p>If put on monitor:</p> <p>Pulse: 116</p> <p>RR: 30</p> <p>SPO2: 88</p>	<p><b>Complaints:</b> Increasing difficulty breathing.</p> <p><b>Actions:</b> Becomes slower to respond to questions; labored breathing.</p> <p><b>Script:</b> Answers questions as asked to guide participants through the algorithm.</p>	<p>Identify chest injury as correct algorithm and evaluate patient for breathing and respiratory distress</p> <p>Continue to pneumothorax pathway</p> <p>Unstow equipment and continue using algorithm to guide insertion of needle catheter</p>	Prompts patient as necessary to assist with exam.	

## Scenario C: Smoke Inhalation

Condition: **No Mission Control**

Trigger	Patient vitals	Patient cues/actions	Expected participant actions	Facilitator notes	Mission Control Notes
Participants called to medical bay by sick patient	None	<p><b>Complaints:</b> difficulty breathing</p> <p><b>Actions:</b> Coughing and trouble breathing</p> <p><b>Script:</b> Provides information as requested on how smoke started.</p>	Questions patient to determine problem		
<u>1 minute</u> after scenarios begins alarms and lights in simulator sound	None	<p><b>Complaints:</b> difficulty breathing</p> <p><b>Actions:</b> Coughing and trouble breathing</p> <p><b>Script:</b> prompts participants to need to perform technical tasks</p>	<p>Divide responsibilities to care for patient and conquer technical task</p> <p>Deploy checklist for smoke inhalation.</p>	<u>After 1 minute</u> , prompt SS to start alarms and lights	
<u>After 3 minutes</u> of not moving forward with diagnosis or treatment.	None	<p><b>Complaints:</b> Increasingly difficulty speaking and breathing</p> <p><b>Script:</b> Prompts participants to the checklist. If all participants focus on</p>	Deploy checklist	Prompt patient to ask participants to perform medical and technical tasks, retrieve checklist	

		technical task, request help from participants			
Patient care begins	<p><b>Before on O2:</b> RR: 26</p> <p>SPO2: 91</p> <p>HR: 96</p> <p><b>After on O2:</b></p> <p>RR: 20</p> <p>SPO2: 98</p> <p>HR: 96</p>	<p><b>Complaints:</b> Increasing difficulty breathing.</p> <p><b>Script:</b> As necessary, remind patients of tasks.</p>	<p>Place patient on O2 per algorithm.</p> <p>Check vital signs</p>	<p>Prompt patient to remind participants to do tasks.</p> <p>Watch participant(s) performing technical task to look for completion.</p>	
<u>After 6 minutes,</u> technical task unable to be completed	Same as above throughout	Continued as above	Continued as above	Turn off lights and alarms as “returned to normal”	
Technical Task completed, lights and alarms turn off.	Same as above throughout	<b>Complaints:</b> Breathing improves with oxygen	<p>Participants engaged in technical task return to assist with patient.</p> <p>Team forms a plan to care for patient and move forward.</p>		

## Scenario C: Smoke Inhalation

Condition: **Mission Control**

**3:00 – MC Calls**

Trigger	Patient vitals	Patient cues/actions	Expected participant actions	Facilitator notes	Mission Control Notes
Participants called to medical bay by sick patient	None	<p><b>Complaints:</b> difficulty breathing</p> <p><b>Actions:</b> Coughing and trouble breathing</p> <p><b>Script:</b> Provides information as requested on how smoke started.</p>	<p>Questions patient to determine problem</p> <p>Call Mission Control</p>		
<b>1 minute</b> after scenarios begins alarms and lights in simulator sound	None	<p><b>Complaints:</b> difficulty breathing</p> <p><b>Actions:</b> Coughing and trouble breathing</p> <p><b>Script:</b> prompts participants to need to perform technical tasks.</p>	<p>Divide responsibilities to care for patient and conquer technical task</p> <p>Discuss issues with mission control.</p> <p>Request assistance with patient and technical issues.</p>	<b>After 1 minute,</b> prompt SS to start alarms and lights	<p>Provide guidance on ongoing issues.</p> <p>Direct participant to divide into groups to handle the technical task and the patient.</p> <p>Give guidance on patient care.</p>
<b>After 2 minutes</b> of not moving forward with diagnosis or treatment.	None	<p><b>Complaints:</b> Increasingly difficulty speaking and breathing</p> <p><b>Script:</b> Prompts participants to call mission control</p>	Call Mission Control		Prompt patient to ask participants to perform medical and technical tasks, retrieve checklist



Patient care begins	<b>Before on O2:</b> RR: 26  SPO2: 91  HR: 96  <b>After on O2:</b>  RR: 20  SPO2: 98  HR: 96	<b>Complaints:</b> Increasing difficulty breathing.	Place patient on O2 per algorithm.  Check vital signs  Follow instructions from mission control.	Prompt patient to remind participants to do tasks.  Watch participant(s) performing technical task to look for completion.	Provide participants with assistance in developing the care plan, following the algorithm.  Remind participants that technical task is most important.
<b>After 6 minutes,</b> technical task unable to be completed	Same as above throughout	Continued as above	Continued as above	Turn off lights and alarms as “returned to normal”	
Technical Task completed, lights and alarms turn off.	Same as above throughout	<b>Complaints:</b> Breathing improves with oxygen	Participants engaged in technical task return to assist with patient.  Team forms a plan to care for patient and move forward.		Make a plan to call participants back to gather more information.

## Scenario D: Cardiac Arrest

Condition: **No Mission Control**

Trigger	Patient vitals	Patient cues/actions	Expected participant actions	Facilitator notes	Mission Control Notes
Participants witness	VF	Not breathing,	Assess patient for pulse		

patient receiving electrical shock via computer video.  All enter the simulator		speaking or moving	and breathing.  Start CPR  Deploy Checklist		
Participants begin CPR	VF	Not breathing, speaking or moving	Divide responsibilities to perform CPR and manage algorithm.  Retrieve AED from storage		
Apply AED pads to patient	VF	Not breathing, speaking or moving	Turn on AED  Follow provided directions from MC and AED		
After 2 shocks <u>Or</u> If AED is not used, after 4 rounds of CPR (approximately 8 minutes)	HR: 120  RR: 30	Patient coughs and recovers	Participants speak to patient and asks if ok.  Make a plan for continued care with MC		
If no CPR or AED: After 8 minutes scenario ends				After 8 minutes, end scenario for participants.	

## Scenario D: Cardiac Arrest

Condition: **Mission Control**

**3:00 – MC Calls**

Trigger	Patient vitals	Patient cues/actions	Expected participant actions	Facilitator notes	Mission Control Notes
Participants witness	VF	Not breathing,	Assess patient for pulse and		

patient receiving electrical shock via computer video.  All enter the simulator		speaking or moving	breathing.  Start CPR  Call for Help		
Participants begin CPR	VF	Not breathing, speaking or moving	Divide responsibilities to perform CPR and manage algorithm.  Retrieve AED from storage		Walk participants through CPR algorithm and application of the AED.
<b>After 3 minutes</b> , if participant have not called MC, FS calls into simulator.	VF	Not breathing, speaking or moving	Participants answer call and provide update to flight surgeon	Prompt call from MC after 3 minutes	Ask for status update due to issues seen on monitors at MC
Apply AED pads to patient	VF	Not breathing, speaking or moving	Turn on AED  Follow provided directions from MC and AED		Instruct participants to apply AED pads to the patient.
After 2 shocks	HR: 120  RR: 30	Patient coughs and recovers	Participants speak to patient and asks if ok.  Make a plan for continued care with MC		Make a plan with participant and respond that you will call back with further instructions in 10 minutes.

## Scenario B: Penetrating Eye Injury

Condition: **No Mission Control**

Trigger	Patient Vitals	Patient cues/actions	Participant Actions	Facilitator Notes	Mission Control Notes
Small explosion in simulator seen via	NONE	Falls back in shock, confused.	Participants enter simulator to assess	May need to provide prompts for patient to	

monitor		Begins to call for help and yell in pain	patient. Ask for status updates.	enter.	
After 3 minutes		<b>Complaints:</b> eye is in severe pain  <b>Actions:</b> Cover both eyes with hands, refuses to allow participants to look at eyes.  <b>Script:</b> Increasingly agitated and upset	Provide comfort to patient.  Ask to see eye.  Open checklist for eye injury-penetrating object	If participants provide helpful comfort, patient may become calm and more cooperative.	
Checklist not deployed, and participants stuck for 3 minutes		Patient prompts participants to check the algorithm for care	Participants get out checklist	Prompt patient to discuss checklist.	
Checklist deployed or participants proceeding with care		Patient upset and asking about damage. Concerned about how they will continue mission.  If participants give comfort, patient responds.  If not, participant increasingly agitated	Follow directions in the manual.  Retrieve appropriate equipment  Cover patient eyes  Make a plan for continued monitoring	Prompt patient with cues for level of agitation.  Once participants have calmed patient and made a plan, scenario ends.	

## Scenario B: Penetrating Eye Injury

Condition: **Mission Control**

**4:30 – MC Calls**

Trigger	Patient Vitals	Patient cues/actions	Participant Actions	Facilitator Notes	Mission Control Notes
Small explosion in simulator seen via monitor (pre-recorded)	NONE	<b>Script:</b> Begins to call for help and yell in pain	All participants enter simulator to assess patient.  Request updates from patient on condition.	Coax participants to enter simulator to care for patients.	May need to provide prompts for patient to enter.
After 3 minutes	NONE	<b>Complaints:</b> eye is in severe pain  <b>Actions:</b> Cover both eyes with hands, refuses to allow participants to look at eyes.  <b>Script:</b> Increasingly agitated and upset.	Provide comfort to patient.  Ask to see eye(s)  Call for help from MC	If participants provide helpful comfort, patient may become calm and more cooperative.	
<u>After 3 minutes</u> of not calling for help	NONE	<b>Script:</b> Prompt participants to call the flight surgeon	Participants call for help from MC.	Prompt patient to discuss call for help	Request information on situation and patient condition.
<u>After 1.5 minutes</u> of not calling for help	NONE			MC calls	
MC called and participants proceeding with care.		Patient upset and asking about damage. Concerned about how they will continue mission.	Follow directions from MC  Retrieve appropriate equipment as requested by MC	Prompt patient with cues for level of agitation.  Once participants have calmed patient and	Provide instructions to care for patient. Instruct participants to cover eyes. As needed, provide support for helping calm patient.

		<p>If participants give comfort, patient responds.</p> <p>If not, participant increasingly agitated</p>	<p>Cover patient eyes with eye patches.</p> <p>Make a plan for continued monitoring with flight surgeon</p>	<p>made a plan, scenario ends.</p>	<p>After patient is handled, request to call back in 10 minutes with further instructions.</p>
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