Royal College of Anaesthetists

Theatre team training
Flash Cards Starter Pack

Adapted from What if? flash card pack produced by Tom Burr & Barry Featherstone for East Kent Hospitals NHS Foundat
Trust

User Guide

- **WHY?** Preparation and planning helps us manage emergencies together as a team more effectively. The aim of this activity is to use verbal simulation to help raise our awareness of human factors which impact on patient safety.
- **WHEN?** Set aside 5 minutes after theatre list safety team brief (huddle)
- **WHO?** Where possible ALL team members should remain in the room and participate
- **HOW?**
  - The team selects a flashcard at random (if the team has already done that flashcard, select another)
  - The flashcard reader is the team member indicated by the colour code - *the topic of the emergency scenario is not necessarily linked to the specialty of the reader*
  - The team should have a collaborative discussion to answer the questions
  - Any learning points identified by the team should be written on the evaluation form

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Ground Rules

Please follow these TEAM rules when running your flashcard simulation as this helps creates an environment for you to learn together

TIME	No longer than 5 minutes
ENQUIRE	If unsure, ask - no question is a 'stupid question'
ALL INCLUSIVE	All team members can make a valuable contribution
MUTUAL RESPECT	Be civil and polite to each other

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Flashcard Reader Key

Team Member	Colour Code
Theatre Support Worker	
Scrub Practitioner	
Anaesthetics	
Surgery	
ODP	

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Sheep Model of Human Factors

HUMAN FACTORS	EXAMPLES
Systems	Care plan,patient pathway, computers, software/ applications (Theatreman, vital pac PACS). Telephones, bleeps, department policies, clinical guidelines, culture, rules.
Human Interaction	Names, roles, skills, uniforms. Assumptions, distraction, previous encounters, conflict, hierarchy, communication, interruption, mood, morale.
Equipment	Location, availability, fit for purpose, competent to use, serviced and maintained, clean, charged
Environment	Noise, lighting, temperature, space, contents, design – layout, appropriate for task.
Personal	The 'Bucket' concept – working memory is your top 10% of your bucket. Working memory is lost if your bucket over flows

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	POWER FAILURE
Human Factors:	Systems, Equipment, Environment
Problem:	Halfway through the operating list (mid operation there is a power failure). The anaesthetic machine initially remains active but monitoring is compromised and you cannot see in the dark.

Questions:
What do you expect to happen?
What steps would you take to reduce the risk of harm to the patient/ staff?
What equipment maybe required to maintain patient safety and where is it located?
What resources might you use to help you in this situation?
With regard to managing this situation have you identified any changes which need to be made?

	FIRE ALARM
Human Factors:	Systems, Equipment, Environment
Problem:	Halfway through the operating list (mid operation) the fire alarm goes off. You are told 'Stage 1 Alert'. There is a smell of smoke in the corridor.

Questions:
What do you expect to happen?
What steps would you take to reduce the risk of harm to the patient/ staff?
What equipment maybe required to maintain patient safety and where is it located?
What resources might you use to help you in this situation?
With regard to managing this situation have you identified any changes which need to be made?

	DISTRACTION
Human Factors:	Systems, Human interaction, Equipment, Environment
Problem:	You are in the middle of anaesthetising an ASA 3 elderly patient whose circulation is relatively unstable. You are interrupted by a colleague who walks into your anaesthetic room demanding to borrow your infusion pump.

Questions:
What are the risks to the patient in this situation?
What would you do?
How would you give colleague feedback? **SBIC** (situation, behaviour, impact, change/continue)
With regard to managing this situation have you identified any changes which need to be made?

WRIST BAND ERROR – ALLERGY STATUS

Human Factors:	Systems, Human Interaction
Problem:	After the patient has been transferred under GA into theatre from the anaesthetic room you notice that the drug chart states ALLERGY TO PENICILLIN. The patient is wearing a white wrist band and the anaesthetist is about to give a dose of IV Co-Amoxiclav to the patient

Questions:

How would you stop your colleague from giving the antibiotic?

CUSS (I am concerned that…,I am unsure whether…,Is it safe…?,STOP!)

What would you do to keep the patient safe now and for the future?

How might this situation have arisen?

With regard to managing this situation have you identified any changes which need to be made?

	LARYNGOSPASM
Human Factors:	Human Interaction, Equipment, Environment
Problem:	The theatre team are busy tidying up at the end of the list. After reversing the muscle relaxant with neostigmine/ glycopyrrolate you proceed to extubate the patient awake. The patient immediately becomes stridulous. There is no End-tidal CO2 recordable with a face mask and the patient starts to desaturate quickly.

Questions:
How would you manage this situation?
How would you communicate this concern to your team? **DODAR** (Diagnostics/ Options/ Declare decision/ Allocate Roles/ Review
What help might you need and where would you get it?
With regard to managing this situation have you identified any changes which need to be made?

NEEDLE-STICK INJURY

Human Factors:	Systems, Human Interaction
Problem:	During the first case on the list, the scrub nurse notices that the senior surgeon has sustained a needle-stick injury from the junior surgeon during skin closure

Questions:
What steps would you take to reduce the risk of harm to the patient/ staff?
What would you do if the surgeon refused to acknowledge what has happened and continues to suture the skin?
What resources might you use to help you in this situation?
With regard to managing this situation have you identified any changes which need to be made?

	OXYGEN SUPPLY FAILURE
Human Factors:	Systems, Equipment, Environment
Problem:	After induction of GA (patient paralysed and intubated) in the anaesthetic room the low inspired oxygen warning alarms. You identify a mains oxygen failure.

Questions:
What do you expect to happen?
What equipment is required to maintain patient safety and where is it located?
Are you aware of a cognitive aid which may be of help in this situation?
With regard to managing this situation have you identified any changes which need to be made?

	MAJOR INCIDENT
Human Factors:	Systems, Equipment
Problem:	Mid list and mid-operation the anaesthetist receives a message via the ‘Everbridge’ app that EKHUFT has declared a major incident.

Questions:
How would you get more information?
Where is the major incident plan located?
What would be your individual roles in the team for a major incident?
How would you manage the rest of your list?
With regard to managing this situation have you identified any changes which need to be made?

	UNWELL TEAM MEMBER
Human Factors:	Human Interaction, Environment, Personal
Problem:	Mid operation the surgeon complains of feeling faint. They subsequently collapse.

Questions:
What steps would you take to reduce the risk of harm to the patient?
How would you allocate roles?
How would you contact another surgeon and who else might you contact?
With regard to managing this situation have you identified any changes which need to be made?

	INTRA-OPERATIVE BLEEDING
Human Factors:	Systems, Human Interaction, Equipment, Environment
Problem:	During the operation the surgeon damages a major vessel and the patient start to bleed profusely.

Questions:
How would you alert the rest of the team in theatre?
How would you allocate roles?
How would you get help from a vascular surgeon?
What other tasks might the team need to perform to stabilise the patient?
With regard to managing this situation have you identified any changes which need to be made?

	INCORRECT SWAB COUNT
Human Factors:	Systems, Human Interaction, Equipment
Problem:	At the end of the last case during the 1st count, the scrub nurse and TSW identify that there is a large swab missing. The surgical team are convinced that the scrub nurse is wrong and they request a suture for skin closure.

Questions:
What steps would you take to reduce the risk of harm to the patient?
How would you ensure that your concerns are acknowledged appropriately? CUSS (I am concerned that…,I am unsure whether…,Is it safe…?,STOP!)
What resources might you use to help you in this situation?
With regard to managing this situation have you identified any changes which need to be made?

CARDIAC ARREST

Human Factors:	Systems, Human Interaction, Equipment, Environment
Problem:	You have just completed the Time Out for the first case on your list and the patient has a cardiac arrest on the operating table.

Questions:
What initial steps would you take as a team?
Which roles would each team member take?
How would you get help if needed?
What additional resources would you need that are not already in theatre?
With regard to managing this situation have you identified any changes which need to be made?

	HYPOXIA
Human Factors:	Systems, Human Interaction, Equipment, Environment
Problem:	The operation is underway for the last case on the list. After 5 minutes the patient looks blue and the oxygen saturations read 70% on the monitor.

Questions:
What would you do?
What equipment do you need to help in this situation?
How would those aware of the problem tell the rest of the team?
What could aid your decision making as a team? (Hint: Association of Anaesthetists Quick Reference Handbook)
With regard to managing this situation have you identified any changes which need to be made?

MACHINE ALARM

Human Factors:	Human Interaction, Equipment, Environment
Problem:	Mid surgery the anaesthetic machine starts alarming. The high airway pressure alarm is sounding.

Questions:

What would you do?

If the problem gets worse or persists how would you call for help?

What equipment do you need and where would you access it from?

With regard to managing this situation have you identified any changes which need to be made?

	LOW BLOOD PRESSURE
Human Factors:	Systems, Human, Interaction Equipment
Problem:	A patient on your list develops severe hypotension during surgery under GA. The cause of the hypotension is not immediately clear.

Questions:
How would you manage this problem?
How would you establish the cause of hypotension? (Hint: AAGBI QRH)
How would you decide on treatment options in order to stabilise the patient's blood pressure? **DODAR** (Diagnostics/ Options/ Declare decision/ Allocate Roles/ Review
With regard to managing this situation have you identified any changes which need to be made?

	LOW HEART RATE
Human Factors:	Systems, Human Interaction, Equipment, Environment
Problem:	The patient heart rate suddenly drops to 25 beats per minute at knife-to-skin. The anaesthetist alerts the entire team.

Questions:
How would you respond as a team?
Which drugs might be needed – are they immediately available?
If the problem persists, how do you decide whether to continue surgery?
If the patient required external pacing, where would you access a defibrillator with pacing functionality?
With regard to managing this situation have you identified any changes which need to be made?

	FAST HEART RATE
Human Factors:	Systems, Equipment, Environment
Problem:	After induction and intubation, and before transfer to theatre, the patient's heart rate increases to from 110 to 180 beats per minute. The anaesthetist confirms the patient is fully anaesthetised but the tachycardia persists.
Questions:	
What would you do?	
How would you establish a cause of the tachycardia? **DODAR** (Diagnostics/ Options/ Declare decision/ Allocate Roles/ Review	
Which protocol might help you manage this emergency?	
What would you do if DC cardio-version was indicated?	
With regard to managing this situation have you identified any changes which need to be made?	

	HYPERTHERMIA
Human Factors:	Systems, Human Interaction, Equipment, Environment
Problem:	The ODP checks the patient temperature before the Time Out and finds its 39.2°C. Pre-op temperature was normal. No patient warming devices are in place.

Questions:
What first steps would you take to ensure patient safety?
If a diagnosis of Malignant Hyperthermia was declared, how would the team decide upon individual roles?
What special equipment might be needed to help manage this emergency and where is it located?
With regard to managing this situation have you identified any changes which need to be made?

	ALLERGIC REACTION
Human Factors:	Systems, Human Interaction, Equipment, Environment
Problem:	Following induction of GA and intubation the patient is "tight to bag" and becomes severely hypotensive and tachycardic. The anaesthetist suspects anaphylaxis. The scrub practitioner and surgeon are currently prepping and draping the patient.

Questions:
How would you manage this emergency?
Which drugs may be required and where are they located? Where is the anaphylaxis box stored?
If you were unsure of your role in this emergency what would you do?
With regard to managing this situation have you identified any changes which need to be made?

	LOCAL ANAESTHETIC TOXICITY
Human Factors:	Systems, Human Interaction, Equipment, Environment
Problem:	The surgeon is finishes injecting local anaesthetic before closure and the patient goes into VT. The anaesthetist suspects local anaesthetic toxicity.

Questions:
How should the team manage this?
What would your individual roles be in this emergency?
Which drug is specifically used to treat this problem and where is it located?
With regard to managing this situation have you identified any changes which need to be made?

	SPINAL COMPLICATION
Human Factors:	Systems, Human Interaction, Equipment, Environment
Problem:	The anaesthetist has just performed a spinal in the anaesthetic room. The patient is still awake but their breathing becomes shallow and cannot move their arms. The monitor starts alarming as the heart rate has dropped to 32. A high spinal is declared by the anaesthetist.

Questions:
What are the priorities in this situation?
How could the AAGBI Quick Reference Handbook be used to allocate roles?
How would you delegate tasks to your team members?
If the patient is intubated and stabilised how do you decide together whether to proceed with surgery?
With regard to managing this situation have you identified any changes which need to be made?

	INTRA-OPERATIVE CARDIAC EVENT
Human Factors:	Systems, Human Interaction, Equipment, Environment
Problem:	Mid-operation the anaesthetist raises a concern to the team that the patient is developing marked ST segment elevation on the monitor.

Questions:
What is the concern?
What steps need to be undertaken as a team to establish the diagnosis?
What resource could help guide your decision making?
If the patient needed intervention in the cardiac catheter suite, how would you arrange this?
With regard to managing this situation have you identified any changes which need to be made?

POST CARDIAC ARREST CARE

Human Factors:	Systems, Equipment, Environment
Problem:	The first patient on your list has a cardiac arrest on the operating table before knife-to-skin. Following 3 cycles of CPR there is "ROSC" (Return Of Spontaneous Circulation).

Questions:
What would you do next?
Who would you call for help?
How and when would you conduct a team debrief?
With regard to managing this situation have you identified any changes which need to be made?

	SEPSIS
Human Factors:	Systems, Human Interactive, Equipment, Environment
Problem:	A patient is booked onto CEPOD for an immediate laparotomy and is in septic shock. They are brought to the anaesthetic room for resuscitation prior to induction of GA.

Questions:
What are your priorities in managing the patient?
What resource could you use to help with your decision making and guide your management?
How would you ensure effective teamwork and delegation of tasks?
The surgeon needs to operate immediately but the anaesthetist would like to resuscitate more before GA – how do you resolve this issue?

	AIRWAY CRISIS
Human Factors:	Systems, Human Interaction Equipment
Problem:	An attempt to electively intubate a patient on your list fails and the anaesthetist follows to the DAS algorithm. Plan A, B and C fail and the anaesthetist declares a "Can't Intubate, Can't Oxygenate" scenario

Questions:
How should this situation be managed?
What equipment (including guidelines) is/are needed to manage this life- threatening emergency? Where is the equipment located?
How could a non-airway trained team member be useful in this situation?
With regard to managing this situation have you identified any changes which need to be made?

	BRONCHOSPASM
Human Factors:	Systems, Equipment, Environment
Problem:	A patient on your list who is a heavy smoker undergoes induction of GA and intubation. Whilst still in the anaesthetic room the oxygen saturations drop to 70% and ventilation pressure rises. This anaesthetist confirms a patent airway and suspects bronchospasm.

Questions:
What would you do next to ensure patient safety?
How would team members not immediately present respond once alerted?
What resources are needed to evaluate the problem and ensure that the correct diagnosis is made?
With regard to managing this situation have you identified any changes which need to be made?

	THROMBOEMBOLIC EVENT
Human Factors:	Systems, Equipment, Environment
Problem:	A patient with a high clotting risk and being bridged on heparin comes from surgery on your list. Mid-operation, under GA the patient desaturates. The anaesthetist assesses the patient and suspects a pulmonary embolism

Questions:
What would you expect to happen next?
What equipment is required that is not immediately available in theatre?
When senior help is called 4 anaesthetists arrive to offer help – how do you allocate roles?
With regard to managing this situation have you identified any changes which need to be made?

	PATIENT ON FIRE
Human Factors:	Systems, Equipment, Environment
Problem:	You are mid-surgery with the patient under GA when the surgical drapes catch fire as the surgeon is using the diathermy.

Questions:
What would you do first?
How do you activate the fire alarm?
Which fire extinguisher is needed and where is it located?
With regard to managing this situation have you identified any changes which need to be made?

	CHALLENGING RELATIVE
Human Factors:	Systems, Human Interaction, Environment
Problem:	An anxious patient on your list has insisted that their relative is present at induction of anaesthesia. After an induction dose of propofol the relative refuses to leave the anaesthetic room.

Questions:
What would you do?
How do you ensure the safety of the patient and the staff around you?
How would you contact security if the need arose?.
With regard to managing this situation have you identified any changes which need to be made?

	THE FALLING SCRUB PRACTITIONER
Human Factors:	Systems, Human Interaction, Environment, Personal
Problem:	During one of the cases, the surgeon requires a platform 'step' be optimally positioned to operate. Halfway through the surgery the scrub nurse trips over the step and falls to the floor and cannot get up.

Questions:
What would you do first?
How would you ensure that the staff member is attended to whilst also maintaining patient safety?
How would you facilitate completion of surgery safely?
With regard to managing this situation have you identified any changes which need to be made?

	SURGICAL INTERUPTION
Human Factors:	Systems, Human Interaction, Environment, Personal
Problem:	Mid-list and mid operation the junior surgical assistant is repeatedly bleeped for a variety of non-urgent reasons.

Questions:
How might this be a problem?
What is the potential impact on the patient safety?
How could you effectively raise this concern? CUSS (I am concerned that…,I am unsure whether…,Is it safe…?,STOP!)
With regard to managing this situation have you identified any changes which need to be made?

	STAFF SKILL MIX CONCERN
Human Factors:	Systems, Human Interaction, Personal
Problem:	The department is short staffed. Staff have had to be moved around to fill gaps in lists. A staff member (unknown to the team) has been asked to scrub for the next operation.

Questions:
How might this be a problem?
It transpires that the staff member has never scrubbed for this operation before. What is the potential impact on the patient safety?
What would you do to ensure patient safety is maintained and that the staff member is supported appropriately?
With regard to managing this situation have you identified any changes which need to be made?

Flash card evaluation survey

Date:	Operating List:

Team members present at flash card simulation (please tick):

Theatre Support Worker	Anaesthetic nurse/ODP	Anaesthetist	Surgeon	Scrub nurse

Flash card title:

Has your team identified any changes that need to be made following this flash card exercise? (list up to 3)

1.

2.

3.

To what extent do you agree that this flash card exercise was a beneficial team training opportunity? (Please tick)

Strongly agree	Agree	Unsure	Disagree	Strongly disagree

Comments:

Are there any ways this flash card exercise could be improved?