



# 'Ready for Reg'

Anaesthetic Crisis Resource Management

---

# Introduction

## Development of the mandatory CT2+ 'Ready for Reg' Anaesthetic CRM course in Kent

There has been mandatory simulation for every year of anaesthetic training since 2012. Initially the CT2 simulation day required candidates to identify and manage anaesthetic crisis as the CT2 level anaesthetist. The course would focus on the use of non-technical skills to ensure that the patient was managed safely.

It soon became apparent that trainees could readily identify problems and effectively raise concerns to their Registrars and Consultants. In order to better prepare the CT2 trainees for the transition to Registrar, the simulations were redesigned to reflect the fact that the Registrar is usually the most senior anaesthetist in the hospital out-of-hours, with the Consultant on-call from home. As a result, the delegates on this course are expected to participate as the Registrar subsequently called to assist a CT1 or CT2 trainee in managing a clinical dilemma or crisis. This enables the delegates to rehearse taking charge of simulated clinical scenarios in preparation for entering further specialist training (CT3 onwards).

A variety of clinical scenarios will be simulated to allow both technical & non-technical skills to be practiced. The majority of the scenarios will involve adult simulated patients, although we do sometimes include paediatric patients.

Feedback from the course has been extremely positive, and we hope you enjoy the 'Ready for Reg' course as much as the attendees that have preceded you:

**'Well structured, strong learning objectives that were met & make me feel like a better and more prepared anaesthetist'**

**'Friendly faculty, good use of study leave, good for practicing scenarios and developing confidence'**

**'Extremely supportive & approachable, with very insightful & considered feedback'**

---

# Course Information

## Important details about the day

You have been booked to attend the **'Ready for Reg' CT2+ Anaesthetic Crisis Resource Management** course.

Please make sure you read the information below and make note of the start time and dress code. **Punctuality is expected.** We reserve the right to exclude delegates from joining the course if they arrive late as this is disruptive to the training event. Additionally, late arrival means delegates may have missed essential 'Health & Safety' and 'Induction' briefings.



Registration is between **08:30-08:45**

Introductory briefing commences at **08:45**

Anticipated finish time of approximately **17:00**, although this may be subject to change.

You will be notified on the day if the timetable has been amended significantly.

**Attendance for the full course is expected**



The course will take place at the **William Harvey Hospital Simulation Centre** which is located on the first floor of the Arundel Unit (Maroon Zone). A detailed map of the hospital can be found here:

<https://www.ekhuft.nhs.uk/patients-and-visitors/william-harvey-hospital/finding-your-way-around-whh/>



William Harvey Hospital is situated on Junction 10 of the M20. It is signposted from the motorway. The address of the hospital is as follows:

**William Harvey Hospital, Kennington Road, Willesborough, Ashford, Kent, TN24 0LZ**

---

Details regarding public transport can be found on the Patient & Visitors webpages: <https://www.ekhuft.nhs.uk/patients-and-visitors/find-us/getting-to-william-harvey-hospital/>

For those with staff parking permits, please ensure you park in a designated staff carpark (first left turn on entering the main access road and follow the signs). Those without permits wishing to park on site will need to use visitor parking and purchase the appropriate ticket. Parking & Tariff information can be found via the link below: <https://www.ekhuft.nhs.uk/patients-and-visitors/find-us/parking-at-our-hospitals/>



We advise you to wear **scrubs or clean work attire** to the event. This will make you more comfortable during the scenarios and help contribute to our attempt at recreating a 'realistic' environment. Changing facilities are available at the venue (however please note that scrubs are not supplied).

In simulation, we sometimes utilize moulage to enhance the fidelity of the scenarios (e.g. fake blood, make-up, prosthetic wounds). Personal protective equipment such as gloves, aprons & masks are available for your use. The organisers will not be held responsible for damage or staining of personal effects or clothes.

You are welcome to **bring handbooks, manuals and equipment** that you would carry with you in your work environment for use during the course. This includes mobile telephones, although we do request that these are switched to silent for the duration of the event to avoid unnecessary interruptions.



Refreshments and lunch are kindly provided by Medical Education for delegates on the 'Ready for Reg' course. Please notify the simulation team **no later than 7 days in advance** of the event should you have specific dietary requirements.

Email: [Ekh-tr.simulation@nhs.net](mailto:Ekh-tr.simulation@nhs.net)



Example timetable (may be subject to change)

|             |                                                                  |
|-------------|------------------------------------------------------------------|
| 0830 - 0845 | <b>Registration + change into scrubs</b>                         |
| 0845 - 0945 | <b>Introduction</b><br><b>Meet the manikin &amp; Orientation</b> |
| 0945 – 1005 | <b>Scenario 1</b>                                                |
| 1005 – 1040 | <b>Debrief 1</b>                                                 |
| 1040 – 1055 | <b>Coffee Break</b>                                              |
| 1055 – 1115 | <b>Scenario 2</b>                                                |
| 1115 – 1150 | <b>Debrief 2</b>                                                 |
| 1150 – 1215 | <b>Workshop</b>                                                  |
| 1215 – 1300 | <b>LUNCH</b>                                                     |
| 1300 – 1320 | <b>Scenario 3</b>                                                |
| 1320 – 1355 | <b>Debrief 3</b>                                                 |
| 1355 – 1415 | <b>Scenario 4</b>                                                |
| 1415 – 1450 | <b>Debrief 4</b>                                                 |
| 1450 – 1505 | <b>Tea Break</b>                                                 |
| 1505 – 1525 | <b>Scenario 5</b>                                                |
| 1525 – 1600 | <b>Debrief 5</b>                                                 |
| 1600 – 1620 | <b>Scenario 6</b>                                                |
| 1620 – 1655 | <b>Debrief 6</b>                                                 |
| 1655 – 1700 | <b>Feedback &amp; Close</b>                                      |



Dr Barry Featherstone (Trust Simulation Lead): [barry.featherstone@nhs.net](mailto:barry.featherstone@nhs.net)

Vicky Gray (Simulation Manager): [vgray2@nhs.net](mailto:vgray2@nhs.net)

Vikki Kerslake (Simulation Technician): [Victoria.kerslake@nhs.net](mailto:Victoria.kerslake@nhs.net)

Simulation Centre: **01233 616185**

---

# Course Objectives

## Learning Objectives

- To experience an anaesthetic crisis in a controlled simulated environment.
- To rehearse emergency treatment algorithms for rare life-threatening events.
- To practice leadership skills in managing life-threatening anaesthetic emergencies in readiness for becoming the 'Anaesthetic Reg on-call'. In the coming months many of you will progress to CT3 posts and find yourself as the most senior anaesthetist in the building out-of-hours.
- Learn about your own behaviours and those of others during crisis situations.
- To reflect on your performance in crisis situations and help you feel more prepared for similar 'real life' clinical encounters.
- To have an enjoyable & productive learning experience.

## A Guide to Simulation

### Simulation Overview

Simulation-based education (SBE) is a 'technique' now commonly integrated into both undergraduate and postgraduate healthcare curriculums. As a teaching strategy, simulation attempts to contextualise learning by recreating situations that learners would recognise as familiar in their clinical practice. It has been cited as an essential methodology in which to facilitate 'mastery' through deliberate practice, whilst providing guaranteed exposure to new or rare clinical events within a risk-free learning environment (Hellaby, 2013; Harden and Laidlaw, 2012). Reime *et al.* (2017) claim that simulation is a far superior teaching strategy in comparison to traditional apprentice-style approaches due to the ability to experience, reflect and discuss events in a safe and timely manner.

SBE is comprised of two essential elements; the simulated scenario and the facilitated debrief. In the debrief, experienced simulation facilitators will guide the learners to reflect on events. New ideas and behaviors subsequently generated through these discussions can be explored as a group.

Simulation is fundamentally an active learning technique, although clearly all delegates cannot actively participate in every simulated clinical scenario during a course. Conventionally, participation in scenarios was deemed important for learning, however a review by Issenberg *et al.* (2005) suggests engagement with the debrief process is actually the most crucial aspect of the simulation process.

---

Research is underway to determine whether people can learn vicariously in simulation. Mayes (2015) defines vicarious learning as “learning through observing others specifically in the act of learning”, which concurs with Banduras social learning theory (1971) where he claims that learning attained through *direct experiences* could equally be learnt through *secondary experiences* or ‘observation’. With this in mind, delegates in observer roles during a simulated scenario are requested to pay full attention to the events that unfold as they will be encouraged to contribute to the facilitated debriefs that take place afterwards. The virtual experience of *imagining* what you would do if in the same situation as the active participant can still evoke reflection and subsequent learning.

Although the observer role is sometimes misconstrued as a ‘passive role’, close observation of simulation scenarios can also allow delegates to focus on the situation from a broader perspective and appreciate ‘non-technical skills’ in action. Equally, the observer role can offer the opportunity for delegates to provide valuable peer-feedback and develop professional communication skills during debriefs.

Bandura, A. (1971) *Social Learning Theory*. New York: General Learning Press.

Harden, R and Laidlaw, J. (2012) *Essential Skills for a Medical Teacher*, London: Elsevier Churchill Livingstone.

Hellaby, M. (2013) *Healthcare Simulation in Practice*, Keswick: M&K Publishing.

Issenberg, S., McGaghie, W., Petrusa, E., Gordon, D. and Scalese, R. (2005) ‘Features and uses of high-fidelity medical simulations that lead to effective learning: a BEME systematic review’, *Medical Teacher*, 27. pp 10–28. *Taylor&Francis* [Online].

Mayes, J (2015) ‘Still to learn from vicarious learning’, *E-learning and Digital Media*, 12, 3-4. pp. 361-371. *Sage* [Online].

Reime, M., Johnsgaard, T., Kvam, F., Aarflot, M., Engeberg, J., Breivik, M. and Brattebø, G. (2017) ‘Learning by viewing versus learning by doing: A comparative study of observer and participant experiences during an interprofessional simulation training’, *Journal of Interprofessional Care*, 31, 1. pp. 51-58. *Taylor&Francis* [Online].

## What to expect on the day

This day aims to provide a safe, supportive environment in which to review how you apply your knowledge, technical & non-technical skills and experiences in the context of a simulated clinical environment, whilst also striving to familiarise you with emergency algorithms and guidelines.

It is important to remember the focus of the day is **not an assessment**; it is an educational opportunity to practice taking the lead in managing anaesthetic emergencies. Whilst we expect to provide you with a degree of challenge by asking you to act up as the Registrar for the day, nobody will be asked to perform unrealistically outside of this remit.

At registration you may be invited to complete a pre-course questionnaire. This will be followed by an introduction to the faculty and fellow delegates. Before the scenarios

---

commence, a familiarisation session will be conducted, during which you will be orientated to the environment in which you will be learning including a 'meet the manikin' session, and be given the opportunity to clarify any queries about the course, the equipment and other resources available to you on the day. The rest of the day is divided into a series of scenarios followed by focused debriefs.

As a department we are actively involved in simulation faculty training, forming part of the HEKSS endorsed *TeachSim Faculty* collaborative (<https://www.medisimulation.org/teachsim-faculty>). We strive to adhere to simulation standards as set out by *The Association of Simulated Practice in Healthcare* (ASPiH) which states that all debriefers should be trained in the art of debriefing (<https://aspih.org.uk/standards-framework-for-sbe/>). As such, all debriefs will be facilitated by trained faculty, with 'novice' debriefers actively supported by more experienced individuals to ensure delegates have a valuable learning encounter.

During the debriefs you will be asked to contribute to the discussions based on your experiences as the active participant, your observations of the scenario, or drawing from your involvement in similar situations at work. These discussions typically lead to the following outcomes:

- Identification of individual, team and organisational factors that can influence effective management of acutely ill ward patients.
- Recognition of observed examples of good practice whilst also highlighting topics that are identified as requiring development.
- Discussion of your experiences of clinical practice where patient outcome and safe (or best) practice have been influenced by examples (good and bad) of team leadership, team working, effective communication and listening.

Please note that we use AV equipment (SMOTs cameras) in our department for the purposes of live-streaming simulation footage to the observation rooms. Scenario footage is captured, although the continuous loop recording means this footage eventually gets over-written. With your written consent only, these videos may be archived for faculty and course development purposes. The simulation team would approach you to gain your written consent in this instance.



---

## Meet our manikins

Here at EKHUFT we have a range of medium and high-fidelity adult manikins:

### **Laerdal SimMan 3G**

<https://laerdal.com/us/products/simulation-training/emergency-care-trauma/simman/>

### **Laerdal SimMan 3G Plus**

<https://laerdal.com/us/products/simulation-training/emergency-care-trauma/simman-3g/>

### **Laerdal SimJunior**

SimJunior® – a pediatric simulator | Laerdal Medical

### **CAE Apollo**

<https://www.caehealthcare.com/patient-simulation/apollo/>

### **CAE Lucina**

<https://www.caehealthcare.com/patient-simulation/Lucina/>

# Simulation Etiquette

## Faculty and Delegates

Confidentiality within simulation is vitally important. As we have eluded to already, your simulation encounter is **not an assessment**. The ‘patients’ you meet on the day will be ‘manikins’, therefore no real patients will come to any harm if you make a mistake, or do not know how to manage the situation with which you are faced. The most important aspect of each learning encounter is the facilitated debrief afterwards where we can explore issues or events as a group and decide on the appropriate actions should you go on to experience a similar situation in a real clinical encounter.

To ensure we create the correct learning environment as outlined above, we **do not** report back to educational supervisors or mentors and we will not provide written feedback. Delegates performance during simulated scenarios, the discussions that take place in the debriefs and any questions that are asked remain confidential between the faculty and the delegates attending the session. The main focus of the faculty is to support delegates learning and help them reflect on their experience rather than to pass judgement on performance.

---

We schedule several dates for this course throughout the year therefore would appreciate if you **do not** divulge information about the content of the scenarios to colleagues.

We strive to create an immersive clinical environment to increase the realism of the scenarios. To gain the most from your simulation experience, we ask that you try to **immerse yourself** in the scenario, take the situation seriously and treat the manikin like you would any patient (e.g. introduce yourself, gain consent before procedures etc.).

We aim to run our scenarios in 'real time' as much as the situation will allow, therefore there may be a wait before you are presented with investigation results. Please **try not to ad-lib**; if you are unsure whether you should do something, please ask the faculty. You will always have a faculty member playing a confederate role in your scenario (e.g. nurse, AHP, doctor etc.) therefore you will not be left alone to figure things out on your own. There are limitations to what some manikins are able to provide with regards to clinical examination. Please examine your patient fully and the faculty will subsequently provide any additional information you may require (e.g. CRT, temperature, signs of pallor or rash, distention or guarding, percussion notes etc.).

Most importantly, **be yourself!** Although we would like you to take on the role of the Registrar in preparation for your transition to CT3 soon, we would not expect you to pretend to be someone you are not (e.g. experienced higher trainee or Consultant). On the day of your simulation you will be informed how best to escalate concerns and call for senior help should it be necessary.

After completing your simulation session, you will be asked to **complete feedback**. This usually takes the form of a Survey Monkey link via email. If you have not received the email within a few days of completing your course, please check your junk/spam folders. Please notify us via [ekh-tr.simulation@nhs.net](mailto:ekh-tr.simulation@nhs.net) if you do not receive the link. Please ensure you complete this honestly; we appreciate all feedback and utilize this to amend the course in order to meet the needs of our delegates.

---

# Human Factors & Non-Technical Skills

## Overview

We all come to work keen to do our job to the best of our ability; no one intentionally means to make a mistake. However, up to one in ten patients will sustain harm owing to an error in their care (Great Britain. Department of Health, 2006) and reportedly there are 230 avoidable hospital deaths per week (CHFG, 2022).

Aviation has led in the scientific discipline of Ergonomics & Human Factors for many years through rigorous training and education due to it being recognized as a safety critical industry. Healthcare became acutely aware of its importance upon the creation of the *Clinical Human Factors Group* in 2007; a charity set-up by Martin Bromiley (OBE) after the death of his wife during a routine operation in 2005. 'Human Factors' are described as the non-technical or 'soft skills' that encircle clinical knowledge and expertise (Rosenorn-Lanng, 2014). These include teamworking, communication and situational awareness, all of which can be observed and enhanced through SBE. By better understanding personal behaviors, our interactions with other people and our working environment, we can attempt to mitigate errors by optimizing our performance in healthcare (National Quality Board, 2013). For those of you interested in the CHFG charity and the story of Elaine that precipitated its creation, more information can be found at <https://chfg.org/>

There are numerous systems or mnemonics for Human Factors to help remember the various subdivisions or categories within which we break down this complex subject. Some examples include:

**S**ystems

**H**uman interactions

**E**quipment

**E**nvironment

**P**ersonal

(Rosenorn-Lanng, 2014)

**S**oftware

**H**ardware

**E**nvironment

**L**iveware

(Hawkins & Orlady, 1993)

---

Gordon Dupont is attributed as first describing the *Dirty Dozen*; a collection of pre-conditions that can subsequently lead to accidents/incidents through human error (as cited by Dupont-Adam, 2021). Initially described for aviation, it can be transferred to healthcare.

- Lack of communication
- Distraction
- Lack of resources
- Stress
- Complacency
- Lack of teamwork
- Pressure
- Lack of awareness
- Lack of knowledge
- Fatigue
- Lack of assertiveness
- Norms

Clinical Human Factors Group (2022) Available at: <https://chfg.org/>

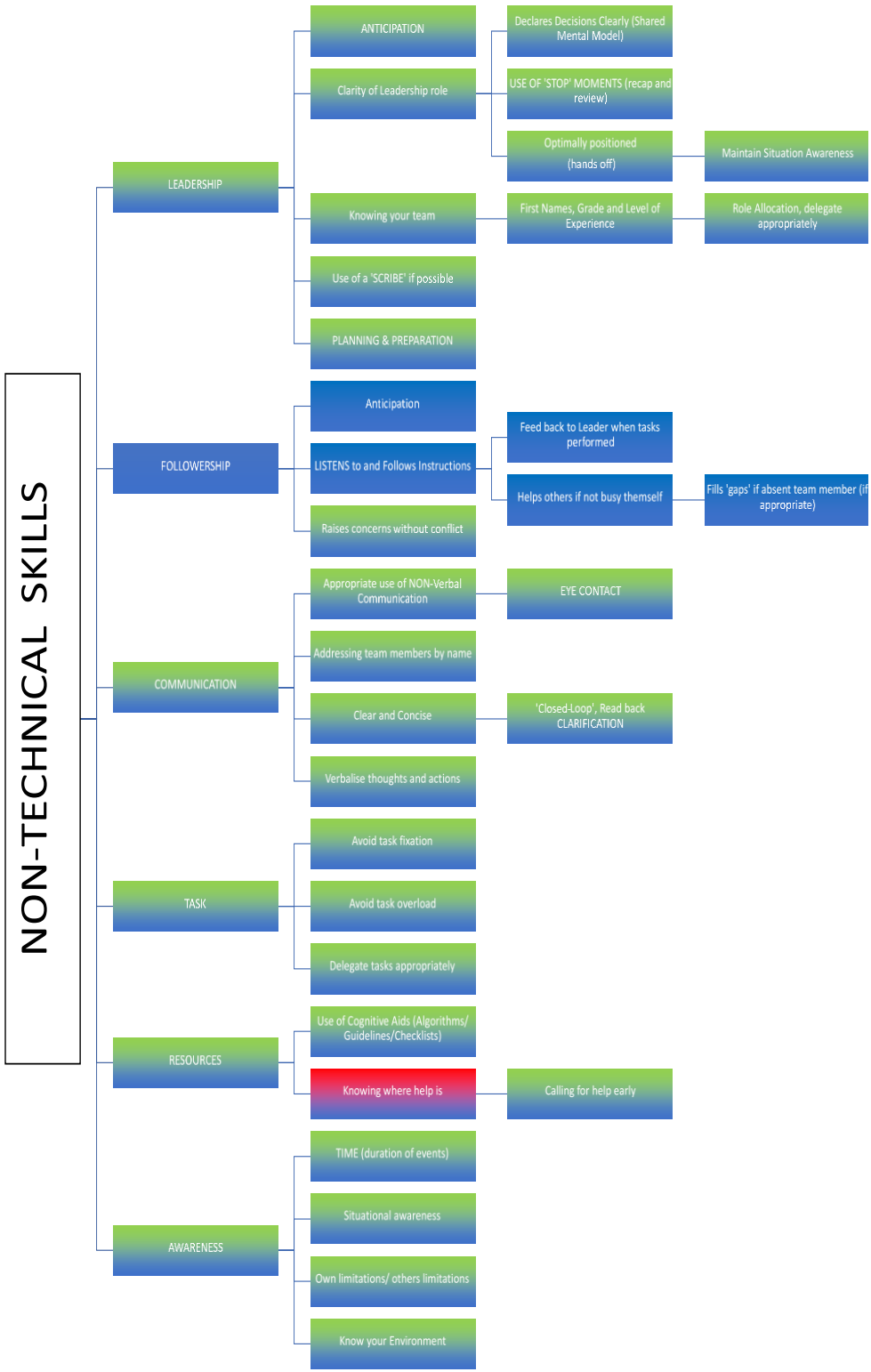
Dupont-Adam, R. (2021) *Let's Talk Human Factors – Origin of the Dirty Dozen*. Available at: <https://aviationsafetyblog.asms-pro.com/blog/lets-talk-human-factors-origin-of-dirty-dozen>

Great Britain. Department of Health (2006) *Good Doctors, Safer Patients*

Hawkins, F.H., & Orady, H.W. (Ed.). (1993) *Human factors in flight* (2<sup>nd</sup> ed.). England: Avebury Technical

Rosenorn-Lannig, D. (2014) *Human Factors in Healthcare, Level 1*. Oxford: Oxford University Press

Regardless of how best to remember Human Factors and the various interlinked subdivisions that can help or hinder our ability to treat our patients, raising awareness about the importance of Human Factors and Non-Technical Skills in healthcare is paramount for improving patient safety. Below you will find an overview of **Non-Technical Skills** created by our Trust Simulation Lead, Dr Barry Featherstone, that can assist us in our clinical roles. We will almost certainly explore a variety of these topics during your simulation experience with us.



NON-TECHNICAL SKILLS

LEADERSHIP

ANTICIPATION

Declares Decisions Clearly (Shared Mental Model)

Clarity of Leadership role

USE OF 'STOP' MOMENTS (recap and review)

Optimally positioned (hands off)

Maintain Situation Awareness

Knowing your team

First Names, Grade and Level of Experience

Role Allocation, delegate appropriately

Use of a 'SCRIBE' if possible

PLANNING & PREPARATION

FOLLOWERSHIP

Anticipation

LISTENS to and Follows Instructions

Feed back to Leader when tasks performed

Helps others if not busy themself

Fills 'gaps' if absent team member (if appropriate)

Raises concerns without conflict

COMMUNICATION

Appropriate use of NON-Verbal Communication

EYE CONTACT

Addressing team members by name

Clear and Concise

'Closed-Loop', Read back CLARIFICATION

Verbalise thoughts and actions

TASK

Avoid task fixation

Avoid task overload

Delegate tasks appropriately

RESOURCES

Use of Cognitive Aids (Algorithms/ Guidelines/ Checklists)

Knowing where help is

Calling for help early

AWARENESS

TIME (duration of events)

Situational awareness

Own limitations/ others limitations

Know your Environment

---

For those of you that may like to do some further preparation prior to attending the course, scenarios may include (but are not limited to) the following:

- Massive blood loss
- Local anaesthetic toxicity
- Anaphylaxis
- Malignant hyperthermia
- Difficult intubation
- Failed intubation

We recommend you familiarize yourself with the up-to-date AAGBI and Difficult Airway Society guidelines. You may also wish to refer to the Anaesthetic Quick Reference Handbook (QRH):

<https://anaesthetists.org/Home/Resources-publications/Safety-alerts/Anaesthesia-emergencies/Quick-Reference-Handbook>

You may also find it useful to look at the patient safety video 'Just a Routine Operation' as we may refer to elements of this event during the course. Links to the video and further information about Clinical Human Factors can be found here: [CHFG History | CHFG - Clinical Human Factors Group](#)

We hope you have found this pre-course handbook useful.

Should you have any questions prior to attending your simulation course please contact us at **[Ekh-tr.simulation@nhs.net](mailto:Ekh-tr.simulation@nhs.net)**

We look forward to meeting you on the day of your course!

Kind regards

***The EKHUFT Simulation Team***