



Improving Patient Safety using a Human Factors and Ergonomic approach

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There is a problem.

- 1 in 10 patients will suffer **adverse events**
 - 50% of the events were preventable.
 - 33% of adverse events led to moderate, or greater disability, or death

DH (2000); Vincent (2006)





Human Fallibility

- Healthcare is increasingly complex.
- Fallibility makes healthcare professionals (as humans) prone to error.
- Systems that depend on perfect human performance are inherently flawed.






Count the F's in the sentence.

**FINISHED FILES ARE THE RESULT
OF YEARS OF SCIENTIFIC STUDY
COMBINED WITH THE
EXPERIENCE OF YEARS.**





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Please be as careful as possible as you read this!

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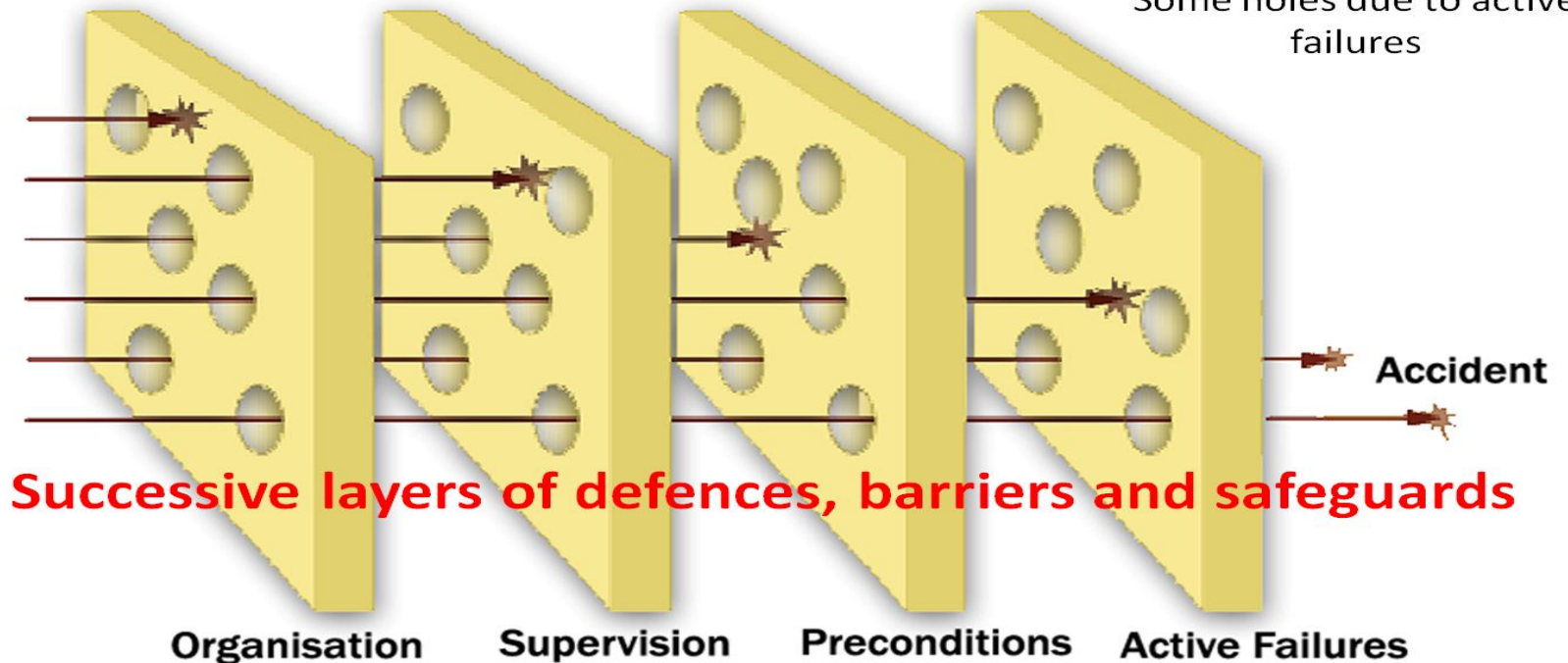
Humans will make mistakes



Swiss Cheese and Front line Staff

Some holes due to latent failures

Some holes due to active failures



Reason (1990)





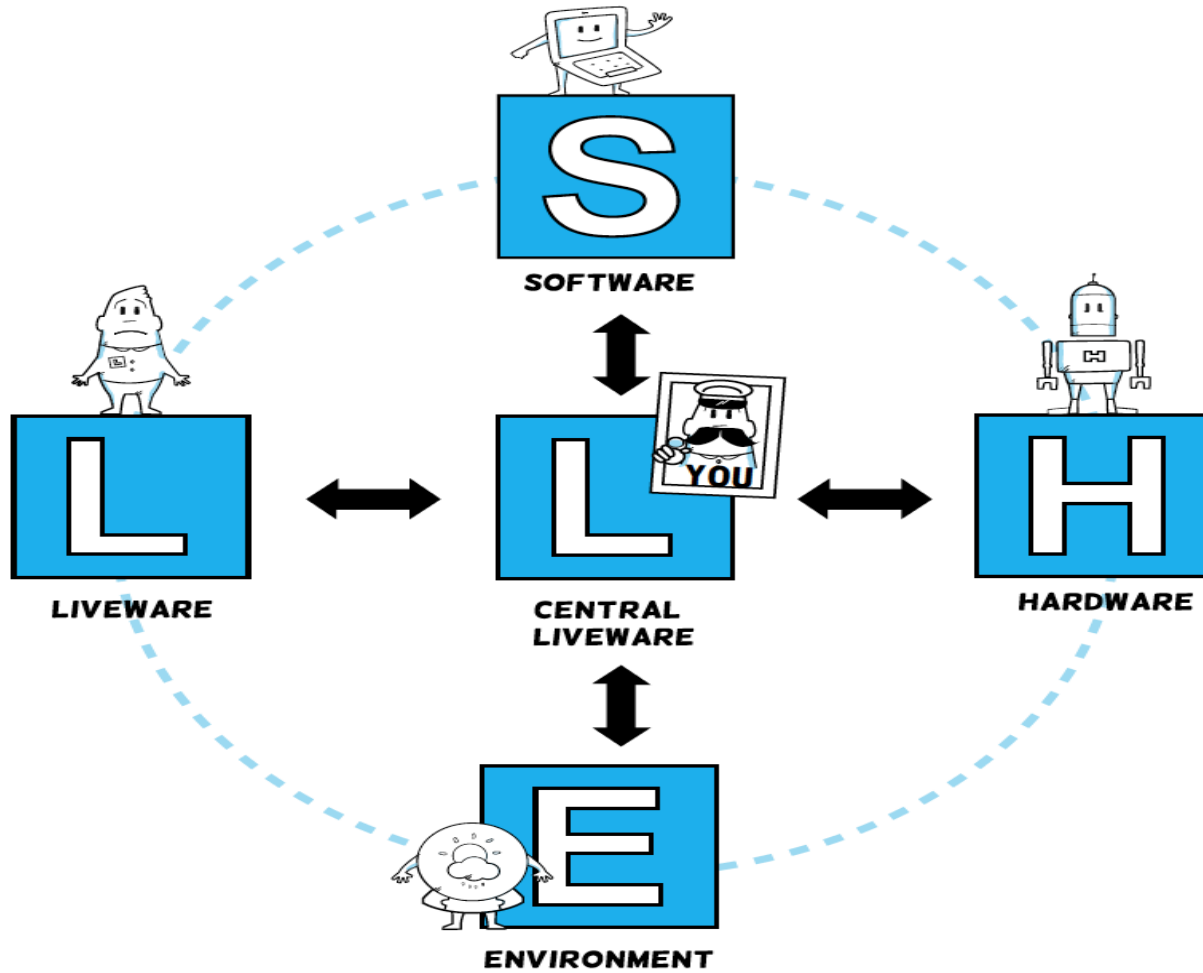
Anyone for...Clinical Human Factors

"Enhancing Clinical Performance through an understanding of the effects of teamwork, tasks, equipment, workspace, culture, organisation on human behaviour and abilities and application of that knowledge in clinical settings"

Catchpole (2011)



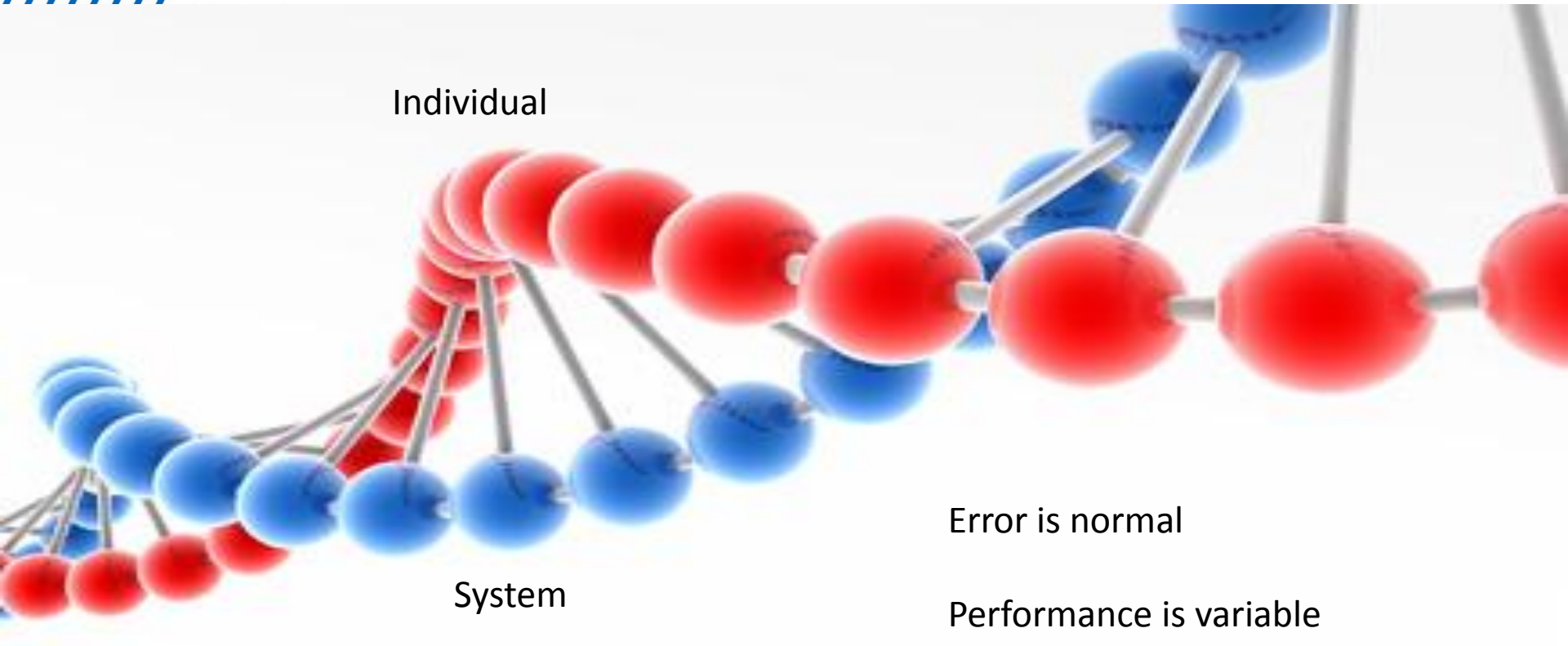
SHELL



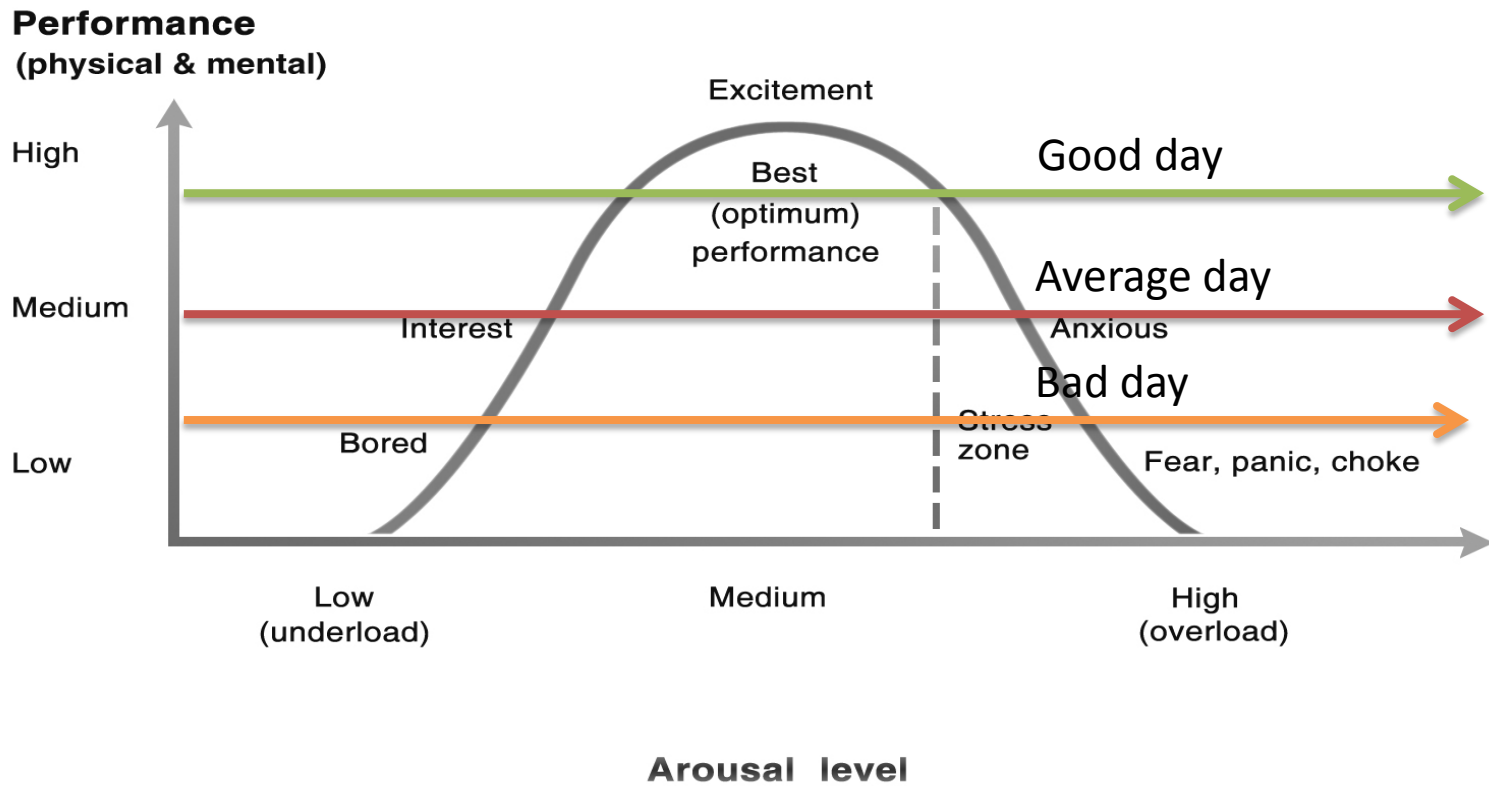
(Hawkins & Orlady, 1993)



Human Factors Principles



Human Factors

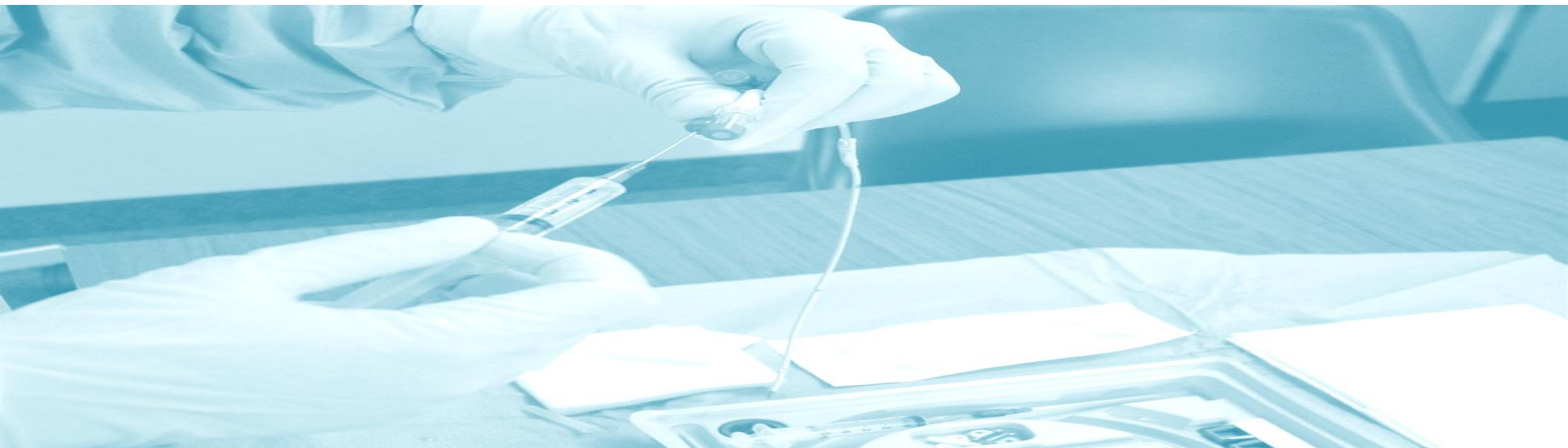




Non-Technical Skills

We make an assumption that if we give individuals the technical skills, they will be able to efficiently use these skills when working together in teams

(GAT 2009)



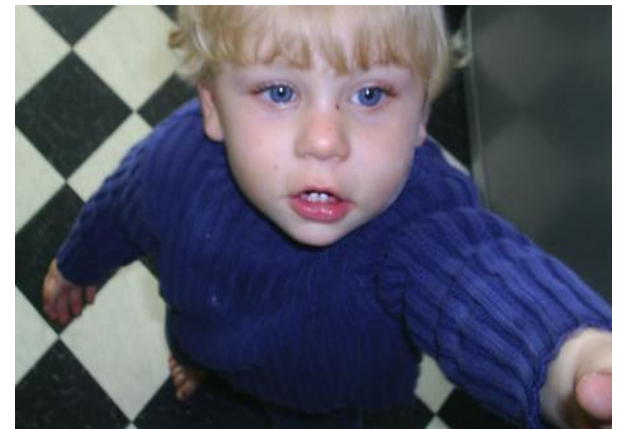
Non-Technical Skills





Serious case reviews

- Error chain...
 - Missed opportunities
 - Communication breakdown
 - Inaccurate Situation Awareness
 - Poor decision making
 - Unworkable rules and procedures
 - System change over



Staff sickness: extra workload

Patient Harm

- Distraction
 - Relatives
 - Drs rounds

Stress



Missed breaks

Busy

Fatigue

Start of the error chain

Error chain

No Harm

Change to
tallman
lettering
Barrier
Cross-check

Stress



Fatigue

Start of the
error chain

Error chain- broken



Using Human Factors to increase safety...

- We have to accept that the vast majority of people come to work to a **good job**
- Mistakes are usually caused by ineffective systems **not** bad people
- Systems should be designed so that it is **easy to do the right thing.**
- Creating a culture where human error is seen as a **source of important learning.**

This also means taking personal responsibility for safety, whoever we are, where ever we are.



Change Yourself?



SBAR Reporting

Attention all team members

For good communication about patients between all health professionals, use the SBAR tool before calling:

- ▶ Assess the patient
- ▶ Know the admitting diagnosis
- ▶ Read the most recent progress notes and assessment from the prior shifts
- ▶ Have appropriate documents available e.g. Nursing and Medical Records, MEWS (modified early warning score) charts, Allergies, IV fluids resuscitation status

NHS
Institute for Innovation
and Improvement

Situation

- ▶ State your name and unit
- ▶ I am calling about patient's name
- ▶ The reason I am calling is

Background

- ▶ State the admission diagnosis and date of admission
- ▶ Relevant medical history
- ▶ A brief summary of treatment to date

Assessment

- ▶ State your assessment of patient e.g. vital signs, MEWS score, mental state, mobility, medicines

Recommendation

- ▶ I would like (state what you would like to see done)
- ▶ Determine timescale
- ▶ Is there anything else I should do?
- ▶ Record name and contact number of contact

Don't forget to document the call



Change the system?



NHS
Institute for Innovation and Improvement

Situation

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Background

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SBAR Reporting
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Surgical Safety Checklist

World Health Organization Patient Safety

Before induction of anaesthesia (with at least nurse and anaesthetist) → Before skin incision (with nurse, anaesthetist and surgeon) → Before patient leaves operating room (with nurse, anaesthetist and surgeon)

<p>Has the patient confirmed his/her identity, site, procedure, and consent?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes <input type="checkbox"/> Not applicable 	<p>Confirm all team members have introduced themselves by name and role.</p> <p>Confirm the patient's name, procedure, and where the incision will be made.</p>	<p>Nurse Verbally Confirms:</p> <ul style="list-style-type: none"> The name of the procedure Completion of instrument, sponge and needle counts Specimen labelling (read specimen labels about, including patient name) Whether there are any equipment problems to be addressed
<p>Is the site marked?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes <input type="checkbox"/> Not applicable 	<p>Has antibiotic prophylaxis been given within the last 60 minutes?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes <input type="checkbox"/> Not applicable 	<p>To Surgeon, Anaesthetist and Nurse:</p> <ul style="list-style-type: none"> What are the key concerns for recovery and management of this patient?
<p>Is the anaesthesia machine and medication check complete?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes 	<p>Anticipated Critical Events</p> <p>To Surgeon:</p> <ul style="list-style-type: none"> What are the critical or non-routine steps? How long will the case take? What is the anticipated blood loss? 	<p>To Anaesthetist:</p> <ul style="list-style-type: none"> Are there any patient-specific concerns? <p>To Nursing Team:</p> <ul style="list-style-type: none"> Has stability (including indicator results) been confirmed? Are there equipment issues or any concerns?
<p>Does the patient have a:</p> <p>Known allergy?</p> <ul style="list-style-type: none"> <input type="checkbox"/> No <input type="checkbox"/> Yes 	<p>Difficult airway or aspiration risk?</p> <ul style="list-style-type: none"> <input type="checkbox"/> No <input type="checkbox"/> Yes, and equipment assistance available 	<p>Is essential imaging displayed?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes <input type="checkbox"/> Not applicable
<p>Risk of >500mL blood loss (7mL/kg in children)?</p> <ul style="list-style-type: none"> <input type="checkbox"/> No <input type="checkbox"/> Yes, and two IV central access and fluids planned 		

This checklist is not intended to be comprehensive. Additions and modifications to fit local practice are encouraged.

Revised 2009 © WHO, 2009



Any Questions?





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