Understanding Systems and the impact of complexity on patient

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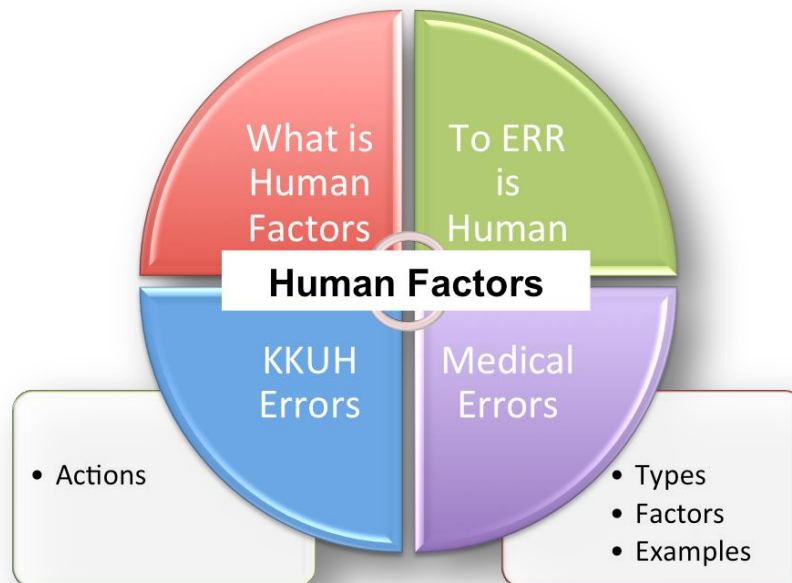| ⬛ **Slides**	🟥 **Important**	⬜ **Explanation**

Objectives and Mind Map

Objectives:

1- Human factors and their relation to patient safety

2- to Err is Human : True or False

3- Medical Errors : types , causes and example

4- Actions to reduce medical errors which related to humans

Mind Map:

Human Factors (HFS)

- **Understanding and advancement** of the systematic consideration of people in relation to machines, systems, tools, and environments.

- (HFS) highlights fundamental human capabilities, limitations, and tendencies, as well as the basics of human performance.

Medical Errors

Failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim.

Types of Medical Errors Important

Near Miss
- incidence about to happen but by chance didn't occur.

A patient is anesthetized and incorrectly prepared for surgery on his right leg. In the operating room, during a final check of the patient's X-ray, the surgeon realizes the film was accidently reversed. The surgery should be performed on his left leg.

sentinel event
- is an unexpected occurrence involving death or serious physical or psychological injury

Same example above, but if no one noticed that the film was reversed and the surgery was performed.

Medication Error
- is any preventable event that may cause or led to inappropriate medication use or patient harm.

The patient who wants a flu shot doesn't say he's allergic to eggs, and the nurse forgets to ask, her question would heads off a potentially fetal allergic reaction.

Factors causing errors	• Large work loads • High patient acuity • Inexperienced staff • Lack of rewarding system • Multiple hand offs • Constant interruption
Examples of errors	• Delay in response to emergency • Failure to diagnose or delay of a diagnosis. • Wrong drug or (wrong patient, wrong chemical, wrong dose, wrong time, wrong route) • Wrong-site surgery (Most Common) • Retained surgical instruments • Improper transfusions • Restraint -related injuries or death • Falls • Incorrect record-keeping
KKUH medical errors	• Expired medication dispensed • Un planned hysterectomy • Wrong Sponge counting • Self extubation • Wrong patient ID , went to wrong procedure • Wrong medication delivered • Wrong dose administered

Causes of Medical Errors Important

1- Healthcare Complexity	2- System and Process Design	3- Environmental factors	4- Infrastructure failure
- Complicated technologies. - Drugs interaction. - Intensive care. - Prolonged hospital stay. - Multidisciplinary approach.	- Inadequate communication. - Unclear lines of authority.	- Over crowded services. - Unsafe care provision areas. - Areas poorly designed for safe monitoring.	- Lack of documentation process. - Lack of continuous improvement process.
5- Human Factors and Ergonomics			
- HALT → Hungry, Angry/ Emotions , Late/ lazy , Tired/fatigue/sleep less. - Lack of skilled workers. - Lack of training.			

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Actions	✓ **Greater focus on the quality of healthcare** (performance measures / clinical audits/ quality in healthcare research) ✓ **Accreditation process mandatory** ✓ **Patient safety standards/ goals** ✓ **computerized drug** ordering systems ✓ **Error reporting** should be <u>voluntary</u> and <u>confidential</u> ✓ **malpractice insurance** ✓ **National standards for on work hours** for medical interns and residents ✓ **Patient education** ✓ Verification, credentialing, privileging and evaluation process ✓ **Morbidity and mortality review process** ✓ OVR process ✓ **No Blame Culture** ✓ **WHO / JCI/ AC** and others standards and check list ✓ **Medical societies**

Questions

1. Which one of the following factors can lead to medical errors?
   a. Large work loads
   b. Inexperienced staff
   c. Lack of rewarding system
   d. All of the above.

2. <u>Drugs interaction</u> and <u>intensive care</u> are examples of which one of the medical errors causes:
   a. System & process design
   b. Environmental factors
   c. Healthcare complexity

1.D 2.C

Quiz

1. Among the environmental factors that can lead to medical errors:

   a. Lack of skilled workers.

   b. Tired and fatigue staff.

   c. Poorly designed patient care area.

2. An unexpected occurrence involving death or serious physical or psychological injury is definition of:

   a. Medication errors.

   b. Sentinel event.

   c. Near miss

1.C 2.B