HUMAN FACTORS IN PRACTICE WORKSHOP

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WHAT IS HUMAN FACTORS SCIENCE?

Human factors encompasses all of those factors that can influence people and their behaviour. In a work context, human factors are the environmental, organisational and job factors and individual characteristics which influence behaviour at work.
Clinical Human Factors Group. 2009

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Clinical human factors

Applies science to design and evaluation of tasks, jobs, equipment, environments and systems...

to make them more compatible with needs, capabilities and limitations of people.

Also called ergonomics – it considers physical and mental characteristics.
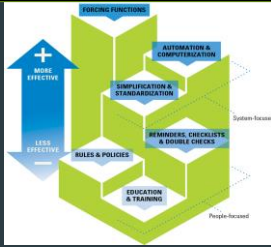
Aims to make things measurably easier, safer, more effective and satisfying to use

In healthcare Human Factors can:

- improve human & system performance
- improve staff & patient safety well-being and experience.

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HIERARCHY OF EFFECTIVENESS OF DIFFERENT TYPES OF SOLUTIONS

Cafazzo JA and St-Cyr O. Human Factors: From Discovery to Design. Healthcare Quarterly (2012): 24-29.

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SOLUTIONS - HIERARCHY OF EFFECTIVENESS

Stronger Actions
Architectural / physical plant or equipment changes
New device with usability testing before purchasing
Engineering controls (interlock / forcing function)
Simplify the process and remove unnecessary steps
Standardise equipment or processes or care plans
Tangible involvement and action by leadership in support of Patient Safety

Moderately Strong Actions
Increase in staffing / decrease in workload
Software enhancements / modifications
Eliminate / reduce distractions
Checklist / cognitive aid
Eliminate look and sound-a-likes
Enhanced documentation
Enhanced communication

Weaker Actions
Double checks
Warnings and labels
New procedure / policy
Training individual who made the last error
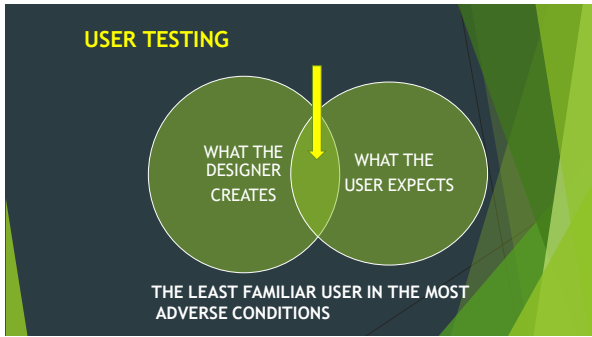Additional study / analysis
Disciplinary action

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Forcing Functions

A **forcing function** is an aspect of a design that prevents the user from taking an action without consciously considering information relevant to that action. It forces conscious attention upon something ("bringing to conciousness") and thus deliberately disrupts the efficient or automatised performance of a task.

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USER TESTING

WHAT THE DESIGNER CREATES

WHAT THE USER EXPECTS

THE LEAST FAMILIAR USER IN THE MOST ADVERSE CONDITIONS

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Inattentional blindness

- 83% radiologists did not see the gorilla
- Gorilla = 48X size of nodule on a CT scan
- Don't see what you are not expecting to see

Drew, Vo and Wolfe (2012)

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INVOLUNTARY AUTOMATICITY (TOFT AND MASCIE, 2005)

▶ A risk factor where repeated checks are carried out (e.g. dispensing checks, repeat prescriptions)

▶ Going through the motions of carrying out the checks but not consciously engaged in the checking process.

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Last task step and primary goals

- NEW COMMUNITY PHARMACIST
- DISPENSES WHEN YOU ARRIVE IN THE PHARMACY TO PICK UP THE MEDICATIONS
- TIME PRESSURE AND STRESS
- COMPLEX PRESCRIPTION WITH ELEVEN MEDICATIONS
- DISPENSES THEN FORGETS TO PUT THE RE-ORDER FORM IN THE BAG

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GENERIC 'NON-TECHNICAL SKILLS'

• A dynamic process involving two or more people engaged in the activities necessary to complete a task **Teamwork**	• Process of influencing people towards achievement of identified goals (Naylor, 2004) **Leadership**	• Perception of the elements in the environment. • The comprehension of their meaning, and the projection of their status in the near future' (Endsley, 1995) **Situation awareness**
• Transfer of information, ideas or feelings **Communication**	• Process of reaching a judgment or choosing an option to meet the needs of a given situation (Flin et al, 2008,) **Decision Making**	• A formalized process for achieving an identified result **Task management**

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Team psychological safety

▶ TPS is *"a shared belief held by members of a team that the team is safe for interpersonal risk taking"* (Edmondson 1999).

▶ Interpersonal risk taking includes, for example, speaking up to make suggestions, expressing concern or asking for help.
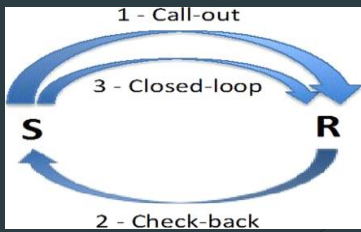
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Mitigated speech

"An attempt to downplay or sugarcoat the meaning of what is being said. We mitigate when we are being polite or when we are ashamed or being deferential to authority"

- Malcolm Gladwell

We could also call it "Hint and hope"
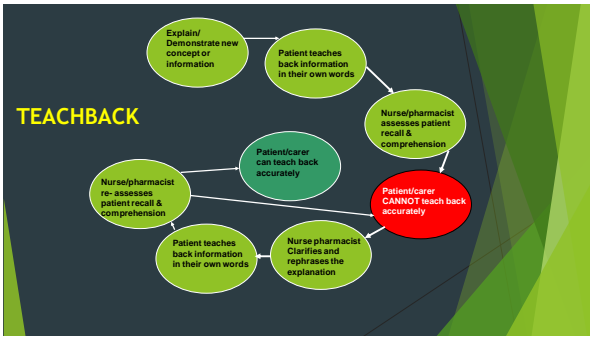
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Open versus closed loop communication

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DO PATIENTS TAKE THEIR MEDICINES?

► Around 30 – 50% of patients taking medicines for a chronic (long term) condition do not take the medicine as it has been prescribed.

► We call this non-adherence or non-compliance.

► Does it matter?

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TEACHBACK

Explain/ Demonstrate new concept or information

Patient teaches back information in their own words

Nurse/pharmacist assesses patient recall & comprehension

Patient/carer can teach back accurately

Nurse/pharmacist re- assesses patient recall & comprehension

Patient/carer CANNOT teach back accurately

Patient teaches back information in their own words

Nurse pharmacist Clarifies and rephrases the explanation

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Using teach back

▶ Uses statements such as:
  ▶ "I want to make sure I explained everything clearly to you. Can you please explain it back to me in your own words?"

  OR

  ▶ "I want to make sure I did a good job explaining this to you because it can be very confusing. Can you tell me what changes we decided to make and how you will take your medicine now?"

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TAKE HOME MESSAGES

▶ Applying human factors methods creates safe design in healthcare

▶ We need to broaden our understanding of human factors to improve the safety of pharmacy systems

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