Improving Patient Safety using a Human Factors and Ergonomic approach

Debbie Clark
Deborah.Clark@yahhsn.nhs.uk
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.
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

Filled up with the wrong fuel? Help!
Swiss Cheese and Front line Staff

Some holes due to latent failures

Successive layers of defences, barriers and safeguards

Organisation  Supervision  Preconditions  Active 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)
(Hawkins & Orlady, 1993)
Human Factors Principles

Individual

Error is normal

System

Performance is variable
Human Factors

- Individual performance
  - Stress
  - Fatigue
  - Hunger
  - Late
  - Anger

- Team performance
  - Communication
  - Sharing mental models
  - Decision making

Average day
- Tension
- Anxiety
- Fatigue
- Depression

Good day
- Calm
- Confidence
- Productivity

Bad day
- Stress
- Overload
- Panic

Performance (physical & mental)

Arousal level

Low (underload)
 Medium
 High (overload)
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

- Communication
- Situational Awareness
- Decision Making
- Leadership / Followership
- Behaviour
- Feedback

SAFETY
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

- Distraction
  - Relatives
  - Drs rounds

Stress

Fatigue

Busy

Missed breaks

High Cognitive load

Patient Harm

Start of the error chain

Error chain
Start of the error chain

Stress

Fatigue

No Harm

Barrier

Cross-check

change to tallman lettering
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, wherever 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:

- Situation
- Background
- Assessment
- Recommendation

Don't forget to document the call
Change the system?
Any Questions?
Contact Details

@Improve_Academy

www.improvementacademy.org

t: 01274 383926

e: academy@yhahsn.nhs.uk