SAVING LIVES

APPLYING HUMAN FACTORS FOR SAFER HEALTHCARE DESIGN

clinical human factors group
the charity working to make healthcare safer
Mistakes happen...

...because we’re human

230 avoidable deaths occur each week in the NHS – many due to poor designs causing people to make mistakes.*

Poor designs in healthcare often go unreported or are thought to be too difficult to resolve. So when staff make mistakes, managers focus on retraining, improving procedures and warnings.

Not reporting and fixing design issues means mistakes are repeated.

Applying human factors during design and procurement ensures equipment, devices, and systems used in healthcare help staff get it right the first time and deliver safe and effective healthcare.

Example: Chlorhexidine used to clean patients’ skin before surgery.

There’s a 20-year history of injury and death following accidental injection.

Despite national warnings, new procedures, and safety alerts, the mistakes continue.

Sometimes it is only by changing the design that mistakes are prevented.

Design for safety:
Using a pre-loaded swab for skin cleaning reduces risk. You can’t inject anyone with a swab.

Buying different designs of the same device, like these 3-way taps, make intravenous drug errors more likely.

Supplying consistent design of devices with the same function reduces mistakes and learning time.

Misleading designs confuse. 1 in 10 people used the Adrenalin pen upside down and injected themselves, not the patient.

Demanding evidence of tests with real users informs procurement of issues.

Ignoring simple design conventions – like clockwise for on or increase – make errors much more likely, as reported with this anaesthetic machine.

Assessing usability design and standards reduces the likelihood of mistakes.

Over-complicated designs add to workload and reduce productivity.

Testing with real users demonstrates how long it takes for new users to complete simple bed adjustments.

Difficult to differentiate packaging contributes to 12,000 drug-related mistakes every year in the NHS.*

Selecting manufacturers that use packaging design guidelines help staff select the right treatment for the right patient.

Designs that fail to meet the needs of users, such as elderly diabetics, reduce their ability to manage independently and risk their safety.

Demanding evidence of tests with real users shows the device design meets specific needs.

Applying human factors ensure designs work well

The things we use should be designed to help us deliver safe and effective healthcare – not slow us down because they’re complicated, misleading, or don’t do what we need them to do.

Applying knowledge of human factors ensures designs work well for everybody, everywhere and in every situation.

Standards and regulatory bodies recommend this human factors approach. Many designers use these methods, but there is much more we can do.

What you can do

» Employ human factors specialists and train staff.

» Hire experts to test products in specific contexts.

» Control risks at procurement. Focus on usability in equal measure to utility and cost.

» Insist on evidence of usability performance testing from manufacturers.

» Apply human factors in procurement, design and investigations.

» Use your simulation department to test and measure efficiency, effectiveness and safety.

» Report all design problems via incident reporting systems or use MHRA Yellow Card Scheme.

» Avoid buying based on the views of one or two users’ likes and dislikes.

Don’t accept poor design.
Useful Resources

Reporting Issues
Report issues with equipment, medical devices, packaging and IT system issues via the local incident reporting system. Name manufacturer and give details – ask experts to help identify issues.

Patients and staff can report problems with drugs and medical devices to the MHRA via the Yellow Card Scheme.

Human Factors Standards

The Clinical Human Factors Group
www.chfg.org

Guidance
Human Factors and Usability Engineering – Guidance for Medical Devices Including Drug-Device Combination Products. MHRA. Sep 2017

Guidance for Human Factors Evaluations in the Procurement of Medical Devices, Equipment and Technology. Western Canada Human Factors Collaborative. May 2017


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