**FISH workshop**

10th June 2016 – part of the Clinical Librarians group meeting at Salford Royal.

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Search query: human factors and medication errors.

**Resources/databases searched:**

* Google (to establish definition of term “human factors”/quick scoping search) (2)\*
* Pubmed (2)
* Evidence search (3)
* HDAS: Medline (1)– Embase (4) – PsycINFO (1) – HBE (1) – HMIC (1)
* Emerald (not v useful beyond human factors ideas) (1)
* Library print resources (1)
* Trip (1)

\*(no. of people who used the resource)

The Cochrane Library and Best Bets were also mentioned during the workshop discussion.

**Search terms/subject headings and keywords used:**

* “human factor” OR “human factors”
* ? concerns regarding the utility/usability of Medline MeSH term Human Engineering/
* Embase has a specific Emtree term– Human factors/
* Ergonomics
* medication errors/
* “prescribing error\*”
* “medication error\*”
* Pharmac\*

It was generally felt that a simple approach (human factors AND medication errors) was sufficient to retrieve useful results as part of a scoping search.

Other terms that could be used for more comprehensive coverage of human factors:

Human error, quality improvement, human factors investigation tool, decision making, situational awareness, leadership, communication, error management, personality and behaviour, psychological factors, stress\*, fatigue\*, tired\*, burnout, overwork\*, workload, overload\*, distract\*, interrupt\*, disrupt\*, forgetful\*, poor concentration, lack of concentration, lack of staff, understaff\*, short\* adj2 staff\*, poor communication, inadequate communication, lack of communication, misunderstanding\*, lack of training, inadequate training, lack of knowledge, knowledge deficit, lack of skill\*, skill\* deficit, poor performance, performance deficit

**Top 5 results:**

A mixture of journal articles and reports were chosen as part of the top 5 results.

Five workshop participants handed in their top 5 results, see the summary below sorted by rank (1), (2), (3), (4), or (5).

Whilst compiling these results, I [ET] noticed that three of them (indicated by an asterisk) are conference abstracts (found on Embase). This is something to look out for whilst searching, because conference abstracts are low level evidence and a surprising choice for the top 5 results in a search that wasn’t on a rare topic. Of course, and this might explain it all, I realise that participants will not have been undertaking this search quite as thoroughly as they would normally at work!

(1) (3) (3) Gluyas, H. and Morrison, P. (2014) Human factors and medication errors: A case study, *Nursing Standard*, 29(15), pp.37–42.

(1) Durham, M.L. et al (2016) Reducing medication administration errors in acute and critical care, *JONA: The Journal of Nursing Administration*, 46(2), pp.75–81.

(1) Health Foundation (2012) *Evidence scan: reducing prescribing errors*. Available at: <http://www.health.org.uk/sites/default/files/ReducingPrescribingErrors.pdf> (Accessed: 30 June 2016).

(1) Maaskant, J.M. et al (2015) Interventions for reducing medication errors in children in hospital. *Cochrane Database of Systematic Reviews*, Issue 3. Art. No.: CD006208. DOI: 10.1002/14651858.CD006208.pub3.

(1) Russ, A.L. et al (2013) The science of human factors: Separating fact from fiction, *BMJ Quality & Safety*, 22(10), pp.802–808.

(2) (5) Carthey, J. et al (2009) *The ‘how to guide’ for implementing human factors in healthcare. Patient safety first.*Available at: <http://www.institute.nhs.uk/images/documents/SaferCare/Human-Factors-How-to-Guide-v1.2.pdf> (Accessed: 30 June 2016).

(2)\*Bassi, H. et al (2014) (Future models of care) Educational intervention to increase hospital pharmacist exposure and instigate safe prescribing in undergraduate medical students: our future doctors, *International Journal of Pharmacy Practice*, 22(Supplement 2), pp.51–52.

(2) Carayon, P., Xie, A. and Kianfar, S. (2013) Human factors and ergonomics as a patient safety practice, *BMJ Quality & Safety*, 23(3), pp.196–205.

(2) Patel, S. and Loveridge, R. (2015) Obstetric Neuraxial drug administration errors, *Anesthesia & Analgesia*, 121(6), pp.1570–1577.

(2) Russ, A.L. et al (2014) ‘Applying human factors principles to alert design increases efficiency and reduces prescribing errors in a scenario-based simulation’, Journal of the American Medical Informatics Association, 21(e2), pp. e287–e296.

(3) (4) Carayon, P. et al (2013) Characterising the complexity of medication safety using a human factors approach: An observational study in two intensive care units, *BMJ Quality & Safety*, 23(1), pp.56–65.

(3) Brandt, J.D. (2015) Human factors and ophthalmic drug packaging: time for a global standard, *Ophthalmology*, 122(12), pp.2368–2370.

(3) Chui, M.A. and Mott, D.A. (2012) Community pharmacists’ subjective workload and perceived task performance: A human factors approach, *Journal of the American Pharmacists Association*, 52(6), pp.e153–e160.

(4) Cafazzo, J. et al (2009) ‘Human factors perspectives on a systemic approach to ensuring a safer medication delivery process’, Healthcare Quarterly, 12(sp), pp. 70–74.

(4) Mitchell, R.J., Williamson, A. and Molesworth, B. (2015) Use of a human factors classification framework to identify causal factors for medication and medical device-related adverse clinical incidents, *Safety Science*, 79, pp.163–174.

(4) Ryan, C. et al (2013) Junior doctors’ perceptions of their self-efficacy in prescribing, their prescribing errors and the possible causes of errors, *British Journal of Clinical Pharmacology*, 76(6), pp.980–987.

(4) Werner, N.E., Nelson, E.T. and Boehm-Davis, D.A. (2012) Human factors methods to reduce medication error: Using task analysis in a pediatric and adult pharmacy, *Work*, 41(Supplement 1), pp.5665–5667.

(5)\*Bostock, N. et al (2014) Investigating prescribing errors, *Archives of Disease in Childhood*, 99(Suppl 1), pp.A97–A98.

(5) \*Brown, C. et al (2015) A narrative literature review of medication-related clinical decision support: What issues are pertinent to its future development?, *International Journal of Pharmacy Practice*, 23(Supplement 2), pp.31–32.

(5) Filik, R. et al (2006) Labeling of medicines and patient safety: Evaluating methods of reducing drug name confusion, *Human Factors: The Journal of the Human Factors and Ergonomics Society*, 48(1), pp.39–47.

(5) Frith, K.H. (2013) Medication errors in the intensive care unit: literature review using the SEIPS model, *AACN Advanced Critical Care*, 24(4), pp.389–404.

**Problems encountered:**

None really.

Had it been a real search, some may have asked the requester for further details/focussed area.

Noted that Embase brought back a large number of results.

Human factors was a surprising “catch all” term for a range of ideas.

Choosing top 5 felt slightly artificial, although it was a good exercise in thinking about the reasons for including/excluding results.

**Search tips:**

Google good for getting a basic understanding of ideas/terms

Good idea to start with TRIP database – sort evidence levels quickly/easily

Cochrane results found in a number of places (TRIP, Evidence Search etc) – trials database can be useful.

[NWSEN](http://www.northwestsimulation.org.uk/welcome/index.php) (North West Simulation Education Network) or [ASPIH](http://www.aspih.org.uk/) could potentially be useful for human factors resources.

**New HDAS:**

At the end of the FISH workshop, we did a live search on the new HDAS to try it out and familiarise ourselves with it. There are a number of things that don’t work properly at the moment, so the system should not be used for real world searches yet. Below is the search strategy we used:

