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PUTTING THE HUMAN BACK INTO THE QUALITY OF CLINICAL DEVELOPMENT

TRULY APPLYING A SYSTEMATIC APPROACH TO GCP

Have you ever wondered why compliance with regulations is so difficult? What do we mean when we say 'safety is everybody's responsibility'? What is meant by risk-based compliance? What is the basis for an effective safety system? The reality is that humans will make mistakes so that ultimately safety and quality is all about human performance.

There is now overwhelming evidence that around 80% of non-compliance is caused by the human factor but how has the system responded? In December 2013, there was a major breakthrough with the publication of the Human Factors Concordat by the UK government. This has been primarily aimed at patient safety within the NHS. The pharmaceutical system and clinical research sector were not included.
For that reason, a Pharmaceutical Human Factors and Ergonomics (HFE) group was set up within the Chartered Institute of Ergonomics and Human Factors. The aim is to promote, debate and develop programmes of work focusing on capacity and capability of HFE and identify what support is needed to enable pharmaceutical organisations of all forms and sizes to embed HFE principles and practices into their culture, systems and processes. This unique group is open to all who work in the healthcare product sector at any level and in any discipline who are committed to enhancing human performance towards greater safety and efficiency. Our vision is of a healthcare product system that places an understanding of HFE at the heart of improving clinical, managerial and organisational practice, leading to significant improvements in the way researchers and organisations manage and supervise the ongoing conduct of clinical research, development and optimising use of healthcare products across their life cycles.

DRIVING EVOLUTION OF A MORE EFFECTIVE, SAFER CLINICAL RESEARCH SYSTEM BASED ON PRINCIPLES OF MINIMISING HARM, REMOVING WASTE AND MANAGING VARIATION REQUIRES A SYSTEMATIC APPROACH TO THE HUMAN FACTOR AND JUST CULTURE

In recent years, a number of regulatory agencies, scientific bodies and healthcare organisations have introduced initiatives to improve the effectiveness and quality of clinical research. However, while well intentioned, these initiatives have so far failed to produce meaningful results when it comes to balancing safety and efficiency often resulting in over regulation and needless bureaucracy. Thus, it has been repeatedly stated that there is an urgent need for better regulation and quality management. Why is a different approach needed?

Firstly, current initiatives are based on massive assumptions so that our understanding of what 'safety' means has not changed in over 50 years since the Declaration of Helsinki was first drafted. All initiatives have focused on safety, meaning 'Safety Reporting' which is a completely inaccurate term as safety is not being reported, harm is, as represented by the term 'adverse event'. Such initiatives do not recognise that safety is ultimately all about human performance and the way humans interact with the investigational product.

Secondly, these initiatives have been inward looking in the sense they look at specific territorial needs (EU or US only) or have only been partially global and not fully inclusive (Council for International Organisations of Medical Sciences (CIOMS) VI). It is of note that there has been a lost opportunity with the recently approved Guideline for Good Clinical Practice E6 (Revision 2) in that there was nothing to suggest that they examined the vast evidence base from organisational science to see how it might positively influence and impact the quality of GCP implementation[1].

Thirdly, as already stated, current initiatives ignore the increasing amount of systems and cultural evidence around human factors. There may well already be many individuals who already manage clinical research projects utilising human factors principles. But its importance remains unrecognised with no systematic application of standards or best practice.

In order to truly improve the safety of clinical research, process design needs to focus on humans who work within them to not only mitigate risk but also strive to eradicate waste and understand and learn from variation. We need to recognise the latent conditions in processes that can predispose to errors. Although there are some research findings about human factors in the clinical research environment, to our knowledge, none of these studies specifically address the influence of human factors systematically on the clinical research process and optimising its effectiveness[2]. For instance, there is no research evidence on how the working relationship and human performance of R&D teams with other research management organisations can be optimised from the human factor and cultural point of view. However, what sort of research culture should we strive for? The next section addresses this.

THE MOVE FROM BLAME FREE TO JUST CULTURE

Originally 'no-blame culture' was recommended as an essential component of safety culture to counteract 'blame cultures'. This conclusion was based on the understanding that a large proportion of unsafe acts were 'honest errors' (the kinds of slips, lapses and mistakes that even the best people can make) and were not truly blameworthy. The problem is that this approach failed to confront those individuals, regardless of hierarchical position, who wilfully (and often repeatedly) engaged in dangerous behaviours which are outside what many would regard as acceptable. This meant that blame free culture did not properly distinguish between culpable and non-culpable unsafe acts. The reality is that when an incident puts patients at risk and so impacts safety, someone will be blamed. That is why 'just culture' should now be a more desirable aim. This refers to an atmosphere of trust in which people are encouraged (even rewarded) for providing safety information, but in which they are also clear about where the line must be drawn between acceptable and unacceptable behaviour. This means front line personnel feel comfortable disclosing errors, including their own, while maintaining professional accountability. Individuals should not be held accountable for system failings over which they have no control. There is recognition that many individual or 'active' errors represent predictable interactions between humans and the systems in which they work. This means that competent professionals make mistakes and they will develop unhealthy norms (shortcuts, 'routine rule violations'). The difference between a just and blame free culture is that there is zero tolerance for reckless behaviour, ranging from conscious disregard of clear risks to patients or gross misconduct (e.g. falsifying a record, performing duties while intoxicated). A 'just culture' should be fostered and cultivated as follows:

- Identification and building upon of existing best practices in project and quality management
- Recognition of the scope of clinical and non-clinical errors with thorough root causes analyses corrections, corrective and preventive actions conducted transparently
- Encouragement of all those involved in clinical research and development to report errors, incidents and near misses
- Provision of fair-minded treatment and creation of effective structures that help people reveal their errors and organisations learn
- Critique or assessment of competence will be performed if this is justified by the evidence. For example, if after careful collection of facts, reckless or wilful violation of policy or negligent behaviour has occurred.

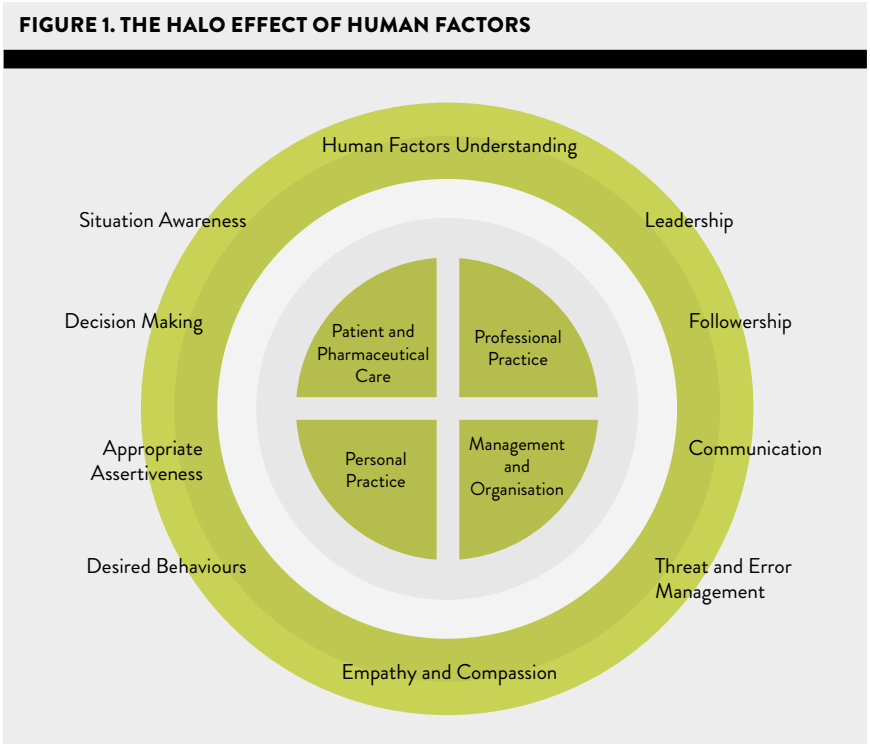
How human factors frame systems development is summarised below as The Halo Effect. Understanding safety culture is crucial to improving safety, as is understanding how the underlying safety climate influences error reporting, teamwork, as well as communication across roles and throughout the management hierarchy. Poor safety cultures are associated with increased error rates, yet surveys of safety attitudes indicate that changes are often impeded by existing cultures of individual blame and attitudinal variations in the actual operational meaning of different roles and responsibilities.

WHAT HAS HAPPENED IN THE UK CONCERNING HUMAN FACTORS?

Around 2008, the Clinical Human Factors Group was established with its focus on the NHS and healthcare[3]. At that time the aim was to extend the activities of the Clinical Human Factors Group (CHFG) into the pharmaceutical sector with a focus on pharmacovigilance[4]. Following the pharmaceutical legislation in July 2012, with its increased emphasis on quality management and the publication of the NHS Concordat in 2013, an independent pharmaceutical human factors group (PharmaHuF) was formed on LinkedIn[5]. In 2015, we entered into discussion with the Chartered Institute of Ergonomics and Human Factors (CIEHF) who define Ergonomics or Human Factors as 'the scientific discipline concerned with the understanding of interactions among humans and other elements of a system, and the profession that applies theory, principles, data and methods to design in order to optimise human well-being and overall system performance'[6].

We believe including human health and wellbeing in the system of quality management would be a very progressive innovation and would cover issues such as stress, fatigue and distractions. In November 2015, a dedicated Pharmaceutical Human Factors and Ergonomics Special Interest Group (PHFE SIG) was set up within the CIEHF. This we believe is a 'world-first' and no such group exists elsewhere at present.

FIGURE 1. THE HALO EFFECT OF HUMAN FACTORS



THE VISION OF THE UK PHARMACEUTICAL HUMAN FACTORS AND ERGONOMICS SPECIAL INTEREST GROUP

Our vision is of a UK healthcare product system that places an understanding of human and other organisational factors at the heart of improving clinical, product development, managerial and organisational pharmaceutical practice, leading to significant improvements in safety and efficiency across the life cycle of a pharmaceutical product (this includes the active medicine, excipients and all associated labelling).

THE GOAL AND AIMS OF THE UK PHARMACEUTICAL HUMAN FACTORS AND ERGONOMICS SPECIAL INTEREST GROUP

The goal of PHFE SIG is to optimise human performance within the UK healthcare product sector, for patient safety and efficiency by systematically applying evidence from organisational and human factors science. This can be achieved by:

1) Stimulating dialogue across the healthcare product sector and to provide a non-judgemental forum for pharmaceutical professionals to explore how the culture, the beliefs, incentives, motivation of individuals, teams and organisations can impact both system and drug safety and to facilitate how this understanding can be applied to optimise the current system to strengthen trust in patient safety and lead to risk-based compliance
2) Demonstrate through concrete action and examples how a better understanding of the role of human factors can have a significant impact on safety, quality and productivity in the healthcare product sector.

Membership crosses boundaries between academia, regulatory agencies and healthcare industries and professionals from the pharmaceutical industry and the medical device industry, including trade associations.

The urgency of our collaboration has been accentuated by the International Standard on the Human-Centred Organisation ISO 27500 launched 1st September 2016. Accordingly, for an organisation to be human-centred they must meet the criteria for seven top level principles defined by the committee:

- Capitalise on differences between employees and see diversity as a corporate strength
- Diversity and performance go together
- Usability and accessibility need to be strategic business objectives
- Adopting a total systems approach
- Ensure health, safety and well-being of employees
- Value employees and create meaningful work environments
- Be open, trustworthy and be socially responsible.

WHAT HAS THE UK PHFE GROUP DONE SO FAR?

We have held regular team meetings of different representatives from the pharmaceutical sector together with human factors and system experts held under Chatham House Rules.

We have members in our group who are also part of the MHRA Human Factors Study Working Group. In addition to regular team meetings, we have several sub-groups supporting different aspects of the group's strategy and objectives. We have a sub-group who will be developing some evidenced-based recommendations about best practice in conducting human factors studies[7]. It soon became obvious that we do not understand the system for healthcare products in the UK and the way all the different stakeholders interact. So, we also have a sub-group mapping the system using systems engineering techniques. This will enable us to demonstrate control structures both for clinical research and marketed healthcare products (note although our focus are medicines, in reality the division with devices and kits is artificial). We have set up a group to look at implications of ISO 27500 and how this may be applied. Above all, training and education is central to CIEHF and so we are looking to identify opportunities for postgraduate work involving human factors science from both the academic and industry groups and how human factors and system thinking should be built into current pharmaceutical training across the system. This includes MSc projects applying systems science.

We would like to extend our activities into clinical research and development given that we know human factors are the main cause underlying poor quality data and research inefficiency. In other words, we believe that effective quality management requires human factors at the heart of improving the management and organisation of a clinical research system. We acknowledge that many questions remain and there is a considerable amount of conceptual, research and practical work ahead if we are understanding of the steps that are needed to create a more effective clinical research system. We welcome the involvement of RQA members and are looking for volunteers to join us on what is a unique journey and opportunity.

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PROFILE

1980-1994 Guy's Hospital Medical School followed by hospital medicine and clinical research in London, Birmingham and Manchester

1994-1999 Senior Medical Assessor, Pharmacovigilance Assessment Group, UK Medicines Control Agency

1999-2005 Senior Medical Director, Parexel Scientific and Medical Services

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Since July 2007 Principal Consultant in Pharmacovigilance and Drug Safety with NDA Regulatory Science Ltd.

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