

# Human Factors For Healthcare



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Healthcare operates in urgent, high stakes situations, with considerable uncertainty and resource constraints, often with high degrees of complexity. A significant strength in healthcare is the people working within it, the vast majority of whom work incredibly hard to ensure that patients remain safe and have positive experiences of their care. When quality of care fails to meet expected standards, this is rarely a question of intent, rather that our systems of work do not get the best from the people working within them. The goal of Human Factors For Healthcare (HFFH) is to create conditions that allow people to be and perform at their best, in a reliable, consistent and sustainable way.

Delivering HFFH requires a multi-disciplinary approach, across a variety of specialisms. Crucially, no one individual, discipline or body can lay claim to all of the skill-sets which are required, since the leading edge of knowledge in each specialism will naturally be developing in different spaces. Equally importantly, healthcare professionals and patients/families should be leading developments and testing to ensure we are guided by the practical needs of people working in the system and receiving care from the system.

# Three Domains

Understanding the interactions of all three is fundamental to success and the balance of focus between the three will be dependent on context.

## 1. Internal

Understanding human capabilities and limitations, for example the relationship between stress and performance, the mechanisms through which we process information and make decisions, and the interplay between our beliefs, thoughts and emotions - in essence our internal frame of reference. Developing this understanding is rarely sufficient in isolation, but is a vital foundation for improving how we 'design for people', as well as how we work with others and design education.



## 2. Interpersonal

Healthcare professionals typically operate with incomplete information, in time limited and emergent situations, where conflicting goals and high degrees of ambiguity regarding decisions exist. This means that interpersonal relationships become crucial to keeping the work in systems as safe as possible. This is ultimately a fragile system, especially with ad hoc teams, and identifying and optimising group/team dynamics, and how leaders at all levels contribute to safety, is a critical focus.





### 3. External

HFFH promotes the ambition that we ‘design for people’, utilising an understanding of human capabilities and limitations. The word design is worthy of explanation, and specifically that whilst it does of course refer to whether physical components of the system such as equipment, technology and environment are designed to be intuitive/easy to use/safe, it also refers to anything else around the people that could moderate, influence or force changes in human behaviour, performance or wellbeing. This includes policies, rules, guidelines, work processes and other organisational structures - do these make it easier or more difficult to get work done safely and effectively?

# Five central principles

Integral to HFFH are five underlying principles, which in combination represent its scope and reach:

## 1. A Systems Approach (internal and external)

Central to a HFFH approach is to never deal with behaviour in isolation - instead seeing the behaviour we see as the product of interactions, broken into the internal, interpersonal and external domains described above.



## **2. Twin Interdependent Aims of Performance and Wellbeing**

HFFH is aligned with other Human Factors work in seeing performance and wellbeing as interdependent outputs of a system, and that one should never be sought without consideration of the other. Whilst improving performance (however that is defined in different contexts) is clearly vital, the experience of patients and staff must be central in all our shared work in healthcare, and therefore wellbeing should be at the heart of all our conversation and collaboration. Doing so requires a deep understanding of context and culture, taking a systems approach and enabling people to co-design and deliver high quality and person-centred care.

# 3. Embracing Complexity

Of utmost importance in HFFH is a thorough understanding of the implications of complexity. The term complexity is used with increasing frequency, and as often happens within workplace jargon, the true meaning of the term can quickly become diluted or lost. The term complexity has become synonymous with 'difficult', and this can limit how we explore work and how we attempt to solve problems together. Embracing complexity within a HFFH approach does not mean the work is difficult. It means it is different.

Complexity within workplace systems necessitates a different perspective of decisions made that allow for innovation or adaptation. The degree of adaptive behaviours within systems is surprising. Even a process which would be considered to be simple can display considerable variation in performance. To ignore adaptive behaviours, or to think a system can be designed to apply sufficient control and order for all circumstances, is to misunderstand humans particularly in complex systems. Adaptive behaviours will always be present, it is their effect that we need to understand.

The relationship between systems approaches and adaptive behaviours needs to be more fully considered within each context and environment to enable HFFH to become a catalyst for improvement. At times adaptations will be unhelpful and/or symptomatic of a lack of user-centred design. At others they may be necessary and even desirable for optimal outcomes. Adaptive behaviours are not inherently the seeds of failure, neither are they a substitute for the design of robust systems that are fit for purpose.





## 4. Multi Human Interface

Healthcare, more than any other industry, has a multi human interface that requires greater exploration and greater investment in order to achieve reliability. Comparing safety statistics and approaches with other safety-critical sectors is a much-lauded ambition but it is naïve to suggest that healthcare does not require a fundamentally different paradigm than less people dependent industries. Care systems are both person centred (i.e. focused on those receiving care) and person driven (i.e. focused on those delivering care). Consequently, HFFH needs to recognise the importance of solutions which are sensitive to the inherent variability and complexity arising from the multi human interface, to ensure people can perform in a safe environment, with equipment, tasks and tools conducive for success. Such is the impact of this variability, a broader range of solutions needs to be considered and tested in HFFH.

## 5. Contextual Flexibility

Healthcare, to a far greater degree than industries such as aviation and rail, is not a homogenous industry. The healthcare field is vast. The specialities that are encompassed by this can be diametrically opposed in many ways. The systemic dynamics as well as the risks present can be just as polarised. In some instances safety can and should be improved through the design and application of standardised processes, reducing variation and thereby reducing risk. In types of work that require a high degree of adaptive response - for example due to variation being an inherent part of the work - success may require a greater focus on strategies that improve the capacity of people in the system to perform under pressure (e.g. training, mentoring, provision of appropriate resources etc). Even within one particular division/speciality within healthcare, flexibility regarding point of focus and 'what good looks like' may still be necessary from task to task. Consequently, to suggest that HFFH should adopt similar approaches to those undertaken in other industries is at best limited.

It is clear therefore that healthcare needs to develop an approach to integrating Human Factors that is unique to itself rather than adopting and imitating other approaches, irrespective of their success. Whilst cross industry collaboration should always be welcomed with a respectfully curious mindset, the learning should consider how approaches may be translated or customised, rather than replicated.

# Summary comments



The underlying purpose of Human Factors For Healthcare (HFFH) is to create the conditions that support the performance and wellbeing of all the people affected by the work of healthcare systems.

To achieve this, we should consider Human Factors to be a scientific understanding of work that recognises the flexible relationship between internal human function, interpersonal interactions and external influences on people in the system. It will require a humanistic and inter-disciplinary approach that is inclusive of and embraces a broad range of subject matter expertise and experience. HFFH is an opportunity for a unified approach to understand and to co-design the science of work within future healthcare systems.



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