# Improving organisational performance through integration of human factors

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## ABSTRACT

GSK Ware, UK, is home to a leading Pharmaceutical manufacturing site serving patients around the world in Respiratory and Oral Solid Dose medicines. Following an analysis of deviations from process and proactive improvement ideas the site recognised an opportunity to use human factors proactively to create the climate for change to improve how people experience their work and business key performance indicators (KPIs). A strategic program launched in late 2017, adapting the Human Performance route map from BioPhorum Operations Group (22 company members). This map enabled a cohesive, measurable approach supported by accessible education and tools. Progress is benchmarked internally and externally. 18 months on, Human Factors has become business as usual on site, in everyday language, in problem solving and proactive work with relevant training and coaching. Key business KPIs have been sustainably and positively impacted since implementation of the human performance program, sometimes quite dramatically. Ware continues to weave Human Factors into their organisational "DNA" sharing learnings across the GSK network.

## **KEYWORDS**

Human Factors, Just Culture, Pharmaceutical

## Introduction

Ware manufacturing site was looking to make a step change in organisational performance. Following an analysis of deviations from process and proactive improvement ideas with a catalyst of the recruitment of a human factors specialist and membership of CIEHF, the site gained an insight into how adopting human factors proactively could create the climate for change for improvement in people engagement and business KPIs (Dekker, 2006). A strategic program launched in late 2017, adapting the human performance route map from the Biophorum Operations Group (BioPhorum 2014). The site committed to developing sustainable human factors capability in individuals and teams, and to embed human factors into existing systems. Proactive stakeholder engagement and change management encouraged early adoption of a growth mindset towards building new human factors skills. We visualised the change as wearing human factors glasses to help find the second story in problem solving and to promote a Just Culture (Dekker, 2007). Human Factors came to life from the shop floor to the board room as the site adjusted its focus to what people needed to succeed rather how to prevent mistakes (Hollnagel, 2014).

# The problem

Ware is a complex site with constant change and improvement activities. Quality systems help ensure processes and activities comply with Good Manufacturing Practice (UK regulators, MHRA). Human error was identified as a contributory cause of some deviations from Quality processes, so it was logical to introduce human performance tools to make improvements. Lag metrics when measuring success by the absence of failure did not always provide sufficient granularity of information to understand where and how to proactively improve human performance (Hollnagel, 2013). Meaningful lead measures were needed. Use of cause and effect problem solving helped correct and prevent issues but this was not always enabling consistent continuous improvement in human performance (HSE, 2002). The site needed to make it easier for people to succeed under varying circumstances (Hollnagel, 2014) and have more adaptive capacity to more easily anticipate and manage change (Dekker, 2014). The site needed more understanding of human performance, Hollnagel Safety-I and Safety-II: The Past and Future of Safety Management (2014) to consistently create conditions for success.

# **Investigation & analysis**

The Ware site belongs to the Human Performance work stream of the BioPhorum Operations Group (BioPhorum 2014), made up of 21 Biopharm global companies. BioPhorum created a Human Performance 5- level route map which contains 5 key elements: Strategy & Leadership, Communication and Training, Tools, Creating the right culture, and Measuring and Reporting. The Ware site baselined its capability against this map. Initial score was between level 1 and 2. They set a target to improve by one level to achieve known as 'Developing'. Root cause analysis data indicated human performance as an area for focus (Ishikawa, 1980). Employee feedback highlighted simple opportunities to make the work easier to complete right first time and give them "head space" to manage complexity and change. EHS colleagues shared their experience of a proactive system to improve personal & process safety.

## **Resolution of the problem**

The site focused on proactively promoting human factors and potential benefits. Progress was measured against the BioPhorum route map with meaningful target conditions identified and implemented (Rother, 2008). People learned to wear human factors glasses to see different improvement opportunities (Covey, 2008). As engagement and education spread insights, beliefs and behaviours changed to recognise "People are not the problem to solve they are the solution to harness" (Dekker 2014; Senn Delany, 2008).

Human Factors Advocates were recruited and trained across the site. Their remit was to coach and build capability working across functions and teams. Human performance education was integrated into site training on Good Manufacturing Practices 'GMP' that regulate pharmaceutical manufacture. Multiple education channels and formats were used including classroom, on the job coaching, animations, social networks, real time feedback and process confirmation, webinars, and conferences. Learnings and feedback are included in material updates for delivery on a rolling basis. 'Nudge' techniques (Thaler, 2013), helped integrate our human factors messaging and engagement

In a digital world with multiple metrics and reporting lines we focussed on lead metrics for human performance at point of use. Examples include Pre-Job Briefs (AARs Moseley, 2013; Los Alamos National Laboratory, 2010), and Human Reliability Assessments, (Gembas, Womack & Shook, 2013). We have introduced a site wide PowerApp (mobile and desk top) for all employees to raise

and track improvement ideas for quality and safety with associated enriched reporting data. Human factors are included in design and implementation phase for digital solution introductions.

## **Impact & implications**

Flow of material from manufacturing to test and release is improved by the reduction in deviations from process by 50% in key areas. The Power App has simplified and sped up the implementation of hundreds of improvements to support human performance in quality and safety systems. Hundreds of hours saved on investigations can now be utilised for proactive improvement. Teams call it the 'snowball' effect. Laboratories have seen a very significant and sustained improvement of over 50% in performance in cycle time, productivity, schedule adherence and output. The site achieved level three on the BioPhorum maturity route map – "Developing". The Warehouse has seen a substantial improvement in safety and quality for Material movements. The reduction in costs associated with fewer deviation investigations and delays to product flow have supported an improved financial bottom line for the site. Human factors competence is rising with training mapped to roles and competency matrix. Human Factors Advocate groups are becoming self-sustaining and engaging with other GSK sites.

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