HUMAN FACTORS

HUMAN FACTORS

The healthcare setting has become increasingly complex. Patient and societal demands for transparency in defining and justifying treatment decisions impact on all healthcare workers, who need to understand their professional responsibilities when working within complex social and work environments. Healthcare workers must understand that patients are increas ingly better informed and wish to be included more fully within the decision-making processes regarding treatment options. Likewise, when performance and clinical outcomes are less than expected, patients and their supporter s are entitled to timely and honest appraisal of ‘what went wrong’ and to be part of the discussion regarding ongoing care. Therefore, increasingly , surgeons will need to integrate knowledge, technical skills and mastery of complex equipment while participating in a multidisciplinary healthcare setting, in order to deliver safe and e ff ective care . The communica tion skills required to work in these complex environments and engage e ff ectively with audit, management and quality improvement systems are all dependent on human behaviour. These complex skill sets are set out in the study of human factors (HF), whic h examines the behavioural interrelation ships between humans, the tools the y work with and the environment in which they work. It is a complex area that incor porates knowledge derived from many disciplines. A bet ter understanding of the e ff ects of teamwork, tasks, equipment, workspace, culture and organisation on human behaviour will improve performance in clinical settings. A HF appr patient safety di ff ers from traditional safety training in that the focus is less with the technical knowledge and skills required to perform specific tasks, but rather with the cognitive and inter personal skills needed to e ff ectively manage team-based, high- risk activities. With time, HF training has evolved from models describing human interactions within complex environments to more nuanced programmes that modify wor kers’ behaviour and improve patient safety . HF was originally conceived in the 1940s in the aviation industry to better understand the relationship between a team’s behaviour, its technical surroundings and a c hanging environ ment. The ‘cognitive skills’ of the aircraft crew refers to the mental processes used for gaining and maintaining situational awareness, for solving problems and for making decisions, whereas ‘interper sonal skills’ are the communications and behavioural activities associated with teamwork. Crew resource management (CRM) training was developed to build e ff ective communication skills and a cohesive environ ment among team members and to build an atmosphere in which all personnel feel empo wered to speak up when the Richard H. Thaler , b.1945, economist, University Chicago, IL, USA, winner of the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2017 for contributions to behavioural economics. Cass R Sunstein , b.1954, lawyer, Harvard Law School, Boston, MA, USA, co-authored in 2008. each other’s actions, o ff er assistance when needed and address errors in a non-judgemental fashion. Debriefing and providing feedback are key components of CRM training. It also empha - sises the roles of fatigue, perceptual errors (such as misreading monitors or mishearing instructions) and the impact of man - agement styles and organisational cultures. More recent developments in HF have looked more closely at designing systems better suited to minimising er ror. Stud - ies examining the hierarchy of intervention e ff ectiveness and concepts

based on nudge theory allow f or design of healthcare systems that increase safety and give a better understanding of - how people make decisions and behave. The n udge theory , introduced by Richard Thaler and Cass Sunstein, is based on shaping the environment to encourage choice selection along pathways deemed to be beneficial to the individual, an organisation or society . A key feature of nudge theory is to structure the selection of preferred options while allowing individuals to maintain freedom of choice within the decision-making process. One successful example is the adoption of generic medication brands on electronic medical records by the use of a simple opt-out checkbox if the pre - - scriber wishes to use a non-generic medication. It is now widely recognised that HF need to be consid - ered in every aspect of surgical care if the highest standards in patient safety are to be achieved. However, safety is just one aspect of a wider HF systems approach to equipment, task, - environment and or ganisational design. Better understanding of HF can also significantly contribute to the quality , accessibil - ity and cost of healthcare services and to the recruitment and - retention of healthcare sta ff . Summary box 15.1 oach to Acknowledging the gap between medical progress and delivery of quality patient care - /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF -

Health care is complex with many areas for improvement Understanding of the in /f_l uence of HF among care givers can highlight areas of risk but also potential solutions The different factors that impact human behaviour can be identi /f_i ed and in /f_l uenced in a way that improves health care Acknowledge the importance of ‘value’ for both healthcare provider and patient Training in human factors to enhance teamworking is a prerequisite of contemporary health care

HUMAN FACTORS

The healthcare setting has become increasingly complex. Patient and societal demands for transparency in defining and justifying treatment decisions impact on all healthcare workers, who need to understand their professional responsibilities when working within complex social and work environments. Healthcare workers must understand that patients are increas ingly better informed and wish to be included more fully within the decision-making processes regarding treatment options. Likewise, when performance and clinical outcomes are less than expected, patients and their supporter s are entitled to timely and honest appraisal of ‘what went wrong’ and to be part of the discussion regarding ongoing care. Therefore, increasingly , surgeons will need to integrate knowledge, technical skills and mastery of complex equipment while participating in a multidisciplinary healthcare setting, in order to deliver safe and e ff ective care . The communica tion skills required to work in these complex environments and engage e ff ectively with audit, management and quality improvement systems are all dependent on human behaviour. These complex skill sets are set out in the study of human factors (HF), whic h examines the behavioural interrelation ships between humans, the tools the y work with and the environment in which they work. It is a complex area that incor porates knowledge derived from many disciplines. A bet ter understanding of the e ff ects of teamwork, tasks, equipment, workspace, culture and organisation on human behaviour will improve performance in clinical settings. A HF appr patient safety di ff ers from traditional safety training in that the focus is less with the technical knowledge and skills required to perform specific tasks, but rather with the cognitive and inter personal skills needed to e ff ectively manage team-based, high- risk activities. With time, HF training has evolved from models describing human interactions within complex environments to more nuanced programmes that modify wor kers’ behaviour and improve patient safety . HF was originally conceived in the

1940s in the aviation industry to better understand the relationship between a team’s behaviour, its technical surroundings and a c hanging environ ment. The ‘cognitive skills’ of the aircraft crew refers to the mental processes used for gaining and maintaining situational awareness, for solving problems and for making decisions, whereas ‘interper sonal skills’ are the communications and behavioural activities associated with teamwork. Crew resource management (CRM) training was developed to build e ff ective communication skills and a cohesive environ ment among team members and to build an atmosphere in which all personnel feel empo wered to speak up when the Richard H. Thaler , b.1945, economist, University Chicago, IL, USA, winner of the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2017 for contributions to behavioural economics. Cass R Sunstein , b.1954, lawyer, Harvard Law School, Boston, MA, USA, co-authored in 2008. each other’s actions, o ff er assistance when needed and address errors in a non-judgemental fashion. Debriefing and providing feedback are key components of CRM training. It also empha - sises the roles of fatigue, perceptual errors (such as misreading monitors or mishearing instructions) and the impact of man - agement styles and organisational cultures. More recent developments in HF have looked more closely at designing systems better suited to minimising er ror. Stud - ies examining the hierarchy of intervention e ff ectiveness and concepts based on nudge theory allow f or design of healthcare systems that increase safety and give a better understanding of - how people make decisions and behave. The n udge theory , introduced by Richard Thaler and Cass Sunstein, is based on shaping the environment to encourage choice selection along pathways deemed to be beneficial to the individual, an organisation or society . A key feature of nudge theory is to structure the selection of preferred options while allowing individuals to maintain freedom of choice within the decision-making process. One successful example is the adoption of generic medication brands on electronic medical records by the use of a simple opt-out checkbox if the pre - - scriber wishes to use a non-generic medication. It is now widely recognised that HF need to be consid - ered in every aspect of surgical care if the highest standards in patient safety are to be achieved. However, safety is just one aspect of a wider HF systems approach to equipment, task, - environment and or ganisational design. Better understanding of HF can also significantly contribute to the quality , accessibil - ity and cost of healthcare services and to the recruitment and - retention of healthcare sta ff . Summary box 15.1 oach to Acknowledging the gap between medical progress and delivery of quality patient care - /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF -

Health care is complex with many areas for improvement Understanding of the in /f_l uence of HF among care givers can highlight areas of risk but also potential solutions The different factors that impact human behaviour can be identi /f_i ed and in /f_l uenced in a way that improves health care Acknowledge the importance of ‘value’ for both healthcare provider and patient Training in human factors to enhance teamworking is a prerequisite of contemporary health care

---

Revision #1
Created 2025-12-31 15:09:13 UTC by Omar Ayman
Updated 2025-12-31 15:09:13 UTC by Omar Ayman