The Royal College of Pathologists
Pathology: the science behind the cure

Safety – the science behind the cure

How can safety be improved in pathology?

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Safety is critical in pathology for both patients and pathologists. In this article, College Vice President Professor Peter Johnston explores how pathology services can learn from different models and approaches to safety.

Pathology is very conscious of safety and has been for years. Could we do better for patients and for staff? This article suggests we can and proposes how. Many people don't know that laboratory medicine is the backbone of patient safety in the 21st century. How is this assertion justified? At almost every fork in every patient's journey, there are laboratories and pathologists providing accurate, timely and relevant screening, diagnostic and prognostic data. We monitor disease, enable treatment and assure its efficacy to optimise patient outcomes. But how safe are pathologists – and, specifically, how safe do we feel?

Plato introduced the concept of social justice in ancient Greece. This embodied a triad of culture of learning, improvement and safety. But currently, safety in healthcare tends to be one-sided, focusing on patients, with little emphasis on the people delivering that care. Perhaps a more balanced approach across all stakeholders would be better? The impact on care of having a safe, content and supported workforce was recognised by the Boorman Report in 2009. Many subsequent reports have produced similar findings but with minimal impact. The COVID-19 pandemic popularised the word 'wellbeing' to healthcare workplaces; however, little has changed subsequently to benefit staff morale or productivity or, indeed, wellbeing.

An evolving culture of safety

Safety culture in healthcare is evolving. Before 2000, there was little attention paid to the fact that healthcare could lead to patient harm. The book *To Err is Human – Building a Safer Health System* (2000) changed that. This raised awareness that every healthcare interaction involves risk and that risk can be recognised and measured. James Reason's Swiss cheese model describes adverse

events as arising from a combination of active and latent factors in the system that allow errors to pass through safety barriers. This developed into 'Safety-I' (if we record and analyse adverse events, we can identify the active errors – unsafe acts – and latent factors – hidden flaws – and fix them).

Safety-I assumes that, if we set up processes, pathways and the like correctly, we can minimise error – the 'perfection myth'. When things go wrong (and we know they do and will), there are identifiable failures and malfunctions that are the root cause. Human fallibility is a fact and, thus, people are considered a liability. Our variability is a problem. It follows that blame can be ascribed that emboldens the second myth – the 'punishment myth'. Punitive action will fix the problem – again, experience and safety data tend to expose this idea as unlikely.

Pathology has embraced Safety-I. We have standardisation, automation (with notable exceptions), internal quality control, external quality assurance (EQA) and external quality assessment through technical EQA schemes. We record harm and potential harm and analyse such events using root cause analysis as a tool. We are educated, trained, registered, regulated and work in accredited laboratories. Why, then, has Safety-I not been wholly effective?

Paradigm shifts in safety

System issues are identified in Safety-I models but, often, the easiest and cheapest part to try and fix is the person. Many latent conditions offer up 'wicked' problems that are too hard to resolve. In 2015, Erik Hollnagel and his colleagues wrote a white paper, *From Safety-I to Safety-II*. This is based on system-wide thinking that appreciates the complexity of clinical environments and the variation experienced within them. It recognises people as the asset whose resilience enables much to go well, often against the odds. An adverse outcome is the result of the interaction of many factors, coalescing within an unsafe system.

Benefiting from Safety-II needs us to appreciate healthcare from a Human Factors and Ergonomics (HFE) perspective. HFE is variously defined as 'a scientific discipline concerned with the understanding of interactions among humans and other elements of a system' and, for those working in the field, 'a profession that applies theory, principles, data and methods to design in order to optimise human wellbeing and overall system performance'. HFE embraces 3 main aspects of system performance: the person, their job and the organisation in which they work. Under these headings, a number of elements can be gathered as, for example, in Table 1.

Table 1. Elements of the HFE perspective.

Person	Job	Organisation

Person	Job	Organisation
Skills – technical and non-technical Behaviours Perception (risk) Attitude Capability, insight Life story beyond	Nature of tasks Processes involved Workload Workplace design Broader environment Appropriateness of interaction with workers	Culture, climate Belonging Being valued Work patterns Resources – all sorts Communications Leadership

Thinking of these categories helps us to see the work we do is more complex than the way employers define it. On occasion, people need to be creative to ensure that what needs to be done is done. Hollnagel observes that 'Safety-I does not consider why human performance practically always goes right'. Rather, he points out that 'things do not go right because people behave as they are supposed to, but because people can and do adjust what they do to match the conditions of work'. Surely, there is risk associated with this, but managing risk is part of the process. So, HFE gives us the opportunity to build complexity into our models of working environments and to do so from a variety of perspectives, with awareness of how each part of a system is dependent on other composite parts. When it comes to individuals in Safety-II, the person is transformed into the strength because we are the enablers of safe systems.

Building a safety culture in pathology

Back to Plato. Culture is central to how safe systems operate. Our cultures comprise shared values, standards and behaviours. Standards are important for pathology. We have worked hard to determine and uphold these. The recently introduced ISO15189-2022 standards accept that variation is a fact – the key is recognising the risk to patients and staff associated with it while ensuring systems minimise this risk, which is typical of Safety-II thinking.

NHS England's *Patient Safety Strategy* (2019) embraces HFE, noting the importance of culture and system design to improve safety. It is applied to patients and staff alike across healthcare domains, including pathology.

How do the challenges we face in pathology relate to our safety? Workforce is one, if not the main, concern of the College today. In the light of our role in patient safety, our scarcity makes us all crucial and, thus, retaining staff is paramount. People protect treasures – our people – and keep them permanently. If we don't recognise our own value, we cannot expect others to do so. Being heard, valued and supported is linked to enhanced performance, desire to stay in post and improved productivity.

Collegiate vision for safety

As safety science matures, developing holistic safety as part of patient pathways in which we contribute our knowledge, skills and expertise will be a priority for pathologists, services and organisations. The College's 2025–2028 Workforce Strategy is aligned with this thinking. Its themes put the workforce at the centre of the system, pushing the need for employers to consider personal and service developmental needs with pathologists. It seeks solutions to 'manage the pathology workload and develop intelligent solutions to support the pathology workforce'.

The College Workforce Strategy includes learning as a theme. Developing the use of HFE in pathology is not just a curricular issue for pathology residents and scientists in training. It is for us all. Pathology curricula do contain references to HFE, derived primarily from the GMC-UK's generic capabilities framework. How we apply these to our daily lives is dependent on our knowing the tools exist and how to use them. We must make the time for this education and its implementation.

We all contribute to our workplace cultures, valuing our colleagues and celebrating how much goes right and for so long in our hard-pressed, poorly designed, dilapidated quarters. Let us learn to be kind and considerate of our colleagues up, down and across hierarchies. Language is subtle and we can learn to use it carefully and inclusively. We can be confident about the value we add to patient safety and about telling others how much they need us to make healthcare work for our patients. No-one is going to do this for us. We have no option but to address these issues ourselves. In doing so, let us think about our contribution across patient pathways and how we make these safe. We can further develop our awareness of safety science and how we can use it to our and our patients' advantage.

I look forward to seeing our bespoke College Safety Strategy – safety about us, by us, for us.

Meet the author

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