Letters to the editor

Overcoming and benefitting from the psychological challenges posed by cadaveric dissection

We read with interest the article on the 'Psychological impact of cadaveric dissection on first-year medical students',[1] which highlights that dissection can cause acute stress disorder. With traumatic emotional experiences of dissection increasingly being recognised,[2] we wanted to share our perspectives on performing dissection during medical school and offer some solutions that may reduce this psychological impact.

Cadaveric dissection has been an integral part of medical education for centuries,[3] and presents students with a unique learning opportunity. We believe that lessons learned from dissection reach far beyond gaining a better understanding of the human anatomy: it fosters teamwork, allows practice of manual skills and helps us come more to terms with death. As such, it plays a key role in preparing us for our future careers as doctors.

Nonetheless, we agree that performing dissection can lead to significant anxiety and distress. At the same time, we believe that learning to deal with emotionally challenging situations is a crucial part of becoming a doctor, where being exposed to illness and death is commonplace. We therefore believe that exposure to dissection and overcoming its challenges creates a unique learning opportunity for students to develop coping mechanisms and confidence, as well as build resilience. Furthermore, we noted that our initial feelings of anxiety and shock reduced with time and repeated exposure, which is in line with previous findings.[2] It is important for students to recognise that anxiety-inducing situations in an uncomfortable environment can in fact turn into positive learning experiences. Indeed, positive attitudes supervened among our peers by the end of the course.

However, feelings of threat and anxiety should not be trivialised and must be addressed in order to support students. As mentioned by the authors, students who experience acute stress disorder are at risk of developing more severe mental health issues, such as post-traumatic stress disorder.[1] In addition, students who find these sessions more emotionally taxing may develop maladaptive coping strategies, such as denial and avoidance. Concerningly, this can have long-lasting consequences for their ability to care and empathise later on as doctors.[4] To avoid such adverse effects, we propose that students be exposed to dissection in a gradual fashion: starting with prosections, for example, or with videos and images of human dissection, which has been shown to reduce anxiety among students.[5] Moreover, we found that familiarising ourselves with the dissection room prior to being exposed to the bodies reduced our feelings of apprehension. Starting dissection away from areas described as especially sensitive, such as the head and neck,[5] additionally helped us become acclimated with the process. Importantly, we believe students must always be provided with an accessible forum to discuss possible concerns, with our university, for example, having offered counselling and opportunities to talk to the chaplain.

Cadaveric dissection can be a great source of anxiety for some students, but we believe that with proper support and gradual exposure it presents an invaluable opportunity for personal growth and professional development.

Tabea Haas-Heger, Molly Kirkman, Sophie Simmonds, Celina Pook[1]
[1]All medical students, GKT School of Medical Education, King's College London, London, UK
Email: tabea.haas-heger@kcl.ac.uk
doi: 10.4997/JRCPE.2021.423

References

1 Zubair A, Waheed S, Shuja F. Psychological impact of cadaveric dissection on first-year medical students. *J R Coll Physicians Edinb* 2021; 51: 173–6. https://www.rcpe.ac.uk/college/journal/psychological-impact-cadaveric-dissection-first-year-medical-students.
2 Hancock D, Williams M, Taylor A et al. Impact of cadaver dissection on medical students. *NZ J Psychol* 2004; 33: 17–25.
3 Makoul G. Essential elements of communication in medical encounters. *Acad Med* 2001; 76: 390–3. http://journals.lww.com/00001888-200104000-00021.
4 Nnodim JO. Preclinical student reactions to dissection, death, and dying. *Clin Anat* 1996; 9: 175–82. https://onlinelibrary.wiley.com/doi/10.1002/(SICI)1098-2353(1996)9:3%3C175::AID-CA9%3E3.0.CO;2-F.
5 Arráez-Aybar L-A, Casado-Morales MI, Castaño-Collado G. Anxiety and dissection of the human cadaver: an unsolvable relationship? *Anat Rec B New Anat* 2004; 279B(1): 16–23. https://anatomypubs.onlinelibrary.wiley.com/doi/10.1002/ar.b.20022.

Comments on 'Psychological impact of cadaveric dissection on first-year medical students'

Following the insightful recent article about the biopsychosocial ramifications of initial exposure to dissection as part of anatomical education,[1] we wish to provide a student's perspective to matters.

For one of us, our recent first exposure to cadaveric specimens relates greatly to the contents of the aforementioned study, and our anecdotal experience affirms the widely held notion that this is a profound moment in the educational journey for many healthcare professionals. We take particular interest in your findings that the 'threat' domain of the Appraisal of Life Events (Revised) (ALE-R) scale was heavily indicative of overall ALE-R score (and consequently the psychological impact of such an experience). This corresponds to our own personal experience whereby the subjective threatening nature of the situation often proved overwhelming. This was present even in students whom – outside of the dissection environment – rationally identified the situation as being objectively without any clear and obvious threats, but still suffered from this perceived sense of vulnerability when in the moment. Perhaps pre-emptive, proactive interventions to reduce the notion of perceived threat[2] could assist new medical students to minimise such feelings and ultimately blunt any associated negative psychological repercussions of this traditional learning opportunity? These interventions may include utilising personal tutors to provide space for reflection for medical students. At the Nottingham Medical School, our cadaveric dissection experience culminated in a final cremation ceremony to which medical staff were invited and, in some cases, to also meet relatives. It helped create a sense of closure and humanised the experience of dissection. It would be interesting to see whether biopsychosocial ramifications are altered following such an experience for the student.

Our own experience is also consistent with the evidence base mentioned in the article suggesting that any such negative psychological or emotional repercussions tend to diminish upon repeated cadaveric exposure as part of the teaching of human anatomy.[3] However, it would perhaps be interesting to see if the impact of the COVID-19 pandemic may have changed this normal process given the manner in which clinical teaching (including anatomy) has been widely disrupted in the face of changing public health guidance, allowing for less cadaveric exposure for many medical students currently in training (including ourselves). Finally, this may also be of relevance to the study given the focus upon acute stress disorder (ASD), since the baseline prevalence of this pathology has been shown to have increased within the medical student population over the course of the pandemic.[4]

James Francis[1], Petra Popovic[2]
[1]University of Nottingham School of Graduate Entry Medicine
[2]University of Nottingham School of Medicine
Email: mzyjf7@nottingham.ac.uk
doi: 10.4997/JRCPE.2021.424

References

1 Zubair A, Waheed S, Shuja F. Psychological impact of cadaveric dissection on first-year medical students. *J R Coll Physicians Edinb* 2021; 51: 173–6.
2 Sándor I, Birkás E, Győrffy Z. The effects of dissection-room experiences and related coping strategies among Hungarian medical students. *BMC Med Educ* 2015; 15: 73.
3 Wisenden PA, Budke KJ, Klemetson CJ et al. Emotional response of undergraduates to cadaver dissection. *Clin Anat* 2018; 31: 224–30.
4 Zhang L, Qi H, Wang L et al. Effects of the COVID-19 pandemic on acute stress disorder and career planning among healthcare students. *Int J Ment Health Nurs* 2021; 30: 907–16.

Isolated oculomotor nerve palsy

We read with great interest the manuscript by Larcombe et al., about 'Isolated oculomotor nerve palsy secondary to acute sinusitis',[1] drawing attention to the 64-year-old male with a two-day history of left-sided ptosis associated with one week of nasal congestion and frontal sinus pain, with examination revealing ptosis with left pupil mydriasis. We have the following comments and concerns.

We think the article offers a good opportunity for resident physicians and specialists to review neuroanatomical and semiological concepts of ocular motility.

Isolated paralysis of the third cranial nerve is one of the most common injuries of the oculomotor nerves. Its aetiological diversity represents a challenge for any neurologist, and it motivates numerous diagnostic tests, some at high cost and not without risks for the patient. The number of patients with undetermined causes varies from 22.1% to 28.2%.[2]

The main known causes include: congenital, head trauma, cerebrovascular disease ischemic, neoplasms, aneurysms, postsurgical iatrogenic, demyelinating, migraine and infectious or parainfectious.[2]

Isolated oculomotor nerve palsy due to sinusitis is uncommon, so this rare case causing ptosis is presented due to its infrequent nature, such that awareness of the differential diagnosis of cranial nerve palsy and complications of sinusitis may be improved.

We had the opportunity to take care of a healthy 35-year-old man who presented diplopia and eyelid ptosis 48 hours after a febrile condition associated with odynophagia, which turned out to be purulent tonsillitis, and who fully recovered with antibiotic treatment,[2] as in the case described by Larcombe et al.[1]

The presence of isolated oculomotor nerve palsy with normal neuroimaging studies constitutes a diagnostic dilemma that requires a detailed medical history and assessment of nuances in the exam that may have been originally forgotten.[3]

An excellent review of the theme by the authors, we would just like to suggest having deepened the importance of brain and orbit neuroimaging in the diagnosis as well as the possible physiopathogenic mechanisms of this unusual association.

We congratulate the authors for the report and the opportunity to delve into a topic so interesting that it will serve as a motivation for further studies.

Otto J H Fustes[1], Carlos Arteaga Rodriguez[2]
[1]Postgraduate Program in Internal Medicine and Health Sciences, Universidade Federal do Paraná, Curitiba, Brazil
[2]Medicine Department, Universidade Positivo, Curitiba, Brazil
Email: otto.fustes@hc.ufpr.br
doi: 10.4997/JRCPE.2021.425

References

1 Larcombe SJ, Street D, Wright B. Isolated oculomotor nerve palsy secondary to acute sinusitis. *J R Coll Physicians Edinb* 2021; 51: 143–145. doi: 10.4997/JRCPE.2021.209.
2 Arteaga-Rodríguez C, De Cassias AL, Hernández-Fustes O. Oculomotor nerve paralysis and purulent acute tonsillitis: a case report. *Rev Neurol* 2002; 34: 296.
3 Tian G, Kardon R, Feng C et al. Oculomotor nerve palsy due to unusual causes. *J Neuroophthalmol* 2021; 41: e244–e250. doi: 10.1097/WNO.0000000000001032.

Authors' reply

We thank Dr Fustes and Dr Rodriguez for their valuable comments on our paper.[1] We read with interest the case history they share, providing support for our findings. As they point out, isolated oculomotor nerve palsy is an aetiologically diverse condition, partly related to its neuroanatomical pathway originating in the midbrain and ending in the extraocular muscles. Damage at any point in the nerve's course, divided broadly into the regions of brainstem nucleus, fascicles, subarachnoid space, cavernous sinus and orbital apex,[2] for any number of different reasons can lead to clinical manifestations.

Our intention when writing this paper was to draw attention to a rare complication of a very common and easily treatable condition; an unusual occurrence in neurological practice. Given the patient's presenting features of sinusitis, the focus of our search and the consequent discussion of the paper understandably revolved around the anatomical location of the cavernous sinus, with the additional motivation of ruling out a serious alternative serendipitous diagnosis, such as an intracranial aneurysm. Neuroimaging proved very helpful on both accounts on this occasion, but it cannot be relied upon to elucidate every possible cause. Overdependence on any diagnostic modality can be perilous in medicine, especially given the known inter-rater variation[3] and importance of expertise in neuroimaging reporting,[4] often not available in every centre. Detailed knowledge of the neuroanatomy remains key to consider causes not identified through neuroimaging studies. Our broad, systematic approach was rewarded for example when cerebrospinal fluid studies were unremarkable, making another serious but treatable diagnosis, meningitis, very unlikely.

The guiding principles of two historical Williams, Occam and Osler, can provide an important take-home message from this case. William of Ockham, a thirteenth-century philosopher and theologian introduced the methodological principle of Occam's Razor; that a single, often simple explanation is the most likely. Dr William Osler meanwhile, a pioneer of bedside clinical training, is credited with stating: 'Just listen to your patient, he is telling you the diagnosis.'[5] Much as new technologies will help push the boundaries of what is possible, traditional neurological approaches of accurate history, examination and understanding of anatomical pathways will continue to remain relevant to all clinicians for many years to come.

Stephanie Jade Larcombe[1], Duncan Street[2], Benjamin Wright[2]
[1]College of Medical and Dental Sciences, University of Birmingham, Birmingham, United Kingdom
[2]Department of Neurology, University Hospitals Birmingham NHS Foundation Trust, Birmingham, United Kingdom
Email: stephanielarcombe@gmail.com
doi: 10.4997/JRCPE.2021.426

References

1 Larcombe SJ, Street D, Wright B. Isolated oculomotor nerve palsy secondary to acute sinusitis. *J R Coll Physicians Edinb* 2021; 51: 143–145. doi: 10.4997/JRCPE.2021.209.
2 Bruce BB, Biousse V, Newman NJ. Third nerve palsies. *Semin Neurol* 2007 Jul; 27: 257–68. doi: 10.1055/s-2007-979681.
3 Wardlaw JM, Mielke O. Early signs of brain infarction at CT: observer reliability and outcome after thrombolytic treatment – systematic review. *Radiology* 2005 May; 235: 444–53. doi: 10.1148/radiol.2352040262.
4 McCarron M, Wade C, Flynn P et al. The value of neuroimaging team meetings for patients in a district general hospital. *Clin Med (Lond)* 2018; 18: 206–211. doi:10.7861/clinmedicine.18-3-206.
5 Osler W, Silverman M, Murray T et al. *The Quotable Osler*. Philadelphia: American College of Physicians; 2008.

The birth of British geriatric medicine: further information on Scotland

I enjoyed Ritch's paper on the birth of geriatric medicine,[1] which notes that Sir Ferguson Anderson was an early pioneer in Scotland, appointed in 1952 as a consultant physician in diseases of old age in Glasgow. Readers may be interested in further information on the birth of Scottish geriatric medicine.

Ghosh and Ghosh, in their 'History of geriatric medicine in Scotland',[2] note that the genesis of Scottish geriatric medicine was the lecture on old age, entitled 'De Senectute' given to the Royal Medico-Chirurgical Society of Glasgow in 1941 by Professor of Materia Medica Noah Morris, Stobhill Hospital, Glasgow. In 1947, Morris sent his young colleague Dr Oswald Taylor Brown to visit Dr Marjory Warren at the West Middlesex Hospital, and to learn from her pioneering work in geriatric medicine. Brown was appointed in 1948 as assistant physician with a special interest in the care of the elderly at the Southern General Hospital, Glasgow; and became the first consultant in geriatric medicine (and senior lecturer in the University Department of Medicine) in Scotland in September 1951, in Dundee; the year before Anderson (who also trained with Morris) was appointed as consultant geriatrician in Glasgow. In 1961 Brown proposed the formation of the Scottish Branch of the British Geriatric Society; and in 1969 was appointed OBE for his work as architect of Scotland's geriatric services.[2]

Subsequent to these appointments in Dundee and Glasgow, further consultants in geriatric medicine were Ronald Simpson, Perth in 1954; Leslie Wilson, Aberdeen in 1955; Robert Rankine, Kirkcaldy in 1956; and James Williamson, Edinburgh in 1958. In 1961, the President of the Royal College of Physicians (Edinburgh) appointed a committee 'to consider the arrangements and facilities for the care of the elderly in Scotland and make recommendations'. Williamson was the main architect of the report, whose recommendations included academic development: which led to Anderson's appointment to the first Chair of Geriatrics in the developed world at Glasgow; and to Williamson's appointment as the second Professor of Geriatrics in Scotland at Edinburgh.[2]

Gordon Lowe
Emeritus Professor, University of Glasgow
Email: Gordon.Lowe@glasgow.ac.uk
doi: 10.4997/JRCPE.2021.427

References

1 Ritch A. The birth of British geriatric medicine and its struggle for survival as a medical specialty. *J R Coll Physicians Edinb* 2021; 51: 184–91.
2 Ghosh UK, Ghosh K. The history of geriatric medicine in Scotland. *Scott Med J* 1997; 42: 158–59.

Comments on 'Seven reasons why the physical examination remains important'

We read with interest the article by Garibaldi and Elder describing the importance of physical examinations (PE) when treating patients.[1] As final-year medical students at King's College London, this article was of particular interest as we were able to reflect on many of the points raised from personal experiences, having gone from being taught PE skills since our second year to completing our fourth year objective structured clinical examinations (OSCEs) without being tested on any PE. Under the current COVID-19 restrictions, it was understandable why real patients who may be at risk were not invited as subjects, but healthy actors used instead. However, the lack of any actual PE for a cohort of final year students is an important point to be discussed.

As articulated by Garibaldi and Elder, the COVID-19 pandemic has challenged the logistics of bedside teaching. The use of personal protective equipment protects people from transmission of the virus; however, it hinders trainees from receiving adequate bedside teaching. Being restricted from percussing, auscultating and palpating has resulted in students not only deskilling, but also compensating by relying more on history and investigation results, thus forgetting the fundamental basic structures taught throughout their medical degree.

Although our reflections agreed with this article, we felt that the authors could have explored the limitations of PE such as subjectiveness of PE and why it may be deemed that 'the stethoscope is worthless'. Although the importance of standardisation of PE[2] has been reiterated throughout medical training, it is near impossible to standardise PE presentations to that of investigations, thus leading to what the authors label as 'over-investigation'.

As with many other industries, technological advances can be utilised to improve PE skills in clinical settings. As students there have been numerous times when we have been turned away by patients, for example in an intimate examination or for cultural reasons.[3] For these situations, mannequin simulations or augmented and virtual reality (AR/VR) devices can provide alternatives to practice and hone trainees' PE skills. A study by Barteit et al. provides evidence for the effectiveness of using AR/VR devices in medical education; it also 'demonstrated greater enthusiasm and enjoyment in learning' by healthcare professionals.[4] The use of mannequin simulations to mimic critical care scenarios is another example in which trainees would benefit more from studying their assessment and PE skills in a safer environment, thus becoming more competent.[5,6]

To conclude, the use of PE as part of a physician's assessment of a patient is a fundamental aspect, alongside history and investigations, and the points raised by Garibaldi and Elder in this article provide strong evidence for this. However, as final-year medical students who have experienced times when we have been limited in having the ability to perform them and reduced teaching, we believe it is important to look forward to technological and more standardised solutions. The increased use of mannequin simulations or AR/VR can overcome a lot of issues faced by bedside teaching and improve trainee satisfaction.

Karusan Srithar, Simeon Harrow, Aaruran Nadarajasundaram, Albert Mensah
Final-year medical students, King's College London, UK
Email: karusan.srithar@kcl.ac.uk

doi: 10.4997/JRCPE.2021.428

References

1 Garibaldi B, Elder A. Seven reasons why the physical examination remains important. *J R Coll Physicians Edinb* 2021; 51: 211–214.
2 Lee P, Koo S, Panter S. The value of physical examination in the era of telemedicine. *J R Coll Physicians Edinb* 2021; 51: 85–90.
3 Attum B, Hafiz S, Malik A et al. Cultural competence in the care of Muslim patients and their families. *StatPearls* [online] 2021. Treasure Island (FL). https://pubmed.ncbi.nlm.nih.gov/29763108/ (accessed 15/08/2021).
4 Barteit S, Lanfermann L, Bärnighausen T et al. Augmented, mixed, and virtual reality-based head-mounted devices for medical education: systematic review. *JMIR Serious Games* 2021; 9: e29080.
5 Oman S, Magdi Y, Simon L. Past present and future of simulation in internal medicine. *StatPearls* [online] 2021. Treasure Island (FL). https://pubmed.ncbi.nlm.nih.gov/31751073/ (accessed 15/07/2021).
6 Pacheco Granda F, Salik I. Simulation training and skill assessment in critical care. *StatPearls* [online] 2021. Treasure Island (FL). https://pubmed.ncbi.nlm.nih.gov/31751085/ (accessed 15/08/2021).

Enhancements to Simulation via Instant Messaging – Birmingham Advance (SIMBA): addressing clinical communication

We read with great interest the recent article by Morgan et al.[1] which aimed to explore SIMBA as a mode of delivering medical education during the COVID-19 pandemic. We commend the authors for devising a heuristic teaching method that was engaging, relevant to clinical care and utilised familiar and widely available platforms. Moreover, developing skills through interventions such as SIMBA will enable medical students to become proficient in the virtual consultations that have become the new norm given ongoing restrictions due to the pandemic. While SIMBA is an innovative approach, we noticed that it presents limited scope to hone communication skills. This was particularly evident in the study's notably lower improvement in communication skills compared with other domains. As medical students, we propose minor modifications to SIMBA that could address the gap in improving communication skills.

Although instant messaging is practical and efficient, we believe that it leaves little room for the development of the skills required when eliciting a history from a patient, such as avoiding medical jargon, using open and closed questions and developing a rapport. The use of medical students to provide the history is also unlikely to be akin to history taking from a patient, which can be circuitous, implicit and emotionally charged. Fostering a therapeutic relationship is the cornerstone of every patient consultation; phrasing of every question and delivery of information in an empathetic and confident manner play a critical role in achieving this. Furthermore, an important aspect of history taking is being able to synthesise the information being relayed by the patient in real time and then formulate relevant follow-up questions as part of a dynamic mental process. Unrestricted access to resources may lead to delayed responses and thus does not adequately reflect the nature of history taking. Given the exclusion of verbal communication skills in SIMBA, this could potentially have implications for the self-reported confidence of students on dealing with specific cases, which was the primary outcome measure. Had participants been asked to interact with patients verbally, this may have affected their confidence in handling the case.

At our university, online patient educator sessions were frequently held during lockdowns. Students would take a history over Zoom from a trained simulated patient (SP) and offer investigations and management. Anecdotally, these sessions have increased students' confidence in building rapport with patients during virtual consultations. Research also illustrates how video-based communication can improve students' competency with history taking.[2]

Therefore, our proposed modification to SIMBA would be to replace texting with a brief WhatsApp video call with an SP. If, for practical reasons, medical students must be used to deliver the history during video calls, they should receive prior training on acting as an SP. There is a valuable role for text-based communication, which could still present an efficient medium for ordering investigations following video-based history taking.

In summary, we concur that SIMBA is a credible teaching strategy that could be further improved by including opportunities for students to develop their clinical communication skills.

Ayda Haile-Redai, Suhaylah Adam, Luwaiza Mirza
Final year medical students, King's College London, UK
Email: ayda.haile-redai@kcl.ac.uk
doi: 10.4997/JRCPE.2021.429

References

1 Morgan G, Melson E, Davitadze M et al. Utility of Simulation via Instant Messaging – Birmingham Advance (SIMBA) in medical education during COVID-19 pandemic. *J R Coll Physicians Edinb* 2021; 51: 168–72.
2 Darnton R, Lopez T, Anil M et al. Medical students consulting from home: a qualitative evaluation of a tool for maintaining student exposure to patients during lockdown. *Med Teach* 2020; 43: 160–7.

Authors' reply

We thank Haile-Redai et al. for their insightful comments with regard to our article and for the opportunity to respond to their suggestions. We recognise that effective communication is an integral part of clinical practice and commend the use of video-based simulation to improve history-taking skills in medical students.[1]

SIMBA aimed to provide medical education to clinicians virtually during the pandemic. While a small number of medical students (n=14) participated in sessions, we predominantly focused on the education of doctors (n=188). During each session, medical students principally acted as moderators, facilitating simulation of cases for clinicians via WhatsApp. Each moderator in SIMBA was allocated several participants with whom they would interact via WhatsApp simultaneously. For a video-based history taking, each medical student acting as a moderator can interact with only one participant. Therefore, video-based simulation requires a greater number of moderators (perhaps with a higher level of training). However, we agree this may enhance the quality of interaction for both the moderator and participant. We are currently developing SIMBA for students and recognise that communication skills are an essential component of the undergraduate medical curricula. We make note of the proposed modifications and will look to incorporate video-based simulation where possible when teaching medical students.

Georgia Morgan[1], Punith Kempegowda[2], on behalf of the SIMBA team
[1]Princess of Wales Hospital, Cwm Taf Morgannwg University Health Board, Bridgend, UK
[2]University Hospitals Birmingham NHS Foundation Trust, Birmingham, UK; Institute of Metabolism and Systems Research, College of Medical and Dental Sciences, University of Birmingham, Birmingham, UK
Email: P.Kempegowda@bham.ac.uk
doi: 10.4997/JRCPE.2021.430

References

1 Darnton R, Lopez T, Anil M et al. Medical students consulting from home: a qualitative evaluation of a tool for maintaining student exposure to patients during lockdown. *Med Teach* 2020; 43: 160–7.

Plurality of governance – plurality of systems

Deighan and Aitken's editorial[1] on the plurality of governance raises a recurrent issue with terminology used in healthcare quality and safety. The editorial challenges current definitions and the knowing of 'what good looks like'.

At a recent event with the Royal College of Physicians of Edinburgh (RCPE), Quality Governance Collaborative Fellows,[2] we debated the definitions of other safety-related terms, including 'systems'. Like governance, one could argue that a 'system' does not have a distinct definition and the term could be misleading depending on the audience.

The Clinical Human Factors Group defines a system as ‘a set of interdependent elements that interact to achieve a common aim’.[3] However, those elements will differ depending on who is considering the system. For example, what is a ‘system’ if one asks a patient, nurse, hospital director, policy lead or Member of Parliament?

For safety investigation the system is important to define early. What is the system I am looking at, what are its boundaries, and how do I communicate that to various stakeholders? This was eloquently analogised by one of the Fellows at the recent RCPE event, an analogy which we have embellished here. Think of a beautiful lake with wildlife and humans enjoying nature. To the fish, the system is their immediate subaqua environment, bigger fish looking for a meal and the hooks of those looking to catch their dinner. To the child playing on the edge of the lake, the system is the cool waters on a hot day, the sun beating down, the swarming insects and their parents preparing the picnic. To the environment agency, the system is the lake and all the various elements that potentially threaten to pollute it, including nearby businesses, industries and the visiting tourists.

The point of this analogy is that the boundaries of the system depend on whose perspective it is. When undertaking a safety investigation, the system of interest needs defining from the beginning. This provides transparency on the scope of the investigation and whether the investigation will consider elements within the control of an individual, ward, specialty or organisation, or go further to look at policy and strategic system factors at a national level. Not only is this important to inform the level of recommendations, it is important to prevent stakeholders expecting more from an investigation than its scope intends to offer.

Defining the elements of a system is difficult. Comparison with the Systems Engineering Initiative for Patient Safety (SEIPS) may help to consider what elements of a system influence the processes and outcomes of interest.[4] SEIPS describes people, tasks, technology, environment, organisation or elements outside of the organisation.

Comparing back with Deighan and Aitken’s editorial,[1] much like governance, definitions and understanding of what is meant by the ‘system’ are fundamental to ensuring excellence in the safety of systems. By correctly defining an organisation’s system, the organisation can identify those areas within their control for improvement, and those areas that require national support.

Nick Woodier[1], Sean Weaver[1], Helen Dormand[2], Kevin Stewart[1]
[1]Healthcare Safety Investigation Branch, Farnborough, UK
[2]Royal College of Physicians of Edinburgh
Email: Nick.Woodier@hsib.org.uk
doi: 10.4997/JRCPE.2021.431

References

1 Deighan M, Aitken F. Plurality of governance: the transparency of definitions. *J R Coll Physicians Edinb* 2021; 51: 123–4.
2 Royal College of Physicians of Edinburgh. QGC Fellowships. https://www.rcpe.ac.uk/college/qgc-fellowships (accessed 03/08/2021).
3 Ives C, Hillier S. Human factors in healthcare: common terms. Clinical Human Factors Group. 2015. http://s753619566.websitehome.co.uk/wp-content/uploads/2018/06/chfg-human-factors-common-terms.pdf (accessed 08/03/2021).
4 Holden RJ, Carayon P, Gurses AP et al. SEIPS 2.0: a human factors framework for studying and improving the work of healthcare professionals and patients. *Ergonomics* 2013; 56: 1669–86.