tackle more directly the frustrations in the workplace that hamper performance and ultimately curtail patient care. Bearman et al.[2] describe the 'power' of simulation as 'the learning that resonates long after the experience has passed'. It is often the failures experienced by learners that resonate most and we should not shy away from identifying them and maximising their positive value, exploring experiences in a collective and safe manner. Simulation debriefs offer an opportunity for discussion about shared practice that is unparalleled within medical education and we should strive to find new ways to harness their potential.

Much of the power of simulation – its ability to resonate long after the event – lies precisely in what hurts about simulation. We should seize the opportunity in debriefs to ask not only the safe questions (What works?), but also the challenging ones too (What hurts?).

REFERENCES

1 Ziv A, Ben-David S, Ziv M. Simulation based medical education: an opportunity to learn from errors. *Med Teach* 2005;**27** (3):193–9.
2 Bearman M, Greenhill J, Nestel D. The power of simulation: a large-scale narrative analysis of learners' experiences. *Med Educ* 2019;**53** (4):369–79.
3 Dieckmann P, Patterson M, Lahlou S, Mesman J, Nyström P, Krage R. Variation and adaptation: learning from success in patient safety-oriented simulation training. *Advances in Simulation* 2017;**2**:21.
4 Hollnagel E. *Safety-I and Safety-II: The Past and Future of Safety Management*. Farnham, Surrey; Burlington, VT: Ashgate Publishing Company 2014.
5 Pelletier C, Buchan K, Hall-Jackson M. Learning from failure: exploring the psychodynamics of work in a clinical simulation centre. *Psychoanalysis, Culture and Society* 2019. [in press].
6 Pelletier C, Kneebone R. Learning safely from error? Reconsidering the ethics of simulation-based medical education through ethnography. *Ethnography and Education* 2016;**11** (3):267–82.
7 Hollnagel E, Braithwaite J, Wears RL, eds. *Resilient Health Care*. Farnham: Ashgate 2013.
8 Dejours C. *Psychopathology of Work: Clinical Observations*. London: Karnac Books 2015.
9 Rudolph JW, Simon R, Rivard P, Dufresne R, Raemer D. De-briefing with good judgment: combining rigorous feedback with genuine inquiry. *Anesthesiology Clinics* 2007;**25** (2):362–76.

Through another lens: the humanities and social sciences in the making of physicians

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As physicians and health systems remain vigilantly focused on improving health outcomes, sometimes the most effective answers are the simplest ones: open communication, trust and compassionate care. Furthermore, patients also have an expectation of creating trusting and therapeutic relationships with their health care providers. As the association between effective patient–doctor communication and improved patient satisfaction and health outcomes has become clearer,[1,2] it is imperative for medical educators to continue to examine how, exactly, some clinicians thrive in this arena and what the most effective means may be to teach these skills.

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In the attempt to advance healing relationships, medical education has become more understanding that medical care involves attending to the experiential and emotional, as well as the physical, needs of patients, an approach that has been articulated by such thinkers as George Engel[3] and Arthur Kleinman.[4] However, these existential reflections on life,

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health and illness do not occur solely within patients, but also within and amongst physicians themselves, who tap into their own educational and life experiences in developing an ability to connect with patients.

> *medical education has become more understanding that medical care involves attending to the experiential and emotional, as well as the physical, needs of patients*

We and others have suggested that careful engagement of literature, narratives, creative art, theatre and other areas in the humanities in undergraduate medical education may enhance empathy and perspective as well as an openness to 'otherness', at the same time stimulating reflection on self, others and the world.[5–7] Through education in the humanities and social sciences, future health care providers may acquire 'cultural capital' that can be applied effectively to future clinical relationships.

> *the humanities in undergraduate medical education may enhance empathy and perspective as well as an openness to 'otherness', at the same time stimulating reflection on self, others and the world*

Therefore, it would make sense that medical students with an educational background already firmly grounded in the humanities would come to medicine possessing unique skills applicable to medical care, including deeper critical reflection on existential questions, assumptions, biases and societal conditions. Enhanced skills in these areas, may also then allow for a deeper and more humanistic clinical practice.

In this edition of *Medical Education*, Hirshfield and colleagues investigate whether students who come to medical education with an educational background based in the humanities or social sciences may have unique advantages in their abilities as a doctor.[8] Through a retrospective analysis, they report that students with such educational backgrounds score higher in the more subjective assessments included on the Graduation Competency Exam Standardized Patient Encounter Communication and Interpersonal Skills (CIS) scores than peers with more traditional natural science backgrounds, at the same time scoring similarly to these peers on the more traditional objectively scored aptitude tests such as the United States Medical Licensing Examination (USMLE) Step 1 and Step 2. This study provides some food for thought regarding who is most desirable amongst the applicant pool and whether recruiting students with backgrounds steeped in the humanities and social sciences may, in fact, bring to the table communication skills that subsequently could be strengthened during their medical education instead of focusing curricular time on developing a humanistic 'baseline'.

It is important in this context to also note that within the present analysis, the cohort with a non-traditional educational background also showed a statistically significant difference in age, being on average 1.3 years older than peers who had majored in science ($p < 0.001$).[8] It is possible then that students entering medical school at a later age, regardless of undergraduate focus, have had more time to encounter diverse life experiences and perspectives, which ultimately helped them to deal with the complexity and uncertainty inherent in human interactions.

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These findings should extend the discussion within medical education to include a nuanced view that incoming students with diverse backgrounds may provide unique abilities related to human interaction and communication, and could therefore, have an effective skill set for engaging patients in a collaborative approach to health improvement through a more humanistic approach to clinical practice.

In summary, this study adds to an important discussion regarding which educational backgrounds lead to the best physicians. Historically, students who displayed significant aptitude in the natural sciences were considered those best prepared for the rigours of a medical education; however, this thinking may be shifting as new emphasis is placed on the importance of problem solving, self-regulated learning, teamwork and communication, as well as an ability to provide humanistic person-centred care. As part of this process, it makes sense to consider this diversity – not only in an academic background, but also in age, gender, gender identity, race and ethnicity, socio-economic class and national origin

– to enrich dialogue in the learning environment. Finally, within this diverse environment, we should take advantage of the ability of literature, the arts and the social sciences to prompt reflection, encourage engagement with complexity and uncertainty, and critically question taken-for-granted biases and assumptions as a part of learning to work with human beings at their most vulnerable.[9]

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REFERENCES

1 Haskard Zolnierek KB, DiMatteo MR. Physician communication and patient adherence to treatment: a meta-analysis. *Med Care* 2009;**47** (8):826–34.
2 Haskard KB, Williams SL, DiMatteo MR, Rosenthal R, White MK, Goldstein MG. Physician and patient communication training in primary care: effects on participation and satisfaction. *Health Psychol* 2008;**27** (5):513–22.
3 Engel GL. The need for a new medical model: a challenge for biomedicine. *Science* 1977;**196** (4286):129–36.
4 Kleinman A. *The Illness Narratives: Suffering, Healing, and the Human Condition*. New York, NY: Basic Books 1988.
5 Jones EK, Kittendorf AL, Kumagai AK. Creative art and medical student development: a qualitative study. *Med Educ* 2017;**51** (2):174–83.
6 Kumagai AK. A conceptual framework for use of illness narratives in medical education. *Acad Med* 2008;**83** (7):653–8.
7 Bleakley A. *Medical Humanities and Medical Education: How the Medical Humanities Can Shape Better Doctors*. New York, NY: Routledge 2015.
8 Hirshfield LE, Yudkowsky R, Park YS. Pre-medical majors in the humanities and social sciences: impact on communication skills and specialty choice. *Med Educ* 2019;**53** (4):408–16.
9 Kumagai AK. Beyond "Dr Feel-Good": a role for the humanities in medical education. *Acad Med* 2017;**92** (12):1659–60.