Sustainability in Quality Improvement (SusQI): challenges and strategies for translating undergraduate learning into clinical practice

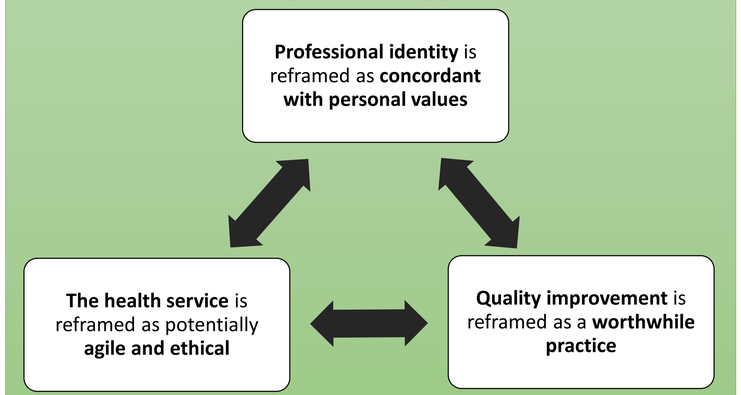
Olivia Marsden[1], Philippa Clery [1, 2], Stuart D'Arch Smith[3], Kathleen Leedham-Green[4] (corresponding author k.leedham-green@imperial.ac.uk)

1 Bristol University Medical School, 2 University Hospitals Bristol NHS Foundation Trust, 3 Centre for Sustainable Healthcare, Oxford, 4 Medical Education Research Unit, Imperial College London

Background

The healthcare sector is a major contributor to climate change and there are international calls to mitigate environmental degradation through more sustainable forms of clinical care [1, 2]. The UK healthcare sector has committed to net zero carbon by 2040 [3]. All UK graduating doctors nationally mandated to address sustainable healthcare as part of their national requirement to address social, economic and environmental challenges [4]. A toolkit to teach Sustainability in Quality Improvement (SusQI) was piloted at Bristol Medical School by Clery et al., but encountered challenges creating SusQI project outcomes [5, 6]. This research investigated barriers and enablers to improve the translation of classroom learning into clinical practice [7].

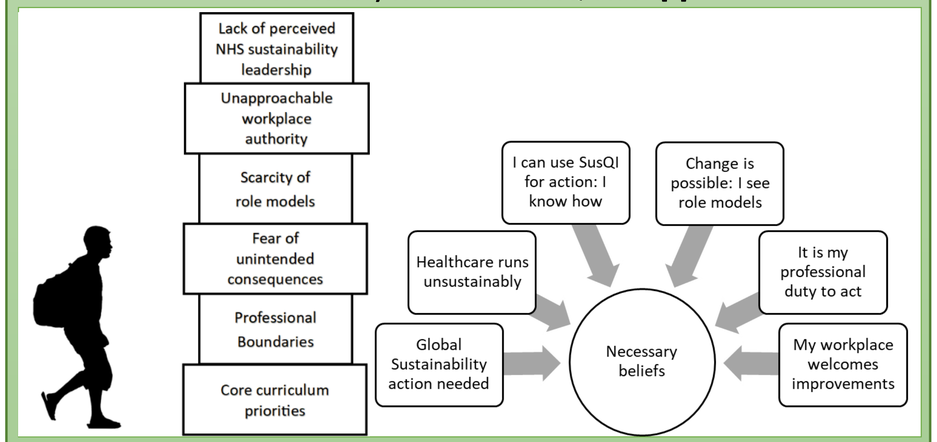
Figure 1: The triad of positive reframing experienced by 'activated' SusQI practitioners [7]



Methods

We conducted five focus groups that identified and iteratively explored barriers and facilitators to practice among medical students. We used inductive, deductive and axial coding to compare a range of experiences to generate a conceptual framework (Figure 2) [7]. We then combined our findings with behaviour change theory to generate recommendations and theoretical models for practice [8, 9].

Figure 2: Theoretical framework for supporting students by addressing barriers and achieving the necessary conditions for SusQI action [7]



	Pre-contemplative	Frustrated	Cautious	Activated
Attitude toward SusQI	No interest as focused on shorter term goals / seen as outside professional role	Disillusioned by perceived structural barriers to change, with concomitant moral injury	Willing but cautious due to barriers associated with lack of social capital or organisational knowledge	Keen, actively seeks and creates SusQI opportunities, develops a 'SusQI gaze'
Needs	Motivation	Belief in capability	Social enablement	Opportunity
Strategies	Education and reframing, wider curricular engagement	Hope and empowerment, role modelling	Safe co-created or pre-made project ideas, champions	Networking, time, resources

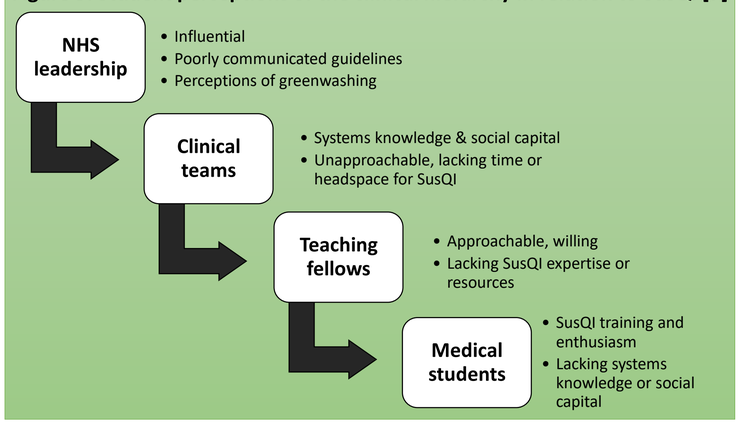
Results

The Bristol SusQI workshop was appraised as value-rich and motivating [6, 7]. We isolated the required beliefs students need in order to act: a 'triad of positive reframing' regarding their identity, their QI skills, and the healthcare environment (Figure 1) [5, 8]. We also identified four distinct 'student outcomes,' on a spectrum of motivation (Figure 2). Activated students created opportunities; Cautious students needed support and permission; Frustrated students were discouraged by perceived infrastructural barriers (Figure 3); whereas pre-contemplative students saw sustainable healthcare as beyond their professional scope or interest. Despite the positive SusQI workshop, the 'wall' barriers students described was enough to prevent their application of knowledge and skills in the clinical workplace (Figure 4) [7].

Discussion

Our analysis has shown not only why the 'SusQI' pilot workshop was successful, but also illuminated the challenging context it operated in. By providing positive experiences of both 'sustainable healthcare' and 'QI', students developed intentions to practice 'SusQI' [6]. The toolkit can now be confidently employed by other universities: educators should target the motivational stages described by our 'four practitioners' model (Figure 2) [7]. To maximise gains, adaptations are needed to translate workshop-based learning into clinical behaviours. Subsequent workshops must innovate to overcome the structural barriers identified (Figures 2 & 3). Educators would benefit from impact assessment using the mixed-methods approach described in our sister paper, Clery *et al. [6]*.

Figure 3: Student perceptions of the clinical hierarchy in relation to SusQI [7]



Conclusions

The SusQI education toolkit offers a path towards sustainable healthcare services. Building on the findings of Clery *et al.,* we offer medical educators a menu of options to bridge the implementation gap between workshops and clinical settings. Key recommendations include wider curricular engagement with sustainable clinical practice; time and headspace for students to engage via structured opportunities for credit-bearing project work; and supportive enablement strategies (e.g. workplace champions, co-creation of improvement goals).

References:

1. Wang H, Horton R. Tackling climate change: the greatest opportunity for global health. The Lancet. 2015;386(10006):1798-9.
2. Sustainable Development Unit. What is sustainable health? 2018 [Available from: https://www.sduhealth.org.uk/policy-strategy/what-is-sustainable-health.aspx.
3. NHS England and NHS Improvement. Delivering a 'Net Zero' National Health Service. 2020.
4. GMC. Outcomes for Graduates 2018. Available from: https://www.gmc-uk.org/-/media/documents/dc11326-outcomes-for-graduates-2018_pdf-75040796.pdf.
5. Mortimer F, Isherwood J, Pearce M, Kenward C, Vaux E. Sustainability in quality improvement: measuring impact. Future Hospital Journal. 2018;5(2):94-7.
6. Clery, P., d'Arch Smith, S., Marsden, O. *et al.* Sustainability in quality improvement (SusQI): a case-study in undergraduate medical education. *BMC Med Educ* 21, 425 (2021)
7. Marsden, O., Clery, P., D'Arch Smith, S. *et al.* Sustainability in Quality Improvement (SusQI): challenges and strategies for translating undergraduate learning into clinical practice. *BMC Med Educ* 21, 555 (2021).
8. Cook DA, Artino Jr AR. Motivation to learn: an overview of contemporary theories. Medical education. 2016;50(10):997-1014.
9. Yardley S, Dornan T. Kirkpatrick's levels and education evidence'. Medical education. 2012;46(1):97-106.