



Education

Simulation Based Education in pre-registration and postgraduate respiratory physiotherapy: An ACPRC position statement

Stephanie K. Mansell, MSc, BSc(Hons), MCSP^{1,2}, Emily Barnfield³, Amy Bendall⁴, Gabriella Cork⁵, Amanda J Thomas⁶, Kate Grafton⁷, Georgina Eckersley⁵, Agnieszka Lewko⁸

¹ Institute of Cardiovascular Science, University College London, ² Therapy Services, Royal Free London NHS Foundation Trust, ³ Simulation Centre, Gloucestershire Hospitals NHS Foundation Trust, ⁴ School of Health Care Sciences, Cardiff University, ⁵ School of Allied Health Professions and Nursing, University of Liverpool, ⁶ Critical Care Outreach, Barts Health NHS Trust, ⁷ School of Health, Leeds Beckett University, ⁸ Centre for Healthcare and Communities, Coventry University

Keywords: Simulation based education, preregistration education, postgraduate education, cardiorespiratory physiotherapy

<https://doi.org/10.56792/XRTY3249>

Journal of the Association of Chartered Physiotherapists in Respiratory Care

Vol. 54, Issue 3, 2024

INTRODUCTION

This ACPRC position statement recognises the high levels of interest and potential impact of simulation-based education (SBE) use for education and training in the cardiorespiratory physiotherapy field. This position statement is relevant to both pre-registration and postgraduate settings and is designed to provide best practice points for physiotherapists facilitating SBE across the spectrum of educational interventions.

The evidence base for SBE in cardiorespiratory physiotherapy has been described in a previously published scoping review¹ and thus is not discussed in any detail. Readers are encouraged to read this position statement alongside the ACPRC commentary on SBE, also presented in this journal issue. SBE should be delivered in concordance with the Association for Simulated Practice in Healthcare (ASPiH) standards.^{2,3} Educators should ensure local guidance is also adhered to such as Health Education England's National Framework for Simulation Based Education (SBE),⁴ Health Education and Improvement Wales's All Wales Simulation-Based Education and Training Strategy⁵ and the Chartered Society of Physiotherapy's Simulation toolkit for pre-registration physiotherapy education and training.⁶ More local guidance and resources may also apply, and SBE faculty and educators should contact their simulation network and simulation centre where these exist.

BEST PRACTICE POINTS

Delivery of simulation based education:

1. In concordance with ASPiH standards, when designing an educational intervention utilising SBE, planning should include clear learning outcomes. These learning outcomes should then inform the intervention including the equipment used, the location and the attendees.
2. Whilst there are occasions when SBE should be delivered uni-professionally, those delivering SBE should strive to deliver SBE interprofessionally as this is re-

flective of clinical practice and may confer additional benefits.

3. In concordance with Health and Care Professionals Council standards of proficiency for physiotherapists⁷ and ASPiH standards, SBE should be delivered in a non-discriminatory and inclusive manner.
4. In concordance with ASPiH standards, SBE should be designed with thought given to sustainability and the ecological impact of all aspects of SBE.

Considerations for faculty training and development:

1. When delivering SBE, faculty should ensure they have knowledge and understanding of adult learning theories and ensure these are implemented throughout the educational intervention.
2. In concordance with ASPiH standards, educators delivering SBE must have undergone adequate faculty training, which should include, as a minimum: adult learning theories, scenario design, pre-brief and debrief.
3. Basic, advanced and refresher faculty courses are necessary and new faculty members should be mentored by more experienced facilitators.⁸
4. Faculty training is recommended for interprofessional SBE to maximise the learning opportunities and identify any interprofessional issues that may arise.⁹

Outcome measures and assessment:

1. In concordance with ASiPH standards, SBE faculty should consider the use of SBE as part of a formal assessment of competence while prioritising psychological wellbeing and creating a safe learning environment. Competence assessment requires an objective, external evaluation by instructors using procedural checklists or global rating scales.¹⁰
2. In concordance with ASPiH standards, the construct underlying the use of SBE as a teaching modality should determine the outcome selected to evaluate its effectiveness and learning impact domain. For example, SBE designed to develop awareness of human

factors would require a different evaluation to SBE designed to develop clinical reasoning.

3. Faculty should acknowledge that learning outcomes from SBE depend upon context including: learning setting, learner experience, and course content and objectives. Faculty should recognise learning mechanisms via SBE can be multifactorial and might include: learning needs identification, technical skills, human factors reflection and self-efficacy. Faculty should acknowledge that both context and learning mechanisms interact with each other in a complex manner before, during and after a SBE learning event. Faculty should also recognise that learner outcomes might be individual and not related to pre-set learning objectives.¹¹
4. SBE should be subject to an iterative evaluation process, consisting of triangulation of data from various outcome instruments to simultaneously evaluate multiple learning domains and identify unanticipated or unexpected learning outcomes.¹¹
5. Physiotherapist satisfaction with SBE has been effectively answered in previous literature and future re-

search should aim to evaluate the impact of SBE at higher Kirkpatrick levels¹ (beyond level 2).¹²

6. New measures exploring application, integration and longer-term change are required to advance our understanding of the impact of SBE within physiotherapy education.¹² Developing and testing novel tools capable of reflecting transformational change in participant behaviour (Kirkpatrick Level 3) and longer-term impacts on patient metrics, organisational or safety systems (Kirkpatrick Level 4) are required to fully understand the impact of SBE within cardiorespiratory physiotherapy.

.....

ACKNOWLEDGEMENTS

Association of Chartered Physiotherapists in Respiratory Care editorial board.

Submitted: April 10, 2024 GMT, Accepted: April 12, 2024 GMT



This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CCBY-4.0). View this license's legal deed at <http://creativecommons.org/licenses/by/4.0> and legal code at <http://creativecommons.org/licenses/by/4.0/legalcode> for more information.

¹ Kirkpatrick's evaluation framework classifies training outcomes into 4 levels: reaction/satisfaction, learning/knowledge, behaviour/practice change, and results/impact

REFERENCES

1. Mansell SK, Grafton K, Barnfield E, et al. Simulation-based education within respiratory physiotherapy training: a scoping review *Journal of the Association of Chartered Physiotherapists in Respiratory Care*. 2024;56:37-51.
2. Purva M, Nicklin J. ASPIH standards for simulation-based education: process of consultation, design and implementation. *BMJ Simul Technol Enhanc Learn*. 2018;4(3):117-125. doi:10.1136/bmjstel-2017-000232
3. Diaz-Navarro C, Laws-Chapman C, Money Penny MPM. The ASPIH Standards - 2023: guiding simulation-based practice in health and care. 2023. <https://aspih.org.uk>
4. Health Education England. Framework for Simulation Based Education. <https://www.hee.nhs.uk/sites/default/files/documents/National%20framework%20for%20simulation%20based%20education.pdf2018>
5. Health Education and Improvement Wales. All Wales Simulation-Based Education and Training Strategy for the Healthcare Workforce. <https://heiw.nhs.wales/files/all-wales-simulation-strategy-mg-draft-6pdf/2022>
6. Heneghan N, Thackray D, Stiger R, et al. Simulation toolkit for pre-registration physiotherapy education/training. Chartered Society of Physiotherapy. 2023. https://www.csp.org.uk/system/files/publication_files/002042_A4_tab_Final.pdf:
7. Health & Care Professions Council. The standards of proficiency for physiotherapists. Health & Care Professions Council. 2023. <https://www.hcpc-uk.org/standards/standards-of-proficiency/physiotherapists/>;
8. Fanning RM, Gaba DM. The role of debriefing in simulation-based learning. *Simul Healthc*. 2007;2(2):115-125. doi:10.1097/sih.0b013e3180315539
9. Boet S, Bould MD, Layat Burn C, Reeves S. Twelve tips for a successful interprofessional team-based high-fidelity simulation education session. *Med Teach*. 2014;36(10):853-857. doi:10.3109/0142159x.2014.923558
10. L'Her E, Geeraerts T, Desclefs JP, et al. Simulation-based teaching in critical care, anaesthesia and emergency medicine. *Anaesthesia Critical Care & Pain Medicine*. 2020;39(2):311-326. doi:10.1016/j.accpm.2020.03.010
11. Graham AC, McAleer S. An overview of realist evaluation for simulation-based education. *Adv Simul*. 2018;3(1):13. doi:10.1186/s41077-018-0073-6
12. Quiben M, Greenwood KC, Gorman SL, et al. Simulation-Based Education in Physical Therapist Education: Perspectives From the Strategic Initiative Panel on Simulation in Physical Therapist Education. *Physical therapy*. 2022;102:pzac135.