Issue Paper

Enhancing the Educational Standards for Respiratory Therapists in Evidence-Based Medicine, Quality Improvement, and Research

The American Association for Respiratory Care's (AARC) strategic plan incorporates the pillars of elevate, advocate, and educate, which have operational goals that require supportive scientific evidence. Currently, there is no standardized level of education provided to respiratory therapists (RTs) that ensures that respiratory therapists can effectively use or create the evidence to support these strategic pillars. The practice of Respiratory Care continues to struggle with a lack of quality evidence to support current practice, including the choice of one therapeutic modality/intervention over another in a given population, or even that RTs are the best ones to provide this care. The American Respiratory Care Foundation (ARCF) and Vision Grants have research grants, available to respiratory therapists, but there are few applicants with the skills necessary to perform research.

Cardiopulmonary medicine, pharmaceutical treatment, and medical technology have significantly advanced since 1992, as have the academic preparation and professional standards for RTs.[1-3] New evidence is released daily on advancement of disease diagnosis and treatment. This may include new uses of existing medications, devices, and supporting transitions of care from the hospital to the home as new needs arise in caring for more medically complex conditions outside the hospital.[1-4] The expectation is that the practice of respiratory care should be evidence-based.[4,5] Research within nursing practice has confirmed that when nurses practice using evidence-based medicine and problem-solving approaches to clinical care, patient clinical outcomes improve, patient safety improves, and healthcare costs are reduced.[5-9] Nurses have previously identified the barriers to utilization of research as a lack of knowledge about the research process, how to critique research articles, a lack of awareness of new research, and colleagues not being supportive of practice changes.[5,10,11] It is reasonable to believe that barriers exist and the impact on patient safety and outcomes could be achieved in patients with pulmonary disease or critical illness if respiratory therapists had equivalent training in evidence-based practice and research. Just as respiratory therapy can benefit from increased training in evidence-based practice, other professions like occupational, speech, and physical therapy have already set advanced degree requirements to ensure the use and development of evidence-based care. One of the reasons for the requirements of the advanced degrees is the assurance of widespread evidence-based practice and ability of the professions to develop their own evidence.[12-15]

Since 2007, the AARC has sought to determine what will be required of the graduate respiratory therapists to fulfill patient needs in an ever-changing healthcare landscape and work with all stakeholders to ensure an adequate workforce that is prepared for current and future needs.[1-3] Recommendations from the third conference of the AARC 2015 and Beyond noted the importance and challenges of incorporating education on evidence-based practice and research into the curriculum for respiratory therapy programs.[2,3] Additionally, the AARC issue paper on Entry to Respiratory Therapy Practice 2030 also states and defends the need for standardized education of evidence-based medicine, quality improvement, and research in respiratory therapy program curricula.[16] To date, we have yet to reach the goal outlined in these publications.

We need more RTs with the ability to evaluate and appropriately implement evidence-based practice within respiratory care at their respective centers. Additionally, we need more respiratory therapists conducting research to promote the essential role of the respiratory therapists as valued health care members and contributors to improved patient outcomes. There is a lack of standardized education for respiratory therapists in the areas of evidence-based medicine (EBM), quality improvement (QI), and research, and there is a need to establish a minimal level of training and competency in these areas for respiratory therapists at each degree level.

Some respiratory therapy programs provide research courses within undergraduate programs, and some do not. The level of quality of these programs varies, as there is no consistent curriculum for all to follow. From a hospital leadership perspective, new graduate RTs are not necessarily expected to participate in research. However, they should be able to synthesize existing evidence to improve patient care and improve processes. The skill of implementing EMB does not only help with bedside conversations on individualized patient care but also helps prepare these RTs to step up into leadership roles and become change agents in their hospitals.

The Commission on Accreditation of Respiratory Care (CoARC) standard 4.02[17] states bachelor's and master's degree programs must include content related to research, it does not provide guidance or outline minimum requirements for the separation of EBM, QI, and Research by degree level and the National Board for Respiratory Care (NBRC) does not provide questions for assessment these topics within their exams. Currently, there is no minimum requirement for respiratory therapy programs to incorporate these topics within each program level, with the goal of increased knowledge gained with each degree achieved. Therefore, the AARC recommends establishing minimum educational requirements at each degree level. The recommended minimum requirements which should be incorporated into each degree program are outlined below:

Associate Degree:

- Search for and evaluate published research for use in practice.

Bachelor's Degree:

- Understand the differences between EBM and QI
- Understand the elements that underly a valid research study
- Synthesize available evidence and provide a review at a journal club meeting or in front of faculty members.

Master's Degree:

- Utilize appropriate methodology in planning and executing a research project.
- Synthesize evidence to support research and practice development.
- Present an abstract and a detailed scientific manuscript outline.

Doctoral Degree:

- Research Design and Implementation
- Statistical analysis
- Facilitation of larger research studies

References:

1. Kacmarek RM, Durbin CG, Barnes TA, Kageler WV, Walton JR, O'Neil EH. Creating a vision for respiratory care in 2015 and beyond. *Resp Care* 2009; 54(3):375-389.
2. Barnes TA, Gale DD, Kacmarek RM, Kageler WV. Competencies needed by graduate respiratory therapists in 2015 and beyond. *Resp Care* 2010;55(5):601-616.
3. Barnes TA, Kacmarek RM, Kageler WV, Morris MJ, Durbin CG. Transitioning the respiratory therapy workforce for 2015 and beyond. *Resp Care* 011;56(5):681-690.
4. Hecht L, Buhse S., Meyer G. Effectiveness of training in evidence-based medicine skills for healthcare professionals: a systematic review. *BMC Med Educ* 2016;16:103-119.
5. Black AT, Balneaves LG, Garossino C, Puyatt JH, Qian H. Promoting evidence-based practice through a research training program for point-of-care clinicians. *J Nurs Adm* 2015;45(1):14-20.
6. Fineout-Overholt E, Melnyk B, Schultz A. Transforming health care from the inside out: advancing evidence-based practice in the 21st century. *J Prof Nurs* 2005;21:335-344.
7. Peterson ED, Bynum DZ, Roe MT. Association of evidence-based care processes and outcomes among patients with acute coronary syndromes: performance matters. *J Cardiovasc Nurs* 2008;23(1):50-55.
8. Considine J & McHillivray B. An evidence-based practice approach to improving nursing care of acute stroke in an Australian emergency department. *J Clin Nurs* 2010:19(12):138-144.

9. de Pedto-Gomez J, Morales-Asencio JM, Bennasar-Veny M. Determining factors in evidence-based clinical practice among hospital and primary care nursing staff. *J Adv Nurs* 2012;68(2):452-459
10. Squires JE, Estabrooks CA, Gustavsso P, Wallin L. individual determinants of research utilization by nurses: a review update. *Impenent Sci* 2011;6:1-20.
11. Retsas A. Barriers to using research evidence in nursing practice. *J Adv Nurs* 2000;31(3):599-606AARC Issue Paper. Entry to Respiratory Therapy Practice 2023. 2019. Accessed on 24 June 2024 at: https://www.aarc.org/wp-content/uploads/2019/09/issue-paper-entry-to-respiratory-therapy-practice-2030.pdf
12. Mathur S. Doctorate in physical therapy: is it time for a conversion? Physiother Can 2011;63(2):140-142
13. Case-Smith J, Page SJ, Darragh A, Rybski M, Cleary D. The professional occupational therapy doctoral degree: why do it? The Amer J Occupar Ther 2014;68(2),e55-e60.
14. Threlkeld AJ, Jensen GM, Royeen CB. The clinical doctorate: A framework for analysis in physical therapist education. Physical Therapy 1999;79(6):567-58.
15. Smith DL. Perceptions by practicing occupational therapists of the clinical doctorate in occupational therapy. J Allied Health 2007;36(3):137-140.
16. Entry to Respiratory Therapy Practice 2030. AARC Issue paper. Accessed on 4 July 2023 at: https://www.aarc.org/wp-content/uploads/2019/09/issue-paper-entry-to-respiratory-therapy-practice-2030.pdf
17. Commission on Accreditation Standards for Respiratory Care, Accreditation Standards for Entry into Respiratory Care Professional Practice. Accessed on 24 June 2024 at: https://coarc.com/wp-content/uploads/2024/03/CoARC-Entry-Standards-1.1.2022-updated-3.24.pdf

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