

AANA Proficiency Based Progression Shoulder Course

In 2014¹ the Institute of Medicine delivered a report on Graduate Medical Education in the US and recommended that training must move to an outcome based approach to training where the verifiable performance of the trainee was known. This requires that the performance levels of trainees at the end of training must be demonstrated and verified.

Traditionally, surgeons have trained in the apprenticeship model in which observation, exposure to surgery, and graduated practice served as the framework. Working long hours over many years served as the pattern and the norm. Changes in work practices and medical technology have considerably challenged this approach to learning procedural medicine such as surgery. There appears to be an emerging global consensus from professional bodies and health care training organizations that basic procedural skills training should not occur on patients in the operating room. Procedure-based trainees, including surgeons, should acquire fundamental procedural skills outside of the surgical theater before being permitted to operate on patients. For the past two decades, proficiency-based progression (PBP) training coupled with simulation has been proposed as a superior and more reliable strategy to train procedural skills. A PBP approach to training ensures that at the completion of training the trainee not only knows what to do, but also is able to demonstrate the desired skills to a quantitatively defined performance benchmark (i.e., proficiency level).

The best evidence on the effectiveness of this approach comes from well controlled studies by AANA.² A randomized trial of orthopaedic surgical residents from ACGME programs across the US were trained using a PBP curriculum along with a medium fidelity model simulator. They performed 56% better than trainees undergoing a traditional training program and 41% better than trainees who underwent the exact same training, over the same training time, utilizing the same resources and taught by the same level of faculty, but without the requirements of the PBP protocol. These findings have since been replicated in anaesthesia,³ cardiology⁴ and critical care.⁵

In Sept 2019, AANA consolidated this work by conducting an arthroscopic shoulder course for Arthroscopy/Sports Medicine Fellows from the US. Using a PBP curriculum and rigorously validated metrics, they were trained to perform arthroscopic Bankart and Rotator cuff repairs. Of the 2 randomly selected subgroups performing a baseline pre-course repair (6 Bankart and 6 Rotator Cuff), only 1 fellow achieved the proficiency benchmark. In stark contrast, 89% of the 18 fellows attained the proficiency benchmark in a cadaveric shoulder for the Bankart repair and 83% for the Rotator Cuff repair at the completion of the training.

As medicine and surgery in the US pursue the development of a strategy for an evidence-based approach to training that is objective, transparent and fair, AANA is strengthening its position as a leader in surgical skills education. For nearly a decade they have embraced and systematically validated each of the components of a PBP curriculum with considerable success. They have unambiguously demonstrated that this approach to training produces a superior surgical skill set. Furthermore, the science and the results from the related investigations have been published in international peer-reviewed papers.

Dr. Tony Gallagher, the creator of the PBP approach⁶⁻⁸ to surgical training attended the AANA (Sept. 2019) PBP shoulder course at the Orthopaedic Learning Center in Chicago. He said, "The commitment of AANA to an evidence based approach to surgical skills training is admirable. During the Sept. course I observed 5 AANA past Presidents, the current President,

Dr. Larry Field, and some of the most eminent arthroscopic surgeons in the US/World volunteering their time for the weekend to teach the course. Furthermore, the leadership and staff of the OLC demonstrated the same commitment and resourcefulness in orchestrating the program.”

In the past decade, Dr. Rick Angelo has been the principle investigator for the AANA Copernicus Initiative – the series of studies designed to rigorously validate the principles of a PBP curriculum. He also served as one of the co-chairs for the Fellows’ Shoulder PBP Course and commented, “the effectiveness of the focused and well-structured program that demanded the sequential demonstration of increasingly complex skill sets was truly remarkable – further, the confidence exhibited by the fellows as they mastered the required techniques was both impressive as well as immensely rewarding for the dedicated faculty. The passion and ingenuity of the AANA and OLC staffs enabled us, for the first time, to assess the trainees’ performance in real time as well as score the performance metrics on a tablet – both innovations have saved countless hours of work.”

Dr. Pat St. Pierre, co-chair of the Fellows Shoulder PBP course, commented “This has been a landmark weekend of documenting effective motor skill training in arthroscopy. Many faculty noted how much more confident they were that the participants had mastered the skills taught than they had at any previous course. The participants, even those who may not have achieved proficiency, all noted dramatic improvement. This demonstration of the effectiveness of PBP training, should lead to a paradigm shift on how we train surgical residents and fellows.”

References

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