

DEVELOPMENT OF AN INTEGRATED CLINICAL RESEARCH EDUCATION PROGRAM FOR NEUROSURGICAL RESIDENTS: A CASE STUDY FROM THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

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Aim: It is the responsibility of neurosurgical training programs worldwide to provide not only graduates with expertise in pathophysiology of the nervous system, a high degree of clinical judgment and well-honed surgical skills, but also a well-developed ability to critically evaluate patient management stratagems and literature generated for that purpose. At the University of Alabama at Birmingham, an educational program aimed at providing training in research methodology and critical appraisal of the medical literature, increasing resident publications, and expanding the scope of research by resident staff was implemented and evaluated.

Methods: A mandatory program was established that included three key aspects of resident interaction: 1.) A Journal Club, in which published literature is explored that uses various study design, e.g., randomized controlled trials, case control studies, prognostic studies, diagnostic test studies, reliability of clinical assessment, economic analysis, decision analysis, meta-analysis, etc., is carried out monthly to develop critical appraisal skills. 2.) A monthly Medical Evidence Conference provides didactic teaching in research methodology, using case examples. 3.) A monthly meeting is held between each resident and the Director of Clinical Research in which the resident's research portfolio is reviewed to assess progress. Each of these three events reinforces all of the others, building a repertoire of techniques available to the neurosurgeon-in-training. In addition, residents are encouraged to form writing groups that vary according to the project being undertaken; a single resident may be part of several writing teams, each undertaking a different manuscript.

Results: In the eight years since the program was implemented, a total of 36 residents at various stages of training have been exposed to the paradigm. Resident publications have risen from approximately 6-7 per year to 50, demonstrating greater than exponential growth. In addition, residents present more frequently at national and international meetings, and some are Co-Investigators on multi-institutional clinical trials.

Conclusion: In taking the teaching and learning of research methodology and integrating it into a standard residency training program, participants learn how to carry out research responsibilities while continuing to meet their clinical requirements for patient care, thus preparing them for a productive future in academic neurosurgery.