

## OTHER

ETHICAL, LEGAL, SOCIETAL, HISTORICAL  
ASPECTS OF NEUROSCIENCE

## P.099

## The history of neurosurgery in Victoria, BC

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*Background:* Neurosurgery was first practiced in Victoria, BC in the 1950's. It has grown from 1 neurosurgeon to 6 neurosurgeons today. *Methods:* Research into the beginning of Neurosurgery in Victoria demonstrates that it started with one surgeon and has grown significantly over the past 60 plus years. *Results:* Although Neurosurgery started in Victoria with humble beginnings it has now developed into a sophisticated unit with 6 neurosurgeons with various subspecialty interests including complex and minimally invasive spine, cerebrovascular and neuro-oncology. *Conclusions:* The Neurosurgery division in Victoria has grown over the years from a single surgeon to 6 surgeons practicing a wide scope of neurosurgical procedures.

## NEUROSCIENCE EDUCATION

## P.100

## A competency-based stroke curriculum for non-neurologists

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*Background:* Previously-identified deficiencies in stroke training for emergency and internal medicine trainees led us to develop a competency-based curriculum for a stroke rotation, based upon entrustable professional activities (EPAs). EPAs are observable and measurable activities that are routine care within a given medical specialty. *Methods:* We surveyed stroke- and non-stroke neurologists using a modified Delphi process with two iterations. The survey sought input on the number and nature of EPAs considered most important and achievable during a one month stroke rotation. *Results:* Surveyed neurologists considered 5-10 EPAs as adequate and reasonable to achieve during a one month elective. A list of the most essential EPAs was obtained and will be used as the basis of a curriculum for rotating residents in Internal and Emergency medicine at the Island Medical Program in Victoria, BC. *Conclusions:* Our work highlights an approach to meeting an identified gap in resident training in an important area of neurology (stroke). A competency based approach to medical education, focusing on EPAs, offers an innovative way of approaching resident education that seeks to ensure residents develop skills that experts in the field have identified as most essential for the work at hand (in this case, the proper management of stroke patients).

## P.101

## Case-oriented needs assessment for professional development in an academic neurology centre

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*Background:* Needs assessment is a cornerstone of designing programs for continuing professional development (CPD). However, typical needs assessment surveys often yield non-specific information insufficient to guide professional development programming decisions. *Methods:* A survey was distributed to Neurologists practicing in city of Calgary. A stimulated-recall method was used to generate specific case-oriented clinical questions and 5-point Likert scales were used to rate specific topics across the CanMEDS competency framework and CPD preferences. *Results:* A total of 48 surveys were distributed, with a response rate of 62.5%. Most respondents were subspecialists in Neurology (87%) in practice for less than 15 years (71%). Most used local neuroscience (97%) rounds as source for CPD. Respondents reported a need to address specific questions relating to the following topics: Acute stroke (54%), non-acute stroke (45%) and epilepsy (50%). For example, physicians identified that they wanted to learn more about when to reinitiate anticoagulation following ischemic stroke, or which choice of anti-epileptic for various seizure presentations. Specific medical content was rated highly disproportionately to other physician competencies such as communication or management skills. *Conclusions:* Our survey elicited detailed learning gaps from academic neurologists and identified a disconnect in interest in topics related to medical content compared to other important physician competencies.

## P.102

## Simulation-based training for surgical instrument recognition

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*Background:* Surgical simulation training offers trainees the opportunity to practice surgical skills before entering the operating room. The objectives of this study were to determine the effect of simulation for learning instruments for burr hole surgery and whether this learning is translated to real instrument recognition with retention. *Methods:* Randomized trials of PGY1 neurosurgery residents and perioperative nurses were conducted, using PeriopSim™ for instrument recognition, as well as real instruments. Group A performed simulation tasks using PeriopSim™ prior to identifying real instruments, whereas Group B identified real instruments prior to performing simulation tasks. Nurses' recall was assessed at seven days. *Results:* Sixteen residents and 100 nurses were recruited. All participants showed significant overall improvement in their scores for simulated tasks. Group A demonstrated enhanced accuracy and speed of identifying real instruments compared with Group B ( $p < 0.001$ ). Furthermore, knowledge recall testing at one week demonstrated retained learning, shown by 97% accuracy in instrument identification. *Conclusions:* Our results demonstrate that recognition of surgical instruments improves with repeated use of the PeriopSim™ platform.

Instrument knowledge acquired through simulation training results in improved identification and retained recognition of real instruments.

## P.103

### Studying behaviors among neurosurgery residents using web 2.0 analytic tools

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**Background:** Web 2.0 technologies (e.g. blogs, social networks, and wikis) are increasingly being utilized by medical schools and postgraduate training programs as tools for information dissemination. These technologies offer the unique opportunity to track metrics of user engagement and interaction. Here, we employ Web 2.0 technologies to assess academic behaviors among neurosurgery residents. **Methods:** We performed a retrospective review of all educational lectures, part of the core Neurosurgery Residency curriculum at the University of Toronto, posted on our teaching blog (www.TheBrainSchool.net) from Sept 2013 - Nov 2016. We looked for associations with lecturer's academic position, timing of examinations, and lecture/subspecialty topic. **Results:** The overall number of clicks on 123 lectures was 1079. Most of these clicks were occurring during the in-training exam month (43%). Click numbers were significantly higher on lectures presented by faculty (mean 18.6, SD  $\pm$  4.1) compared to residents-delivered lectures (mean 8.4, SD  $\pm$  2.1) ( $P=0.031$ ). Functional neurosurgery lectures were the most downloaded (47%), followed by pediatric neurosurgery (22%). **Conclusions:** The current study demonstrates the value of Web 2.0 analytic tools in examining residents study behavior. Residents tend to 'cram' downloading lectures in the same month of training exams and display a preference for faculty-delivered lectures.

## P.104

### Factors influencing resident engagement in research during post-graduate training

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**Background:** Residency training programs aspire to develop residents' research skills, but engaging trainees in research often proves challenging. Addressing this requires a better understanding of factors influencing residents' engagement in scholarship. We sought to identify such factors through an interview-based study that explored residents' interest and involvement in research during training. **Methods:** We conducted 15 semi-structured interviews with neurology (n=8) and neurosurgery (n=7) residents at our institution based on an interview guide developed through a literature review and pilot interviews (n=3). Using template analysis, we examined transcripts to identify facilitators and barriers to resident research. **Results:** Motivation, mentorship, and resource availability were noted to significantly impact resident research. Trainees indicated motivation is influenced by personal desire to develop research skills, interest in available projects, and pressure to engage in scholarship from peers, mentors, and future employers. While strong men-

torship and departmental resources for data collection and analysis facilitate resident research, funding and time constraints are barriers to success. **Conclusions:** We have identified multiple factors influencing residents' engagement in research, which may be targeted by program directors to optimize the post-graduate training environment for resident scholarship. In the next phase of our project, we will corroborate and expand on these findings through a national survey of residents across all specialties.

## P.105

### Smartphone and mobile app use among Canadian Neurosurgery residents and fellows

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**Background:** Communicating with senior neurosurgical colleagues during residency necessitates a reliable and versatile smartphone. Smartphones and their apps are commonplace. They enhance communication with colleagues, provide the ability to access patient information and results, and allow access to medical reference applications. Patient data safety and compliance with the Personal Health Information Protection Act (PHIPA, 2004) in Canada remain a public concern that can significantly impact the way in which mobile smartphones are utilized by resident physicians. **Methods:** Through the Canadian Neurosurgery Research Collaborative (CNRC), an online survey characterizing smartphone ownership and utilization of apps among Canadian neurosurgery residents and fellows was completed in April 2016. **Results:** Our study had a 47% response rate (80 surveys completed out of 171 eligible residents and fellows). Smartphone ownership was almost universal with a high rate of app utilization for learning and facilitating the care of patients. Utilization of smartphones to communicate and transfer urgent imaging with senior colleagues was common. **Conclusions:** Smartphone and app utilization is an essential part of neurosurgery resident workflow. In this study we characterize the smartphone and app usage within a specialized cohort of residents and suggest potential solutions to facilitate greater PHIPA adherence

## P.106

### Ethics education in neurosurgical training- a survey of North American program directors

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**Background:** Despite being mandatory for accreditation by the RCPSC and ACGME, little is known about how ethics education is undertaken during neurosurgery training. This study assessed the current state of ethics education in North American neurosurgery training programs. **Methods:** A web-based survey was developed based on ethics competencies outlined by the RCPSC and the ACGME and emailed to North American neurosurgery residency program directors (PD's). Responses were analyzed using descrip-