Canadian Medical Student Interest Group in Neurosurgery

Progress Report 2021

Organizational Tasks and Future Plans

September 2020 – June 2021

Report Prepared by
Pedram Laghaei, Saman Arfaie, Mohammad Mashayekhi
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I. Co-Founders and Leadership Team

**Saman Arfaie**

*About Saman:* Saman Arfaie is a current Doctor of Medicine and Master of Surgery Candidate at McGill University (2024). He is passionate about neurosurgery, basic science research (i.e. neurobiology and brain tumors), and encouraging equitable representation of wide talents in surgical fields. As a co-founder of CaMSIGN, he hopes to create a new chapter for connecting Canadian medical students interested in neurosurgery.

**Pedram Laghaei**

*About Pedram:* Pedram Laghaei is a current Doctor of Medicine Candidate at the University of British Columbia (2023) and a co-founder of CaMSIGN. He is deeply intrigued by the intricacies of the brain, investigations within neuroscience and neuro-oncology, and has a genuine interest in pursuing a career in the field of neurosurgery. Pedram hopes to fulfill the missions and visions of CaMSIGN through collaboration and communication.

**Mohammad Mashayekhi**

*About Mohammad:* Mohammad Mashayekhi is a co-founder of CaMSIGN and a current Doctor of Medicine Candidate at University of British Columbia (2023). He has always remained fascinated by the inner workings of the human brain and aspires to continue his future trajectory in neurosurgery. He is excited to help connect all Canadian medical students interested in neurosurgery and provide opportunities for networking between medical students, surgical residents and faculty neurosurgeons.

II. Media Team

**Benyamin Zargar**

*About Benyamin:* Benyamin Zargar is an incoming medical student. He recently received his Bachelor of Science (Health Sciences) from Simon Fraser University. He is passionate about knowledge translation, and research in neuro-oncology, and epigenetics of chronic diseases. As CaMSIGN’s web developer, he is excited to be part of this initiative and assist with ease of web access.
In September 2020, our team created the Canadian Medical Student Interest Group in Neurosurgery (CaMSIGN). As the first nationally focused neurosurgery initiative, and a non-profit student-led organization, our aim has been to create a bridge between medical students, residents, and faculty to cultivate an atmosphere of academic engagement, educational platform, and advocacy. To date, our platform has enabled 150+ students from across Canada to enjoy high-quality lectures, journal club discussions, case series, and panel discussions free of charge.

One of the primary challenges for medical students is to successfully narrow their specialty choices prior to their CaRMS applications. We understand that this is a time-consuming and energy-driven process which necessitates a thorough examination of all aspects of a field. Making valuable connections with neurosurgical residents, fellows and staff surgeons is a great way to explore these choices and assist students to make more informed decisions about their future career choices.

Additionally, one of the other initiatives that we strongly value is enhancing the advocacy and networking events between medical students, residents, and staff surgeons. With the COVID-19 complications, and the unfortunate cancellation of cross-province electives for fourth year medical students, our events satisfied an even greater need for those unable to explore in-person activities. Therefore, CaMSIGN acts as an educational medium for those keen to learn about the field beyond their medical curriculum.

Upon hosting some of our events, we are grateful to learn that many of our members indicated that after attending our events, they felt a greater sense of connection and enhanced emotional well-being. While Zoom-fatigue has become an increasingly pervasive phenomena, through making friends with like-minded individuals, CaMSIGN helps reduce social isolation and foster positive interactions. We are also pleased to paint a more accessible image of neurosurgery, demystifying the notion that only a select few can pursue the field.

The long-term goals of CaMSIGN could be explained in four-folds: One, is to create a digital archive of resources such as lectures, journal club discussions, case studies, workshops, interviews with faculty which would be accessible by anyone interested to delve deeper into neurosurgical sciences. Second, we are planning to compile resources for the CaRMS application
MISSION AND VISION STATEMENTS

including key dates for each program’s information session and other sources of information that would be of use to applicants. Third, we hope to expand our initiative through key partnerships and host a yearly conference beginning with 2022. Fourth, we hope to be recruiting new members for a variety of positions to best support medical students who are interested in being involved in the neurosurgical committee.

Moreover, we have initiated a new series entitled “Women in Neurosurgery” with the intention to encourage more women to pursue neurosurgery and perhaps other surgical specialties. Given the diversity of talents within Canadian medical students, there is no question that our healthcare system would immensely benefit from having a more equitable ratio of women surgeons. Through introducing role models in the field and creating a mentor-mentee platform, we are confident that CaMSIGN can increase the presence of women in surgical fields and positions of leadership.

Inspired by our members, our commitments continue to grow through the promotion of neurosurgical education, research, and advocacy. We believe that through the valuable advice and expertise from our advisory board, we can improve the quality of CaMSIGN and constantly make improvements to best uphold our mission of serving all 17 medical schools in Canada within the years to come.
I. The Road to Success: Mentorship, Lectures and Clinical Cases

Fireside Chat: An Open Discussion with Dr. Mostafa Fatehi
November 5, 2020

Dr. Mostafa Fatehi
MD, MSc, PGY-6 Neurosurgery
University of British Columbia

For its first event, CaMSIGN welcomed over 25 participants to learn from Dr. Fatehi as he shared his academic background that led him to switch from mathematics/physics to physiology and biology. He stressed the importance of having great mentors, building professional relationships during research, selecting electives in preparation for CaRMS, and the neurosurgical job prospect.

A Life in Neurosurgery: Thoughts and Reflections
December 14, 2020

As the keynote lecture of 2020, CaMSIGN welcomed Professor Del Maestro to reflect on his 40 years of experience in neurosurgery. He shared his insights and wisdom of what makes life in neurosurgery meaningful, how students can become competitive for residency, and the role of research in advancing the field of neurosurgery with a particular focus on the utilization of artificial intelligence. Dr. Del Maestro also outlined trends in the field and the exciting potentials awaiting the next generation of neurosurgeons. Over 40 medical students attended this session.

A Primer on Vascular Neurosurgery: Case-Based Medical Student Hot Seat
May 12, 2021

Dr. Matthew Eagles
MD, MSc Candidate, PGY-4 Neurosurgery
University of Calgary

This was CaMSIGN's first event in its new and engaging series, “Medical Student Hot Seat”. This event was led by Dr. Eagles, which simulated an interactive session mimicking neurosurgery electives and rounds, particularly focused on vascular neurosurgery. Participants volunteered to practice their clinical knowledge pertaining to the differential diagnosis, management, and complications of five unique cases in a safe and judgment-free environment. These cases included (1) subarachnoid hemorrhage, (2) parenchymal intracranial hemorrhage, (3) ischemic stroke, (4) unruptured aneurysm, and (5) vascular malformation. The event consisted of 22 participants, including numerous Canadian medical students, a medical student from the University of Cambridge, and an incoming neurosurgery resident at the Mayo Clinic.

Professor Rolando del Maestro
MD, PhD, FRCSC, FACS, DABNS
Department of Surgery, McGill University
As part of CaMSIGN’s educational mission, the CaMSIGN team was very excited to organize and host several incoming Neurosurgery PGY-1 Residents in a panel dedicated to discussing CaRMS. The goal was to aid aspiring medical students to learn valuable information as they prepare for their future applications to Canadian neurosurgical residency programs. During the evening, the panelists shared their experiences with the CaRMS process, why they chose neurosurgery, their trajectories in matching to neurosurgery, and help answer questions related to a variety of topics such as components of a competitive application, obtaining reference letters, doing electives, impressing preceptors, and much more. In total, 38 medical students attended the event.

II. Women in Neurosurgery Lecture Series

ADVENTURES IN ACADEMIC NEUROSURGERY: CLINICS, RESEARCH, EDUCATION AND MORE!

March 8, 2021

In celebration of International Women’s Day and the vital role that women play in healthcare, the CaMSIGN team initiated the “Women in Neurosurgery” Lecture Series with the first episode featuring Professor Mojgan Hodaie, and welcoming 70 medical students. Professor Hodaie reflected on her trajectory to academic neurosurgery, the importance of mentors in her journey, and some challenges she overcame along the way. She further discussed her contributions to global surgery, research, and work as a staff neurosurgeon at Toronto Western Hospital.
REFLECTIONS, RESILIENCE & PATH TO SUCCESS: A PANEL WITH HEALTHCARE LEADERS
April 21, 2021

In this semi-interview webinar, the panelists kindly shared their journeys to neurosurgery, personal experiences in the field, and their work in academia. Additionally, they shared some tips for clerkship, electives, preparing for CaRMS, and other valuable insights for over 40 medical students in the audience. Although she intended to join, Dr. Dandurand was unable to join this event.

PERSONAL EXPERIENCES IN BALANCING FAMILY AND A SURGICAL CAREER
May 21, 2021

This event welcomed over 50 participants and brought together mothers at various stages of their careers in a panel dedicated to maternity and motherhood in neurosurgery. The panelists shared their experiences and reflected on varied topics, including personal relationships, balancing professional endeavours, pregnancy, maternity leave, and forming a family as a neurosurgeon.

III. Neurosurgery Journal Club

METASTATIC BRAIN TUMOURS
January 13, 2021

The first Neurosurgery Journal Club event welcomed 17 medical students. Dr. Manoranjan led the discussion on the origins, clinical features and treatments of metastatic brain tumours; discussion was then followed by a Q&A period.

CHRONIC SUBDURAL HEMATOMAS: A PARADIGM SHIFT IN PATHOPHYSIOLOGY AND TREATMENT STRATEGIES?
February 28, 2021

The second Neurosurgery Journal Club meeting welcomed 12 medical students and was led by Dr. MacLean in discussing chronic subdural hematomas and current understandings from the literature regarding their pathophysiology and novel treatment strategies; this was followed by a Q&A period.
**1. A BRIEF INTRODUCTION TO BRAIN TUMOURS: CASE-BASED MEDICAL STUDENT HOT SEAT**

Description: On July 23rd, the CaMSIGN Team is very excited to welcome Dr. Amit Persad, PGY-5 Neurosurgery at the University of Saskatchewan, for the second episode within the “Medical Student Hot Seat” series. This event will simulate an interactive session mimicking neurosurgery electives and rounds. Medical students are encouraged to volunteer and discuss five unique cases related to brain tumours, namely (1) supratentorial intra-axial tumour, (2) supratentorial extra-axial tumour, (3) posterior fossa tumour in adults, (4) posterior fossa tumour in children, and (5) multiple tumours. As a result, participants will have a chance to practice their clinical knowledge pertaining to the differential diagnosis, treatment, and complications of these five cases in a safe and judgment-free environment. Registration is currently open: bit.ly/camsign-braintumours

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**2. MEDICAL STUDENT TEACHING SERIES BY UBC NEUROSURGERY RESIDENTS**

Description: CaMSIGN is very thrilled to introduce a unique series of teaching sessions for medical students led by UBC Neurosurgery Residents, namely Dr. Oliver Ayling (PGY-8) and Dr. Michael Rizzuto (PGY-3). These sessions are based on a variety of cases within neurosurgery and are intended to prepare medical students for their clinical rotations. The first episode is scheduled to start on July 29th. More details will be announced.

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**3. MEDICAL STUDENT HOT SEAT #3: PEDIATRIC NEUROSURGERY**

Description: The third episode of the “Medical Student Hot Seat” series will be dedicated to Pediatric Neurosurgery cases. The CaMSIGN Team is very delighted to welcome Dr. Nicholas Sader, PGY-5 Neurosurgery at the University of Calgary, to lead this particular session. This episode is scheduled for August. More details will be announced.
I. Short-Term Goals

1. Launch and introduce CaMSIGN’s Advisory Board Committee on the website (task in progress).
2. Upgrade CaMSIGN’s website with new graphical capabilities (task in progress).
3. Add testimonials from medical students that regularly attend CaMSIGN’s events.
4. Add Canadian neurosurgery program requirements to the website as a central resource for students.
5. Hold one meeting with each advisory board member once every six months to integrate their expertise and feedback into improving CaMSIGN for each upcoming year.

II. Intermediate Goals

1. Expand CaMSIGN’s Team by recruiting 3-5 new members for varied tasks including composing regular newsletters and starting an education/research blog.
2. Host events with overlaps between neurosurgery and neurology, neuropathology, neuroradiology, neuro-oncology, and neuroscience.
3. Aim to organize up to two events each month starting September, including journal club meetings, hot seat episodes, “Women in Neurosurgery” episodes, and so forth.
4. Potentially start a new series on advanced technologies impacting the future of neurosurgery.

III. Long-Term Goals

1. A yearly research conference with medical students, residents and staff collaborating on a national scale and potentially with different organizations, including CNRC, CNSF, and AANS.
2. A mentor-mentee program for medical students to connect with residents for research purposes and to receive valuable mentorship as they prepare their applications for neurosurgery.
3. Apply for the Student Initiative Grant provided by the Canadian Federation of Medical Students and find other appropriate funding opportunities to help achieve CaMSIGN’s goals.