Canadian Medical-Student Journals: An Overview

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Abstract

Introduction: We offer an overview of the major Canadian student-run medical publications: their format, structure, and productivity. Canada has eight active medical-student journals, which publish more than 200 articles each year.

Methods: Editors of medical-student publications in Canada were interviewed by telephone or online survey to obtain information about demographics and other characteristics of the publications. Topics included editorial autonomy and faculty involvement, organizational mandate, organizational staffing and structure, years in operation, funding sources, and distribution and indexing.

Results: The publications varied widely in each characteristic reviewed. Some journals are new, some have a long history. Authorship eligibility ranges from being exclusive to medical students to being open to practicing clinicians and allied health students. The mandates of the schools vary; some opt for a special focus, such as the humanities. Staffing ranges from eight to 60, and staff are local or international. Funding ranges from combinations of private and public to exclusively public.

Conclusions: Student medical journals publish articles from and for a broad audience and provide students with an opportunity to develop their medical literacy and publishing skills. We propose a consortium of student-journal editors to bridge knowledge gaps with respect to their function and to strengthen the positions of the institutions in the student and medical-education communities.

Key Words: medical students, publishing

Introduction

Formal training opportunities for clinicians to learn medical-editing skills are few, and editors of the most prestigious journals in the world have recognized that. Their own accounts of how they became influential leaders in our profession are admittedly surprising. Richard Horton, of The Lancet, admits that “there is no career structure”, and Fiona Godlee, of the BMJ, described her entry into the position as “by accident”. Journals themselves lament in writing about the challenges in finding suitable candidates to lead their publications. One formal training program, based at the Georgetown University School of Medicine, in Washington, DC, offers an elective for fourth-year medical students to work at American Family Physician. In Canada, the Canadian Medical Association Journal (CMAJ) used to offer a fellowship program for those who had completed their medical training. After the program was discontinued, the CMAJ, in collaboration with the Canadian Federation of Medical Students, opened a position for a single medical student on the Editorial Advisory Board in 2010. However, the position has a proposed 3-year term, and Canadian medical students generally graduate in 4 years, which restricts the opportunity for student participation.

Major medical publications in the United Kingdom have a strong history of training opportunities for medical students and medical graduates alike. Both The Lancet and the BMJ offer a year-long elective, taken away from clinical medicine, in which a student is provided the opportunity to serve as editor-in-chief of the student publication (The Lancet Student and Student BMJ). In contrast, Canadian medical-student journals tend to be associated with medical universities.

A former editor of the McGill Journal of Medicine wrote about the role of student publications in stimulating and reinvigorating an interest in academic medicine and research in the current climate of declining numbers of students in clinician-scientist investigator programs. Although some training programs exist, they are currently insufficient to meet the demand for the rapidly growing numbers of biomedical journals and to accommodate the quantity of articles being submitted to them.

Publishing is an invaluable opportunity for a medical trainee for learning: what the submission and review process is like, how to formulate and defend hypotheses, and about being accountable for research findings and study recommendations. Beyond being directly involved in the publication of research results, students must learn to access and apply research results effectively in clinical practice to become successful modern practitioners.

In Canada, there are eight active medical-student journals, which together publish more than 200 articles per year (Table 1). The purpose of our study was to develop a basic understanding of the scope and practice of medical-student publications.
Research

Table 1. Summary of Canadian Student Medical Journals

<table>
<thead>
<tr>
<th>Journal</th>
<th>Years in Operation (Cumulative)</th>
<th>Who Can Submit</th>
<th>No. Staff</th>
<th>Funding Source</th>
<th>Approximate No. Articles per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dalhousie Medical Journal</td>
<td>53</td>
<td>Any local allied-health student</td>
<td>10</td>
<td>Private, university</td>
<td>16</td>
</tr>
<tr>
<td>McGill Journal of Medicine</td>
<td>16</td>
<td>Undergraduates, medical students, graduate students located internationally</td>
<td>124</td>
<td>Private, advertising</td>
<td>40</td>
</tr>
<tr>
<td>McMaster University Medical Journal</td>
<td>6</td>
<td>Any medical or allied-health students, residents, physicians, nurses, occupational therapists, physiotherapists, graduate students, researchers at any institution</td>
<td>13</td>
<td>University</td>
<td>19</td>
</tr>
<tr>
<td>Queen's Health Science Journal</td>
<td>13</td>
<td>Open</td>
<td>8</td>
<td>Private, university</td>
<td>10</td>
</tr>
<tr>
<td>University of Alberta Health Sciences Journal</td>
<td>6</td>
<td>Local medical students, residents, physicians, researchers, graduate students</td>
<td>11</td>
<td>Private, university</td>
<td>26</td>
</tr>
<tr>
<td>University of British Columbia Medical Journal</td>
<td>9</td>
<td>Students at any institution</td>
<td>40</td>
<td>Private, university</td>
<td>20</td>
</tr>
<tr>
<td>University of Toronto Medical Journal</td>
<td>87</td>
<td>Universities, institutes, organizations, medical professionals around the world</td>
<td>36</td>
<td>Private, advertising</td>
<td>48</td>
</tr>
<tr>
<td>University of Western Ontario Medical Journal</td>
<td>80</td>
<td>Local medical students</td>
<td>26</td>
<td>Private, advertising</td>
<td>38</td>
</tr>
</tbody>
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in Canada. By reviewing their publishing trends and mandates, we hope to stimulate an academic exploration of the effects of working on such publications on student trainees both inside and outside the medical profession.

Methods

We identified medical schools across Canada by using a snowball sampling technique. Initial contacts were made with student journals identified by our current staff and with those whose contact information was publicly accessible on the Internet through August 2011. A survey tool was developed to assess several journal characteristics: scope and size of the journal’s staff and finances, editorial scope and audience, relationship of the student publication with faculty or other mentors, and policies on funding and distribution. Data were collected using a variety of methods, including telephone interviews, distribution of an online form, and finding information available on publications’ Web sites. We developed a tool to tabulate data for analysis that evaluates each journal according to the characteristics listed above.

Eight Canadian medical-student journals were invited to participate (Table 1): the Dalhousie Medical Journal (Dalhousie), the McGill Journal of Medicine (McGill), the McMaster University Journal of Medicine (McMaster), the Queen’s Health Science Journal (Queen’s), the University of Alberta Health Sciences Journal (Alberta), the University of British Columbia Medical Journal (British Columbia), the University of Toronto Medical Journal (Toronto), and the University of Western Ontario Medical Journal (Western). Data were collected by interviewing participants by telephone or providing them with an online survey that contained the same question series; staff at McGill and Toronto were unable to participate directly, so we used relevant information from their public Web sites. Clarification and opportunities to modify the information electronically were available to all participants. Survey questions were organized according to the following domains: editorial autonomy and faculty involvement, editorial scope and content, organizational mandate, organizational staffing and structure, years in operation, funding sources, and distribution and indexing.
One criterion for inclusion in the study was that interviewees had to be medical students serving in a senior executive role in the publication (typically called the editor-in-chief, although the role might have been divided among several students). Criteria for exclusion were non-student and/or non-executive members of the journal staff and non-Canadian medical-student publications.

Results

Editorial Autonomy and Faculty Involvement

A vast range of faculty involvement is represented among the publications: from an active participating role in policy making through a consultancy role that involves advising on an as-needed basis to full commitment to reviewing and editing every article. Alberta has the smallest amount of faculty involvement: support is provided only when needed. In contrast, British Columbia and Dalhousie call on faculty members as reviewers of submitted articles. Another common role of faculty members is that of an advisory board that the journal staff can refer to for guidance. Alberta and Dalhousie do not use an advisory board composed of faculty, but British Columbia, McMaster, and Western all have such committees in place. British Columbia also includes senior faculty members in the selection of writing-award winners for each issue.

Overall, there is little in terms of formal, publicly available information about the autonomy that student editors have in the operations of the journals. Providing more cohesive documentation of this on their Web sites may encourage students to submit their work. Similarly, formal recognition of faculty contributions could enhance the credibility of the publications, which might help in recruiting top research articles and attracting organizational funding.

Editorial Scope and Content

The journals vary widely in author eligibility criteria. Some accept articles only from local medical students, others accept work from internationally established students and practicing physicians, and still others from allied-health and basic-science research fields. By limiting articles to those written by local students, student publications may be limiting their ability to develop a more national or even international profile.

Organizational Mandate

An important goal of some journals is to focus explicitly on student training in research and academic writing (for example, Alberta and British Columbia). Accordingly, some extended their integration within the medical school by cosponsoring student research conferences. Journals often participate by publishing conference abstracts in a dedicated online issue (British Columbia) or incorporated into their regular issues (Toronto). In contrast, Dalhousie Medical School has devoted extensive time to the humanities, establishing a strong relationship with the school’s Humanities in Medicine Program.

Organizational Staffing and Structure

Journal structure varies widely among the medical schools. Staff size ranges from eight (Queen’s) to more than 60 (McGill), and staff were recruited from all years of medical school. “Top executive positions” refers to the position of editor-in-chief or the equivalent highest-ranked authority in the publication. The number of top executive positions ranged from one (Western) to three (Dalhousie). Most journals are staffed solely by local medical students. However, the marketing strategy of McGill includes internationally based students and clinicians who advise on editorial content (n = 20) and participate in public relations (n = 24). In all journals, designated section editors select articles and coordinate peer review.

Several journals opt for a clear division of labor among editorial sections (British Columbia and Toronto) whereby editors are responsible for a single submission format—research, case reports, or news. Others provide a less specific division (Dalhousie, McGill, and McMaster) whereby editors are responsible for overseeing a broad array of types of articles. In most journals, first-year students enter positions as section editors and are promoted to higher executive positions in their second or a higher year; this facilitates mentorship and capacity building among staff.

Most journals use some form of a peer-review process for article acceptance. Articles submitted to Alberta undergo initial review by student editors, and final acceptance depends on peer review by volunteers from the student body, who might not have content expertise. In contrast, Dalhousie asks only faculty to complete external review. British Columbia and Toronto request reviews from a combination of faculty and student reviewers, who typically have content knowledge, and weigh the returning comments in making final decisions to accept or reject articles.

Years in Operation

Sustainability is a critical issue for student journals, especially in light of the necessarily high staff turnover. Evidence of student-driven medical publications has existed for nearly a century. Some of the oldest known medical-student journals are Toronto (1923), Western (1930),7 and Dalhousie (1957). Others were relaunched from journals that ceased publication in the middle of the 20th century. (McGill was previously in print from 1947 to 1951 and British Columbia was previously in print from 1962 to 1968.10)

Funding Sources

All journals receive funds from their home institutions through support from either the faculty or the student governing body. Notably, Dalhousie receives funding from outside medicine—from the university’s “Medical Humanities” department. Many journals (Dalhousie, McGill, Toronto, and Western) have contracts with private advertising agencies, whose collection rates (the fees the agencies take for providing the advertising services) are reportedly up to 50% of total advertising revenue.11,12 Private sponsors of Alberta include medical-equipment and pharmaceutical companies, notably Pfizer Canada. Few of the
Research
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schools have formal policies about accepting pharmaceutical or medical-equipment funding or about how editorial integrity must remain in the hands of students. This situation suggests an opportunity for other professional medical editors to mentor and educate student editors in developing their own policies regarding the role and influence of advertisers in their publications.

The total annual operating cost of the journals ranges from $5,000 to $10,000; printing accounts for most of the expenses. British Columbia and Western also reserve a portion of funding for writing awards.

**Distribution and Indexing**
All the journals have an online presence, and print distribution tends to be limited to local students and physicians. Dalhousie distributes its print version to all medical students and physicians in Nova Scotia, whereas Western circulates only to all students and faculty members. No journal is distributed to all students in Canada, nor is there a central repository of student publications.

There is inconsistency among the student publications with regard to indexing, a vital means of accessing student work. At the highest level, McGill is the only publication indexed on MEDLINE. Alberta is indexed by the National Archives in Ottawa but has no plans to apply for indexing on MEDLINE. British Columbia is indexed in Google Scholar, the National Archives, and the World Health Organization’s HINARI, which makes it possible for developing nations to have free or low-cost access to biomedical publications.

**Discussion**
Despite the long existence of Canadian student journals, to our knowledge this is the first formal attempt to describe their scope and content. The Canadian Medical Education Directives for Specialists (CanMEDS) is the framework of core competencies required of all medical graduates in Canada. CanMEDS explicitly states that Canadian medical graduates must meet standards for “communicator” and “medical expert” roles. We posit that medical-student journals play an important part in building that capacity by providing students with practical training in academic writing and editing.

**International Comparators**
Student publishing has a rich history internationally, particularly in the UK. The integrated Student BMJ, operated by a single student editor, uses the resources of the host BMJ for mentorship and training and for print and distribution. Through a relationship with its medical society, the Student BMJ is delivered in print to all medical students in the UK and this makes students much more aware of student publishing than does the limited print circulation of Canadian student journals. The McGill model of using promotional representatives from around the world is, however, an effective strategy for increasing its exposure as one of Canada’s few MEDLINE-indexed student publications. A host–journal-based strategy has been used by The Lancet Student and the now out-of-print Medical Student JAMA.

Beyond North America and Europe, medical-student journals are flourishing and should be the focus of new research. Most recently launched is the International Medical Journal of Students’ Research (http://www.imjsr.com), which is based in India but includes staff and publishes articles from around the world. We are populating a list of all international student journals (http://lib-drupal2.lib.sfu.ca/studenteditors).

**Future Directions**
An important next step is to explore the effects of formalized training in scientific publication on new graduates’ research output and career outcomes. Student journals could serve as a platform for exchanging knowledge, resources, and ideas. In light of the multitude of benefits that medical-student publications are providing, it is interesting to note how different they are in their methods. There is no consistent way for the editors of these publications to receive mentorship. We propose that a society of editorial members of student journals could have a substantial effect on the journals’ ability to raise their profiles as a collective, as has been done in other domains of medical publishing. It would also provide a forum for editors to discuss emerging issues, exchange contacts and resources, and give each other new and creative suggestions for promoting their success.

**Knowledge Gaps**
Medical-student journals provide many opportunities for budding clinicians, but this has yet to be documented formally. It is not known how student engagement influences career outcomes. Are medical-student editors more likely to become medical editors or researchers? What is the effect of medical-student journals on their student readers? Do they make the students more comfortable about participating in research projects later in their careers or about embracing evidence-based practice? In light of the scope of the journals, those questions are worthy of investigation.

**Conclusion**
Student medical journals in Canada have diverse scope, structure, and policies. They operate in a dynamic setting with rapid staff turnover, yet also constitute an important training and mentoring facility for students. We hope that this paper will initiate a formal discussion on the role of student journals in medical education and help to develop a national network to promote high standards of excellence akin to the standards of the World Association of Medical Editors and the Canadian University Press, a journalism student union. Investing in student journals will be an effective means of engaging students in academic discussion and enhancing their capacities as future medical practitioners.

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