

# Challenges and solutions to expanded satellite clerkship rotations

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A certain type of medical student is drawn to doing an elective at a satellite campus. This student is an independent learner, determined and excited by the opportunity for increased hands-on exposure and drawn to autonomous problem-solving. In short, satellite clerkship rotations appeal to most future surgeons. Given the obvious appeal of satellite clerkship rotations, the reasons why many medical students do not pursue these experiences must be addressed. The primary barriers to medical students accessing these opportunities include the fear of approaching an unknown setting, apprehension that residency programs favour individuals who completed centralized rotations and the reduced number of subspecialty rotations available in some satellite locations.

The fear of an unknown setting can be a tremendous hindrance when medical students are considering locations for their clerkships/electives. The city and hospital may be unfamiliar. In addition, there is little word of mouth among medical students about satellite campuses because they are relatively new. Possible solutions include site visits for in-province medical schools and videos accessible

on medical school websites for potential elective students to view. These online videos would include current students touring the facilities and commenting on their preceptors and the quality of their experiences. Peer assessment of a situation has great influence. A perfect example of this occurred at the University of Saskatchewan, where the second-year class comprising 60 students travelled from Saskatoon to Regina to visit the satellite campus. All 60 students were tentative because, if there were not enough volunteers, 20 people would be sent to that location for their subinternships. After the site visit, 22 students volunteered, and the vast majority were those interested in surgery. It is possible to overcome doubt and generate excitement about the benefits of training in satellite locations.

A commonality among all medical students is their desire to demonstrate their skills, prove their competence and develop a relationship with the individuals who select candidates for residency programs. Given the competitive selection process for surgical residencies, many medical students are not willing to complete electives at satellite locations. One

possible solution is to have representatives from satellite campuses on residency selection panels. Residency programs could further support students who have attended satellite campuses by giving them equal consideration and endorsing such electives. The messages that come from attending physicians and surgeons and from residency program directors are heard loud and clear by the student body.

Finally, students interested in pursuing careers in some subspecialties may be concerned that there are fewer physicians or surgeons practising these subspecialties in satellite locations. This concern can be alleviated by focusing on the individualized training that a medical student can receive in an environment where there are fewer residents and medical students. A satellite elective could allow medical students to personalize their experiences. In addition, there is increased communication with the attending physicians or surgeons in satellite locations. There is more room to develop working relationships than in larger academic settings. Also, satellite electives offer medical students the opportunity to experience a diverse demographic

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setting that they may not have otherwise considered. The satellite electives could help Canada to disperse physicians.

Given the intrinsic clinical benefits of rotations in satellite locations, it is important to ascertain whether theoretical learning is maximized in such settings. Both video conferencing and Internet technologies have been used for the delivery of didactic information.<sup>1-7</sup> The academic equivalency between video conference and in-person didactic lectures has been demonstrated.<sup>1</sup> No significant difference was found between the mean test scores ( $p = 0.16-0.92$ ) or between total scores ( $p = 0.65$ ) of students who attended didactic surgical clerkship lectures via video conferencing and those of students who attended in-person lectures. Furthermore, video conferencing has been observed to be effective in the delivery of subspecialty lectures.<sup>2</sup> The equivalency between video conference and in-person lectures remains apparent, even at the residency level.<sup>3</sup> Other studies have focused on resident satisfaction, and have found that video conferencing technology was particularly useful in centres with subspecialty deficiencies.<sup>4</sup>

Another method that may be used to enhance surgical clerkship learning, regardless of centralized or remote location, is the Internet.<sup>5</sup> Online classrooms have been created to supplement small group teaching, allowing for improvement in the faculty's ability to differentiate among students and for better assessment of student knowledge and reasoning.<sup>5</sup> Surgical interactive multimedia modules have linked the relevance of basic science disciplines to clinical scenarios.<sup>6</sup> The end result was a decrease in student anxiety, an increase in operating room (OR) participation and an improvement in students' recall and knowledge of surgical procedures.<sup>6</sup> Finally, online resources have been shown to be used more by students with lower

class ranking, who subsequently improved their class rank.<sup>7</sup>

The skills and benefits derived from multimedia technologies have been shown to extend beyond the period of medical school and residency to that of the practising surgeon.<sup>8-10</sup> The usefulness of telementoring for surgeons performing advanced laparoscopic procedures without formal training has been illustrated.<sup>8</sup> With a growing need for continuing medical education that is cost-effective and safe, the need for sound methodology in telementoring has been addressed.<sup>9</sup> It has been suggested that multimedia and Internet-based learning create a multisensory environment that promotes the retention of information.<sup>10</sup> In particular, it was argued that digital video libraries that demonstrate interventional procedures are needed.<sup>10</sup> The multimedia resources available allow for tremendous educational advancement during medical school, through residency and throughout a physician's career.

In my experience as a medical student, I have found my clerkship experience at a satellite location to be very appealing. The physicians and surgeons in Regina have been very receptive to students, and the students are treated like colleagues. I enjoy self-directed learning and am motivated by the opportunity to be as active as possible in the OR and on the ward. Future medical students will also have similar motivation and benefit greatly from the satellite experience. I know that in addressing the fear of an unknown setting, the apprehensions regarding resident selection and the high quality of the elective experiences, the number of medical students willing to pursue satellite electives/clerkships will increase. Furthermore, by making video conferencing and Internet resources available, students can maximize theoretical knowledge and develop lifelong self-directed learning skills. As the number of medical students rises across the country, de-

veloping satellite campuses and involving more surgeons in medical education will result in the continuation of strong surgical education across Canada.

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