International Dental Education

Advanced Placement, Qualifying, and Degree Completion Programs for Internationally Trained Dentists in Canada and the United States: An Overview


Abstract: Canadian and U.S. universities are faced with the challenge that they are not graduating enough dentists to meet the future needs of the Canadian and U.S. populations. Foreign-trained dentists represent a valuable resource to society and the economy. Dental programs have been established to train foreign-trained dentists for some or all of the following reasons: public need for health care services, income generation for universities, and demand by foreign-trained dentists who desire to practice dentistry in Canada or the United States rather than in their own nation. Changes implemented by the National Dental Examining Board (NDEB) of Canada in 2000 and by the Commission on Dental Accreditation (CODA) in the United States in 1986 have resulted in foreign-trained dentists no longer being able to gain dental licensure in these countries strictly through a certification examination. Foreign-trained dentists are now required to apply for and complete a two- to three-year advanced placement, qualifying, or degree program at a Canadian or U.S. dental school prior to receiving licensure to practice. The study reported in this article investigated the various types of advanced placement, qualifying, or degree programs available to foreign-trained dentists wishing to practice in either Canada or the United States and the differences among these programs. This research provides a better understanding of the various commonalities and differences among Canadian and U.S. programs for internationally trained dentists.

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Key words: licensure, foreign-trained dentists, accreditation, advanced placement programs, qualifying programs, international degree programs, United States, Canada

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Current demographic evidence and forecasts for the future show that the populations of Canada and the United States are aging exponentially—a trend that will result in a nationwide shortage of dentists if the situation is not addressed. Compounding the aging trend is the looming retirement of the many baby-boomer dentists who started to practice in the mid-1970s.¹³ Of even more concern for the provision of dental services, particularly in historically and/or geographically underserved regions and populations, is the impact of recent changes in licensure policies for foreign-trained professionals in Canada and the United States. Foreign-trained professionals have historically compensated for the Canadian and U.S. health sector deficits.⁴ However, regulatory changes by the National Dental Examining Board (NDEB) of Canada in 2000 to no longer allow direct licensure of foreign-trained dentists has resulted in a projected reduction of foreign-trained dentists in Canada by 30-40 percent per year.⁵ This decision was due to an assessment of variation in the quality of education at international dental schools when compared to Canadian and U.S. accredited dental faculties.⁶⁷

To ensure that all practicing dentists are meeting the desired high standard of care through a solid
four-part process of education, accreditation, certification, and licensure, a number of Canadian and U.S. dental schools have developed training programs aimed at educating foreign-trained dentists to help ease the projected nationwide shortage of dentists in the next five to ten years. In Canada, foreign-trained dentists are now required to enter a Qualifying Program (QP), International Dentist Advanced Placement Program (IDAPP), Advanced Standing Program (ASP), Internationally Trained Dental Program (ITDP), International Dental Degree Completion Program (IDDCP), or International Dentist Degree Program (IDDP) and successfully pass both the NDEB examination and the objective structured clinical exam (OSCE) prior to receiving a license to practice. In the United States, foreign-trained dentists are required to complete a D.D.S./D.M.D. program with advanced standing and successfully pass the National Board Dental Examination (NBDE) administered by the American Dental Association via the Joint Commission on National Dental Examinations (JCNDE) prior to receiving dental licensure. These names of the U.S. programs vary from school to school, including the Program for Advanced Standing Students (PASS), Advanced Standing Program for International Dentists (ASPID), International Student Program (ISP), Dental International Program (DIP), Advanced Placement Program (APP), Internationally Trained Dentist Program (ITDP), Postdoctoral International Dental Program (PIDP), International Degree Program (IDP), Professional Program for International Dentists (PPID), International Dental Education Program (IDEP), and International Dental Studies (IDS) program. This purpose of this article is to describe the various types of programs geared at educating foreign-trained dentists in Canada and the United States. This report compares these programs based on their history, their requirements, and their components.

Methodology

Data were gathered through qualitative and quantitative resources. This process required accessing websites for each of the programs and direct contact with the program coordinators at various educational institutions. The variables of most interest to the study were inception date, program name, type of program, program length, program costs, number of positions available, and whether a degree or certificate is awarded. Ethical approval was granted for this study by the University of Manitoba Research and Ethics Board. Eleven out of thirty-two U.S. schools and all seven Canadian schools with programs for foreign-trained dentists were reviewed.

History of Internationally Trained Dentist Programs

Programs in Canada

The National Dental Examining Board (NDEB) of Canada was founded in 1952 to “establish and maintain qualifying conditions for a national standard of competence for dentistry in Canada, and to issue a certificate to those dentists who met the standard.” From 1971 to 1993 dental graduates of undergraduate dental programs accredited by the Commission on Dental Accreditation of Canada (CDAC) obtained licensure and certification on the sole basis of graduating from an accredited program. Foreign-trained graduates of dental programs not accredited by the CDAC and U.S. graduates did not receive automatic licensure. U.S. graduates and foreign-trained dentists were required to complete and successfully meet the criteria of an NDEB written examination and a three-part clinical examination. Changes to the certification process of the NDEB in 1994 resulted in all graduates of accredited programs being required to successfully complete an NDEB written exam and OSCE (Figure 1). Graduates of all other programs, whether U.S. or international, were required to successfully complete an NDEB written exam and three-part clinical exam (Figure 1). As seen in Figure 2, changes to the NDEB certification required all graduates of nonaccredited dental programs to obtain licensure by one of two routes: either to successfully pass the NDEB written and three-phase clinical exams or to complete an accredited two-year QP and then pass the NDEB written exam and OSCE. However, effective December 31, 1999 (Figure 3), the NDEB discontinued the written and three-phase clinical exams. This change required all foreign-trained dental graduates of nonaccredited dental programs to complete a QP, IDAPP, ITDP, IDDCP, or IDDP to be eligible for dental certification and licensure in Canada.

In Quebec, the Ordre des Dentistes du Quebec (ODQ) has separate requirements for foreign-trained
Figure 1. The National Dental Examining Board of Canada certification process from 1994 to 1996

Figure 2. The National Dental Examining Board of Canada certification process, 1996–99

Figure 3. The National Dental Examining Board of Canada certification process after 2000

dental graduates of nonaccredited dental programs. Foreign-trained dentists can apply to the ODQ for a permit to practice dentistry only in the province of Quebec. To obtain a permit, foreign-trained dentists must apply to the Examination and Accreditation Committee of the ODQ for recognition of their dental diploma and training equivalence, pass all written and clinical components of the ODQ Equivalency Test, have a working knowledge of French in accordance with the Charter of the French Language, and successfully pass the NDEB Part I and II exam.18

Programs in the United States

U.S. dental schools created undergraduate modified dental programs/degrees for graduates of foreign dental schools in the 1970s and 1980s. Programs were developed such as the Program for Advanced Standing Students (PASS) in 1986 to accommodate the growing need for licensure of foreign-trained dentists.19 Currently, there are thirty-two U.S. dental schools that offer education programs for foreign-trained dentists.15,20,21

Advanced standing programs were developed in response to most states’ changing their licensure criteria in the late 1970s. Similar to the process with Canada’s Accreditation Council, the individual state licensing bodies in the United States require all foreign-trained dentists to obtain a degree from a dental school accredited by the Commission on Dental Accreditation (CODA).15 Advanced standing programs allow foreign-trained dentists to be admitted into specific dental schools at either the second or third year of the program. In these programs, foreign-trained dentists receive credit for previous educational experiences in their nonaccredited foreign dental school.21

In addition to the advanced standing programs, some U.S. dental schools have developed international dentist programs (IDPs). Schools have assigned many different names to these programs, including the International Dental Education Program or International Dental Studies programs.20,22 Currently, there are fifteen IDPs at U.S. dental schools.21 Some programs run completely separate from the regular-stream dental education programs, whereas other programs integrate students into the junior- and senior-year dental curriculum. The IDPs admit foreign-trained dentists into their programs depending upon the school’s locally developed selection criteria for internationally educated students who already hold a dental degree.20,21 These admissions criteria can vary from school to school. However, in most schools, admission into the program is based on performance scores of the National Dental Board Examination (NDBE) Parts I and II, TOEFL scores, a personal interview, letters of reference, a psychomotor skills test, and the performance ratings in the applicant’s previous dental school.21,23 The purpose of the IDP is to ensure that the foreign-trained dentist receives the same knowledge and skills as dental graduates of U.S.-accredited programs and to familiarize foreign-trained dentists with the delivery of oral health care in the United States. The educational program includes procedures and techniques taught and utilized by U.S. dentists, U.S. standards of oral health care, and characteristics of the oral health care needs of U.S. citizens.21

Most of the IDPs grant either a D.D.S. (Doctor of Dental Surgery) or D.M.D. (Doctor of Dental Medicine) degree. However, some of the programs may only grant a certificate of completion. Unlike a D.D.S. or D.M.D. degree, the certificate of completion may only satisfy the state licensure eligibility requirements in the state where the program is located.20,21

Meeting Licensure Requirements in Canada and the United States

The decision to institute a requirement to complete an Advanced Standing, IDP, QP, or degree completion program prior to licensure in Canada and the United States was mandated in order to protect the public. It was deemed necessary to ensure that foreign-trained dentists were adequately trained to meet Canadian/U.S. standards.24 The World Dental Federation (Federation Dentaire Internationale, FDI) has conceded that at this time it is premature to claim that dental education programs worldwide have equivalent standards. The FDI supports the right of professional organizations to withhold the diplomas of dentists whose training and experience is of a lesser quality.6 A 1996 study by the NDEB of Canada found that graduates from accredited Canadian and U.S. dental programs performed significantly better on a written examination than did their counterparts from international programs.7 The differences in written exam mean scores of graduates of Canadian and U.S. programs as compared to graduates of international programs were statistically
significant. There was a large difference in overall mean scores of 8 to 15 percent. However, more significant is the passing rates on the national written examination between the two groups. The passing rate of graduates of Canadian and U.S. schools was 93 to 100 percent, whereas graduates of international programs had a 47 to 68 percent passing rate. It has been argued that the ability to pass an examination is at best a crude measure of medical competence and that it is the quality of the educational experience that is most significant. For these reasons, the NDEB of Canada has phased out the process by which foreign-trained dentists can obtain licensure through a four-part written and clinical examination and, as of 2000, requires these individuals to complete a two-year qualifying or degree program at an accredited school. These changes in certification processes have resulted in dental schools’ developing new programs to educate foreign-trained dentists. The goal of these programs is to ensure that foreign-trained dentists reach a level of competence that is comparable to students enrolled in a traditional four-year dental degree program.

The CDAC, NDEB, and the Association for Canadian Faculties of Dentistry (ACFD) were involved in the creation of QPs, IDAPPs, IDDCPs, ITDPs, and IDDPs. Thus, foreign-trained dental graduates from nonaccredited schools must complete any of these programs at a Canadian school of dentistry to be allowed to take the NDEB exam and the OSCE, a station type examination that candidates must take. The OSCE requires candidates to answer clinical questions with regards to information supplied at the particular station. This can include any of the following: a case history, photographs, radiographs, dental casts, and models. Each station requires the candidate to answer an extended match type question with up to fifteen answer options. Both regular stream dental graduates and QP, IDAPP, IDDCP, ITDP, or IDDP graduates are required to successfully pass the NDBE written exam and the OSCE to receive licensure in Canada.

Similar to Canada, licensure in the United States involves many agencies with responsibilities for education and licensure issues. In addition to the individual school of dentistry, the American Dental Association (ADA), Council of Dental Education and Licensure (CDEL), Commission on Dental Accreditation (CODA), Joint Commission on National Dental Examinations (JCNEDE), and state licensing bodies are all involved in dental licensure. Specific dental licensure requirements vary among jurisdictions and states; however, all jurisdictions have three mandatory requirements: education from a CODA-accredited dental school and achieving satisfactory scores on a written examination and a clinical examination. The NBDE Parts I and II are used by some states to fulfill or partially fulfill the written examination component of licensure requirements. However, some states have a separate written examination to fulfill their written examination requirement. The clinical examination requirement is fulfilled by regional testing agencies, which contract with the state boards of dentistry to create and administer the clinical examination component required for licensure in the particular state. Following graduating from an accredited dental school, regular stream dental graduates and advanced standing and IDP graduates are required to successfully pass the written and clinical requirements for the particular state in order to gain licensure in the United States.

### Current Programs for Internationally Trained Dentists

Table 1 shows the individual program statistics for each university in Canada. The main difference between the types of Canadian programs is whether it grants a certificate or a degree. The QPs and ITDPs grant their foreign-trained dentists a certificate of qualification in dentistry. Upon successful completion of the QP or ITDP and the NDEB examinations, the foreign-trained dentist is eligible for licensure in all the provinces of Canada. However, the advanced standing IDAPPs, IDDCPs, or IDDPs grant the foreign-trained dentist a D.M.D. (Doctor of Dental Medicine) or D.D.S. (Doctor of Dental Surgery) degree. Upon successful completion of the advanced standing program and the NDEB examinations, the foreign-trained dentist is eligible for licensure in all the provinces of Canada as well as the United States. As of 2006, the Canadian QP and ITDP are no longer recognized by the ADA and the U.S. licensing jurisdictions as meeting U.S. educational qualifications. Thus, QP and ITDP graduates are unable to obtain licensure in the United States, whereas IDAPP, IDDCP, or IDDP graduates can obtain licensure in the United States upon suc-
Successful completion of the NDBE Parts I and II as well as relevant state licensing exam.\(^{21}\)

### Qualifying Programs in Canada

Currently, two dental schools in Canada offer QPs. The University of Toronto created a QP that commenced in 1999 and continued until May 2007, when it was replaced with an IDAPP.\(^{13,30}\) While it operated, Toronto’s QP accepted between twenty-five and twenty-nine students per year, for a total number of 163 graduates, and ran separate from the regular student program.

The universities of Dalhousie and Western Ontario continue to offer QPs leading to a certificate. In 1998, the University of Dalhousie QP had its first incoming QP class of seven foreign-trained dental students. Dalhousie’s program accepts between seven and nine students per year into its two-year QP.\(^{9,32}\) The University of Western Ontario’s first incoming class was in 1997 with seven students. Called the Internationally Trained Dental Program (ITDP), it accepts between seven and twelve students per year.\(^{38}\) Since 2003, this ITDP has created twelve positions for internationally trained dentists. Since its inception, the program has successfully graduated eighty-five students who earned a QP certificate.\(^{38}\)

### Advanced Standing Programs in Canada

There are currently five advanced standing programs—at the Universities of Alberta, British Columbia, Manitoba, McGill, and Toronto—which award the D.D.S. or D.M.D. degree.\(^{20,39}\) The demographics of these programs are compared in Table 1.\(^{9,12-14,30-37}\)

<table>
<thead>
<tr>
<th>University</th>
<th>Type of program</th>
<th>Year of inception</th>
<th>Number of applicants accepted per year</th>
<th>Number of successful graduates of program</th>
<th>Degree/certificate awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dalhousie University</td>
<td>QP</td>
<td>1998</td>
<td>7–9</td>
<td>59</td>
<td>D.D.S.</td>
</tr>
<tr>
<td>University of Alberta</td>
<td>APP</td>
<td>2000</td>
<td>3–7</td>
<td>22</td>
<td>D.D.S.</td>
</tr>
<tr>
<td>University of Toronto</td>
<td>QP/IDAPP</td>
<td>1999</td>
<td>25–29</td>
<td>163</td>
<td>QPC/D.D.S.</td>
</tr>
<tr>
<td>University of Manitoba</td>
<td>IDDP</td>
<td>2003</td>
<td>7–12</td>
<td>8</td>
<td>D.M.D.</td>
</tr>
<tr>
<td>University of Western Ontario</td>
<td>ITDP</td>
<td>1997</td>
<td>4–7</td>
<td>21</td>
<td>QPC</td>
</tr>
<tr>
<td>University of British Columbia</td>
<td>IDDCP</td>
<td>2000</td>
<td>10–15</td>
<td>72</td>
<td>D.M.D.</td>
</tr>
<tr>
<td>McGill University</td>
<td>ASP</td>
<td>2002</td>
<td>2–3</td>
<td>8</td>
<td>D.M.D.</td>
</tr>
</tbody>
</table>

System (IELTS) or Internet-based TOEFL, autobiographical sketch, clinical dental work experience, and academic credentials. This was followed by an invitation to twenty applicants to participate in an on-site assessment. The on-site testing included psychomotor skills assessment (tooth preparations and placements of restorations on mannequin models of teeth), an OSCE, and a personal interview that addressed the educational aspects of the candidate’s program as well as his or her previous dental work experience. The ability to communicate effectively in the English language was also assessed. This program accepts four to seven candidates per year, and twenty-one international dentists have now graduated with an D.M.D. degree.

The International Dentist Advanced Placement Program (IDAPP) at the University of Toronto is different from the QP it replaced in that it accepts international dentists to join the regular stream third-year dental class, continuing into the fourth-year class. This allows for the IDAPP students to be granted a D.D.S. degree following graduation from the program. In March 2007, twenty-nine students gained admission to the new advanced placement program.

Criteria for Selection and Focus of QP and Advanced Standing Programs

Although these programs have differences in selection criteria, numbers of foreign dentists admitted per year, and tuition costs, they have some similarities. First, all programs require the candidate to be a graduate of a minimum four-year university dental program that is not recognized by the CDAC. Second, each candidate must successfully complete the ACFD eligibility examination within two years of application. The ACFD eligibility examination is used as a preliminary indicator in assessing foreign-trained dentists’ academic knowledge of the biomedical and clinical sciences. Third, all applicants are required to be proficient in both written and spoken English. Applicants whose first language is other than English must submit proof of English proficiency marks obtained in one of the following tests of English: Test of English as a Foreign Language Problem-Based Test (TOEFL PBT), Test of English as a Foreign Language Computer-Based Test (TOEFL CBT), Test of English as a Foreign Language Internet-Based Test (TOEFL IBT), International English Language Testing System (IELTS), Michigan English Language Assessment Battery (MELAB), or Certificate of Proficiency in English (COPE).

Each of the programs can accept from two to twenty-nine foreign-trained dentists per year. This number varies across Canadian dental faculties due to infrastructure constraints in the preclinical laboratories, lecture halls, and faculty clinic units. Human resources also limit the numbers of applicants accepted. These programs require more dental instructors and support staff, which includes dental assistants, receptionists, and administrative personnel to run a program to its full capacity. In some programs, foreign-trained dentists are integrated into the third- and fourth-year dental curricula along with the regular stream dental students. Programs taking this approach are the Universities of Manitoba, British Columbia, McGill, and Dalhousie. The other approach does not integrate the foreign-trained dentists with the regular stream dental students, but rather tailors the program to meet the entry-level curricular and clinical needs of the foreign-trained dental candidates. The University of Western Ontario maintains a separate program in order to focus on the specific learning needs of its foreign and national (regular stream) students. This is also the approach taken by the former IDAP at the University of Toronto.

The University of Manitoba provides an example of how a program integrates the foreign-trained dentists into its regular program. Upon acceptance into the University of Manitoba IDDP, the students attend a seven-week intense summer program that includes lectures, laboratory, and clinical exposure to the various dental disciplines, designed to ensure the students are calibrated to have the same background experiences as the regular stream students. Following the summer session, the students are integrated into the incoming third-year regular stream dental program. These students have the same clinical, externship, internship, laboratory, and written curricular components as the regular stream dental students in third and fourth years. Upon satisfactory completion of the third and fourth years of the dental program, the foreign-trained students are awarded the Doctor of Dental Medicine degree (D.M.D) at the annual convocation.

Program Costs

The costs associated with the QP, IDAP, ITDP, IDDCP, and IDDP vary across schools. In addition to costs associated with the programs, the number
of positions for foreign-trained dentists also plays a role in one’s decision to apply to a specific faculty. Table 2 presents a summary of the costs of attending these programs. Total costs associated with application fees, tuition, and kit fees range from $88,350.00 to $141,415.62 (CDN). The Dalhousie University program has the lowest cost in Canada, whereas the highest is at the University of British Columbia. Note that the costs do not factor in the cost of living, which is significantly different at the larger metropolitan schools such as the Universities of British Columbia and Toronto. Furthermore, traveling and relocation expenses must be factored into the total costs.

Comparing the cost of the international programs to the cost of a regular four-year Canadian dental degree program reveals some interesting differences. As seen in Table 3, the total costs associated with Canadian four-year dental degree programs range from $88,156.00 to $198,301.65 (CDN). Therefore, if one compares the international degree programs and QPs with the regular dental degree program at the same university, there is a significant discrepancy in fees, as shown in Table 4. The largest fee difference between a QP/advanced standing degree program and a regular four-year dental degree is at the University of Alberta, with the advanced standing degree program fee $18,968.76 higher. On the other end of the spectrum is the IDDCP at the University of British Columbia, which is $56,886.03 less than a four-year regular degree program. It is even more interesting that Dalhousie University has a difference of $194.00 (CDN) between the QP and the regular four-year dental degree program.

### Current U.S. Programs for Internationally Trained Dentists

The costs associated with U.S. advanced standing and international dentist programs are much...
Table 3. A comparison of D.M.D./D.D.S. regular program fees (in Canadian dollars) at Canadian dental faculties

<table>
<thead>
<tr>
<th></th>
<th>University of Saskatchewan</th>
<th>University of British Columbia</th>
<th>University of Western Ontario</th>
<th>University of Toronto</th>
<th>Dalhousie University</th>
<th>University of Alberta</th>
<th>University of Manitoba</th>
<th>McGill University</th>
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<tbody>
<tr>
<td>Tuition, 1st year</td>
<td>$32,000.00</td>
<td>$14,857.00</td>
<td>$32,912.72</td>
<td>$22,612.00</td>
<td>$14,074.00</td>
<td>$17,761.56</td>
<td>$13,395.00</td>
<td>$11,473.92</td>
</tr>
<tr>
<td>Tuition, 2nd year</td>
<td>$32,000.00</td>
<td>$15,154.99</td>
<td>$32,414.72</td>
<td>$18,668.00</td>
<td>$14,074.00</td>
<td>$17,761.56</td>
<td>$13,278.00</td>
<td>$12,011.76</td>
</tr>
<tr>
<td>Tuition, 3rd year</td>
<td>$32,000.00</td>
<td>$15,458.09</td>
<td>$25,411.72</td>
<td>$18,668.00</td>
<td>$10,000.00</td>
<td>$17,761.56</td>
<td>$13,278.00</td>
<td>$9,143.28</td>
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<tr>
<td>Tuition, 4th year</td>
<td>$32,000.00</td>
<td>$15,767.25</td>
<td>$21,316.72</td>
<td>$18,668.00</td>
<td>$10,000.00</td>
<td>$15,305.16</td>
<td>$13,278.00</td>
<td>$6,095.52</td>
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<td>Instruments, 1st year</td>
<td>$4,187.00</td>
<td>$6,375.00</td>
<td>$10,195.00</td>
<td>$10,000.00</td>
<td>$10,000.00</td>
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<td>Instruments, 2nd year</td>
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<td>$5,650.00</td>
<td>$8,895.00</td>
<td>$5,317.00</td>
<td>$5,317.00</td>
<td>$11,312.00</td>
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<td>Instruments, 3rd year</td>
<td>$1,050.00</td>
<td>$4,584.00</td>
<td>$6,495.00</td>
<td>$3,511.00</td>
<td>$5,543.00</td>
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<tr>
<td>Instruments, 4th year</td>
<td>$600.00</td>
<td>$2,327.00</td>
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<td>$7,000.00</td>
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<td>$25,220.67</td>
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<td>Clinic fees, 4th year</td>
<td>$25,725.08</td>
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<td>Student/additional fees, 1st year</td>
<td>$3,473.00</td>
<td>$11,741.83</td>
<td>$2,534.00</td>
<td>$903.22</td>
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<td>$1,370.00</td>
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<td>$2,011.10</td>
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<td>$9,131.58</td>
<td>$1,815.00</td>
<td>$903.22</td>
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<td>$1,270.00</td>
<td>$1,612.28</td>
<td>$1,617.10</td>
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<tr>
<td>Student/additional fees, 3rd year</td>
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<td>$7,476.22</td>
<td>$1,815.00</td>
<td>$903.22</td>
<td>$845.00</td>
<td>$1,270.00</td>
<td>$1,612.28</td>
<td>$1,617.10</td>
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<tr>
<td>Student/additional fees, 4th year</td>
<td>$1,145.00</td>
<td>$8,500.64</td>
<td>$4,865.00</td>
<td>$903.22</td>
<td>$845.00</td>
<td>$1,170.00</td>
<td>$1,612.28</td>
<td>$1,369.70</td>
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<tr>
<td>Total (CDN)</td>
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<td>$198,301.65</td>
<td>$123,084.88</td>
<td>$101,184.88</td>
<td>$88,156.00</td>
<td>$95,579.24</td>
<td>$90,416.00</td>
<td>$101,639.48</td>
</tr>
</tbody>
</table>

The recreation of foreign-trained dentistry has additional benefits to society besides an increase in the overall number of dentists. The PASS program has graduated who deliver care to various ethnic groups. The experiences of the University of Pennsylvania have been that demand for this program is significant, with only 4 percent of the applicant pool being accepted into the Program for Advanced Standing Studies (PASS). The experiences of the University of Pennsylvania have been that foreign-trained dentists differ from regular four-year dental students in terms of cultural values and previous life experiences, both professionally and personally, and that most of them are older with families. It has been hypothesized that the cultural influences can have a significant bearing on a foreign-trained dentist's ability to cope in a U.S. dental school environment.

Studies have shown that the academic performance of international students is affected by such factors as psychological adjustment, assimilation into a new environment, and social-cultural adjustment into the practice of dentistry in combination with learning to adapt to cultural differences.

Table 5 presents a listing of international dentist programs available at a select number of U.S. dental schools. There is a range of total costs associated with application fees, tuition, and kit fees for these programs. Additionally, the total length of the program ranges from two to three years—although only one program, New York University, has a three-year program. The range of costs has been estimated from $90,835 to $170,516 (CDN). This is much higher than the Canadian programs, with the exception of the University of British Columbia, where the total tuition is $141,415.62 (CDN). Furthermore, one must factor into the final tabulation the cost of living for approximately two years in the city of the program. Finally, traveling and relocation expenses must also be factored into the total costs. The number of positions in each U.S. program also varies from school to school. There is a range from ten to twenty-four students. Some schools do not list their fees or number of positions available for foreign-trained dentists on their websites.

Table 4. Differences in degree program and QP fees versus regular four-year degree student fees at Canadian universities

<table>
<thead>
<tr>
<th>University of Alberta</th>
<th>University of British Columbia</th>
<th>Dalhousie University</th>
<th>University of Manitoba</th>
<th>University of Toronto</th>
<th>University of Western Ontario</th>
<th>McGill University</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree program/QP cost</td>
<td>$114,548.00</td>
<td>$141,415.62</td>
<td>$88,350.00</td>
<td>$101,243.00</td>
<td>$105,953.00</td>
<td>$91,873.45</td>
</tr>
<tr>
<td>Four-year dental degree cost</td>
<td>$95,579.24</td>
<td>$198,301.65</td>
<td>$88,156.00</td>
<td>$90,416.00</td>
<td>$101,184.88</td>
<td>$123,084.88</td>
</tr>
<tr>
<td>Net difference between programs</td>
<td>+$18,968.76</td>
<td>-$56,886.03</td>
<td>+$194.00</td>
<td>-$10,827.00</td>
<td>+$4,768.12</td>
<td>-$31,211.43</td>
</tr>
</tbody>
</table>

Table 5. A comparison of select advanced standing or international dentist programs in the United States

<table>
<thead>
<tr>
<th>University</th>
<th>Length of program (years)</th>
<th>Application fee (USD)</th>
<th>Tuition, 1st year (+ kit) USD</th>
<th>Tuition, 2nd year (+ kit) USD</th>
<th>Tuition, 3rd year (+ kit) USD</th>
<th>Total costs: application + tuition (USD)</th>
<th>Total costs in CDN dollars</th>
<th>Number of students accepted/year</th>
<th>Type of program</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York University</td>
<td>3</td>
<td>$75.00</td>
<td>$48,625.00</td>
<td>$48,625.00</td>
<td>$48,625.00</td>
<td>$145,875.00</td>
<td>$154,333.00</td>
<td>110</td>
<td>APP</td>
</tr>
<tr>
<td>Tufts University</td>
<td>2 yrs + 3 months</td>
<td>$75.00</td>
<td>$27,500.00</td>
<td>$52,601.00</td>
<td>$52,201.00</td>
<td>$132,302.00</td>
<td>$140,001.00</td>
<td>14-15</td>
<td>DISP</td>
</tr>
<tr>
<td>University of Colorado</td>
<td>2</td>
<td>$175.00</td>
<td>$58,600.00</td>
<td>$53,000.00</td>
<td>n/a</td>
<td>$111,600.00</td>
<td>$118,095.00</td>
<td>Not listed</td>
<td>ISP</td>
</tr>
<tr>
<td>Loma Linda University</td>
<td>2</td>
<td>$195.00</td>
<td>$44,842.00</td>
<td>$43,720.00</td>
<td>n/a</td>
<td>$88,562.00</td>
<td>$93,716.00</td>
<td>Not listed</td>
<td>IDP</td>
</tr>
<tr>
<td>University of Pittsburgh</td>
<td>2</td>
<td>$50.00</td>
<td>$46,831.00</td>
<td>$41,275.00</td>
<td>n/a</td>
<td>$88,106.00</td>
<td>$93,233.00</td>
<td>10</td>
<td>ASP</td>
</tr>
<tr>
<td>University of the Pacific</td>
<td>2</td>
<td>$75.00</td>
<td>$87,998.00</td>
<td>$73,140.00</td>
<td>n/a</td>
<td>$161,138.00</td>
<td>$170,516.00</td>
<td>Not listed</td>
<td>IDS</td>
</tr>
<tr>
<td>University of Florida, San Francisco</td>
<td>2</td>
<td>$30.00</td>
<td>$42,920.00</td>
<td>$42,920.00</td>
<td>n/a</td>
<td>$85,840.00</td>
<td>$90,835.00</td>
<td>12</td>
<td>IEDP</td>
</tr>
<tr>
<td>University of Illinois at Chicago</td>
<td>2</td>
<td>$150.00</td>
<td>$80,732.00</td>
<td>$57,240.00</td>
<td>n/a</td>
<td>$137,972.00</td>
<td>$146,001.00</td>
<td>24</td>
<td>PPID</td>
</tr>
<tr>
<td>University of Texas at San Antonio</td>
<td>2</td>
<td>$0</td>
<td>$62,525.00</td>
<td>$60,325.00</td>
<td>n/a</td>
<td>$122,850.00</td>
<td>$130,000.00</td>
<td>10</td>
<td>ASP</td>
</tr>
<tr>
<td>University of Illinois at Chicago</td>
<td>2</td>
<td>$150.00</td>
<td>$70,261.00</td>
<td>$68,827.00</td>
<td>n/a</td>
<td>$139,088.00</td>
<td>$147,183.00</td>
<td>24</td>
<td>IDDP</td>
</tr>
<tr>
<td>University of Minnesota</td>
<td>2</td>
<td>$100.00</td>
<td>$83,000.00</td>
<td>$66,000.00</td>
<td>n/a</td>
<td>$159,000.00</td>
<td>$164,000.00</td>
<td>10</td>
<td>PASS</td>
</tr>
</tbody>
</table>

survey conducted by the Pennsylvania PASS program found that graduating students generally have a positive experience. However, some PASS graduates had concerns that students in the regular four-year program are only superficially friendly to them and that faculty do not understand their backgrounds as foreign dentists. There is no additional literature to further identify or explain other assimilation concerns and issues as related to the education of foreign-trained dentists in U.S. and Canadian dental schools.

Similarities and Differences Between U.S. and Canadian Programs

There are evident similarities and differences between programs for foreign-trained dentists in the two countries. In both, the demand for placement in programs is high, and admission processes are rigorous. Both countries require that applicants take a standardized test to evaluate their pre-existing biomedical and clinical dental knowledge: the NDBE Parts I and II in the United States, and the ACFD eligibility examination in Canada. Furthermore, both application processes require proficiency in written and spoken English, as evaluated by a TOEFL score or equivalent and/or a personal interview. Many universities’ selection processes also involve a psychomotor skill testing of their candidates, though some schools in both countries do not. The average total tuition for the advanced standing or international dentist programs in the selected United States universities is $131,628.45 (CDN). There is a range of tuition fees from $93,233 (CDN) (at the University of Pittsburgh) to $170,516 (CDN) (at the University of the Pacific). The Canadian degree programs and QPs’ average total tuition is $103,230.51 (CDN). In Canada, the range of fees (Table 3) is from $88,350 (CDN) (at Dalhousie University) to $141,415.62 (CDN) (at the University of British Columbia). The greater number of positions available for foreign-trained dentists in the U.S. programs and the higher average tuition for programs are the most significant differences between the Canadian and U.S. programs.

Dealing with Globalization

Dental schools in the United States have experienced an increase in demand for programs that prepare foreign-trained dentists for U.S. licensure. These demands are a direct result of globalization. Globalization includes increased mobility by specific world population segments, increased and accessible means of communication (Internet), changes to immigration policies in Canada and the United States, and increased financial incentives/incomes in developed nations. The increase of foreign-trained dentists in developing nations is not a new or unique phenomenon; there has been an increase in the training of all types of health professionals, including physicians, nurses, and pharmacists, in many nations. Many of these individuals, however, are seeking opportunities to practice in the United States, Canada, and the nations of Europe. This immigration phenomenon has been referred to as the “brain drain” from developing to developed nations.

Globalization has a significant impact on both developed and developing countries. The movement of highly skilled professionals to developed countries is the result of such factors as better postgraduate education and economic opportunities, access to advanced technology, higher salaries, and more opportunities for their children. Studies by the International Organization for Migration (IOM) have identified the following driving forces of the migration of health professionals. First, with the rise of the technological revolution and advanced communication technologies, advanced economies in developed countries turn towards developing countries for skilled workers. Secondly, developed countries have experienced a decrease in population and a dramatic increase in the elderly population. This has led to an increased dependence on the social services sector and foreign health care professionals. Thirdly, there is higher unemployment among post-secondary educated graduates in developing countries. This leads to the “brain drain” phenomenon in which skilled workers needed on the global market move to the areas where they will be able to work in the field of their primary interest rather than staying in their own country and experiencing underemployment (working only part-time or as a lower level provider or being forced to work in a different profession for lack of job opportunities in the field of primary training). Canada and the United States are benefiting from this phenomenon as more foreign-trained dentists are applying to programs to receive licensure to practice in these countries.

Medicine has accommodated this exodus of health professionals by adding more residency positions for international medical graduates and
streamlining the immigration process and medical training requirements to allow for direct entry of these international medical graduates into practicing hospitals and clinics. In the United States, foreign-trained medical graduates comprise between 23 and 28 percent of practicing physicians. In Canada, 17.6 percent of physicians are foreign-trained. In the United States, physicians from India (4.9 percent), the Philippines (2.1 percent), and Pakistan (1.2 percent) constitute the largest numbers of international medical graduates. In Canada, the United Kingdom (4.0 percent), South Africa (2.6 percent), and India (2.1 percent) represent the largest numbers of international medical graduates. In dentistry in the United States, the following countries were identified as the sources of the most foreign-trained dentists: India, the Philippines, Colombia, Egypt, and Syria. To date, there is no reported literature or other data on the number of foreign-trained dentists in Canada or their country of origin.

There are two primary reasons that underlie the need for qualifying programs or degree programs at Canadian dental faculties. First, there is an anticipated nationwide shortage of dentists, and these programs are required to meet the growing trends of immigration of health professionals to Canada and the United States. It has been hypothesized that, within the next five to ten years, there will be a shortage of dentists in Canada as a result of a large number of the baby-boomer dentists who will retire from dentistry between the years 2005 and 2010. Furthermore, more than 50 percent of dental students in Canadian universities are female. Thus, it has been predicted that there will be fewer full-time dentists because there is evidence that female dentists are more inclined towards part-time practice. Also noteworthy, female dentists have a shorter career length by fifteen years on average when compared to their male colleagues. The literature supports that women, on average, work slightly fewer weeks per year and fewer hours per week, are less likely to be practice owners, and are more likely to take a leave of absence for child rearing. Finally, the changes to the NDDB of Canada in 2000 resulted in a projected reduction of foreign-trained dentists in Canada by 30 to 40 percent each year.

**Future Research**

In 2008, there were seven Canadian and thirty-two U.S. programs for foreign-trained dentists. However, at the present time, there is no data to assess whether these programs are adequately preparing foreign-trained dentists for clinical practice in these countries. Secondly, there is limited data on the experiences of qualifying or advanced standing degree program students and how they deal with challenges during their education. When foreign-trained dentists relocate to Canada and the United States, making the transition into a dental community and practice requires more than just dental training. It also requires assisting these dentists to adapt to a different culture and, in many cases, a somewhat different way to practice dentistry. At the present time, the research literature is limited in documenting the extent to which these students make a successful transition into a new culture. Future research needs to focus on obtaining the following data: the total number of graduates from U.S. and Canadian qualifying or advanced standing programs, the numbers of graduates who stay in Canada and the United States, and the duration of practice in Canada and the United States. Finally, it is necessary to determine how well these graduates perceive their program assisted them in integrating into the professional community of dentistry.

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