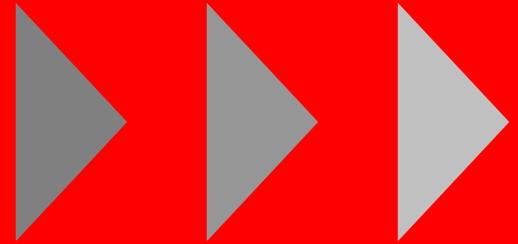




National Education Standards for the Orthotic and Prosthetic Profession in Canada



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Executive Summary

Orthotics Prosthetics Canada (OPC) is the national credentialing and regulatory body for the orthotic and prosthetic profession in Canada. OPC's mandate is to protect the public and advance the profession in all aspects. A critical function for OPC is the certification of clinicians who develop and implement treatment plans for their patients. As such, one of its core functions is to determine what the appropriate education standards and competencies are for the certification of clinicians in Canada.

Currently, there are four orthotic and prosthetic (O&P) education programs in Canada, two that are accredited by OPC, and two that are not. The two non-accredited programs are Quebec CEGEP college programs. The two accredited programs are post-graduate diploma programs offered through Canadian colleges. All four programs recognize that their O&P graduates are training at a higher level than the diploma they receive. One accredited program has begun the process of moving its program to a Master's level program. It is recognized that OPC, in collaboration with its education stakeholders, needs to establish national education standard(s) for the profession in Canada as three education levels are evolving.

Education standards for orthotics and prosthetics are in a dynamic state throughout the world. The US has recently moved to the Master's level as a pre-requisite to becoming certified. The International Society of Prosthetics and Orthotics recently published new education standards and the World Health Organization published "Standards for Orthotics and Prosthetics" at the end of 2018. OPC commissioned a third party to prepare a report entitled: *National Education Standards for the Orthotic and Prosthetic Profession in Canada* that contains a set of recommendations with respect to Canadian O&P education standards. The report includes information about the education standards, competencies and program accreditation requirements of the UK, Australia, and the USA as well as the international standards approved by the WHO and ISPO, and makes the following recommendations for the Canadian profession:

- 1 A Master's entry-level credential should be implemented for orthotists and prosthetists.
- 2 A plan should be developed and implemented with the aim of increasing the number of Orthotist/Prosthetist graduates and clinicians.
- 3 A plan should be developed and implemented with the aim of increasing the number of Orthotic and Prosthetic Technician education programs.
- 4 An Associate Orthotist/Prosthetist educational level should be established.
- 5 Supporting documents should be produced for each of the educational levels established.

The National Education Standards report establishes clear education standards for the profession and addresses the supply problem by identifying an additional professional level, and a business model, that can increase clinical capacity. The ISPO education standards recommend at a minimum, the following levels of training for their three professional levels:

- a two-year college diploma for Orthotic/Prosthetic Technicians;
- a three year college degree for Associate Orthotists/Prosthetists; and,
- a four year university degree level for the Orthotist/Prosthetist level.

The National Education Standards for the Orthotic and Prosthetic Profession in Canada report recommendations align with the ISPO education standards with one exception. A Master's level degree for the Orthotist/Prosthetist level is being recommended that better reflects the current education level for Orthotists/Prosthetists in Canada (already higher than the ISPO recommendations), to align with the WHO Prosthetic and Orthotic Standards and to better reflect the competencies needed for the Orthotist/Prosthetist level in Canada.

This creates clear and cohesive education streams that cater to the level an individual aspires to when accompanied by a well outlined laddering process from level to level. It is noted that discussions need to occur with all education stakeholders in Canada as well as with provincial and federal governments to ensure the recommendations make sense and can move forward. This business case presents the reasoning for pursuing the above recommendations.

1. The Strategic Context

Orthotics and Prosthetics is an internationally recognized profession that has been evolving in response to changes affecting the marketplace for O&P services. Accordingly, OPC's strategic direction has focussed on the growing need for O&P professionals with increased education and skills. OPC itself has evolved as the national professional organization representing orthotists and prosthetists nationwide. A number of drivers (see p.6 of this report) in recent years have given greater urgency for OPC to address the changing needs of the profession. It is expected that the recommendations contained in this document will enhance the profession and align it with the orthotics and prosthetics standards of leading nations worldwide.

1.1 Organizational Overview

Credentialing

Orthotics Prosthetics Canada (OPC) is the representative national organization that accredits and regulates the approximately 450 certified clinicians and 150 registered technicians in Canada. Its role is to protect the public and advance the profession through quality standards of practice, professional credentialing, continued education, advocacy, and regulation. The credentialing of professionals is a core mandate for OPC.

OPC policies currently require that in order to become certified, individuals must graduate from an OPC accredited orthotics and prosthetics (O&P) program, complete a two year residency under the supervision of a certified professional, and successfully challenge national written and practical board examinations. The certification pathway for orthotists and prosthetists is rigorous and ensures competent professionals are determining and rendering effective treatments to patients.

Accreditation

An important part of that mandate is the accreditation of O&P programs with each program undergoing the accreditation process every six years. Currently there are four O&P programs in Canada. Only two of the current programs are accredited by OPC. Therefore, only two of the four programs currently provide a pathway to clinician certification. The non-accredited programs in Quebec were accredited in the past.

Regulation

In Canada, with the exception of the province of Quebec, the O&P

O&P Programs in Canada

BCIT (British Columbia) – 2 year, post-graduate diploma program. Pre-requisite is a Bachelor of Science Degree or equivalent (kinesiology, engineering, biomechanics, etc.) – OPC Accredited

George Brown College (Ontario) – 2 year, post-graduate diploma program. Pre-requisite is a Bachelor of Science Degree or equivalent. – OPC accredited.

College Montmorency (Montreal) – 3 year diploma program. Pre-requisite is CEGEP graduate. Not OPC accredited.

College Merici (Quebec) – 3 year diploma program. Pre-Requisite is a CEGEP graduate. Not OPC accredited.

profession is not regulated by government statute, due to the small numbers of professionals in each province. OPC has exclusive right to title, through trademark protection of the credentials, but not exclusive rights to practice. Nonetheless, OPC-certified orthotists and prosthetists are recognized by provincial health departments, public and private payers, allied health professions and patients as legitimate and respected health professionals. Further, the majority of Canadian public and private payers require certification by OPC as a “Certified Orthotist” (CO), “Certified Prosthetist” (CP) or “Certified Prosthetist Orthotist” (CPO) as a condition for reimbursement claims. Only those individuals certified under OPC can use these professional titles and credentials in Canada.

1.2 Drivers for Change

There are a number of drivers that are moving the orthotics and prosthetics profession in recent years towards higher levels of education and experience.

Research & Evidence

Among them is the increasing need for evidence based practice which requires more clinicians trained in applied research methodologies. Therefore, professionals need to have well-developed skills in such things as critical thinking and problem solving, as well as the ability to better understand and participate in research activities. These skills, which are offered at the Master’s level, need to be built into the professional education.

Further, clinicians need to possess advanced skills in patient management, treatment planning, along with business acumen. This combination of higher order knowledge and skills are being taught by the schools that offer accredited orthotics and prosthetics programs.

International Education Standards

The profession is also being driven by the new orthotic and prosthetic standards promulgated by the International Society for Prosthetics and Orthotics and the World Health Organization which has recommended that orthotists and prosthetists be trained at the same education level as physiotherapists and occupational therapists. It is important to note that physiotherapists in Canada have been educated at the Master’s level since 2012. Further, the orthotics and prosthetics profession in the USA has already moved its O&P education to a Master’s level. In Canada, core competencies now support the entry into the professional health ranks via a Master’s degree program.

Supply of Professionals

There are also a number of supply-side drivers including the fact that a growing number of certified practitioners are nearing retirement. As such, there is a need to increase the number of orthotics and prosthetics professionals including certified clinicians, and technicians to replace those who are leaving, and to deal with the growing need for orthotic and prosthetic services due to the aging population, and other factors.

Technology

Technology is another driver, and the rapid changes that are taking place in health care along with an unprecedented growth in computer technology and material sciences are pressuring the profession to keep pace. As such, the knowledge and skills required by professionals is expanding and requires an educational level to match.

1.3 Strategic Fit

The recommendations to 1) Implement a Master entry-level credential for Orthotists/Prosthetists, 2) Increase the number of Orthotist/Prosthetist graduates/clinicians, 3) Increase the number of Orthotic/Prosthetic Technician education programs and 4) Implement an Associate Orthotist/Prosthetist educational level are appropriate to the OPC mandate and its stated strategic objectives of:

- Improving awareness of orthotic and prosthetic professionals and the understanding of their competencies and treatments
- Undertaking actions that maintain necessary standards and increase the number of credentialed professionals in the country and their capacity to practice
- Establishing leadership in the profession through the development of standards and guidelines to be consistently applied across the profession

1.4 Expected Results

The implementation of national education standards will result in enhanced care for individuals requiring orthotic and prosthetic rehabilitation. Never before has this been more important, as we see ever increasing numbers of Canadians with more complex challenges requiring assistance through orthotic and prosthetic care.

In particular, the implementation of the Master's degree will align Canadian orthotics and prosthetics professionals with the educational requirements of related professionals such as physiotherapists, occupational therapists, and pharmacists.

The introduction of a Master's degree for the orthotics and prosthetics profession may generate new opportunities for independent practice, planning, for the implementation of programs to meet specialized needs, and for the identification of new niche markets.

A Master's degree will also result in the achievement of increased professional credibility and autonomy that go hand-in-hand with higher educational training as evidenced by the observed outcomes for related health professions. With higher levels of education, the profession may be able to broaden its scope of practice allowing for the exploitation of new opportunities.

Moreover, the introduction of a Master's degree requirement will enhance the orthotics and prosthetics profession's educational process and help to ensure that Canada retains its status as a world leader in orthotics and prosthetics.

It is expected that the introduction of a Master's degree requirement will enhance the education process without adding significant additional burden. In particular, it is expected that it will likely not contribute to any lengthening of the academic pathway for the Orthotic/Prosthetic clinician, but instead will improve the quality and efficiency of the education being offered.

Increased efficiency and capacity may help to address the shortage of practitioners that the profession is now experiencing and will continue to face in the years ahead. It is recognized that there is an inadequate supply of O&P professionals to meet Canadian needs, and these needs will only increase as the population ages. By introducing a Master's degree requirement for orthotists and prosthetists it is expected that the profession will achieve a higher level of credibility thereby attracting more individuals to the certification program.

In addition to addressing the need for more highly qualified clinicians, it is expected that the requirement of a Master's degree will increase the pool of administrators, educators, and researchers for the future of the profession. It is also expected that the development of a new Associate educational level will create another option for applicants who are not accepted into the current clinical programs but who may not be ideal candidates for the technical program. The addition of the Associate educational level will provide an opportunity, and a way for institutions that do not offer a Master's level program to modify their current educational offerings and continue to graduate orthotics and prosthetics professionals with a new and important set of competencies.

With respect to internationally educated orthotics and prosthetics professionals, the addition of a Master's degree requirement along with the introduction of the Associate educational level, and a more streamlined process should help to increase the success rate of these applicants with respect to the credentialing process, and help to increase the number of Canadian and foreign-trained professionals.

2.0 Detailed Description of the Need

OPC needs to address a number of challenges facing the O&P profession in order to ensure that it meets the growing needs of stakeholders by providing an adequate supply of highly qualified clinicians and technicians nationwide. There are a series of problems that need to be solved, and some risks to take into consideration when developing and implementing solutions. In particular, there is a need for national education standards that will raise the competency level of O&P professionals coast-to-coast and put them on par with other first-tier countries worldwide. There is also a need to increase the supply of clinicians, and technicians to meet the growing needs of Canadians.

2.1 Key Problem Areas

National Education Standards

In Canada, education systems vary by province and there is no national framework. While each province has the capacity to offer Bachelor level education, at this time, Canada's accredited Orthotist/Prosthetist programs are two-year programs at the postgraduate diploma level. This is above the ISPO European Classifications Framework (EQF) Level 6 but below the EQF Level 7 required in the USA. (see Appendix A)

Given the current dynamic in education standards for O&P across the world, it is important that National Education Standards be established for Canada before pursuing the establishment of new O&P programs.

Master's Level

Until recently, Canada's diploma program had been a role model for orthotics and prosthetics educational programs around the world. However, Canada's O&P diploma programs are no longer in the vanguard. The educational requirements within the field of orthotics and prosthetics in Canada have fallen behind that of other industrialized nations in the past several years. For example, the American Board for Certification of Prosthetics and Orthotics does not always accept Canadian graduates into internship positions, although they welcome certified clinicians. At this time, accredited O&P programs currently offered in Canadian institutions are not at the Master's educational level, despite an equivalent level of education being provided currently. Further, some institutions such as colleges (in Ontario) cannot offer Master's level programs.

Quebec

The Quebec context poses a challenge for many Canadian health professions given its unique educational and regulatory contexts. If Quebec schools were accredited, its graduates would have a pathway to certification that would allow them to practice outside of Quebec. However, at this time the Quebec schools are not in compliance with the OPC accreditation standards, given the gap in education pre-requisites (Bachelor vs. CEGEP).

Supply

Demographic surveys of the orthotics and prosthetics profession in Canada have identified a significant and growing lack of professional supply to keep pace with stakeholder needs. By the World Health Organization's standards, Canada has a shortage of between one hundred and fifty and three hundred and thirty O&P clinicians. The WHO Standards suggest there should be fifteen to twenty orthotic and prosthetic clinicians per million of population. Currently, there are about eleven orthotic and prosthetic professionals in Canada per million of population and the gap is widening. The number of graduates from accredited schools preparing to enter the profession marginally offsets the number of individuals exiting the profession through retirements. Further, it is estimated that over two hundred current clinicians will retire within the next ten years.

Canada also has a potential shortage of six hundred and fifty O&P technicians to support the currently practising four hundred and fifty Canadian O&P clinicians.

Given the growing demand for orthotic and prosthetic treatments, ensuring an adequate supply of professionals is a high priority strategic objective for OPC and hastens the need for determining a national education standard for the profession. The recommendations of the National Education Standards for Orthotics and Prosthetics in Canada report identify the need for more technicians as well as establishing a second clinical level into the professional model. Establishing National Education Standards for all professional levels to meet the demands for orthotic and prosthetic care in Canada is a high priority, before proactive action can be implemented to address the supply shortage.

Meanwhile, in order to fill the demand gap, other professions have entered the field and begun treating patients in need of orthotic and prosthetic services, without adequate training. These developments could weaken the quality of services provided to patients in need of care and increase risk to the patient.

2.2 Challenges

The orthotics and prosthetics profession faces a number of education-related challenges that need to be overcome in order to implement a Master's degree requirement for Certified Orthotists and Certified Prosthetists. Among them, is the inability of accredited Canadian college programs in Ontario to grant Master's level degrees. In addition, there are concerns among stakeholders about the cost of funding a graduate program. The relatively small class size and significant capital and material costs of the current O&P program may not make buy-in by universities easy. Support for national educational standards for the profession nationwide will be necessary as a first step to moving to a Master's level O&P education. In this respect there is a need to demonstrate worth and value to institutional decision-makers.

Educational institutions would have to undertake significant steps to implement a Master's level program. Moving to a Master's level of education will depend on the availability of qualified faculty members to teach the program. There will be a need for more full-time faculty to increase the sizes of classes, and colleges will require at least a Master's level credential for full-time faculty. The requirement of a Master's degree for certified professionals could adversely impact those schools that cannot offer Master's level courses if increasing numbers of students pursue a Master's degree.

With respect to O&P students, they face the challenge of not having adequate and available evidence and research opportunities in the Canadian O&P field to meet the research needs of a Master's program. Nonetheless, the ability to offer a Master's level education for the orthotics and prosthetics profession exists in every province.

With respect to Québec, both schools that offer orthotics and prosthetics are at a college diploma level and have a large gap to jump to a Master's program; they would not be able to offer a Master's degree within the Quebec CEGEP college framework.

Another challenge is the lack of a mechanism to encourage provincial, federal and public awareness and support for the vision of the future of orthotics and prosthetics in Canada. Moreover, there is no government financial support to establish a contemporary curricular design at a national level. There is also a lack of documentation that provides a comprehensive overview with which students can be taught about the evolving and complex field of O&P.

Most education programs are not taught by individuals who possess an advanced degree or by individuals who possess formal training or instruction in either curriculum development or research methodology. Further, only a small number of individuals from within the profession have contributed to the profession's body of knowledge through research processes and advanced education.

There would also be some challenges with respect to implementing an Associate level orthotics and prosthetics program as recommended by the World Health Organization. While there is much guidance available from ISPO and the WHO with respect to models for competency profiles and accreditation standards for this occupational classification, there would need to be commitment and buy-in from all key stakeholders (including educational institutions and government) in order to ensure success.

The introduction of a new professional level into the existing practice model will present a challenge. While the benefits of added capacity and lower costs are valuable, Orthotist/Prosthetist clinicians must adjust current practices to realize the benefits. Currently many clinicians perform their own technical functions of design and fabrication as well as all aspects of patient interface and treatment planning. A new model would require clinicians to empower technicians and to open up roles for the Associate clinician to perform.

2.3 Potential Risks

There are also a number of risks associated with moving to a Master's level orthotics and prosthetics education requirement. In particular, there is the risk that tuition costs will increase. Further, the increased educational costs may not translate to increased compensation that would offset these costs. The increased education costs combined with remuneration that is not commensurate may dissuade individuals from considering the profession.

There is some risk that the higher educational requirement will lengthen the time to become certified. There is also a risk that important hands-on skills associated with orthotics and prosthetics could be lost when moving to a Master's level program. There is a risk that the path from technician to clinician would become more complicated or not available at all.

With respect to the supply-demand balance for O&P professionals, there is a risk that with larger class sizes the quality of education could be reduced. Further, there is a risk that there

could be a shortage of venues to accommodate the need for an increased number of O&P candidates to gain appropriate professional experience.

There is also a risk of creating an over-supply of O&P professionals as well as the risk of creating too many clinicians in proportion to the number of technicians or vice versa. Finally, there is the risk that the scope of practice of Associate clinicians will conflict with that of certified professionals.

3.0 Analysis and Rationale

The proposed recommendations are based on an analysis of the challenges faced by the profession over time. The rationale for adopting the recommendations is based on data collected by OPC from stakeholders over a period of ten years.

3.1 Implementation of Master's Degree

Orthotics Prosthetics Canada, in collaboration with its education stakeholders, needs to establish national education standard(s) for the profession that include a Master's degree as the minimum educational requirement in order to meet the credentialing requirement for orthotists and prosthetists.

The implementation of the Master's entry-level credential will raise the quality standards for the profession in Canada align it with the standards promulgated by the World Health Organization and formally align the education with the increasing demand for research, analytics and leadership skills.

There is a high level of agreement among stakeholders that moving to a Master's credential for the O&P profession makes sense. In 2007, the Canadian O&P community undertook a consensus meeting with stakeholders and it was determined at that time that a Master's degree was appropriate for the O&P education standard in Canada. This was informally recognized but was never formally adopted by the credentialing board at the time.

The curriculum of study for the proposed Master's level Prosthetics and Orthotics program is based upon a strong undergraduate education that provides a solid foundation of knowledge, methods and attitudes. Admission requirements to the existing Diploma in P&O include completion of a recognized baccalaureate degree.

With the exception of Quebec, almost all current students have a related undergraduate or postgraduate degree. A Master's degree program in orthotics and prosthetics would likely be built on the current educational model for orthotics and prosthetics practitioners.

While there are currently no Master's degree programs in orthotics and prosthetics, the online Masters of Rehabilitation Sciences program through McMaster University has been available to Canadian P&O students and certifees for several years. An undergraduate degree is required by

any Certificate applying to the program. There are research based, thesis Masters' programs, and course-based programs aimed at developing self-directed students who use critical thinking. The Master's level graduates are resulting in a different type of clinicians. Their skill sets go well beyond traditional lab instruction and include outcome-based training, document proficiency, and technology expertise. Further, they have an enhanced ability to practice the reflective nature of clinical decision-making and metacognition, the ability to analyze literature and evaluate best practice guidelines for clinical challenges, and they are familiar with objective measures to help formulate robust and sound justification of patient treatments.

As a result, patient care is enhanced through the use of current evidence on patient treatment options, the evaluation of clinically relevant sources of error in patient assessments, greater integration of contextual factors more likely to improve patient outcomes, and collaborative leadership in patient-centered care, among other things.

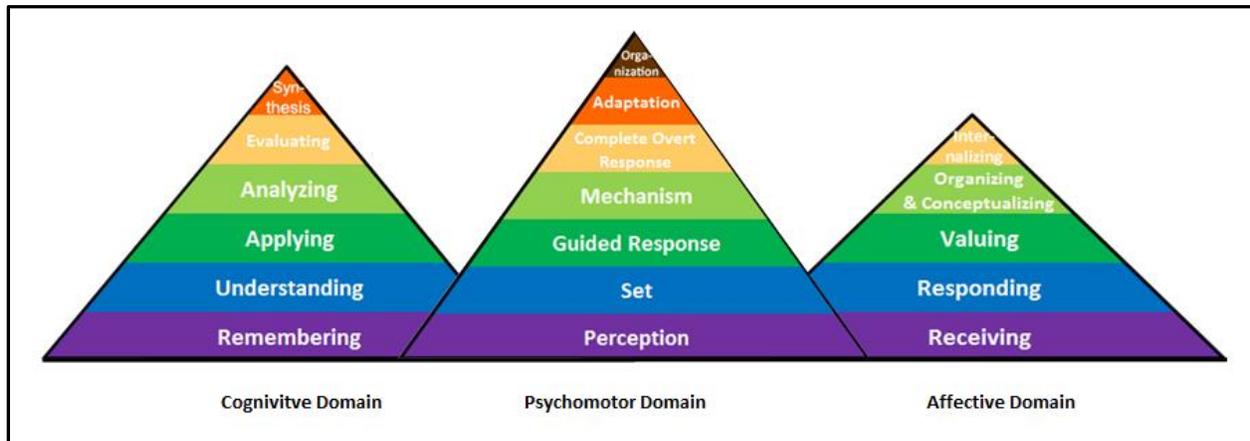
A modern day requirement of this training is the ability to deal with and make decisions that affect patient outcomes and ultimately their lives. Prosthetists and orthotists are members of an integrated health care team, which includes but is not limited to physicians, physiotherapists, occupational therapists and social workers, all of which hold Master's degrees or higher. Prosthetists and orthotists must remain fully involved collaborators with these and other members of the health care team.

The proposed post graduate education will ensure that the graduate has been exposed to the competencies required and is better equipped to make these high level decisions. Funding agencies within Canada give O&P practitioners freedom to develop treatment plans without a prescription requirement but demand detailed evidence and verified outcome measures before payment of claim. A requirement of such an environment is to ensure that practitioners are consumers of research at a level that implies understanding and application. Graduate level courses and graduate research projects ensure integration into a modern day health care environment.

The reasons for moving to a Master's degree requirement for the profession are many and include:

- To align Canadian O&P education with the education levels recommended by the World Health Organization
- To better align the educational credential of O&P programs in Canada with the level students are training at
- To align with O&P education standards in the USA
- To produce clinicians who have the knowledge and skills to better meet the needs of patients
- To strengthen evidence-based practice
- To enhance the critical reasoning skills of clinicians
- To achieve greater capacity to develop research methodologies

- To improve data collection
- To validate recognition of the profession



Master's Degree Areas of Knowledge¹

The orthotists and prosthetists currently practicing in Canada have been certified following an education that is beyond the Bachelor level. The current requirement is a Bachelor level plus a two year postgraduate diploma. Moving to a Master's entry-level would allow the profession in Canada to:

- Meet the WHO standard related to ensuring the same educational standard for physiotherapists, occupational therapists, and orthotists/prosthetists within a given jurisdiction
- Meet the WHO recommendation to encourage the development of orthotics and prosthetics education programs in institutions where physiotherapists and occupational therapists are trained at the Master's level, allowing for easier inter-professional education opportunities
- Retain equivalency of the educational credential between Canada and the US and support labour mobility between the two countries

The international standards promulgated through the International Society of Prosthetics and Orthotics (ISPO), call for an undergraduate degree in orthotics and prosthetics. The current O&P education standard in Canada (postgraduate diploma) already exceeds the ISPO standard for the Orthotist/Prosthetist professional category.

The proposed Master's credential would also be above what ISPO recommends. However, the Master's recommendation is justified by the WHO standards which suggest that the educational requirements of orthotists and prosthetists should correspond to those of physiotherapists and occupational therapists in the same jurisdiction. In Canada, physiotherapists and occupational therapists graduate at the Master's level and are regulated

¹ Jeffreys, Yvonne, C.O.(c), MSc, F.C.B.C and Schubert, Loren, CP(c), *A New Type of Clinician: Why Hire a Master's Level Graduate...*

in all provinces. Licensure for Canadian physiotherapy and occupational therapy graduates requires graduation from an accredited entry-level program and, in all jurisdictions except Quebec, successfully challenging the national physiotherapy or occupational therapy exam. Historically, the current O&P accredited programs have attracted university graduates of kinesiology, human kinetics, engineering and science programs. It is expected that this will continue to be the primary target audience. Research indicates that counselors at institutions of higher learning typically do not recommend post baccalaureate diploma programs, but rather direct high achievers towards Master's programs. It is anticipated that the Master's program in O&P will be more attractive to those students wishing to pursue graduate level education in the health care field.

The World Health Organization's guidance regarding the implementation of minimum standards for orthotics and prosthetics professionals suggests that:

- Orthotists and prosthetists (clinicians) be trained to at least the Bachelor level at a post-secondary institution, in similar fashion to physiotherapists and occupational therapists.
- Associate orthotists and prosthetists (also considered clinicians) should be trained at a post-secondary institution in alignment with vocational training programs. In Canada this would be similar to education at the technologist level.
- Orthotic and prosthetic technicians (considered non-clinicians) should have either experiential learning or training at a vocational post-secondary institution. In Canada this would be similar to education at the technician or assistant level.
- Training should follow the educational standards for orthotists and prosthetists, associates, and technicians published by ISPO.
- Professionals working in orthotics and prosthetics should be regulated in order to protect the public. Non-clinician technicians/assistants should be supervised by regulated orthotic and prosthetic clinicians, who have responsibility for client care and non-clinician conduct.

The WHO standards are minimum requirements that have been exceeded in many first-tier countries worldwide. In Canada, many members of the health care profession require a Master's degree for entry to practice, with a bachelor's degree being the norm. In the USA, the American Board for Certification of Prosthetics and Orthotics has raised the entry to practice level to a Master's degree. The O&P profession in Canada needs to enhance its certification requirements similarly.

3.2 Increasing the Number of Graduates/Clinicians

As previously mentioned, in order to meet stakeholder needs a country requires five to ten orthotic and prosthetic clinicians per million of population, with each clinician supported by at least two and up to five non-clinicians. As such, Orthotics Prosthetics Canada, in collaboration

with its stakeholders nationwide, needs to develop plan of action to ensure that there is an adequate supply of O&P professionals to meet the needs of Canadians. OPC should look for ways to advocate for additional seats in existing education programs and for the creation of new programs across Canada.

The adoption of a Master's degree requirement for entry to practice could help to increase the supply of clinicians. This is evidenced by the experience in the USA where the move from a Bachelor to a Master's level resulted in the opening of additional schools and an increased supply of O&P clinicians.

In order to grow the number of O&P graduates, the number of programs offered across Canada will need to increase. The need could also be met by attracting more internationally-educated O&P professionals. If the profession relies on internationally-educated applicants to address supply needs, or if the profession is looking to increase the number of these applicants to Canada, it will be important to identify the effect of moving to a Master's entry-level credential on that supply.

Also important to consider is the application process for those internationally-educated applicants: whether a Master entry-level degree would be required or whether a lower credential could be accepted along with proof of adequate experience and/or continuing education, similar to what is required from internationally-educated physiotherapists and occupational therapists.

The credentialing of internationally-educated O&P professionals is dependent upon how those professionals demonstrate the required competencies to practice in Canada. Therefore, having an entry-level competency profile will be highly important.

3.3 Increasing the Number of Technician Education Programs

Should the number of O&P clinicians increase through the measures described above, the need for technicians will grow proportionately. Increasing the number of practising RTPs, RTOs, and RTPOs should be a priority for OPC in order to address growing health human resources needs, and to best support currently practising clinicians.

Technician education programs should be at the two-year college level to align with ISPO educational standards. The current technician program in Canada is in alignment with this. In Canada, the sole two-year technician program is in alignment with the ISPO technician occupational classification at EQ Level 4 (see Appendix A). Additionally, O&P technicians can practice in Canada without being registered, and some practice without completing a formal education program and are trained on the job. Other educational institutions which offer PTA or OTA programs could be approached to offer technician level programs, again to maximize the opportunity of inter-professional education.

3.4 Implementing an Associate Orthotist/Prosthetist educational level

Orthotics Prosthetics Canada, in collaboration with its education stakeholders, needs to implement an Associate orthotist/prosthetist educational level as outlined by the World Health Organization in order to add clinical capacity, provide additional support to O&P clinicians, and better meet the needs of the patient population

The recommendation to implement an Associate orthotist/prosthetist educational level as outlined by the World Health Organization would add clinical capacity, provide additional support to O&P clinicians, and better meet the needs of Canadian stakeholders.

The WHO standards defines the Associate Orthotist/Prosthetist as a hands-on clinician with more training than a technician but short of the orthotist/prosthetist educational level that includes training in leadership and advanced methodologies.

The establishment of an Associate Orthotist/Prosthetist category should be considered given the Canadian educational environment for orthotists and prosthetists. Currently, there is no equivalent to the Associate Orthotist/Prosthetist in Canada. However, there is an opportunity to establish an Associate Orthotist/Prosthetist with a minimum three year entry-level education. This would be in line with “the training level aimed at general clinical service delivery” according to ISPO and create an educational level not currently in existence.

Many colleges offer courses which are recognized at the university level, making it possible for students to complete up to two years of college-level courses, and possibly three, and then transfer to a university for a final year, if necessary. In order to complete an education at the EQF Level 5 (see Appendix A), in alignment with ISPO’s occupational classification for Associate Orthotist/Prosthetist, a student with a two-year college diploma may have to transfer to a university to complete a three-year degree, if not offered at a College.

Alternatively, the Associate Orthotist/Prosthetist requirement could be established as a three-year college or university-level credential or some combination of the two such as the completion of a two-year college diploma and a final year in a university/institute of technology level program specific to O&P service delivery.

Currently, Quebec O&P educational programs appear to align between the levels of Orthotist/Prosthetist and Orthotic/Prosthetic Technician. The introduction of an Associate Orthotist/Prosthetist category as described above could make it possible for Quebec technology program graduates to qualify as Associate Orthotists/Prosthetists candidates thus opening up a new credentialing pathway and making it possible for these graduates to be credentialed to practice throughout the country.

3.5 Supporting Documents for Each of the Educational Levels Established

Orthotics Prosthetics Canada, in collaboration with education stakeholders nationwide, as well as with Provincial and Federal Governments, needs to create supporting documents for each of the educational levels it establishes. The implementation of national education standards for the orthotic and prosthetic profession including a Master's entry-level credential for Orthotists/Prosthetists and an Associate Orthotist/Prosthetist educational level would result in significant changes to the orthotics and prosthetics competencies, curricula, educational accreditation policies and procedures, and certification requirements. As such, it would be appropriate to review and update all supporting documentation to ensure that it is current and consistent across Canada, and that it is aligned with ISPO policies. The documents in question should include:

- Competency profiles
- Accreditation standards
- Curriculum guidelines
- Certification exams
- Foreign credential recognition policies and processes
- Certification paths including inter-category progression

among others, and will better support the profession and help to harmonize assessment practices between jurisdictions, promote enhanced labour mobility, and improve credential recognition for those holding international qualifications.

This would be in line with the vast majority of health professions in Canada which have developed and maintain supporting documents including national competency profiles that describe entry-to-practice expectations and requirements for new members.

4. Pros and Cons

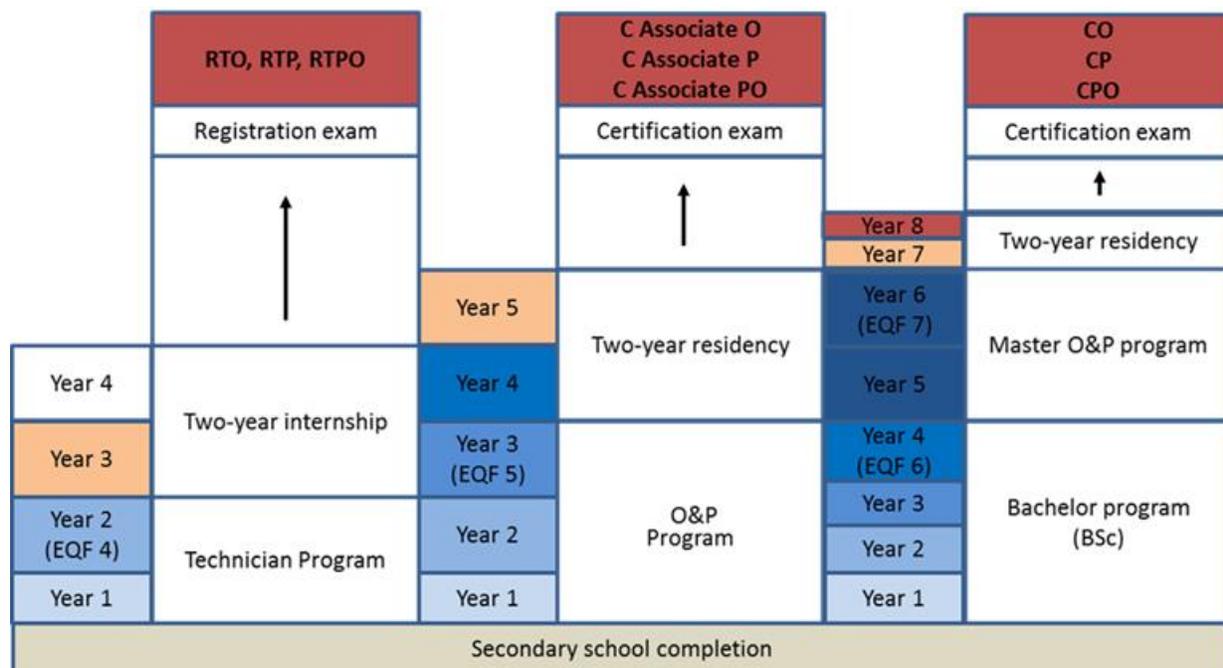
Recommendation	Pros	Cons
Implementation of a Master entry-level credential for Prosthetists/Orthotists	Results in more highly qualified clinicians to better serve patients	Graduate degree requirement may lengthen the path and time to credentialing
	Aligns with allied health professionals and WHO standards	Could increase cost of becoming a certified professional
	Generates new opportunities for independent practice, planning, for the implementation of programs to meet specialized needs	Risk of losing hands-on skills
	Matches education credential to current training levels	
	Enhances critical reasoning skills and research methodologies	
	Validates recognition of the profession	

Increase the number of Prosthetist/Orthotist graduates/clinicians	Ensures there is an adequate supply of O&P clinicians	Could create an over-supply of O&P professionals
		Could upset the clinician/technician balance
		Larger number of O&P candidates may not be able to find venues to gain appropriate experience.
Increase the number of Prosthetic/Orthotic Technician education programs	Ensures appropriate level of support for clinicians Increases opportunities for education pathways vs experiential pathways	Larger class sizes could reduce quality of education
		Could result in a shortage of venues for candidates to gain experience
Implement an Associate Orthotist/Prosthetist educational level	Helps to offset the demand for P&O services in Canada	Scope of practice of Associate clinicians could conflict with certified professionals
	Adds clinical capacity and provides additional support to O&P clinicians	Requires a practice model shift
	Creates option, other than technician program, for applicants not accepted into clinical program	
	Provides new opportunity for institutions that do not offer a Master's level program to graduate orthotics and prosthetics professionals	
Create supporting documents for each of the educational levels established	Ensures that current, and consistent supporting documentation is available across Canada	
	Aligns Canadian documentation with ISPO policies	

5. Recommendations

National education standards need to be developed and implemented across the country and consistently applied. OPC has a role to play in working to better align the pathway to enter the profession with those of other jurisdictions, both within Canada and internationally. Further, because regulated professions are required to be compliant with the Canadian Free Trade Agreement which requires that an individual licensed in a regulated profession in a given province or territory be able to become licensed in another without the imposition of additional material requirements, national education standards will go a long way to ensure interprovincial alignment should the O&P profession become regulated at some future date. In addition to adhering to national education standards, Canadian training in orthotics and prosthetics should be aligned with national and international educational standards by introducing a Master's degree educational requirement for certified orthotics and prosthetics professionals.

Proposed Framework for Education, Prosthetics & Orthotics Profession



Source: National Education Standards for the Orthotic and Prosthetic Profession in Canada, K. Davidson and K. Johnson

The move by the O&P profession to a Master’s level degree will improve its ability to communicate with peers, as similar academic backgrounds would facilitate collaboration and innovation in health care. This translates into greater potential for improvements to health care delivery and patient outcomes. Degree status will also attract the kind of people capable of taking on this very demanding vocation in the health care field.

In addition to raising the bar with respect to the educational requirements for clinicians, measures need to be put in place to increase the supply of O&P professionals to meet the needs of Canadians. The demand for highly qualified clinicians is significantly higher than the available supply at this time and it is growing. OPC has an important role to play in addressing this shortfall by encouraging educational institutions to offer accredited graduate level programs for orthotists and prosthetists, and by helping to streamline the incorporation of foreign-trained orthotists and prosthetists into the Canadian market.

An increased number of prosthetists/orthotists will necessitate increasing the population of Registered Technicians. OPC should work with educators to help increase the supply of O&P technicians by expanding technician-level education programs. Technician education programs should be at the two-year college level to align with ISPO educational standards.

An Associate orthotist/prosthetist category should be established to add clinical capacity and provide support to O&P clinicians. The Associate level should follow the guidelines set out by the World Health Organization. However, consideration should be given to the Canadian educational context. Educational models vary from province to province. Quebec in particular has a unique educational and professional environment. As such, an Associate educational level with a Bachelor entry-level could align with the ISPO's description of service delivery as "the training level aimed at general clinical service delivery". Alternatively, the requirement for an Associate level could be a three-year college or university-level credential, or a combination of the two. This could open up a new certification pathway and afford an opportunity for Quebec technology program graduates to be considered as candidates for the Associate level.

In support of the development and implementation of national education standards that are in alignment with WHO guidelines and with ISPO resources, OPC needs to create supporting documents for each of the educational levels it establishes. Competency profiles should be updated to accurately describe entry-to-practice expectations and requirements. Competency profiles will inform the accreditation standards, professional exam content, and prior learning assessment recognition models for international applicants. OPC should approach pertinent federal public sector agencies and request assistance for the development of the necessary documentation in support of national education and professional standards for the orthotics and prosthetics profession that will improve professional labour mobility among other things.

Appendix A - European Qualifications Framework Descriptors

	Knowledge	Skills	Responsibility and autonomy
	In the context of EQF, knowledge is described as theoretical and/or factual.	In the context of EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments).	In the context of the EQF responsibility and autonomy is described as the ability of the learner to apply knowledge and skills autonomously and with responsibility
Level 4 The learning outcomes relevant to Level 4 are	Factual and theoretical knowledge in broad contexts within a field of work or study	A range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	Exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change; supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities
Level 5 The learning outcomes relevant to Level 5 are	Comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge	A comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems	Exercise management and supervision in contexts of work or study activities where there is unpredictable change; review and develop performance of self and others
Level 6 The learning outcomes relevant to Level 6 are	Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	Manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts; take responsibility for managing professional development of individuals and groups
Level 7 The learning outcomes relevant to Level 7 are	Highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research Critical awareness of knowledge issues in a field and at the interface between different fields	Specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields	Manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches; take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams

Appendix B - Authority Signatures



Jesse Cornell
President, Orthotics Prosthetics Canada

December 6, 2019

Date



Dana Cooper
Executive Director, Orthotics Prosthetics Canada

December 15, 2019

Date