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Entry-Level Doctor of Pharmacy Degree in Canada: Information Paper on the Potential Impact on Pharmacy Services (2009)

Canadian Society of Hospital Pharmacists
Société canadienne des pharmaciens d'hôpitaux

Entry-Level Doctor of Pharmacy Degree in Canada: Information Paper on the Potential Impact on Pharmacy Services

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1. INTRODUCTION

A variety of issues and factors that could be associated with implementation of the Pharm.D. as an entry-to-practice degree in Canada were examined:

- Current professional education curricula in other industrialized countries were compared to the baccalaureate program in Canada.
- Canadian and United States' pharmacy curricula were compared, since pharmacy schools in the United States have universally adopted the Pharm.D. in the entry-level format (California has had the entry-level Pharm.D. since the 1960s). In this area, the Task Force looked for factors unique to Canadian programs.
- Pharmacy literature was searched for studies comparing entry-level Pharm.D. graduates to baccalaureate or postbaccalaureate Pharm.D. graduates in clinical practice.
- A general comparison of arguments both in favour and in opposition to the entry-level Pharm.D. was carried out, based again mainly on the U.S. literature over the past few decades.
- The effect of an entry-level Pharm.D. on practice change was reviewed, including the recently published Holland-Nimmo model, which will be referenced later in this paper. This model describes three prerequisites for a change to occur in practice: practice environment, learning resources, and motivation strategies. Medical education literature was examined, since some North American curricula have been revised based on the theory that changing educational training leads to improved practice outcomes. A similar argument has been proposed by supporters of the entry-level Pharm.D. in Canada.
- A survey of CSHP members was conducted via the internet in August and September 2000 to gather views on this controversial issue. The findings are referred to in this paper and are summarized in Appendix B.

2. PHARMACY EDUCATION WORLDWIDE

Internationally there has been acknowledgment that pharmacy education has evolved from a drug- or product-centered model to a patient-centered care model.[1] As a result, there have been many changes in educational practice around the globe. Pharmacy education now goes beyond teaching specific professional competencies to include general skills and attitudes necessary for professional and personal growth that will prepare future pharmacists for a lifetime of learning.[1,2] The changes have been influenced by a variety of professional, political, physical and economic forces.

At a recent International Pharmaceutical Federation / Fédération Internationale Pharmaceutique (FIP) meeting, the reported standards for compulsory practical training in various pharmacy programs internationally ranged from 1 to 12 months.[3] The FIP statement, *Good Pharmacy Education Practice,* did not include a single, best model for the education and training of pharmacists; however, a conceptual framework for the design, implementation and assessment of contemporary educational programs for pharmacists throughout the world was provided.[4]

In the United States, the American Association of Colleges of Pharmacy set up a commission to implement educational change in the early 1990s. After a prolonged and often heated debate they approved the adoption of a single, entry-level educational program at the doctoral level, the Pharm.D. degree. The recommendation was to have a minimum two year pre-professional education followed by four professional "doctoral level" academic years. Shortly thereafter, the American Council on Pharmaceutical Education revised its accreditation standards and stated that after the.

year 2000 it would only accredit colleges of pharmacy that offer the Pharm.D. degree.

Colleges of pharmacy in the United States now offer the Pharm.D. degree in various formats. A recent survey included 57 schools of pharmacy in the United States, which together offered 78 Pharm.D. programs, and revealed that 139 different Pharm.D. streams were available (including entry-level, post-baccalaureate, track-in, and non-traditional).[3]

3. ISSUES UNIQUE TO CANADA

While Canada will undoubtedly be able to draw on the U.S. experience, the issues facing U.S. pharmacy practice in the 1970s and 1980s are not the same issues affecting Canadian pharmacy in the 1990s and 2000s.

First, the larger number of post-graduate Pharm.D. programs in the United States, and the presence of established entry-level Pharm.D. programs, have put the United States in a far better position to transition to the entry-level Pharm.D. The United States also have a larger population base, with many more health care facilities to provide clinical rotation sites. Canada currently has only two post-baccalaureate programs that graduate a small number of students and require a relatively large number of resources.

Second, differences exist in the funding of educational systems between Canadian and U.S. universities. Canadian post-secondary education has traditionally been partially funded by public monies (directly or indirectly), although that has changed somewhat over the last 20 years. Publicly funded or subsidized education continues to be an expectation among Canadians and recent increases in university tuition fees have drawn significant public attention. In the United States, on the other hand, students are accustomed to having to pay out of pocket for their education. The adoption of an entry-level Pharm.D. in Canada would undoubtedly require significant public financial commitment; this difference in funding could limit its potential of success in Canada.

Additionally, no studies could be found that compared practice outcomes from Canadian and U.S. graduates in order to assess the value of a pharmacy degree from either country's professional schools at any level (i.e., baccalaureate, entry-level Pharm.D., post-baccalaureate Pharm.D., etc.).

4. LITERATURE REVIEW

In 1989, the American College of Pharmacy Education (ACPE) decided to revise accreditation standards for U.S. schools of pharmacy due to concern that public and academic interests were not being met by the two distinct pharmacy curricula that existed. Although other options were available - such as, a BSc program plus a one-year residency, a BSc plus a one-year practice internship, a clinical master's degree - many schools offered the Pharm.D. program. The ACPE could have revised its framework around the BSc but chose the Pharm.D. as the preferred curriculum and credential for an entry-level program, likely because of the already significant number of entry-level Pharm.D. programs in the U.S. by the late 1980s.[5]

With pharmacy schools in California graduating pharmacists with entry-level Pharm.D. degrees since the early 1960s, many studies have compared behaviour and attitudes of graduates from California to those from other U.S. schools, including BSc graduates and post-BSc Pharm.D. graduates. Studies suggest that Pharm.D. pharmacists are more likely to be employed in hospital settings, while BSc pharmacists are more often found in community settings.[7-9] It has also been found that BSc and Pharm.D. pharmacists spend similar amounts of time on prescription processing, management and patient care.[9-11] Two studies examined job satisfaction of Pharm.D. and BSc pharmacists and found no difference between groups based on their educational background.[9,11]

It is difficult to extrapolate results of studies to the current environment in Canada. All of the studies have limitations based on their sample size, sample representation and validity of survey instruments employed. Furthermore, the practice environment has changed significantly since many of the studies were conducted. As an entry-level pharmacy degree in the 1980s, the Pharm.D. outnumbered the BSc in the United States by 2:1.[6] Most of the published studies predate the 1990s era of pharmaceutical care, which places greater emphasis on patient-focused care.

Based on a review of the literature, ACPE announcements, and pharmacy school opinion, the Association of Faculties of Pharmacy of Canada (AFPC) produced a background paper on the issue of the entry-level doctor of pharmacy degree.[6] The AFPC presented seven arguments in favour of the entry-level Pharm.D. replacing the BSc; they were grouped into supply, demand, geographic, professional and faculty self-interest categories. Some of the arguments presented included: the need of Canadian pharmacists for additional education in order to reduce medication costs in our society and the prevalence of drug-related problems; the restricted mobility of Canadian non-Pharm.D. graduates wishing to practice in the United States; and that Pharm.D. graduates might enjoy an increased sense of professional dignity and status.

The move to an entry-level Pharm.D. may represent the inevitable and logical progression of professional pharmacy education: from apprenticeship training to diploma programs to university based BSc degrees. If this is the case, the development and implementation of such a major curriculum change at the national level should take 10 or more years. A change in pharmacy education in Canada should focus on educating pharmacists who can enter practice and deliver significant and lasting benefits to patients and to the Canadian healthcare system, addressing medication-related issues such as optimal drug usage, reduction of "drug misadventures",[12] drug-related morbidity and mortality, and drug expenditures. In fact, many such studies, including some Canadian reports,[13] have shown that pharmacists with a variety of educational backgrounds (BSc, hospital pharmacy residency, post-BSc Pharm.D., etc.) involved in the care of community and hospital patients, can provide outstanding care that results in positive outcomes for patients, institutions and third party payors. [13-21]

5. COMPARISON OF VIEWS FAVOURING AND OPPOSING THE ENTRY-LEVEL DOCTOR OF PHARMACY DEGREE

Over the years, several arguments have been raised to either favour or oppose the entry-level Pharm.D. Proponents argue there is fragmentation of the profession due to several degrees as well as the need to increase education to meet the expanding clinical role of the pharmacist.[22] Opponents argue that there are different levels of pharmacy practice (requiring different levels of education) and that practice does not necessarily change as a result of changes in education.[22] A summary of these views is presented in Table 1.

An additional argument in favour of an entry-level Pharm.D. is that Canadian pharmacists should not have a different educational qualification from graduates of U.S. pharmacy schools, which have all converted to an entry-level Pharm.D.[6] This is similar to the "bandwagon" effect which precipitated movement of pharmacy schools in the United States towards an entry-level Pharm.D. Another concern regards the effect of such a decision on pharmacist shortages in Canada. Some fear this will worsen the pharmacist shortage, while others feel that it will benefit the profession by leading to increased use of technical staff.

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Table 1
Comparison of Views of Proponents and Opponents of the Entry-Level Pharm.D. Degree

Proponents' Views[6,22-24]	Opponents' Views[22,23,25]
Confusion among current pharmacy education programs with multiple levels of degrees	Multiple levels of practice (and hence education) in the pharmacy profession
It is the Faculty's/College's responsibility to educate for future demands/trends	Practice does not change as a result of educational changes
Increasing clinical role of the pharmacist, as advocated by the profession	Majority of practice environments do not support clinical role of the pharmacist
Enhanced image of the pharmacist and the profession in eyes of public and other health professionals	Diluted value of doctoral degree; may place "status" or "self esteem" before academic competence
Increased responsibility for support personnel, i.e., technicians	Increased support personnel would decrease demand for pharmacy services
More options for employment opportunities	Field of pharmacy cannot absorb the large influx of clinical practitioners
Bandwagon effect of movement to entry-level Pharm.D. program	Rapid movement to entry-level Pharm.D. has compromised clinical training and course work of previously available BSc programs in Pharmacy

6. PRACTICE CHANGE

Changes are taking place in the Canadian healthcare system, and as a key provider of healthcare services, pharmacy is an important part of that system. The healthcare system is in the process of establishing a new order, with the various healthcare professions adapting to the changes and working to redefine their roles. Recent developments include the introduction of nurse practitioners.

CSHP has demonstrated leadership in promoting the changing roles of pharmacists in the Canadian healthcare system. The Society has established vision statements and strategic goals outlining the profession's relationship with its clients; it has adopted the patient-focused, pharmaceutical care model of practice; and it continues to support the investigation of new, expanded roles for pharmacists. Additionally, increased responsibility for technicians has been addressed by the Society.[26,27]

As CSHP contemplates a position on the introduction of an advanced entry-to-practice degree, the Holland-Nimmo Practice Change Model, a framework for change, can be used to describe the role of various players in change.[28] The Model describes three prerequisites which are necessary for a change in practice by individuals: 1) practice environment, 2) learning resources, and 3) motivation strategies. It is only when all three elements are aligned that change can occur.[28-32]

The practice environment is comprised of three main components: society, the healthcare system and the practice site. This element involves components such as laws, policies, reimbursement strategies, and relationship with patients/public, and other healthcare professions. The learning resources element relates to continuing education and training related to the desired change. Motivation strategies encompass the beliefs of pharmacists, such as

individual personalities, socialization to the profession, values and attitudes toward the change.

From the perspective of a national pharmacy organization, the model can also serve as a leadership model for change. There are specific areas where organizations can have a large impact on practice change. For instance, CSHP and other pharmacy organizations may concentrate efforts on the components of the practice environment, whereas universities and colleges may focus on learning resources. Pharmacy organizations could work together with universities and continuing education groups to develop programs and motivation strategies that spotlight "best practices" and innovative practice examples. These types of initiatives would enhance continuing education programs for practising pharmacists and would stimulate changes in daily practice, increasing the emphasis on direct patient care.

Examples from the profession of medicine document that the ability to fulfil specific roles in the healthcare system is strongly influenced by factors other than the education of the healthcare professional.[33-36] This literature provides strong evidence that, when educational institutions implement program changes which aim at new and different roles for graduates, these institutions are "graduating their uniquely trained students into an inhospitable practice environment".[34] It is emphasized that the success of innovations in the education of healthcare professionals is dependent on the degree to which these innovations are linked with complementary changes in healthcare service delivery. Without these concomitant changes, reforms at university can "best be described as educational gymnastics".[33] This literature comes from medicine for its attempts to encourage community-based practice and an increase in providers of rural medicine, yet these same types of problems can be anticipated for educational program changes in pharmacy.

If the sole change made concerning the role of pharmacists is to change the educational program requirement to an entry-level Pharm.D., this change would have little effect on the role or functions undertaken by pharmacists. Although trained for different, perhaps expanded roles, pharmacy graduates would still enter into practice in the traditional system that reinforces the existing role. Without changes in this system, such as, changed consumer expectations, reimbursement for expanded services, and changes in the legal scope of practice for pharmacists, the impact of implementing an entry-level Pharm.D. program on a pharmacist's activities and responsibilities could be expected to be minimal.

Attempts have been made by pharmacists to change practice in Canada in recent years. Cognitive service initiatives have been implemented in Quebec ("L'Opinion Pharmaceutique" or the Pharmaceutical Opinion) with limited success in terms of usage by pharmacists. The Ontario Pharmacists' Association has a suggested fee schedule for cognitive services. The Canadian Forces offer reimbursement to pharmacies that provide defined cognitive services to its members. Pharmaceutical care studies and programs have been implemented in a number of provinces with a range of success. Such attempts to change pharmacy practice will likely continue to be supported by leaders within professional associations like CSHP, CPhA, AFPC and others.

7. MEMBERSHIP SURVEY

The purpose of the survey was to gain insights into CSHP members' perceptions of the impact of implementing an entry-level Pharm.D. degree in Canada. A web-based survey-questionnaire, detailed in Appendices A and B, was used to gather both qualitative and quantitative data from members. The survey consisted of open- and closed-ended questions using a five-point Likert Scale. Members were asked to provide their CSHP membership number to ensure that only members' responses

were included in the data analysis. The membership number was viewed only by the webmaster. All information collected was confidential and anonymous. Data from the survey were analyzed using Access database for frequency counts. Availability of the survey was announced at the CSHP Annual General Meeting (Winnipeg, August, 2000), in an email message from CSHP office, and in the CSHP Newsletter. Members gained access to the web-based survey for approximately 4 weeks (August 13 - September 10, 2000).

Two hundred and ten members responded to the survey, representing all provinces but none of the territories. Members reported a variety of opinions concerning implementation of an entry-level Pharm.D. in Canada. While a few members supported a change to entry-level Pharm.D., the majority of respondents did not support such a change. There was support, however, for changes in existing curricula, specifically related to access to patients early in the curriculum and increased experiential training. With respect to the role of pharmacists with the focus on direct patient care, there was acknowledgement that entry-to-practice education is a significant component, however, there was also recognition that other factors are equally important for the profession.

8. SUMMARY

Research on the potential impact of a doctor of pharmacy as the entry-to-practice degree in Canada, resulted in the following findings:

• No international guidelines exist for a single, best model for the education and training of pharmacists on a worldwide basis. However, the Fédération Internationale Pharmaceutique has provided a conceptual framework for the design, implementation and assessment of contemporary educational programs for pharmacists throughout the world.
• Regarding a potential widespread change in professional curricula, there are unique issues in the current climate in Canada compared to that of the United States when it adopted the entry-level Pharm.D.
• Several arguments have been presented both in favour of and in opposition to an entry-level doctor of pharmacy degree. Many of these have been maintained from the U.S. debates, along with some unique concerns about a potential exodus of Canadian pharmacists to the United States in response to manpower needs.
• Using medical education research as a parallel, it may be surmised that if the sole change made concerning the role of pharmacists is to change the educational program requirement to an entry-level Pharm.D., this change would have little impact on the actual functions undertaken by pharmacists. Without changes in the existing system - such as raising consumer expectations, providing reimbursement for expanded services, and changing the legal scope of practices - the effect of implementing an entry-level Pharm.D. program on the role of the pharmacist could be expected to be minimal. Combining the experience of medical educators and the Holland-Nimmo practice change model, a responsibility of CSHP may be to continue highlighting positive practice environments and supporting delivery of high quality continuing education programs, while working with academia to develop educational standards which prepare pharmacy graduates to meet the challenging healthcare and disease prevention needs of Canadian society.
• Results of a web-based CSHP membership survey showed that the overwhelming majority of respondents were not in favour of an entry-level Pharm.D. in Canada. Respondents cited fears of a further divisive attitude within the profession, dissatisfaction among new graduates in a practice environment, and the belief that the entry-level Pharm.D. would not help the profession realize its responsibility to patients. Members supported changes to entry-level education but opposed the entry-to-practice degree being a Pharm.D.

CSHP would like to encourage its members to further develop patient-focused practices. In general, hospital pharmacists have more and diverse clinical opportunities (in the traditional sense), through their access to detailed patient, disease and diagnostic information found in inpatient medical records, than do community. Many hospital pharmacists have advanced clinical training in the form of residency and post-baccalaureate degree programs, and routinely work closely with specialists, house staff and other physicians in a variety of practice and teaching environments. Regionalization of health services over the past decade in many provinces has not spared hospital pharmacy departments. Many regional pharmacy departments have adapted to regionalization by expanding services into new areas such as: parenteral nutrition and IV admixture programs now allow therapies to be delivered in the patient's home at a reduced overall cost; outpatient pharmacies affiliated with an institution allow a more seamless approach delivery of pharmaceutical services; and involvement of pharmacists in disease management speciality clinics, e.g., travel medicine, HIV/AIDS, diabetes, congestive heart failure, hypertension, and dyslipidemia.

In this period of health reform and rapid technological advances in information storage/ retrieval, pharmaceuticals, biologicals and gene therapy, professional organizations must look beyond their own needs towards a larger societal benefit. It is imperative for CSHP to assist in development of education and practice research strategies with schools/faculties of pharmacy, the Canadian Pharmacists Association and other professional organizations to promote acceptance of new practice models focused on direct patient care that lessen pharmacists' involvement in technical activities of medication distribution. These strategies should be supported by innovative educational programs such as expanded experiential training opportunities and post-BSc residencies for pharmacy students and practising pharmacists in the community and in health care institutions.

In summary, in the absence of data to support a benefit of one degree program over another, adoption of the entry-level Pharm.D. may serve to polarize the profession in Canada. Most CSHP members who responded to the online survey believed there is a need for curricular change in Canada's schools of pharmacy but do not see the entry-level Pharm.D. as the definite solution for curricular shortfalls or for improving practice-based outcomes in Canadian society's drug-related needs. The lack of a proven benefit of any profession educational program – BSc or entry-level Pharm.D. – should not limit our profession's desire to look beyond the *status quo* to a pharmacist's future educational needs.

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APPENDIX A: SURVEY QUESTIONS

Respondents were asked to select an option from the rating scale of "strongly agree", "agree", "neutral", "disagree" and "strongly disagree".

1.

a) The education I received in my bachelor degree (*entry-to-practice degree*) was adequate to prepare me to practice pharmacy.
b) The post-graduate training/education (*such as residency or graduate degree*) I received was adequate to prepare me to practice pharmacy.

2. I believe that the role of the pharmacist is to:

a) Serve society by reducing the prevalence of drug-related problems
b) Ensure safe distribution of quality pharmaceuticals
c) Prevent disease
d) Ensure cost-effective use of medications
e) Provide information and education on medications to healthcare professionals
f) Provide information and education on medications to patients

3. Pharmacy graduates require increased experiential training (that is, greater than 16 weeks) to provide adequate direct patient care.

4.

a) To meet CSHP's vision of an enhanced role in direct patient care, pharmacy graduates require increased (that is, greater than the current 16 weeks) experiential training
b) To meet CSHP's vision of an enhanced role in direct patient care, pharmacy graduates require more structured and demanding experiential training

5. The change of the entry-to-practice degree from a Bachelor degree to a Pharm.D. will facilitate the achievement of a higher standard of pharmacy practice in Canada.

6. An entry-level Pharm.D. degree will lead to a perception of the enhanced value of the pharmacist in the eyes of the public.

7. Benefit of an entry-level Pharm.D. degree would be that the pharmacist:

a) would be called "doctor"
b) would have more knowledge
c) would have increased experiential training
d) would have more skills
e) would have more confidence in his/her ability to provide patient care
f) would have increased job satisfaction.

8. Canadian pharmacists should have the same educational degree as American pharmacists. (Note: *within the next one or two years, every American school of Pharmacy will only offer a Doctor of Pharmacy degree.*)

9. I am concerned that I will not be able to practice pharmacy in the United States unless I have a Pharm.D. degree.

10. A Pharm.D. degree will increase my sense of professional status comparable to other "doctor-titled" providers in the health care system.

11. Within the near future, I am likely to enrol into a program to upgrade my direct patient care knowledge and skills.

12. If you were to consider a program, which type of program you would be most likely to apply for:

a) Residency program (1 year full-time study)
b) Post-baccalaureate PharmD (2 years full-time study)
c) Master of Pharmacy (or Science)
d) Entry-level PharmD (6 years full-time study)
e) Nontraditional PharmD (2-5 years part-time study)
f) Ph.D
g) Post - Doctoral Fellowship
h) Other
i) I am unsure which of these programs I would prefer
j) Not considering any program

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13. If you were to consider a program, indicate your primary reason for enrolling:

a) Enhanced clinical knowledge and skills
b) Increased job satisfaction
c) Better salary and job opportunities
d) More respect from physicians and patients because of doctor title
e) I would have more confidence in my job
f) Other

14. If you were NOT to consider a program, indicate the reason why you would not enrol:

a) Cost of tuition, books, etc.
b) Need to resign or take leave from current job
c) Need to relocate to attend program
d) Do not believe additional training would benefit my career
e) Other

15. I support the notion that entry-to-practice pharmacy education in Canada requires significant changes.

Respondents were also asked to volunteer the following demographic information:

- Province
- Professional Education (check all that apply)
- Bachelor degree
- Residency
- Master degree
- Pharm.D. degree
- Post Pharm.D. residency
- Ph.D.
- Post-Doctoral Fellowship
- Presently enrolled in program
- Other
- Years since graduation (since your first pharmacy degree): <0 (still studying); 0-5; 6-10; 11-15;16-20; >20
- Pharmacy School attended (to obtain your first pharmacy degree): UBC; U of A; U of S; U of Man.; U of T; U of Montreal; Dalhousie; Laval; Memorial; USA; Other
- Area of practice: Community; Academia; Hospital; Military; Long term care; Other
- Employment status: part time; full time; casual; not-practicing
- Nature of position:
- Manager, hospital or community pharmacy
- Staff pharmacist, hospital or community pharmacy
- Owner, community pharmacy
- Clinical coordinator
- Professor
- Clinical pharmacist
- Research Coordinator
- Other

APPENDIX B: SUMMARY OF SURVEY RESULTS

B1. SURVEY

A web-based questionnaire, detailed in Appendix A, was used to gather both qualitative and quantitative data from CSHP members. The survey consisted of open- and closed-ended questions using a five-point Likert Scale. The purpose of the survey was to gain insights into CSHP members' perceptions on the impact of implementing an entry-level PharmD degree in Canada. Members were asked to provide their CSHP membership number on the survey to ensure that only members' responses were included in the data analysis. The membership number was only viewed by the webmaster. All information collected was confidential and anonymous. Data were analyzed using an Access database for frequency counts. On-line availability of the survey was announced at the CSHP Annual General Meeting (Winnipeg, August 2000) in an e-mail message from CSHP National and in the CSHP Newsletter. Members gained access to the web-based survey for approximately 4 weeks (August 13 -September 10, 2000).

B2. FINDINGS

Information was acquired that affords insights into members' perceptions regarding the implementation of an entry-level PharmD degree. These insights should serve as a basis for understanding current perceptions. In the first section, a profile of the respondents provided. The second and third sections report the findings of the quantitative and qualitative evaluation methods.

B2.1 Profile of Respondents

B2.1.1 Demographics

210 members responded to the survey, representing all provinces but none of the territories.

The distribution of responses according to province was: Ontario (35.2%), Alberta (19.5%), British Columbia (15.2%), Saskatchewan and New Brunswick (7.1%), Nova Scotia and Manitoba (4.3%), Newfoundland (2.9%), Quebec (2.4%), Prince Edward Island (0.5%), and outside of Canada (1.4%).

B2.1.2 Professional Education

Almost all members reported having completed a Bachelor of Pharmacy degree (99.5%) and a high proportion of members completed a residency (53.8%), a post-graduate PharmD degree (20.5%), and a masters level degree (13.3%).

Years since graduation from the first pharmacy degree were reported as follows: 0-5 years (15.7%), 6-10 years (20%), 11-15 years (21.9%), 16-20 years (17.6%), and greater than 20 years (24.8%).

All pharmacy schools in Canada were represented.

B2.1.3 Areas of Practice

Most members reported working full-time (88.6%), in hospital practice (75.7%). The majority of types of positions held fell into three main categories: staff pharmacist (24.8%), management (23.8%), and clinical pharmacist (19%).

B3. QUANTITATIVE DATA

B3.1 Undergraduate Education Received Was Adequate to Practice Pharmacy

When asked whether the education members received in their first pharmacy degree was adequate to prepare them to practice pharmacy, responses were split: 54.8% agreed or strongly agreed that the education they received was adequate, whereas 30% responded in the disagreed or strongly disagreed categories. Members responded that their post-graduate education (such as a residency or graduate degree) was adequate to prepare them for practice (63.3% agreed or strongly agreed).

B3.2 Role of the Pharmacist

There was strong agreement by the respondents on the role of the pharmacist in all categories outlined in the survey.

B3.3 Experiential Training

When asked if pharmacy graduates require increased exposure to experiential training to provide direct patient care, responses indicated a trend to agree, however they were fairly evenly distributed: strongly agree (26.2%), agree (37.6%), neutral (20%), disagree (15.2%), and strongly disagree (1%).

When asked if pharmacy graduates require more experiential training to achieve an enhanced role in direct patient care, responses supported both *increased* and *structured and demanding* experiential training. Over 60% of members indicated that they support the notion that entry-to-practice pharmacy education requires change (question 15).

B3.4 Higher Standards of Practice in Canada

Members' opinions on whether a change to an entry-level Pharm.D. degree will facilitate the achievement of a higher standard of pharmacy practice in Canada varied. Most members disagreed or strongly disagreed with this statement (54.4%), 20% neutral, and 25.7% agreed or strongly agreed.

B3.5 Public Perception

Members were asked if an entry-level Pharm.D. degree would lead to a perception of the enhanced value of pharmacists in the eyes of the public. Again, a large proportion of members disagreed or strongly disagreed (43.3%), 20% neutral, and 26.6% agreed or strongly agreed with this statement.

B3.6 Benefits to the Pharmacist

Responses to a menu of potential benefits, cited in the literature (Hill, 1999), indicated a positive trend to increased knowledge, experiential training, skills and confidence. Note that this section reveals a high proportion of responses in the neutral category (14.8-35.7%), perhaps indicating that members are unsure of benefits afforded by an entry-level Pharm.D. degree.

The two areas in which members did not see benefit from an entry-level degree were with respect to the title of "doctor" and increased job satisfaction.

Highlights of opinions concerning the following:

• The title of "doctor" - Responses indicated this is **not** a perceived benefit by most respondents (64.4%). This was supported in another question (number 10 in the survey), where pharmacists were asked about their sense of professional status compared to other doctor-titled health care providers: 54.3% of members responded that they disagreed or strongly disagreed that their sense of professional status would be increased, 19% neutral,

and 26.6% agreed or strongly agreed that it would increase.

• More knowledge - Responses indicated that there is a perception of benefit from increased knowledge (58.1%).

• Increased experiential learning - Responses indicated there is a perceived benefit from increased experiential training (77.6%).

• More skills - Responses indicated there is a perceived benefit from increased skills (52.8%).

• More confidence - Responses indicated there is a perceived benefit from increased confidence (54.2%).

• Increased job satisfaction - Responses indicated this is **not** believed to be a benefit to most respondents (47.1%); neutral, 35.7%.

B3.7 Follow the Experience of the United States

Members were asked if Canadian pharmacists should have the same educational degree as U.S. pharmacists. Responses showed that most members disagreed with this statement (47.6%). However, there were 26.2% neutral, and 26.2% who agreed or strongly agreed. Responses to the statement "I am concerned that I will not be able to practice pharmacy in the U.S. unless I have a Pharm.D. degree" produced roughly the same results: 43.8% disagreed or strongly disagreed, 31.4% neutral, and 26.6% agreed or strongly agreed.

B3.8 Plans for Further Education

Approximately 15% of members responded that in the near future they are likely to enrol in a program to upgrade knowledge and skills related to direct patient care. Interest in the following types of programs was indicated: non-traditional Pharm.D. (29.5%), post-baccalaureate Pharm.D. (8.1%), and Master of Science degree in Pharmacy (5.7%). The primary reasons for considering further education included: enhanced clinical knowledge and skills (59.5%) and better salary and job opportunities (11.9%). For those not considering further education, the reasons included: needing to resign or take leave from current job (29%) and the belief that additional training would not benefit career (20.5%).

B4. QUALITATIVE DATA

The open-ended questions and comment boxes generated a plethora of comments concerning implementation of an entry-level Pharm.D. degree. The comments complemented the quantitative data. Opinions varied greatly from support of an entry-level Pharm.D. to no strong opinion and, finally, to strong opposition to the concept.

Five themes emerged in the analysis of the qualitative data. They are supported by quotes of members' comments, where possible.

B4.1 Support for Change to the Entry-Level Degree

Members supported that *changes* to the entry-level degree are an important element to moving the profession to a direct patient care role. However, their support was qualified by specific recommendations. Many suggestions were provided as to what these changes would entail, such as, maintaining the program at 5 years, increasing the experiential training component, and introducing students to direct patient care roles early in the program. Other suggestions included screening and interviewing applicants prior to acceptance into the program. Very few members suggested that the degree should be changed to an entry-level Pharm.D.

"I feel that the entry to pharmacy practice education has to change significantly. This does not mean that the only option is the Pharm.D. degree. The most significant deficiency of the current entry-level programs is the amount of direct application of knowledge via clinical rotations (community pharmacy based or hospital). There is not enough

time spent on rotations and the student is usually exposed to the rotations very late in the education process. More rotations are needed as well as some form of early exposure to basic clinical rotations so students do not get "culture shock"."

"I think that most of us recognize that our training during our bachelor program was not enough to prepare us for practice in the "real world". Residency programs certainly enhance clinical skills. Whether we need a "Pharm.D." designation after our names is debatable. I think what we need are programs that contain SUBSTANTIALLY more experiential training than what is provided now. It does not really matter to me what we call the programs."

One member noted that "entry to practice education programs ARE changing in Canada - but [we] need change in practice as well to go hand in hand so that if more highly patient-focused pharmacists are trained and graduated they have somewhere to practice this type of care."

There was strong support for ensuring *quality* of entry-to-practice education. Many members commented that the most important considerations for any changes to curricula should focus on quality, ensuring competence and exposure to quality preceptors in direct patient care settings.

B4.2 Change in Practice Requires More Than Education Reform

Members opinions reflected a belief that changing the entry-to-practice degree **alone** would not promote a change in practice.

"People are not getting the big picture; do we want to bicker and fight over entry level Pharm.D. like the US, or fight the real challenge: improve and credential (and re-credential) the clinical competence of all pharmacists in Canada. How this is done is not so important as the actual outcomes achieved; a higher level of practice will translate into a higher level of results. Undergraduate education (Pharm.D. is an undergraduate degree) is only a small part of the whole picture of producing a competent pharmacist. It is up to us as individuals to ensure we are competent in our practice areas."

Issues such as practice environment, support for direct patient care role, and remuneration were mentioned by respondents as needing to be addressed by the profession.

Members' comments:

"The structure of the current practice will not make it possible to enhance the practice. The main problem in pharmacy is that pharmacists are dissatisfied with their job[s] as they are not using their knowledge. If they all [have] Pharm.D.s this will be even worse. Let us work to have an environment where the pharmacists can use their knowledge before giving them more."

"I understand the drive to change to the entry level Pharm.D…however, an opportunity to practice what we learn, an environment to actually implement the clinical skills and knowledge, and the EXPECTATION of the above from the public and other health professionals is what is what is needed before the role of the pharmacist can change. Changing the degree will not accomplish this."

"I don't believe that a change in the degree earned will have any impact on pharmacists' competency…. A simple change to the Pharm.D. designation will only create the perception of change."

B4.3 Support for Two Levels of Education

Several members commented that the educational system should maintain two levels of practice degrees: entry level, and advanced level. A reason for this suggestion could be the lack of demand for advanced practitioners in the health care system.

With respect to community practice:

"There is no need for it [entry-level Pharm.D.] in community practice leading to even greater

frustration there. There is a role for specialized post-grad training to clinical specialists but this will be devalued by trying to make it available to the whole range of practitioners."

With respect to hospital practice:

"I feel that there would be the benefit of a Pharm.D. in the hospital setting. But I see it as over education in the community setting. There are some specialty community settings where it would also be a benefit."

"I think there would be a great deal of benefit for entry-level Pharm.D. for patients entering into Clinical Hospital Pharmacy Practice. But, I don't think a pharmacist needs a Pharm.D. to work at a Retail Store, and I think that increasing the amount of schooling will contribute to the shortage of pharmacists we are already facing…. It will also, decrease the value of the postgraduate Pharm.D. for those who already have gone back to school to obtain this degree."

B4.4 I Am CANADIAN!

There appeared to be a strong sense of national identity. Several responses indicated that members do not support a change to entry-level Pharm.D., based on what is happening in the U.S. One member offered this comment, "I abhor any notion that we MUST do something based on the fact that the USA has done it."

There is also concern that the Canadian health care system differs from that in the U.S., that there is a shortage of pharmacists, and that Canadian-trained pharmacists will be lost to the "brain drain" at an increasing rate if an entry-level Pharm.D. program is implemented in Canada.

"The Canadian health care system is very different from the U.S. system and thus our needs with regards to pharmacy services are different also. Moving to an entry-level Pharm.D. will result in more skilled and knowledgeable pharmacists with potentially increased job frustration if there are not opportunities to utilize these skills, not to mention the short term problems that the increased pharmacist shortage will create during the transition."

B4.5 Seek "Evidence" to Support a Change to Entry-Level Pharm.D.

Members commented that they would like the decision to change to an entry-level Pharm.D. to be based on "evidence". Concerns included that academics are driving the movement towards this change, that there have been no changes or positive outcomes from the change in the U.S., and that there is no demonstrated need for this change in the health care system.

"The current trend is to base decisions on evidence - is there evidence to support the American decision to switch to entry-level Pharm.D. and if not should we not try and gather supportive evidence before making such a drastic change?"

"I wonder, in a time when faculties of pharmacy across the country are contemplating commencing a ELPD [Entry-Level Pharm.D.] program, are these faculties wanting to move forward with the ELPD to TRULY improve the standard of care (again, where is the evidence?), or is it being done to stroke their (academia) own egos by graduating students with the "Dr." classification."

B5. REFERENCES

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