

Pharmacists

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Northern Labour Market Information Clearinghouse

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Pharmacists

The Clearinghouse Project is a consortium of northern Alberta colleges and the Northern Alberta Development Council. The focus of the project is to conduct research concerning labour market issues in the north.

The college partners have identified a shortage of pharmacists as a major concern for northern communities. An August 2000 report from the Alberta College of Pharmacists indicated that rural pharmacies could be forced to close because of a lack of pharmacists.

An examination of current and future demands for pharmacists, their training requirements, and training requirements for pharmacist assistants was requested. An investigation into possible programs and partnerships for northern colleges was an additional request.

Methodology

The Alberta College of Pharmacists was contacted to gain an understanding of that organization's approach to the issues. This is the governing body for the profession under the Pharmaceutical Professions Act. A related organization, the Pharmacists' Association of Alberta was contacted to acquire provincial demographic information. The Association, membership in which is voluntary, has been in existence for less than a year. The Alberta Professions and Occupations Bureau was asked for a description of scope of practice for pharmacist technologists and pharmacist assistants.

The entrance requirements and curriculum outlines for the occupations of pharmacist, pharmacy technician and pharmacy assistant were acquired through the Alberta Learning Information System website.

The Alberta Government website provided the information concerning scope of practice for pharmacists as well as the pharmacists' responsibilities

concerning the supervision of pharmacist technicians and pharmacist assistants. The same Pharmaceutical Professions Act provided the scope of practice for pharmacist technicians.

Current Supply of New Pharmacists

The University of Alberta School of Pharmacy is one of several quota faculties. It is currently graduating 103 pharmacists each year. According to the report: Projected Requirements for Retail Pharmacists in Alberta, 85% of these graduates will go into the retail sector in the province. This means approximately 85 new pharmacists are available to the retail sector each year. Another 13% of new pharmacists enter the hospital sector, yearly.

It should be noted that not all graduated pharmacists stay in the province. It is estimated that 15 new pharmacy graduates move to the United States annually. Large U.S. chain stores are offering starting salaries of up to \$74,000 U.S. plus moving expenses to Alberta graduates.

The College of Pharmacists negotiates yearly with the University of Alberta to agree on the number of training “seats” that will be made available. These negotiations are currently underway for the 2002 intake. The present position of the University is that no new existing funds can be allocated to the School of Pharmacy. Thus new provincial funding is a precondition to any increase in the number of seats.

Further supply may be available by virtue of a new Alberta regulation that allows for recognition of degrees and experience gained in other parts of Canada. As of March 31, 2001 out of province pharmacists can write the Alberta exam and be eligible to practice in the province. This advantage to Alberta will have less impact if other provinces enact similar legislation.

Demand for Pharmacists

The Pharmacists' Association of Alberta has a mandate to monitor employment trends in pharmacy in the province. In response to a growing concern about an apparent shortage of pharmacists, the Association provided an interim report on the province-wide survey designed to gauge the severity of the problem in April 2001.

A total of 921 surveys were sent to hospital and community pharmacies in March 2000. As of April 2001, 361 surveys were returned, providing a response rate of 39%. Community pharmacists returned 302 surveys and hospital pharmacies returned 59 surveys. The results can be analyzed in terms of urban and rural pharmacies. Unfortunately, there is no way to use north/south geography to review the data.

Community Pharmacies

Survey results indicated that there were 88 pharmacist positions vacant as of March 2001. Calgary accounted for 20% of the vacancies. Edmonton is experiencing more shortages, with vacancies of 39%. The remaining 37.5% of vacancies were reported in rural areas, outside of the two major centres.

The major reason for the vacancies was given as incumbents pursuing other opportunities (42%). Other reasons included maternity leave, medical leave and a desire to work fewer hours. Also, 31% of the vacancies were attributed to the creation of new positions. Respondents anticipated 145.5 vacancies in the next year. The increased demand is being generated by extended store hours (11%), prescription increases (16%), a desire to offer an increased level of service (10%) and, current staff wanting decreased hours (10%).

Hospital Pharmacies

There were 19 pharmacist vacancies in the hospital sector as of March 2001. The vacancies were evenly distributed between urban and rural centres. The larger centres anticipate the need for 24 additional pharmacists in the coming year. Smaller centres reported the need for 7.5 positions.

The Pharmacists Association of Alberta concluded that with only 361 responses received, there is indeed a severe shortage of pharmacists in the province: 107 vacancies now, and a further 170 vacancies anticipated.

Other Factors That Influence Pharmacist Shortages

The Alberta Pharmacy Economics Committee and the Canadian Association of Chain Drug Stores commissioned a study of projected requirements for retail pharmacists in the year 2000. Stokes Economic Consulting produced the report: Projected Requirements for Retail Pharmacists in Alberta. Using economic modeling, the study explores factors that have contributed to the current situation and projects requirements for pharmacists to the year 2009.

Prescriptions Per Pharmacist

One indicator of the requirement for pharmacists is the growth in the number of retail prescriptions dispensed per pharmacist per year. The Alberta Association of Pharmacists reports an increase of 17% of prescriptions dispensed over the past several years.

The aging of the population and its relationship to numbers of prescriptions dispensed provides another indicator of a growing requirement for pharmacists. The Stokes Report uses Alberta Health data to reinforce this indicator. 1999 data “suggested that there were about 6 prescriptions per year dispensed for persons under the age of 65 and just over 19 prescriptions for those persons 65 and over”. The Report shows continued growth in

population over the age of 65 between 1995 and 2010 at between 2.9% and 3.5%.

The favourable economic environment of the province provides a third indicator. The low unemployment rates and strong personal income growth attract new people to the province. The in-migration growth rates were reported at 11% in 1995, 37% in 2000, 25% in 2005 and 12% projected for 2010. These new people will require the services of pharmacists.

Finally, the Alberta Government continues to provide increased funding to the health care system following a number of years of health care cuts. While continued increases are not certain, the forecasted budget surpluses seem to indicate continued investment in health care. This increase will allow more people to access the system at a faster rate, thus having an effect on pharmacists' services required.

Remedies for the Pharmacist Shortage

The health industry as a whole has concerns about the shortage of pharmacists in North America. While there is no formal research reported concerning an especially adverse effect of rural centres, several of the studies cited above did provide numbers of vacancies for rural areas. The studies did not go so far as to speculate on the impact of shortages on a rural drugstore's ability to keep its door open.

A number of remedies have emerged from the literature and from interviews:

1. One response is to increase the starting salaries of new graduates in an attempt to attract them to employment in a drugstore (or chain). There are reports of wages of \$30.00 per hour for new graduates in Edmonton. While this may be a temporary solution for a single drugstore or chain, it does nothing to address the real problem of shortages. It may not even prove to be a solution for the high paying store if their new employees can be attracted away by other rewards.

2. A second response is to try to convince the Alberta Government and the University of Alberta to increase the number of admissions to the School of Pharmacy. As indicated above, discussions on this subject are underway. However, the opinion expressed by both the Alberta Association of Pharmacists and the Stokes study is that this will not alleviate the problem entirely.
3. There are ongoing attempts to recruit from outside the province. Alberta's new ability to license out of province pharmacists will provide a recruiting advantage until other provinces pass similar legislation. This will be only a short-term solution.
4. Considerable attention is being given to measures that could increase a pharmacist's productivity. Two major initiatives were reported in the Stokes report.
 - a.) Change technology to reduce the amount of time it takes the pharmacist to dispense the prescription and to manage the affairs of the pharmacy. Some examples of changes that could allow additional time for pharmacists to dispense prescriptions were: changes in accounting methods, inventory systems and merchandising practices.
 - b.) A great deal of attention has and is being directed at the use of pharmacist technicians and assistants to increase productivity. Stokes indicated that the extent to which technicians and assistants can be utilized would reduce the amount of time spent by pharmacists to dispense prescriptions, thus increasing the number of prescriptions per day. This measure has significant potential to provide a positive impact on the productivity of pharmacists and is discussed in more detail in the next section.

Pharmacy Technicians and Assistants

The governance for the scope of practice for technicians is currently in the Pharmaceutical Professions Act. Technicians are considered a restricted practitioner. The Act dictates the activities that they can engage in. (See Appendix A.) The Act is also very clear that the activities can only be undertaken under the direct supervision of a pharmacist (<http://www.gov.ab.ca/qp/acts.html>).

Further information is contained in Section 6 of the supporting regulation. Pharmacy Assistants are not yet regulated. Their activities are prescribed by the Council of the Alberta Pharmaceutical Association.

At the time of writing this report, a paper discussing alternate forms of governance for these occupations is being circulated among pharmaceutical professionals for their comments. The suggestion is that technicians and assistants should ultimately fall under the authority of the Health Professions Act.

The Stokes report cited a 1999 survey conducted by the Canadian Association of Chain Drug Stores that found an average of 3.2 technicians per store in Canada. If this number held for Alberta, there would have been 2,400 pharmacy technicians in Alberta in 1998. The Alberta Pharmacy Economics Committee reported 800 registered pharmacy technicians, both community and institutional, that year. This number does not include non-regulated pharmacy assistants. It appears that Alberta has not yet begun to utilize technicians to the level of other parts of Canada. The Canadian Association Report found that the 1998 average yearly salary for pharmacy technicians in Canada was \$30,500.

Training for Pharmacy Technicians and Pharmacy Assistants.

Currently Red Deer College has a 10-month Pharmacy Technician program. (Full details are in Appendix B.) The Red Deer College program has been in existence for a number of years. It is limited to an intake of 44 students per year.

The program requires 14 courses taken on-site over a 10-month college term. In addition, students participate in a two-month practicum in either a retail or hospital setting. The entrance requirements are Biology 30, Chemistry or Science 30, Mathematics 30 and typing of 30 words per minute. A distance program is also available, with time-lines extended to 2 ½ years. As well, mature students are eligible for both sections of the program.

The Southern Alberta Institute of Technology (SAIT) began offering a Pharmacy Assistant program in March 2000. (See Appendix C for full details.) The program offers 16 weeks of module-based, self-study theory. There is an on-campus lab requirement of 104 hours. The theory portion is based on the Red Deer College curriculum. Entrance requirements are an Alberta high school diploma or equivalent, Math and English 30 or 33 and demonstrated communication and organizational skills. Program intakes occur twice per year, in January and September.

Discussion

There is strong evidence to support the concern about a shortage of pharmacists. The support is found in surveys and studies commissioned by the Alberta Association of Pharmacists and the Canadian Association of Chain Drug Stores. While not as clear, there are some indications in these reports that rural areas are being more severely affected. Unfortunately, none of the studies examined conditions in the north.

A number of remedies to address the pharmacist shortage were presented in previous sections of this report.

At the time of writing, discussions among the Alberta Government, the University of Alberta and the Alberta College of Pharmacists are underway. The goal of the discussions is to increase the number of first year seats in the School of Pharmacy to greater than the present 103. An increase in graduated pharmacists would be a positive step; however, the extent of the problem is such that additional measures are necessary to fully address the issue.

Increasing the productivity of existing pharmacists is an initiative that is receiving a good deal of attention. One effective way of achieving this is to support the pharmacist's duties with pharmacy technicians and assistants. Currently, two of the province's colleges offer programs, one, a technician program and the other, an assistant program.

The Red Deer College Pharmacy Technician program accommodates 35 on-campus students each year. The new distance program had 10 students this year and has the capacity to enroll 22 distance learners. The distance students are required to complete weekend labs on-campus.

The lab for the program is a fully equipped pharmacy with capacity for two students per work station. The cost of the completed lab was around \$100,000.

The SAIT Pharmacy Assistant program is a new earned revenue program. In its one-year history, it has graduated 50 individuals. Plans are underway to expand the program to accommodate an additional 50 students outside of Calgary. The program uses brokered Red Deer College curriculum. It too has weekend lab requirements. SAIT is hopeful that an articulation agreement with Red Deer College can be reached that would allow SAIT graduates to be eligible for advance credit towards the technician certification.

The researcher spoke with administrators of both programs to explore the potential for future college partnerships or cooperative ventures. While both college representatives expressed a willingness to talk with other colleges, neither administrator was optimistic about such ventures. SAIT, for example, is conducting a system-wide review of its brokering activities.

Until a policy decision is reached about the future of brokering programs to other institutions, no action will be taken by SAIT.

The Red Deer College spokesman was cautious about employment opportunities if another college offered a technician program that would, in effect, double the number of graduates each year. This is somewhat at odds with the Stokes report cited above that indicated that if Alberta followed the national norm for ratio of pharmacy technicians, there would be 2,400 technicians in the province. Only a survey of pharmacies would resolve this completely.

He also saw the cost of the necessary lab as an impediment to offering the program from a northern college. While currently this program is a “first qualified, first admitted” program, he is willing to discuss holding an agreed-on number of seats for northern students.

**Duties and Responsibilities
of Pharmacist and Pharmacy Technicians
As Approved By
The Council of the Alberta Pharmaceutical Association**

The duties of the Pharmacy Technician may be performed only under the direct supervision of a pharmacist.

	PROCESSING THE PRESCRIPTION	pharmacist	technician
1.	Collection of demographic information		X
2.	Receive a written prescription		X
3.	Interpretation of the prescription	X	
	a.) indications for use	X	
	b.) dosage	X	
	c.) dosage form	X	
4.	Transcribing of information onto patient profile		X
5.	Monitoring of patient profiles	X	
	e.g. a.) allergies	X	
	b.) drug information	X	
	c.) rational drug information	X	
6.	Selection of drug product	X	
7.	Generation of prescription label		X
8.	Counting and pouring (includes obtaining product from shelf stock)		X
9.	Selection of auxiliary labels	X	
10.	Preparation of Rx receipt		X
11.	Preparation of third party billings		X
12.	Reporting of controlled and narcotic drugs		X
13.	Preparation of compounded pharmaceuticals including IV additives and IPM		
	a.) checking of calculations	X	
	b.) checking of weights and/or measures	X	
	c.) checking of procedures	X	
	d.) responsibility for documentation	X	
	e.) physical preparation		X
14.	Preparation of pre-packaged pharmaceuticals		
	a.) Checking of packaged material	X	
	b.) Checking of stock product	X	
	c.) checking of labels	X	
	d.) checking of procedures	X	
	e.) responsibility for documentation	X	
	f.) physical preparation		X
15.	Final check on all prescriptions	X	
16.	Consultation with physicians and other health care professionals in respect to medication orders	X	
	a.) verbal prescriptions	X	
	b.) repeat authorizations	X	
	c.) Rx copies	X	
17.	Release of prescription to patient with assurance of appropriate patient counselling	X	
18.	Patient counselling on OTC's e.g. product selection and recommendations	X	
19.	Inventory control		
	a.) Placing orders	X	
	b.) Responsibility for placing narcotic and controlled drug orders	X	
	c.) receiving orders		X

Red Deer College Pharmacy Technician Program

Studies include preparing aseptic products, compounding pharmaceuticals, narcotics control and drug distribution. You will also gain a working knowledge of computer processing, third party billing, record keeping, inventory control, purchasing and merchandising.

One-Year Certificate

Graduates work in hospitals, community pharmacies and related pharmaceutical fields, under a Pharmacist's supervision. Duties include:

- preparing medication for dispensing
- compounding pharmaceuticals
- preparing aseptic products
- inventory control
- purchasing
- merchandising
- record keeping as required under such acts as the Food and Drug Act
- narcotics control
- third party billing
- drug distribution
- prepacking pharmaceuticals
- computer processing
- clerical and other duties as necessary

The On-Campus Program

- 14 courses
- 10 months (September to June)
- 8 months at Red Deer College
- 2 months of practicum
- Community Pharmacy (140-160 hrs)
- Hospital Pharmacy (140-160 hrs)
- 3 terms

The Distance Program

- 14 courses
- 2 1/3 years
- Practicum
- Community Pharmacy (140-160 hrs)
- Hospital Pharmacy (140-160 hrs)
- 7 terms

Admission Requirements

A) Academic Requirements

1. High School Diploma with no mark below 60% in:
 - a. Biology 30
 - b. Chemistry 30 or Science 30
 - c. English 30 or 33
 - d. Mathematics 30 or Mathematics 30 (Pure) or Mathematics 33 or Mathematics 30 (Applied)
 - e. Typing 30 or you may show ability to type a minimum of 35 net words per minute.

OR

2. Mature Student

You must be 19 years of age or older, out of high school at least one full year before the program starts with no mark below 60% in:

- a. Biology 30
- b. Chemistry 30 or Science 30
- c. English 30 or 33 or a minimum score at the 50th percentile on the English component of the College Board Placement Test (written on campus) or the Test of Adult Basic Education (written off campus) and a score of 2-3 on a writing sample.
- d. Mathematics 30 or Mathematics 30 (Pure) or 33 or a minimum score at the 60th percentile for the Math component of the College Board Placement Test (written on campus) or the Test of Adult Basic Education (written off campus).
- e. Typing 30 or you may show ability to type a minimum of 35 net words per minute.

AND

B) Other Requirements

1. Knowledge of the Pharmacy Technician career (forms provided by the College). Pharmacy experience is an asset.
2. Two letters of reference from educators or employers, or both (forms provided by the College).
3. A one- to two-page handwritten essay giving your reasons for choosing a Pharmacy Technician career.
4. A medical and personal health review completed before starting the program (forms provided by the College).
5. Computers 30 or equivalent is an asset.
6. Computer literacy.

SAIT Pharmacy Assistant Program

16-week self study format

Minimum Educational Requirements:

Alberta High School Diploma or equivalent

Math 30 or 33

English 30 or 33

Courses include:

Introduction to pharmacy

Order processing

Drug Product Knowledge

Inventory management

Professional standards

Computer Fundamentals

Medical Terminology

Human/Workplace

Health Care Communications

The Program

Pharmacy Assistants work together with Pharmacists and Pharmacy Technicians to provide optimal drug therapy to patients in community and institutional settings.

The Pharmacy Assistant is a vital member of the Pharmacy team, performing various duties under the supervision of a pharmacist. Responsibilities are varied and include drug preparation and dispensing, prescription and patient information data entry, inventory management, customer service, clerical tasks, and other duties, which increase the pharmacist's efficiency and availability to provide pharmaceutical care to patients.

Admission Requirements

Academic prerequisites include an Alberta high school diploma or equivalent, and completion of Math and English 30 or 33. Applicants to this program should have excellent communication and organizational skills and should be proficient in mathematics. You need to be detail-oriented, precise, an effective team player, and able to work well under pressure.

Program Length and Location

The program has two intakes per year, one in September and one in January. The Program is comprised of a theory portion designed in an outreach format combined with lab and practicum time. It requires minimal classroom time to cover essential program content making it well suited to those working part-time or facing child-care challenges. The program is 16 weeks in length. Theory is delivered in a module-based, self study format.

Concurrent with the theory, students will attend class/lab days on weekends. Practical experience is gained through a practicum in a community pharmacy. This allows graduates to develop the necessary manual skills, technical knowledge, and clinical experience required on the job.

Program Details

Subject	Hours
Computer Fundamentals	48
Medical Terminology	24
Human/Workplace Relations	48
Health Care Communications	32
Introduction to Pharmacy	16
Order Processing	232
Drug Product Knowledge	80
Professional Standards	24
Inventory Management	32
Practicum	104

Sources

<http://www.alis.gov.ab.ca/learning/institutions.html>

<http://www.gov.ab.ca/qp/acts.html>

Projected Requirements for Retail Pharmacists in Alberta. Prepared for the Alberta Pharmacy Economics Committee and the Canadian Association of Chain Drug Stores by Stokes Economic Consulting

A Vacancy and Projected Hiring Survey of Members. The Pharmacists Association of Alberta

Contacts

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