Chapter 12 Canada 1970-90

World situation

This period reflected a dynamic, changing world. Technology greatly shifted activities and communications while political changes were brought about by new concepts of government. New regimes took over in Greece, Argentina, Argentina, Uruguay, Brazil, Chile, Peru, Brazil, Guatemala, Nicaragua, and Spain. The Ayatollah Khomeini fled Iran in 1978 and returned a year later to form the government when the Shah was expelled. Bangladesh was carved out of Palestine, Zimbabwe emerged from Rhodesia, and the Soviet Union invaded Afghanistan. Many of these changes resulted in conflict and misery.

Overall, the world economy was growing, civil rights were being enacted, developing countries were developing and the international agencies were reasonably effective in creating an interactive process among countries that led to improved trade, communication, and benefits. A number of conflicts continued, however, and the East - West polarization of the Cold War continued.

In the early 1970's the United States was bogged down in the Vietnam war and was desperately seeking a way out. They decided to leave in 1973 mainly due to public pressure for an unpopular war which required the conscription of thousands of young men (at one point about 500,000 troops were in Vietnam). Their sudden withdrawal from Vietnam left the South Vietnamese to face the North Vietnamese army alone. After struggling for the next two years the country was united under North Vietnam in 1975. The psychological trauma of this war had an enormous impact on America and slowed US international intervention for some time. In this period an estimated 30,000-50,000 draft dodgers came to Canada.

Despite their involvement in Vietnam the United States actively assisted Israel during the 1972-73 war with Egypt, Syria, and Jordan. This action by the United States to support Israel resulted in the exporters of oil in the Middle East more than doubling oil prices with dramatic economic repercussions in the marketplace. This success of the OPEC nations in this event led to a continued regulation of oil prices into the next decade.

The Cultural Revolution in China stretching from the mid 1960's to the mid 1970's was a massive social disaster with thousands killed and millions sent to work camps. Universities were shut down and teachers killed or sent to work camps. China became isolated from the world and the teaching of other languages was forbidden. It took several decades to recover from this event. In October of 1970, Canada established diplomatic relations with China and China opened an embassy in Ottawa. The same year China became a member of the United Nations.

In 1989 a massive demonstration, mainly of students, took place in Tiananmen Square in Beijing. It was a peaceful demonstration for reform. The army brutally put down the demonstration and

reportedly killed thousands. Strong legislation preventing demonstrations was enacted. No information has been released by the Chinese Government on the event and internal discussion of it is prohibited. A large number of students left for other countries and many of those abroad in countries such as Canada chose not to return. Canada allowed these students to remain in Canada.

In 1978-79 the Iranian Revolution took place forcing the Shah of Iran to leave in 1979 and the Ayatollah Khomeini took power creating the Islamic Republic of Iran. Soon after, Iranian students seized the US embassy and held the staff captive. Canada played a role in this by helping six Americans from the embassy to escape by flying out with the Canadian embassy staff. The remainder of the US embassy staff were prisoners for quite a long time (444 days) before they were released in exchange for weapons that the US supplied through Israel. This scheme was illegally funded by funds intended for the Contras in Nicaragua. An attempt to free the staff took place with a botched rescue attempt by American troops which led to political repercussions and further strained relations between the two countries.

A massive earthquake in Peru in 1970 caused huge mudslides and rock avalanches. A city of 80,000 was virtually destroyed and 3,000 people killed. A series of additional earthquakes in the region caused more problems. An earthquake of similar dimensions (7.6 Richter) destroyed a swath across Guatemala in 1976 including the ancient capital of Antigua. The same year an 8.2 Richter quake in China is reported to have killed between a quarter and three quarters of a million people destroying a city of 1.6 million and killing 12,000 coal miners underground. A major earthquake (7.8 Richter) in Mexico City, followed by another quake, destroyed over 250 buildings, left tens of thousands homeless and thousands died. Each decade suffers from natural calamities. Each year we seem to be better prepared to assist those afflicted and many repressive regimes are now less likely to hide the problem.

In 1980 Mount St. Helens erupted in Washington State with a large number of people killed and a large area devastated. The park area now has displays of the event.

In the United States a nuclear accident occurred at Three Mile Island in Pennsylvania when an atomic reactor overheated, melting the isotope rod jackets, leaking radioactive water into adjacent buildings. This meltdown was safely shut down and there were no reports of deaths. However, public concerns over the potential dangers of nuclear power plants has continued, especially since the 1986 Chernobyl Disaster in the Ukraine which did kill thousands and contaminate a huge area. These events have created a continuing public concern over the safety of nuclear generation of electricity.

In 1980 the AIDS epidemic struck the United States. In the next 10 years 175,000 people died. This epidemic spread also to Canada and public health programs have been initiated to try to control the outbreak.

In 1986 the Berlin wall came down and shortly thereafter the Soviet Union collapsed with several European countries becoming independent again. This marked the end of the Cold War.

Developments in Canada

In 1970 the population of Canada was 21,297,000. Economic growth from the 1960's continued and the major social changes were the rapid promotion of personal rights, political change and rapid growth of noncommercial organizations, this latter change was particularly true of pharmacy.

Various groups agitated for recognition of their rights: lesbians, gays, native people, women, ethnic and religious minorities. A Minister Responsible for the Status of Women was appointed to the cabinet in 1971. The Canadian Human Rights Act was passed in 1977. Various rights were enshrined in the Charter of Rights and Freedoms of 1982. This was exemplified by the first female Rhodes Scholars being selected in Canada to study in England. On the other hand the Supreme Court issued an injunction to prevent a woman from having an abortion in January 1972. The request for an injunction was brought by her husband. In 1973 Dr. Henry Morgantaler was acquitted of the charge of performing an illegal abortion. Juries acquitted him despite his statements that he had performed thousands of abortions. This led to some changes in criminal law with respect to abortion. In 1976 the death penalty was abolished in Canada.

Greater recognition for women in many sectors was evident. The United Nations designated 1975 as International Women's Year. Many women in Canada became more active in politics. Monique Begin was the first women from Quebec elected to the House of Commons (1972) and served as the minister of national health and welfare 1977-1984. She was instrumental in having the Canada Health Act passed in 1984. The first female recruits were accepted in the RCMP in 1974. In 1978 Air Canada hired its first woman pilot and flight attendants won the right to continue working after marriage and past the age of 32.

In 1980 Britain agreed that Canada would assume control of their constitution and end the practice of Britain being the ultimate arbiter of Canadian constitutional issues under the British North America Act. In 1982 Queen Elizabeth signed the new Constitution which transferred power to Canada. This legislation also included the Charter of Rights and Freedoms. The Charter would come to play an increasing role in Canadian legal cases in the future. Canada's voting age for federal elections was dropped from 21 to 18. The high turn out of voters in the 1970's did not last and since then the proportion of people voting has consistently decreased, particularly among young people.

The 1970's saw rising prices, due in large part to the massive increase in oil prices as a consequence of the Arab-Israeli war in the Middle East. An economic recession during the 1970's made people more dependent on government but it also led to increased taxes and large fiscal deficits to pay for benefits. Balancing the budget became a continuing aim of various governments with the longer term objective of lowering the massive public debt. However,

society continued to push government to deal with urgent social and economic problems by increasing government expenditures. The free trade agreement with the US (1986) provided a hedge against domestic economic fluctuation and the economic growth provided an opportunity for many Canadian firms.

The growth of technology with the introduction of the computer was beginning with the explosive growth of the internet in the 1990's. Computer technology enabled Canada to become more productive in both the economic and social fields and was a transformative technology.

In the political area the decade was scarred by the October Crisis of 1970, resulting from FLQ kidnapping of British diplomat James Cross and the killing of the Quebec Minister of Labour and Immigration Pierre Laporte. Prime Minister Trudeau enacted the War Measures Act and sent troops into Quebec province and Ottawa. Membership in FLQ became a crime, civil rights were ended and hundreds were arrested. Eighteen were convicted.

Quebec was increasingly in the news as the federal government set out programs to make Canada a bilingual and bicultural country. In 1969 the Official Languages Act had been passed and federal services were to be available in both official languages in 37 designated regions. A goal of 28% francophones in the armed services was announced. In Quebec there was a demand for a right to live in the French language and culture including legislation to make French the official language of the province. The Parti Quebecois was elected in Quebec and a referendum held in 1980 with 60% of the voters supporting federation with Canada rather than separation. This was the first of several referenda.

Constitutional change was attempted in the Meech Lake Accord in 1987 but it failed to gain unanimous provincial support in 1990. This has been a festering issue with the province of Quebec.

One important impact of the linguistic turmoil in Quebec was the departure of many corporate head offices from Montreal to Toronto rather than attempt to adjust to the new regulations for firms and educational restrictions in the province. This resulted in Toronto becoming the main financial centre in Canada rather than Montreal. The provincial government in Quebec set a policy of supporting the pharmaceutical industry and medical research so that only a portion of the pharmaceutical industry moved to Ontario.

Foreign ownership of corporate firms in Canada was a concern and legislation was enacted to review all such purchases. The US held 80% and UK 9% of total foreign capital invested in Canada. In 1900 the figures were reversed with the UK holding 85% and the US 14%. US takeovers such as the sale of Ryerson Press to McGraw-Hill of the US generated concern and press coverage. The federal government gave Canadian firms loans to keep them in Canada. In 1971 publisher McClellan and Stewart was granted a loan of $961,000. Ontario followed up by initiating a program to help prevent foreign ownership of Ontario based publishing houses. Despite all of this, McClellan and Stewart was finally sold to a foreign firm in 2011. Foreign

ownership ceased being an issue with the initiation of the Free Trade Agreement with the United States in 1986.

In the mid 1970's the federal government, Alberta, and Ontario invested in Syncrude to develop the Athabasca oil sands. Petro Canada, a crown corporation, was formed to assume responsibility for the federal government's investments in the oil sector. With the federal Progressive Conservatives coming to power a budget was proposed to increase excise tax on gasoline. This resulted in the defeat of the Joe Clark government in 1979. In 1980 the federal government under Trudeau passed the National Energy Policy which resulted in a confrontation with Alberta and years of rancor. The National Energy Policy that sought to reduce American control of the petroleum sector by purchasing American companies and regulating royalties was bitterly contested by Alberta and resulted in long term Western alienation. It also created a large government debt ($6 billion) from purchasing oil companies at a time when oil prices were at a low level. In 1970 Shell Canada became the first company to offer unleaded gasoline.

Canada passed legislation in 1977 requiring people wishing to purchase a firearm to have a Firearms Acquisition Certificate necessary to purchase firearms and ammunition. Some weapons, especially automatic weapons and pistols, were restricted meaning that individuals could not own or purchase them. Long weapons, rifles and shotguns, were added to the firearms registry by the Liberal government without Parliament's knowledge or consent. This change drastically increased the cost of the registry, alienated the target shooters, hunters and farmers, and resulted in a registry that was incomplete and unreliable. The enormous cost and lack of accuracy in the registry has led to controversy regarding its retention which has moved the argument of those in favour from the original basis of the legislation which was to ensure the safety of the public by preventing crime on the street to suicide prevention, the major cause of firearms deaths. Those opposed to the registry point out that the control of firearms is an ineffective approach to suicide prevention and a waste of money. In any case the firearms controversy is more about politics than safety.

The breathalyzer to test blood alcohol levels of suspected impaired drivers was introduced at the end of 1969. In the same year Walter Chell of Calgary developed the Bloody Caesar, a combination of tomato juice, vodka, celery stick and lime with seasoning. It became the most popular drink in Canada and is still very popular in Calgary and places where Calgarians are found, such as Phoenix, Arizona.

In 1970 Canada began the process of banning DDT which was thought to decrease bird raptor populations and was thought to be a carcinogen (in 1975 there were only 34 pairs of nesting peregrine falcons). The next year Canada established a Department of the Environment. In 1977 polychlorinated biphenyls (PCBs), mainly in electrical transformers, were prohibited due to their carcinogenicity. Fluorinated hydrocarbons were also banned due to their destruction of the ozone in the upper atmosphere. These changes were based on an international consensus for restrictive legislation.

The Canadian aircraft carrier Bonaventure was decommissioned in 1970 leaving the Canadian navy without an aircraft carrier. An antisubmarine hydrofoil craft “Bras d'Or” in 1971 was mothballed due to cost. Through the 1970’s and 1980’s Canada’s armed forces were reduced to a very small, unequipped force that was more proficient in the government’s language requirements than in operational capacity. Adding insult to injury the daily rum ration of naval personnel was discontinued in 1972. During the 1970’s and 1980’s Canada maintained peacekeeping missions in the Middle East and Cyprus. Some of these lasted decades and gave Canada a reputation as peace keepers. It should be kept in mind however that the peacekeeping activities of this ear were based on both parties in conflict agreeing to a negotiated process involving peacekeepers.

Canadian provinces introduced legislation to participate in the federal Medical Care Insurance program that was introduced in 1967 by the federal government. This program shared half the cost of provincial physician expenses – too good a deal to refuse. By 1972 all the provinces were participating and physician expenditures and incomes were rising sharply. In 1984 the Canada Health Act was given royal assent and went into effect. It required provinces to prevent additional charges for physician and hospital services or face financial penalties. The provinces were to maintain the 5 conditions of cost sharing by the federal government: full access, universality, comprehensive coverage, portable coverage, and not for profit administration. These have come to be known as the Principles of health care in Canada although they are in actually the criteria for federal provincial cost sharing. Only in Canada would federal-provincial program criteria be discussed as principles of health care. Various other principles based on health outcomes are in the literature and would be more appropriate. To make health care more effective community health centres were being advocated and this was supported by the Hasting’ Report. It was hoped that this would lead to greater health opportunities for pharmacists but neither health centres or pharmacist involvement occurred. What did occur was a rapid increase in wages and fees. In 1980 the United Nurses of Alberta went on strike despite a back-to-work order and they gained a wage increase of 37.8% over two years. In Quebec a five day strike by general practitioners in 1982 for a fee increase of 38.5% resulted in an increase of only 11.4%. Pharmacy received few increases in its professional fees. One measure of progress for pharmacy was the initiation of pharmacy assistant programs in Ontario’ s Humber College in 1971. From this initial program pharmacy assistants, then technician, programs have evolved.

The LeDain Commission on the non-medical use of drugs released their report (1972) in two parts. They recommended the use of heroin to treat drug addiction and the elimination of penalties for possession of marihuana and hashish. The government rejected both recommendations. The government did, however, adopt the policy of not sending first time marihuana users to jail. There was an expectation that pharmacists would somehow be involved in dealing with addictions but the nature of addiction is more of an intensive, personal, patient treatment process than a drug control process. In any case pharmacists were not involved in the distribution of illicit drugs and other than taking part in education, mainly directed at parents.

Rising concerns from the health effects of tobacco products led to studies on health impact, health costs, and damage from fires caused by cigarettes. By 1975 the federal government initiated legislation requiring public transportation companies to have nonsmoking sections in planes, trains and buses regulated by the federal government. This tide of smoking constraints had an impact on pharmacies which were the main vendors of tobacco products.

Canada began the establishment of a 200 mile economic zone in the oceans around Canada to control fishing, pollution, and exploration. In 1982 the collapse of the cod fishery resulted in economic hardship along the Atlantic coast particularly in Newfoundland. In the next few years 40,000 Newfoundlanders left the island, mainly for Alberta.

The Supreme Court ruled the Lord's Day Act, used to restrict or ban Sunday shopping, was unconstitutional. Pharmacy's exemption from the Act no longer allowed it to monopolize retail sales.

The Summit Series in hockey between Canada and Russia was held in 1972. After a number of games Canada narrowly beat Russia with the winning goal by Paul Henderson who became a Canadian hero. This event has become an iconic moment in Canadian history. Edmonton hosted the World University Games in 1983. The Commonwealth Games were held in Edmonton in 1978 with Canada winning a record number of medals. In 1988 the Winter Olympics were held in Calgary and were extremely successful. The facilities resulting from the event have enabled a major advance in Canadian athletics.

Scientific Advances

The Medical Research Council of Canada and the University of Alberta established Canada's first organ transplant research group.

Dr. Gerhard Herzberg, a Canadian physicist with the National Research Council, received the Nobel prize in 1971 for his work in molecular spectroscopy.

The first Canadian satellite was launched from the space shuttle Discovery in 1985.

Canada developed the CANDU nuclear reactors. They were safer as they were able to use natural uranium, rather than plutonium, and ordinary water rather than heavy water. This was to be Canada's contribution to energy generation. The Gentilly nuclear power plants in Quebec began construction in 1970 to generate electricity. In 1977, 8 Bruce nuclear reactors were built on Lake Erie to generate electricity. The next year 8 Pickering CANDU Reactors began to be installed near Toronto with the final one completed in 1986. In1972 Quebec planned the massive $6 billion James Bay hydroelectric power project with the support of the Federal Government. At about the same time the Churchill Falls powerhouse in Labrador went on line to Hydro-Quebec. This was the largest single site hydroelectric power project in the world.

Developments in Pharmacy

The rapid expansion of health care in Canada along with the advances in surgery, public health and new drugs for diseases that were not formerly treatable created a sense of progress with little concern about public funding. But even in this free spending era the cloud of high drug prices and rapid pharmaceutical expenditure in public programs resulted in attempts to constrain pharmaceutical expenditures. There were numerous surveys, investigations and litigation that reflected a frustration in getting control of public expenditures. Pharmacists were seeing rapid increases in prescription volume along with more administrative hurdles in providing care. Reimbursement for service was now at the whim of provincial governments and there were substantial differences from province to province. What was common to all the provinces was a desire for cheap drugs and efficient dispensing that was inexpensive. Health concerns were notable for their absence.

Over this period pharmacy organizations underwent dramatic change. National organizations reorganized, moved and faced a variety of new problems. Provincial organizations that served both the profession and the public were divided into two organizations with very different mandates. A number of specialty organizations also appeared. In 1970 almost every pharmacist was a member of the Canadian Pharmaceutical Association and received their journal. In 1990 they were struggling to maintain membership at 50%.

The Canadian Pharmaceutical Association formed a Commission on Pharmaceutical Services in 1967 and set out the terms of reference: “The Commission shall inquire into and report on all aspects of the practice of pharmacy, the provision of pharmaceutical services to the public, the profession’s role in health care, and its relations with and services to the other professions”. The Commission was headed by John B. Macdonald, a dental academic with experience in health planning as Executive Director of the Council of Ontario Universities. The Commission’s report, Pharmacy in a New Age was released in June 1971. The members of the Commission were: Professor Ross M. Baxter of the Faculty of Pharmacy, University of Toronto (served as Dean); Prof. Bernard Blishen, Dean of Graduate Studies and Head of the Department of Sociology, Trent University; Donald M. Cameron, Registrar, Alberta Pharmaceutical Association; Roger Larose, Vice-Rector (Administration), University of Montreal and President of Ciba-Geigy Canada Ltd (also served as Dean of Pharmacy); J. Keith Lawton, President, Lawton Drug Stores, Halifax N.S. (served as President of CPhA); Jack L. Summers, Professor of Hospital Pharmacy, University of Saskatchewan (served as President of CPhA, CSHP and AFPC),; R. Ernest Wilton, Wilton’s Pharmacy, London Ontario (Died during the Commissions work in September 1970);and A. Whitney Matthews, Registrar, Pharmacy Examining Board of Canada (served as Director of Pharmacy program at University of Alberta and as Dean of Pharmacy at U.B.C). Whit Matthews was the Executive officer of the Commission and organized the data collection and writing of the report. In addition there were several staff members: Dr. Harold Segal, Pharmacy Administration, University of Toronto; George M. Torrance, Sociology; G.W. (Pete) Fairley, Secretary; and Dr. John Bachynsky as Consultant on loan from the Department of National Health and Welfare.

Major studies were conducted of: the occupational role of the pharmacist, pharmacist manpower resources, economics of providing pharmaceutical services, the laws and regulations pertaining to pharmacy (conducted by legal experts at the University of Toronto, Faculty of Law), and the utilization of nonprofessional assistants. Submissions of material were also made by many pharmacy organizations. The final report submitted in 1971 was entitled Pharmacy in a New Age. It consisted of 15 Chapters, 97 recommendations and a detailed appendix all of which totaled 463 pages. It presented a perspective on the future of Pharmacy and the changes needed to prepare Pharmacy for the future. It was a useful document for both provincial and national organizations with many of the recommendations being put into practice over the next few years. The research and ideas put forward shaped the profession over the next two decades.

While the Commission was conducting its study, CPhA had engaged a management consultant firm, Stevenson-Kellogg to report on CPhA organization, operation and administration. This was the first major review since the organization was formed 60 years earlier. The governance of CPhA consisted of 4 delegates from each province sent by the licensing body (except Quebec which had opted out). Over time there was growing representation (one person) from other pharmacy groups (AFPC, CSGP, CSHP, and CSIP). Ontario initiated a discussion on the imbalance between its large number of pharmacists and its representation. This imbalance continued to be discussed in the context of the plan proposed by Stevenson-Kellogg. They proposed a House (later changed to Council) of Delegates with representation of one delegate from each province's affiliated body (licensing) plus an additional delegate for every 500 pharmacists belonging to a nonaffiliated body (professional organization). It should be kept in mind that at this time all the licensing bodies required pharmacists to be members of CPhA. The Stevenson Kellog report also proposed council members from government and lay organizations. This resulted in a large unwieldy structure including an Executive Committee and a Board of Governors.

The Commission on Pharmaceutical Services had recommended that CPhA be organized with a voluntary membership structure rather than having delegates from licensing bodies. It would also be transformed into an umbrella organization for all the various pharmacy organizations. As a result CPhA had a wide range of activities and services but no longer had automatic membership fees from each pharmacist. The recommendations of the Commission on Pharmaceutical Services were in line with those of Stevenson-Kellogg but had a stronger emphasis on individual membership and eventually this approach was taken.

There was a growing requirement for much more communication and the publications in the form of newsletters, reports, drug information and formal continuing education programs, all of which was costly at the same time the membership was declining. To some extent publication of the CPS generated income to help balance the budget. Publication became a key element in CPhA operations and a committee was formed under the President Chuck Meagher to guide activities. CPS had now been established as a valuable resource to physician and pharmacists with strong support from industry, pharmacy and medical associations, and hospitals in the form

of assistance in distribution. Revenue from the other publications (Canadian Pharmaceutical Journal, Canadian Journal of Pharmaceutical Sciences, PharmaNEWS, Pharmaceutical Price Book for Retail Practice and various reports) generated losses rather than contributing to revenue. A companion to the CPS was Canadian Self Medication published in 1980.

Patient records was a major issue through the 1970's as it was seen as a breakthrough in patient care. In dispensing a pharmacist would review the patient record to see the medication that had been dispensed previously and any information on allergies, untoward reactions, etc. This reinforced the concept of pharmacy as a helping profession instead of a business. As the use of computers began there was recognition of the benefits that could be obtained. Many pharmacists became involved in electronic record keeping and later computerized dispensing programs. While there was substantial developments over the next two decades, it wasn't until the turn of the century that there was a requirement that all prescriptions dispensed for third party payment be submitted electronically. During the 1970's the number of prescriptions rose substantially and continuously with the introduction of new products. In 1978 CPhA moved to Ottawa and sold the Toronto building which provided enough money to build a new building in Ottawa. In preparation for the move and as a transitional endeavor an office was rented in Ottawa and the Executive Director, John Turnbull, came to Ottawa one day each week to meet with federal officials, politicians, and pharmacy groups. As part of the office rental he employed Lois Bachynsky as the office manager to maintain communication and arrange meetings.

An ideal site in a park like setting obtained from the National Capital Commission. This came about through the efforts of Jean-Paul Desjardins, an influential Ottawa pharmacist and the Hon. Gerry Weiner, a pharmacist cabinet minister. The building was located next to the Canadian Medical Association and Canadian Dental Association on Alta Vista Drive. Across the street was the national Red Cross building. The ground breaking ceremony took place on 21 October 1985 and the building was completed the following year.

Concern over drug toxicity was reflected in the development in 1980 of the Drug Caution Code in Manitoba and then upgraded and implemented in Alberta in 1984 where over seventy per cent of the pharmacies participated. Nonprescription medication was labeled with a code indicating its potential for harm. Saskatchewan and Nova Scotia also implemented the program which consisted of self-talkers in the pharmacy, pamphlets for customers, decals in the pharmacy, and stickers for nonprescription drug products. A survey of pharmacy customers reported in the October 1987 CPJ showed that customers became aware of the program by the information in the pharmacy and that the code influenced their choice of medication, notably the decision not to purchase by a third of the customers influenced. This program generated a great deal of public education and professional good will but over time the enthusiasm, supplies, and support decreased and it passed out of existence.

Patient safety was also the aim of having the public get rid of outdated and unneeded medication by turning it in to a pharmacy. A program called the Great Drug Roundup in Alberta began the

program with the support of most pharmacies, drug wholesale, and provincial government. A surprisingly large collection of medication resulted, some of it going back to the early 1900's. This program grew to the point where almost 20 tonnes of medication is taken to the provincial incinerator for destruction. The discovery of persistent levels of medication in community drinking water as a result of it being flushed down toilets into the rivers has been a reminder of the value of the program.

Another attempt at providing patient information was the SIMS program in the mid 1980's in which the CPhA printed patient information for many drugs that would be passed out to patients. This was a timely action as there was a perceived need but the number of pharmacists participating resulted in CPhA incurring a substantial loss and the program was discontinued. A book for patients entitled About Your Medicines; A Reference For Consumers was published in 1983 by CPhA and sold through pharmacies. As patient information on use of medication became more accepted as a professional responsibility pharmacists such as Dorothy Smith prepared information, in this case a book on prescription drug use. In 1989 Shoppers Drug Mart introduced *Healthwatch* magazine to provide health information to customers. This magazine came out 6 times a year. Later the concept was broadened to be the Healthwatch program. In 1990 the Canadian Medical Association produced a book Guide to Prescription and Over-the-Counter Drugs. It was printed by Readers Digest and sold for $39.95.

One aspect of drug price competition that impacted Pharmacy was product selection. The meaning of this was that the pharmacist would select the brand of product to be dispensed as they had the knowledge of drug quality and action to make an informed decision. In 1972 several provinces (Alberta, B.C., Saskatchewan and Manitoba) introduced legislation giving pharmacists this authority, thus nullifying the previous pharmacy regulations that prohibited the substitution of another brand of product than the one prescribed by the physician, by brand name. Since new products were promoted by brand name they were the best known name and it was more appropriate for combination products. With the introduction of generic products an effort was made to induce physicians to prescribe by generic name, a losing cause, and to enable pharmacists to dispense a lower priced generic product rather than the brand name product. Alberta led the way with product selection legislation, but this was without consulting pharmacists or physicians resulting in both professions ignoring the legislation and dragging their feet on this issue so that they were the last to apply product selection. Manitoba was the first province to legislate the equality of products on their formulary list and took legal responsibility for any injuries to patients. The response of the pharmaceutical industry was to lobby pharmacists to support them in order to maintain scientific research and to ensure the patients' access to quality products. Quality issues were dominant over the next decade with both provinces and the federal government initiating programs to maintain quality standards. Despite pharmacists having more information on drug quality, the dominant determinant in dispensing generics was inevitably price. Later, the chain pharmacies negotiated price discounts from

generic firms and compelled their pharmacists to dispense the generic selected by the pharmacy chain.

Professional Image

Pharmacy as a profession carried the burden of a large retail operation that distorted public perception about its professional role. The reality was that in North America carrying retail products was necessary for survival. Over time the size of stores and the breadth of products grew to the point of hiding the professional aspect. Surveys in this period revealed the shocking statistic that a third of the pubic did not know that pharmacists were university graduates. Since then various pharmacy organizations have launched public campaigns to educate the public about the role and value of pharmacists. This seems to have paid off in that pharmacists are now seen to be the most trusted health professional, perhaps in part because people don't really know what they do.

The 1981 annual general meeting of CPhA was held in Winnipeg. One resolution dealt with passport guarantors, individuals from an approved list of professions that have known the applicant for at least two years and well enough to be confident that the statements made in the application are true. Pharmacy as a profession requested that they be listed as guarantors but were turned down by the federal government on the basis that there were enough groups listed to meet the needs of the public.

The resolution called on pharmacists to urge their member of parliament to make representation on behalf of the profession. In all likelihood this generated little communication with the members of parliament. What did stir the issue was that shortly afterward veterinarians were listed as passport guarantors. Apparently animals had more influence than health professionals! With the election of the Progressive Conservative government Mr. Gerry Wiener, a pharmacist, was appointed as Minister of Immigration and responsible for passports. Soon after pharmacists were guarantors. Gerry was proud of being able to make this change on behalf of the profession.

The image of pharmacists did not move as quickly as the changes in pharmacy practice. A survey of physicians in 1985 reported that they saw the role of pharmacists as: dispensing prescriptions 38%, providing information on nonprescription drugs 30%, advising patients on medication 27%, providing patients with information on allergies and side effects 22%, as a back up for physicians 11%, and providing drug information 10%.

An Upjohn survey of consumers in 1988 (CPJ July 1988), repeating some questions asked in 1982 was positive with 80% reporting "a great deal" or "quite a lot" of confidence in pharmacists, up from 73% in 1982. What made this particularly important was that there were lower scores for physicians (67%), nurses (73%), and dentists (72%). Pharmacists were increasingly seen as a health professional rather than a retailer but they still carried a heavy retail

image. When asked if they discussed their prescriptions with the pharmacist 48% said they did, up from 37% in 1982.

High Drug Prices Issue

In the midst of this reorganization and perilous funding period the wave of public indignation over pharmaceutical pricing washed over the profession. It was fanned by inflammatory statements about the enormous mark up on prescription drugs by pharmaceutical firms and the discrepancy between prices to government and hospitals compared to those for community pharmacy. Generic drugs that now appeared at low prices also fueled the criticism of drug prices. The federal government had investigated drug prices and as a result of a Special Committee Report (Harley Report) was prepared to introduce legislation for compulsory licensing. Drug patents prevented other firms from making protected products but with compulsory licensing the generic firms would be able to make the patented products and compete with the brand name firms on the basis of price by paying a licensing fee to the patent holder. Licensing arrangements were common in the pharmaceutical industry with fees normally over 20%. In the case of Canada's compulsory license fees they were only 4%. The Canadian pharmaceutical industry was devastated by this decision.

The Harley Report contained 23 recommendations, some of them simplistic and unhelpful such as a recommendation that "all medical and pharmacy students be instructed during their studies in the generic nomenclature for drugs" (which has always been the case). Others were very good but ignored by government (increasing funding through the Medical Research Council to promote pharmaceutical research), some were self apparent (that the sales tax be removed from prescriptions), and some were well meaning but injurious (compulsory licensing). These recommendations were the basis for a government initiative to reduce drug prices.

The compulsory licensing legislation was part of a government program to lower drug prices. Other components of the program were: Pharmaceutical Industry Development Act (PIDA) in which government funds were given to generic firms to increase their production of generics, copyright changes that allowed the import of patented products from the patent owning firm in other countries (later referred to as parallel imports), and greater Food and Drug testing of generic products (at the time there were some terrible products that began disintegrating in their original container).

The public perception of excessive drug prices included Pharmacy as part of the problem. CPhA representatives visited the Honourable Ron Basford, Minister of Consumer and Corporate Affairs, who was responsible for the legislation and presented pharmacy's views but had little influence. Even their request that government take action with respect to Hoffman La-Roche company providing free Valium to hospitals, an action that prevented competition, was ignored. Pharmacists were concerned about the need to fund research to produce more new discoveries and in 1982 passed a resolution at their annual meeting:

> *"Be it resolved that CPhA informs the federal Department of Consumer and Corporate Affairs of the need to modify the compulsory licensing legislation to provide a period during which new drug discoveries would be protected against compulsory licensing, with special incentives for Canadian basic research contributions, in order that pharmaceutical companies may be encouraged to maintain and increase research and capital investment, thus providing the environment for a dynamic and innovative Canadian pharmaceutical industry."*

The Canadian government did not act on this but began to look more closely at the impact of the legislation as indicated by the response of Andre Oullet, the Minister of Consumer and Corporate Affairs in 1983, "your views on compulsory licensing along with those of other interested parties will be fully considered during the review." The policy of the CPhA and CPJ were to support changes to the Patent Act to provide greater patent protection for pharmaceutical research.

Universities had created research facilities and recruited staff and graduate students that were now conducting pharmaceutical research. They were seeking partnerships with firms and realized that they needed patent protection for their discoveries and so were supporters of strong patent protection. The many spin off firms from universities were dependent of patent protection to attract investors. Cheap drugs came at a price, one that discouraged drug research in Canada.

Pharmaceuticals seemed to be capable of generating knowledge in those studying the economics of pharmaceutical distribution as there were soon hundreds of experts in the field of drug prices. As Dean MacAulay of the University of Saskatchewan would say, "They were able to discourse at length since they were not held back by any knowledge of the subject." In economic terms the situation was that price competition was being advocated by many people, including the Eastman Report, without realizing that the goal to be achieved was better health not buying a standard product at the lowest cost.

The immediate impact of the compulsory licensing legislation was that the international pharmaceutical companies saw Canada as a poor place to do business and firms immediately shifted research and production to other countries. This resulted in loss of jobs and more important, difficulty in accessing company research funds to be spent in Canada. While other countries had rapid increases in pharmaceutical research the expenditures in Canada were stagnant. Investment in Canada declined. I was a guest of Smith Kline and French in Montreal when the announcement of the legislation was made and the President said that the recently constructed research facility in Montreal would be sold and that the firm was diversifying into cosmetics (Love brand, now long gone). Hoffmann-LaRoche immediately shut down their manufacturing plant. Ayerst Laboratories also shut down their manufacturing which was a blow in that it was originally a Canadian firm and had pioneered many manufacturing innovations. One aspect of research that was widely misrepresented was that the major firms did all their research at the head office site. The reality was that firms often had several major sites and additional smaller sites in 10 to 20 countries. These were important in maintaining a linkage to

the research communities in the various countries. Now that countries are attempting to attract research funding from industry they face a situation where the research has been consolidated over the past few decades and it is much more difficult to establish a partnership.

The legislation was originally passed on the basis that it would not affect research. It was clear to all concerned that the legislation did indeed diminish the research that should have been conducted in Canada. As the cumulative impact of reduced capital investment, less domestic production of pharmaceutical products, and fewer clinical trials became evident the various groups affected were ready to raise the issue with the federal government. After a decade of experience, a coalition of professional, scientific and legal (patent lawyers) met with Mr. Oullet, the Minister of Consumer and Corporate Affairs and strongly recommended changes. This came as a surprise to the Minister as his staff had not kept him informed. More importantly, the government staff was strongly committed to the reduction of drug prices and compulsory licensing and avoided making any changes. This problem continued with the change of government. Harvey Andre became Minister and introduced Bill C-22 in November 1986 to amend the Patent Act and undo the damage from compulsory licensing. The majority of Liberals in the Senate sent the bill back twice for revision and this became a very controversial issue in Canada. Finally the bill was passed in November 1987 and compulsory licensing was dead although the products that had been licensed continued to be sold at a lower price for many years, including sales to United States residents (under the misleading description of international pharmacy). A follow up event was the introduction of Bill C-91 which extended patent protection to 20 years in step with international standards. Assent to the Bill was received in February 1993.

The federal government initiated a Commission of Inquiry into the Pharmaceutical Industry in 1984 to study compulsory licensing and pharmacy costs. Pharmacy made representation as did many other groups. The impression received in making a verbal submission (personal view of John Bachynsky) was that the Commission had made up their mind beforehand and were simply going through the motions. The report of the commission was poorly researched and reflected badly of Prof. Eastman. It began with some background material that was clearly wrong (stated that government laboratories were much better than those of the pharmaceutical industry but the Medical Research Council a couple of years earlier did a tour of industry labs and found them much more up to date. It was also stated that the purpose of patents was to reduce the price of products which was a bizarre statement as patents have always been regarded as a means of stimulating research by giving an inventor exclusive use of the research). The commission report muddied the water rather than clarifying the issues.

Pharmacy had reached the point where the public now believed that in addition to a pill for every ill, there was now a bill for every pill. There was a perception that the pharmaceutical industry and pharmacy were in league with one another while the physicians and government were on the side of the public. It took several decades for pharmacy to gain the support of the public on the issue of drug prices.

The other aspect of drug prices is the dispensing cost. This began to be negotiated with the provincial governments and there was a need to justify the prices by studies of the operating costs of a pharmacy. A number of studies were conducted and the provincial government set a reimbursement rate more in keeping with the provincial budget than with the reality of doing business. This was particularly acute in Ontario in the 1980's and to some extent has continued. In retrospect the shift to a professional fee has not been in the best interest of pharmacy as the gross margin on prescriptions has fallen from about 50% in 1970 to about 20% in the new century (post 2000). This has been a particular problem for the very expensive drugs as the inventory carrying cost exceeds the fee allowed. Based on this various fees are being negotiated or the fee is combined with a small mark up.

Regulation

Pharmacy is highly regulated and the drug products are also highly regulated. For many years pharmacists competed with dispensing physicians. It was only when they were required to keep records on narcotics and controlled drugs that they decided to spend all of their time in the more lucrative practice of medicine. Studies of health professionals revealed that pharmacists were the only health profession that saw themselves as professionals who "followed all the regulations". In any situation where patient care came into conflict with regulations it was the patient that suffered. In the period 1970-1990 there was a tremendous growth in both professional regulation and the regulation of drugs.

As a result of children dying or being injured by taking prescription and non prescription medication, Pharmacy began to advocate the widespread use of child resistant closures on all prescriptions. In Britain in 1971 there were 14,052 hospital admissions for poisoning with acetylsalicylic acid and 227 deaths. There were no comparative data for Canada at this time but it was known that there were many poisonings and that some measures to reduce deaths and injury were needed. Recommendations flowed from the work of the Special Committee on ASA Poisoning of the Department of Health and Welfare chaired by John Turnbull, Executive Director of CPhA. Child resistant closures began to be developed by several firms and marketed to the profession following the pharmacy licensing bodies making their use mandatory for all oral dosage form prescriptions. In 1981 CPhA recommends that guidelines be established for pharmacy sales of Acetylsalicylic acid and acetaminophen.

At the CPhA conference in 1983 scientific studies on ASA and acetaminophen were presented to give the pharmacists an accurate assessment of the value and toxicity of these agents. Both were safe when used appropriately. An interesting side light was the discussion of caffeine as an analgesic potentiator – no evidence was found.

Joint meetings of the Food and Drug Directorate of National Health and Welfare and the registrars of Pharmacy and Medicine began in 1970 to discuss various issues affecting patient safety. This was initially focused on non prescription medication but discussions became wide

ranging and many drug related issues were discussed. It should be remembered that this was the era of widespread drug abuse and many products were found to need more administrative controls. Some controls were regulated at the federal level and some were informal controls at the pharmacy level. The meetings were originally organized by CPhA but after their reorganization the Conference of Registrars of Pharmacy assumed responsibility for the meetings.

Community pharmacy, once the sole face of Canadian pharmacy, was by 1972 only one element of the various pharmacy sectors represented by CPhA. After a number of deaths and injury from medication the federal government began a series of steps to regulate medication more closely. Prescription drugs were the first to endure a wave of regulatory change. Next nonprescription medication was examined in the context of dubious advertising of benefits and the use of some toxic ingredients. A key issue at this time was drug scheduling. Provinces designated nonprescription drugs into various schedules based on their risk potential. Some were to be sold only on prescription (digitalis) or on the recommendation of a pharmacist, while others were confined to sale in pharmacies, and others, mainly patent medicines (soon to disappear), could be sold anywhere. Efforts were made to get some standardization so that the restrictions were uniform from province to province. This was important to firms marketing the products. Later a process involving federal provincial authorities was formed to recommend a uniform schedule and this was effective.

Problems with manufacturing drug products sometimes required that the product be recalled. This became a complex and substantial problem as pharmacies began to carry a larger number of products. A particular difficulty was the lack of suitable communication with community and hospital pharmacists. Resolutions at pharmacy meetings were generated and the CPhA made representation to the federal government based on them. Early and complete information was seen to be necessary and it was recommended that this be published in pharmacy journals.

CPhA in its 1984 resolutions called for the federal government to prohibit the public advertising of nonprescription drugs that are restricted to sale in pharmacies. This reflected a long historical precedent in which nonprescription drugs that were “ethical”, that is, sold only on the recommendation of a physician or pharmacist and sold only in pharmacies, were not advertised to the public. The publicly advertised products were proprietary or patent medicines. The situation at the time was that the ethical pharmaceutical firms were beginning to dominate the nonprescription drug field and increasingly saw public advertising as an important step towards increased sales. Most of the old proprietary medicines have now gone and the current medication is much more scientific, effective, and better known by the public. This resolution while well meaning was unable to change the course of marketing consumer health products.

In 1981 CPhA held a national symposium on the rationalization of drug schedules to bring pharmacy and industry together. It was chaired by Trevor Watson, a past president of CPhA. Over time the provinces accepted the rationale for a common approach to classifying

nonprescription drugs and there were automatic changes in provincial schedules in response to the committees' recommendations. This was a wonderful change from the previous system where advocated changes seemed to take ages and each province moved at a different speed.

There was also a vigorous regulatory discussion on the distribution of acetylsalicylic acid and acetaminophen as they were seen to be dangerous if misused. An expert committee was commissioned by the Food and Drug Directorate to deal with the labeling, the number of units in a container, maximum single and daily dosage including duration of use, package size, and the availability in distribution (ie. in pharmacies only? The Committee recommended only small containers be sold outside pharmacies, a restriction that is still used). The maximum quantity for ASA sold outside pharmacies was 24 tablets and immediately afterward a family size package of 3 x 24 tablets was on the market causing pharmacists to protest to the federal government.

Compounding pharmacists have been battling a regulatory problem for some time in the form of federal legislation that classes compounding as manufacturing and as such, meeting all the federal requirements. If more than one prescription is compounded there may be problems. There is an additional issue in that pharmacists are prohibited from compounding a prescription drug for which there is a notice of compliance (that is, a drug is marketed in Canada). This latter issue was the subject of a Canadian Pharmaceutical Association resolution in 1985 which states:

> *"Whereas practitioners from time to time wish to prescribe medications which are not ordinarily available in commercial form, and*
>
> *Whereas it is in the interests of optimum patient care for pharmacists to compound and dispense such extemporaneous prescriptions,*
>
> *Be it Resolved that Canadian pharmacists reconfirm their belief that extemporaneous compounding is a matter of professional pharmacy practice and as such falls under the jurisdiction of provincial pharmacy licensing bodies."*

Increased regulation of drugs by the federal government at a time when a flood of new drugs were being marketed resulted in long delays in firms obtaining a Notice of Compliance (NOC), in Canada new drugs were not "approved" for sale, the firm met the requirements of the Act for marketing the drug. One result of the delays was that many new drugs were only available to physicians as emergency drug releases. In 1984 the number of emergency releases was 5,354 compared to a much lower number in the UK and USA. To speed the process of reviewing new drug submissions the pharmaceutical industry agreed to pay a fee for reviewing the new drug application. This was to enable the hiring of more reviewers but the delay of 1, 2, and 3 years improved only slowly and the fee became a contribution for service rather than a means of decreasing the processing time. For small firms and start up firms the fees became an added hurdle in marketing new products in Canada.

Another form of regulation relates to the ownership of pharmacies. In the early 1980's a revision of the Pharmacy Act in Alberta proposed restricting ownership to pharmacists. This resulted in a flurry of meetings, discussions, lobbying and advertising. In the end ownership was not restricted. In 1964 when this was first raised it was also defeated. In both Ontario and Quebec there are some restrictions on ownership. Pharmacist ownership provides the licensing bodies with much more power for disciplinary action. In Alberta some advertising by a chain was seen to be unprofessional and the licensing body was required to charge all store managers. This certainly got the attention of the senior management as some of the pharmacy managers were about to resign.

It is interesting that in 1904 William Dunlap opened a pharmacy in Stettler, Alberta (actually in 1904 it was in the Northwest Territories as Alberta was not yet a province) with a pharmacist, Walter Hart. Two years later Hart left and Dunlap hired another pharmacist and operated the store. Dunlap was active in civic politics and served as mayor. His two sons graduated in pharmacy and continued to run the store. In addition to medicines he relied on the front store sale of stationery, perfumes, battery operated radios and guns. He diversified into manufacturing making gopher poison during the 1920's and 1930's. His success was due in large part to the extending of credit to farmers and receiving payment later, often in produce.

Association of Canadian Community Pharmacists

Formed in the mid 1970's the Association represented the need for CPhA to create an organization for community pharmacists since it no longer functioned as a community pharmacy organization. At first the association was part of CPhA but later was an external organization. The major issues to be discussed were reimbursement systems for prescriptions and related medication. In addition they conducted public relations to improve the image of community pharmacy.

The Association with Don Manore as Executive Director was active for over a decade but with the withdrawal of Ontario in 1982 the organization began to decline. CPhA was urged to continue the task of funding studies to examine the area of economic and professional services.

British Columbia found a way of funding their professional association by negotiating a 9 cent per prescription check off system. This generated enough funds to provide services to their members and initiate new programs. Unfortunately the provincial government discontinued the program in 1989 with little notice and the association was reduced to requesting funding from pharmacists to stay afloat.

A major activity of the community pharmacists was to host a negotiators conference each year in which the provinces would exchange information on methods of negotiating with government and exchanging information on drug programs. With the establishment of professional associations, as opposed to licensing bodies, in each province these negotiating meetings are now organized on an interprovincial basis. It took a long time for all the provinces to establish a

second professional association. In 1989 the Saskatchewan Pharmaceutical Association voted down the recommendation to form a second pharmacy organization. Alberta was even later in taking this step.

A major change in pharmacy occurred in 1983 with Safeway placing pharmacies in their grocery stores. This was followed by other grocery and mass merchandising stores as the trend to one stop shopping flowed from the United States to Canada. The proportion of chain, grocery and mass merchandiser pharmacies grew with more influence on pharmacy practice, pharmacy governance and price competition.

Canadian Society of Hospital Pharmacists

The Canadian Society of Hospital Pharmacists underwent a dramatic transformation in the period 1970 to 1990 from an organization with a part time executive secretary, several provincial branches and a larger, broader organization with branches in all provinces and an active educational program. By the late 1980's the organization was facing serious organizational problems while attempting to transform the organizational structure, initiate a new Journal editorial structure, become bilingual, and hire a new Executive Director. A Task Force to Examine Restructuring of CSHP and New Definitions of Membership Eligibility. The Task Force chaired by Roy Steeves held meetings and invited submissions from members.

The organization faced financial problems at this time and the move to Ottawa exacerbated this situation. CSHP moved ahead, however, and added full time staff, supported research programs and initiated a 3 day professional practice conferences in Toronto (by 1975 over 300 members attended and a decade later there were over 700). CSHP membership reached 1000 in 1977 and by 1989 almost 2000.

A national Workload Measurement Study was initiated by CSHP with funding from the National Health and Development Program. It was conducted by Dr. Bruce Schnell and was designed to promote efficient and optimal hospital pharmacy service. A manual was developed to be used by hospitals.

Medication errors accompanied the increased use of medication in hospitals. In the United States reduction of medication errors was accomplished by using a unit dose medication system. Progress was slower in Canada and a research study was launched to show its value. This study conducted by Bruce Schnell at the College of Pharmacy, University of Saskatchewan was funded by the Department of National Health and Welfare in 1972. It was important because it was the first major research project and it showed a close relationship between the profession and the national government. Four hospitals participated and the results led to increased use of the unit dose system in Canada.

Staff were hired through the 1980's and expanded educational programs, research studies and a more comprehensive planning process came into being as the organization matured and met the

needs of hospital pharmacists. It was a remarkable transition based on the flood of new effective medications and the construction of new hospitals that required the services of a pharmacist.

The annual meeting of CSHP in 1984 revealed the dramatic advancement of the professions as it discussed: computers in pharmacy, control of investigational drugs, policies set by committees for quality service, drug monitoring in elderly patients, professional ethics. CSHP as an organization was active in studying the labeling and packaging of drugs, improving communication with members and orientation of elected officers in the branches (provincial).

A major therapeutic advance in the early 1980's was the development of total parenteral nutrition (TPN) where a variety of nutrients was added to the IV to nourish the patient that could not eat. This led pharmacists to become more knowledgeable in nutrition and more adept at complex intravenous therapy. Soon after this a home care system of TPN for patients evolved. Credit should also be given to the pharmaceutical industry contribution to this scientific advance especially the Travacare Centres in major hospitals operated by Baxter Travenol.

In 1979 a decision was made to move to Ottawa and this was accomplished two years later. The move was a difficult decision as the key staff and a large number of members were in the Toronto area. At the time of the move they had 2056 members and about a thousand were attending the annual professional practice conference (PPC). National guidelines and standards were developed, task forces were formed to deal with current issues, and $200,000 was raised for research. Over this period and into the future the Canadian Journal of Hospital Pharmacy kept members informed and up to date on pharmacy practice. The Journal had been published in Saskatoon from 1961 to 1981 under the direction of Jack Summers. It was then moved to the CSHP offices in Toronto.

Drug Information Centres

The flood of new drugs, some of which had novel mechanisms of action, combined with each brand of a product having a unique name, resulted in a massive, complex literature that was difficult to access. In response Drug Information Centres were established in some provinces and in some hospitals. In 1986 there were nine regional drug information centres and 23 drug information centres in major hospitals. Pharmaceutical firms also operated drug information centres dealing with their products. Some provinces also established Poison Control Centres that provided information on treatment of drug toxicity. Although physicians were the main target of these centres, pharmacists and nurses also made extensive use of them. Commercial drug information systems were sold to hospitals using cards and loose leaf books. Regional centres sponsored by a group of hospitals evolved and later both governments and universities also participated. In the 1980's computers began to be used to access the drug literature.

Tobacco and Drug Abuse

Beginning In the 1070's there was a growing realization of the negative health effects of tobacco. The sale of tobacco products by pharmacies became an ethical issue as the health danger emerged. A survey in 1979 showed that 84% of pharmacies sold tobacco and that the majority of them (49%) said that tobacco sales were important to their financial success. Most pharmacies (56%) reported that information on the dangers of smoking was available to customers in the pharmacy. This was to be a continuing concern in pharmacy for several decades. The pharmacists in Alberta voted to remove tobacco from pharmacies and the licensing body worked with the government to have this take place 20 years later.

From earliest times pharmacy has had strong links to tobacco products. By 1970 pharmacies were a main distributors of tobacco products (22% of tobacco sales second only to grocery stores at 45% in 1974) when the debate over the harmful effects became a major public issue. It was seen as hypocritical that pharmacist whose role was to improve health would sell tobacco that damaged health. The negative perspective was enhanced by the fact that a major tobacco company owned Shoppers Drug Mart. In this background the profession initiated a number of initiatives to improve their image and to mitigate the impact of tobacco on health.

The Department of National Health and Welfare initiated a tobacco reduction strategy based on a series of initiatives to produce a generation of non smokers. These initiatives followed a cohort of newborns through their childhood and into adulthood. In conjunction with the Canadian Pharmaceutical Association a program "Stand Up and Be Counted" was launched in 1984. It has three phases. At Level One the pharmacist agrees to display material illustrating the health risks associated with smoking. Level Two participants agree to making educational materials available and to refrain from promoting or advertising tobacco products. Level Three participants pledge not to sell tobacco products. Initially over 400 pharmacies were at level 3. Participation in all the levels encompassed between 25 and 50% of pharmacies in each province with Saskatchewan highest and Quebec lowest (CPJ, January 1985). In the period 1980 to 1990 overall consumption of cigarettes in Canada decreased 20%.

Smoking is costly to both the smoker and society yet in 1981 it was "socially acceptable" to 79% of the population. Over the next 30 years the acceptance level dropped continuously. Reflecting societal norms, Pharmacy and pharmacist gradually moved away from tobacco sales. Pharmacies distributed educational material and began to be more active in smoking cessation programs.

Pharmacy involvement in tobacco resulted in a whole issue of the Canadian Pharmaceutical Journal being devoted to the problem. It provided information on a variety of health problems and some methods of weaning smokers away from tobacco.

Although tobacco sales were discouraged by pharmacy organizations the fact that Shoppers Drug Mart was owned by a tobacco company made change difficult. In 1989 the Canadian Medical Association asked consumers to boycott Shoppers Drug Mart then broadened the attack by asking consumers not to shop in pharmacies that sold tobacco.

In 1985 the 34th International Congress on Alcoholism and Drug Dependence was held in Calgary. A week of workshops preceding the congress were devoted to the world wide epidemic of smoking. It was recognized officially that smoking was an addiction. Under the Stand Up and Be Counted Program, half the pharmacies were participants according to Stan Lissack the chairman of the program. International participants at the Congress were surprised that tobacco products were sold in pharmacies.

Provincial and federal government acted on the problem of drug abuse by printing information for the public. The Department of National Health and Welfare enclosed a card with family allowance cheques that parents could send in and get a pamphlet on drug abuse. This was an immense success and several printings of the booklets were required. Simlarly the Addiction Research Foundation of Ontario put out a booklet Facts About Drugs. A national group formed to provide information on drug abuse to parents, PRIDE which stand for Parents' Resource Institute for Drug Education) was formed in 1981 in Saskatoon, base on an American organization. Prof. Wayne Hindmarsh and Prof. Jim Blackburn were active in this organization and Dr. Hindmarsh later published a book for parents with information on drug abuse. This organization was located in the College of Pharmacy at the University of Saskatchewan.

Pharmacy Education

1969 was the 25th Anniversary of the Canadian Conference of Pharmaceutical Faculties (CCPF) and the date at which the organization assumed a new name, the Association of Faculties of Pharmacy of Canada (AFPC) a name that had the same initials in both French and English. It also was the date for organizational changes. Each school of pharmacy elected a representative to the association board and AFPC officers were elected by the faculty members. Also, an Executive Director, part-time was hired in 1977, Dr. J. Alex Wood of the University of Saskatchewan.

Pharmacy began a number of changes from the late 1960's onward, in part reflecting the changes being initiated in Medicine incorporating student centred, problem based learning with less emphasis on didactic instruction. Pharmacy moved slowly in this respect but began a shift to more instruction in pharmacy practice which up to this time was the responsibility of the licensing bodies' apprenticeship programs.

Social and administrative pharmacy following the lead of the United States also entered the curriculum, mainly as pharmacy practice management. The first full time academic staff in Pharmacy Administration were hired in the early 1970's, with the appointment of Dr. Harold Segal at the University of Toronto and Dr. Bruce Schnell at the University of Saskatchewan.

Pharmacy administration was also the basis of a CPhA resolutions which called for pharmacy schools to place more emphasis on management education in the curriculum. About the same time the Canadian Society of Hospital Pharmacists made a resolution at their conference to include management education in the Pharmacy Residency Programs. The Association of

Faculties of Pharmacy of Canada also examined this issue by forming a committee under Dr. Bachynsky. Although there was some movement in this direction it was short lived as the Association of Faculties of Pharmacy of Canada removed the management area from the recommended curriculum and some pharmacy schools discontinued classes in pharmacy practice management. This was a controversial issue that was finally resolved when the Pharmacy Examining Board of Canada added pharmacy management to the list of areas to be examined.

AFPC had the goal of creating a uniform four year curriculum in Canada and this was assisted by the gradual acceptance of the Pharmacy Examination Board of Canada (PEBC) examinations by pharmacy graduates (it was voluntary at the time but required if a pharmacist wished to move to another province to practice, also required for pharmacy graduates from outside Canada). In Ontario, the province began to require all pharmacist to pass the PEBC examination to practice and this then spread to the other provinces resulting a situation that eased into reciprocity in 2000, almost a century after the goal of reciprocity had been set by the Canadian Pharmaceutical Association in 1907.

Pharmacy practice in the curriculum shifted apprenticeship from a pre-pharmacy requirement to an apprenticeship after graduation, normally for one year. Over time the apprenticeship increasingly came to be part of the pharmacy curriculum and was designated as clinical clerkship, internship or experiential learning. Beginning in 1980 pharmacy practice began to move into community and hospital pharmacies, at first for a few days then for a few weeks and eventually for several months.

From 1977 onwards the clinical aspect of pharmacy evolved and began to have a larger role in the curriculum. By 1980 pharmacy practice generally had only a third of the hours that were devoted to pharmaceutical sciences. Students that wanted more clinical education went to the United States to take a Pharm. D. degree.

A recommendation for a major change in curriculum was made by AFPC in 1979. It was recommended that a shift to a 1+4 program be examined. At this time pharmacy students were taken directly from high school as well as from Science programs. This was an administrative mess as students who were given advanced standing had widely differing timetables and there was pressure from the students to graduate in less than 4 years which was often precluded by the prerequisites for courses. At the University of Toronto the first year students were selected from Grade 13. Any students enrolled in university programs who wished to enter Pharmacy had access only to those positions where first year students dropped out (a small number). A more feasible option was to apply to the University of Alberta where a quota system reserved 10% of the places for students from other provinces. This meant that 13 positions were available each year. Alberta was jokingly referred to as the second school of pharmacy in Ontario (the joke being that the pharmacists in that province were not able to convince government to open another school of pharmacy although there were 5 medical schools).

By 1970 all 8 pharmacy schools in Canada had M.Sc. programs and 5 had Ph.D. programs (this is a decade after the first Ph.D. was awarded a pharmacy to Ken James at the University of Alberta). Research slowly increased in this period with few sources of research funding and few academic staff with the time to devote to research. With research underway pharmacy schools forged links with the pharmaceutical industry and spun off firms that were home grown pharmaceutical firms. At the University of Alberta a US pharmaceutical firm, Summa Laboratories, was rented space to conduct collaborative research to develop a diagnostic test for cancer. Initial manufacturing was to be done on campus but the firm was bought out and the project died. Several firms were spun off from the Faculty however and provided a base for industrial research and employment for graduating Ph.D. students.

In 1971 Newfoundland initiated the 9th pharmacy program in Canada at the Newfoundland College of Trades and Technology. This program was in existence until 1986 when a program was begun at Memorial University. During this period and even prior the Association of Faculties of Pharmacy of Canada were making recommendations, working with the pharmacy organizations and provincial government to initiate a four year university degree program. The diploma program was not acceptable to PEBC and the Newfoundland graduates were not able to practice in other Canadian provinces. The federal government, however, recognized the pharmacy qualifications of each province so Newfoundland pharmacists were hired in several federal government departments. This issue was contentious for several decades.

The Pharm. D. degree was gaining acceptance in the United States by 1980 and in 1984 the topic was a major focus for discussion at the annual meeting of the Association of Faculties of Pharmacy of Canada. Senior educators from the United States (Dr. Jeff Koup and Mary Anne Koda-Kimble) were invited to speak on the topic. With the move to a one year pre-pharmacy followed by four years of Pharmacy underway the pharmacy schools were not anxious to leap into a four year program with two years pre-pharmacy and four years of pharmacy.

In the evolution of pharmacy schools, many started as departments of other faculties in the University. This meant that they had a Director rather than a Dean and more constraints on their programs. In 1970 Manitoba elevated their pharmacy program to Faculty status. Dalhousie and Laval became faculties later. This is not to say the nomenclature is uniform. Some faculties recognized their increasing research focus by designating their school with the title of Pharmaceutical Sciences (BC) or adding it to Faculty of Pharmacy (Alberta). Two pharmacy schools are designated Colleges of Pharmacy (Saskatchewan and Dalhousie). In the United States the Pharmacy programs are either a School of Pharmacy or a College of Pharmacy (the organization of pharmacy schools is the American Association of Colleges of Pharmacy).

The Pharmacy Examining Board exams in 1970 were reduced from six to only two and the compounding portion of the examination was replaced by a written pharmacy practice exam.

In 1981 four pharmacy students were selected for the one year industrial pharmacy residencies. These residencies allow the resident to spend time in the various areas of a pharmaceutical firm as a precursor to a career in industry. They predate hospital pharmacy and community pharmacy residencies.

Continuing Education in Pharmacy

Following an invitational conference on continuing pharmacy education the Canadian Council on Continuing Education in Pharmacy (CCCEP) was formed in 1973. Whether continuing education should be voluntary or mandatory was hotly debated for several years and in 1975 Alberta made it a requirement for annual licensing.

It was in this period that CPhA initiated pharmacy practice workshops in Halifax and Regina but they were not supported by pharmacists for some reason. More successful was the 6th Annual Pharmacy Refresher Course led by CPhA past president Joe Despot, it was a three week tour of Japan along with some continuing education. Over the next two decades this form of learning was very popular and some trips were sponsored by pharmaceutical firms, notably Frank Horner Ltd.

International Linkage

Canada has a long history of close professional relations with the United States in the field of pharmacy. Many Canadian pharmacists have received pharmacy education in the United States, especially in graduate studies. There have been a few joint conferences and some meetings of the American Pharmaceutical Association have taken place in Canada. There is now a regular meeting of APhA and CPhA executive officers. Similar meetings take place between CSHP and ASHP as well as AFPC and AACP.

The CPhA was active in FIP activities with the President attending the conferences in the 1970's and 1980's. Participation in Commonwealth and Pan-American meetings also took place. For financial reasons membership in the Commonwealth Pharmaceutical Association lapsed for several years beginning in 1970 and a senior pharmacist in the Canadian government attended the Regional meetings as the CPhA representative (Dr. John Bachynsky). The Commonwealth Pharmaceutical Association had a number of regional groupings (Canada was a member of the Americas Region). Countries that had links to the British Commonwealth were eligible to be members. For the Americas Region most member countries were in the Caribbean and a meeting was held annually. In 1989, for the first time a regional meeting was held in Canada coordinated by Dr. Bachynsky. Every four years a world wide meeting of all the regions took place which included all of the regional meetings. The 1991 world wide meeting of the Commonwealth Pharmaceutical Association was held in Hamilton, Ontario. This was a very successful conference with a major contribution to the program from Canadian pharmacists. The choice of Hamilton was due to the fact that the President of the Commonwealth Pharmaceutical Association elected in 1987 was Alf Scales, a pharmacist from the Hamilton area, a former

president of the CPhA (1982-83) and a vigorous supporter of the Commonwealth Pharmaceutical Association.

Meetings of the FIP (Federation Internationale Pharmaceutique) were held in Montreal in 1985 and in Vancouver in 1997. Various sections of FIP such as the Academic section, the Pharmacy Practice Section, Hospital Pharmacy Section, Military Pharmacists Section, and the History of Pharmacy Section held meetings. There were also various sections of the pharmaceutical sciences. The breadth of the conference offerings at these meetings which are held in different cities around the world is impressive and reflect the evolving professional stature of Pharmacy. Recommendations on pharmacy practice standards are invaluable to developing countries as they use them as guidelines for program development.

The 1985 FIP meeting in Montreal was notable in that graduate education in clinical pharmacy was first discussed at an international level. United States educators were leaders in this field and played an important role in FIP activities. The 1997 FIP meeting in Vancouver was well attended and had an excellent program with substantial Canadian input. The meeting was organized in large part by Vancouver pharmacists and academics and nationally by CPhA members.

Drug Benefit Programs

The movement of provincial governments into drug benefit programs led community pharmacists to urge more pharmacist involvement in the design and operation of drug benefit programs. Unfortunately this was often not the case and poorly designed programs resulted in rapid increases in expenditures, lack of suitable controls, and escalating administrative restrictions for dispensing pharmacists.

While the publicity for new benefit programs stressed the health benefits, the operation of the programs soon shifted to cost control as utilization grew. Drug prices and pharmaceutical firm profits became the focus of many programs and attempts to reduce program costs resulted in patients being denied needed medication. The value of drugs, however, was realized whenever there was a shortage of drugs, particularly in hospitals. This left physicians helpless and operating rooms were often shut down.

1970 witnessed the introduction of the PARCOST (Prescriptions at Reasonable Cost) program in Ontario. This was linked to the initiation of a social assistance program which combined all the municipal programs into a province wide program using a benefit list. PARCOST was based on the Provincial government negotiating a price for pharmaceutical products on the benefit list. This was done every June and December. Since Ontario was the major drug market firms adapted their pricing announcements to these dates and to a great extent this is still the case. PARCOST promoted lower prices to prescribing physicians using some marketing techniques borrowed from the pharmaceutical industry and by having pharmacists join into a voluntary arrangement with government setting a “negotiated fee” for dispensing. This was the first major use of a professional dispensing fee rather than a mark up on drugs sold. The various brands of

drugs were listed in a glossy PARCOST manual using bar graphs to illustrate the relative cost of products. This was a poor attempt to copy the slick marketing of the pharmaceutical industry. Maximum allowable reimbursement costs (MAC) for the drug products were set for pharmacists. Pharmacies were encouraged to join the voluntary PARCOST program and place a decal in their window to show the public they were taking part in the program to lower drug costs. This requirement to join the program was not well received by pharmacists. The other major change in which pharmacists were reimbursed on a cost of drugs plus a professional fee instead of the traditional mark up system was also resisted. Although this pricing system was required for the social assistance prescriptions and PARCOST participants it did not become widespread until the seniors drug benefit program was launched. When professional fee pricing was introduced the fee was approximately equal to the cost of the medication dispensed giving a 50% gross margin. Although the concept of a professional fee, as with other health professionals, was sound it did not take into account that pharmacists dealt with products and they incurred an inventory carrying cost. With the new expensive drugs this inventory cost was substantial and over time the pharmacists asked for recognition of the cost in the form of a higher fee or a mark up in addition to the fee.

Professor Horace Fuller at the University of Toronto conducted an annual survey of retail operations for publication by CPhA for 30 years in order to provide data on trends in retail pharmacy to assist pharmacy organizations in negotiating with provinces and insurance companies. This long standing survey played a key role in pharmacy's economic planning. As the chains, grocery stores and mass merchandisers entered the field there were fewer respondents and the data was less usable. The survey was discontinued although some provinces commissioned economic studies of dispensing costs for the purpose of negotiation. Professor Fuller also promoted the concept of a professional fee in place of a mark up on prescription drugs. He attributed the concept to one of his students Larry Rosen and referred to this as the Rosen method of pricing. It was accepted by Ontario with the introduction of PARCOST in 1970.

In 1970 the BCPhA and BC Professional Pharmacists organizations as well as several retail corporations were charged with contravention of the Combines Act for imposing a $1 surcharge on welfare prescriptions. The pharmacists were frustrated with the dragging negotiations with the provincial government and imposed this charge for a short period. They were found guilty and a fine of $10,000 imposed. The defence offered by the pharmacists that prescriptions are not a normal item of commerce was unavailing.

Saskatchewan passed the Prescription Drug Act in 1974 which provided residents with free prescription drugs, not including the dispensing fee. Benefits began in 1975. The funding was to come from a province wide purchasing arrangement for benefit drugs. This in turn generated a quality inspection program with scientific support from the College of Pharmacy at the University of Saskatchewan. The drug benefit program was soon swamped by rapid increases in utilization that led to continued incremental reductions of benefits in order to control government

expenditures. To deal with the volume of prescription data Sask Health initiated a centralized computer system. Information was rolled out in 1988 and the new system began in 1989. For pharmacies with computers there were changeover problems and a need for a parallel system for up to 6 months but once online adjudication, pricing, and a receipt were completed within 12 seconds. The system was particularly helpful when the deductible was reached and the copay had to be calculated. The comparison with the paper system of a decade earlier showed an enormous increase in efficiency, accuracy and much earlier receipt of revenue by pharmacies. Patients were given a plastic card to be used in purchasing medication, a technological advance that worked well.

A survey of Ontario pharmacists in the late 1980's (Lowy Commission Survey) reported that aging of the population was an important factor in the increased use of prescription medication and that they observed an increase in use when patients were able eligible for Ontario Drug Benefit Plan. Some of the ways that pharmacists thought drug costs could be reduced was by: reporting double doctoring and drug abuse, a centralized computer system, substitution of lower cost medication, printed information on use and side effects of drugs and the use of a fixed dispensing fee. This was a comprehensive report that revealed the scope and complexity of prescribing, dispensing and use of medication. Although the report recommended changes to improve health care, it was mainly the cost reduction elements that were adopted.

In Manitoba a universal drug benefit program was launched in the 1980's based on a deductible feature. Patients were required to pay all of the cost of medication up to the deductible limit then the government paid a major portion. In 1989 the deductible for seniors was $85 per year and for others $150 per year. Over time the deductible increased, at first in step with the consumer price index and later at the whim of government.

Nova Scotia launched a Royal Commission on Health Care with a report in 1989 entitled Towards a New Strategy. The recommendations with respect to pharmaceuticals were ahead of their time and formed the basis of programs in other provinces. In Nova Scotia the expenditures per capita for medication were higher than in the other provinces and there were few controls on expenditures. It was recommended that payment for medication be based on the lowest available drug price. It broadened its drug benefit program to include social assistance recipients, children suffering from chronic diseases and people with catastrophic drug costs. What was significant, however, was the decision to focus on utilization, the main cost driver in third party drug programs. Over medication was due to a variety of causes: lack of policy guidelines; gaps in continuing medical and nursing education; and poor communication among families, patients, physicians, pharmacists and nursing staff. In addition to over medication there was concern over prescription drug abuse and drug interactions causing harm. The report recommended utilization reviews utilizing new technology and public information and awareness programs.

Human Resource Management

There was a concern over the supply of pharmacists in Canada at this time. This was in the context of a series of professional and government meetings, research projects and discussions regarding the situation of health resources (human). Although there was some collection of data on numbers of pharmacists, there was greater emphasis on the need for integrated education and practice. This was a continuing theme for the next forty years with little progress on integrating education. In terms of numbers there was always a shortage of pharmacists, especially in Ontario which had only one school of Pharmacy. South of the border, Ohio with a similar population had 5 schools of pharmacy. Ontario pharmacists were constantly pushing government to open a new pharmacy school but without success. Eventually a school was established at Waterloo University 30 years later, but only because it had initially been created as a satellite teaching site for the University of Toronto. The provinces in Canada set enrollment levels based on perceived need for graduates. This is a strange educational concept and it has rarely been accurate. Canada has relied on foreign pharmacy graduates for several decades and this is continuing. In the mid 1960's the number of female graduates became greater than the number of male graduates changing Pharmacy from a male dominated profession to a female dominated profession by the 1980's. Not only were there more female pharmacists but they quickly became managers and owners with more managerial responsibilities. The pharmacists' background was sufficiently broad that, combined with their business experience, many found subsequent employment in a variety of positions: selling financial stocks, health insurance, real estate, hospital administration, education, pharmaceutical sales, drug wholesale, or other health professions (physician, dentist, naturopath).

In the early 1970's pharmacists employed by chains stores such as Cunningham's were engaged in discussions leading to the formation of a union. This came at a time when retail workers were becoming unionized. In the public sector the federal government pushed for all public sector employees to be unionized. As a result, in the federal public service pharmacists were in a union as were many pharmacists working in provincial governments and in hospitals. The Commission on Pharmaceutical Services had recommended that pharmacists not belong to a union but the Canadian Pharmaceutical Association rejected this. In many chain stores and grocery stores with pharmacies there are unions for most retail staff but pharmacists are usually exempt from joining the union. Hospital pharmacists were included in hospital unions beginning in the mid 1960's.

Pharmacy Publications

In 1970 almost 40,000 copies of the CPSV were distributed along with 7,000 in French. This established the dominance of this publication as the main source of information on drugs for pharmacists and physicians. CPhA also distributed the Canadian Pharmaceutical Journal, a newsletter and a Canadian Journal of Pharmaceutical Sciences. These endeavors were the beginning of a large publication department in the organization which generated revenue and jobs although occasionally it resulted in some losses when changes were being made.

Pharmaceutical Industry

The advances in medical research and the profit generated by the introduction of new drugs attracted foreign firms to Canada and created many new domestic firms. Initial costs, once the research was complete, were relatively low for regulatory requirements but considerably higher for marketing costs as intensive promotion through advertising, direct mail and personal selling were employed. The marketing of new products was restrained due to the nature of the audience, physicians and pharmacists, but the cost of personal selling using pharmacists and journal advertising were substantial and the methods began to come under criticism as being too biased and inaccurate. The environment was one of excitement and enthusiasm. When the manufacturers' sales representative arrived at the physician's office or pharmacy the question "What's new?" was not rhetorical. There was an expectation that the firm would have a new product and new information. There was literally a flood of new products. There was also a constant corporate change with new firms arriving, some firms merging and rarely, some firms closing.

The rapid growth of the pharmaceutical industry and the introduction of new therapies for formerly incurable diseases required pharmacists to become more educated about biochemistry and physiology so that they could understand the rationale for drug therapy. With many more therapeutic groups of drugs and a plethora of new products in each category this was a major task.

There was a requirement for more self study and the development of continuing education programs. In 1975 Alberta introduced a requirement for mandatory continuing education. If a pharmacist did not acquire 15 CE U' by year end they lost their licence to practice. The relationship with pharmaceutical firms changed with the firms now dominating communication with physicians about drug therapy.

In 1970 the courts found that compulsory licensing proposed by the federal government was valid. Based on the Harley Report, firms were able to obtain a licence to manufacture and sell drug products which were protected by Canadian patents. While voluntary licensing was common, the compulsory patents were granted by the federal government at a comparatively low level (4% instead of the customary 20-30%). Several firms applied to get compulsory licenses for some of the best selling patented drug products. This began a dramatic change in Canada's pharmaceutical marketing system. The research based firms no longer saw Canada as a preferred market and this led to a decline in the investment in new plant and production facilities so that Canada's domestic production as a proportion of total sales steadily declined. Up to this time Canada maintained a self sufficiency policy, in part from the Emergency Measures program that was in place during the Cold War. It also inhibited Canada's drug research growth. While other counties were rapidly increasing drug research Canada had a steady level, which in comparative terms was a decline. This situation was unacceptable to many groups for many reasons and delegations pressured the federal government to change the compulsory licensing legislation.

One of the most telling arguments for change was that the federal government had initiated compulsory licensing on the basis that it would not affect drug research or distribution, but it had. Compulsory licensing was revoked in 1986 with the pharmaceutical industry making a commitment to spend 10% of sales on research in Canada. This was done and almost a billion dollars in drug research was funded within a few years. In comparison, the Medical Research Council of Canada had a budget of only $25 million for medical research.

There has been criticism of pharmaceutical marketing beginning with the flamboyant ads for patent medicines. In the ethical pharmaceutical industry the sales representatives direct their information to the physicians' most vulnerable attitude, the desire to help their patients. Drug effectiveness in improving patient outcomes is emphasized in pharmaceutical promotion. Critics claim that the information provided is not balanced, that it stresses the positive aspects and does not give enough emphasis on side effects and cost. It is also claimed that sales representatives bribe physicians with drug samples, trinkets, expensive meals, and conferences. Beginning in 1961 the pharmaceutical manufacturers through their organization, the Pharmaceutical Manufacturers Association of Canada (PMAC) began to initiate changes that would improve their image and mute the criticism. The first step was to develop a Code of Marketing Practices to which all their members would subscribe. Any violation of the code that was reported would be investigated and the results publicized. While this was helpful in setting a defined standard, it was an "after the fact" mechanism that still allowed faulty practices to be in place for some time before remedial action was taken.

The next step was to raise the standard of performance of the sales representatives. There was criticism that the pharmaceutical sales staff simply parroted the information but were not qualified to explain the use of the drugs and potential problems. In response, the pharmaceutical firms introduced an accreditation program for pharmaceutical representatives to raise the level of knowledge and service that was operated by a Council for Accreditation of Pharmaceutical Manufacturing Representatives. It was about this time that firms began to shift away from pharmacists as representatives to those with a university degree, usually science. The accreditation program was an educational program that the sales representatives were expected to complete in their first two years at which time they would receive a pin with the initials APMR (Accredited Pharmaceutical Manufacturer Representative). Most firms took part in this program and it was seen as very successful.

The most interesting and least known measure was to create a Pharmaceutical Advertising Advisory Board to review all promotional material before it was distributed. The Board is composed of representatives from the Canadian Pharmaceutical Manufacturers Association of Canada, The Canadian Drug Manufacturers Association, L'Association des Fabricants du Quebec de Produits Pharmaceutiques, The Canadian Medical Association, Association des Medecins de LangueFrancaise du Canada, Consumers Association of Canada, Association of Medical Media, Canadian Advertising Advisory Board, the Health Protection Branch of Health and Welfare Canada, and the Canadian Pharmaceutical Association. Standards were developed by the

marketing section of PMAC and reviewed by the Board. A small staff of people with pharmaceutical marketing experience was hired to review promotional material. Only after the material was approved by PAAB would the medical media print and circulate the information. The advertisements would then contain the PAAB logo to indicate that it had been reviewed and approved. This program has evolved into a sophisticated evaluation system with training courses for marketing staff in the industry. While there is still some criticism of ads in the US there are relatively few in Canada. Most of the criticism arising in Canada is more general and aimed at perceptions of problems. This is an excellent example of the high level of self regulation that can be achieved through mutual co-operation. It is surprising that other countries have not copied this mechanism.

Pharmaceutical Manufacturers Association of Canada (later Rx&D)

The Association celebrated its 75th anniversary in 1989. The organization describes itself as "the representative of research-based pharmaceutical industry" in Canada.

The anniversary was a happy occasion as the hated compulsory licensing legislation of 1969 was repealed in 1987. Compulsory licensing was strongly pushed by federal government bureaucrats in the Restrictive Trade Practices Commission and later the Department of Consumer and Corporate Affairs based on commitment to lower drug costs and defeat and arrogant industry (according to Ronald Lang in his book The Politics of Drugs). A core of senior bureaucrats from six departments briefed ministers, supported advocates and generally created a wave of support for action to reduce prices. After many debates and studies the Report of the House of Commons committee on drug costs and prices chaired by Dr. Harry Harley recommended that the Patent Act be amended to provide for "compulsory licences to import drugs in all forms". There was ongoing conflict between the firms and the federal government but eventually the forces wanting stronger patent protection (including foreign governments), isolated the bureaucrats in Consumer and Corporate Affairs. Andre Oullet, a Montreal Liberal MP was sensitive to the loss of major research laboratories in Montreal due to compulsory licensing and tabled a discussion paper in 1983 on compulsory licensing to rebalance drug policy. The next year Tories came to power and Prime Minister Mulroney pushed for changes to compulsory licensing in order to get more political support from Quebec. Although the Minister of Consumer and Corporate Affairs was charged with making legislative and administrative changes regarding compulsory licensing, the bureaucrats in the Department were so reluctant and obstructive to change that the minister was compelled to bring in a Special Advisor to deal with compulsory licensing changes. The bureaucrats believed that they had a higher responsibility to the public than to the elected Government, an interesting perspective because at the same time the pharmaceutical industry was being condemned for excessive lobbying. For a more detailed description of this issue see *Anatomy of a Lobby* in the CPJ, November 1989.

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Appendix: Research Based Pharmaceutical Firms

A list of the firms operating in Canada in 1980 with information on their characteristics is as follows. This reflects the market place in that era. Since then the number of firms has shrunk due to consolidation as there was a perceived need f or firms to be larger in order to operate internationally and to conduct clinical research in a large number of sites

Abbott Laboratories

The company Abbott Laboratories has been in Canada since opening a sales office in 1929. Since then it has constantly enlarged its facility and initiated manufacturing in 1947. In 1973 a large manufacturing, sales and warehouse site was built in Montreal. The bulk and weight of the intravenous solutions required two distribution centres , one in Toronto and one in Winnipeg. Intravenous solutions has been a major product category for Abbott but they have also marketed a line of pharmaceuticals including antibiotics, cardiovascular and mental health drugs. With the a.

Adria Laboratories of Canada Ltd.

Adria Pharmaceuticals of Canada was established in 1974. It is a subsidiary of Hercules Inc. and Arethusa Trading Corp, an American affiliate of Montedison of Milan Italy. The parent company acquired Warren-Teed Pharmaceuticals in 1977 which had been established in 1920 at Columbus Ohio. They produced several lines of pharmaceuticals and established a sales office in Toronto in 1975.

Alcon Laboratories

Alcon Laboratories is a United States company originally which originally began as a pharmacy and small manufacturing company in 1945 but soon after specialized in ophthalmic products. Their products were introduced in Canada in 1959. A merger with Owen Laboratory of Dallas introduced a line of dermatological products. A new office and manufacturing complex was built in Toronto area in 1975.

Allergan Canada Ltd.

Allergan is a wholly owned subsidiary of Allergan Pharmaceuticals Inc. in the United States. It was founded in 1948 in California and established a Canadian sales office in Dorval in 1964. In 1970 a manufacturing operation was begun in Pointe Claire. Further expansion of manufacturing and a sterile products laboratory were added in 1976 and a quality control laboratory in 1979. Their products were primarily ophthalmics and dermatologicals.

Anca Inc.

Anca Inc. began in the mid 30's in Oshawa as Anglo-Canadian Drugs founded by John Gordon of St. Catharines. In 1959 it was sold to the Wander Company of Switzerland and renamed Anca Pharmaceuticals and later Anca Laboratories. The Wander company merged with Sandoz Group of Basle. In 1979 Sandoz (Canada) acquired Anca's assets and formed a wholly-owned subsidiary, Anca In.

Astra Pharmaceuticals Canada Ltd.

Astra Pharmaceuticals Canada Ltd. Is a subsidiary of AB Astra of Sweden established in 1913. Astra Canada began manufacturing and sales in Canada in 1954. Subsequently they moved to Mississauga where a large manufacturing site is located. An active clinical research program is conducted in Canada.

Ayerst, McKenna and Harrison Inc.

Ayerst, McKenna and Harrison Inc. was founded in 1925 in Montreal. The first two products were Elixir of Pepsin and Aromatic Cascara. The firm grew and moved several times. It emphasized its Canadian roots and hired pharmacist for its sales force. In 1934 it was purchased by American Home Products, by this time it had established a successful American subsidiary. A subsidiary Ayerst Organics was established in Brandon Manitoba to extract estrogenic hormones from the urine of pregnant mares. This is the basis of Premarin (Pregnant Mare UrIne). This product introduced in the early 1940'was used for a very long period and despite recent controversy is still being produced. One story is told of the Ayerst sales representative who was taking a bottle to the home of a pregnant lady to collect urine when he was arrested as a bootlegger. The police were told to be more observant as the sales rep was taking in an empty bottle and coming out with a full bottle.

Baxter Travenol Laboratories of Canada

Baxter Travenol Laboratories of Canada is a subsidiary of Baxter Travenol US which was started in Glenview, Illinois in 1931 to produce intravenous solutions. Canadian production began in Canada in 1937 in Toronto. During the war the Toronto plant was taken over by the government and the firm operated out of Acton Ontario. In 1957 a large manufacturing facility was build in Alliston, Ontario. Offices and warehouse facilities were later built in Malton. In 1981 Baxter made a major plant expansion adding 80,000 sq. feet. Baxer also produced a small line of pharmaceuticals and diagnostic reagents. Baxter and Abbott were the two main suppliers of intravenous solutions in Canada. Due to the volume of the intravenous solutions and the need for timely delivery distribution centres were established in Montreal, Calgary and Vancouver.

Beecham Laboratories Inc.

Beecham Laboratories inc. is a subsidiary of the international firm Beecham Group of the United Kingdom. The Canadian firm was built around the purchase in 1978 of a Canadian firm Mowatt and Moore originally established in 1920. Antibiotics are a major product category. Manufacturing facilities and offices are in the Montreal area. In addition the Bencard Allergy Service manufactures sterile allergy products in Weston Ontario.

Boehringer Ingelheim (Canada) Ltd.

A subsidiary of Boehringer Ingelheim of West Germany, the parent company was formed in 1885. The Canadian firm was established in 1972 in Montreal. Since 1978 its administrative offices, packaging plant and distribution centre have been in Burlington Ontario.

Bristol Meyers Pharmaceutical Group

A pharmaceutical division of Bristol-Meyers company of the U.S. The Bristol-Meyers Group was formed in 1973 with the joining of Mead Johns on and Bristol Laboratories. Mead Johnson had been established in 1923 at Belleville Ontario manufacturing nutritional products. Bristol Laboratories had a sales office in Montreal from 1948. Bristol Laboratories had grown with a packaging operation in 1954 and a research and sterile facility in 1964, Westwood Pharmaceutical s was incorporated in 1967. With the creation of a joint company a headquarters operation, manufacturing and packaging operation was established in Candiac Quebec and the nutritional products manufacturing was moved to Ottawa.

Burroughs Wellcome Inc.

The Canadian operation is a subsidiary of the Wellcome Foundation in the U.K. Established in 1880 in Britain by two American pharmacists the firm was very successful based on its tablet technology. Following the death of Silas Burroughs in 1896, Henry Wellcome became the sole owner and guided it to become a major international firm under the corporate structure of the Wellcome Foundation. A Canadian branch operation was established in 1906 in Montreal. Initially products were imported from Britain. Canadian manufacturing began in 1930. Several moves were made as the company grew and consolidated all the operations in LaSalle Quebec. In 1983 a new plant was built in Kirkland (Montreal) Quebec with a large manufacturing area of 19,700 square meters costing $24.5 million. It is noted for its state of the art injectible production and large volume of syrups.

Ciba-Geigy Canada Inc.

Ciba and Geigy are old chemical (dyes) and pharmaceutical firms in Basle. Ciba began operating in Canada in 1922 and Geigy in 1945, both in Montreal. Ciba and Geigy merged in 1971. They produced a full line of pharmaceuticals and were particularly successful in the field of psychotherapeutic products.

Connaught Laboratories

This research facility was initially owned by the University of Toronto. With the discovery of insulin the licensing fees flowing in created a sizeable research fund to conduct research into vaccines and to produce insulin and immunization products. The Canada Development Corporation purchased the firm as part of Canada’s attempt to have a seat at the table for pharmaceutical research and marketing. The firm was purchased by Merieux of France in 1989.

Cutter (Canada) Inc.

A.E. Cutter established a laboratory in a pharmacy in Fresno California in 1897 to produce vaccines and sera. A larger manufacturing facility with more products was built in 1906 and the firm moved to Berkley. This family owned firm was purchased by Bayer AG of Germany. Canadian operations began in 1920 located in Calgary and eventually grew with the establishment of a manufacturing facility for parenteral solutions and regional sales distribution centres.

Cyanamid Canada

Cyanamid was founded in 1907 to manufacture the world's first synthetic fertilizer, calcium cyanamide, from which the company took its name. In 1934 a Canadian subsidiary of American Cyanamid was formed. The pharmaceutical segment of the firm was Lederle Laboratories, originally founded in 1906 in Pearl River New York to produce diphtheria antitoxin and other antitoxins and sera. These products were made available in Canada as early as 1910 with a branch in Ottawa. In 1930 American Cyanamid purchased Lederle Laboratories and in 1946 the Lederle business in Canada became a division of Cyanamid Canada. A manufacturing plant was built in the Montreal area in 1952 with expansions and a relocation in 1976. The experience with biological products was the basis of the firms early entry into antibiotics (Aureomycin). The product line expanded over the years and the firm was a major producer of pharmaceuticals in Canada.

Dow Pharmaceuticals.

Dow Pharmaceuticals is a division of Dow Chemical of Canada which in turn is a division of Dow Chemical Company of Midland, Michigan. The pharmaceutical division began in 1879 when it was founded by E.B. Shuttleworth, the first Dean of the Ontario College of Pharmacy. Professor Shuttleworth led the company until 1888 when it was purchased by two chemists who changed the name to Smith and McAskill. It was reorganized and incorporated as E.B. Shuttleworth Chemical Co. in 1895 with Professor Shuttleworth as President. Several relocations in Toronto occurred as a result of fires and the need for larger facilities. In 1957 it was purchased by Pitman-Moore company and three years later was purchased by Dow Chemical Company becoming Dow Pharmaceuticals.

Eli Lilly and Company (Canada) Ltd.

Eli Lilly and Company of Indianapolis, Indiana was founded in 1876 by Colonel Eli Lilly. The discovery of insulin in 1921 was a turning point for Lilly as the company offered to help Banting and Best in the production of insulin. Similarly they assisted Dr. Salk in the production of oral polio vaccine. Lilly (Canada) began in1938 with a sales and packaging operation in Toronto. In 1946 they relocated to a larger site and manufactured its first product completely formulated in Canada. A major plant expansion took place in 1977-78. Insulin production technology was shared with Connaught Laboratories of the University of Toronto enabling them to produce the product for Canadian use.

Endo Laboratories

The company was first established in Canada in 1953 as Endo Drugs (Canada) with sales and marketing operation in Montreal. In 1968 the parent company, Endo Laboratories, was acquired by E.I. DuPont De Neimours. In 1974 the Canadian operation changed its name to Endo Laboratories. They have progressively expanded their product line over the years.

Fisons Corporation Ltd.

Fisons is a Canadian affiliate of Fisons Ltd of the United Kingdom. Canadian sales operation began in 1958 with a sales office in Toronto. The company expanded and consolidated divisions in 1961, 1966 and 1978. Facilities include a warehouse and laboratory.

Charles E. Frosst & Co.

This Canadian company was founded in 1899 by Charles E. Frosst in Montreal. The initial products were a variety of elixirs, syrups and solutions. In 1910 the company pharmacists developed an analgesic combination of acetylsalicylic acid, phenacetin and caffeine. This was a very popular product and became even more popular when caffeine was added. The products were designated by numbers: 217, 222, 282, 292. In 1928 Frosst was the first firm to produce synthetic Vitamin D in Canada. Research was conducted into radiopharmaceuticals which were sold in Canada and the United States. Further research was halted by a disastrous fire that destroyed the research facility and led to the purchase of the firm by Merck and Co. of the United States in 1965. The firm was then known as Merck Frosst until about 2010. The joint companies established a large research laboratory in Montreal in 1969.

Genentech Canada

Genentech Canada was formed in 1985 as a joint venture between Boehringer Ingelheim (Canada) and Genentech Inc of California. It will market products developed by Genentech. The products are made using recombinant DNA technology. Some products are Human Growth Hormone, Gamma Interferon, and Plasminogen Activator.

Glaxo Canada Ltd.

Glaxo has its historical roots in England as Allen and Hanbury in 1715. The Canadian operation began in Niagara Falls in 1902, moved to Lindsay Ontario then to the Toronto area in 1950. Until 1935 Glaxo Laboratories was a separate company from the parent firm. Allen and Hanbury was purchased by Glaxo in 1958 forming Glaxo Allenburys (Canada) Inc. When Glaxo purchased British Drug Houses (1968), a producer of galenicals and fine chemicals the two firms merged in Canada forming Glaxo Canada Ltd. The firm produced penicillin during the war and then had a wide range of fine chemicals and pharmaceuticals including radio diagnostics, vitamin B12, cortisone, etc. In 1981 a major expansion of 85,000 sq feet was added. This boosted production of oral solid dosage forms from 175 million to 250 million, some of which was for export. In

1989 Glaxo constructed a large plant at a cost of $100 million in Mississauga, Ontario. This production facility was designed to produce aerosols, tablets, and ointments. A strong supporter of Pharmacy, Glaxo contributed $100,000 to help establish the College of Pharmacy at Memorial University.

Hoechst Canada Ltd.

Hoechst Canada is the Canadian division of Hoechst AG of Germany. It began in Canada in 1957with facilities in Montreal. Several other divisions of Hoechst were consolidated in Montreal and a plant built on the outskirts of Montreal in 1971. In 1974 the firm moved to Toronto and changed its name to Hoechst Canada.

Hoffmann-LaRoche Ltd.

It is the Canadian subsidiary of F. Hoffmann-LaRoche &Co. AG of Switzerland. Canadian operations began in 1931 in Montreal as a sales office. Packaging was established in 1940 and in 1957 the firm moved to a facility in which manufacturing was begun. Expansions took place in 1960 and 1965 and finally a dedicated plant and offices were established in Vaudreuil, Quebec in 1972. This facility was shut down as a result of compulsory licensing of pharmaceuticals in Canada.

ICI Pharmaceuticals

ICI Pharmaceuticals is the pharmaceutical division of Imperial Chemical Industry of the UK. Canadian operations began in 1977 in Toronto. Previously ICI products had been sold in Canada by Ayerst, McKenna and Harrison.

Mallinckrodt Canada Inc.

The Canadian operation that began in Monteal in1913 is a subsidiary of Malickrodt of the United States. They produce specialty chemicals for the food and health care industries. This includes medical diagnostic products; radiological contrast media, immunoassays, diagnostic test kits, and radioisotopes. A number of expansions of facilities and products took place with the Health Care division moving to Mississauga in 1966. Mallincrodt is particularly well known to pharmacists as they distributed chemicals used in compounding and many pharmacies have a row of identical Mallincrodt chemical bottles over the dispensing counter.

McNeil Laboratories (Canada) Inc.

McNeil Laboratories is a subsidiary of Johnson and Johnson (McNeil Division of Philadelphia). Johnson and Johnson began in 1886 pioneering in the manufacture of health products based on killing germs. It grew to a firm of 150 companies operating worldwide. McNeil products were first sold in Canada through an agent, VanZant in 1958, then opened their own sales office. In 1959 McNeil Laboratories (US) was purchased by Johnson and Johnson. The firm operated a

sales office in Toronto until 1963 when it relocated with a sister company Ortho Pharmaceuticals to Don Mills. In 1978 a larger plant was built just outside Toronto.

Merck Sharp and Dohme Canada Ltd.

The Canadian firm began in 1911 with Sharp and Dohme importing pharmaceuticals and biological from the United States. Merck & Company was established in Canada in 1929 to provide pharmaceuticals and fine chemicals for laboratory use. The two firms merged in Canada in 1955 but continued with the same names until 1961 when the company became known as Merck Sharp and Dohme Canada. In 1965 the firm purchased Charles E. Frosst Inc. to form Merck Frosst.

William S. Merrell Company

A subsidiary of Richardson-Merrell of the United States, originally founded as Vick Chemical Company. Richardson Merrell was begun in 1905 by a pharmacist, Lunsford Richardson, a Greensboro, North Carolina pharmacist. They purchased the Wm. S. Merrell Company of Cincinnati in 1938. A firm that manufactured ethical drugs since 1828. Other acquisitions followed. Vick, including Merrell moved to St. Thomas Ontario.

Miles Canada

Established in Canada in 1937 as Miles Laboratories it was a subsidiary of BayerAG of Western Germany.

Nordic Laboratories

Nordic was formed by several Quebec pharmaceutical firms combining. It was also partly owned by the federal government through Canada Development Corporation. Sales tripled from 1980 to 1985 reaching $60 million in 1986. A major production plant was expanded in Laval (1986) and a new research site was build tin Kirkland with 6,000 square feet devoted to research.

Norwich-Eaton Pharmaceuticals

A division of Norwich-Eaton of Norwich in the United States. The company began manufacturing operations in Canada in 1944. It was a small firm that manufactured and distributed urinary tract antibacterials, topical antiseptics, nutritionals, antacids skeletal muscle relaxants and anti-diarrheals.

Organon Canada

Organon was founded in theNetherlands in 1923 and expanded operations to the United States in 1938. A sales office was set up in Montreal soon after and imported finished and bulk goods from the United States and Holland. Later parenterals were manufactured and packaged by third party manufacturers. The Montreal facility expanded over the years and in 1972 with the

purchase of Penick company in West Hill, Ontario the firm established a manufacturing and packaging plant for all its products in West Hill.

Ortho Pharmaceutical (Canada) Ltd.

Ortho is a division of Johnson and Johnson. It is located in Don Mills Ontario, a suburb of Toronto. The Canadian operation was established in 1941 in Montreal. Three years later the firm moved to Toronto and began manufacturing . In 1955 a plant was built with a major expansion in 1969. Ortho is a major producer of oral contraceptives in Canada and has a contraceptive museum at its head office.

Pennwalt of Canada Ltd.

This firm is a subsidiary of Pennwalt Corporation of Rochester N.Y. and a Canadian subsidiary was established in 1951 under the name of Strasenburgh with the name Pennwalt from 1969 with the amalgamation of the operations of Pennwalt, Wallace and Tiernan and their associated companies in Canada. The firm markets both prescription drugs and nonprescription drugs.

Pentagone Laboratories

The firm is now owned by Knoll AG and Schering AG, both of Germany. Before its purchase in 1973 it began in Ville St. Michel in Quebec where it was founded by three pharmacists, Michel Graton, Claude Lafontaine and Gerard Dufault. Much of the production was manufactured b y third party manufacturers.

Pfizer Canada

Pfizer was founded in Williamsburg (now Brooklyn) by Charles Pfizer and Charles Erhart to manufacture fine chemicals. The company grew over time and the international division was founded in 1950 under which a Canadian office was opened in 1951 in Toronto then relocated to Montreal in the following year. Pfizer's first Canadian pharmaceutical plant was built in Arnprior, just outside Ottawa, in 1956 and renovated in 1977. The pharmaceutical side of Pfizer began as a result of its fermentation technology used to make citric acid which was applied to the manufacture of antibiotics. Through acquisitions Pfizer has become one of the largest firms.

Purdue Frederick Company (Canada) Ltd.

Purdue Frederick began in the United States in 1892. The family name Purdue is the same family which was instrumental in the founding of Purdue University in Illinois. In 1956 Purdue Frederick Company (Canada) Ltd. Was established in Montreal for sales and packaging. In 1958 the Canadian company became operationally separate and relocated to Toronto. A larger facility was acquired in 1964 with manufacturing and quality control departments. Additional facilities were added in 1975 and 1979.

Rhone-Poulenc Pharma Inc.

Rhone-Poulenc is a very large chemical company operating in many countries. The Canadian company was established in Montreal in 1920 to distribute the products of the French company, Poulenc Freres. It has acquired the firm Riker.

A.H. Robins Canada Inc.

The Canadian firm is a subsidiary of A.H. Robins Company of Richmond, Virginia. Albert Hartley Robins founded the company in 1866 in a small apothecary shop in Richmond. It grew slowly until it began to diversify in 1963. A.H. Robins was established in Canada in 1949 in Montreal and became a Canadian incorporated company in 1952. It used third party manufacturers In Canada until 1960 when it establish its own manufacturing facility. Expansions were made in 1968 and 1974. It is now part of Wyeth.

Rorer Canada Inc.

Jonathan T. Rorer operated a pharmacy in West Chester, Pennsylvania in the middle of the 19th Century and this was then carried on by his son William H. Rorer who was also a pharmacist. He became interested in pharmaceutical manufacturing and started his own company in 1910, a drug repackaging operation. By 1918 he was manufacturing his own products. His two sons, also pharmacists, took over the business in 1945 and oversaw the expansion of the firm. William H. Rorer (Canada) Ltd. Was incorporated in 1968 in Toronto. In 1980 the name was changed to Rorer Canada Inc. A major expansion in Bramalea at a cost of $3.5 million and 27,000 square feet in 1987 produced a facility for laboratories, packaging, warehouse and offices. The firm produced a diverse line of pharmaceutical products specializing in gastro-intestinal, dermatological, and cardiovascular products. In 1989 Rorer purchased Wampole pharmaceuticals.

R.P. Sherer

Was founded in 1933 in Detroit based on the invention of the rotary die encapsulation machine by Robert Pauli Sherer. A Canadian operation was begun as Gelatin Products Inc. in 1936 in the John Wyeth building in Windsor Ontario. Several expansions and relocation in Windsor were required as business increased. It does custom manufacturing and also has a stock of standard soft gelatin capsules containing vitamins, health and nutritional products

Roussel Canada Inc.

Roussel Canda is a wholly owned subsidiary of Roussel Laboratories Ltd. United Kingdom which in turn is owned by Roussel Uclaf of France. The Canadian operation was founded in 1957 to market Roussel products in Quebec using the services of Anglo-French Laboratories in Montreal. The rest of Canada was serviced by Cow and Gate Ltd. These arrangements lasted until 1970 when the firm undertook sales, marketing, and packaging services. It later contracted out its manufacturing in Canada.

Sabex International (1980) Ltd.

Sabex International is a Canadian company which began in 1973 as an affiliation of 13 firms, the oldest established in Canada in 1923. The firm was reorganized in 1980. It was operated in the Montreal area. It was recently acquired by Aventis.

Sandoz Pharmaceuticals

Sandoz is a large Swiss firms with several divisions, one of which is pharmaceuticals. It began the distribution of pharmaceuticals in Canada through an agent in 1927. Sandoz Pharmaceuticals was established in Montreal in 1952. It was combined with Sandoz Chemical Works Ltd and built facilities in Dorval. In 1958 it partnered with Ciba to have Mount Royal Chemicals produce and package it products. The facilities of the pharmaceutical division were expanded in 1971 with increased Canadian manufacturing some of which was by Anca Laboratories. Anca was acquired in 1979.

R.P. Scherer (Canada)

This firm is a division of R.P. Scherer of Troy Michigan. The company was founded in Detroit Michigan in 1933 by Robert P. Scherer following his invention of the Rotary Die encapsulation machine for the manufacture of soft elastic gelatin capsules. In 1936 the firm established an operation in Windsor Ontario under the name Gelatin Products Inc. Several moves and expansions took place so that by 1957 a new plant was established with additional manufacturing capacity in 1972 and 1978. The firm manufacturers soft gelatin products for the pharmaceutical industry as well as standard products, mostly nutritionals, for other firms.

Schering Canada Inc.

Originally established in Montreal in 1926 as a subsidiary of Schering AG of Germany, it was seized by the Canadian government during World War II and sold to Schering (USA) in 1943. Manufacturing began in Canada in 1939. Research and new products by the parent company required a relocation an expansion in Montreal in 1955. Further expansion and a relocation took place in 1968 and another expansion in 1976. It is now part of Merck co.

Searle Pharmaceuticals

Searle Pharmaceuticals is a division of G.D. Searle & Co of Canada which is a subsidiary of G.D. Searle & co of Chicago. Gideon Daniel Searle first established the company in 1888. The Canadian operation dates to 1951. Expansion of manufacturing required larger facilities in 1962 first in Brampton then Oakville Ontario.

Servier Canada Inc.

This firm is a wholly owned subsidiary of Les Laboratoires Servier of Nuilly-sur-Seine, France. This international firm established an operation in Canada in 1978 at Pointe Claire, Quebec. It produced a range of research based pharmaceutical products.

Smith Kline and French Canada Ltd.

The parent company is Smith Kline and French Corporation of Philadelphia. The Canadian company began in 1950 with office and manufacturing facility in Montreal. In 1963 30 acres of land was purchased in Senneville, just outside Montreal, for a research facility. The introduction of compulsory licensing in Canada resulted in the selling of the site and ending the research program. The firm then relocated its manufacturing to Mississauga in 1979. It has since joined Glaxo. SKF was noted for its work on sustained release using spansules.

Squibb Canada Inc.

Squibb Canada is a wholly owned subsidiary of E.R. Squibb & Sons of New Jersey. The company was originally founded by Dr. E.R. Squibb during the American Civil War in order to provide quality pharmaceutical products. It specialized in the manufacture of ether for anaesthesia. The Canadian operation began in 1925 in Toronto as a sales office and packaging plant. John A. Huston Company acted as Squibb's Canadian distributor until 1948 when Squibb established a plant in Quebec and a new sterile laboratory In1952. A new major facility was built in 1952 with distribution centres across Canada. In 1974 the firm launched a new injectible line in Canada under the name Linson Pharmaceuticals. The name was changed to Squibb Canada Inc. in 1979.

Stiefel Laboratories (Canada) Ltd

This firm is an associate company of Stiefel Laboratories Inc. Coral Gables, Florida. Its historical origins go back to 1846 when the company began to manufacture soaps in Offenback-am-Main, Germany. Stiefel's products were introduced to the Canadian market in 1956 by Winley-Morris, a Montreal firm that held the agency for 20 years. In 1976 Stiefel Laboratories (Canada) was established in Montreal by Richard J. MacKay, a Canadian, in association with Herbert and Werner Stiefel, two descendents of the founder of the original company. Most of the firms products are produced in Canada by contract manufacturers. The firm is owned 25% by Canadians. The product line consists of dermatological products.

Syntex Inc.

The Canadian operation is a subsidiary of the Syntex Corporation of Palo Alto, California. Its historical roots go back to 1944 in Mexico where research into steroid compounds led to the production of progesterone like compounds from cactus. This led to the production of oral contraceptives in 1960. A Canadian firm was established in 1962 in Montreal and with growth

relocated to Mississauga Ontario in 1980. In addition to manufacturing a research facility was also built. In addition contraceptives the firm also markets topical steroids, anti arthritic drugs and nutritional products. The parent company also markets veterinary drugs, dental instruments, diagnostic assay systems, beauty care products, fine chemicals and ophthalmic products.

The Upjohn Company of Canada

This firm is a subsidiary of the Upjohn Company of Kalamazoo, Michigan. It was founded in the United States at the time of the Civil War. The products were first marketed in Canada through various agencies beginning in 1927. In 1933 the Upjohn Company of Canada was formed with a sales office and warehouse in Toronto. A sales force of pharmacists was hired to market the products. In 1954 manufacturing began in Don Mills, a suburb of Toronto. In 1979 the firm celebrated its 25th anniversary in the Don Mills facility. A major firm, there is an extensive product line and world wide marketing.

USV Canada Inc.

The Canadian company is owned by USV Pharmaceutical Corporation which is part of Revlon Health Care Group, wholly owned by Revlon, Inc. USV International operates in many countries. Canadian operations began in 1953 in Montreal, Quebec as Arlington Funk Laboratories. In 1967 It was purchased by Revlon and in the following year Arlington Funk Laboratories was renamed Arlington Laboratories, division of USV Pharmaceutical Corporation. In early 1979 the company's name was changed to USV Canada and operations were moved to Mississauga, Ontario.

Winthrop Laboratories

Winthrop Laboratories is a division of Sterling Drug Ltd of Aurora, Ontario which is a wholly owned subsidiary of Sterling Drug of New York, a multinational firm. The company was first established in Canada in 1919 in Windsor, Ontario as the Winthrop Chemical Company. Subsequently as a result of the acquisition of Frederick Stearns and Company Ltd. It became known as Winthrop-Stearns. In 1958 the company moved its manufacturing and distribution facilities to Aurora, Ontario. Winthrop has allied divisions such as Sterwin Laboratories (veterinary products) and Breon-Winthrop Laboratories (hospital products).

Wyeth Ltd.

Wyeth Ltd is a subsidiary of American Home Products Corporation of New York. Wyeth was founded in Philadelphia in 1860 by two brothers John and Frank Wyeth. Frank was a pharmacy graduate of the Philadelphia College of Pharmacy. The firm entered the Canadian marketplace in 1883 with a branch in Montreal. In 1932 the company was purchased by American Home Products Corporation and moved to Walkerville, Ontario, now the city of Windsor. The firm

grew at this site with major expansions in 1954, 1973 and 1979. In 1980 over 90% of Wyeth's Canadian distribution was made in Canada.