

Chapter 10 Pharmacy 1930-1945

A collapse of the New York Stock Exchange in 1929 led to the economic depression that followed. In the turbulent world: Italy marched into Abyssinia in 1935 to create an African colony and killed over half a million people; France occupied Morocco and Algeria in North Africa; Germany rearmed and occupied the Rhineland, first took over Austria, then Czechoslovakia, and participated in a civil war that had erupted in Spain; and Japan sent an army into China and fought a continuing campaign throughout the 1930's with a horrific loss of life. These conflicts in several countries made the world a tinderbox and led to World War II beginning on 1 September 1939 when Germany invaded Poland and Britain declared war on Germany.

The Great Depression began with the collapse of the stock market in 1929. At first it was assumed that the depression was a temporary decline but after 5 years of a downward spiral people were losing hope as well as their jobs, farms, businesses, and often children. Unemployment reached 13% in 1930 and doubled to 26% in 1933. Work camps in the national parks were created, especially for single men, and social benefits (food) were only available if they went to a work camp. Despairing men travelled constantly seeking work, this coalesced into a flood of men intending to go to Ottawa by train until turned back by police in Regina and Winnipeg. In that era there was virtually no social assistance, health programs, or disaster relief. There was only a flood of unresolved personal disasters. In desperation people looked to another social system and many joined the Communist Party which alarmed the government and resulted in many people being jailed and the police actively seeking out subversives, especially university professors. The Depression left an indelible impression on two generations and influenced many economic and personal decisions. In short, it was a disaster for Canada.

As a trading nation Canada was more severely affected than many other countries and underwent a tremendous economic decline accompanied by a severe drought in the West. When the drought ended there were swarms of locusts that destroyed crops. Life went on however and in the sport world Sandy Somerville of London, Ontario was the first Canadian to win the US Amateur Golf Championship (1932). While conditions improved in the late 1930's it wasn't until the war that there was a full economic recovery.

The Depression caused everyone to wonder about the calamity and what had caused it and how it was to be resolved. This was particularly difficult for government as the Conservatives were in power and were relying on the market economy to correct itself. They also relied on increased tariffs on goods, but when other countries also did this the overall effect was less trade and less income. When, after several years it appeared that there was no end in sight new parties appeared with "solutions", mostly socialist or communist. Prime Minister Robert Bennett then took the unprecedented step of following the lead of President Roosevelt in initiating unemployment insurance, minimum wages, maximum hours of work, and a grain board to regulate prices.

Under the new Prime Minister, Mackenzie King, Canada followed a neutral foreign policy and tried to avoid a war. The Canadian government supported Chamberlain in attempting to negotiate with Hitler. There was no Canadian support for efforts to suppress belligerent attacks on various countries. It was only when Britain declared war that Canada decided to support the

Commonwealth position and also declared war on Germany.

While the war resulted in enormous losses, both people and communities, it also sparked an enormous application of science. Most of this was war related but there were societal spin offs. In the Spanish Civil War, Dr. Norman Bethune, a Canadian physician pioneered the use of blood transfusion on the battlefield. (He had become a Communist and was later involved in the Communist-Nationalist war in China. For his dedication and assistance he became a hero of the Chinese people.) The MacKenzie-Papineau Brigade from Canada volunteered to fight the fascists in Spain despite the opposition of the Canadian government that had declared an embargo on assistance to either side, which didn't prevent Italy and Germany from helping Franco. Canadians participating in the war were treated as law breakers and not given any recognition by the Canadian Government.

The war effort in Canada was a massive transition of manufacturing, jobs, economic growth, and communication (censorship and propaganda). Women filled many of the jobs left vacant when men entered the war. Women obtained good wages and the unions that were now created provided better working conditions. The government initiated Family Allowances in 1944 to help with the cost of raising children. A welfare state was being created in anticipation of returning to the Depression at the end of the war. During the war there was discussion of having a Health Insurance system for Canada. This was a transformational change that shifted Canada away from a social class system to one where there was more opportunity for advancement. Returning soldiers were also given greater opportunities with educational grants and preferred employment.

The Second World War was called a world war as virtually every country took part. Some were not actively involved but took sides with either the Allies or the Axis powers. A few, such as Switzerland and Sweden remained neutral. Early in the war the Axis were dominant and captured most of Europe, North Africa and a large part of Asia (China, Indonesia, Singapore, Malaysia, Burma, French Indo China, and the Philippines). In 1942 it appeared that they would win the war. This gradually changed as America joined the Allies in December 1941 with the attack on Pearl Harbor and mobilized millions of troops and a huge manufacturing industry.

Canada declared war a week after Britain but was hesitant to commit large numbers of troops to Europe based on the carnage of the First World War. Instead it offered to increase the navy to protect North Atlantic convoys that were essential to the survival of Britain and to build airplanes and train air crew. One army division was sent to Britain immediately and a small contingent sent to Hong Kong which was thought to be a safe place for them to train and maintain order. The entry of Japan into the war resulted in the capture of Hong Kong and the loss of many of the Canadian soldiers. This was the first major loss of life for Canada in the war and it was a shock to the nation. There was also criticism of sending untrained and poorly armed soldiers abroad. Soon afterward, another bloody engagement in Dieppe resulted in even greater losses in killed, wounded, and captured.

Canada offered to train air crews in Canada where conditions for building airfields and training facilities was easy, safe, and relatively inexpensive (British Commonwealth Air Training Plan). This enabled uniformity in training and an ability to train large numbers. In the five and a half years that the program was in effect there were over a hundred airfields in Canada that trained

73,000 RCAF airmen, 42,000 RAF airmen (including 2000 Free French, 900 Czechs, 677 Norwegians, 448 Poles, and about 800 Dutch and Belgian), 5,300 Royal Navy Fleet Air Arm personnel, 9,600 Royal Australian Air Force, 7,000 Royal New Zealand Air Force personnel. In addition, 40-50,000 ground crew tradesmen were graduated. This massive endeavor resulted in Canada having the third largest air force in the world at the end of hostilities. Awards won by air force personnel consisted of 427 receiving the Air Force Cross for bravery, 4,021 the Distinguished Flying Cross, and 2,197 were Mentioned in Dispatches. There were 13,000 operational casualties and more than 3,000 training casualties. The air force at the beginning of the war had consisted mainly of biwing, fabric covered, propeller driven planes. At the end of the war there were large, powerful fighters and bombers with jet planes appearing.

Canada had a major role in keeping Britain afloat in the early part of the war as wartime production could take place without the threat of bombing. Also, Britain was short of workers as many were in the armed forces. The increased manufacture of war materials and food sent across the Atlantic was vital to Britain. German submarines tried to stem the flow of goods and sunk thousands of ships although Canada had an increasing number of corvettes and destroyers deployed. It was only late in the war with the assistance of the United States and the employment of airplanes that the U-boat threat was finally controlled.

A major issue for Canada towards the end of the war was conscription. The government had promised that there would not be any conscription for service but the demand for troops in the closing stages of the war resulted in the introduction of conscription. This was a major issue in Quebec and the legislation was passed amidst controversy. To mitigate the impact conscripts were only required to serve in Canada. Later, when the government required them to go abroad there were riots, especially in B.C. In the end very few were sent overseas as the war came to an end.

The war had a pervasive impact on Canada. Every family was affected. Not only by serving in the armed forces but in working in a war economy, rationing of food and gasoline, buying war bonds, numerous restrictions and government programs related to the war. One example of the impact on families was the request for scrap metal and fat (to make explosives) for the war effort. As a consequence families put things out in the street to be picked up, as with the current recycling program. On my way to school in Grade I it seemed like a good idea to kick some of the cans. This resulted in my being called to the Principal's office and lectured on interfering with the war effort. It reflects the seriousness that people took the war. This was in 1942 when things were looking dismal in the war. Happily, things turned around soon after probably assisted by my patriotic duty in not kicking any more cans with fat.

The war also had an impact on pharmacy as many pharmacists enrolled and served in the Royal Canadian Army Medical Corps. Some were given little military training before being sent off. Cliff Smith who was later the senior pharmacist in the military recounts that nine months after joining the army he was on a ship to Britain. In Calgary a "Pharmacy Platoon" was formed in the Calgary Highlanders Militia (Gerry Shapter, Vince Harrigan, Howard Pickup, Joe Altilio, Pen Penley, Jim Stott, Bill Mitchell, Bill Rook). Other pharmacists served in various militia units and took part in the war. Some spent most of the war as prisoners of war (Bob Charman, Cliff Irwin, Torm Cornett, Jack Dunlap, Dick Appleyard, R.L. Beech, Ed O'Farrell, J.E. Taylor, J.J. [Hep]

Geddes all of Alberta).

Major Fred Tilson of the Essex Scottish was a 34 year old pharmaceutical sales manager who lied about his age (made himself younger) to get into combat. In leading an attack on a German position late in the war he received a head wound from shell fragments (the majority of casualties during the war were due to artillery) but continued to lead the attack. Throwing grenades he destroyed one machine-gun nest and led his men to the next line of defence. He was hit again, in the hip, but got up and continued to press forward. After some vicious fighting they captured the enemy position and prepared for a counter attack. Tilson kept going, bringing ammunition and grenades for the troops and in doing so was wounded in the leg. He organized the defence and only then allowed himself to be evacuated for medical aid. He received the Victoria Cross for bravery. On his return to Canada he became the President of Sterling Drug (makers of Aspirin) and was active in the Canadian Pharmaceutical Association. Others who distinguished themselves in the military became pharmacists after the war and contributed to pharmacy as leaders: John Turnbull (DFC), Jack Summers (Military Cross). Among pharmacists of that era a large proportion served in the Armed Forces.

Scientific Advances

The technology competition during the war required large expenditures on improving weapons, transport, and factories. A comparison of guns, tanks, planes, and vehicles shows a dramatic improvement. There were also major improvements in treating the injured and in organizing care from the front line to rehabilitation in Canada.

In 1930 cyclopropane was introduced for anaesthesia based on research in Wisconsin. It is very safe and does not affect the heart or liver. The main disadvantage is price.

In 1936 CIBA company marketed Androstine (containing all the active principles of the male genital glands). It was used to treat impotence, testicular insufficiency, prostatic hypertrophy, infantilism, premature senility, etc. It had an interesting dosage form, in addition to tablets, consisting of two ampoules. One ampoule contained the hydrosoluble components and one ampoule contained the liposoluble principles.

Canada also played a major role in the study of biological and chemical warfare. Due to conditions in Britain this research was conducted in Suffolk military base in Alberta under the direction of Dr. Frederick Banting. This was the site of all Commonwealth research until the United States entered the war and then most of the research was shifted to the United States. Canada continued to conduct research in this field looking for ways to protect troops, for many years, with some pharmacy schools participating in the research.

During the Second World War sulphonamides (sulpha drugs) that had been introduced in the late '30's were extensively used to treat infections. Penicillin that was discovered in Britain by Fleming in 1928 was developed into a drug in 1939 by British researchers. The pharmaceutical industry then worked on the production of sufficient quantities to treat the wounded in the war. Canada played a major role in this production with several firms manufacturing penicillin in the Montreal area. This was an enormous challenge as they used flasks with a fermenting brew from

which penicillin was extracted. Only small quantities were produced from this process and its use as a wonder drug led to careful use on soldiers. The creation of large companies during the war resulted in many large pharmaceutical firms at the end of the war that had experience in doing large scale research. This set the pattern for the many wonder drugs to emerge in the next two decades.

Pharmacy Development.

During the Depression pharmacy as a profession had the task of doing as much as possible with as little as possible to help people facing economic, social, and health problems. Simple remedies and patent medicines were the basis for much of the treatment of illness and they generated little income for pharmacists. To exist pharmacies sold a wide range of products: giftware, toiletries, cosmetics, olive oil, shaving supplies, veterinary products, kerosene, stationery, tobacco, photographic supplies, etc. They also provided a wide assortment of services: photo finishing, exterminator, tooth extraction, ice cream production, veterinary medicine.

Medications for the poor and unemployed were available from the hospital. In Calgary there were so many patients that the prescription orders were left with the City Relief Department at city hall then a courier took them to the hospital to be dispensed. The hospital employed only one pharmacist at the time (Dorothy Whiteman) and an assistant who was paid by the Relief Dept. During the War, Dorothy took a leave of absence from the hospital to work at the British Mission at Nitro Quebec. She took additional training in chemistry of explosives at Niagara Falls she joined several hundred workers in Quebec making explosives (T.N.T., D.N.T. Tetrol, and Nitrocotton).

Organized pharmacy during the thirties had the task of ensuring that pharmacists' retail interests were protected. Since government during this era was very lean, it provided an opportunity for pharmacy organizations to supply technical advice on the distribution and control of medication, poisons, patent medicines, alcohol, and chemicals. University professors were expected to contribute their skills in helping to solve problems, for example, to conduct assays and develop ways of controlling the purity and safety of medication.

Pharmacy conferences enabled pharmacists to join together to lobby government, but also to learn to improve practice and their commercial operations. To open a pharmacy in 1930 cost about \$2,500. Economics was important; the main topic was price cutting by pharmacists and corporations. Talks on improving productivity by redesigning pharmacies was a popular topic and Bob Pinder of Saskatoon presented a talk on the subject at the CPhA conference in Winnipeg in 1935. He was mayor of Saskatoon the next year when the conference was held in Saskatoon. His son Ross Pinder continued an innovative pharmacy practice later by insisting that all pharmacists hired must complete the Dale Carnegie Course on Winning Friends and Influencing People. He also created a controversy when he installed self service and turn stiles in his pharmacy in 1960.

Substitution of one brand for another was condemned by several eminent pharmacists in the 1930's as being not only unlawful but also unethical. There was strong support for industry to protect their products and reputation and in return the industry would market their products in a

way that maintained a standard price. In 1937 the Ontario Medical Association launched a voluntary health insurance program in three centres. Associated with this plan was an agreement with pharmacists to dispense medication over a two year period on a capitation system under contract with municipal Relief Departments using a formulary and its prescribing restrictions. Many of the problems of government benefit programs had its origin in these programs that attempted to provide services to a growing number of beneficiaries at a low cost.

Pharmacies often had a small room behind the selling area of the pharmacy where they kept their dispensing materials and equipment. This area was used not only for compounding prescriptions but also for manufacturing products for self care. Pharmacists either used their own formulation or one from the Canadian Formulary. They could then put their pharmacy name on the label and sell it to the public. Cough remedies, products for upset stomach, calamine lotion, etc were all features in the pharmacies. A survey of prescriptions in a Victoria pharmacy reported that 60% were compounded. This dropped to 25% by 1947.

In most provinces the Lord's Day Act required stores to be closed. Pharmacies could stay open but there were often restrictions on what they could sell. Some municipalities and provinces also mandated closure on Wednesday and Saturday afternoon. Again, pharmacies could stay open but only to sell medication. Inspectors came around to check and often gave a story that evoked sympathy to induce the pharmacist to sell other products.

Interest in Chinese drugs was shown by an address on the subject by Dean F.A. Stewart-Dunn of the University of Alberta. A committee on Health Insurance recommended a health insurance program for pharmaceuticals even though the price of medication, in general, is not exorbitant nor that pharmacists charged unreasonable fees. The high drug issue has its roots in history.

At conferences in the 1930's there were always sing alongs with popular songs, although the words were changed to pharmaceutical issues. Some were to express appreciation for the committees organizing the Conference, others to reflect their views on current issues. For example "Send 'em to Helen" to the tune of Smile, Smile, Smile:

Boost all the lines that show a fair per cent.
And, smile, smile, smile.
These are the only ones that pay your rent.
Smile boys, that the style.
What's the use of handling the ones not worth your while,
So, send all the other ones to "Helen Gone"
And smile, smile, smile.

There were few mechanisms for pharmacists to communicate which made the Journal and conferences very important. News ranged from personal items such as a pharmacist cutting his arm from shaking a jar of candy to detailed evaluation of complex federal legislation. There were many in between items of interest. For example, Hilda Cook, an Edmonton hospital pharmacist wrote a short article in the Journal (January, 1938) describing her pharmacy, her duties, and the need for more recognition. She ended by thanking the Journal of helping to arouse interest in hospital pharmacy and indicated a willingness to correspond with other lady pharmacists. One

interesting aspect of her duties was to prepare solutions for X-ray and the laboratory. Mostly, she compounded medication for patients.

Business topics were by far a key element of pharmacy conferences. There was little instruction in the pharmacy programs and most pharmacist managers were aware of their need for information. They came to rely on information published in the journal, meetings and assistance from some manufacturers and franchise companies. The depressed conditions during the 1930's and into the 1940's required careful management of the business as seemingly small errors in judgment could result in bankruptcy. Business advice often consisted of simple rules and procedures by successful pharmacists.

Canadian pharmacy organizations were in close contact with those in America and in 1932 a joint conference of Canadian-American Pharmaceutical associations was held in Toronto. While some American conferences have been held in Canada over the years, joint conferences were rare.

Physician ownership of pharmacies had always existed in Canada and in the 1930's became an issue once again. In Nova Scotia and Quebec restrictions were placed on physician ownership in urban areas. Generally, the physicians were selling medication in rural areas not served by pharmacy. In Quebec in 1917 36.7% of pharmacies were owned by physicians dropping to 22.7% by 1945. Quebec later enacted legislation that any physician selling medication could not charge a fee for dispensing as the government was already paying for patient service. This put an end to physician dispensing as few continued to dispense although earlier they were claiming that they were dispensing not for the money but only as a service to their patients.

The most common treatments in 1931 were: codeine, acetylsalicylic acid, sodium bicarbonate, acetophenetidin, Elix. pepsin comp., sodium bromide, glycerin, sodium salicylate, nux vomica, and ammonium chloride.

War time shortages were acute. It was difficult to obtain many products as ingredients were diverted to the war effort and many companies were converted to making war products rather than consumer products. Rubber for example was in very short supply as the source in Asia had been captured by the Japanese and any rubber available was used for military equipment. As a result any pharmacist that could obtain products such as olive oil, chocolate, castile soap, essential oils, chemicals or cameras was fortunate. With international trade disrupted and government taking a large range of products, there were continuing problems with obtaining medication, supplies, and containers. For ointments and toothpaste, customers were required to bring in the empty tubes in order to get a new one. Wages had improved with the war and there was little to buy. People were constantly exhorted to buy Victory Bonds. Pharmacists were urged to promote large sizes "Today it is More Than Good Business – It is a Patriotic Duty to Promote Large Sizes" not only to save the customers money but to serve their country.

A survey in Ontario in 1942 of a pharmacy showed the following sales:

| <u>Department</u> | <u>Per Cent of Sales</u> |
|-------------------|--------------------------|
| Fountain | 16.4 |

| | |
|--------------|------|
| Magazine | 7.2 |
| Tobacco | 22.2 |
| Candy | 7.1 |
| Drugs | 24.3 |
| Toilet goods | 7.7 |
| Sundries | 15.4 |

Pharmacists during the War were usually given the rank of sergeant although many were recruited as privates. Other than officers, pharmacists received additional pay for their rank. Some pharmacist were officers, usually through qualifying as an officer in another service then transferring into the Royal Canadian Army Medical Corps. This had been an issue during the First War as well. It is interesting that women serving as nurses have always had officer rank. Attempts in the 1930's were made to have the Government of Canada establish a Pharmacy Corps along the same lines as the Royal Canadian Dental Corps. Nothing ever came of these efforts. A government reply in 1941 to the Canadian Pharmaceutical Association of Pharmacy Committee chaired by Lt. Col. (and Dean of Pharmacy at Alberta) F.A. Stewart-Dunn that pharmacists receive commissions revealed that there was one pharmacist as major, five as captain, and 16 as lieutenants while over 150 were warrant officers or noncommissioned officers. Pharmacists were also eligible to serve in various non pharmacy roles in the Royal Canadian Army Medical Corps and achieve commissioned rank up to Lt. Col.

With respect to pharmacists being called up for service from the militia, it was recommended that pharmacists be called up only as dispensers as their role on the home front was very valuable. The government, however, placed all retail staff, including pharmacy staff in the classification of Restricted Occupation which required a permit and permission to go to another store. They were not considered exempt from military service. "No employer hereafter shall hire any person, male or female, without the approval of a selective service officer in an employment office of the Unemployment Insurance Commission."

Canadian Conference of Pharmaceutical Faculties began in 1944 and later changed their name to the Association of Faculties of Pharmacy of Canada (the initials AFPC served both the English and French names). Its goal was to discuss educational issues, establish uniform standards and undertake activities that would improve pharmacy education. The faculties had decided that as of 1940 all pharmacy programs must be degree programs. Some were three years and some four. With almost 500 pharmacy apprentices serving in the armed forces these people would be continuing their studies on discharge. In addition, many other service people would want to enter pharmacy with their studies paid by government. Pharmacy schools were not prepared for the deluge of incoming students after the war with classes several times larger than normal. With pharmacists serving in the armed forces there was a serious shortage of pharmacists for civilian care.

The Canadian Foundation for the Advancement of Pharmacy (now the Canadian Foundation for Pharmacy - CFP) was formed in 1945. It is a charitable organization that collects and contributes funding to improve the practice of pharmacy. Initial funding came from a fund established in 1941 by Canadian pharmacists to assist British pharmacists whose pharmacies and homes had been bombed during the Blitz in England. After the war the fund was used to support graduate

students in pharmacy and to sponsor research conferences at the annual Pharmacy Convention.

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