The greatest question, then, which confronts the Canadian steel industry is: "Will there be a sufficient degree of world recovery to ensure continuance of a reasonably high level of prosperity in Canada?" If the answer is to be in the affirmative, then our basic steel making capacity will undoubtedly be further enlarged in short order. But if evetn, now developing return a negative answer then we are likely to find ourselves with more capacity than we can keep full employed.

Canada Needs More Dentists and Nurses

By J. W. WILLARD

This is the second in a series of two articles dealing with Canada's health personnel. The first article, "Has Canada Enough Doctors?" appeared in the issue of December, 1947.

DENTISTS

Demand for Dental Services

FOR almost eight years there has been a serious shortage of dentists to serve the civilian population. War service drew off such a large sector of civilian dental manpower that, even by February, 1943, it was estimated that effective civilian dentists numbered roughly only two-thirds of normal peacetime strength.[1] This loss to civilian practice during the war meant both inadequate service at the time and the building up of a backlog of dental care among the civilian population.

Nor has the situation been materially alleviated since that time. After the war the Department of Veterans Affairs provided dental benefits to all discharged personnel of the armed services, thus creating, during a period of two years, perhaps the heaviest temporary civilian demand for dental services ever experienced in Canada. The problem was accentuated by a time lag of three to four months between the commencement of this heavy demand for treatment and the extensive release of dental officers from the armed forces. An additional complication arose through the difficulty experienced by discharged dental officers in obtaining suitable office accommodation, which delayed many from entering practice immediately, and consequently wasted thousands of man-hours of dental care at a time when they were urgently needed.

The demand for dental services has been greatly augmented by the rise in national income and employment during the war and post-war years. Higher incomes accompanied by shortages of consumer goods, particularly during the period of the war, have meant more money for the purchase of dental services. The rural-urban migrations that accompanied expansion of industrial activity since 1939 have brought a greater portion of the population within larger urban centres where dental care is more easily procurable. Bringing dental services within the financial and geographic reach of more people has in turn stimulated an increased appreciation of dental care. A recent survey pointed out that "prior to the war less than one-fourth of the population demanded full treatment for their teeth. The rest asked for treatment only occasionally and usually were content with extractions. The increased demand has been variously estimated but it is safe to state that there is an approximate increase of 25 per cent over the pre-war level."[2]

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1. *National Health Survey*, 1943, Canadian Medical Procurement and Assignment Board, Kings Printer, 1945, p. 245.

2. *Survey of Dentists in Canada*, April, 1947, Dept. of National Health and Welfare, p. 3

Dental Personnel

Between 1901 and 1921 the population per dentist fell considerably, but in the next two decades the increase in dental personnel approximated the growth of the general population. It is of interest to note that Canada has a more satisfactory supply of dentists in relation to population than Great Britain but is less favourably situated in comparison with the United States. In the early forties the population-dentist ratios were roughly 1,716, 2,733 and 3,221 for United States, Canada and the United Kingdom respectively. The most recent ratio for Canada of 2,674 persons per dentist for December 31, 1946, is almost identical with that of 1938. Thus, while the dental load has increased by as much as 25 per cent since the pre-war period, the same relative number of dentists are providing dental services.

The prospect for the future of a more satisfactory balance between supply of, and demand for, dental services is hopeful. There is evidence to support the contention that the present shortage of dentists may become less acute within the next four or five years. It will take some time, of course, to overcome the backlog of dental care resulting from the past several years of minimum civilian dental services and to adjust to a higher normal demand for services.

The output of Canadian dental schools has been stepped up from an average class of 114 in the years 1939-45 to a maximum class of 194 in 1947-48 and an increased output is anticipated in the years ahead. At the present time it is expected that graduates may total 200 in 1949, 300 in each of 1950 and 1951 and then level off to about 200 a year thereafter.

Although the data available may not provide the complete picture it would appear that Canadians training in the United States to some extent offset students from outside Canada enrolled in Canadian dental schools. The total number of foreign-born dental students in Canadian schools rose to 58 in 1946-47 from 25 in the previous year, owing to marked increases in the enrolments from Australia and the United Kingdom. The net loss of trained dental personnel for Canada under this reciprocal training process may run as high as an annual average of 6 for several years or an average of about 3 per cent of the output of dental schools. This is much more favourable than in the case of doctors.

Migration of Canadian dentists to the United States appears to be negligible at the present time, which is in sharp contrast to the situation with respect to nurses and doctors. For instance in the year ended June 30, 1947, there were only 4 dentists admitted to the United States as immigrant aliens compared to 206 physicians and 429 nurses. It is not possible at present to determine how many may remain in the United States but in the case of dentists it is clear that any loss will be relatively insignificant.

During the war years many older dentists who would normally have retired carried on with their practice. After the war, this resulted in an increase in the number of retirements from 29 in 1945 to 36 in 1946. It is anticipated that the retirement rate will remain at a higher level than in pre-war and war years. It has been estimated recently that retirements and deaths combined will mean a loss of approximately 90 dentists a year.

One forecast of the population-dentist ratio for the next few years suggests that at the end of 1950 there may be about 2,480 persons per dentist in Canada.[3] It has not been possible in this estimate, of course, to allow for the effect of immigration and emigration over the period on the population as a whole. This forecast represents a drop of about 7 per cent over the December, 1947, ratio (2,674).

Several developments which have been taking place over a number of years are assisting in the conservation of

3. *Ibid.*, p. 37.

dentists' working time. As demands upon the time of dentists have increased, many have ceased to care for their own mechanical work in connection with the construction of artificial dentures and the profession has become increasingly dependent on dental technicians to complement their services. Similarly, the greater use being made of dental nurses and assistants has permitted a more efficient use of the dentists' time. A more recent development has been the amendment to the Quebec Dental Act, in 1946, to permit the employment of dental hygienists in that province. Hygienists are semi-professional office assistants who relieve the dentist of some of the more elementary aspects of his dental work. However, dental hygienists are prohibited in the other provinces and, in view of the fact training facilities for them have not been established in Quebec, they have as yet made little or no impression upon dental services in Canada.

Faulty Distribution of Dentists

The provincial distribution pattern of dentists is similar to that of physicians. Ontario and British Columbia have the most favourable population-physician ratios while Saskatchewan and the three Maritime Provinces have the most un satisfactory ratios.

However, in the case of dentists, faulty distribution presents the *urgent* problem rather than considerations of total supply. In the "Survey of Dentists in Canada" it was stated that "strong preference for urban location has been shown by the dental profession for many years, with the result that 96 per cent are now located in urban centres and 71 per cent in centres of 10,000 population and over."[4] Only about 38.5 per cent of the population of Canada were resident in these centres at the time of the 1941 census. This illustrates vividly why perhaps the most pressing problem in the field of dental care in Canada to-day is the inadequate dental service afforded in rural and remote areas. One very practical means of alleviating this situation in some measure would be the greater utilization of travelling dental clinics.

Future demand for dental services is intimately related to a number of variables, such as economic conditions, the appreciation of dental services and public dental care programs. Unfavourable economic conditions, such as have been witnessed in the past, might easily produce an over-supply of dental personnel relative to the demand for dental services. On the other hand, under conditions of full employment, appreciation for dental care may develop at a faster pace than dental personnel can be trained under present facilities. Much will depend, too, on educational efforts in the field of dental health.

Present dental manpower in Canada is fully engaged in meeting the demands for *full treatment* by perhaps less than a third of the population. Therefore, it would appear that at the present time there is insufficient dental personnel in Canada to implement a prepaid dental care program freely available for *all* Canadians. However, if health insurance were introduced and if it included dental care, probably the best that could be hoped for, initially, would be a program of dental services for all children up to a certain age with gradual extension of the scheme to higher age groups as more dental personnel become available.

NURSES

Nursing Personnel

The shortage of nurses is world-wide. The United Kingdom is in dire need of nurses; the most recent report on the situation indicated a need of at least 120,000 to 125,000 nurses, compared with a supply of about 80,000 in 1945.[5] Nearly every European country faces a critical shortage of trained nurses.

4. *Ibid.*, p. 1

5. *Report of the Working Party on he Recruitment and Training of Nurses*. London H. M. Stationery Office, 1947

In spite of the fact the United States has perhaps a more favourable supply of nurses in relation to population than any country in the world, a shortage of nurses exists in that country. The number of registered nurses in the United States increased from 295,000 in 1931 to 317,800 in 1946, but the number of patients entering hospitals rose during the same period from 7,058,000 to 15,159,000 —a 13 per cent increase in the number of nurses, but more than a 100 per cent increase in the patient load. In the spring of 1947 the American Hospital Association reported that 16 per cent of the hospitals in the United States had a total of over 33,000 beds closed because of lack of nursing personnel.[6]

For years the demand for nursing services in Canada has been increasing steadily and to a considerable extent. This is well illustrated in the field of hospital care where almost half of Canadian nurses are employed.[7] In 1945, public hospitals reported to the Dominion Bureau of Statistics 1,314,951 admissions, including newborn, compared with 556,600 in 1932, or an increase of 236 per cent. An even greater percentage rise in the admissions to private hospitals was recorded in the same period. Several factors have contributed to this rise in the demand for hospital care—the increase in the amount of obstetrical care in hospitals, inadequate housing accommodation, lack of domestic help and housekeeping personnel, the great expansion of coverage by private hosital insurance plans, a greater appreciation of medical services including hospital treatment, and the financial ability of a larger sector of the population to afford hospital services. Thus, it is understandable why, in this field of nursing in which half of our nurse power is employed, the demand for nursing care has shown a phenomenal rise.

The shortage of nurses in hospitals is reflected in acute manner in tuberculosis, mental and chronic sick hospitals throughout the country. The lack of adequate nursing staff has forced some hospitals to close entire wards and to discontinue certain types of treatment. A survey of the nursing situation in Canadian mental hospitals in 1947 indicated that there are 200 fewer registered nurses on mental hospital staffs than there were 10 years previous, and 400 fewer non-registered nurses on these staffs than there were 15 years ago. And, while the staffs of these mental institutions were being depleted of nursing personnel, the work load was augmented steadily, so that there are now 50 per cent more patients in mental hospitals than there were in 1932.

Between eight and nine per cent of the active graduate nurses in Canada are employed in the field of public health. In November, 1946, the Canadian Public Health Association, in a report to the Dominion Council of Health, stated that: "The greatest deterrent to the expansion of public health services in Canada at the present time is the lack of trained public health nurses . . . Existing public health agencies are expanding and new ones are being planned all across Canada, but in most cases these programs are being retarded drastically because authorities are unable to find public health nursing personnel."[9]

The Canadian Nurses' Association in September, 1946, estimated a shortage of 500 public health nurses and forecast that an additional 1,800 nurses would be required for the development of new programs to be put into operation in the next three years.[8] It cannot be emphasized too strongly that if sufficient public health nurses were employed in the prevention of disease, the economic

6 Editorial on "The Shortage of Nurses," *New York Times*, Sept. 13, 1947.

7. *The National Health Survey* of 1943 revealed that 48.8 per cent of the civilian nurses were employed in hospitals and nurs ng schools.

8. Report of the Committee on Salaries and Qualifications of Public Health Personnel, Canadian Public Health Association, presented to the Dominion Council of Health, November, 1946, p. 20.

9. *Nursing Service in Canada*, a submission to the Department of National Health and Welfare by the Canadian Nurses' Association, September, 1949, p. 29.

costs of illness would be reduced and, as a by-product, by materially alleviating the nursing load in both hospitals and homes, an economy of nurse power would be effected.

About 30 per cent of active nurses are engaged in private duty nursing. Most of these are on call at nursing registries and respond to requests for services to individual patients either in the hospital or in the home. Practically every registry in Canada is experiencing an acute shortage of registrants and a large proportion of calls must go unfilled. An estimate made in the fall of 1946 placed the shortage at 1,200 private duty nurses.

Demands for visiting nuring services to patients in their own homes, provided by the Victorian Order of Nurses, the Saint Elizabeth Visiting Nurse Association and a number of other such organizations, have been exceedingly heavy. The shortage of private duty nurses and the heavy demands on hospital accommodation have in turn augmented the number of persons seeking the care provided by visiting nurse services.

Because the general shortage of nursing personnel is so acute, very little is said about the distribution of nurses. Nurses, like doctors and dentists, tend to concentrate in metropolitan areas. Educational facilities are available, a more satisfying social life is possible and economic considerations are more favourable in cities. The result is that small communities have difficulty in getting public health nurses and small hospitals are, for the most part, chronically short-staffed.

In assessing the total picture of Canadian nurse power the heavy demands for nursing services and faulty distribution of nurses must be compared with the present and prospective supply of nursing personnel. The compulsory registration of nurses in 1943 recorded 52,483 civilian nurses of whom 22,136 (or 42.2 per cent) were actively engaged in nursing. At the time of registration, 2,008 nurses were in the armed services, making a total of 24,144 active Canadian nurses. This represented an over-all Canadian ratio of 489 persons per nurse, compared with 506 in 1931 and 424 in 1941. It will be noted that, even apart from the great rise in demand for nursing services, the supply of personnel in 1943 was somewhat less favourable than in 1941.

Training of Nursing Personnel

We must look to the 269 hospitals which operate schools of nursing to provide the great bulk of future Canadian nurses. In addition, a small but increasing number of nurses are being trained in nursing schools associated with universities. Immigrant nurses might be another source of supply but whether this will involve any large number cannot be forecast with any degree of accuracy.

In a recent statement of the Canadian Nurses' Association it was estimated that some 3,774 nurses would graduate in 1947. This will be one of the largest graduating classes in the history of Canadian nursing. For instance, in 1938 a normal pre-war year, 2,603 nurses graduated; it will be noted that the 1947 output represents an increase over 1938 of 1,171, or 45 per cent. Much of the credit for this increase in student enrolment is due to the energetic recruitment campaign carried on by the Canadian and provincial nursing associations and the encouragement provided by sizeable financial grants from the federal government during the war. Prospects for the next few years look better. At the present time there are 3,885 student nurses enrolled in the third year at schools of nursing and 3,835 in the second year which indicates that, even though there may be some wastage, the output will remain at a high level roughly comparable to the 1947 output.

Each year a large number of student nurses are lost to the profession before they complete training Many entering training are not suitably equipped which emphasizes the need for more

proficient counselling and greater care in the selection of student nurses. A better and more vigorous recruitment program in high schools would help to assure a more adequate flow of suitable candidates as well offsetting the competition of other occupations.

There are a number of factors which discourage trainees from continuing in their chosen vocation. These vary in degree of importance from one school of nursing to another and include unsatisfactory food and accommodation, too strict discipline, lack of opportunity and facilities for recreation, long hours of work and very meagre compensation for services rendered.

Student nurses receive tuition and maintenance in return for work. It has been estimated that each student renders at least 5,808 working hours during the three-year period of training. If she were paid an unskilled rate of 50 cents an hour for her labour she would have contributed in services more than $2,900. This raises one of the most fundamental difficulties with our present method of training nurses. Hospitals are organized to care for the sick, not primarily as educational institutions. Too often nurses' training is conceived as an important source of unskilled labour for hospitals rather than as an educational process in which practice in the particular task at hand is only a pedagogical tool.

Improvement in training technique could help apreciably in meeting the need for increased nursing personnel. This could be achieved by the reduction of training time, partly by eliminating domestic work and partly by getting rid of the repetitive tasks inherent in the present system which uses the student nurse as untrained labour.

In Great Britain a "working party" recently completed a survey of the whole field of the recruitment and training of nurses and the assessment of the nursing force required by the National Health Service. In its report on suggestions as to how nurses might be best recruited, trained and deployed, the majority recommended full status for nurses in training; a wider basic training, including training in public health; and a training period of two years (instead of three as at present), followed by a year's practice under supervision.

It is of special interest to know that the Canadian Nurses' Association has sponsored an experimental plan to shorten the usual three-year course to 25-months, which began in January, 1948, at the Metropolitan Demonstration School of Nursing in Windsor, Ontario. Trainees will go as students and services will not be required of them thus permitting more time for their studies.

Loss of Trained Nurses

An important leakage in our nurse-power reservoir is the drain of trained nurses into other occupations. During the war and in the post-war years there have been exceptional opportunities in other types of employment. Excluding nurses who are now housewives, about one trained nurse out of every 14 is in some field of employment other than nursing. The inadequacy of economic status and unsatisfactory employment conditions discourage many from continuing nursing. This wastage of trained personnel might be offset to some extent through the improvement of the economic position and working conditions of the graduate nurse so that non-nursing positions in industry, business, teaching, etc., might be relatively less attractive to them.

The greatest loss of trained nurse personnel occurs because of marriage. About 46 per cent of Canadian nurses were employed as housewives in 1943 and the percentage may be somewhat higher to-day. Married nurses should be encouraged to remain in active nursing. Beyond this, the only solution appears to ensure that sufficient nurses are trained to offset this wastage in effective nurse-power.

Another significant loss of nursing personnel to Canada is the migration

of Canadian nurses to the United States. During the war and for some time afterwards the federal government placed restrictions on the emigration nurses seeking employment outside of Canada. This labour exit control worked hardship in many cases but had it not been implemented the supply of nurses in Canada would have been much more seriously depleted than at present. But the critical period does not appear to be over, for in the year ending June 30, 1947, there were 429 nurses admitted to the United States as immigrant aliens from Canada. While some of these nurses are taking post-graduate training and will return to Canada, a large propotion will remain permanently in the United States. Present indications are that on the average the net loss may run as high as ten per cent of the output of our schools of nursing. It is even questionable whether under these conditions we can correct the shortage of nurses by merely training more nurses. So long as economic conditions remain favourable and there are heavy demands for nursing personnel in the United States, Canada may well face a situation where the more nurses she trains the larger will be the proportion that are drained off through the emigration spillway to United States.

The existing acute shortage of nursing personnel has lead to steady upward adjustments in salaries and continuous staff changes. One method that might be useful in helping to stabilize this situation would be the institution of a job analysis study in the various fields of nursing. Such a scientific approach to job evaluation might assist in promoting efficiency and establishing and cultivating better co-operation. It might be helpful,too, in reducing to some extent the present high turnover of staff. This is an approach that might well disclose considerable waste of trained nurses' professional skill in many of the duties they now perform and might lead to the greater utilization of the nurse-power. By itself, however, it probably would not be a factor of sufficient importance to solve the fundamental disequilibirium in the supply of and demand for nursing personnel in Canada.

There is a real need also for the strengthening of hospital staffs with auxiliary employees, both domestics and properly qualified nursing aides. Economy of nursing personnel demands that graduate nurses devote time to nursing service exclusively. Domestics and assistant nurses can be assigned to routine, non-nursing tasks and duties which require neither specialized training nor the experience of a graduate nurse.

The Canadian Nurses' Association estimated in the fall of 1946, that there was a shortage of 8,700 nurses in all branches of nursing services. Since this estimate was made a considerable number of nursing sisters have been released from the armed services and about 3,744 students have graduated. But these additions have been offset somewhat by retirements from active nursing, marriage of practising nurses and by emigration of nurses to United States. So long as economic conditions remain favourable and if migration to the United States continues to be large, it may be difficult to meet adequately present and prospective demands for nursing services unless the present system of recruitment and training is modified to stimulate the output of trained personnel and the economic position and working conditions of nurses are improved.