Chapter 3. Major Problem Areas in the Health Field

The major problem areas in the health field fall generally into two separate categories: 1) the health status of the population and 2) the problems involved in the actual organization and delivery of health care.

Health Status of the Population

Three main indicators of the health status of the population are (a) life expectancy and mortality rates, (b) causes of death and (c) morbidity.

(a) Life expectancy and Mortality Rates

Life expectancy at birth has increased significantly between 1941 and 1971, from 63.0 years to 69.4, for males and from 66.3 to 76.5 for females. The main reason is the significant drop in infant mortality, from 61 deaths per 1,000 births in 1941 to 17.5 deaths per 1,000 births in 1971.

Once a male has survived beyond childhood, however, there has been very little improvement in the number of remaining years he can expect to live. A twenty-year old male in 1941 could expect to live to 69.6 years of age, while in 1971 this had only increased to 71.8. For twenty-year old females the improvement has been more significant, from 71.8 in 1941 to 78.3 in 1971.

These figures reflect a widening gap between male and female life expectancy, whose gravity is underlined when one looks at specific statistics.

In 1971 twice as many men as women died between the ages of fifteen and seventy. The actual figures are 43,450 male deaths and 22,150 female deaths in this age group. In simple terms, death overtook two men for every woman in these prime years of life.
In 1931, women, on the average, could expect to live two years longer than men. In 1971 this difference had grown to seven years.

Turning to comparisons with other countries, there are only three nations in the world, Sweden, Norway and The Netherlands, which have a greater life expectancy for females than Canada, and the difference between Canada and the best nation is only one year. For male life expectancy, there are six countries, Sweden, Norway, The Netherlands, Denmark, Switzerland and Greece, which outperform Canada and the gap between Canada and the best nation is two and a half years.

Another analysis was made of years lost due to early death between the ages of one and seventy, using relativity at age seventy. By this definition the following comparison was obtained:

<table>
<thead>
<tr>
<th>Cause</th>
<th>Years Lost Male</th>
<th>Years Lost Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor Vehicle Accidents</td>
<td>154,000</td>
<td>59,000</td>
</tr>
<tr>
<td>Ischaemic Heart Disease</td>
<td>157,000</td>
<td>36,000</td>
</tr>
<tr>
<td>All Other Accidents</td>
<td>136,000</td>
<td>43,000</td>
</tr>
<tr>
<td>Respiratory Disease and Lung Cancer</td>
<td>90,000</td>
<td>50,000</td>
</tr>
<tr>
<td>Suicide</td>
<td>51,000</td>
<td>18,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>588,000</strong></td>
<td><strong>206,000</strong></td>
</tr>
</tbody>
</table>

For these five main causes of early death, as defined, males lost almost three years of potential life for every year lost by females.

Turning next to the actual number of deaths by cause and sex, one finds that between the ages of thirty-five and seventy there were 18,400 men who died of diseases of the cardio-vascular system compared to only 7,300 women. For each sex at all ages, major differences in numbers of deaths were also found in the following selected categories for 1971.*

*More complete mortality statistics are shown in the ensuing table.
<table>
<thead>
<tr>
<th>Cause</th>
<th>Deaths Male</th>
<th>Deaths Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SPECIFIC ACCIDENTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Automobile Accidents</td>
<td>4,100</td>
<td>1,600</td>
</tr>
<tr>
<td>(b) Other Transport Accidents</td>
<td>500</td>
<td>70</td>
</tr>
<tr>
<td>(c) Industrial Accidents</td>
<td>700</td>
<td>55</td>
</tr>
<tr>
<td>(d) Accidental Drownings</td>
<td>600</td>
<td>150</td>
</tr>
<tr>
<td>2. LUNG CANCER</td>
<td>4,600</td>
<td>800</td>
</tr>
<tr>
<td>3. BRONCHITIS, EMPHYSEMA AND ASTHMA</td>
<td>2,800</td>
<td>700</td>
</tr>
<tr>
<td>4. SUICIDE</td>
<td>1,900</td>
<td>700</td>
</tr>
<tr>
<td>5. CIRRHOSIS OF THE LIVER</td>
<td>1,300</td>
<td>650</td>
</tr>
</tbody>
</table>

From the foregoing analysis, there is no doubt that Canada has a male mortality problem of great significance.

As already noted, life expectancy is much influenced by changes in the infant mortality rate and most of the improvement in Canadian life expectancy can be attributed to a reduction in the infant mortality rate from 102.0 deaths per 1,000 live births in 1921 to 17.5 in 1971. While Canada’s performance has been outstanding, it still falls well below that of Sweden with a rate of 11.0 per 1,000 live births. What offers hope for improvement is the difference in infant mortality rates between certain socio-geographic segments of the Canadian population. By attacking the problem among high-risk populations, improvements can still be made. At the same time one must keep the importance of infant deaths in perspective. Of 157,300 deaths in 1971, only 6,400 occurred before age one and of these many are due to congenital anomalies about which little can be done after a baby is born.

(b) Causes of death

The graphic at Annex A provides a vivid picture of the major causes of death for each sex and age group in 1971. It highlights the fact that the importance of each cause of death varies according to sex and age group. Noticeable immediately is the tremendous importance of motor vehicle accidents and all other accidents, which account for large percentages of death in young males between the ages of five and forty and in females between five
and thirty. Suicide is an important cause of death in males and females as young as fifteen years. Coronary-artery disease becomes and remains the major cause of death in males from age forty on, and in females from age fifty on. Cancer strikes at most ages, but at a much earlier age among women. Deaths due to respiratory diseases and lung cancer are important in men over fifty years. Cirrhosis of the liver appears as a major cause of death in males between the ages of forty and fifty.

An overall view of the major causes of death at all ages, with predominant ages for each, is as follows:

<table>
<thead>
<tr>
<th>Major Causes of Mortality (1971)</th>
<th>No. of Deaths</th>
<th>% of All Deaths</th>
<th>Predominant Ages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ischaemic heart disease</td>
<td>48,975</td>
<td>31.1%</td>
<td>40 and over</td>
</tr>
<tr>
<td>Cerebrovascular disease</td>
<td>16,067</td>
<td>10.2%</td>
<td>Age 65 and over</td>
</tr>
<tr>
<td>Respiratory diseases and lung cancer</td>
<td>15,677</td>
<td>10.0%</td>
<td>Under 1 year and 55 and over</td>
</tr>
<tr>
<td>Motor Vehicle and all other accidents</td>
<td>12,031</td>
<td>7.6%</td>
<td>All ages</td>
</tr>
<tr>
<td>Cancer of the gastro-intestinal tract</td>
<td>7,947</td>
<td>5.1%</td>
<td>50 and over</td>
</tr>
<tr>
<td>Cancer of the breast, uterus and ovary</td>
<td>4,816</td>
<td>3.1%</td>
<td>40 and over</td>
</tr>
<tr>
<td>Diseases specific to the newborn</td>
<td>3,299</td>
<td>2.1%</td>
<td>Under 1 week</td>
</tr>
<tr>
<td>Suicide</td>
<td>2,559</td>
<td>1.6%</td>
<td>15 to 65</td>
</tr>
<tr>
<td>Congenital anomalies</td>
<td>1,967</td>
<td>1.3%</td>
<td>Under 1 year</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>113,338</strong></td>
<td><strong>72.1%</strong></td>
<td></td>
</tr>
<tr>
<td><strong>ALL DEATHS</strong></td>
<td><strong>157,272</strong></td>
<td><strong>100.0%</strong></td>
<td></td>
</tr>
</tbody>
</table>

It will be noted that the major causes of death are now chronic illnesses and accidents, with relatively few due to infectious diseases. This is a drastic change from the situation around the turn of the century when the major causes of death were primarily, or related to, infectious diseases such as influenza.
pneumonia, tuberculosis, gastro-enteritis, chronic nephritis and diptheria. These diseases have largely been brought under control, and the only ones which remain major problems of mortality are influenza and pneumonia, and certain diseases of early infancy. Whereas the major problems of the past were acute illnesses, which have a fairly abrupt onset and a finite duration, the major problems now are chronic illnesses, which have a gradual onset and an indefinite duration (see Chapter 10), and accidents.

(c) Morbidity

With regard to the incidence and causes of illness, the available information is more limited and less reliable than it is on mortality. In order to have key indicators of health, it would be necessary to have a measure of ill-health in the population, including the whole range of disabilities from the severe conditions that often require hospitalization and medical treatment to the minor ailments and mild chronic conditions. However, the only Canadian data that are current relate to illness treated in hospitals, and to certain contagious diseases which must be reported by physicians to public health authorities.

Looking at acute treatment hospital morbidity, measured by the number of hospital days, one finds that diseases of the cardio-vascular system, injuries due to accidents, respiratory diseases and mental illness, in that order, are the four principal causes of hospitalization, accounting for some 45% of all hospital days.

By another measure, the number of hospital admissions, diseases of the respiratory system come first, followed by childbirth, diseases of the digestive system, diseases of the genito-urinary system, diseases of the cardio-vascular system and accidents.

The difference between the two rankings is due to the fact that one measures the number of hospital days while the other measures the number of admissions. Since hospital stays, on the average, are longest for cardio-vascular disease and accidents, these are more prominent in the ranking by hospital days.

Hospital morbidity, like mortality, is of limited use in assessing the general level of health of the population because it reflects only the severe cases, i.e. those requiring hospitalization. Furthermore, if one makes year-to-year comparisons, it is necessary to take into account factors other than the rate of sickness, such as the effect of prepayment of hospital and medical care and of more sophisticated diagnostic techniques. These factors are difficult to measure at present.

What is really needed is a measure of the prevalence of ill-health in the population, counting not only mortality and hospital morbidity, but illness treated by health professionals outside hospital, illnesses which are self-treated
or self-limiting, undetected morbidity, and a count of the chronically disabled. Only when this comprehensive view is obtained will it be possible to ascertain the level of health and to identify year-to-year changes. Conceptual and technical problems need to be resolved before this comprehensive view is obtained, and substantial funds would have to be made available for surveys of the population and for the establishment of useful data series.

To operate most effectively in regulating dangerous products there is a need for accurate, comprehensive knowledge of the causes of accidents and for the identification of the products, if any, involved. This points to the need for a broadly-based, well-designed statistical system for reporting accidents.

One of the ironies of obtaining and analysing health data is that it is so difficult to act upon the conclusions reached. Taking coronary-artery disease as an example, one finds that it is the major killer and the major cause of hospital days. Contributing factors are well known and include genetic inheritance, the relative absence of estrogenic hormones in men, smoking, obesity, high-fat diets, high serum cholesterol, lack of exercise and stress as well as such morbid conditions as atherosclerosis, diabetes and high blood pressure. Yet, when one looks for programs aimed at reducing the prevalence of coronary-artery disease through an abatement of known contributing factors, one finds that they are weak or non-existent.

Deaths and injuries due to automobile accidents could probably be reduced by 50% if everyone wore seat-belts, and if stricter measures were taken to reduce the number of impaired drivers. In spite of this knowledge the rate of seat-belt wearing stays at about 10% and alcohol continues to be a factor in half the traffic accidents.

Cigarette smoking contributes heavily to respiratory disease and lung cancer. Educational campaigns have succeeded in reducing the number of smokers in the twenty years-and-over bracket from fifty-eight per hundred to fifty per hundred but the recruitment of new smokers among teenagers has increased alarmingly, especially among teen-age girls.

Some 40% of all alcoholic beverages in Canada are purchased by but 7% of the drinking population, the alcohol abusers. At December 31, 1969, there were sixty-seven children under the age of fifteen with a diagnosis of alcoholism in Canadian mental hospitals. One-quarter of all first male admissions to psychiatric hospitals are due to alcoholism, and the heavy contribution of alcohol abuse to motor vehicle accidents, poisonings, accidental fire deaths, cirrhosis of the liver and falls has been ascertained. Absenteeism due to alcohol abuse costs a million dollars a day to Canadian industry. Yet the control and treatment of alcohol abuse in Canada is fragmented and weak.
The lack of physical fitness of the Canadian population has been measured and one criterion, the capacity to use oxygen efficiently, indicates that Canadians are not as fit as citizens of some European countries.

A study in 1972 showed that 76% of Canada’s population over age thirteen spend less than one hour a week participating in a sport, and that 79% have less than one hour per week in other physical activity such as walking. This same survey shows that 84% of the population over age thirteen watches four or more hours a week of television. Some 36% watch in excess of fifteen hours a week. This pattern of living, dominated by sedentary living, explains why so few Canadians are fit.

Accurate statistics on the incidence of gonorrhea and syphilis are hard to come by but those that are reported indicate that venereal disease is again reaching epidemic proportions. Efforts to combat this health problem are at best of uneven effectiveness.

The common dental diseases of caries, periodontal disease and malocclusion are not dramatic but in terms of numbers of people affected they constitute one of the greatest public health problems in Canada. Almost 60% of Canadians appear to receive little or no dental care, and yet few dentists are in a position to accept more patients. A greater number of dental auxiliaries is needed, to relieve dentists of the more routine procedures.

It is estimated that about half the burden of illness is psychological in origin and this proportion is growing. An indication of the seriousness of the problem can be seen from the following facts: one-third of all hospital beds and hospital days are for mental care patients; three out of 1,000 Canadians are hospitalized in psychiatric institutions at any given time; between 5% and 10% of school children suffer from mental or learning disorders; there is a significant increase in alcoholism and drug addiction, homicide and suicide, crime, anxiety neuroses and depressive psychoses. And yet mental health, as opposed to physical health, has been a neglected area for years; unfortunately there is still a social stigma attached to mental illness.

When one looks at the foregoing major health problems of Canada and their underlying causes it is obvious that we are failing to act on the information we already have.

The health care system, for all its facilities and for all the numbers, training and dedication of its health professionals, still tends to regard the human body as a biological machine which can be kept in running order by removing or replacing defective parts, or by clearing its clogged lines. The medical solution to health problems, while an extremely important aspect of health, is only one
of many aspects revealed by an examination of the underlying causes of sickness and death.

If government is, at least in part, a mirror of the people's collective will, then the people collectively must accept the blame for any causes of sickness arising from the deterioration that has taken place in the environment.

In addition to the health care system and the people collectively, individual blame must be accepted by many for the deleterious effect on health of their respective lifestyles. Sedentary living, smoking, over-eating, driving while impaired by alcohol, drug abuse and failure to wear seat-belts are among the many contributors to physical or mental illness for which the individual must accept some responsibility and for which he should seek correction.

Finally, the medical research community, with its emphasis on human biology, must continue to evaluate the direction of its research in terms of the country’s major health problems and of the gaps in knowledge that need to be closed if those problems are to be solved. Balancing the need to respect the independence of the researcher with the need to relate research to health problems is a question of continuing debate; it is true, however, that the research community could pursue with more vigour the application of new knowledge in the environment, lifestyle and health care sectors.

This section on Canada’s health status dwells necessarily on the problems which still face the country and because of this tends to project a picture that is gloomier than is actually the case. By comparison both with its past history and with other countries, Canada has much to be proud of, and thankful for. This is no less true in the health field than it is in other areas of social progress.

Problems in the Organization and Delivery of Health Care

With the introduction of universal pre-paid medical and hospital care, Canadian provinces, with federal financial assistance, have substantially eliminated the spectre of catastrophic medical and hospital bills. Various measures are also in effect to help pay for other services, including special assistance to the needy.

There are three overall indicators of the level of health services: the ratio of various health professions to the total population, the ratio of treatment facilities to the population, and the extent of pre-paid coverage.

The following table shows how Canada compares with other countries in some of these respects. The actual years for which statistics are shown vary slightly according to the availability of the most recent figures.
Australia 79% (Hosp.)
75% (Med.) 117.4 11.8 66.6
Canada Almost 100% 102.3 15.7 57.3
Denmark 96.7% 89.4 14.5 53.4
Sweden Almost 100% 145.8 12.4 43.7
United Kingdom Almost 100% 111.4 12.5 35.1
United States 85% (Hosp.) 65% (Reg. Med.) 35% (Maj. Med.) 82.7 15.3 49.2

In hospital and medical insurance coverage Canada equals the best of the five countries chosen for comparison; it leads in respect of physicians, is in the middle rank in respect of hospital beds, and is second only to Australia in nurses. Since the countries chosen are among those with the best health care services in the world, there is no doubt that, by the four measures used in the table, Canada is among the world leaders.

Canada’s national health expenditures, including personal health care,* in 1971, were as follows:

<table>
<thead>
<tr>
<th>Country</th>
<th>As % of G.N.P.</th>
<th>As % of Personal Income</th>
<th>Per Capita Annual Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>7.1</td>
<td>9.0</td>
<td>306.11</td>
</tr>
</tbody>
</table>

These figures reflect total health expenditures. For that part which comprised personal health care only, the per capita cost in Canada was $271.72, or about $1100 for a family of four. This is a substantial sum by any measure, even if most of the costs were met by insurance.

*Personal health care consists of services received by individuals and provided by hospitals, physicians, nurses, dentists, pharmacists, etc.
In spite of the great strides made in recent years, there are a number of difficult problems facing those with responsibilities for providing health care services:

1. The annual rate of cost escalation has been between 12% and 16%, which is far in excess of the economic growth of the country; if unchecked, health care costs will soon be beyond the capacity of society to finance them.

2. The past twenty years have seen an emphasis on the construction of hospitals and not enough on other needed health care facilities. As a result, Canada now finds itself with an excess of expensive acute care beds, coupled with a shortage of alternative treatment, convalescent and custodial care facilities and increasing pressure on hospital emergency services.

3. Medical services are not yet equally accessible to all segments of the population because health manpower tends to concentrate in cities and is not attracted to rural or isolated locations.

4. Dental services are not equally accessible to all segments of the population, mainly because of the cost to the patient of dental care, a shortage of dental professionals, as well as a maldistribution of available dental manpower.

5. Present organizational arrangements for providing health care services could be improved to more satisfactorily meet the needs of the population.

6. Over the years, a large proportion of Canada’s needs for physicians has been met by the immigration of personnel from foreign countries. Over the decade 1961-1971, the average annual number of immigrant physicians was 914. During the same decade, an average of 919 students graduated each year from Canadian medical schools. This reflects a problem of dependency on other countries for physician supply.

7. Certain sectors of the population have special health problems, due to a number of factors such as mode of living and isolation; they require supplementary services which must be provided at higher than average cost.

8. There is a lack of a uniform and integrated system for maintaining health records of individuals; essential data are scattered in many locations: in physician’s offices, hospital records, clinics, etc.

9. Health manpower planning is difficult because of interprovincial mobility, immigration and emigration.

10. Present cost-sharing arrangements between the federal and provincial governments tend to encourage the use of physicians and acute treatment hospitals, even for services which could be adequately provided through less costly means.
11. Improved ambulatory health centres, with round-the-clock, comprehensive out-patient care are needed in order that accessibility of care will not be dependent on the individual availability of physicians.

12. Regional health authorities with the power to plan and manage the health care requirements of a given geographical area are needed.

The foregoing problems in the provision of health care services are principally the concern of provincial governments, who are charged with ensuring that adequate health care is available at a cost that can be afforded.

**Conflicting Goals in the Health Care System**

Some of the problems of providing and financing health care within reasonable limits arise from attempts to meet conflicting goals.

On the one hand, it is a goal to make physician services equally accessible to everyone; on the other hand, it is also a goal to permit physicians to practise where they wish. The result is that physicians are maldistributed among provinces and between urban and rural areas. At the two extremes, British Columbia, in 1971, had one physician for every 603 citizens while Prince Edward Island had one physician for 1,143 citizens. Ontario had one to 616 in 1971 and calculated that by the end of 1973 it had one physician for less than 600 citizens, in spite of the fact that there is no evidence to suggest that the standard of health care is improved when the ratio of 1 to 600-650 is exceeded.

A second set of conflicting goals consists of trying to control costs while removing all incentives to patients, physicians and hospitals to do so. The existence of a generous supply of hospital beds and of increasing numbers of physicians makes it easy for patients to seek care even for minor conditions and for physicians to hospitalize more patients, particularly when there are no financial barriers. Thus the goal of ready access to health care services, both physical and financial, conflicts with the goal of controlling costs.

A third set of conflicting goals consists of providing a balanced supply of the various medical specialties while permitting physicians to select their fields of special training. The shortage of physicians specializing in rehabilitation medicine and in the care of the aged is evidence that mechanisms are needed to reconcile these two goals.

Fourth, health care administrators would like to see services provided by staff trained only to the level of skill needed for the task performed. However, the present licensing patterns for health professionals as well as the fee-for-service system, coupled with the principle that the physician or dentist alone
bears responsibility for his patient, encourages the practice of physicians and dentists carrying out tasks which could be done by others, as well or better, and often at a lower cost. In the Canadian North the role of the nurse has been expanded along these lines with great success. Similarly, the Government of Saskatchewan has successfully implemented a dental care system for school children in which a major part of the work is done by dental health professionals other than dentists, according to protocols established by dentists and under their overall supervision.

Finally, there is the paradox of everyone agreeing to the importance of research and prevention yet continuing to increase disproportionately the amount of money spent on treating existing illness. Public demand for treatment services assures these services of financial resources. No such public demand exists for research and preventive measures. As a consequence, resources allocated for research, teaching and prevention are generally insufficient.

It would appear that steps need to be taken to reconcile the foregoing, and other conflicting goals and principles, while retaining all that is necessary to properly reward health manpower, control costs and ensure accessibility to quality service.