

*The Address—Mr. Yewchuk*

familiar, biomedical research, the list of Canadian research accomplishments is both long and impressive. This is the list of golden eggs that I want to put on the record. For example, Dr. Sourkes of Montreal and Dr. McGeer of Vancouver jointly elucidated the cause of Parkinson's disease, a condition which causes uncontrollable shakiness in certain individuals; Dr. Robinson of Vancouver has developed a method for controlling rheumatoid diseases; Dr. Noble, also of Vancouver, has discovered an important group of anti-cancer drugs; Dr. Nickerson, also of Vancouver, has developed drugs used in the treatment of high blood pressure.

Dr. Merrimam of Saskatoon has demonstrated the relationship between grain dust and chest disease and has also pioneered work on the role of exercise in coronary heart disease; Dr. Kirkaldy-Willis' work in Saskatoon has improved methods of managing low back pain; Dr. Harold Johns, formerly of Saskatoon and now working at the Ontario Cancer Institute in Toronto, discovered and developed a Cobalt 60 unit for radiation treatment of cancer; Drs. Gold and Freedman of Montreal developed an extremely important diagnostic test for bowel cancer; Drs. Horlick and Sodhi of Saskatoon—there are a lot of good scientists in Saskatoon, some good politicians, and some bad ones too—clarified the role of high fat levels in atherosclerosis and their control with drugs; Dr. Chang of Toronto developed a purification cartridge for portable artificial kidney machines; Dr. Bruce, also of Toronto, developed the rationale for combination cancer therapy.

This listing of major accomplishments by Canadian biomedical researchers is by no means all-inclusive. It does, nonetheless, clearly indicate that in addition to the highly publicized achievements of people like Wilder Penfield, Hans Selye, J. B. Collip, D. H. Copp, Fredrick Banting and Charles Best, this country has many other scientists of first-class international standing.

Canada does not lack scientific talent; rather, it lacks a science policy which would allow researchers to contribute to improving the health and well-being of Canada and the economy of the nation. The government that we are faced with today in this chamber deals with health research as if it were an expensive charitable budgetary outflow. The fact is that health research expenditures by the federal government constitute less than 0.2 per cent of the total budget, and less than 1 per cent of the Department of National Health and Welfare budget. Furthermore, there is now ample documentation that funds spent on health research are a prudent investment for reducing health care costs in the future. They are not a charitable expense without any tangible fiscal benefits.

You may be asking, Mr. Speaker, what that means, and perhaps even members on the other side might be curious about how much one of these golden eggs is worth. It might even be thought "Who cares about golden eggs? They be worth nothing." However, I can assure hon. members that the value of gold is very high these days, and I would like to give an indication of what these golden eggs are worth. For example, Dr. Bob Hickie of the University of Saskatchewan has recently completed a study which shows that for every dollar

invested in health research, the minimum return within ten years by way of permanently reduced health care costs is at least \$20.

The total research cost for developing poliomyelitis vaccine was \$41 million. The estimated saving to Canada since that time has been about \$200 million per year since 1955. Just consider that saving, for a small investment. The saving due to this discovery alone more than pays for all the health research done in Canada since that year.

Measles immunization has resulted in a saving to Canadians of at least \$10 million per year. Treatment of hemophilia saves Canadians \$20 million per year in hospitalization costs alone, not to mention the suffering of patients which has been reduced. Basic research into the cause of blindness in premature babies cost \$34,000. The annual saving due to the averted blindness is \$24,000 for every dollar spent on research.

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The discovery of the antibiotic streptomycin used for treatment of tuberculosis has saved Canadians \$30 million per year since 1952. Penicillin continues to save more lives each year than were lost during the entire Second World War. Just consider that, for a government which looks on research as a charitable outflow. If typhoid fever were treated today by 1935 standards, the patient would have to be hospitalized for about 50 days at a cost of about \$8,500; now the costs include a prescription for chloramphenicol at about \$5, and one or two days of fever.

The basic research by Canadian scientists into the defect associated with Parkinsonism and its treatment with L-DOPA saves Canadians at least \$120 million per year. A diagnostic test for cancer of the bowel, also developed by Canadian scientists, saves Canadian taxpayers about \$60 million per year. The total cost of discovering insulin by Drs. Banting and Best was less than \$30,000; though not yet documented, the total monetary saving to Canadians since the discovery in 1921 would be staggering.

The lives and livelihood that have been spared by cures and treatments resulting from basic and applied biomedical research during the last 40 years have been estimated by Creditel of Canada Limited to save Canadians \$1.7 billion this year. This saving represents nearly 10 per cent of the total budget of the Department of National Health and Welfare.

We believe that the government's expenditures are in general excessively high, and in some areas outright wasteful. As I mentioned, this government can be compared with the farmer who feeds too many cats and other family pets which are not productive. We believe also, however, that spending in the area of research and development should be regarded as a needed investment, not as a loss of federal dollars. It is not a loss or simple expenditure. Federal investment in this area must increase, not decrease, because it is clear that scientific innovation could play an essential role in achieving many of Canada's economic objectives, a strong manufacturing sector with consequent growth of employment opportunities, industrial effectiveness leading to greater price stability and a stronger value