

Standing Committee on the Alberta Heritage Savings Trust Fund Act

10:02 a.m.

[Chairman: Mr. Ady]

MR. CHAIRMAN: We'd like to call our meeting to order. We'd like to welcome Mr. Al Libin, the chairman of the Alberta Heritage Foundation for Medical Research, and the president, Dr. Matthew Spence. It's not that long since we saw them. I'm sure all members of the committee enjoyed our visit last week at their facilities in Calgary and the great hospitality and the excellent overview they gave us of the research that they're doing and the progress that they're making. We would invite one or both of you to make opening remarks and give us additional information. I'm sure there's more, with all that you're doing down there, in addition to what we were able to view last week.

Prior to doing that, I would like to give an opportunity to members of the committee if they have recommendations they'd like to read into the record. It's getting close to that time.

The Member for Calgary-Fish Creek.

MR. PAYNE: Thank you, Mr. Chairman. I'd like to introduce two recommendations today. The first:

Resolved that the Minister of Municipal Affairs be encouraged to develop additional initiatives to attract more private-sector investment in social housing projects.

And the second:

Resolved that the Alberta Occupational Health and Safety heritage grant program fund research into the health and safety implications of cigarette smoking in the workplace and that related health and safety promotion campaigns be undertaken.

MR. CHAIRMAN: Thank you.

Are there others?

If not, Mr. Libin, do you choose to go first?

MR. LIBIN: Thank you, Mr. Chairman.

MR. CHAIRMAN: The Chair recognizes your time.

MR. LIBIN: Mr. Chairman and members of the committee, thank you very much for the opportunity to meet with you again and to discuss the Alberta Heritage Foundation for Medical Research. I'm very glad that most members of the committee had an opportunity to meet with the heritage-funded investigators at the University of Calgary last week. To share the dedication, enthusiasm, and excitement of our scientists at firsthand puts a human touch on the facts and figures of our annual report and gives you an informed overview of what the foundation is all about. I hope that this overview and our discussions today will position the committee to advise the Legislature and the government about the continuing progress of the foundation and the Alberta scientific community that it supports and of our plans and needs for the future.

You have received two documents as background to this meeting. One is the annual report of the foundation for the year ended March 31, 1992. The report contains the audited financial statements of the foundation, brief headlines concerning some of the research activities that we support, and a letter to the reader from myself and Dr. Spence. The report is brief, as many of the stories and some of the information it usually contains will be presented to you, to the government, and to the people of Alberta as part of the upcoming triennial report and the report of the International Board of Review.

Let me take a few minutes to describe both of these activities to you. The Act which established the foundation in 1979 not only provided the enabling legislation for one of the most imaginative vehicles for the promotion and maintenance of medical science and subsequent spin-offs into better health and technological innovation but also crafted a process of regular reporting and review. Each year the foundation gives an annual report to you. Every three years the foundation provides a more detailed report of its activities, the triennial report. Every six years the foundation is reviewed by the International Board of Review, composed of scientists drawn from around the world. This panel of expert scientists is provided with extensive background information concerning our programs and our medical research efforts. They visit the province to meet with the scientists and their leaders. Their charge is to provide the foundation and the people of Alberta with a report which reviews our programs, evaluates their effectiveness, and recommends maintenance or change. These reports, the triennial report and the report of the International Board of Review, will be available to you and the people of Alberta in 1993. All foundation programs were strongly endorsed by the first International Board of Review in 1986.

We have been in existence for 12 years, and after 12 years of operation it was time to re-examine the foundation's goals and activities in the context of current issues in the medical research community and health care scene, the changing economy, and the maturity of the foundation itself. Accordingly, in the last year the foundation has gone through a strategic planning process supervised by the trustees and the management of the foundation. The process was carefully designed to gather the ideas and concerns of a broad group of stakeholders in medical research in Alberta and to foster genuine debate about issues. The foundation invited people to participate in eight focus groups drawn from the scientific community, university and hospital administration, health-related organizations, and government. The participation of the focus group was most gratifying because it was enthusiastic, concerned, and honest, with agreement on several key points and very diverse opinions on others. In addition, the foundation consulted with other medical research funding agencies in Canada, the United States, and Britain.

We are grateful to those who participated in our strategic planning. They expressed their confidence in us, and in these challenging times we are moving forward with commitment and imagination to fulfill the bright promise of medical research in our province. We've examined our mission and objectives as put forward in our Act and found the spirit of these statements is as relevant today as it was in the late '70s or early '80s. Our newly articulated mission statement is entirely consonant with the original Act. The mission statement reads:

We support a community of researchers who generate knowledge that improves the health and quality of life of Albertans and people throughout the world.

Our long-term commitment is to fund basic, patient and health research based on international standards of excellence and carried out by new and established investigators and researchers in training.

To fulfill this mission, we have developed nine goals which chart our direction for the future. With your permission, Mr. Chairman, I'd like to review these goals and use them to highlight some of the foundation activity in the past year and the exciting opportunities for the future. Dr. Spence will elaborate on these in more detail during his remarks.

Our first goal is

to maintain international standards of excellence through an appropriate and effective peer review system.

There are no provincial or federal barriers to the movement of ideas. Our scientists compete on an international stage. Their ideas and impact on our provincial health system and industries is world class

and competitive. Last year alone we sought the opinion of over 140 scientists throughout the world about the quality and type of research to be done or being done in our province, and only those applications which met these high standards were approved. Thirty of these scientists served on special expert panels that advise the president. Because of this review process, the foundation is confident the scientists supported through its programs are in the front ranks worldwide. Their work is new, innovative, and is not duplicated anywhere else. We are very proud of our review system, which ensures we maintain the highest standards of excellence.

Our next goal is

to manage expenditures to ensure the continuance of [the foundation] for future generations while avoiding significant fluctuations in annual spending.

We've adopted a spending formula which preserves the purchasing power of the endowment for future Albertans but at the same time provides as many dollars as possible for the initiatives of the present. The spending formula also ensures that budgets are relatively stable despite rapid fluctuations in interest rates and equity yields. This responsible position by the trustees of the foundation will preserve the endowment's purchasing power into the future but at the same time, however, limits the dollars available for our current programs or for new programs during times of increasing opportunity and escalating demands. The challenge of the foundation in the future will be to employ these limited resources effectively to realize our goals.

Our third goal is

to maintain and strengthen basic research in order to discover the underlying causes of disease and provide a [basis] for patient and health research, the practise of medicine and prevention of disease.

To achieve this goal, we have continued to support over 150 scientists at the University of Alberta and the University of Calgary. On the recommendation of our expert advisory panels, only the best are chosen. As a result of detailed review every five years, some of these scientists have not been successful in their applications for continuing support. They are still very good. They are simply not as good in the opinion of our committees as many of the others whom we support. Recognizing their quality and the importance that they may have had in the health and education system of our province, the foundation provides up to two years of terminal support for all of these unsuccessful candidates. For those whom the universities and hospitals would particularly like to retain and for whom there may not be immediate openings elsewhere in the system, the foundation has also instituted a bridging program to assist in placing these talented investigators elsewhere in the Alberta system at a later time. We've been advised by our Scientific Advisory Council that this terminal and bridging program is among the most forward thinking and imaginative in our country.

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At the same time, we are supporting the recruitment of top-notch new young scientists to provide the new ideas and new ways of approaching scientific problems that are essential if Alberta is to remain competitive in the future. At least 15 new young scientists have joined the faculty in Edmonton and Calgary in the last year and are making fundamental contributions in such areas as multiple sclerosis, epilepsy and stroke, studies of the immune system, and rehabilitation from injury and disease.

Our fourth goal is

to expand [the foundation's] support of patient-based and health research in Alberta and lead new initiatives in these areas.

Our third goal acknowledges the importance of basic medical research to health. This fourth goal acknowledges the impact of physical and social environments, wealth, genetic endowment, life-style, and other diverse factors on health and individual well-being

and the importance of research in these areas. Let me cite two specific examples of research initiatives funded by the foundation last year that will help us to recognize this fourth goal and which deal with patients and human populations.

The first is the Alberta centre for evaluative clinical research. The foundation is providing the universities of Alberta and Calgary with \$450,000 each over three years to study the impact of new drug therapies and treatments to reduce hospital stays and improve the quality of life. One of the conditions for continued funding is adequate collaboration between Calgary and Edmonton, a move endorsed by both universities, the University of Alberta hospital, and the Foothills hospital. More money is likely to be attracted from industry to test drugs and procedures, particularly from the pharmaceutical companies. Heritage researchers at both universities are already participating in multicentre trials of new drugs for health disease. Such multicentre activity will increase as the centres develop further with the new funding from the foundation.

The second example is the Alberta primary care research unit. This group will be doing research to answer problems of concern to the primary care physician and to the general population. The foundation has provided \$180,000 over three years in support of this imaginative research network of family practitioners, one of the few in Canada.

In our specific goal 5, Mr. Chairman, we will maintain our thrust in "research education and training programs" for young Albertans and our continuing encouragement to them "to pursue research careers." You met some of these students the other day in Calgary. We are currently supporting over 300 students in this province. In the past year over 80 students and postdoctoral fellows graduated from our Alberta system. The new ones have come attracted by superior milieu in our institutions. A critical aspect of these programs is their ability to provide the staff for further biotechnology initiatives in Alberta.

Our sixth specific goal is

to encourage increased collaboration in Alberta, Canada and elsewhere among investigators, research institutions, governments, other granting agencies and the private sector.

I have already alluded to the co-operative programs we have funded among the University of Alberta and the University of Calgary, the hospitals, and the offices of primary care physicians. We also encourage collaboration through visiting scientists and speaker programs, which brings a string of international experts to our province, and send scientists away to learn the advances in other centres. The result is that we have a formal and informal communications network that ensures research advances from around the world can be readily tested and applied in our province.

We're also collaborating with voluntary and federal granting agencies. The National Cancer Institute of Canada, the Medical Research Council of Canada, the Heart and Stroke Foundation of Canada, and a host of other agencies provide research funding for imaginative research projects in the province of Alberta carried out by heritage researchers. Their dollars are attracted here by the researchers funded by the heritage dollar, so there is very immediate 2 for 1 return to our province for every dollar the foundation invests. Dr. Spence will elaborate further on this.

To realize our seventh goal, we

continue to promote the development of medical research-related economic activities in Alberta, including commercialization of innovation.

You met Mr. Cliff Anger, president of Itres Research, last week in Calgary. Itres is developing an imager, a sort of camera for use with genes in cells that can cause fluorescence. They are developing this medical research instrument with the assistance of foundation funding. Other examples of foundation assisted commercialization

include the further development of systems for designing below-the-knee amputee sockets and artificial legs and the design of new drugs.

Our eighth goal is

to maintain and improve communication with the public, government, the research community, universities, and health-related institutions.

Members of the committee will be familiar with the foundation's bulletins and news flashes. Our staff and trustees continue to meet with all of the constituencies concerned with foundation activity as often as possible. The communication programs have been expanded to include public education activity such as public lectures on health.

Finally, no organization can rest on its laurels. The foundation is continuously examining what it does or whether we can do it better. Our final strategic goal is to continue to review and update our strategic plan and set priorities. The International Board of Review in this coming year will be part of that process. To carry out this ambitious strategic plan will require all the resources the foundation can muster and imaginative partnerships with federal granting agencies, volunteer agencies such as the heart and stroke and the cancer societies, industry, and the universities and hospitals, but government is also a partner and a very important one.

We are going to fall short of the dollar requirements necessary to carry out our plan. In the past Mr. Geddes, Dr. McLeod, Dr. Spence, and I have repeatedly requested that the endowment be supplemented by \$150 million to \$200 million. If this is not possible, urgent consideration should be given to at least ensuring the equivalent interest income to the foundation so that we could realize the very real opportunities for biomedical and health research in our province. A measured infusion of \$5 million to \$10 million per year over the next five to 10 years would be a sound further investment in what is universally acknowledged as one of the best things this province and this government have ever done.

We look forward to the challenge of the future. We have a history of success in supporting world-class medical research and now have a clear vision of how we can become even more successful.

As you know, Dr. Matthew Spence is our president, and it's his dynamic leadership that has taken the foundation forward in these challenging times. I turn the floor over to him to describe more specifically how we'll build on past successes and move in new directions for a healthier Alberta.

MR. CHAIRMAN: That's a very good overview.

DR. SPENCE: Thank you very much, Mr. Chairman and members of the standing committee. It's good to see you again. I just wanted to again echo the thanks of the chairman to all of you for taking the time from your schedules to visit with the heritage-funded investigators at the University of Calgary. I think you can probably appreciate what I would say is one of the more exciting and rewarding parts of my job, which is to hear the new ideas from some of these people and to share the excitement of their discoveries, talk to the students, and brush shoulders with the patients and some of the members of the public that are vitally concerned with the foundation's programs.

Now, Al has given you an overview in the context of our strategic plan, and I thought maybe what I could do is complement the overview by filling in some of the details, sort of answering the question: what are we getting for the investment of about \$370 million to \$390 million that we've spent over the last 12 years? I think, quite frankly, we're getting an enormous return, and maybe I could give you a few examples.

The first one is sometimes a bit intangible, and that's the new knowledge, the knowledge that's generated through research, the knowledge of new molecules, what's going wrong in our bodies, how

you bring a body back to health when it's sick, and how you maintain health in people who are already healthy. I think all of us would like to stay healthy for as long as we possibly could. I think all of us would like to live to be 150, and we would all like to enjoy good health for the full 150 years.

Now, this new knowledge is communicated by our scientists through articles in national and international journals and by presentations at meetings. I thought you'd be interested to know that in the 12 years since the foundation was established, the students and the scientists have published over 5,000 articles in international journals of the highest standard. There have been over 2,000 presentations made at national and international meetings of the highest calibre. Investigators from around the world have come to Alberta, and some of our people have traveled elsewhere to these meetings. The knowledge generated in Alberta is distributed internationally and is acknowledged to be among the best in the world. At the same time, of course, our people are able to take the research advances from around the world and apply them very rapidly in Alberta, certainly to the benefit of Albertans, so that we can be assured that what's coming to our province is among the best in the business.

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Now, let me give you a few examples of the new knowledge. You've seen a little bit of it in Calgary, and I suspect you've seen some of it in the papers over the last while. Let me just hit the highlights. We have the world's first diabetic patient to be free of insulin therapy for over a year after having received transplanted insulin-producing cells. It's a first in the world. We have the world's first electrical stimulation therapy for use at home by a stroke patient. This is the use of electrical currents to help stroke stricken limbs move.

During the tour of the cancer floor at the heritage building in Calgary I think some of you saw the new use of an old drug and the dramatic return of cancer cells to a more normal appearance under the microscope. I think you'll remember those. You could see very clearly what was happening, a very exciting potential use of this drug. We have the discovery of genes for key proteins which allow killer cells in the immune system to destroy tumour cells. A vaccine has been developed in Alberta that can prevent hereditary diabetes in mice, and the implications of that for diabetes in man are of course enormous.

A promising new drug candidate has been developed for hepatitis B, which is a real scourge in North America at the present time. Heritage researchers have developed the world's most sophisticated machine for monitoring heart electrical activity. Alberta investigators have contributed to the studies that special drugs help control dangerous heart rhythms which frequently carry many of us off. Western Canada's first knee ligament transplant was performed in this province. Then again, as you heard in Calgary, Albertans have provided the first evidence that I am aware of that spinal cord cells damaged in Lou Gehrig's disease can recover. Now, these are just a few of the many contributions to knowledge that heritage scientists have made.

Now, what about the return to the people of Alberta for these discoveries? Well, in some of these latest advances the knowledge that is available is being applied in new and in expanded clinics for Alzheimer's, allergies, Crohn's disease, multiple sclerosis, diabetes in pregnancy, sports injuries, heart attack, sleep disorders, infant nutritional problems, and many other areas. As Mr. Libin alluded to, heritage-funded researchers also bring new dollars into the province from other granting agencies and from the private sector. For every dollar that we invest in the system, more than \$2 returns to the Alberta economy. Thus for the \$25 million that we invested directly

in the province, as documented in the annual report last year, over \$50 million returned to the province. That's a very healthy return on any investment, and over 70 percent of these dollars are spent directly in jobs for Albertans and thus spin off directly in the local economy. We estimate that there are over 800 jobs in the province of Alberta as a result of the foundation-funded activity.

Now, when Mr. Lougheed and the Legislature of the day established the foundation, they thought that the brain trust we were assembling, focused on medicine and health, would be an important cog in the province's diversification of the economy. I think this has begun to pay off. Let me just give you a couple of examples. In October of this year, just this month, Glaxo Canada, which is one of the largest research-based pharmaceutical companies in Canada and in the world, announced the creation of the Glaxo Heritage Research Institute at the University of Alberta. Glaxo will provide \$800,000 in start-up capital to this centre, continuing operating funds of at least \$550,000 per year, and has earmarked up to \$15 million over the next 10 years to support the institute's research program. This very significant development was attracted here by the presence in our province of heritage-funded scientists working on virus diseases and on hepatitis B and on AIDS in particular. The central Alberta figure in this development, Lorne Tyrrell, has acknowledged that this development would not have been possible without the foundation.

Another example. John Remmers, who's a physician and scientist supported by the foundation in Calgary, is the inventor of a medical device for noninvasive treatment of what's called obstructive sleep apnea. How many of you wake up startled just as you fall off to sleep, for example, listening to somebody like myself talking and all of a sudden, bang, you wake up and you get this start? For most of us it's benign, it doesn't really hurt, and as a matter of fact, it's rather useful. It prevents you from falling out of your chair or out of bed. But some people stop breathing, and that's why they wake up. They're actually starting to lose oxygen. For some people it's a real problem; it can be life threatening. We call it sleep apnea, and it can kill. Dr. Remmers and his colleague have developed a special mask for the treatment of sleep apnea. You wear it when you go to sleep. It's licensed to a company in Marietta, Georgia, and to date over \$1.5 million in royalties have come back to Calgary for the sale of this device.

Back to Edmonton. I'm sure you're all familiar with Larry Wang and the Coldbuster bar. Larry got an ASTech award just the other night. Did you know that Larry developed some of his ideas for that bar during a year of dedicated research activity supported by our professor in residence program of the foundation, that the medical research environment that the foundation has established was of inestimable help to him in this initiative, and that he used some of the equipment funded by the foundation along the way?

One final example is that there is a company called LivingWorks in Calgary which undertakes the development, delivery, and dissemination of technology for the prevention of suicide. This is a suicide prevention program. Suicide is a major cause of death, particularly for our young people. The foundation has provided a technology commercialization grant to this group to refine the existing programs and to do a market analysis. The program is being sold around the world, and the company is negotiating further sales. It's currently employing four people with new positions to be created in the next few years.

Mr. Libin alluded to the Alberta centre for clinical evaluative research and the Alberta primary care research unit. Let me just tell you a few things about the latter one. The Alberta primary care research unit is again an example of collaboration in our province between the faculties of medicine at the University of Alberta and the University of Calgary and the Alberta chapter of the college of family practice. I think it's interesting that the new wave in health

care -- health promotion and disease prevention -- is moving out into the primary care physicians' offices, and it's going to put new demands on the health care system to find effective ways to deliver health services. There's going to need to be a thorough and rigorous evaluation of the assessment of the quality and the outcome of services delivered in the primary care physicians' offices. In other words, are we doing things right in the general practitioner's office? Because for every patient that enters the U of A hospital or the Foothills, 200 consult their family physicians. So this network is an imaginative linking together of all the family physicians, the grouping of the family docs together with the central academic units, seeking answers to research questions which are of interest to the family physicians and their patients but also to you as members of the Legislature who are ultimately responsible for the health care provided to Albertans.

Well, those are some of the things that we've accomplished along the way. But what about the challenge for the future? I think it's absolutely breathtaking, and the foundation is going to try to meet this challenge with an integrated sort of three-pronged thrust. The first thrust you've seen. It's in basic biomedical research, and our knowledge of human biology is advancing by leaps and bounds. Advances in genetics are revolutionizing our approach to disease. Gene therapy, gene engineering are just around the corner. If Alberta is to capitalize on our past investments and realize the promise of existing and new technologies for the benefit of all Albertans, we have to maintain our commitment to basic biological research. This will continue to consume a major part of the income of the foundation, so we will be maintaining our thrust in basic biology.

For the second prong of our thrust we want to apply these advances to patient care and the promotion of health through clinical trials for new therapies. We are also interested in research that improves our health system, such as the evaluation of existing methods of treatments -- should we be continuing to do some of these; should we be stopping them; should we be putting others in place? -- methods of cost containment and health promotion and disease prevention strategies. You've heard some of those touched on when you visited Calgary.

The third thrust, however, has to look at the broader and equally important determinants of health that are imbedded in our life-styles and in our family and social structures. It's clear that the major determinants of health are not only in the chemical reactions of the cells in our bodies and in the development of new drugs and vaccines but really in a clearer understanding of how we as human beings function in our greater environment. Wealth, jobs, the social fabric of our country, family, faith, knowledge, and attitudes play a fundamental role in establishing health. I think this social health, as I've loosely defined it, will undoubtedly have an increasing impact on our health in the future. We can lead in this area in Alberta, and if we do, the world will beat a path to our door. The spin-offs to us not only in our own health and in international acclaim but also in the more practical creation of jobs, local industries, and services cannot be underestimated.

10:32

Now, to maintain those first two thrusts -- the basic science thrust, the basic biology, and the research on the health care system itself -- and to further develop the third thrust in the social health or innovative research related to man and his environment will exceed the resources of the foundation. We can maintain the first thrust and part of the second with a judicious allocation of existing resources, but to further develop the research on the health care system itself and also to carry out that crucially important area of what I call the social aspects of health, we need to develop and to nurture a nucleus of first-class scientists in this province. Creating this nucleus will

take more dollars than the foundation has at present but not much more. Were we able to access 5 million to 10 million new dollars per year over the next 10 years, much of this goal could be realized. Were we able to start that ball rolling, we could do the same thing you saw in Calgary. The nucleus of social or health scientists would attract to the province additional dollars from the outside -- from the federal government, voluntary agencies, and industry -- more jobs, and possibly the most important long-term impact on the future health of our province and on our nation that we are likely to ever realize. In other words, I think the attention to some of these social determinants of health will be as important as the fundamental biology.

Might I suggest, members of the standing committee, that if the income, not the capital, from about \$150 million of the heritage savings trust fund could be allocated to the foundation over the next 10 years, we could realize these three goals for fundamental advances in Alberta. The resultant impact on our health and on our economy I think would be incalculable.

Thank you very much, Mr. Chairman.

MR. CHAIRMAN: Thank you, Dr. Spence. Thank you to both of you.

Mr. Libin and Dr. Spence have been generous in supplying us with a written text of their presentations. I'll have our legislative secretary distribute them to you, and you can have them for your future reference. I find them most valuable. I think it gives each of us an opportunity to tell Albertans this information. So it's nice to have it in print. Although we could get it from *Hansard*, we appreciate your making them available to each of the committee members.

I'd now like to invite questions from the committee and would recognize the Member for Edmonton-Calder, followed by Calgary-Fish Creek.

MS MJOLSNESS: Thank you, Mr. Chairman. Good morning and welcome to the Legislature. I would like to say, too, at the outset that I enjoyed our visit to Calgary very much. I had so much information when I left there. I really appreciated the day that we spent.

I'd like to follow up, Dr. Spence, on something that you were talking about: the return on our investment. Certainly we know that not only Alberta taxpayers are putting some financial support into the foundation; business is as well. You mentioned the return in terms of the knowledge that we gain, which I think is very important, the jobs that are created and so on. I'd like to just ask you about the return in terms of the monetary return. Now, for example, when a business invests in research, is there any monetary return to that particular business if a drug is discovered? I'm thinking of, say, a pharmaceutical company that invests so much money. Would it get part of the profits once a drug is discovered and marketed?

DR. SPENCE: Oh, yes. I don't think the large multinationals or even the small firms go into this totally out of altruism. Their research obviously ultimately pays off in terms of a product which can be marketed. So obviously there are dollars that return to them from either their own research effort or from that research information which is in the public domain if they can figure out a way to commercialize it, to invest it.

One of the things we have to remember is that simply the discovery of the idea may cost, say, a hundred thousand dollars, but to actually commercialize it, to lead it through all the testing that may be necessary and then to finally market it in the community, can take many, many more dollars than that. The figure that's quoted by the drug companies for the commercialization of a new drug is

something like a hundred million dollars. That's what they claim it takes to take it all the way to market, by the time prescriptions are being written and it's being sold across the counter.

MS MJOLSNESS: Okay. So then in terms of the Alberta taxpayers' monetary return, is there any? I'm not sure if in fact there is. I'm just curious. If a business invests and gets monetary return for their investment, is the same applied to Alberta taxpayers?

DR. SPENCE: I think the Alberta taxpayers, as I was sort of alluding to in some of my comments and as you pointed out, get a return in three or four ways. The first, of course, is in terms of the application of knowledgeable patient care, and that's a little difficult to deal with in tangible terms. For example, the arthritis group that you saw in Calgary are working directly in the treatment of arthritis, and I would say that the treatment of arthritis in Alberta at the present time is probably second to none in the country. In other words, they receive a return on the investment in terms of improved health and health services as a result of the research activity.

The second area, of course, is in the jobs which are created by the research activity itself. Their investment, if you like, gets spent on jobs. So the sons and daughters of Alberta taxpayers are either carrying out the research or are employed in the research laboratories of the foundation.

The third area in which I think there is a fairly direct return is in the investment back of the companies in terms of the dollars that they are getting as profits which they then turn around and invest in Alberta. The Glaxo initiative of \$15 million, for example, is a return of part of Glaxo's profits on the sale of pharmaceutical products back into the research efforts of the province. So it spins off into our economy here.

MS MJOLSNESS: What I'm getting at is that there's no direct monetary return like there would be for the business though. There's a direct monetary return to the business that invests, but that same monetary return does not go to the taxpayers. It's a return in different ways.

DR. SPENCE: It's returning the same way that any investment by the taxpayer, if you like, through government returns to the taxpayer, in an indirect fashion. It does not return as a direct salary cheque, except for those that are employed in the research business, obviously. I'm not sure I've answered your question.

MR. CHAIRMAN: Perhaps I could just clarify. If I understand, what the member is really trying to determine is whether there is a possibility of a royalty coming back to the foundation and hence back to the taxpayer. Would that be what you're really seeking to determine?

DR. SPENCE: The chairman mentioned to me, too, that intellectual property was probably also one of the things that was tied up in the question. Most of the investigative activity that the foundation funds is in the universities, and the universities and the hospitals have agreements with the investigators in their institutions about the licensing and protection of intellectual property. For example, for that sleep apnea mask that I was referring to, the royalties come back to the investigator but also back to the institution. So there is a sharing, if you like, back to an Alberta institution. As long as an Alberta institution has a royalty stake in this, the foundation then feels that the money is returning to the province. Were there not an institution involved, then the foundation would take a direct interest in a return to the province, either in a payback of the dollars that we

have put into it or in some other sort of royalty agreement to ensure that some of those dollars are returning to the province.

MR. CHAIRMAN: The Member for Calgary-Fish Creek, followed by Westlock-Sturgeon.

MR. PAYNE: Mr. Chairman, you may recall that when the committee met with Mr. Libin and Dr. Spence last year here in this Chamber I asked Dr. Spence if the foundation at that time was giving any consideration to the ethical implications of physician-assisted suicide in its planning and research activities related to medical ethics. As I recall, Dr. Spence replied at that time that the foundation was not directly considering that as a research topic. If I could quote from *Hansard*, Dr. Spence did say, "It is an area, though, that I think we will have to look at again in the future."

Now that 12 months have lapsed, I wonder if it's fair to ask, Mr. Chairman: has any further consideration been given to that admittedly controversial yet obviously very timely subject?

10:42

DR. SPENCE: Well, Mr. Chairman, first of all, I would make the general remark that I think the bioethical issues that are important for medicine and health are obviously of major concern to all of us, and they obviously concern the foundation as well. The foundation has funded in the past some activities in bioethics in the universities in both Calgary and Edmonton. More specifically, we have in partnership with the universities created a lectureship series on medicine, ethics, and the law. It's a combination, a rather imaginative combination, of law, ethics, and medicine at both universities in which a panel of distinguished speakers will be coming to talk about various issues of this type -- in other words, to address some of these controversial issues -- so that Albertans can consider the various ramifications of these sorts of very tough ethical issues, debate these, and then ultimately incorporate this sort of information into their own process of making decisions.

We haven't had one directly in the area of physician-assisted suicide, but an equally controversial area, which is the area of termination of pregnancy, was addressed by a speaker from Britain, one of the distinguished ethicists in this area. Obviously, he didn't come down with a thou shalt or thou shalt not but discussed in a very learned fashion, I think, the ethical issues of this particular issue.

So we do have these types of things starting in place. My anticipation is that they will increase in the future because this is an area of investigation and scholarly enquiry and also of very practical importance. I think more reasoned decisions get made when people discuss these in advance than they do in the shell shock of the moment. Sometimes at that time we make decisions that we perhaps live to regret in the future.

MR. PAYNE: Mr. Chairman, Dr. Spence's reference to terminated pregnancies prompts a question with respect to fetal research. Could I ask: is the foundation at the present time undertaking any research with respect to the fetus itself?

DR. SPENCE: We are funding research in what we call perinatal medicine, which is the period of time, if you like, that takes you sort of from mid to late pregnancy, although it is concerned, obviously, with the earlier stages, through delivery and those first few hours and days of life. It's a continuum; you can't sort of ignore the stages. The major emphasis in this group happens to be in the mechanisms which initiate labour, because one of our concerns is that the best place for a baby until they're nine months or whatever old is in the mother's womb. Babies born prematurely, no matter how well taken care of, don't do as well as in the mother's womb. Nature designed the best incubator and the best milieu. So understanding what

triggers labour -- and, quite frankly, with all the work we've done on it, we're still a little bit in the theory -- and how to perhaps control this process to a certain extent so the babies can remain in the womb until they are capable of standing on their own two feet is an extremely important issue. That is where the major amount of the work that we are funding at the present time is concentrated, on this whole question of intrauterine development, nurture in utero, and controlling the birth process itself. We obviously have people who are interested in brain development in early utero, but they're not doing any direct human experiments.

MR. PAYNE: Finally, Mr. Chairman, Dr. Spence twice in his remarks made reference to research on the health care system itself and suggested that for a modest additional investment of \$5 million to \$10 million annually that kind of research could be undertaken. I wonder if Dr. Spence could elaborate for the committee's benefit today what kinds of methodologies he would anticipate in conducting that kind of research. You know, the committee toured the facilities last week, we were privileged to learn about quite a wide number of areas of what I guess I'd call the more traditional medical research, but the reference to research of the health care system itself seems to engender a slightly different set of methodologies. It's that area where I would appreciate some elaboration.

DR. SPENCE: Well, as I'm sure you can appreciate, the research on the health care system . . . In the sorts of things we showed you, we were obviously seeking things which were visually interesting; in other words, where you could see something moving or whirling or something of that sort, because as we all know, those are the things that attract us as we pass around. I don't think any of you would particularly want to look at paper. I suspect that you are deluged with paper in the course of your everyday work. One of the fundamental bases of research in the health system is information. So what you're really looking at is paper, computers, this sort of thing, because what you're basically saying is: is this way of doing things . . . For example, is it necessary to hospitalize somebody with a coronary, let's say, for X weeks? Can they be discharged earlier to home, to a hospice or something like that, with a modified care regime? What you do is that after making sure that this is not going to increase the risk for the subject, you study what happens when one hospital does this, discharges early, and another hospital hangs on, and you look at the eventual outcome in terms of how many weeks or months or years this individual is disease free. When you pick up the fact that this method of doing it is better than the others -- say it results in less cost because the individual is out of the hospital and at home -- then you make the recommendation to the system to move in that way. It's a method, if you like, of studying the utilization of the system and the way the system is working at the present time.

One of the things that's been pointed out and suggested -- and I don't think there's any hard evidence on this -- is that 20 to 30 percent of what we do now is unnecessary; it makes no difference whatsoever. The feeling is that some of these things could be cut out, but I think most of us would like to feel that they had been studied, that we had looked at it very thoroughly and made sure that that, in point of fact, is the case before we did away with them or before we add anything to the system that's going to make a difference. We're all evangelists for our cause. I'm sure I'm an evangelist for research, and others are evangelists for something else. When somebody comes and talks to you about these sorts of things, you like to say: "Well, let's see the evidence. Let's see that it's going to make a difference." That's the tough choice that the hospital administrator is going to be faced with: should he or she put

this in place or should they take it out? That's the sort of information that I think they require for the management of the health care system.

MR. PAYNE: Very helpful responses. Thank you.

MR. CHAIRMAN: Thank you.

The Member for Westlock-Sturgeon, followed by Ponoka-Rimbey.

MR. TAYLOR: Thank you, Mr. Chairman, and also good morning to Mr. Libin and Dr. Spence. One of the highlights of being a member of this committee is the tour that we occasionally do down to your premises. I always find it very enlightening and eye-opening. In general, of course, the mystification of medical care is always at the back of one's mind, and it's always interesting to see some of those mysteries partly solved or the veil pulled aside occasionally.

My question, Mr. Chairman, is more, I guess, one of planning. I don't know if Mr. Libin or Dr. Spence will choose to answer it. It is with respect to the rheumatology and neurosciences that certainly appear to have good work going forward. One of the concerns I have is whether or not we are starting to fracture our effort. Is there a chance that we're getting too enthusiastic and there'll be other schools of thought springing up? In other words, I could say: how far do you intend to go down the lines that you're going in rheumatology and neurosciences? Then I suppose -- well, I'll leave the other to our second question. How will the budgets be apportioned between the three: cancer, rheumatology, and neurosciences?

DR. SPENCE: I think the first point that I might make in reply to that is that the foundation does fund a fairly broad range of stuff. In other words, we don't put all our eggs in one basket. You happened to see a couple of areas which are noteworthy because of the quality of the science that they're doing but also, of course, because of the partnerships with the private sector; for example, in the arthritis group and the partnership of the Cancer Board with the cancer group. But we do have a number of other areas we're funding. You didn't really see the groups in gastrointestinal diseases, for example, or if you'd come to Edmonton, you could have talked to the group in skin diseases, that were interested in diseases of the skin, and so on. So we do cover a fairly broad spectrum. There have been people, of course, who have urged us to specialize to a certain extent.

10:52

The areas that we've picked out have really accessed, have really come to the fore for two reasons. The first has been their impact in terms of human suffering and disease. In other words, they are priority items by the amount of disability and distress that they cause. I think all of us know people who have suffered from strokes or epilepsy or something of this sort. Almost everybody that we know who is ill ends up sometime or other with a derangement between the ears, either organic or in the thinking process. Arthritis is a very common ailment; one in five individuals at some time or another will have arthritis. So it's picked off by the priority of the disease. The other thing is by the brightness of the scientists themselves. We happen to have recruited extremely good people in those areas who are very competitive nationally and internationally in terms of funding and in terms of attracting others to train with them. Excellence begets excellence, and those units have tended to grow by what they can attract from the outside as well.

So it's both the priority of the disease and the ability of the individuals. If those individuals were not that able, our committees would not recommend that we fund them, and the area might lapse. One of the things we're very concerned with is getting the best

possible people into those places, and that's one of the things I can assure you of, that we look at them very, very hard. As Mr. Libin indicated, we put an international committee together to look at these people, and they really have to stand the gaff on the international scene before we would fund them or continue to fund them.

MR. TAYLOR: A supplemental, Mr. Chairman. Although I agree with you on the need in some of these areas, I'm a little worried, maybe because I come from the business sector. One of the worst things that can happen, I hear in Mr. Libin's report, is that he'd diversify too much. You start chasing down too many areas and then you don't get the management that you should. Is there sort of an effort being made to try to focus more on fewer areas rather than to be all things to all people, and rather than to try to cure everything, to just go farther and further in a few areas rather than answer to everything that's debilitating people?

DR. SPENCE: I think the answer to that is yes. I mean, in point of fact, if you look at it, we have certain natural groupings, and those are the ones into which most of our resources go, but we have a certain amount of, shall we say, broad-based stuff that funds at the base. Its direct relevance to some of these high-profile groups may not be immediately obvious, but in the long haul our advisory committees feel that this is a developing front. So what we're doing is sort of saying that we anticipate some developments in that area in the future, and therefore we will fund in that area. Let me give you an example of that. The diabetes work in the province started with that sort of idea a long time ago, that diabetes would be an area that we should be looking at; diabetes is a problem in Alberta. But there were a couple of natural advantages, and so there was a conscious move made to sort of, if you like, increase the funding. The private foundations like the Muttart group got interested in this, and it sort of came together. Now this is definitely an area of strength and excellence in the province.

MR. TAYLOR: Mr. Chairman, then back to the panel, to both members. That sort of leads into my next question. In picking research areas, do you try to weigh or analyze the amount of aid that is out there in the private and public sectors that would come to your fund? In other words, the leverage you could gain by picking research: is there sort of a weigh-in process on that?

DR. SPENCE: Yeah. You're being very astute on that, Mr. Taylor. We look at that -- there's no question about it -- because we recognize that we can't fund the whole thing. We are a catalyst, if you like. If the opportunity is not out there, for example, for additional funding to come to the province to get the research really rolling, I think we would have to weigh it very, very carefully. We would recognize that we might be pouring dollars into an area where the support wouldn't come in, and therefore it would be sort of pouring it into the sand.

Let me point out, for example, that that is one of the exercises we're doing right now with respect to the social determinants of health that I sort of alluded to -- you know, matters of attitude, the effects of wealth, the effects of our social fabric on health -- because those are very, very strong things. One of the things I've been looking at is: where would alternative sources of support for this come from for that type of research? It doesn't come from traditional medical areas. The foundation is engaged in some very fruitful discussions with organizations like the Social Sciences and Humanities Research Council of Canada and some of the other private foundations with the idea of seeing whether we can start an

Alberta initiative going in that area which they would join us in partnership with and assist us in the funding.

MR. CHAIRMAN: The Member for Ponoka-Rimbey, followed by Edmonton-Meadowlark.

MR. JONSON: Yes, Mr. Chairman. Good morning, I guess, to the gentlemen this morning. I wanted to ask first of all a question with respect to your diabetes research, certainly one of the best known and most dramatic areas of progress. As you mentioned in your remarks, Dr. Spence, you have the only known patient to be off insulin and on I guess what would be referred to as platelet therapy. This has been the situation now for several months at least. My question is this: what progress is being made in going to the next stage? That is, spreading the impact of this particular success to actual treatment of many, many individuals. I could add there: what progress is being made on reducing the dependence upon antirejection drugs, which I understand are a very important part of this being a success?

DR. SPENCE: You're quite right. One of the major concerns with this type of therapy is the requirement for antirejection drugs. What members of the committee may not realize is that in order to . . . People with diabetes suffer. It's the secondary -- let me go back to the beginning. When Banting and Best discovered insulin, it was a battle which we won, but the war has continued. Insulin simply controls the blood sugar and does a few other things, but the secondary complications of diabetes go on unchecked. I think most of you are aware of them: kidney failure -- it's one of the commonest causes of kidney failure -- eye disease, and coronary artery disease. I think most of you probably know people who have had limbs amputated because of diabetes and the vascular changes. So the idea is that if we could replace these cells, we might be able to reverse some of the secondary effects.

When people come to kidney transplants, which is one of the unfortunate situations in diabetes -- when their kidney function goes, we go to renal transplant -- they have to go on antirejection drugs at that time for the renal transplant. So that's when they do the islet cell transplant at the same time for the diabetes therapy. They're looking at ways to capsule those cells or to figure out a way to make those cells that they're transplanting nonimmunogenic; in other words, that they will not cause the body system to reject the cells.

One of the things that appears to be happening is that when they isolate those cells to put them back in the body, they also isolate some of the cells of the immune system from the donor, and it's those cells that are triggering the violent reaction that then rejects these other cells. So ways to get rid of these donor cells are being looked at. They're also looking at microencapsulation. Put them inside some sort of capsule so that they can give out the insulin and do all the good things they should, but the body's immune system can't get at them and reject them.

The other area that they're looking at very actively here is the area of implantable pumps. In other words, it's thought that if you could meter insulin in very steadily instead of in an injection at one shot, that if you could meter it all the time, this would help to control the blood sugar better and might reverse some of the complications. So there are people in our province looking at pumps that will meter the insulin in over 24 hours.

The other area of research they're looking at is better preservation of these islet cells, because to get enough for one transplant takes a long time. They're looking at ways to preserve them, to deep-freeze them for long periods of time so you can build up a big store of them and then use them in other patients. So there's a number of areas that they've been looking at.

MR. JONSON: Just a supplementary question, Mr. Chairman. All right. Given that there are these difficulties, and I thank you for your explanation, what would be the degree of practical application that there is at this moment in time for this platelet therapy? What I'm trying to say is: is it going beyond the one person, with the current knowledge that you have?

11:02

DR. SPENCE: It's certainly being done and has been done on more than one individual. This one happens to be the longest survivor, which is our Alberta first, if you like. It's being done in St. Louis, Lacy's group there. It's being done in the transplant units in southern Ontario. So they are slowly starting to build up an experience with this, but it is looked at at the present time as very much an experimental therapy. I mean it's a clinical trial, if you like, of this type of therapy. Is it going to work? Is it not? That's the question. With time and on the results of what we've seen with these accumulated patients, then that type of therapy may move into a larger scale method of treatment. At that time, it's going to be necessary to have large supplies of these cells for transplantation. So the other arm of the work is to look at that to see whether that's going to become the practical limitation. If we don't have enough cells to do the transplant, then it may become impractical. So they're trying to work on that front. They're moving on two or three fronts at the same time, but the general feeling is that if we could replace that cell type or stop the body from ever rejecting it to begin with, then we would have one of the answers to the treatment of diabetes.

MR. JONSON: Thank you, Mr. Chairman.

MR. CHAIRMAN: Edmonton-Meadowlark, followed by Bow Valley.

MR. MITCHELL: Thank you, Mr. Chairman. I, too, am interested in the economic benefits of the research and development that is stimulated by this program. That's not to say in any way that I would diminish its social and medical benefits, but it is to say that there is this other feature that's worth pursuing and certainly would result and does perhaps result in additional benefit for Albertans. I was very interested to listen to the two presentations, and there was some anecdotal evidence of two kinds of successes. One is investment by a company: Glaxo, for example. Another one is the return of royalties in the case of the sleep apnea mask.

My first question would be: can this kind of benefit, particularly the second kind of benefit, the royalty benefit where we're actually getting a return on investment, be measured more comprehensively than anecdotally and more regularly?

DR. SPENCE: I think the answer to that one is obviously yes, it can certainly be measured more comprehensively. That's one of the things we're looking at at the present time. One of the undertakings which the foundation has sort of taken on is looking at the whole medical research system in Alberta, trying to get a better handle on what is coming into the province in terms of dollars and in terms of royalties, et cetera. In the past this information has been quite fragmentary, and I think we need to look at ways to try to quantitate this and try to get a better handle on it. At the moment my information, of course, is really only on those initiatives which the foundation has funded, but there are many initiatives that have been catalyzed by the foundation where we've put specific pieces of equipment in a laboratory, for example, or we have students training there or there will be a commercial spin-off. I may not have information on that.

I think what we would like to do is to seek, in collaboration with the universities and with the other agencies and organizations in the province, to develop some sort of comprehensive information system on this. It's going to take us a little while to get it together and get it in place, but I would agree with you: I think it's important to have this sort of hard documentation of this because it points where you should be focusing your attention in the future. We may not anticipate any return, and then we'll have to decide whether the social benefit and so on is worth while, because the direct economic spin-off is not coming from it.

MR. MITCHELL: Yes, if we measure it, then people focus on it. They can see results. They can begin to pursue those results more aggressively. The technology commercialization grants program addresses this specifically. Do you have now some kind of measurement that's utilized in viewing the return that is stimulated by that grant program in particular?

DR. SPENCE: That program is under fairly intensive review by the foundation at the present time. It's been stimulated by our own wish to try to improve the program but also of course by the very type of question you're asking -- which, you know, we pose ourselves -- which is: what sort of return, what sort of practical spin-off are we getting from this? So we are looking at this in terms that we do get reports back from these people, and we're trying to improve the quality of these reports and do a forward projection, if you like, of what sorts of successes are being accomplished. One of the things, of course, we expect with them -- these are stage programs -- is that they will make it from one stage to the next; in other words, that the initial look at the technology will have carried it one stage further, that we're that much closer to commercialization. So we are tracking that. Then of course the idea is that if it spins off to licensing or wherever it spins off, we should be taking a serious look at what happens at that stage and what the eventual return is.

Again my examples are sort of one shot, but you may have noticed in the paper the other day that there was a technology for a prosthesis for a limb that was licensed to an international manufacturer. We'll be watching that one with interest because that was an example of one of our technology commercialization grants. Then the question will be: what will be the royalty return in the province and how long would it take at that level of royalties to "pay back the grant?"

MR. MITCHELL: Clearly this addresses the issue of technology transfer, and something that is as complex as that needs to be managed as well. Have you given consideration to the kind of structure that might assist in managing that particularly effectively? For example, if a joint venture is entered into with a given drug company and nobody even raises the question of where they're going to build the plant that will actually produce the final drug, maybe if it were suggested and negotiated, that could be built here in Alberta. What kind of structure could be organized to address those kinds of questions?

DR. SPENCE: Well, obviously when you start getting to that level, that's well beyond the bounds of the foundation itself. Our programs are relatively modest. We don't get into the issue of a plant coming in, although obviously that sort of thing is discussed. I think this probably requires an integrated approach, if you like, of government, industry, and various other major stakeholders in this sort of thing to try to ensure that all these considerations are taken into place as we negotiate these things.

People have asked me whether I get concerned with things being licensed out. Obviously I would like to see a company start in this

province -- I think that's very important -- but sometimes the nucleus simply is not there for it, and a 2 percent royalty return on \$100 million in sales is much better than a 10 percent royalty return on nothing. I think there will always be a balanced spectrum, some of it being done outside the province and some being done in. It's certainly a consideration, particularly with our larger grants, but when we start talking at that stage as to whether there is an opportunity to attract something to the province, then we certainly make the other partners in this type of activity, western economic diversification of the province and so on, aware of these types of developments to try to encourage them to come back to the province.

MR. CHAIRMAN: Thank you.

Bow Valley, followed by Edmonton-Beverly.

MR. MUSGROVE: Thank you, Mr. Chairman. First I would like to say that the tour we had in Calgary was most appreciated. Of all the involvement I've had with certain types of medical research, I thought that was more comprehensive than any I've ever been to, and I really do thank those people for that tour.

During the tour I noticed there was very little mention, if any, of our expanding seniors population, and although there was research done on certain problems that affect mostly seniors, such as Alzheimer's and Lou Gehrig's disease, it was generally discussed as it affects all people in Alberta. So I was wondering if the foundation does have any geriatric research component to it, or is it just for the people of Alberta including senior citizens.

11:12

DR. SPENCE: The foundation doesn't have a specific program which is focused directly at any particular part of our age spectrum. We fund some research in the pediatric area, as I alluded to, and certainly some of the research we fund is of major importance for our seniors. I have had discussions with some of the geriatricians, if you like, or the physicians who specialize in the problems of the senior citizen. We've discussed whether they might be able to mount a special initiative in that area. The foundation would certainly be receptive to that because we recognize the increasing importance of this group not only in population but as consumers of health care and also of course the idea that this is a resource that I think could be, if they were in optimal health, an enormous vehicle for growth and change in our province. So I think that on all counts they're an important group, but no, we don't have a specific program. As I say, if we were approached by that group for something that fit within the foundation programs, we would certainly be receptive to looking at it.

MR. MUSGROVE: Well, working very closely with the Senior Citizens Advisory Council of Alberta and the Edmonton Centre for Gerontology, we have been looking at a foundation for geriatric research. We have also been looking at the foundation, and I'm happy to hear that it's quite possible. One of the things we were told was that geriatric research doesn't necessarily mean it's medical research, and so that seems to be the problem we keep running into on this issue. I'm wondering: if it was not considered necessarily medical research, does that exclude it from funding through the foundation?

DR. SPENCE: Distributed to you I think in some of the materials was the strategic planning report of the foundation, and in that report we've done a little bit of defining of terminology because words mean different things to different people. In the view of the foundation, and I think in the view of all our advisers, the word "medical" is small "m." It doesn't refer to medicine by itself but

basically refers to all those things that impinge on health and disease. So our definition of "medical," if you like, is as broad as from the molecule through to the population, and the things that impact on the population's health are not simply disease but are a whole host of other things. For example, the studies now being done nationally and internationally in terms of simply age at death would suggest that there are population groups in the world that are living longer and that they've done much better over the last 10 or 15 years than other groups. The Japanese are an example of this. Despite all the stress of living in Tokyo and everything else, they are living longer, and the question we are asking and everybody else is asking is why. I think that's one of the things we'll have to look at.

It may be that the breakthrough on the social side will be as important as sewage was. As you know, the pump handle experiment -- just simply taking the handle off the pump so they couldn't pump contaminated water -- was a remarkable demonstration of what polluted water was doing to the health of a whole area. I think we may be moving into some of those in the social area, and I think those are very important questions. We would want them to see them ultimately impact on health, obviously, but I think some of the fundamental research in that area is perhaps going to come from areas quite different than physicians, for example, have traditionally thought of.

MR. MUSGROVE: Thank you very much.

MR. CHAIRMAN: The Member for Edmonton-Beverly, followed by Wainwright.

MR. EWASIUK: Thank you, Mr. Chairman, and good morning, gentlemen. I, too, would like to express my appreciation for the hospitality you demonstrated last week when we were in Calgary. I must say I was impressed and excited about the research that is being conducted by the foundation. Of course, the other auxiliary hospitality you offered to us is certainly appreciated, and I thank you for that.

Let me just say this. I am concerned about the work that's being done relative to Alzheimer's and to other situations as it affects senior citizens. I think our population is aging, and I think we need to direct some research in that direction. I was somewhat surprised -- actually it was on Friday, the day following when we were in Calgary. There was a news bulletin that came through that said that someone in the United States also working in the area of Alzheimer's disease had come up with some very important research documentation that suggested they've made some tremendous headway. That sort of clicked in my mind: my gosh, we're obviously spending a lot of money in this area; there's obviously someone else doing perhaps some similar work. I noticed that in his presentation to us Mr. Libin talked about collaboration that takes place within the research community provincially, nationally, and internationally. I'm wondering: just how much co-operation and collaboration is there? I mean, there is some other obviously extensive research work being done on Alzheimer's. Are we in more of a competitive state rather than in a collaborative one?

DR. SPENCE: I think the answer would be that in a sense we're in both. There is no question that there is competition among scientists. I think every scientist, for example, would like to go to Stockholm and receive the Nobel prize, and in that sense I think they're in competition. Their stock-in-trade is ideas; they'd like to be in there first with the idea. You know, part of the reward is to be the first into uncharted waters, if you like. So I think there's no question that scientists are competitive, but they also collaborate when they can see that the collaboration is going to get them to their goal, their

discovery faster -- you know, to understand what's going on. So they do exchange information, and I'm quite confident that, for example, the advances in Alzheimer's or aging that you are referring to would be known to our researchers in Alberta well before the time they appeared in the press.

One of the things in science, of course, is that they get together, they talk at various special meetings for this purpose, or in the publication of scientific literature you can see where the trend is starting to develop. If one of our investigators was in an area where somebody else was already doing the work and in point of fact was well out ahead of them, our committees would advise us of that, and we would not fund them. We simply would not. I mean, it's a tough business. We don't fund frank reduplication. But one of the things you have to understand is that for a disease like Alzheimer's, or any other disease, there are many ways to approach it. The way somebody may be coming at it and feeling that they've got the cure may not be the way. Somebody else may be coming at it from quite a different angle. In point of fact that may be much more important in the long haul, and you only really know that historically, as it were. But I can assure you that in terms of direct reduplication -- in other words, doing exactly the same thing -- unless it's totally unknown to our expert committees . . . That's always a possibility of course, but if they know about it, they point it out to us. That immediately gives the application or the work a lower priority score, and it may very well not be funded.

MR. EWASIUK: Thank you, Dr. Spence. Some concern about the foundation is that it restricts its funding to biomedical research and does not fund research in terms of health care delivery systems. I think it may be seen differently. Could you expand on that? Are you in fact exclusively tied into biochemical research, and what kind of work are you doing in terms of the health care system to help make it more efficient and cost-effective?

DR. SPENCE: The major part of our activity, there's no question, is directed at fundamental research of one type and another; in other words, either the biochemistry or physiology or whatever of the body. But we do have, I think, a strong and developing arm which is also looking at some of the broader aspects of health. This, of course, is obviously an area we would like to get into more in the future.

The primary care research unit to which I alluded is an example, I think, of this. This is research in the physicians' offices, if you like, of this province, co-ordinated from a couple of central points, which looks at very practical questions with respect to the delivery of care or the promotion of health in doctors' offices of this province, which impacts very widely, of course, in our population. We've also funded some special studies in some of the, if you like, areas of our province that provide special challenge. For example, we had a group working in the Taylor school, Boyle area of Edmonton this last summer, looking at some specific problems associated with delivery of care and promotion of health in those areas. So I think we have a number of projects that get out in that area, and we'll be developing more.

I should point out that this is one of the areas we need new money for, because in point of fact we are trying to shift more resources into that area. It's one of the areas we really want to fund and make a larger effort in without knocking down too much of what we put together before. Therefore, this is one of the things we're making a very strong request for: additional dollars to move and focus high-quality research, if you like, of the type we've supported in the basic biomedical area in some of these other health care areas.

11:22

MR. EWASIUK: My final supplementary, Mr. Chairman. I understand there was an excellent research project undertaken at the Foothills hospital, specifically to evaluate the effectiveness of various types of surgery, and this request for funding was refused by the foundation because it didn't fit within your mandate. You review your mandate from time to time depending on the circumstances that occur and trends changing. So my question, then, is: are you prepared to look at your mandate? I'm emphasizing the fact that we need to look at the basic health care system and see whether we can attempt to make it more acceptable and, again, cost-effective.

DR. SPENCE: The strategic planning exercise we went through last year, which is outlined in the strategic plan, I think very clearly indicates the fact that we do re-examine what we're about. Our strategic goal number 4 very clearly indicates the broader aspects of health, including research on the health system itself, as being a goal of the foundation in the next while. We've only got so many dollars, of course, and when you have a limited number of dollars that means there are some things you may not be able to fund. We seek the advice of the best people we can in terms of whether the research being proposed to us should be funded, and sometimes for a variety of reasons it may get turned down. We do see, if you like, the mandate or the areas we are interested in as being as broad as the determinants of disease and health themselves, and I see the research of the health system as being part of that, as being of fundamental importance. Our input would be in people. We would be interested in funding the scientists and training scientists who would do that type of research and trying to create a nucleus or cadre of these individuals who are superbly skilled and can move on this type of research in a very telling fashion.

MR. EWASIUK: Thank you.

MR. CHAIRMAN: The Member for Wainwright, followed by the Member for Stony Plain.

MR. FISCHER: Thank you, Mr. Chairman. I also would like to say how nice our little trip down to the Baker clinic was. We certainly were treated royally down there, and your hospitality was just excellent. It was a nice relaxed atmosphere, and I feel we learned a lot. Also, the time went awfully quickly because you made it so interesting for us.

I want to ask you a little bit about the scientists you have or your researchers. Certainly management of your work force is vital to the efficiency of any business, and I wonder what kind of turnover you have with your research people. I guess I'm kind of getting at the accountability or the productivity. I know it's so difficult to measure, but do you have those kinds of problems there or not?

DR. SPENCE: The people who are supported by the foundation are almost continuously reviewed. They're reviewed every time they apply for funding from any national or international agency, of course. The application is reviewed very thoroughly and compared to all the other applications in that field and so on. So the fact that they continue to attract the dollars for research is one form of review.

As well, the foundation reviews the people we support every five years. Their program is thoroughly checked over and evaluated. I would say that at that time about 10 percent may be unsuccessful, so there is continuing attrition, if you like, from the system of people who are still very good but don't measure up to the standards the advisory committees are setting. It's this continuous process of

review that gives me a great deal of confidence that the people we are supporting are really among the best in the business.

Now, as I think Mr. Libin alluded to, the people that may be unsuccessful are still very good people. They were recruited because they had very definite skills, and they may be very important in terms of teaching or patient care or some other function within the institution of which they are a part. For all the people who are unsuccessful we do have a terminal policy which can be as long as two years, and then we are prepared to provide even additional terms of support to bridge these people into other activities of the institution. Therefore, we certainly don't turn our backs on somebody who has been unsuccessful. Our expectation is that they will get picked up within the system. We provide the resources to enable them to bridge over. So over the course of a number of years there is, if you like, a continuous process of review. Some people leave the system; the very best stay with it.

MR. FISCHER: I have a supplementary question, I guess, and it has to do with the funding and attracting private-sector funding. Do you see any special things that stick out that the province is not doing regarding attracting this private-sector funding?

DR. SPENCE: Well, I think the province works very hard to try to attract industry from outside and try to attract funding from a variety of sources. I guess one thing I would feel is that I think this type of activity has to be continuously reviewed to make sure there are no impediments in the way of the funding coming in. Sometimes what one sector of government may be doing may provide an impediment they may not even be aware of. So I think it's necessary to co-ordinate the policy across government and indeed outside government, look at the policies of the universities and every other organization that may impinge on a technological development and try to smooth the way for them. Sometimes what may be a boon, if you like, or an added-on in terms of industry -- there may be a countervailing force in some other branch of either government or our province in general.

I guess the only thing I would suggest would be an increasing effort to co-ordinate the approach. It's certainly there now, but it can always be improved. I think we should be looking at that type of thing to try to make it as attractive a venue as possible. You know, if you get harassed along the way or find it difficult, then you go where it's a little easier. I think that's always something we have to be sensitive to: listen to the customer and what they're telling us about how easy or how difficult it is to set up shop in Alberta. We do it as a foundation. We listen to people telling us that our programs are difficult or easy to access and we try to make them as "user friendly" as we possibly can.

MR. FISCHER: Thank you.

MR. CHAIRMAN: The Member for Stony Plain, followed by Westlock-Sturgeon.

MR. WOLOSHTYN: Thank you very much, and good morning, gentlemen. I will just say ditto for all the accolades that went on about our visit. I certainly did enjoy it.

You indicated in some of your earlier remarks, Dr. Spence, that 20 to 30 percent of doctor involvements with patients were somehow unnecessary. Then I understand that at Foothills hospital there was an effort to look into a research project with respect to surgeries and the necessity of them by a particular doctor which your body was not able to fund for research. When I was going through the facility, I was quite impressed with different areas that were growing, but the part that was sort of lacking there -- and it shouldn't have been there

but it's coming to the fore now. You do the research, you do some implementation, clinical applications or whatever, but when we get into the broader field there doesn't seem to be, or at least I wasn't aware of, any way to make sure these procedures in fact are being accepted, especially in the area, say, of sports medicine. My question to you, then, is: in view of the fact that the health care innovation fund was set up to fund the Foothills hospital and this research would be very, very applicable to what the foundation is doing with all the other areas, do you have a direct working relationship with this particular research project?

11:32

DR. SPENCE: You're referring to the health innovation fund of the Department of Health. The foundation is represented directly on the Provincial Advisory Committee on Health Research, which is the committee advisory to the Minister of Health on the fund, so we do have a co-ordinating mechanism between that fund and the activities of the foundation. I would see them as being complementary, very definitely.

MR. WOLOSCHYN: Good. Thank you.

You indicated in your talk also that you're going into a third dimension of research, and that's to do with, I believe, quoting from your talk -- and I do appreciate having the written word here -- "equally important determinants of health that are embedded in our life styles and in our family and social structures." You're going to be looking at your third thrust. I think that's very good. Are you looking at taking over and co-ordinating -- it seems to me just from my previous question that you're involved there, but that fund arose out of a need. We had the Premier coming up recently with his Family Life and Substance Abuse Foundation. It seems to me that these particular areas would fit in directly in what you are saying. Are you looking for additional funding, as you allude to at the end of your talk, in order to co-ordinate this third thrust and in fact take over or, if you will, at least co-ordinate the activities of some of these other areas that in fact may be paralleling the work you would be wanting to do?

DR. SPENCE: My expectation would be that anything we did in that area of the broader determinants of health would be complementary to the activities of the other organizations. I wouldn't see reduplicating what they are doing. My expectation would be, for example, that if we were to fund a group of heritage social scientists, if you like, working on looking at some of the social determinants of health, they perhaps would be in a position to apply for funds from some of the other provincial agencies or outside but the activities would be complementary and we wouldn't be reduplicating what one another does.

With respect to the Family Life and Substance Abuse Foundation, for example, they are in their first cycle of review of grants, and the foundation has provided them with some advice as to the handling of these and some help there. So we certainly are aware of the sorts of things they are looking at and we have an informal exchange of information between us.

I think the foundation has a very good record. This was no credit to me; this was set up by my predecessors. It's a very good record in the area of setting up and managing programs of this type, and I think we can be helpful to other agencies in that regard. Resources are limited, and therefore we wouldn't want to reduplicate what somebody else is doing, of course.

MR. WOLOSCHYN: Thank you.

We all know that research is very good. However, what comes out of that research, whether it be a device or a procedure or a drug

or what have you, is really not going to fly unless it goes beyond the lab. What comes out of the lab has to be assessed, if you will, for lack of a better term, and I believe there is now a federal office for medical technology assessment of some description. Is the foundation's direction going to go into assessments of devices, procedures, drugs, and so on? Is that going to be a new direction you take, or are you going to stay out of that totally? What is the foundation's position on that particular topic?

DR. SPENCE: Our involvement in that would be indirect. Some of our investigators may be involved in the initial development. Some of them may be involved in a "clinical trial," if you like, to indicate the usefulness of this type of procedure. Some of them might be involved in the statistical activities that would go on in terms of accumulating the information. But in terms of the direct testing, if you like, the day-to-day activity which would directly test this sort of thing, no, I would see that as being a function of others. Mind you, I could see some of our heritage funded investigators sitting on the boards of organizations that did that because they're very talented people and can provide the input. So indirectly we would be involved, but I don't see that we would be concerned directly in the area of that type of thing.

Having said that, let me point out that the federal co-ordinating office, which is chaired by Dev Menon who originated here in the province, is putting on a series of conferences across the country looking at various aspects of regulation and how we should be looking at assessing new technologies, et cetera, and co-ordinating the activity both countrywide and internationally. We are collaborating with him in setting up a conference in Alberta looking at the pharmaceutical side of this type of activity. There's going to be one on devices -- I think it's in Ottawa -- and another one out in B.C. So the foundation is a very direct partner with him in this type of activity. But we feel it's important to us in terms of providing something that moves our activities out into the commercial sector.

So I guess my answer to you is: I don't see us being directly involved, but yes, there are spots where we lock in in what we do. I think we can be very effective.

MR. CHAIRMAN: The Member for Westlock-Sturgeon.

MR. TAYLOR: Thank you, Mr. Chairman. The question is directed to Mr. Libin, and it builds on the bioethics the Member for Calgary-Fish Creek has already touched on. I think we touched on it in other years. Both he and I have been quite concerned about it, and maybe it can build on your fourth topic. What's bothering me is a bit like what the Greeks used to say about the Romans: all they knew how to do was build aqueducts and bridges. Of course, the Romans said the Greeks spent all their time philosophizing and were no hell as fighters. The point is that we have a great deal of biotechnology here, yet for a small amount of money I think we could do a lot in the bioethics field. I think it's been telegraphed to you two or three times, yet it seems to be completely ignored in your report.

The closest you come is in your fourth goal out of the eight goals, where you mention that you look for

the impact of physical and social environments, wealth, genetic endowment, life style, and other diverse factors on health and . . . well being.

You go as far as \$450,000 over three years to study the impact of drug therapies and treatments. What I guess I'm trying to get at is: for a small amount of money we could take the leadership in the field or at least start directing it in this province, and in spite of the hints we've given you, there's been nothing done in the last couple of years. Do you have any reason for that?

MR. LIBIN: Mr. Taylor, it's mainly money basically. I think we talked last year and talked again this year about this being a reasonably new initiative for the foundation, and we believe very strongly that this is an area we really need to get into. Basically, our health care system in the province of Alberta costs approximately \$4 billion a year to manage, and there's very little research and development done in these areas that we call health care research. I guess this is part of our continual discussion with this committee to try and either supplement our endowment or find some additional operating funds for us. Our pipeline in biomedical research and basic research continues to grow and build. I suppose that now because of our successes and our ability to attract the kinds of players we've brought to Alberta, they continue to come and we continue to have tremendous demands put on the foundation's funding ability. So these are areas we're getting started in, but this is part of what we're looking to try to find a new ability to fund. Dr. Spence explained to me the new initiative the government has now set up and put \$1 million into. Dr. Spence, how many applications were you telling me?

DR. SPENCE: Well, I think 490 letters of intent.

MR. LIBIN: So it's a big, big area but an area somebody has to get into and develop on some kind of basis.

11:42

MR. TAYLOR: Well, I think that you are starting. Like in your fourth category you mention the concern, the primary care physician and the general population, and you're providing \$180,000 over three years for research network support and family practitioners. But you take something even like this new French RU486. Is that a contraceptive or is it an abortive drug? Ethics are involved and also the priorities. GPs are involved in it day to day. It's so little money, really, compared to medical or biotechnology, to put so little money into bioethics to help health care givers set the priorities and also help the public to see what's going on. Why can't we dig a few dollars out of your fourth goal to aid philosophers? I know that, in general, people think philosophers should live in a cave and eat porridge, but they're a lot cheaper, I can assure you, than PhDs and biotechnology.

DR. SPENCE: I think perhaps, Mr. Taylor, I would disagree. I think ethicists can be just as expensive, actually, as anybody else. I think it depends on the individuals' skills and their national or international stature. I mean, some of these individuals I think command a very healthy lecture fee, for example. I did point out that we are funding a series of visiting lectureships in medicine ethics and law, which are starting to impact on this. Basically, these individuals are chosen by the bioethicists at the University of Calgary and the University of Alberta in conjunction with the deans of law, deans of medicine, and a representative of the foundation. It is our expectation that these individuals will come in to address certain topics of particular interest to our province but also, of course, of interest nationally and internationally.

If the foundation were approached with a special initiative or an individual who wanted to be a scientist in this area, we would certainly fund them. We have sent away one of our leading ethicists for further study -- and that was funded by the foundation -- to go away and acquire new skills and knowledge elsewhere and come back to Alberta. So we have not been inactive in the area. We have not established an institute, if you like, because the foundation works with the community. You can't push a rope; it's much better if they pull it. If the will is not out there to get going in this area, it may not come about. We can try to catalyze it. You do a lot of walking

around and talking about some of these things. Some of them come to fruition, and some do not.

In a sense, you know, medical research is very much like deal-making in the private sector, and some of them you make and some of them you don't. There are some of them in Alberta that have gone very well and others that haven't, for a variety of reasons. Perhaps they will in the future. There are some areas where there hasn't been as much activity as others.

MR. TAYLOR: We could discuss this for quite a time, I guess, but I wanted to suggest to you that maybe somebody could study how the Law Reform Commission works in Alberta, which interfaces quite often what social and legal and ethical mores are at the time and puts them out as a publication about two, three, maybe four times a year. It helps lead discussion in a community. I think you people are in a wonderful position to lead some of that discussion. I think you're too afraid of it, if I may say so, which is always . . .

MR. CHAIRMAN: Hon. member, do you have a final supplementary?

MR. TAYLOR: I know you don't like anything contentious, but the point is this. I think I'd like to put on a little heat. I want to ask him: will he consider setting up some sort of a committee similar to the Law Reform Commission to give leadership and ideas on the whole field of bioethics? That's easy: yes or no?

AN HON. MEMBER: Like all ethical questions.

DR. SPENCE: Yeah, like all ethical questions. I think the ramifications of what sounds like a fairly simple question are rather wide. My answer to that would be that I think the foundation would certainly be interested in participating in something like that. I'm not sure that the foundation is the organization that should be leading it. I'm certainly very interested in ethical issues. I obviously have to be by the nature of my background and the fact that I'm a citizen of this province. I think we all are very interested in it, but I don't consider myself an expert in that area, and I'm not convinced that I should be the person to lead or that any of my colleagues is, for example. But I think we would certainly be interested in participating and trying to catalyze something in that area.

MR. CHAIRMAN: Thank you.

The Member for Athabasca-Lac La Biche.

MR. CARDINAL: Thank you, Mr. Chairman. My question is to Dr. Spence. Because of the nature of the Alberta Heritage Foundation for Medical Research and the general concern of not being able to continue to afford the high quality of health care we have in Alberta, long-term planning would seem to be a very important issue. In fact, in your report you indicate that "we can position our organizations to 'meet the puck' tomorrow." Can you comment on the process for setting up long-term goals and objectives for the foundation? Short term and long term, if it's possible to do that. If not short term, at least long term.

DR. SPENCE: Yes. The process that the foundation uses is a very consultative one. We have the Scientific Advisory Council, which is made up of scientists from Great Britain, the U.S., and Canada. It's from the English-speaking world because that's our language of communication. These individuals spend a lot of time talking, sort of crystal-balling if you like, looking into the future and talking about future trends that the foundation should be interested in. They advise us about some of these areas to look at, and when we see

some of these areas starting to develop, then we may convene a special group to deal with this sort of thing, to advise the foundation on a thrust that we might take in that direction. This is the sort of thing that we're doing in issues related to the broader issues of health at the present time, gaining some advice on that. For example, we have a couple of people preparing some position and information papers for us on the interactions of, say, departments of health with the health system, et cetera, so that we can look at some of these things and say, "Okay; are there special programs or initiatives that the foundation should be mounting there?"

The other thing is we look at our programs to see whether they're inhibitory. In other words, is there a barrier there? Is there a perception that people shouldn't be coming to the foundation? If that is the case, then what we do is make sure that the community knows that there isn't a barrier. We look at what we're doing now to make sure that it fits and is consonant with the longer term calls, but we're steadily, if you like, looking to the future to try to anticipate where the fields are likely to go and how the foundation should be positioning itself to try to catalyze these events in the future. That's why we're so concerned about this third thrust. Our feeling is that we're sort of rooted, if you like, in the traditional biological model of disease, and we should be looking way beyond this to the determinants of health and social structure because ultimately they may impact far more on health than some of the things that we're looking at in the test tube.

MR. CARDINAL: Okay. My supplement is a continuation on the high cost of health care. Is there any research being done that you're aware of through your organization on native, or aboriginal, healing processes and procedures used by Alberta native, or aboriginal, people at this time?

DR. SPENCE: I can't give you a specific project in that area. I don't think that we're funding anything directly. We have had a few projects done by people in training who have looked at some issues with respect to aboriginal health. I don't think it's been in the area of traditional therapies. I think it's been more with respect to access and use of the system, and it's dealt with populations in the cities and some of the problems that they face. We don't have a major thrust in this area, no. It's one that we would certainly be interested in. Again, we don't push ropes; we pull them. So there has to be some interest from the constituency.

MR. CARDINAL: Okay. Thank you.

MR. MITCHELL: I would like to ask for an update on the implications of research that's been undertaken by the foundation on SIDS.

11:52

DR. SPENCE: The spectrum of SIDS, again -- you and I know, but maybe I should just translate it: it's sudden infant death syndrome. This is a tragedy which strikes families in which an infant is very frequently found dead in the crib in the morning by the mother or by the parents, and it's a tragedy because very frequently there is no warning. It now becomes apparent that this is what we call a multifactorial thing; there are a lot of things that bear on SIDS. Some of these clearly relate to the pacesetters with respect to breathing, because some of these infants haven't set their breathing properly and require being brought through this period so that their system matures. We have researchers who are very interested in the development of breathing patterns and in stabilizing these in infants not only for SIDS but obviously for other things.

The other area we have a group interested in in the province is the genetic implications of these types of diseases, because there appears to be a group of them in which there is an inherited defect in energy metabolism. We have groups who are interested in sorting those out in the province. So we do have some activity in that area. I think it reflects, in part, the spectrum of SIDS-related research across North America, because that and the heart arrhythmias, where the heart goes in an abnormal rhythm and stops, appear to be the two areas that people are concentrating on. We have a lot of people working with adults in that area. We have fewer working in the pediatric age group, but we do have a few.

MR. MITCHELL: My second question concerns again technology transfer. It's my understanding that elsewhere in Canada, at least at McGill, there is a graduate degree offered in research management. I'm wondering whether there's a spin-off in what you do for such a degree in Alberta, whether that would be something that would be somehow related to what you do. Your organization would be a wonderful resource for people studying for that kind of degree in Alberta. It seems that there's so much to be done in the area of managing research and development in a place like Alberta that perhaps this is a degree that, if offered here, would have tremendous spin-off benefits.

DR. SPENCE: You've put your finger on what I think is one of the fundamental problems in technology commercialization. Our scientists are superb and they have wonderful ideas, but once they get to the commercialization sector and, you know, the market strategy and how you position yourself and so and so forth, with a few notable exceptions most of them are babes in the woods and they can't do it. They should move out from the directorship of the project to, if you like, chairman of the board or head of the Scientific Advisory Council and let a business person who has the smarts and the drive and everything else drive the commercialization. That is, I think, one of the missing ingredients in technology commercialization virtually worldwide: is it identifying that entrepreneurial culture? They've got it in Silicon Valley, for example, and I think that one of the reasons why that place spins so well is because they've got this entrepreneurial culture.

Having said that, I'm not convinced it comes from a degree. I think we could set up degree courses for this, but there's nothing like the fire of experience. Quite frankly, if I'm looking at, you know, a proposal for a technology commercialization thing and I see one of the partners in there is a businessman who's got a track record of taking a technology through to commercialization, I'm much more comfortable than I am if that individual is not there. So I would be quite happy to look at the idea of courses, and I've talked about it at the business schools at the U of A and the U of C, but I get a little concerned, at least at that level, with the entirely academic orientation. If there were a course, I would want it for people who had some practical experience as well, because I think that is, in the final analysis, what is really required. The chance of success and the likelihood of a Vencap or anybody else investing in it goes up astronomically the minute you've got one of these really good people in there with a good track record starting to drive it. But it's a missing ingredient very frequently, and my guess is that more technology innovation fails because of that than because of the idea. There are lots of good ideas around. It's getting them out there, having the passion to carry them that far, because it's a hell of a job to bring something through all the way. It's no easy task, and the guys that win, my hat's off to them. I think they deserve every bit they get. You know, if they want to drive a Ferrari around the campus, all power to them. I think that they've earned it in spades. But it's a missing ingredient. As I say, I'm not downgrading the idea

of a degree. I'm just not sure that that's all that's required. It may be something more. You know, maybe we need the mature student going back and picking up that type of skill. That may be what we should be looking at.

MR. MITCHELL: Somehow we have to address that needed expertise.

I guess my final question isn't unrelated to that. I read the foundation's mission statement, and it's excellent. Is there room, however, in that mission statement for a recognition of the economic development potential or objective of what the foundation does?

DR. SPENCE: Well, there is in spades, because I think the economic return or the impact on the health of the province -- one of the vehicles for doing this is the commercialization of technology. It impacts because it generates wealth. It generates jobs, employment, all the rest of these things, which I think are fundamental to health, and besides which it's a way of delivering a product. I mean, sometimes the commercial sector is a heck of a lot better at delivering a product to the community than the noncommercial sector. They have a history, if you like, of doing this successfully. So I think it's one of the arms of return to the people of Alberta.

Our concern at the foundation is closing the loop. You know, the discovery is just the start. It's getting it back so that it helps our people, and as many ways as we can figure out to do that is what we should be looking at. I think that technology commercialization is one of them; education is another. There's a whole host of ways to do it.

MR. CHAIRMAN: Thank you. Our time is expended.

Again, thank you, Mr. Libin and Dr. Spence, for the forthright answers that you've given. We appreciate your appearing before our committee and the information that you've brought to us.

A couple of things of interest to the committee. This afternoon we'll reconvene at 2. The Hon. Nancy Betkowski, the Minister of Health, will appear before the committee. I would also remind you that it will be in room 312, the Confederation Room. Another committee has taken priority for the Chamber this afternoon.

I'd also make you aware again that the deadline for submitting recommendations for ministers or others that we'll have before us through this week is November 6. Then for the two ministers that will appear before us on November 6, we have until noon on the 10th to submit recommendations.

Without any further delay the Chair would accept a motion for adjournment. The Member for Stony Plain. All in favour? The meeting stands adjourned until 2 this afternoon.

Thank you.

[The committee adjourned at 11:59 a.m.]

