



**INSTITUTE OF
HEALTH ECONOMICS**
ALBERTA CANADA

MAXIMIZING HEALTH SYSTEM PERFORMANCE

Cost Containment and Improved Efficiency

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Event Proceedings

**IHE Innovation Series
Forum III**

About the IHE

The Institute of Health Economics (IHE) is a not-for-profit organization committed to producing, gathering, and disseminating health research findings relating to health economics, health policy, health technology assessment and comparative effectiveness. This work supports and informs efforts to improve public health and develop sustainable health systems. Founded in 1995, the IHE provides services for a range of health-sector stakeholders, and is governed by a Board that includes representatives from government, academia, health-service delivery, and industry organisations:

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Preface

In December 2008, the Institute of Health Economics launched a series of semi-annual innovation forums whose goal is to bring together senior public and private sector decision-makers to address policy issues of importance in the health care system, not just in Alberta, but to all of Canada and the international community, as well.

Emceed by Tom Feasby, the University of Calgary's Dean of Medicine, this third session considered the following theme: Maximizing Health System Performance. Speakers from all sectors provided a range of perspectives on Cost Containment and Improved Efficiency.

The complete speaker presentations can be found on the IHE website at <http://www.ihe.ca/research/innovation-forums/---maximizing-health-system-performance/>.

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MAXIMIZING HEALTH SYSTEM PERFORMANCE

Cost Containment and Improved Efficiency

Master of Ceremonies: Tom Feasby, Dean, Faculty of Medicine, University of Calgary

Welcome and Opening Remarks

TOM FEASBY: Welcome to the third Institute of Health Economics Innovation Forum, this one on maximizing health system performance. My name is Tom Feasby. I am Dean of the University of Calgary’s Faculty of Medicine, and I am here as a member of the board of the Institute of Health Economics [IHE]. I will be the moderator of this afternoon’s session. I know this will be a stimulating session. We have a great group of speakers.



Improving the health system performance is a focus for many of us in this room. We are concerned about such issues as accessibility, quality, affordability, and, over the long haul, sustainability. We hear a lot about that from our political leaders. Clearly, government officials are concerned about the value received for the significant sum of money that is expended in the health system in Alberta — this year, over \$6,000 per capita. A couple of items in the paper today caught my attention in this vein. One was a report from the Fraser Institute, projecting that Ontario will spend over 50 percent of its funding on health care next year. And in The Edmonton Journal, the lead article was that Alberta Health Services will be increasing its deficit by up to one billion dollars in the next year. Those are big numbers, and they certainly have our attention.

Clearly, there is a commitment from government to provide good health care, and we have a responsibility to ensure that those resources are used well for the maximum benefit of Albertans. This forum is a timely opportunity to engage in discussion of how we can all work together towards maximizing health system performance now and in the future.

I would now like to call on the Chairman of the Board of the Institute of Health Economics, Dr. Lorne Tyrrell, to provide some opening remarks. All of you probably know Dr. Tyrrell well, but I would like to take this opportunity on behalf of all of us to congratulate Lorne for his appointment as the new Chair of the Selection Committee of the Gairdner Foundation. As you know, the foundation provides Canada’s most significant international awards for outstanding achievement in medical research. We are very pleased that they recognized Lorne’s abilities in this area. Well done, Lorne. Please come forward.

Lorne Tyrrell, Chair, Institute of Health Economics



Thank you very much, Tom. I want to say welcome to everyone here. It is wonderful to see these Institute of Health Economics Innovation Forums bringing together leaders from industry, healthcare organizations, and academia. This is a perfect setting, as both the public and the private sectors are here. This is the third of our Innovation Forums, which are themselves an innovation of Egon Jonsson, the Chief Executive Officer of IHE. They are held in conjunction with our biannual board meetings, when we have the opportunity to bring together industry, academia, government, and healthcare organizations that all serve on our board.

This forum embodies two strong beliefs of the IHE: first, that the challenges facing the healthcare system will be addressed only when all of the partners work together; and, second, that there needs to be a regular opportunity for interaction between healthcare leaders to discuss those challenges informally. These forums give us an opportunity to have some of the interaction that I think is so important. Talking is not a waste of time. Good things happen when people get together and talk. We are all very busy in our day-to-day activities, and there is benefit in stepping back at times to look at the broader picture. There is also benefit in having our discussions framed by the ideas of leading thinkers and experts around the world. That is what we have tried to do with these innovation forums. Our first innovation forum was a year ago and featured Gail Wilensky, a key architect of the comparative effectiveness agenda in the United States. At the second forum in May, we heard from Sir William Rawlins, the Chair of the National Institute for Clinical Excellence in the UK, as well as Chris Henshall from York University, a key architect of the UK Health Research Enterprise. I was very pleased to see the announcement a couple of weeks ago that Chris Henshall will be serving on the newly formed Alberta Research and Innovation Authority. That is just a warning to some of the experts and keynote speakers that we bring in: a visit to Alberta may result in ongoing interactions and opportunities for you in this province!

We are very pleased today that we have two significant leaders in health system delivery from the United States and Canada as our keynote speakers: Dr. Bob Brook from RAND Health in California and a professor in the School of Medicine and in the School of Public Health at UCLA; and Mr. Jeff Lozon, who is well known to this audience for the many important roles he has played in health care in Canada. He is currently the CEO of Revera, which is based in Ontario but has facilities across the country. Welcome, Dr. Brook, and, Jeff, welcome home to you. I will leave the more formal introductions of those individuals to Dr. Tom Feasby.

Before we begin, I have the honour of introducing Mr. Fred Horne, Chair of the Standing Policy Committee on Health, who brings greetings on behalf of the Province of Alberta. In addition to his regular duties as an MLA for Edmonton-Rutherford, Mr. Horne serves as the Chair of the Standing Committee on Health, the Deputy Chair of the Premier's Council on the Status of Persons With Disabilities, and as a member of the government's Agenda and Priorities Committee. Fred has been tasked with many difficult challenges in the past few months, and most recently has been asked to co-chair the Minister's Standing Committee on Health. That committee is currently developing recommendations for improvement in the healthcare system, and I hope that today's forum and discussion will be useful in those efforts. Fred, I would like to thank you sincerely for your ongoing support of the Institute of Health Economics and for all of the work that you are doing to improve quality of health care for all Albertans. Ladies and gentlemen, please join me in welcoming Mr. Fred Horne.

Fred Horne, MLA, Chair, Government of Alberta Standing Committee on Health

It is my pleasure to be here this afternoon as a participant in what we are about to hear from our two guest speakers and our panellists. One of the challenges of political life is finding the opportunity to reflect on some of the assignments that one is given. I am very fortunate to have been asked to participate in the committees that Dr. Tyrrell mentioned, as well as to help address other challenges, but I certainly couldn't do so — nor could any of my colleagues in the legislature — without the support and the leadership of the people in this room. You are, ladies and gentlemen, the leaders of our health system. You also represent the leadership in research and innovation in this province, and I dare say that in many cases you represent the thought leadership that drives some of our more significant policy decisions.

On behalf of the premier, the Honourable Ed Stelmach, and our minister, the Honourable Ron Liepert, I thank each and every one of you for the great contribution that you have made, particularly during the last year when we have seen so many changes in our healthcare system. I know that you are all working very hard in your own roles and no doubt are having things come at you at a very quick pace. I would also like to acknowledge two of my colleagues on the Minister's Advisory Committee on Health who are here. One is Tom Feasby and the other is Patricia Bayne. If there are others here, I will take the opportunity to introduce them to you a little later this afternoon. Thank you for the opportunity to be here. I look forward to the presentations and the discussion that will follow. Thank you.

Speakers/Keynote Presentations

TOM FEASBY: It is now my great pleasure to introduce our two keynote speakers. We will have comments from both speakers and then a short question-and-answer period followed by a break. After the break, we will have remarks from our panellists, and then our speakers will join the panellists again for further questions and answers.

Our first keynote speaker is Dr. Robert Brook, the Vice-President and Director of the very large health research group called RAND Health, which is part of the RAND Corporation in Santa Monica, California. Dr. Brook has for years been the American leader in quality-of-care measurement, a field he virtually invented. I had the pleasure of taking his quality-of-care course some years ago during a sabbatical at RAND. Bob is a stimulating teacher. He is known for many things, from running the famous RAND Health Insurance Experiment to developing the field of appropriateness measurement. But most importantly, he is a critical thinker who disrupts complacency, taking us out of our comfort zone to look for better health solutions. Please welcome Dr. Bob Brook.

Disruption, Disruption, Disruption: Building a Successful Canadian Healthcare System

Robert H. Brook, Vice President and Director, RAND Health

Thanks a great deal for inviting me up here. I do wonder about your judgment in inviting an American to come talk to Canadians about improving the healthcare system in Canada. Given the mess that we have in the United States at the moment, that seems a little silly, so I decided to approach this from a different vantage point. I strongly believe that you are at the top of your game, doing a great job, and that is the time that you are most vulnerable. The way to get to the next level is not going to be by marginal change but by disruptive innovation. In the question-and-answer period, we can talk a little bit about that, but I thought I would approach healthcare improvement from that point of view. I hope this talk stimulates you to do something different.



I will begin by saying that what people want is health care that is appropriate, excellent, humane, and affordable. It's that simple. Even if they do not have to pay for it directly, people still need it to be affordable, because every dollar that a person spends on health care represents about 83 cents less in wages. That is why affordability is important even in Canada: the economists have nailed this down: we actually pay for the care that we use, and it comes out of our wages. If we increase healthcare costs by \$10, we decrease the wages that people get by virtually the same amount.

So what's the problem? The problem is that while people want health care that is appropriate, excellent, and affordable, what we do in the United States, is provide care that's variable, mediocre, and very expensive. Care is expensive in Canada, too, and in some cases just as variable and mediocre as in the United States. The vast difference is that everybody in Canada is in the system.

What are your goals in providing health care? Maybe your first goal is to provide all necessary care for everyone in Canada. If so, can you define what you mean by necessary care and then provide a measurement of it? A very famous economist in the United States, John Kenneth Galbraith, used to point out that when a new factory that produced tobacco came online, that production would be counted in the GDP and would be considered a positive, but if somebody built a road through a park, it wasn't measured, and therefore it wasn't emphasized. We emphasize what we measure. If providing necessary care for everyone is a goal, then someone needs to define those terms.

What is necessary care? It is care that is appropriate and provides benefits that are non-trivial and greater than the risks. Necessary care is services that, if not offered, might lead patients to sue physicians, and which, if physicians were not able to offer them to patients, might lead physicians to go on strike. If I ask surgeons what proportion of care is so necessary that they would actually cry if they couldn't deliver it, I get numbers that range from 50 to 80 percent of what they do. There are all sorts of necessary things: Pap smears every three years, bypass surgery for left main disease, bone marrow transplants for aplastic anaemia. Whether expensive or not, whether high tech or low tech, they can all be considered necessary care.

The second goal is to eliminate waste. This includes providing necessary care more efficiently, changing the labour mix, and not using public money to pay for care when the cost is much greater than the benefit. Saying these things is very easy, and you hear virtually the same things at every symposium. The question is do you have a measurement system to determine what proportion of care is waste? My notion of waste may be somebody else's job. If I can train a high school graduate to remove cataracts, I am taking away jobs from ophthalmologists. If I tell primary care GPs that nurse practitioners can do the same thing they do, I am taking away GPs' jobs. Waste for some people is livelihood for other people. But can you measure this, and is that a goal? Is there a report that says this is the amount of waste we had last year, this is the amount of waste we have this year, and this is what we are going to do about it next year? The only win-win solution is eliminating waste. Everything else is a trade-off. Rationing is a trade-off. The only win-win solution is eliminating waste.

Part of eliminating waste is controlling the use of new technology. Decide what technology is worth the cost. There are many ways of doing technology assessment. In the year 2000, we asked Nobel scientists from around the world what innovations were most likely to come out of basic science laboratories between then and 2030. We ran these through a simulation model in order to determine what, in a real population, the real use would be of a cancer vaccine or an anti-aging compound or a treatment for acute stroke or diabetes prevention. Then we ran through the numbers related to the effects these would have on annual costs and on health, in this case on the Medicare program in the United States. You can do this for anything you want to measure: the models are up and running. A model could be built for Alberta, and you would then have some idea of what you are facing in the future. When I meet with

basic scientists who are at the cutting front of their science, the first thing they tell me is that 5,000 to 10,000 new tests are going to come on the market within the next five years. This is going to have enormous implications for what you are doing. You need some mechanism for monitoring the progress of basic science.

Goal number three is to improve the mean quality of care and decrease its variation as a function of whom a patient sees. We are going in exactly the opposite direction at the moment. We are trying to steer patients away from doctors that don't perform as well or to doctors that perform better. When I flew here from Los Angeles, should I have had to look up the serial numbers of planes and get their mechanical history through the Freedom of Information Act in order to decide if I would take Air Canada or United? Think about what medical schools do. When we select residents, we keep the medical students that did the best, and we farm out the ones that did worse to places that we think are not as good. Every resident becomes a doctor, but we increase the variation among them. We don't have a system that reduces the variation in performance.

We need to disrupt this. First, we need to develop a system in which we can give real-time data on quality to everybody. In the UK, after you see your GP, you can pick up your phone and obtain the quality scorecard for that visit. There is no reason why these systems cannot be designed to produce real-time data on quality: What should have been done that wasn't done? What was done that didn't need to be done?

Will public accountability and transparency improve quality? The biggest safety problem in hospitals is avoidable death in patients who are admitted with treatable medical conditions. You can change your administrative data to provide a better look at this. You can produce a hospital death index. You can release it. You can demand accuracy. You can give patients incentives to use safer hospitals.

In surgery, the biggest safety problem is inappropriate surgical decisions: operating on people who don't need the procedure, and not operating on people who need it. Again, there are all sorts of incentives that you could use, but you need a formal system of measuring appropriateness. There is no reason why we cannot have, as part of the doctor-patient encounter, a web-based system that enables patients and doctors to get a formal assessment of the appropriateness of a procedure and then make a decision based upon an explicit assessment. This has been on the table for 30 years, but has still not come about.

The biggest safety problem in ambulatory care is the underuse of medication prescribed for chronic diseases. If I am a geriatrician internist, when I go to work in the morning the first thing I ought to see is a screen that tells me which of my patients didn't fill a prescription. What do I do about people that don't fill prescriptions? I don't know if there is a course in any medical school anywhere that actually teaches this. When I interviewed the young doctors that I trained, they had never learned a formal mechanism for dealing with this problem.

You could pay providers for transparency rather than for performance. You can start by demanding that if doctors are going to get a salary, they must cooperate in ensuring transparency by filling out forms to provide clinical data. You could also increase the healthcare plan's generosity for patients who will answer surveys and allow the use of their medical records. One of the biggest problems in this field is that people do not believe it is their responsibility to help make the system better. Can we change that paradigm? Can we say, in Canada where you have a very generous and expensive system, you are responsible for making the system better by providing answers to questions such as what happened to you following a surgery or a medical condition?

We can demand that hospital CEOs know in real time what patients they are responsible for and how many died in the previous 24 hours. Shouldn't you know how many people you are caring for on a real-time basis? Isn't that a rational thing to know? And shouldn't you know how many people died? Regardless of why they died, isn't it

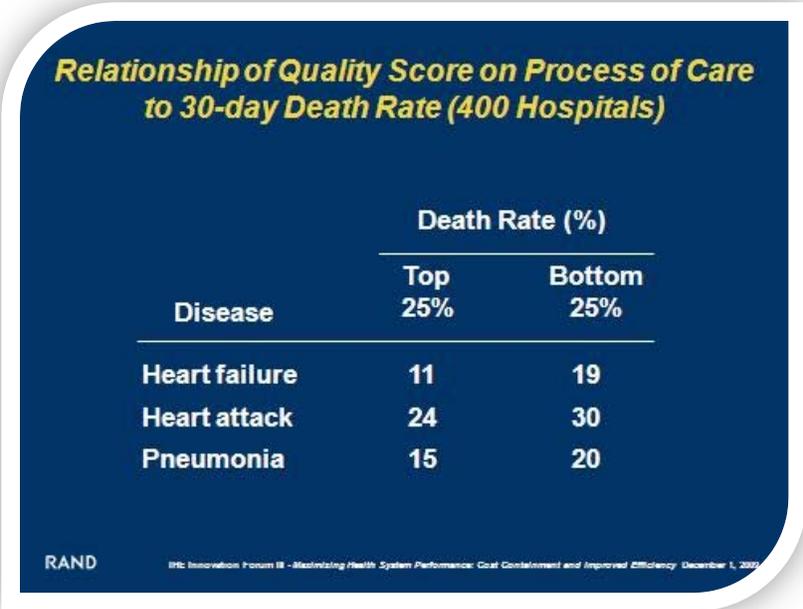
important enough to figure out whether you could have done anything to prevent those deaths? If you are not doing that, how do you improve the system?

I think we need to require, and give incentives to, patients and providers to know the appropriateness of care before a procedure is performed. Wouldn't it be nice if, when you go to get a procedure or are thinking about it, you and the doctor together could go to a website — maybe a talking wall with questions to fill out — and out would come an appropriateness score. It would say that this procedure is appropriate, equivocal, or inappropriate, and you and your doctor could then discuss the result. If you are uncertain and need more information about what would make the procedure appropriate, you could even ask the talking wall for a reference. We now have the ability to implement such ideas and to change the system to do that.

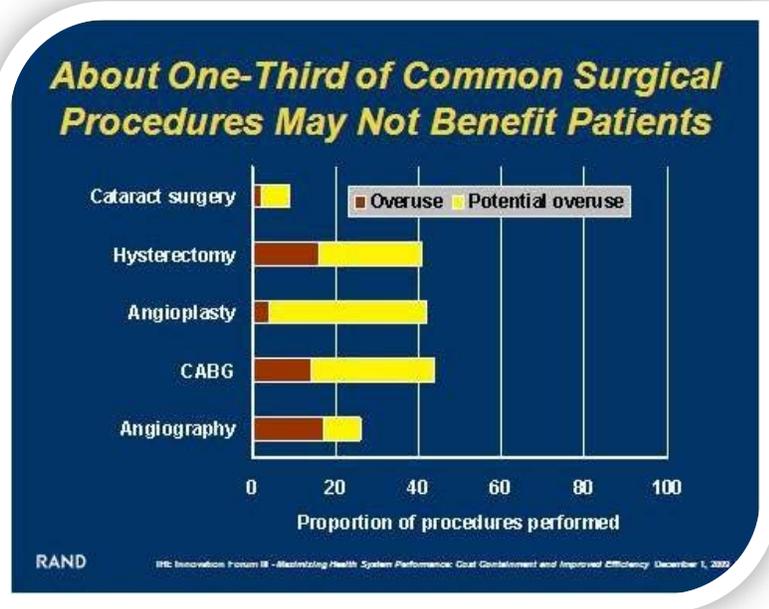
How do you get people to use the least expensive medicine in the least expensive manner? When I was an intern at John Hopkins University, we wrote prescriptions for a year. It costs more money to write prescriptions for shorter periods. When you go buy a beer, the cheapest thing about buying a beer is the beer. The rest of the cost is in the delivery system, the can, the marketing. Why can't I have a prescription for a year? And why do I have to go to a pharmacy to pick up drugs? If I am getting a generic drug, why do I have to use a system in which my drugs come in a box of maybe thousands and are counted out on a dirty counter by somebody who is going to make mistakes and then puts them in a bottle and re-labels the bottle? Think about any industry that would do that. I don't know how many of you have seen a mail-order pharmaceutical facility in operation. It's amazing what technology could do. Why do we give any person with chronic disease medicine other than through such a facility? I wonder what pharmacists do under those circumstances. You know, in a mail-order facility, they have to hire a lot of pharmacists. They do two tests. They try to figure out what the doctors wrote on the prescription pad. They are deciphering illegibility. Just imagine that we tolerate the following circumstance: you come home to your family and walk in the door, and you have a clipboard that nobody can read. You throw that clipboard anywhere in the house that you want to throw it, and then you yell at people if they don't understand what's on the clipboard. That's called medicine. We are changing that system to some degree, but I watched this. It was just amazing. They were as good as the CIA and the FBI in deciphering which physician wrote which prescription. It was a marvellous undertaking to try to figure out what had been written.

How do we provide incentives to people to obtain the least expensive medicines in the least expensive manner? I talked about the need in hospitals for real-time comprehensive clinically-detailed quality data. We have developed two tools at RAND, one called the QA tools and one called ACOVE. ACOVE is Assessing Care of the Vulnerable Elderly. It would be great if a country had a comprehensive assessment of quality, yearly on a sample basis, so that they could answer the question of whether quality is increasing or staying the same. We have talked about pushing the government to produce a yearly national report on how quality varies by race, gender, age, method of payment, location, and medical group.

Why is this all important? Variation in quality has been shown to be enormous when it has been studied in a detailed clinical manner. These are data from 400 hospitals in four areas in the United States, showing the 30-day death rate from heart failure, heart attack, and pneumonia [see slide 29, right, "Relationship of Quality Score on Process of Care to 30-day Death Rate (400 Hospitals)"]. In the top 25 per cent of hospitals, those that performed the best clinically, there were 8 fewer heart failure deaths per 100 people admitted than in the bottom 25 per cent of hospitals. These data are 15 years-old, from a study funded by government (that's how RAND gets its money). Our government refused to repeat their funding when we published them. They said, "This really makes us angry because it shows that our policies aren't working; and if you publish this, we are never going to give you more money, and we are never going to repeat the study." To this day, there has not been another detailed clinical study of variation in quality in American hospitals, because the government and the population have not been committed to doing it.



BROOK: SLIDE 29



BROOK: SLIDE 30

We did a study that found that about one-third of common surgical procedures may not benefit patients [see slide 30, left]. About 20 years ago, we had a meeting with the American Medical Association (AMA), and I showed them these data on the proportion of procedures that were being done for potentially or clearly inappropriate reasons. I said to them, you know, there could be a movement in the United States to develop for-profit managed-care organizations. Why don't you voluntarily become accountable to your patients and to government for appropriateness? In the room were 25 doctors. Twenty-four said they ought to do

that, and they were going to take it to the floor of the AMA. The 25th said no, and doctors work on consensus, so if all 25 didn't agree, they wouldn't take it to the floor. At the end of the meeting, I asked the one who said no why he wouldn't do it. He said, "Look, I am very old. I am going to be out of practice in five years. I know this is not going

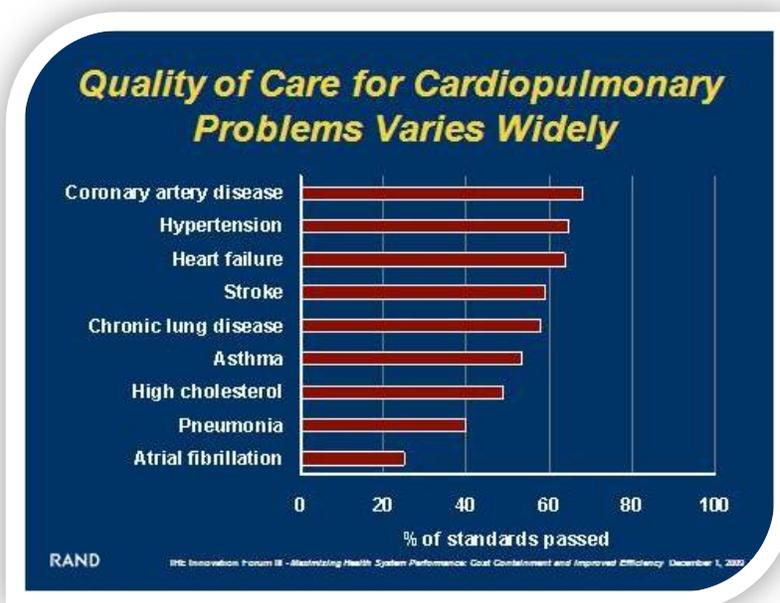
to affect my practice for the next five years, and I don't want to go down in history as somebody that voted for something that might change practice, because it won't affect me." He was right.

Now, let's look at reliability. New York State has long had a system to measure the quality of care given for bypass surgery and angioplasty, so we took a very simple step. We collected a random sample of all angiographies in the state, and we developed detailed criteria for reading them. We then took them to three people that the cardiologists said were experts at reading angiographies and asked them to read them independently. We were shocked. Half of the angiographies had one or more technical inadequacies. The inadequacies varied markedly by hospital, and the academic hospitals were no better than the non-academic hospitals. But the really shocking finding was that only one-third of the patients who had their chests cracked because they were diagnosed with left main coronary artery disease actually had the disease or the condition. The immediate response by the economists was to say that this is just greed: doctors want to get money. However, we looked at the group of people that did not get labelled as having left main disease, and we found the same number of patients in that group as in the group that got the procedure and didn't need it. It wasn't a bias to make money. It was a reliability problem.

We published the data in a cardiology journal, although we had no marketing or sales force to change anything. As far as I know, to this day, nothing has changed in the way angiograms are being read. Similar studies have been published about mammograms and a host of other tests. For the men in this room, one of the most unreliable tests that we do is a Gleason score. The reason that the different ways we treat prostate cancer do not seem to produce different outcomes probably has more to do with the reliability of reading the Gleason score than with the value of the therapy. We always talk about the value of the therapy, but the real question is, can we adequately distinguish an aggressive tumour from a non-aggressive tumour? The basic scientists are now working on very exciting clinical models using computers and other types of simulations to try to do this better, but there are things that we can do right now to improve the reliability of the process.

We did a random study of ambulatory care in 15 sites in the United States to find out what proportion of care that is recommended by the evidence is actually received by patients. What we found is that about half the care that was needed had not been given. Think about this. We spend an enormous amount of money on health care, and when you go to see a doctor for diabetes, hypertension, a cold, whatever, about half the things that you actually need you don't get. The quality of care varies dramatically by condition [see slide 33, right] — for example, the quality of care for atrial fibrillation is

low and for coronary artery disease it is higher — but one of the things that shook the heck out of us is that it does not vary by where you live. Think about Boston, where there are more academic hospitals per square inch than there are roads, and then think about places like Little Rock or Lansing. There is no difference in the proportion of



BROOK: SLIDE 33

recommended care you would receive in those places. Lots of stuff isn't being done. We spend a lot of money, and you are not safe anywhere.

This takes us back to the initial question that Tom asked in this discussion. What proportion of the GDP do we want to spend on health care? That's a tough question. Many of my economist friends believe that spending 30 percent of the GDP on health care would be just fine if we got value for the money that we spent. If I am in the healthcare system as a professor, and I want to expand the healthcare system, I have to convince the public that every dollar I spend I am spending efficiently. I have to change the labour mix; I have to prevent waste; and I have to show that I am producing value. If we do that, it wouldn't surprise me if 20 years from now, we are spending 25 or 30 percent of the GDP on health care.

We also did a study of the elderly, because our population is becoming older. For geriatric conditions, the care is even worse than for medical conditions. Only about a third of the care that is needed is actually given for geriatric conditions. For example, when a vulnerable elderly person presents with injury from a fall, the quality indicator states that the physician should examine the patient to detect the reason for the fall and identify problems that may be treatable so that the patient will be less likely to fall again. Yet, the medical records revealed that only 6 percent of such patients had their blood pressure taken, 25 percent were given a vision exam, 7 percent had a gait and balance examination, and 28 percent received a neurological examination. These exams are necessary to identify patients who are weak and need physical therapy or patients with conditions such as Parkinson's disease who need specific medication treatment. The level of attention given to examining for problems that may be deadly to a number of elders is very low. This was mind boggling to me.

What makes quality of care so important is that quality is directly related to whether a vulnerable elder survives. After very comprehensively measuring what doctors did, we followed up on the death rates after three years among patients that got higher- or lower-quality care. There was a direct relationship between the proportion of recommended care given and the likelihood of survival. Some people may not want to improve the care of the elderly, because that means having more elderly people around, and that means more social security, and that means the budget is going to be in even worse shape than it is now. One of the ways of reducing budget deficits is to let elderly people die early as a result of getting poor-quality care. Not only do you save healthcare dollars, but you save pension dollars.

How can academics play their part? I'm an academic, partly, and I think the way to reform the system is to change fundamentally the relationship between doctors, professional organizations, and government. Here are some ideas:

1. Make the purpose of professional organizations to improve the value of healthcare and use annual meetings to focus on the achievements of last year
2. Aggressively identify and eliminate waste.
3. Tie research to a return on investment. What if the people who receive tax dollars for research had to show a return on investment? I am not talking about basic science. I am talking about the clinical sciences, health services, and the group of people that I relate to in the healthcare system.
4. Change the publication and promotion policy of our schools so that academics, other than the basic scientists, have to demonstrate change and implementation of the knowledge they produce. What if we changed the relationship between government, industry, and academics?
5. Agree to be responsible for cost and quality. Are doctors really in agreement that they have to be responsible for the cost and quality of care?

6. Practice population-based medicine. Do doctors as a whole believe that they are responsible for the health of, say, the people of Edmonton? How do you go from an individual patient to a population-based medicine approach?
7. Require patients to be responsible. Let's say I am an internist and I offer you a free colonoscopy and tell you that it has been demonstrated to be effective (let's assume that it is). And let's say you don't get one, and three years later you show up with colon cancer. Who pays for your treatment? Looking at the age of this audience, I would expect that about half of you are on a statin and about half are on an antihypertensive pill. What if I have given you the pills free, but you don't take them, and you come in with acute myocardial infarction? Do I hospitalize you in an intensive care unit? What's the contract between people and the health system? One of the challenges in trying to figure out what works in medicine is to get data from patients. Let's say I do a hip replacement, and I want to know six months later whether you can walk up a flight of stairs. In the United States, we would spend 90 percent of the budget for such a study going through the Institutional Review Board of the institution, convincing people to answer the questionnaire, and then chasing them down and going through a long process of multiple calls. Developing the questionnaire is easy. Doing the analysis is relatively easy. Getting an acceptable response rate is relatively hard. What if people are required to provide information in order to get free health care or a generous healthcare benefit?
8. Establish a 24-hour business. Should you have the right if your child gets a cold or a sore throat to walk into a clinic at three o'clock in the morning and get care, as opposed to going to an emergency room? What about using expensive technology? Should mammograms be given around the clock? I don't mean acute hospital services.
9. Insist on real-time measures of quality and cost.
10. Measure the functional status of people and the appropriateness of treatment. We have to decide what is to be the content of medical care. Is loneliness something that a doctor should be trained to deal with? A professor at UCLA came to see me and was concerned that he got chest pain at 25 miles when he ran a marathon. I spent hours trying to talk him out of a stress test, but finally, I gave him one. He then complained because the stress test lasted for only 30 minutes and he said that was not long enough. I said, "I am not giving a two-and-a-half hour stress test." Then he said, "If you won't do that, I want to run faster." I said, "Okay, what do you want me to do? He said, "Well, you have a group of kinesthesiologists in the upper campus, and they help athletes run faster. I want you to take pictures of me with different running shoes so that I know which running shoes produce the muscle movement that makes me run faster." "And you want this to be paid for on your HMO?" That didn't go very far. We really do need to think about what the content of medicine is.
11. Finally, we need to give up on astrology. The thing that we know least about in medicine is how often to do anything. If somebody came to me and said, "Tomorrow, reduce the budget of healthcare services in Alberta," I would just change the calendar so that when a doctor said, "Come back once every a month," the calendar month would have 60 days in it. I have told the Chairman of Medicine at UCLA the same thing about meetings in the Department of Medicine. I said, "Every time you call for a monthly meeting, I am going to change the meaning of a month to 60 days. Nothing will happen in the academic centre if we meet every 60 days instead of every 30 days." Why do we do things at 30 days, 60 days, and a year? What if we changed the frequency? An example of the science that supports this is in the treatment of people with heart attacks. When I was young and practicing in the hospital, we kept people on bed rest for 28 days after a heart attack. Now, we hardly do it at all. We need to give up astrology and try to figure out the right frequency for the things we do.

The message I want to leave with you is to spend 10 to 15 percent of your time trying to do something different. Think about something that is really disruptive. I don't care what it is. I don't care if in the next year Alberta comes out with a report that says mammograms should be read by trained high school students and not by radiologists. I don't care if you say that colonoscopies should be done by high school graduates. I don't care if you say that academic medical schools are going to be responsible for the cost and quality of health care in the region in which they exist. Take some big idea, and try to work it from the idea down to a measurement system that you can implement. It's easy to state the ideas, and you are in the perfect place to do it. You are at the top of your business.

I will close with a story about why change is so important. We probably would have lost World War II if there had not been someone in the US military who decided that battleships were not the best way of fighting a naval war, that we needed aircraft carriers. Everybody said, look, we have these big battle ships. They can't be sunk. We don't need anything else. He disagreed, and he disrupted the US Navy and got aircraft carriers. It's not clear we would have won the war in the Pacific without carriers. The US Navy at that point was at the height of its power. When you are at the top of your game, you have the luxury to step back and think about some things that might be somewhat disruptive.

The ideas that I have suggested need to be fleshed out and taken to a measurement and implementation system. I hope you will choose to do that. A lot of people would love to help you. I would love for the future students of health services research and health policy to view western Canada, Alberta, as the place to go to see the system that everyone would like to emulate. We cannot do it in the United States, but you really can do it here, in a country where we are not debating whether people have the right to healthcare insurance. You have passed all those issues, and you can leapfrog to the next generation of the healthcare system. I am really pleased to be here, and I hope that one of these ideas might be useful to you in changing what you are doing.

TOM FEASBY: Thank you very much, Bob. You were very stimulating, and I think we all feel challenged after hearing your talk.

I would now like to introduce someone who is no stranger to people in the room, Mr. Jeff Lozon. Many of you know Jeff from his time as the CEO of the Glenrose Hospital in Edmonton. He then served for many years as the CEO of St. Michael's Hospital in Toronto, where he was a real champion of health services and policy research. Jeff also served as Deputy Minister of Health for the Ontario government, and he has held many other senior posts. He was asked by the prime minister in 2006 to head up the Canadian Partnership Against Cancer. He has been vice-chair of Canada Health Infoway and chair of the Canadian Association of Health Care Organizations. Jeff has recently taken on a new role as the chief executive officer of Revera, which manages over 220 retirement and long-term care homes in Canada and the United States. He has worked in all areas of the health system, and we welcome his comments on how to improve the performance of that system. I would like to call on Jeff Lozon.



Three Perspectives on Maximizing Health System Performance: A Practitioner's View

Jeffrey C. Lozon, President and Chief Executive Officer, Revera Inc.

Thank you very much for having me here. It is a privilege to come back to a place that means so much to me. I left Alberta in 1991 when I moved to St. Michael's Hospital in Toronto. Since then, I have come back from time to time to give a talk, but I always felt a little bit like an imposter, because I learned far more than I contributed. This is another special opportunity to learn about what's happening here. There is a fairly poorly kept secret in health care that Toronto is not the centre of the universe, and all that is

happening that is good and progressive does not happen in Ontario. So it is fun to be here, and it is particularly fun in my new role at Revera. Two thousand Albertans work for our company at 14 sites across the province, and it gives me a chance to acquaint myself with some of their activities.

As a former deputy minister, a former hospital executive, and a former participant in national agencies, such as the Canadian Partnership Against Cancer and the Canada Health Infoway, I am going to talk about maximizing system performance from the practitioner's viewpoint. In particular, I am going to talk about the system from three perspectives: from the perspective of change at the front line, the organizational level, and the systems level.

I have given a lot of talks, and I have a very consistent emotional reaction when I give a talk. First of all, when I am invited to do it, I am delighted, and I am enthusiastic, and I am really happy. And then it becomes sheer terror — I have no idea what I'm going to say; I can't decide what the topic is. Then I finally get down to planning and presenting it. However, in this particular case, I was stuck at the terror stage. The topic of maximizing system performance is so big that I could talk about almost anything. Then I got what I would call manna from heaven. I received this past month a report from the United States Preventative Service Task Force on Cancer Screening, which I think is particularly relevant to what we are talking about today in maximizing system performance.

Just think about this: A group of academics were brought together to look at what type of program the United States needs for breast cancer screening. This seemed like a fairly wise group of people. They were well balanced from a gender perspective. They did what you would expect all good academic task forces to do. They went to the literature. They consulted. They commissioned reports. They commissioned studies. And then they released their report. The report said that breast cancer screening, rather than beginning at age 40, should begin at age 50; and that, rather than being done every year, it should be done every second year. This was based on new evidence suggesting that there is a small risk, more risk than originally anticipated, in starting screening at age 40. Starting earlier didn't catch very many additional breast cancers, so it seemed very logical to do what they were suggesting. But then, of course, the proverbial you-know-what hit the fan, because they forgot that they are in the middle of one of the most acrimonious and difficult healthcare policy debates that that country has had for a long time, and all of a sudden, everybody started lining up and taking sides.

I was watching the media fairly closely over the course of the last two or three weeks as this issue was playing itself out. The academics said, "This is a very well-thought-out well-conceived idea," but for every comment that this was exactly what should be done, there were at least six comments saying how terrible this was. By far the majority of people who supported this were men, and by far the majority of people who were opposed to this were women. Typically, they started their stories with, "My breast cancer was diagnosed in my forties." And guess what happened? The White House said, "We are not having any of this." The opposition said, "You are only doing it because you want to cut costs. You want to screen patients out of things that they should be getting." This, I thought, is a very interesting example of how good academic activity can get caught up in a swirl of things well beyond their control. (By the way, just for your interest, there are 11 organized breast cancer screening programs in Canada. Six of them use 50 as the age, and five of them use 40.)

Let me talk a little bit about maximizing system performance at the front lines. In 2003, I got a call at home from the Deputy Minister of Health. It was a Saturday afternoon. The Deputy Minister of Health said, "I want to see you and your leadership team at St. Michael's Hospital tomorrow morning." That's not usually a good sign, so we all showed up. It just so happened that Toronto was in the midst of the second wave of the SARS epidemic. We thought it had gone, but it had come back, and he said to us, "We have a unique offer for you. Because of the skills that your hospital has, we want you to be ground zero for the SARS epidemic. We want you to take the sickest of the sick SARS [severe

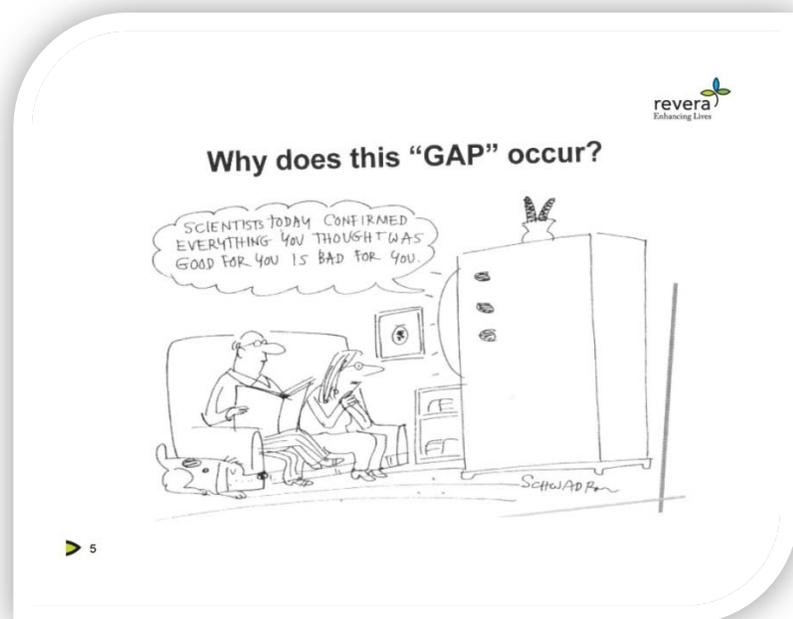
acute respiratory syndrome] patients from across the city of Toronto. This is something that you can do for the healthcare system.”

By this time, we were beginning to realize that SARS was not a typical epidemic. It was not a virus that you would catch out on the street, as you might catch H1N1. This was an epidemic of healthcare workers, and by the end of the first SARS wave we had begun to realize that nurses who had been proclaimed as heroes were actually victims. We all knew this when this offer was made to us, but that was our role, and we took it on. We were the ground zero centre for SARS, wave two, in the province of Ontario. We had no transmissions from patients to staff, and we had no transmissions from staff to staff.

I could tell you stories forever about SARS, about cardiac surgeons that were afraid to come out of their offices for two and a half weeks, or general internists who would stay behind the door, or the unit clerks who would go everywhere and do everything for anyone at any time. But the story that I most want to tell you occurred on our second day into this. I was called to go talk to a group of about 35 housekeepers. These were mostly women (there was one man) in the prime of their lives, between the ages of 30 and 50, most of whom didn't speak English and had no understanding of infection-control activities. They had volunteered — volunteered! — to care for SARS patients in the critical care units. I think that's a huge example of maximizing system performance. Now, it was a spontaneous act, but it wasn't accidental. It wasn't accidental because these individuals were responding to a set of values. They were responding to a leadership culture that enabled them and encouraged them, and they themselves said this is the right thing to do. So, for me, maximizing system performance at the front line is about value-based leadership and value-based commitment to others with whom you work.

In 1999, after 24 hours in a lawyer's office negotiating a merger and a transfer of assets from the Wellesley Hospital to St. Michael's Hospital, I went to talk to the staff of the Wellesley Hospital. There were 700 people in the audience

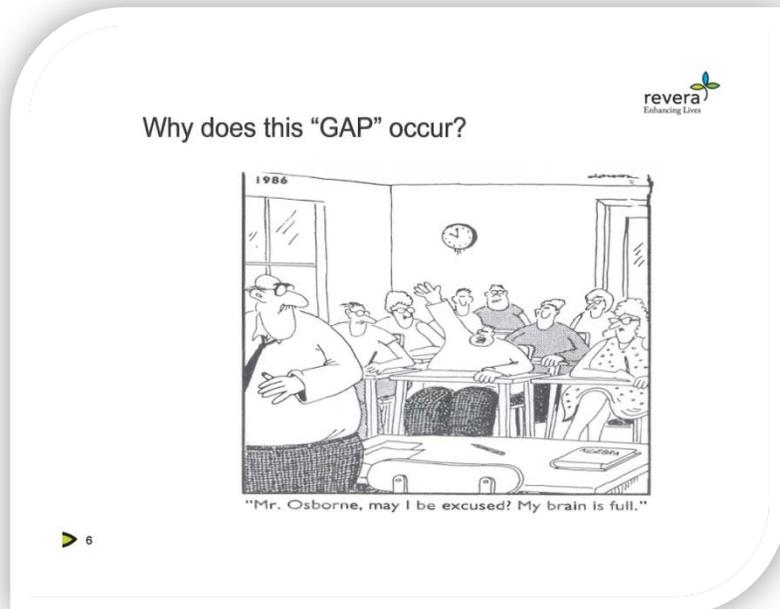
who were concerned that the first thing we were going to do was fire them all or, even worse, make them become Catholic. We weren't going to do any of that, because we understood that it was really about a consistency of values, that what they stood for and what we stood for were actually a lot closer than they had been led to believe by their leaders. Collectively, we ended up with what was probably the most successful merger of health institutions in the province of Ontario, based around solid values and maximizing the performance of the people that were there.



LOZON: SLIDE 5

Now, it is not just about values, and it is not just about good leadership, because there is also some science at the clinical frontline experience. But there are gaps [see slide 5, above, “Scientists today confirm everything you thought was good for you is now bad for you.”]. I am talking about gaps in knowledge

translation and understanding of knowledge [see slide 6, right, “Mr. Osborne, may I be excused? My brain is full.”] There is a great deal of work to be done in the area of distributing research knowledge to the front lines. There were some great articles on this in the New England Journal of Medicine in 2006. For example, Pronovost and their collaborators looked at central catheter infections and suggested five simple steps that took central catheter infection rates from 2.7 per 1,000 catheter days to zero. This had a big impact on system performance. In work done on

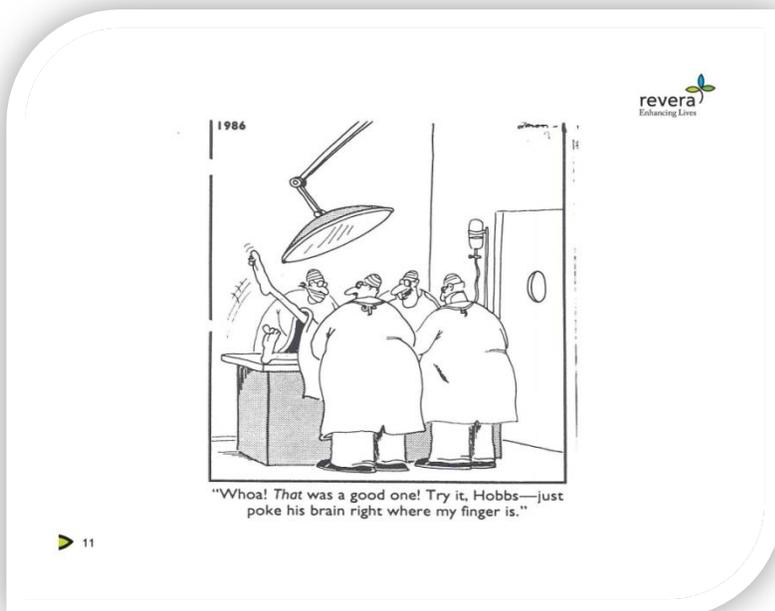


LOZON: SLIDE 6

osteoporosis care in the province of Ontario, Earl Bogoch and Dorcas Beaton found that 18 per cent of the people going to osteoporosis clinics were receiving proper care. When they talked about this, the government created guidelines and protocols, and payment systems based on the adherence to those particular protocols. Now that rate is climbing steadily.

The front line of our healthcare system can contribute to maximizing system performance, but it is not easy. Andreas Laupacis says it well: “Knowledge translation sounds simple, but it is actually quite difficult. Knowledge gets trapped

— in people, places, and habits.” Some academic disciplines consistently focus on maximizing frontline experience, such as organizational design, knowledge translation, work factors engineering (how do we put things together and make them work?), interdisciplinary education, change management, and clinical leadership and education.



LOZON: SLIDE 11

Let’s talk about maximizing system performance at an organizational level. Since 1991, I have watched the regionalizing of health care across the country. Saskatchewan was first, Alberta was second, and then every province entered into a process of reorganizing their healthcare system into

regions. As a hospital CEO in downtown Toronto, I was always a little bit concerned about the implication of that. When I was preparing this talk, I went to the most recent scorecard produced by Alberta Health Services, and I was

delighted to see that the hospitals are included in some of those measures: that is, the scorecard shows the outcomes of various types of activity in the institutions.

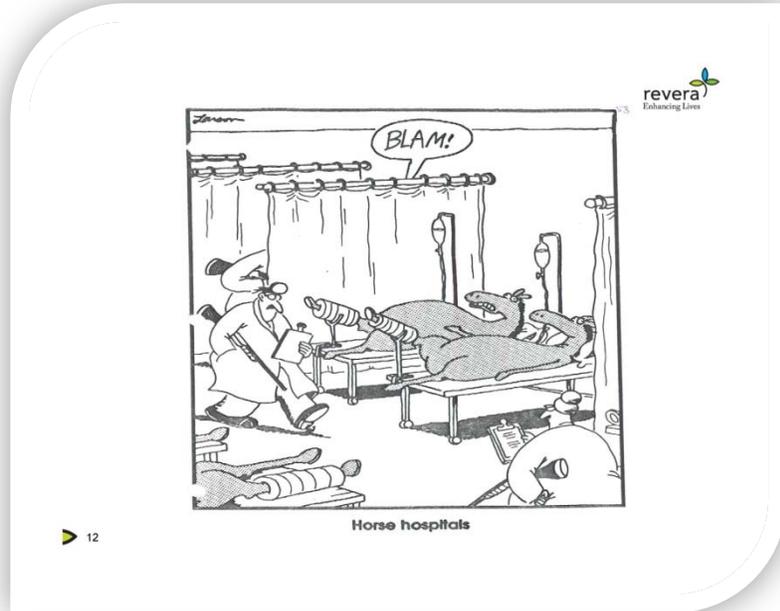
I admit to you right now that I have a bias. I'm a hospital guy. I think that the big blue "H" isn't just a location. It's a promise. It's a promise of care, and it's a promise of commitment, and it's a promise of compassion. I am not blind at all to the problems that hospitals have. We calculated at St. Michael's Hospital our share of the

approximately 30,000 Canadians that die unnecessarily through medical error in a hospital. We took every step that we could to try to eliminate or reduce that. On those days when we didn't think we were making any progress or

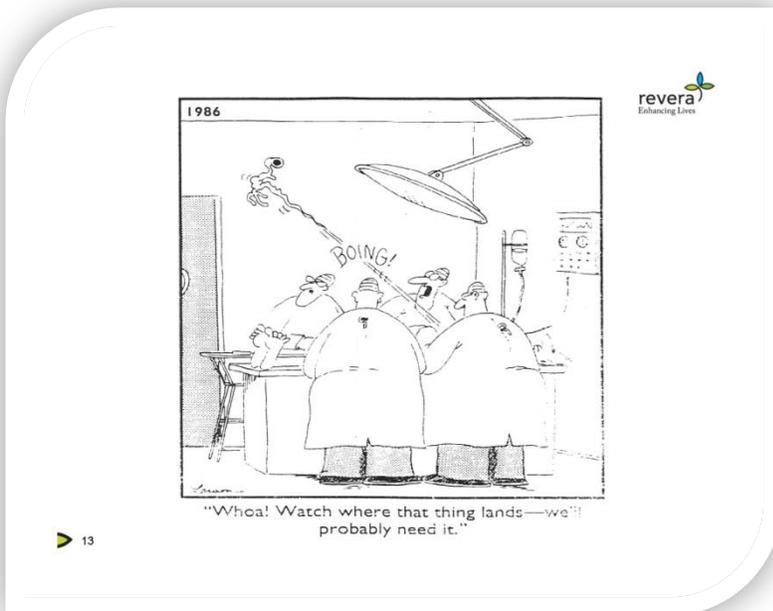
thought we were going backwards, I would sit back and think, "Well, we have got lots of work to do, but I do know one thing: the number of people that we save every day is orders of magnitude beyond the numbers that we don't." So I am a biased guy. I admit that right out front. And besides that, I like hospitals because they are fun. [see slide 11, previous page, "Whoa! That was a good one. Try it, Hobbs. Just poke his brain right where my finger is."], We have come a long way from the horse hospital [see slide 12, above, "Horse hospitals!"] or this [see slide 13, left, "Whoa! Watch where that thing lands. We are probably going to need it."]. Nothing like this

happens in an orthopedic operating room, I am sure, and there are lots of ways that hospitals contribute to maximizing system performance.

Let me give you a couple of examples. About three years ago, we had a big problem in Ontario with long waiting times in our emergency departments. In fact, at the hospital that I was associated with, about 6.5 percent of the people who came into our emergency department waited more than 24 hours. And, honestly, when that issue came to me, I initially considered it to be a medium-level problem. I had other things to worry about. But the province



LOZON: SLIDE 12



LOZON: SLIDE 13

said, “We want to make sure that this issue goes away. If you don’t get on it, there are going to be all kinds of consequences, but we are going to help you do that.” And so a group of people in the organization decided that there was a way of getting at this, and it wasn’t just about enforcing activity. It was about working with people in their own areas, because the problem was not in the emergency department. As all of you know, the problem was in the units behind the emergency department.

I had a personal experience of that when I went in for a minor GI problem. I was in the hospital for two and a half days, and on the back of the door was a nice sign that said checkout time was 11 o’clock. My wife came to pick me up at 11 o’clock, and I said, “Nah, I don’t think it’s going to happen.” And 11 o’clock didn’t happen; 2 o’clock didn’t happen; 3 o’clock didn’t happen. I got out of the hospital at a quarter to five. That was all well and good from my particular perspective, as I was being well cared for and had a pretty comfortable space. But the reasons for my six-hour wait were what you would expect. They couldn’t find the GI specialist because he was in the clinic. When he finally came in to sign off, he gave me some medication orders. Then they couldn’t find the resident for an hour and a half, because the resident was down in the ER. All of a sudden, it went from 11 a.m. to 4:30 p.m. For me, not a problem, except, of course, there were people piling up in the emergency department.

Clearing out an emergency department should not be a matter of days; it should be a matter of hours. We did this by working with individuals in our organization to make sure that the people in the units understood that the problem with the emergency department was, in fact, their problem as well. Through that effort, the hospital reduced the number of patients spending more than 24 hours in emergency from 6.5 percent to 1 percent. Patient satisfaction went from 85 percent to 95 percent, and ambulance offload time went down to about 15 percent. These are examples of organizational efforts at maximizing system productivity.

One last story. In 1991, St. Michael’s Hospital was \$63 million in debt, had \$16 million in operating deficits, and had \$170 million worth of revenue. We were bankrupt. I don’t know the magnitude of the rest of it, but let’s just suggest that more than 35 percent of our total revenue was debt, and it was moving closer to 50 percent. For the next 16

years, the hospital broke even or better every single year, and that was a collective response to maximizing system productivity. Everybody understood that their job was to spend only what could be spent. There are many activities for maximizing system effectiveness, but the real challenge in organizations is this: “The sad fact is that almost universally organizations change as little as they must rather than as much as they should” (Cantor, Stein, and Jack). And, lastly, Kahlil Gibran would tell you that, “It is only when you are pursued that you become swift.” And, right now, I think we are all feeling pursued.

Organizational change Maxims

- Support those who embrace change and deal with those who can't
- Look for clear, specific results
- Avoid paralysis – there is no substitute for action
- Understand there are no absolute right answers
- Do not overcomplicate issues
- Process is not as important as results
- Process is important
- You cannot over communicate
- Never promise what you cannot deliver
- Do not be afraid to say you do not know – but not too often
- Improve your core business
 - ❖ Quantitatively
 - ❖ Efficiency

16

LOZON: SLIDE 16

Here are some organizational change maxims that I don't intend to go through [see slide 16, previous page], and some academic areas that are making relevant organizational contributions [see slide 17, right]. We can talk about these later.

Now I want to talk about maximizing system performance at the system level. I have talked about some successes, but let me tell you one of my big failures. I was Deputy Minister of Health in Ontario during an election period, and the party that was elected had a campaign platform to spend 20 percent more on health care. That was the full extent of the

Maximizing System Performance Organizational Contributions

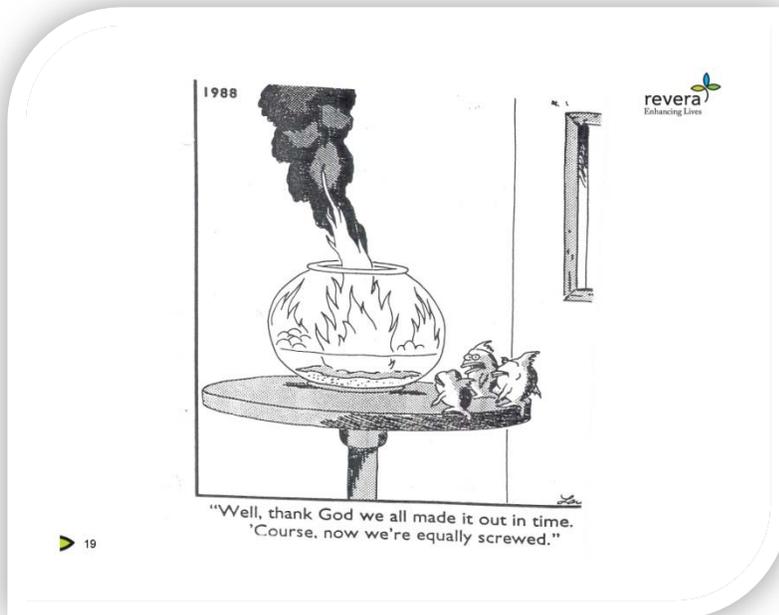


Relevant Academic Areas

- Organizational Design
- Information Management
- Performance Metrics
- Case Studies
- Leadership Theory
- Team Functioning

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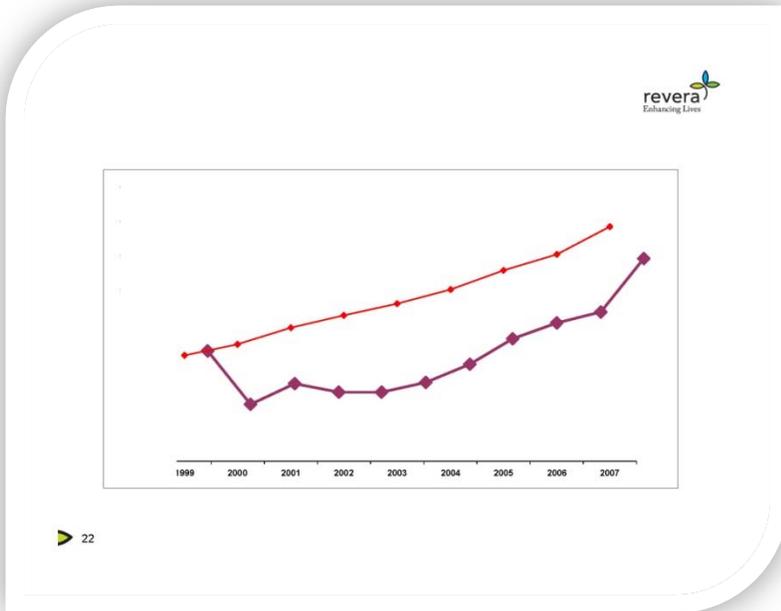
LOZON: SLIDE 17



LOZON: SLIDE 19

party's campaign initiative in health care. When I had my exit interview with the premier, I said, "Mr. Premier, you have accomplished one of your campaign goals. You are now spending 20 percent more than when you were elected. That's the good news. The bad news is that it's two and a half years early." They had spent 20 percent more in one year, but they still had two and a half or three years on their mandate. He didn't think that was funny at all.

System change at a system level is very difficult, and I have watched health reform throughout the terms. Here are some of my comments on healthcare reform [see slide 19, left, "Well, thank God we made it out in time. 'Course, now we're equally screwed."] That's the one I like the best, but here are a couple of others. This is what they think at the provincial level [see slide 20, next page, "C'mon, c'mon — it's either one or the other. Damned if you do or damned if you don't."] Lastly is this [see slide 21, page 20, "Well, I'll be danged!...I'm okay!"].



This graph [see slide 22, left] shows two lines that go from about 1999 to 2007. The top line is personal health expenditures in the province of Alberta, and the bottom line is the price of oil. I put that up simply to suggest that the bottom line will move much more quickly and much more erratically than the top line. In case you think that you are alone in this particular dilemma, I would like to dispel that particular myth. The province of Ontario is now spending 45 percent of its provincial budget on health care, and that is soon to go to 50 percent, as was suggested earlier.

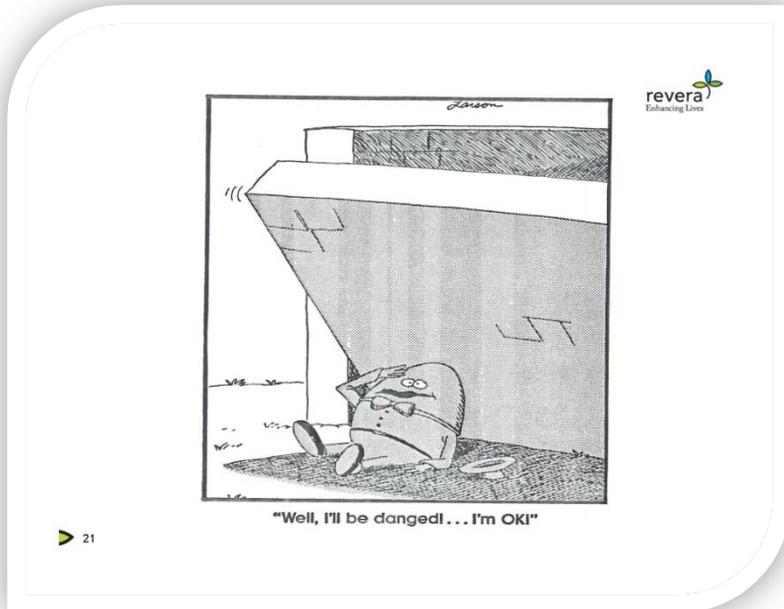
LOZON: SLIDE 22

The provincial deficit is \$25 billion. In addition, in the last nine years, there has been a 450-percent increase in the number of Ontarians who are sent to the United States for care. Right now, about 12,000 procedures are being done in the US at a cost of about \$56 million — money that is going to the US for the care of Ontario residents.

So you are not alone in the dilemma that you have, but I think there are some signs that the apocalypse is not on us yet. I read in *The Globe and Mail* last week that the president of the Canadian Medical Association (CMA) is urging the federal government to give Canada Health Infoway the \$500 million that it had been promised in the federal budget to continue with the efforts to build the electronic health record. This is a big step. When I was involved in Canada Health Infoway, from 2000 on, the CMA were intractably opposed to Canada Health Infoway in every way, shape, and form. Now, they are actually advocating for the release of the \$500 million. The skeptics among us would say that's because most of that money will be used to implement the electronic health record in physicians' offices; but I am going to take that as a sign of system productivity improvement, even though it's a little bit out there to call it that.



LOZON: SLIDE 20



LOZON: SLIDE 21

Whenever we talk about system productivity improvement in Canada, we always talk about levers. Let's lever this or let's lever that. What I have observed about leverage in Canada is that when they talk about leveraging physicians, it usually means paying them more to change. When they talk about leveraging hospitals, it usually means paying them less if they don't change. The trouble is that when you pay people more to change, everyone else in the healthcare system feels they should be paid more to change as well. You create expectations.

Maximizing system performance is a big challenge, and there are really no magic bullets that I can see. However, I did hear a very interesting idea last week from Jim Balsillie, a very unlikely source, who is the co-CEO of Research in Motion, the makers of BlackBerry. Talking at the Ivy Forum on Health Care Innovation, he suggested that we should be seeding one hundred \$100,000 projects to create change at the front lines at the organizational level, as opposed to five projects of \$2 million or ten projects of \$1 million. His view was that innovation is going to come from those small things, and it is the responsibility of the rest of us to move that innovation forward. Relevant academic areas that are making contributions in this area are political science, economics, information management, public affairs, and social dynamics.

Let me conclude with some broader reflections about maximizing system performance. It can happen at all levels. It can happen at a clinical level. It can happen at an organizational level. It can happen at a system level. My own view is that improvement sometimes happens a bit faster at an organizational level, but it probably sticks better if it is done at a clinical or a "coalface" level. At a system level, it takes years and years and years. But, certainly, it will require leadership, commitment, and values at all levels. We have the system that we designed, and now we have to begin to redesign that particular system, but I don't believe there is any substitute for strong, compassionate, and stable leadership. Let me conclude with a quote from the book of Proverbs: "Where there is no vision, the people perish." The responsibility of leaders is to provide that vision, and it seems that you are well set up to do so. Thank you very much for having me.

Questions and Answers – Robert Brook and Jeff Lozon

TOM FEASBY: Thank you very much, Jeff, for a very interesting talk from quite a different perspective. It will be interesting to hear the questions for the two of you who come at this from different directions. I invite questions from the floor. Perhaps I can start off with a slightly facetious one. Bob, is the quality of care better in Rochester, Minnesota [i.e., in the Mayo Clinic]?

ROBERT BROOK: The answer is that there is not a lot of good recent data, but let me just make a comment. In elective surgery, the Mayo Clinic has two groups of patients. The clinic is a community hospital for Olmsted County, Minnesota, and it is also an international facility for people that fly in. The same organizational procedures, the same

doctors, and, presumably, the same operating room techniques are used for both groups. Yet people that fly in do much better than people who come from the residing community. This argues that the motivation to get healthy and well and to recover explains some of the difference in outcomes between the Mayo Clinic and other very good facilities in the United States. That's not saying that we all ought not to emulate Mayo.

I would make one other comment. In the United States, really great companies like General Motors, Ford, and the airlines, have changed only when they were threatened by global competition. They literally got disrupted by the globalization phenomenon. What produces the motivation for change in health care — even if your leaders have good values and can inspire and lead people — in the absence of something that promotes the desire to change? A hospital in the Pittsburgh area has two ICUs run by two different people. One ICU has managed to reduce the nosocomial infection rate to zero, but they have not been able to transfer what they have done to the ICU at the other end of the building. They can't even go from one end of the building to the other end of the building, so what's going to be the force that will get people to improve quickly? What is going to be the incentive to do that, even given that the leaders have good values, good heart, and good vision?

JEFF LOZON: I think that is an excellent question. The fact that it can't be transferred from one ICU to the other ICU speaks to how difficult knowledge translation is. The problem is not learning new things. It's giving up old things. And part of it is asking different things of organizations and of frontline caregivers. For example, consider the broader question of patient safety. We should have been talking about it for a long period of time, but we didn't begin to speak about it in any great depth until To Err is Human came out with all of that good data about how many people die unnecessarily in American hospitals. It has now been replicated across most of the western world, as far as I know. And now we are asking people to do different things: we are instituting things like surgical pauses in our organizations; we are building patient-safety information systems that we wouldn't have built before. But it's not going to happen quickly, and it's a cultural phenomenon as much as anything else.

PAUL ARMSTRONG: I enjoyed the presentations. I would like to ask Jeff a few questions. It has been a while since we worked together at St. Michael's Hospital, and I want to pick up on your comment about values. A place like St. Michael's has a very special value system with a long history. How do you transplant the values of a hospital to a healthcare system, which is more centralized? And have you any thoughts about the current Alberta revolution — about diffusion of values in a system that is changing?

The second question is this. You have been with Infoway for a while. Many of us have watched the hundreds of millions of dollars that have gone into that and have been looking for the product. You alluded to the medical profession's coming around. What are your thoughts about the impediments to an electronic health record, such as privacy issues? What disruptive phenomenon do we need in order to implement the electronic health record — because we haven't got there, and it would be a tremendous advantage.

The third question is what are your thoughts about the alignment of health science and health care?

JEFF LOZON: Let me talk about the values question. As Paul has alluded to, there was a long history of values in St. Michael's, but I don't believe that values-based care or values-based leadership is the sole purview of organizations that have had a religious background. I think that values can be and need to be built in at all levels, and it goes beyond the creation of a value statement. It goes into educating leaders about values. It goes into maintaining consistency of purpose. It goes into building values into performance-management systems. It goes into rewarding on the basis of value-based activities, and there are clear ways that you can measure that. Values-based care is not a function of any particular type of organization. It can be done in lots of different organizations.

The Canada Health Infoway initiative is a long, slow process. The report they produced about midway through indicated that it was about a \$6.5-billion to \$7-billion per year effort to build an electronic health record for Canada. Infoway is probably now at a little less than \$2 billion, so they have a long way to go. I personally am a supporter of Infoway. It may not have been seen much at the clinical coalface, but most provinces in Canada now have or are building central diagnostic-imaging systems that they would not have had without Canada Health Infoway, where radiologists can read and consult on images in a way that was not possible before. I think they are doing good work. It's just a long, slow process.

In response to the last question, about health science, I have a strong bias around health research that goes back to when the Medical Research Council of Canada was transitioning to the Canadian Institute of Health Research. Much of the money and the impetus for that change came from the federal government under the guise of being a way to build prosperity in our country — that if you put money into research, you are going to build a more prosperous Canada. I think perhaps that's true in the long run, but it is definitely not true in the lifetime of a government, which is what they measure. So, frankly, we are now being hoisted with our own petards to some extent, because governments want to see the economic kick that we told them we were going to have. They need to be able to go back to their voters and say that this is money well spent and thoughtfully allocated. The simple fact of the matter is that the results will come, but they will come much later than the timeframe would allow.

LORNE TYRRELL: Can I just make a brief comment on that, Jeff? A few years ago, the Mayo Clinic surveyed the patients who flew in as to why they came to the Mayo Clinic, and it turned out that the most important reason was that the doctors there did research. It's an interesting perception. Perhaps governments don't see it that way, but often people do.

ROBERT BROOK: We did an enormous modelling study of implementing an IT system in the US Assuming that we can get over the problem of having a unified patient identifier, which will make the system much messier, we calculated about \$100 billion worth of savings when the system is up and running in about 15 years, assuming that people actually use the information in it. The winners will be the drug companies, because, as I told you, a real problem in the US is getting the right drugs to people with chronic disease. The losers will be doctors and hospitals, because better control of chronic disease will decrease hospitalizations and doctor visits. So there are real winners and losers, and that's going to require a major cultural shift.

This was the only study, by the way, in the field of health services on which the Republicans and Democrats agreed; they wrote a common commentary in *The Washington Post*. The head of the Congressional Budget Office, who scores such reports, said that we don't have any evidence that doctors will change behaviors, and if they save money on chronic disease, they will just spend it on something else in health care, so there will be no savings. Because of those concerns, they rated the introduction of IT systems as providing "no savings" to the federal government budget.

Regarding the second question about values, I am all for values, but what skills should we be teaching health professionals that we don't teach them now? That to me is where the forefront is — ensuring that everyone gets those skills. I can't tell you whether research studies support it, but I can tell you what Virginia Mason Hospital in Seattle did. They were going to go out of business because they were so high-cost and so inefficient, but they were a good hospital. They took all of their leadership team to Toyota and actually made the head of surgery sit with a stopwatch on the floor of an assembly plant and begin to understand that you have to measure things in order to improve performance.

Most people who have gone into medicine have very good values and work very, very hard. The question is can we quickly give them a skill set that will help generalize what's going on? The answer is that the academic institutions,

whether they are public health schools, management schools, or medical schools, need to figure out how to develop a skill set to get doctors to work in teams with other health professionals to make change more quickly. I am in a great academic institution at UCLA, but the School of Public Health doesn't view that as their mission; the management school is not particularly interested, even though they train public sector people; and the medical school does nothing in this area. If you have the values, maybe the next step is to come up with a very aggressive skills-development program.

TOM FEASBY: Could be right. Tom Noseworthy.

TOM NOSEWORTHY: Dr. Brook, I wonder if I might pick your brain for just a moment on appropriateness methodology. A group of us have been working for a year or so on appropriateness of joint replacements. We have spent a lot of time looking at the RAND/UCLA method, as it is unquestionably the gold standard around which to develop net clinical benefit considerations. But it seems apparent that there is a missing voice, in that the receiver of care, the patient, is not factored in. It seems that when doctors and patients are discussing interventions like joint replacement, there is a phenomenon whereby the physician lays out the net clinical benefits, and then something goes on in patients' heads that has to do with their willingness and acceptance of the procedure, their concept of what is appropriate for them. What in your opinion is the right way to bring in that broader type of methodology? Net clinical benefit doesn't cut it anymore. Patients have their own views, particularly as hip replacements are being done at a younger and younger age; and, quite frankly, there probably is a place for methodology that brings in the views of decision makers and policy makers on what's appropriate, given that they have to pay. Any thoughts about how we should expand methodology beyond net clinical benefit?

ROBERT BROOK: I believe I would start with the RAND/UCLA appropriateness method. There have been about 5,000 studies of it around the world, and its reliability and validity have been well established. And it overcomes a couple of the biases that exist in other efforts. It is evidence-based, to the degree that evidence exists, and it uses a system that prevents one person from dominating the conversation.

Now, how to implement it. If somebody offered me the job of running CMS [content management systems] for Medicare, I would immediately try to get a regulation passed to allow the appropriateness assessment to be a benefit that patients could opt out of. They should know that they are entitled to it and that it is free, but they could opt out of it. To implement it, I would have the doctor and the patient sit down in front of a computer and use a web-based appropriateness-assessment tool. It takes about a minute to enter the information needed to come up with an appropriateness score. The doctor and patient could then discuss differences of opinion about what they have read.

We have talked about dividing the method so that the literature and experts would provide probabilities and patients would provide individual utilities. Some people have tried to develop that kind of software, and it is worth experimenting with. There is so much misinformation out there. For example, when we interviewed mothers of children getting ear tubes, this is the way the conversation went on the phone. The primary care doctor or the intern or pediatrician said, "You ought to go see an ENT doctor. Maybe your kid needs tubes. Schedule an appointment with the ENT doctor." The ENT doctor turned around and said, "Your doctor sent you over here for a tube. When should we do the procedure? Would you like it this week or next week?" Nobody did an assessment of whether a tube was really needed.

I think that the first step is to make sure the right questions are asked, the right tests are done, and the information is put together. I wouldn't use it as a regulatory or utilization-review mechanism. I would use it as a way to stimulate a conversation between the doctor and the patient. And I would bet that you could do both of the things that you want to do. I would also do research to figure out how to do patient utilities and how to get patients to mean that. That is

really hard. Now, I lied to you. I have done that with my smart physicians. I have tried to get them to write health status statements, from popping pimples to saving a life. The heuristics of people are that they never assign low probabilities to rare events. Operating on and saving the life of a person with an appendix is only 20 times more valuable than popping a pimple on a person with mild acne, based on utilities given by informed, knowledgeable people that understand numbers. This problem in math and heuristics is an obstacle to moving forward. That would be a marvellous area in which to spend research money.

Presentations and Panel Discussion

TOM FEASBY: We are going to shift gears a little bit now and hear about health system reform and improvement from an Alberta perspective. Two of our speakers, doctors Duckett and Baker, have very recently moved to Alberta; but they have had enough time, I think, to get a good sense of the situation. It will be very interesting to hear their opinions reflected in their previous experience.

I am pleased to call as our first speaker the Chief Executive Officer of Alberta Health Services, Dr. Stephen Duckett.

Presentations

Dr. Stephen Duckett, Chief Executive Officer of Alberta Health Services

I would like to start by talking to you a bit about the framework we are adopting in Alberta Health Services to help us think about some of issues that were canvassed today by both Bob and Jeff.

The first issue is what affects the utilization of health care. Of course, the first thing you think about is the size and age of the population. Secondly, utilization of health care is affected by the incidence of acute illness and the prevalence of chronic disease. There is no simple and scientific translation between incidence of acute illness or prevalence of chronic disease and healthcare utilization, because it is mediated by whether a person adopts a sick role. Whether or not a person has a propensity to adopt the sick role may be influenced by location: that is, Albertans might be more stoic than people from British Columbia or Ontario. I have no idea whether that is the case, but when I went to my first Canadian Finals Rodeo, I saw a lot of people with casts on their hands hopping on horses in a relatively dangerous way; and I thought, well, they obviously don't feel as if they need to adopt the sick role.

But let's assume they adopt the sick role and they turn up somewhere for care. You have to hope that they turn up at the right place for care. They might decide that, because they have a cough, the appropriate thing to do is to see a doctor rather than go to a chemist's shop and get some sort of soothing medication, or go to a pub and get some other sort of soothing medication. Assuming that they end up at the right setting, what is the probability of provision of contemporary best-practice care? Bob highlighted the issue of there being substantial variability in utilization rates across Alberta. Obviously, one of the issues for Alberta Health Services is whether we can standardize care, both geographically and within institutions. Finally, the cost of healthcare utilization is affected by the efficiency with which care is provided. Given the topic of this forum, "Maximizing Health System Performance: Cost Containment and Improved Efficiency," typically we would think only of the last element of that cascade as the thing that is driving efficiency, when in fact all of the previous components probably have a bigger impact.



So what are we doing about all of that? Obviously, it is possible to influence the incidence of acute illness and the prevalence of chronic disease through strategies for prevention, self-management, and primary care. Similarly, it is possible to influence the probability of someone's adopting the sick role through diversion strategies. Health Link Alberta, for example, might influence people's behaviour. Another example would be advertising that encourages people to go to an influenza assessment clinic rather than to an emergency department. We had, I think, more than 10,000 people attending our influenza assessment centres over the last couple of weeks, all of whom were diverted from emergency departments. We might also give people informed consent about the outcomes of treatment as part of a strategy to get them into the right care setting. We might also think about how we can influence the probability of provision of contemporary best-practice care. Here again, we have a number of strategies. In particular, we are going to rely on our clinical networks to say what best-practice care might be and how it might be structured, and then think about how we can implement that across the province. Another way to do that will be through improved decision support. We are looking not only at decision support for clinicians, but also decision support for patients so that they can be assisted in selecting the right care setting and in becoming informed about what would be contemporary best-practice care for them. Finally, we are going to address efficiency of care through activity-based funding to be rolled out over the next couple of years, starting with nursing homes and moving on to other care settings.

If we are all about maximizing health system performance, the topic of today's session, then we need to take a very broad perspective on what we mean by efficiency. The economists think of efficiency as being of three kinds: technical efficiency, allocated efficiency, and dynamic efficiency. But, typically, economists are tarred with the brush of assuming that there is only one sort of efficiency, namely, technical efficiency — the ratio of output to input — whereas we need also to think about whether we are doing the right thing. Are we actually providing the right sort of care? This was the theme of Bob Brook's talk. I am arguing that we should take a very broad view of efficiency and address efficiency issues with multiple instruments and interventions, not all of which may at first appear to be related to questions of efficiency. Thank you very much.

TOM FEASBY: Thanks, Stephen. Very efficient talk. We will have time to ask Stephen for a little more elaboration on some of these issues as we go further into the panel discussion. It is my pleasure now to move from Alberta Health Services to the Ministry of Alberta Health and Wellness and ask the Deputy Minister, Linda Miller, to address us.

Linda Miller, Deputy Minister, Alberta Health and Wellness



Today we are talking about maximizing health system performance, and since I have been sitting in the deputy's chair — and I think long before — that is, fundamentally, what we have all been talking about. We are all well aware of the structural changes that Alberta has made over the last couple of years, and we are starting to see some benefits of those. We are also seeing some transition challenges — they are in the headlines every morning — but I think we have to expect that with such a massive reform. People often ask me what I would see if I had a crystal ball. My crystal ball isn't all that crystal on some days, but a couple of areas that I would like to comment on are the use of evidence in decision making and the agenda for research and innovation, which is, I think, absolutely critical to moving forward.

As you know, we are in a process right now, with a committee chaired by Mr. Fred Horne, of looking at how our legislation can be renewed. This is also a key element of how we have moved forward structurally. I also expect that

you are going to see some movement in government over the coming months in the way we address health technology. Estimates of the expenditures on the introduction of new technologies range from 35 to 65 percent of the healthcare budget. Quite frankly, as you all know, we don't have a good handle on that, and I don't think any healthcare system in the world does. However, I do believe there is a concerted effort by government to address that particular problem. We need to look at exactly how we are going to do that and what role each of us is going to play. I expect that there will be some decision over coming months with regards to that.

There is also a need for disinvestment from certain obsolete services. We have never tackled that agenda, and it is long overdue. It is going to be very tough to do, because it will involve contractual commitments with provider groups that will have to take this particular challenge very seriously. Notwithstanding the great deal of work that the province needs to do in this area, it is of note that Alberta is one of the three provinces in Canada that have any meaningful health-technology assessment capacity. We have a long way to go, but we certainly are diligent in working towards that goal.

Without question, decisions have been made in the past, and probably will be in the future, that were not always based on a lot of evidence. We all know that, and I believe previous presentations have commented about that. Often the toughest part of moving toward evidence-based decision making is changing behaviour that has been engrained in our psyche for the last 50-plus years. Right now, I don't know how we are going to tackle that, but I know that is the question of the day.

I want also to comment on the need to get a better handle on our research and innovation agenda. Through the Ministry of Advanced Education and Technology, we finally have a research agenda in Alberta, and a great deal of good research has been done in this province. We want to leverage those skills and capabilities, but clearly we do not have sufficient resources to do everything we might like to do. And notwithstanding resource issues, I think it is prudent to focus on our priorities and our skills because only in that way can we be good at what we do.

To go back to my little crystal ball, I think in the coming months we are going to see much more discussion from government on health technology, on using evidence to make better decisions, and on getting agreement on the research agenda in this province. These will be coupled with the good work already underway in restructuring the healthcare system, addressing scopes of practice, et cetera. I think we have come a long way toward maximizing the performance of the health system, but, clearly, we have got a long way to go yet.

TOM FEASBY: We have heard from Alberta Health Services and the Alberta government. It is now time to hear from another partner in this healthcare system, one of the newest Albertans, Dr. Phil Baker, who came to us just three months ago from Manchester in the United Kingdom and is the Dean of Medicine and Dentistry at the University of Alberta.

Philip N. Baker, Dean, Faculty of Medicine and Dentistry, University of Alberta

It is with a little trepidation that I stand up talking about maximizing health service performance, because I am an obstetrician, and amongst health specialties, we have been arguably one of the most challenged in grappling with evidence-based practice. I can think of many aspects of our practice that are more akin to witchcraft than genuine evidence-based practice. Those of you who have had a child or who have sat through your partner's labour will remember the cardiocograph, the machine that monitors the baby's heartbeat and the uterine contractions. We have done a plethora of randomized controlled



trials. We have done meta-analyses. We have done systematic reviews. And all of those have suggested that, apart from a small number of high-risk women, these cardiocographs have a detrimental effect on outcome. They increase the intervention rate, caesarian sections, et cetera, with no the discernible benefit. But, as Linda was alluding to, moving from clear, solid, unequivocal evidence to actually altering performance and behaviour is a very, very difficult challenge. In every continent, at every minute, we continue to rely on these machines, practicing our enteric rather than evidence-based practice.

I thought I would start by emphasizing our mission. I am speaking on behalf of the two faculties of medicine in the province. As our mission statement emphasizes, what we are talking about today is a key component of our faculties' practice: "...dedicated to the optimization of health through scholarship, leadership in our education programs, in fundamental and applied research and in the prevention and treatment of illnesses in conjunction with Alberta Health Service and other partners." This isn't an option. It is part of our key mission.

What are our responsibilities when it comes to containing costs and optimizing efficiencies? Clearly, as academic institutions we have a role in the assessment of treatment and clinical management through clinical epidemiology, through assessment of outcomes, through evidence-based medicine, through the refinement of clinical guidelines, et cetera. We need to contribute to the task of distinguishing between what is simply novel and exciting — the toys for the boys — and what is essential and of clear patient benefit. We have to contribute to assessing the cost-benefit ratio. New drugs and innovations are among the biggest drivers of cost, one example being enzyme-replacement therapy, which costs a quarter of a million dollars per patient per year. We need to be assessing the number required to treat to increase survival, and to be stimulating participation in the debate about benefits and costs.

As an academic institution, it is also our job to assess clinical service and processes. We need to expand research programs in quality and process improvement. Basic science has a key role, and I wholly endorse what Linda Miller said about the need to have clear research priorities. The days of smearing our research across every aspect of the discipline have to end. We need to identify the areas in which Alberta is leading or has the potential to be world-leading. But we shouldn't forget the significant advances that come from basic science, in quality, cost savings, and so on. A very pertinent example, with Lorne Tyrrell sitting squarely in front of me, would be the hepatitis vaccines.

The research that we do has to be real. It has to be relevant. It has to be applied. Academic leadership is required in endorsing, in encouraging, and in emphasizing the need for an evidence-based culture. Research must be a team effort. It has to be done in partnership. We need to be sharing data on outcomes and process measures, and to be sharing information technology and implementation plans. Decisions have to be based on quantitative assessment and ongoing evaluation.

As an academic institution, we need to be optimizing our medical training. We need to work closely with the government health service to meet changing workforce needs. Getting that wrong and having either a surfeit or a deficit of particular skill sets is one of the most expensive drivers of cost. And, as we heard earlier from Bob, concepts of cost containment and efficiency need to be included in the curricula of our various disciplines.

We need to establish partnerships in order to reduce infrastructure and resource redundancy. For example, we could be sharing training strategies and combining efforts in clinical trials. I would like Alberta to have a common portal for clinical trials in order to maximize the benefits of our partnerships with industry, and to do everything we can do to diminish bureaucracy and share experiences around ethics. In my former role, we developed research passports, whereby an investigator with ethical approval in one institution would have access to the whole region. It's going to be tough, but we have to make choices about province-wide specialist services. We need to consider how to reduce duplication of tertiary and quaternary services. This is going to require partnerships, careful joint planning, and joint

strategies. Since coming to Alberta, I have been very encouraged by the consensus-building and the enthusiasm of partners at the University of Calgary in developing joint strategic initiatives. We are, as many of you know, exploring new frameworks for academic health science centre models.

Academic medicine's other role is to ensure a return on investment. Our health science campus needs to be an economic engine, a platform for health research and research funding. One of the outcome measures on which I, Tom, and our colleagues get assessed is our research income — the dollars attracted and generated from research funders or from partnerships with government or industry. It is worth emphasizing that the choice of investment, be it charitable funding or industrial money, is largely based on research leadership, that is, the key individuals who are driving the research programs. We are emphasizing that we are attracting patients from outside the region to the two largest centres in Alberta for clinical services.

Healthcare innovation is another means of ensuring a return on investment. We are beginning to look at points of leverage, such as how we relate molecules to clinical phenotypes and outcomes. It is important that we go forward as a partnership, because new diagnostic tools, drugs, and endpoints require platforms. They require clinical data. They require pathology laboratories. We need to ensure that in our efforts to economize, we don't deconstruct some of these important platforms. Spin-offs take time, and even if they are not commercial successes, spin-off companies can be economic successes, resulting in high-quality jobs and wealth investment in the province for decades to come.

I was interested in Bob's comments about incorporating healthcare innovation into the assessment of academic faculty. It is challenging, but we are developing frameworks for including healthcare innovation in our criteria to promote.

I think that all of us are seeking a productive partnership in which the sum exceeds the parts, in which the health sciences universities play a crucial role in providing platforms and research in partnership with Alberta Health Services. If we combine our two synergistic universities with a unified provincial health service, then I think we will have an entity that can become internationally competitive. And, clearly, that partnership needs to extend to other government agencies and to funders, such as charities and industry. If we can generate a return on that partnership to create what we are all looking for — synergistic use of existing resources, high-quality jobs, wealth, spin-offs, innovations, investment, improved health and outcomes — then we really will have made a difference. Thank you very much.

Panel Discussion: All participants

TOM FEASBY: I would like to invite all of our speakers and Mr. Fred Horne to join us on the platform for what I hope will be a lively question-and-answer session. There has been much food for thought this afternoon. We have a very interesting panel, representatives from different areas of the health system, as well as academia and government, and lots of questions that we should be addressing. We will start with Dr. Lorne Tyrrell.



LORNE TYRRELL: Thank you very much. I want to thank all of the speakers. I have really enjoyed today's session, and I think some very important things have come out.

I'm going to address this question to Dr. Brook. You advocated that medical schools, physicians, and others start looking at ways, even when we are at the top of our game, to create disruption and improve the way we are doing

things. You put much of the responsibility for leading this disruption on physicians and on teaching in medical schools. Our concern is that we have had two waves of major change in this province in which the physicians have been actively excluded from much of the decision making. I don't know how you change the culture if you don't support and work with the people who are going to implement the system, but there is still an attitude that the physicians created the problem rather than that the physicians are a solution to the problem. There is tremendous talent in the academic health centres in both Calgary and Edmonton — people who are willing to take part in this — and the slow acceptance and uptake of those offers is one of our major concerns. I would like to know, and I address this to Stephen Duckett as well as to Dr. Brook, how we can get more involvement of the people who really want to help, and who, I believe, are very anxious to help in this situation?

ROBERT BROOK: I am going to throw a challenge at you. The only short-term way to control costs is to improve the treatment of chronic disease. You have a universal healthcare system with a universal claim system. I don't suppose that it would take you more than a day to identify the 5 percent of people in Alberta who use 80 percent of the healthcare dollars and to find out how many of those are being managed by academic medical centres. The challenge I would throw out to you is, within a year, to develop a culture that views every emergency-room and hospital visit by one of these patients as a failure of the care system, and to design care systems at your institutions that provide the basis for teaching people how to be change agents. If you took this one step forward — to go where the money is and change the concept of failure in your clinical practice so that it is a failure for any one of these people to be in the hospital — maybe the government would not exclude you the next time they design a contract. In my days at Johns Hopkins years ago, the asthma group, even when they had no effective treatments for asthma, viewed it as an absolute failure when any child got admitted with asthma. They had an extraordinary care system that made it very unlikely that any child in Baltimore with asthma would need to be hospitalized, even with the medicines that were available way back when. I think you could do this, and maybe it would lead to a series of very constructive conversations with the government. Be first at the table, if you haven't done it already.

LORNE TYRRELL: Let me say that we are in the process of doing it. We have done it in congestive heart failure, we have done it in renal dialysis, and we are doing it in diabetes. We have active programs being developed in all three of those areas, which account for a fair amount of our chronic disease.

ROBERT BROOK: And, for patients with one of those chronic conditions, can you actually show the government that you are providing a care system within academic centres that saves 50 percent of the dollars used for a similar patient not treated in the academic centre, and that you are training your doctors how to do that? If you are doing that, then that ought to be disseminated south of the border. I work at the third best hospital in the United States, and I don't know a single person there who views it as their personal failure when people with these chronic conditions get admitted to the hospital because somebody somewhere in the system didn't answer a phone call or didn't provide care, or it was hard to get an appointment — all those things that we endure in the United States. If you are doing it, hats off to you.

LORNE TYRRELL: I am sure there are people here that are involved in those programs that could comment better than I can.

TOM FEASBY: Thanks, Lorne. Stephen.

STEPHEN DUCKETT: It's an interesting challenge, isn't it? What is it that might facilitate physician involvement or engagement, and how do you achieve that? There is a question of structure. Do we have the right structures to involve physicians? If we do have the right structures, will we get physicians interested in being involved? And if we

get physicians interested in being involved, will they have the right skill set? I think that is the right cascading of questions.

But let's look at these questions in reverse order. Do we think that physicians have the right skill set to be involved in system-wide issues? They are not trained in that mode of thinking. For better or for worse, there is very little in medical education, nursing education, or any other professional education that develops in our health professionals the skills or the academic foundation to be involved in health policy and priority setting. It is possible to retrain physicians, nurses, and other professionals, and there are actually quite good programs to do that, but research of that kind has certainly not been — in Australia, at least — the most valued in academic health sciences centres. So it is a bit of a challenge.

But let us say that we can address the skills question. We then have to address the interest question. I am acutely aware that there are probably three and a half million Albertans who want to give me advice on how to do my job. We need to develop the structures to harness in a coherent way the people who have advice to give us and the skills and interest to do so. There are two major mechanisms we are using. First are the clinical networks to which I alluded. We are setting up eight or so in the immediate future, and I think we will have the first meeting of at least five of the clinical networks in the very near future. One of the high-priority issues that we are going to have them address is that of variability in care across the province. For example, when the populations of Edmonton and Calgary are standardized for age and gender, we find that people who live in Edmonton have roughly a 5 percent greater chance of being admitted to hospital in any given year than people who live in Calgary, and they have a 15 percent higher number of bed days per person than people in Calgary. This is an opportunity for us. There are seven ICD chapters that account for 80 percent of that difference in bed-day utilization, and one of them, I think, is endocrinology. Those differences are driven by differences in changing practice patterns, and those practice changes can be altered only by engagement of the physicians who make those decisions.

TOM FEASBY: Thanks, Stephen. Any further comments from the group? Bob.

Robert Brook: In the inner circles of the healthcare reform debate in the United States, there is very little physician representation, and many people view that as a mistake. It would be great if the conversation could change a little bit — if the economists and policy people could ask physicians what skills or knowledge they need in order to become more useful partners. I have worked with many physicians, and I can tell you that some of the smartest medical directors of million-people organizations cannot understand the basics of sampling theory. I mean the basics, at the level of a high school statistics course. It would be great to explore how to improve what partners bring to the table so that the conversations are more efficient and effective. I truly believe that reform is going to occur only when clinicians, policy people, and economists work together, and I don't think it's ever going to happen without that skill building.

Physicians received hundreds of millions of dollars to lead the area-wide peer-review organizations in the United States, and they had no statistical training whatsoever, none. They needed to understand variation in rates, and they didn't even know what a rate was, let alone what variation was — and these are all people that got through medical school. We held a three-day symposium to teach them basic statistics so that they could engage with the data and contribute to the conversation. If there is some way of building skill sets so that dialogue becomes more efficient and effective, that may be a way out of the problem. It will take it from an emotional issue to a skill-building issue.

TOM FEASBY: This issue of physician engagement in the health system is a complicated but important one. Harkening back to something you said earlier, Bob, about medical organizations not being sufficiently engaged, we could start with the Alberta Medical Association or the American Medical Association. I think those organizations need to take a

lead in the implementation, assessment, and policing, if you like, of clinical practice guidelines, just to take one example.

LORNE TYRRELL: I just want to say thank you, because the whole purpose of my question was to bring forward the need to have more of that dialogue between the physicians and the administration and to come to these joint solutions. That is going to be the critical aspect of the buy-in.

ROBERT BROOK: One of my roles is running a coronary-outcome reporting system for the State of California, where an enormous number of bypass surgeries are done. The reporting system is a public process involving mostly cardiologists, cardiac surgeons, and a few health services researchers. We have tried to teach them basic risk-adjustment methods, and I can't tell you the number of years it has taken. Teaching people basic concepts of statistics is really hard. Maybe the universities could take on the mission of ensuring that physicians that are going to engage in the process as leaders of their professional specialty organizations actually learn something in this area. For example, deans at Harvard take a two-week executive course on how to run an organization before they become a dean of an institution. They do it all in two weeks, but at least they do two weeks.

TOM FEASBY: We don't really want to discuss the training and education of deans at this venue, but I will say that we are lucky because the president of the Alberta Medical Association is a health services researcher and really does understand this stuff.

TOM NOSEWORTHY: I would like to change the subject to the one that Phil Baker got us into, and that is the topic of a provincial academic health sciences centre. It is an idea that I quite support, but it's not a new idea. In fact, it has been around quite a long time, although not necessarily in this province. The academic developments in the US, which are actually academic-industrial complexes, trace their roots from the military-industrial complexes of the 19th century, and have some of the same problems.

Not infrequently in the last ten years, some of the academic health sciences centres in the US have run into problems simply staying viable. In my view, much of that has had to do with their business models and the relationship between the academic health sciences complexes and the healthcare system. This brings me to my point. I am worried that we are going to create a problem whereby Alberta Health Services does its thing, the academic health sciences centre does its thing, and they are not properly connected. I am enthusiastic about the provincial healthcare delivery system and about a provincial academic health sciences centre, but what are you going to do to avoid another big silo and another big gap? What I have seen so far doesn't look very promising.

PHIL BAKER: There are all sorts of models, and, certainly, we shouldn't be starting to talk about detailed structure and governance. The concept of an academic health sciences centre that we are espousing involves all of the partners and certainly involves Alberta Health Services as an integral component. You know, as do many of the people in the room, that many challenges have come from our establishing a research silo, an education silo, and a clinical service delivery silo. That is reflected in the difficulty in knowledge translation, such that a basic biomedical discovery takes, on average, around 17 years to translate into a patient benefit. It is only by integrating to a much greater degree educational research and clinical agendas that we can shorten the time it takes for that translation. It would be a travesty if a discovery in a laboratory in Calgary or Edmonton tomorrow didn't help a patient until 2026.

TOM NOSEWORTHY: I want to know how you are going to stop the silos from developing? What are your mechanisms? What are your structures? What are your processes? I am not hearing it, and I don't think Stephen is heading in the same direction as both of you. What will you actually do?

STEPHEN DUCKETT: What Alberta Health Services did was to propose to the two universities that we establish a committee to bring together senior staff from Alberta Health Services, the University of Alberta, and the University of Calgary, to meet on a regular basis to exchange ideas and address issues of commonality. Secondly, we are planning to recruit a senior vice-president of research who will have responsibility for the research side of Alberta Health Services. Part of that person's role will be to make Alberta Health Services a research-friendly organization in some of the ways that Phil described in his presentation. We have designated Chris Eagle to be responsible for developing informal relationships with the University of Alberta, and David McGran for developing informal relationships with the University of Calgary. If there are the silos that you refer to, then we have informal mechanisms that can break down those silos to facilitate those relationships.

JEFF LOZON: In the United Kingdom, when we evaluated academic health sciences centres as part of an international panel, there were a variety of criteria. One or two are relevant, I think, to your question, Tom. First, the centres had to have a very clearly defined governance structure outlining how all the parties fit together and who did what. It was therefore very clear that there was a structure and a set of processes. Second, all of the participants, whether they were hospitals, universities, or mental health agencies, had to commit to a common strategy that had as its outcome the health of the population.

LINDA MILLER: Across government ministries, I think we are seeing much more collaboration than ever before. If indeed your worst fears come true, Tom, I suspect that the government would have a lot to say about that, and, as we know, government can make changes. But, without question, the ministries need to ensure that the partners work together and reduce the silo problem that we have had for so long. It is at the front and centre of every deputy minister's agenda.

PHIL BAKER: I don't think we underestimate the challenge, Tom. I was integral in some of the successful UK bids for academic health sciences centres, and they were challenging. You do have to work out the detail of structure and governance, and we are not there yet, but we are working together on it. The benefits are great. I have seen these working. I have seen the change that they make. I remember the Regius Professor at Cambridge saying that the reason that Adam Rooks and the university had a genuine academic health sciences centre is that he insisted that his office be next door to the chief executive officer of the hospital, and they met every day. It is only by increasing communication, by each understanding the language and the culture of the other, that these organizations can work together. We shouldn't underestimate the challenge, but we are going to give it a serious go.

TOM FEASBY: Thanks, Phil. I just want to reiterate that Phil and I are both on the same wavelength in this, representing our two faculties of medicine. We are committed to working closely with Alberta Health Services in breaking down these barriers and silos.

Paul Armstrong: With the talent in front of me, representing the spectrum of health care, government, and academia in our province, I need to ask another question, which I will direct first to Stephen Duckett and then to others. Before I ask Stephen the question, I want to make two comments about his comments. As someone who has had a little experience in five different healthcare systems in three countries, my own observation is that physicians' leadership capability is about as good as economists'. None of us has a monopoly on leadership, and I note that the successor at St. Michael's Hospital is a physician, as are the CEOs of the other two major hospital systems in Toronto. So, at the moment at least, Toronto has decided that physicians are capable of leading healthcare systems. Whether that is more generally applicable is open to question.

Second, while we should compare Calgary and Edmonton, I think we need also to compare both centres with others around the world. I am not sure whether Calgary has too few bed days or Edmonton too many or whether, if we

adjusted for the socioeconomic status and the age and other things, they would come together. I think in order to maximize performance we do need to look at outcomes and to do risk adjustment, as Bob Brook has said.

My question is as follows: Would Stephen Duckett be prepared to take forward the notion of partnership that we have heard from the Alberta government and from the two academic health centres and couple the provision of health care with the education of the next generation of healthcare professionals and the seeking of new knowledge through research to advance the system performance? Is it time to look at the mission statement of Alberta Health Services in the spirit of aligning it with what we would like to do across the spectrum of health?

Stephen Duckett: I didn't say that it is not possible for physicians to have the right set of skills, and as you know, there are a couple of physicians in the executive of Alberta Health Services. One of them, Dr. Chris Eagle, is trained and experienced in these areas, so I don't have a problem in that regard.

The mission statement of Alberta Health Services was developed before I arrived. The one change that I made was to add the word 'quality', which wasn't there before. It may be appropriate to add the words 'education' and 'research' as well. I don't know whether the University of Alberta's mission statement has health care in it, but the faculty's mission statement does. Whether it is in the university mission statement or not, Alberta Health Services cannot survive in the long term unless there is a flow of students entering health professions at the universities, since part of what the universities do is train the future workforce of Alberta Health Services.

It is also important from Alberta Health Services' perspective that we are exposed to new ideas, and that ideas that are generated in Edmonton, Calgary, Boston, and London are translated into clinical practice in Alberta. Whether we are efficient in doing that is another matter, and whether the extent to which we do it would be influenced by a mission statement is another measure as well. I am in favor of shorter rather than longer mission statements. We have to demonstrate that if we are interested in education research, we will actually invest in education research, and do it sensibly.

TOM NOSEWORTHY: May I make one comment, Mr. Chairman? If Stephen Duckett would like a brief mission statement, in the interest of brevity, could I suggest three verbs: care, teach, and discover?

TOM FEASBY: There you go. Fred, would you like to comment?

Fred Horne: Thank you. I am not going to presume to be able to speak on some of the questions that Stephen has just addressed, but I can certainly tell you that if you are an MLA from this city or from the capital region, as I am, you will be aware that the focus on integration of clinical services, education, and research was indeed a major theme and was held in this city as a major source of pride in our achievements in health care prior to the move to a single health region. That integration, while first and foremost valued for what it can do for the improvement of health outcomes, is also one way to reposition our economy for the future, to move toward a knowledge-based economy, or at the very least to broaden the base of the economy that we now have. And, of course, I don't have to tell anyone in this room that our dependence on resource revenue, while it has been very good to Alberta, in times such as these does stretch us. We are seeing that now in some of the budget challenges that Stephen is dealing with. In terms of overall public policy, I think everybody should feel assured that academic medicine is a priority for the premier and government. Rather than lament what we might have lost in the move to a single health region, I think most of my colleagues would agree that it is an opportunity to further strengthen integration. As elected representatives, we have to leave decisions about how it happens — as Tom said, the processes and mechanisms — to the people in the senior chairs to work out. It is something that we're watching closely and comes up often in discussion.

As Linda has said, at a department level, there is a great deal of integration between the Advanced Education and Technology and Health and Wellness. That is supported strongly by the premier. We have instituted what are called ministerial working groups to allow us to look at things on a cross-ministry basis. It wasn't very long ago that a cross-ministry initiative wasn't much more than one minister signing off on another minister's business plan and agreeing to cooperate in a very unspecific way on a shared objective. We realize that integration is integral to our future success, so we are reforming our processes within government. We consider this a great opportunity and are watching very closely to see how that integration plays out in the new structure.

TOM FEASBY: Thanks, Fred. Bob.

ROBERT BROOK: As an outsider, I would like to say that the fact that you are all around the table asking these questions in an open format and that nobody has yet left or walked out is very refreshing. But there is a dilemma that you are facing, and I will put it in terms of drugs, because we just did the study. If doctors prescribe brand-name drugs that are more expensive than generic drugs that are just as good, somebody has to pay for that, whether it's the taxpayers or the patients. The result is a loss in health and welfare at the present time. But you can show through analysis that making the pharmaceutical companies richer will produce a sustained health benefit in the future, so that there is a trade-off between health now for the population and access to drugs in the future. Nobody ever told me that I, as a doctor, trade health now for health in the future.

Academic health centres have a problem in a time when they are facing money problems. Probably over 90 percent of the graduates from our medical schools, even from Harvard, go into practice, and they ought to have learned clinical skills that put the patient first, save money, deal with population health, and do all those things that a health service wants to have happen now. At the same time, we want research funding and long-term investments. There's a trade-off between those two investments. What I have observed here in Canada is that you will make this trade-off more wisely than any other place in the world. I really do think you can do that. As somebody on the "health now" side occasionally, I would love to get academic health centres, even in a time of resource constraint, to take more responsibility for the health now of the people they serve. I don't understand why that has been so difficult, why we teach doctors to operate inappropriately, and why we tolerate things that we could clean up. That might go a long way toward getting the government to invest more money in research.

Lastly, bureaucrats seek out people that will support them. Whether they do it consciously or subconsciously, that is how we work as a bureaucracy. Within a democracy, we form coalitions between patient groups, professional groups, and government groups. Breaking down those silos is really tough. The one that I have been trying to break down in the United States is one that we haven't talked about: how does the academic health centre merge with the university and learn from sociologists, psychologists, anthropologists, and criminologists how to produce health? If you want to know how to change your population health status, the answer is not going to come from health services, but from changes in government funding and the way we allocate resources and merge different parts of the university to work together on health. I am in a medical school, and the people in the School of Public Health want to draw and quarter me most days because I am getting 95 percent of the university resources. They understand that doing things in a public health way would make a bigger change, but they can't get a nickel. The medical school can build a new building with a \$200-million endowment, but nobody comes forward and endows the school of public health.

I hope that the relationships that you all have will make it possible for you to tackle these issues that literally nobody else has dealt with civilly. We don't come to blows, but when I listen to this conversation, I think that you are as close as anybody has come to expressing your opinions and staying in the room.

TOM FEASBY: We will bring our discussion to a close now. I would like to thank all the panellists for a very interesting and stimulating discussion. I think that Bob said it very well at the end. We have great challenges, but it is so refreshing to see this disparate group of people from high levels of the health system sitting down and discussing our serious issues in a collegial fashion. I think we have a tremendous opportunity here in Alberta. Thank you very much.

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INSTITUTE OF
HEALTH ECONOMICS
ALBERTA CANADA

IHE INNOVATION FORUM III: MAXIMIZING HEALTH SYSTEM PERFORMANCE

Cost Containment and Improved Efficiency



December 1, 2009
Edmonton, Alberta, Canada
Westin Hotel

Program

Moderator Dr. Tom Feasby

University of Calgary; Board member, IHE

3:00 Welcome and Opening Remarks

Lorne Tyrrell, IHE Board Chair

Professor and CIHR/GSK Virology Chair, University of Alberta

Fred Horne, MLA

Chair, Standing Policy Committee on Health

3:30 Speakers/ Keynote Presentations

Robert Brook

RAND Health

Jeff Lozon

CEO, Revera Living

4:40 BREAK

5:00 Presentations and Panel Discussion

Stephen Duckett

President and CEO, Alberta Health Services

Linda Miller

Deputy Minister, Alberta Health and Wellness

Dr. Philip Baker

Dean of Medicine and Dentistry, University of Alberta

Panel and Audience Discussion

6:15 Evening Reception and Dinner

Greetings on behalf of the Government of Alberta by Fred Horne

Speaker Biographies

Dr. Tom Feasby



Dr. Tom Feasby has been Dean of the Faculty of Medicine at the University of Calgary since 2007. Previously he was Vice-President of Academic Affairs at Capital Health and Associate Dean in the Faculty of Medicine at the University of Alberta. He is a practising neurologist and a health services researcher, who studies the appropriateness of health care interventions. Dr. Feasby has been a long time member of the Institute of Health Economics Board and was recently appointed to serve on the Minister's Advisory Committee on Health. He completed his BSc and MD at the University of Manitoba, followed by a research fellowship at Institute of Neurology in London, England and professorships in neurology at the University of Western Ontario in London, Ont. From 1991 to 2003, while leading the U of C Faculty of Medicine's Department of Clinical Neurosciences, he was also head of the Calgary Health Region's regional

Department of Clinical Neurosciences, where he assembled an internationally-recognized clinical neurosciences group.

His record of research excellence is reflected in more than 100 research publications in areas such as neurologic diseases and the appropriateness of health care interventions, his supervision of numerous graduate students, and his involvement in professional societies and organizations including the CIHR Institute of Health Services and Policy Research, the Canadian Academy of Health Sciences and the American Academy of Neurology.

Dr. Lorne Tyrrell

Lorne Tyrrell is the Chair of the Board, Institute of Health Economics. He is the CIHR/GlaxoSmithKline Chair in Virology at the University of Alberta. Dr. Tyrrell is also the Chair of the Board of the Alberta Health Quality Council and Chair of the Gairdner Foundation and a member of the Research Council of the Canadian Institute of Academic Research. In 2004, Dr. Tyrrell completed 10 years as the Dean of the Faculty of Medicine and Dentistry at the University of Alberta.

Dr. Tyrrell has won numerous awards at the University of Alberta (Rutherford Undergraduate Teaching Award, J. Gordin Kaplan Research Awards, and the University Cup). He won the ASTech Award for Research in 1993 and the Gold Medal of the Canadian Liver Foundation in 2000.

Dr. Tyrrell was appointed to the Alberta Order of Excellence in 2000, an Officer of the Order of Canada in 2002, and a Fellow of the Royal Society of Canada in 2004. He was awarded the F.N.G. Starr Award from the Canadian Medical Association in 2004 and the Principal Award of the Manning Foundation in 2005 for his work on the development of oral antivirals for the treatment of HBV.



Mr. Fred Horne



Mr. Fred Horne was elected to his first term as a Member of the Legislative Assembly for Edmonton-Rutherford on March 3, 2008. In addition to his regular duties as MLA, Mr. Horne serves as chair of the Standing Committee on Health, deputy chair of the Premier's Council on the Status of Persons with Disabilities and is a member of the Agenda and Priorities Committee, Private Members Business Committee, Legislative Offices Committee and the Select Special Chief Electoral Officer Search Committee. Prior to serving with the Legislative Assembly of Alberta, Mr. Horne worked as a health policy consultant for over 25 years, serving various government bodies and regional health authorities in addition to the public, private and not-for-profit sectors.

Throughout his career Mr. Horne led initiatives to improve access and quality in Canadian public health care and has worked extensively with the Conference Board of Canada, the Alberta government and the Mayo Clinic. An avid volunteer, Mr. Horne has served on numerous boards including: Alberta Mental Health Board, Athabasca University, Mediation and Restorative Justice Centre of Edmonton, Canadian Student Debating Federation. Additionally, Mr. Horne is a former debater and coached Team Canada at the World Schools Debating Championships. For his continued contributions to the development of debate and speech programs Mr. Horne received the Queen Elizabeth II Golden Jubilee Medal in 2002. Mr. Horne and his wife, Jennifer, have lived in Edmonton since 1992.

Dr. Robert Brook

Dr. Robert Brook, M.D., Sc.D., F.A.C.P is Vice-President and Director of RAND Health, Professor of Medicine at the David Geffen School of Medicine and Professor of Health Services at the School of Public Health at the University of California, Los Angeles, where he also directs the Robert Wood Johnson Clinical Scholars Program. A board-certified internist, he received his M.D. and Sc.D. degrees from Johns Hopkins University. He has been on the medical school faculty at UCLA since 1974, and divides his research time between UCLA and RAND. A prolific scholar, Bob has published over 300 peer-reviewed articles in the course of his long and productive career. He conducted pioneering work in the field of quality measurement. He operationalized the concept of appropriateness by establishing the scientific basis for determining whether various medical and surgical procedures were being used appropriately. More than any other individual, he is responsible for focusing policymakers' attention on quality-of-care issues and their implications for the nation's health. Most of the quality of care and health status measures being used today throughout the developed world were developed by Bob or by research teams that he led.



Bob has received numerous professional honors, including the Peter Reizenstein Prize, 2000, for his paper "Defining and Measuring Quality of Care: A Perspective from US Researchers," the National Committee for Quality Assurance Health Quality Award for pursuit of health care quality at all levels of the health system, Research! America's 2000 Advocacy Award for Sustained Leadership at the National Level, the Robert J. Glaser Award of the Society of General Internal Medicine, the Richard and Hinda Rosenthal Foundation Award of the American College of Physicians, and the Distinguished Health Services Research Award of the Association of Health Services Research. He is an elected member of many professional organizations, including the Institute of Medicine, the American Association of Physicians, the Western Association of Physicians, and the American Society for Clinical Investigation. He was selected as one of 75 Heroes of Public Health by Johns Hopkins University and is a member of the Johns Hopkins Society of Scholars. In

2005, Bob was awarded the Institute of Medicine's prestigious Gustav O. Lienhard Award for the advancement for personal health care services in the United States. In 2002, Bob was named chair of a panel to advise the Office of Statewide Health Planning and Development on how to report outcomes of coronary artery bypass graft surgery at California hospitals. In 2007 Bob received the David E. Rogers Award from the Association of American Medical Colleges. This award recognizes a medical school faculty member who has made major contributions to improving the health and health care of the American people.

Mr. Jeff Lozon



Jeffrey C. (Jeff) Lozon is a health care professional with more than 20 years experience in leading large health care systems and academic health sciences centres in Canada. In June of 2009 he became President and CEO of ReveraLiving – a major provider of long term and residential care services. Prior to that Jeff was with the St. Michael's Hospital as Executive Vice-President and Chief Operating Officer. In 1999, he was seconded to serve as Deputy Minister of Health and Long-Term Care for the Province of Ontario for a year. In 2000 He returned to St. Michael's Hospital as President and Chief Executive Officer. He led St. Michael's Hospital through a major financial and strategic turnaround, which included eliminating a debt of \$63 million, and positioning the hospital as a model of fiscal responsibility, management and patient care. During his appointment at St. Michael's Hospital, Mr. Lozon has sat on the Board of Directors for a variety of organizations. Mr. Lozon is a member of the Board of Directors for Canada's Top 40 Under 40 and for the University of Guelph. He also serves on the provincial Panel On The Future Role of Government and as the Vice Chair of Canada Health Infoway, which is responsible for the development of a Pan Canadian Electronic Health Record. From 2006 – 2009 he was appointed by the Prime Minister as the inaugural Chair of the Canadian Partnership Against Cancer.

Mr. Lozon is an Associate Professor in the Department of Health Administration at the University of Toronto. In the past, he has held other faculty positions at the University of Alberta and the University of Saskatchewan. Mr. Lozon has held executive positions at some of Canada's most well known health care institutions and agencies. From 1987 to 1991, he served as President and Chief Executive Officer of the Glenrose Rehabilitation Hospital in Alberta, Canada's largest specialty rehabilitation referral centre, where a new, state-of-the-art facility was completed on budget and ten months early during his term. From 1985 to 1987, he was the Executive Director of the Manitoba Health Organizations Inc., which represents 220 active treatments and long-term care health facilities. In 1998, Mr. Lozon was the recipient of the CEO Award of Excellence in Communications, presented by the International Association of Business Communicators, to recognize leadership in executive commitment to communications.

Dr. Stephen Duckett

Dr. Stephen Duckett has spent his professional life working in health care. As Alberta Health Services' new President and Chief Executive Officer (effective March 23, 2009). Dr. Duckett has more than 35 years of experience in health care.

Prior to coming to Alberta, Dr. Duckett was Chief Executive Officer of the Centre for Healthcare Improvement for Queensland Health in Australia. (Queensland occupies the north east of the Australian continent and is roughly triple the size of Alberta; Queensland health is the public provider with approximately 60,000 staff).



Before that, he was a professor of Health Policy and Dean of the Faculty of Health Sciences for 10 years at La Trobe University in Melbourne. He also chaired the board of a major public health provider, Alfred Health. Dr. Duckett's work in health care also includes two years with the Government of Australia as Secretary (equivalent to Deputy Minister) to the Department of Human Services and Health.

In 2006, Dr. Duckett received a Doctor of Business Administration in Higher Education Management from the University of Bath in the United Kingdom. That same year, he also received a Doctor of Science Award based on his publications from the University of New South Wales in Sydney, Australia. Dr. Duckett has a PhD in Health Administration from the University of New South Wales and a Bachelor of Economics (Economics and Pure Mathematics) from the Australian National University in Canberra, Australia.

Ms. Linda Miller

Linda was appointed the Deputy Minister of Alberta Health and Wellness on December 10, 2008 where she is responsible for the leadership to assure the delivery of health services to Albertans.

Linda obtained her Masters of Health Services Administration, Baccalaureate Degree in Nursing and Certificate in Information Technology Management from the University of Alberta. She earned her Diploma in Nursing from the Royal Alexandra School of Nursing.

Linda has been with the Department of Alberta Health and Wellness since 1994. Her previous post was as the Assistant Deputy Minister of Information Strategic Services where she was responsible for leading the strategic planning process for new information system development in the Ministry and for overseeing the provincial implementation of the Electronic Health Record.



Dr. Philip Baker



Dr. Philip Baker became the Dean of the Faculty of Medicine & Dentistry at the University of Alberta effective September 1, 2009.

Prior to joining the Faculty of Medicine & Dentistry, Dr. Baker was director of the Manchester Biomedical Research Centre - a facility associated with the National Institute of Health Research in the United Kingdom - and Professor of Maternal and Fetal Health at St. Mary's Hospital at the University of Manchester. Dr. Baker trained in Nottingham, U.K., Pittsburgh, Pa., and Cambridge, U.K. From 1989 to 1991, he sat as the British Heart Foundation Clinical Research Fellow before continuing his training at the University of Cambridge. Dr. Baker returned to Nottingham for two years and then accepted the American College of

Obstetricians and Gynecologists Travelling Research Fellowship at the Magee-Womens Research Institute in Pittsburgh.

In 1995, he again returned to Nottingham where he would remain until 2001, splitting duties as Professor of Obstetrics and Gynecology and as the head of the City hospital division of the School of Human Development. Dr. Baker moved to the University of Manchester in 2001 to direct the newly established Maternal and Fetal Health Research Centre, where he was instrumental in fostering collaborations and interactions between scientists and health-care providers. He served as Associate Dean for Research within the Faculty of Medical and Human Sciences, and both Associate Head and

Head of the medical school in Manchester, the largest in Europe. Dr. Baker is well known for his work as an obstetrician scientist. His research focuses on pregnancy complications, including miscarriage, preeclampsia, preterm labour, fetal growth restriction and stillbirth. His major research contribution has been to increase understanding of the life-threatening complication pre-eclampsia and develop therapeutic strategies.

He has written more than 200 scientific publications, more than 50 review articles and 14 books. He edits the journal Current Opinion in Obstetrics and Gynecology. His prizes and awards include the 2004 Sir William Liley Lectureship (Perinatal Research Society) and the 2005 President's Achievement Award of the Society of Gynecologic Investigation, the first time this award had been made outside North America. In 2008 he was elected to the Academy of Medical Sciences.