



Présentation du Dr. David Gratzner, médecin et auteur, entre autres, du livre *Code Blue: Reviving Canada's Health Care System*, le 1er avril 2004, devant les invités de l'Institut économique de Montréal.

Presentation made by Dr. David Gratzner, physician and author of, among other books, *Code Blue: Reviving Canada's Health Care System*, on April 1st, 2004, before the Montreal Economic Institute.

I always enjoy speaking invitations; they present an opportunity to meet people and exchange ideas. But I particularly like invitations from the Montreal Economic Institute because I have so much respect for you, Michel, and for your staff. You run an outstanding organization. Of course, I'm not the only one to hold this view. As many of you know, the Montreal Economic Institute has recently won the Templeton Award for 2004, given annually to just 15 think tanks in the world. This is the intellectual equivalent of winning the Grey Cup or the Tour de France - well done.

Today, I'm going to speak about the pharmaceutical industry. It's a topic much in the public mind as of late. Earlier this year, *Time Magazine* ran a cover story on prescription drug prices, concluding that drugs cost so much (particularly in the United States) because of corporate greed and political sloth. A couple of weeks ago, *60 Minutes* looked at the pharmaceutical industry, also in an unkind light. Editorialists of a major Canadian newspaper recently opined that the practices of Big Pharma border on the "unethical."

Never has the industry faced such sharp attacks; never has the risk of crippling government regulations been greater. We can summarize the criticisms in six words: too greedy, too profitable, too uncreative. That is, drug companies charge too much for their products; as a result, these corporations run up massive profits (at our expense); and that for all the money, the products aren't even that inventive, often just knock-off or "me-too" drugs.

I will address these points momentarily. But before poking the moist underbelly of health economics and public policy, let me highlight three stories because I think it important not just to speak of policies in the abstract but to appreciate their impact on people.

Story #1: President Calvin Coolidge

As the President, Calvin Coolidge had access to the best doctors in the country. But it did little good when his son fell ill in the mid-1920s. At 16, Coolidge's son enjoyed playing tennis, and indulged his hobby on the White House courts. A small blister on his foot became infected; when infection set in, his son became critically ill. He was dead within three days. The president, one of the most powerful people in his time, crawled on all fours in an attempt to catch a rabbit so that his son could hold it when he died. "In his suffering, he was asking me to make him well," remembered Coolidge. "I could not."

Such tragedies are almost unheard of today. Death by simple infection is almost unknown. Our war against microbes has been awesomely successful. In 1900, polio, tuberculosis, and diphtheria accounted for 50% of all deaths in North America. Today, they account for under 1%.

Story #2: Prime Minister Winston Churchill

Days after the Japanese attack on Pearl Harbor, British Prime Minister Winston Churchill came to the United States to help cobble together the war-time coalition. Well remembered is his stirring speech to Congress and then his equally eloquent address in Ottawa. The latter was followed by his

portrait session with Karsh, the famous Canadian photographer, resulting in the most famous Churchill picture. But in the middle of the trip, on December 26, 1941, Mr. Churchill suffered a heart attack. His physician recommended state-of-the-art care of the time - six weeks of bed rest. Mr. Churchill was too busy. And while he survived the heart attack, his chronic heart problems slowed him physically and intellectually.

Heart attacks are still a common problem. But consider how much less serious they are than just a few short years ago. The death rate from heart attacks and heart failure has fallen from about 300 per 100,000 Americans in the 1940s to 126 today. And the lasting effects of a heart attack have also changed. According to the American Heart Association, 88% of heart attack survivors under age 65 can return to their usual work. In a major international study, the Heart and Stroke Foundation of Canada found that about half heart attack survivors felt their health was better than in the month before the cardiac event.

Story #3: Cyclist Lance Armstrong

Armstrong won the Tour de France for a fifth straight time last summer, establishing himself as one of the greatest cyclists of all time. The 2003 competition was particularly hard for Mr. Armstrong. He was so sick with stomach flu that he almost missed his flight to Paris; in the first week of the Tour, he was involved in a bicycle crash that left another cyclist with a fractured femur; unseasonable heat and humidity left him so dehydrated that he lost more than 10 pounds. It was a remarkable victory. What's even more remarkable, though, is that Mr. Armstrong is a cancer survivor. In 1996, he was treated for testicular cancer that had metastasized. He had 40 tumors in his lungs and two in his brain.

Thirty years ago, a diagnosis of testicular cancer was essentially a death sentence. Twenty years ago, survival rates started to improve, but the cure was only marginally better than the disease. Chemotherapy then lasted up to two years, often leaving patients with nausea and other harsh side effects. Today, roughly 96 percent of Americans survive the illness, just as Armstrong did. And chemo often lasts under 3 months.

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There are two observations that can be made from these three stories. First, the advancement of medical science over the last sixty years has been incredible. For anyone at risk for infection, heart disease, or cancer - which is to say everybody - medicine has become relevant and potentially lifesaving. "I owe my life to cancer research," Lance Armstrong recently observed. Second, the pharmaceutical revolution has played a critical role in this advancement. Think of antibiotics that stop infection, beta-blockers that reduce heart attack mortality by 50% and anti-hypertensives that prevent heart attacks in the first place; and the chemo agents that saved Mr. Armstrong.

Can we quantify how important this pharmaceutical revolution has been? Columbia University professor Frank Lichtenberg, a Fullbright scholar and an economist with an interest in health, attempted to answer exactly that question. He looked at the reduction in death caused by a variety of disease over the period of 1970 to 1991. He estimates that new prescription drugs account for nearly half of the reduction in mortality among different diseases over that time.

"On average, each new drug approved during the period 1970-91 is estimated to have saved 11,200 life-years in 1991."

Now, I'll confess to being a bit skeptical of Prof. Lichtenberg's work. I'm a physician, not an economist, and when you ask me what's made the biggest difference in improving lives, I'd have difficulty quantifying success. Physicians are more knowledgeable than in the past; diagnostic testing is more advanced; surgery techniques have evolved. (Once, when I made a similar comment to economist Milton Friedman, he said: "well, you're a little biased, aren't you, doctor?") But this much is clear: the pharmaceutical revolution is essential to the advancement of medical science. If we appreciate how much medicine has done, we must appreciate the importance of drugs.

And yet, looking across the Western world, it would seem that the pharmaceutical industry was engaged not in life saving work, but frivolous activity. In the 1980s, people spoke of a war on drugs. Today, there's a war on drug companies.

Consider:

- prominent American politicians including several governors have embraced drug reimportation, in effect importing Canadian price controls into the American market;
- Canadian politicians flirt with undoing patent law in the name of charity;
- European politicians are addicted to price controls. And, on top of everything, the pharmaceutical industry faces a backlash by angry consumers.

Let's return to those three criticisms.

Drug companies are too profitable.

Here's what *60 Minutes* had to say: "It may come as no surprise that the pharmaceutical industry is the most profitable business in the United States."

In fact, the numbers suggest something else. The computer software industry enjoys gross margins of 65%. Pharmaceuticals clock in at 60%.

But that profitability, incidentally, drives research and development. Since 1964, the total time required for drug development, from synthesis of the molecule to marketing approval, has more than doubled; now topping 15 years, at least in part because of government regulations. And it's not just the incredible delay that's problematic: Drug companies, according to the Tufts Center for the Study of Drug Development, spend almost \$900 million (USD) to bring a drug to market. Thirty years ago, the cost was a mere \$138 million (adjusted for inflation).

Indeed, drug development has become a complex and often frustrating endeavor.

Drug companies are too costly.

Medicine is not a zero-sum gain. Medications cost money - but they do something. Prof. Lichtenberg has looked at drug spending and total health spending. He figures that every \$1 increase in pharmaceutical expenditures actually lowers hospital spending by \$3.65.

And while some may fret the cost of pharmaceuticals, it's important to keep perspective. Even in the United States, the only market without price controls, seniors spend less on prescription drugs than they do on entertainment.

A friend recently quipped: "The message? Save my life, cure my cancer, clear my arteries, staunch my nausea, but do so for less than I spend on eating out every month. People who think drugs are expensive should consider the cost of not having drugs."

Drug companies are too uncreative.

Most of my comments already have implicitly responded to this criticism. With breakthroughs in the treatment of so many illnesses, the argument that drug companies haven't been creative doesn't stand up to scrutiny. I'll just mention one drug that has recently been approved by the FDA - Avastin. That drug is used in the treatment of bowel cancer. Unlike previous medications, Avastin aims at stopping angiogenesis, the process by which tumours cause blood vessels to grow in order to feed the cancerous cells. Avastin may or may not prove to be a great success but its development may well begin a breakthrough in the war on cancer.

Since we're on the topic of creativity, I want to spend just a moment considering the incredible effort required to bring a drug to market. The way critics describe the process, it would seem that drug development requires no more effort than, say, a bit of time, like making Kraft Dinner. Nothing could be further from the truth.

Just as the father and son tragedy of the Coolidge family explains the limitations of life in the pre-pharmaceutical age, the father and son success of the Sternbach family illustrates the limitations of

drug development in the biotech age. Dr. Leo Sternbach is considered a genius. Now 95, he was born in the Austro-Hungarian Empire. As a young man, he studied chemistry. In 1940, he joined Roche and was assigned to their Swiss laboratory. By offering the job, Roche probably saved Dr. Sternbach's life - he was a Jew and it was the time of the Holocaust. In turn, Dr. Sternbach developed drugs that made Roche roughly \$13 billion over four decades. Among his discoveries: the benzodiazepine class of drugs (sedatives). He developed valium, the most prescribed medicine in the U. S. between 1969 and 1992. In all, he patented 241 drugs.

How did Dr. Sternbach accomplish all this? Apparently, with a kettle and wooden paddle. And, by the way, he often tested drugs on himself to see how they worked.

Dr. Daniel Sternbach, son of Leo, is also considered a genius. He also works for a drug company and is a valued employee. But after 17 years at GlaxoSmithKline, not a single one of his creations has ever made it into our drug cabinets. He holds just 7 patents. The younger Dr. Sternbach, incidentally, doesn't work with a wooden paddle but with advanced computer modeling. And he doesn't try his creations, preferring to use rats instead.

The surprise is not that drug companies don't produce more drugs. The surprise is that they've created as much as they have.

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I've used up most of my time. In a moment, I'll take questions and then we can fully weigh policy implications. At that point, we can talk about the Internet pharmacies, patents, federal drug reviews. We can also, perhaps, discuss mistakes the industry has made in defending itself.

Before we do that, though, let me summarize my thoughts and I can do so in just two words: innovation matters. We've made incredible medical progress in the past 60 years, but many challenges remain. Our chemo agents remain primitive; our understanding of mental illness and its treatment is embryonic; our capacity to reverse heart disease is in its earliest stages. If we want to see further advances, we must have government policy that fosters an environment of innovation and creation. That means a thriving pharmaceutical industry. You cannot have one without the other, any more than you could argue for Christmas without December.

Many politicians have made sport of the industry. We all have a vested interest in seeing that good short-term political gain does not result in long-term medical shortcomings.