

Déjà Vu – A New Coronavirus Challenge

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INTRODUCTION

One of the challenges that physicians face when they leave the job security of clinical practice to work for insurance companies is to adjust to the uncertainties of the business world. We are currently in a period of increased anxiety among insurance company physicians about both their place within their company's value chain, and in some circumstances, their job security. Company downsizing, mergers, and consolidation always carry the risk of a reduction of medical director positions or elimination of whole departments.

Contributing to this anxiety are the changes that are occurring in life insurance companies' approach to risk assessment. The traditional life insurance risk assessment process is time-consuming, invasive and costly. As a result, companies have been exploring methods of accelerating the process to make it less costly, less invasive and to provide a more timely response. Early enhancements have included simplified issue products, triage models, risk scores, and the use of alternative data sources.¹⁻³

The increased availability of individual data, new sources of non-traditional information, and advances in machine learning techniques have created an opportunity for life insurers to embrace innovations in various areas along the insurance value chain. As a result, companies are exploring the use of predictive analytics, predictive modelling, and underwriting automation to assess risk with faster turnaround times, reduced costs, and fewer invasive medical requirements.

Medical director anxiety is not new and despite their continuously changing work environment, they continue to remain key members of a life insurance company's workforce. Over the past 30 years, medical director's position in their company's value chain has been enhanced by a number of timely, unanticipated medical issues. Medical director's contributions to the response to these challenges have demonstrated their unique expertise. Among these challenges have been the arrival of the human immunodeficiency virus infection/acquired immunodeficiency syndrome (HIV/AIDS), the completion of the Human Genome Project with the development of

genetic testing, the development of tumor markers, and the arrival of serious life-threatening infectious diseases.

We are now in the midst of one of those challenges. Since COVID-19 initially emerged in China, the virus has evolved and rapidly spread to other countries as a global threat. All of us have experienced the pervasive impact of the pandemic on our lives. Insurance companies are coping with their own challenges in retaining productivity and managing profitability while maintaining employee health.

This issue of the *Journal* contains 3 articles, which provide an early perspective of some of the important insurance company challenges imposed by the COVID-19 pandemic.⁴⁻⁶ To provide context, we have reprinted 3 articles that illustrate the role of medical directors during previous infectious disease challenges for the insurance industry.⁷⁻⁹

HIV/AIDS – A NEW DISEASE CONFRONTS THE INSURANCE INDUSTRY

In 1981, cases of a rare lung infection called *Pneumocystis carinii pneumonia* (PCP) were found in 5 young, previously healthy gay men in Los Angeles.¹⁰ At the same time, there were reports of a group of men in New York and California with an unusually aggressive cancer named *Kaposi's Sarcoma*.^{11,12} In December 1981, the first cases of PCP were reported in people who inject drugs.¹³ These reports heralded the arrival of the human immunodeficiency virus infection/acquired immunodeficiency syndrome (HIV/AIDS). The insurance industry was presented with a new disease. One for which the industry had not planned or projected reserves.¹⁴ HIV/AIDS changed life insurance underwriting and risk selection completely. HIV/AIDS presented immense social, ethical and financial mine fields. Within a year, legislation followed that threatened the risk selection process. In 1985, HIV testing came along, resulting in the rebirth of laboratory testing as part of risk selection.

Serious ethical issues were raised for which there were no precedents. Do we have to obtain informed consent when we test someone for HIV? Do we have to give a pretest notice? What do we put in that notice? What do we do with an indeterminate HIV test result? How do we inform the applicant if they are positive? Do we do it directly or through their doctor? Do we have to notify the partner of the HIV positive applicant? These were major issues.¹⁵

Within insurance companies, the role of medical directors became much more important. They educated not only the employees, but the executives of the company. They helped design forms for application and testing purposes. The insurance medical director helped determine what tests would be used, at what levels and finally, helped fight the legislation that threatened risk selection.

Leadership was provided from the American Council of Life Insurance, Medical Section, Committee on AIDS. This committee served as an information clearing house not only for the disease itself, but also with respect to legislation and testing procedures. The committee insisted on high standards for the laboratories and insurance medicine. It protected the rights of not only the industry, but also the applicants.¹⁶

Based on the experience with HIV and AIDS, insurance medicine met the challenge squarely and decisively. There were considerable savings to the insurance industry; not only on the bottom line, but also related to the risk selection process itself. Relationships with physicians in the community, the public and lawmakers were also enhanced.¹⁷

A CORONAVIRUS CONFRONTS THE INSURANCE INDUSTRY

On February 10, 2003, *ProMED-mail*, an Internet-based reporting system that provides early warnings of infectious disease outbreaks, posted the following:

*"Have you heard of an epidemic in Guangzhou?
An acquaintance of mine from a teachers'*

[Internet] chat room lives there and reports that the hospitals there have been closed and people are dying.” — Dr. Stephen Cunnion (posted on ProMED-mail on February 10, 2003).¹⁸

The next day, the Chinese Ministry of Health notified the World Health Organization (WHO) of an outbreak of atypical pneumonia that had emerged in Guangdong Province, China, in November 2002. During late February to early March 2003, clusters of atypical pneumonia were recognized in Vietnam, Hong Kong, Singapore, and Canada.¹⁹

Epidemiological investigations revealed that the most likely source for each of these clusters was a physician from Guangdong Province, who had stayed on the ninth floor of a hotel in Hong Kong on February 21-22, 2003. This physician had cared for patients affected by the respiratory illness outbreak, and he had been symptomatic with a febrile, respiratory illness since February 15, 2003.

Genome sequencing analyses subsequently indicated that SARS-CoV isolates from the outbreaks in Hong Kong, Vietnam, Singapore, Taiwan and Canada (Toronto) were closely related and matched the viral isolate obtained from the ill physician from Guangdong Province, thus supporting the epidemiological conclusion that each of these outbreaks was directly or indirectly linked to the ill physician.²⁰

This dramatic chain of events brought to the world’s attention a new respiratory disease, which would be called *severe acute respiratory syndrome* (SARS) and clearly illustrated the potential for spread extensively from a single infected person and to rapidly disseminate globally through air travel. The WHO issued an historic global alert and, together with its international partners, initiated a rapid and intense response to this global public health emergency. The response led within 2 weeks to the identification of the aetiological agent, SARS-associated coronavirus (SARS-CoV), and to a series of decisive and effective containment efforts that interrupted

the last chain of human transmission in less than 4 months.

During the 2003 global epidemic, 8098 cases of probable SARS with 774 (9.6%) deaths were reported in 29 countries.^{21,22} From February to July 2003, Toronto experienced the largest outbreak of SARS outside Asia. The index case in Canada was an elderly woman who returned to Toronto from Hong Kong on February 23, 2003. She had stayed on the same hotel floor in Hong Kong on February 21, 2003, as the physician from Guangdong Province mentioned above. She subsequently developed symptoms of SARS and died at home on March 5, 2003. Several family members also developed symptoms of SARS and one of them presented to the emergency department of a local community hospital, which became the epicentre of the Toronto SARS outbreak. Toronto and its suburbs saw 438 suspected cases of SARS and 44 deaths in 2003-2004, including 3 healthcare workers (2 nurses and 1 physician).^{19,23}

During the SARS epidemic, I was chief medical officer of a large multinational life insurance company (Sun Life Financial) at its head office in Toronto. Sun Life had major operations in Southeast Asia (including China, Hong Kong, the Philippines, and Indonesia) as well as India, the USA, the UK, and Canada. In addition, a part of my day was spent working as a clinical cardiologist in an academic medical center (the Toronto General Hospital/University of Toronto Health Network).

Beyond the traditional responsibilities of a chief medical director, SARs presented many unique challenges. What would be the insurability of applicants in Southeast Asia and on a worldwide basis? Should we limit travel between offices in Southeast Asia as well as the rest of the operations in Canada, US, UK, etc? What should be the operational guidelines for company health centers in each country? Should ex-pats and their families return to Canada? Was air travel safe? Where should the company hold board meetings and agents’ bonus award meetings, etc?

These daily challenges required late night/early morning phone calls to Southeast Asia, daily tracking of public health updates and briefings from the WHO, the Center for Disease Control (CDC), Toronto Public Health, Hong Kong and Beijing Public Health, and daily meetings/conference calls with Sun Life's CEO and senior management.

During this period, part of my day was spent at the hospital seeing patients and doing investigative procedures. Each morning, you had to line up just to get into the hospital, undergoing screening via a questionnaire and temperature assessment. Once in, N95 masks were required in public spaces and when in a room with another person—not just patients. All patients were placed on respiratory precautions, which meant that any time you entered their rooms, you had to wear personal protective equipment (PPE).²⁴

As a cardiologist in a hospital setting in Toronto, this was the only time that I have been afraid for my personal safety in clinical practice. The predominant emotion was a feeling of fear. These feelings of anxiety were directly rooted in the initial unidentified nature of the disease and lack of knowledge concerning how it was spread. The fear was made worse by the potential that you could unknowingly contract the disease and then unwittingly spread it to family and friends. Seeing and hearing about colleagues (physicians and nurses) who were directly exposed to the SARS virus at the hospital (or in some cases in their office practice) and became infected resulting in isolation, hospitalization and in some cases, admission to an ICU, intubated and on a respirator certainly focused one's attention.

In the absence of a vaccine, effective drugs or natural immunity, it is unclear why the SARS epidemic eventually disappeared. The most important explanation was the containment of SARS relying heavily on application of public health and clinical infection-control measures rooted in 19th-century science including testing, isolating patients, sophisticated contact-tracing and quarantining con-

tacts, and screening people at airports and other places where they might spread the virus. Case fatality for SARS was around 10%, and that meant those who contracted the virus exhibited symptoms and became severely ill quite quickly. They ended up in hospital where they could be isolated and so there were fewer cases of transmission between these people and well people in the community.^{19,23,25}

DÉJÀ VU - A NEW CORONAVIRUS CHALLENGE

The fear that pervaded the Toronto area during SARS resurfaced when COVID-19 first appeared in the news. The COVID-19 pandemic has many similarities, but there are also significant differences.

Both are caused from strains of coronavirus, which were completely new in humans. Both lead to highly contagious illnesses transmitted through respiratory droplets. When SARS and COVID-19 were first reported, no diagnostics, vaccines, or therapeutics were available. Subsequent development for COVID-19 tests and vaccines has moved much faster.

Many in the general public assumed COVID-19 would be like the SARS pandemic, affecting relatively few people and, aside from a few cities or regions, not disrupting daily life. But SARS-CoV-2 (the strain of coronavirus that causes COVID-19) would turn out to be a very different virus.

People with COVID-19 appear to shed the virus earlier in the course of their infection than people did with SARS. This has made it more difficult to detect who has the virus and isolate them before they spread it to others. As a result, COVID-19 spreads easily within communities. This was not the case with SARS, which was more commonly spread in healthcare settings. Hospitals became the place where most people contracted SARS. And of those patients, nearly half were healthcare workers who became infected on the job.

It's estimated that 20% of people with COVID-19 need to be hospitalized for treatment. A smaller percentage of this group need mechanical ventilation. SARS cases were, in general, more severe. It's estimated that 20% to 30% of people with SARS required mechanical ventilation.

Estimates of the mortality rate of COVID-19 vary greatly depending on factors like location and the characteristics of a population. Generally speaking, mortality rates for COVID-19 have been estimated to range between 0.25% and 3%. SARS was much more deadly than COVID-19 with an estimated mortality rate of about 10%.

Critically important containment measures have been shown to "flatten the curve" of new SARS-CoV-2 infections, save lives and ease the pressure on healthcare systems and medical supplies. At the same time, there are indications that these and other COVID-19 related measures will, depending on their extent and duration, also impact future mortality and morbidity trends of other areas of disease and health. Although data is not yet available, the reduction in preventive medicine and access to maintenance and acute medical non-COVID-19 care will likely have a measurable effect on mortality. Only time will tell as to the long-term effects on non-COVID-19 related mortality and morbidity.²⁶

There is good news in terms of vaccines. Most of the vaccine candidates that were quick out of the blocks have actually turned out to be successful vaccines in less than a year. We've had some possible vaccine misfires. I don't think anyone expected that something that came together this fast would be without any missteps. Supply-chain issues are a thing right now — that's probably going to get straightened out in the months ahead.

Pandemics have a beginning, a middle and an end. Hopefully we are past the middle now, and we're heading toward the end. It's the nature of pandemics that they don't just suddenly stop and drop; you have to go down the other side of the mountain. There's a degree of symmetry to that. So all the damage

that's been done as the epidemic grew, there's a mirror image to that damage as the epidemic declines. But it's clearly in decline at the moment.

The current dark cloud on the horizon is the novel variants, which is not a huge surprise: viruses mutate. Probably the most concerning questions around novel variants are: do they have increased case fatality, do they have increased transmissibility, and will they continue to change and become vaccine-escape mutants? That's why we have to change our influenza vaccine every year or two, because that's what viruses do.

In the months ahead, this pandemic will transition from being a very widespread susceptibility to an endemic disease, probably with seasonal outbreaks. As we get more people immune, hopefully COVID-19 will recede from the headlines and become a nasty virus — but one of many nasty viruses that we contend with every single year.

As someone said: we're at mile 18 of the marathon. We're tired, and we're not at the finish line. But we're getting there.

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