

The COVID Mitigation Monitoring Project

By Dan Ingram and Dave Ingram

Editor's note: As our readers probably would have guessed, COVID-19 is the main focus of the Risk Management newsletter.

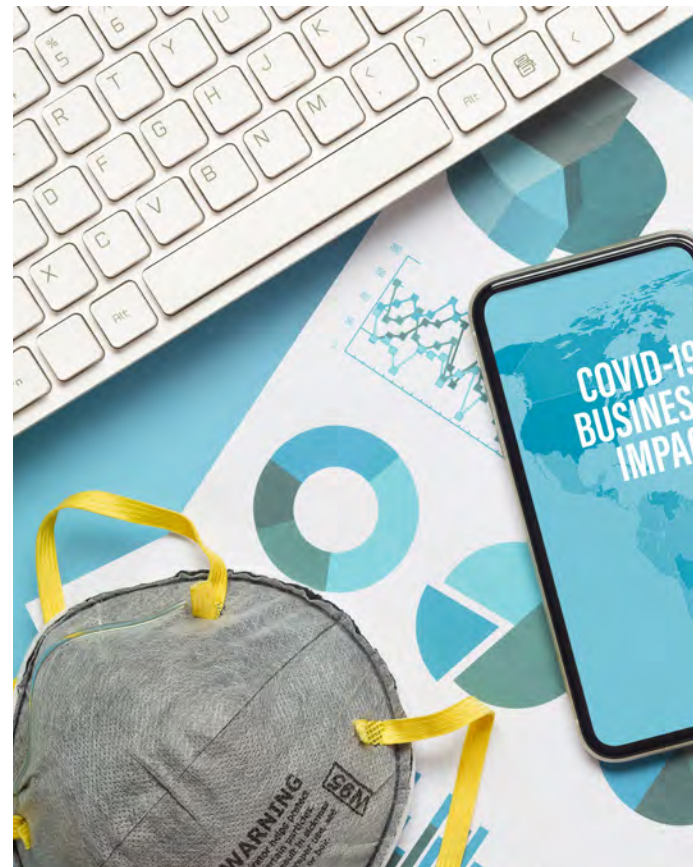
Our first article is meant to raise awareness about the COVID Mitigation Monitoring Project. This study, coordinated by Daniel Ingram and David Ingram, attempts to collect opinions from volunteers regarding the degree of adoption of a list of strategies used by U.S. states to reduce the transmission of COVID-19.

The article is a high-level summary of how the authors are going about the survey, the end goal and how readers can participate.

The summary is followed by the link to the survey itself as well as the latest results of the survey, using data as of August 17. This report is updated every month to reflect new incoming data.

While the news has been flooded with stories about COVID-19 for months, it has been difficult to get a clear picture of the pandemic in the United States. With 50 states each enacting their own mitigation strategies, and little understanding of how those policies are lived by everyday citizens, it is hard to know which mitigation strategies are the most effective. It is because of this uncertainty and imprecise environment that the idea arose for a study comparing hard data about infections and deaths with “the wisdom of the crowds” on what is actually being done in local communities.

The study has two components. First, the hard data comes from a combination of the Johns Hopkins COVID-19 Dashboard and the Centers for Disease Control and Prevention (CDC). This data is used to calculate two metrics based on the idea that a person who gets COVID-19 is typically infected for two weeks on average. The first is the number of new cases in the previous two weeks per 100,000 people. The second is the new infection rate (NIR), which we have defined as one day's percent of the



total new cases in two weeks. This rate can be used at a glance to know if a state or country is increasing or decreasing in infections.

The second component of the study is the “wisdom of the crowd”—a survey of people across the country who give their weekly impressions of which mitigation strategies are in place and how much their communities are adhering to those strategies. The strategies fall into a few broad categories: voluntary or mandatory changes in personal behavior, public services, health sector operations and business operations.

To date, the study is in a pilot phase wherein four weeks of data have been collected from approximately 30 respondents each week. This data has been organized into weekly reports identifying mitigation methods that are in the widest use and comparing it to weekly data on the infection rate and number of new cases in various states. A monthly report investigating the relationships between mitigation strategies and the infection

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rate in specific states has also been produced. The goal is to be able to provide states, local governments, businesses and individuals with a suite of tools to understand what would be the most effective mitigation strategy for their community.

We are moving out of the pilot phase for this project but to do that, we need many more observers in every state. An observer does not need any special training and everyone's observations

will be aggregated to achieve our overall view of mitigation practices in each state.

Please enter your observations at <https://www.surveymonkey.com/r/CVDStrategies>. You can browse our pilot reports and commentary at <https://covidmitigationmonitoring.wordpress.com/>. ■



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COVID-19: Dealing With the Crisis

Operational Management From an Actuary's Point of View

By Institut des Actuaires

Editor's note: Our second COVID-related article assesses the impact of the ongoing pandemic on the operational aspects of everyday insurance business.

The complete analysis from the French Institut des Actuaires (Institute of Actuaries) is available in French through this [link](#). The article published here is an English translation of the executive summary for that report. It presents the main topics discussed in the broader report: lessons learned, actions needed and questions that still need to be answered when it comes to operational management in uncertain times.

The Observatoire actuariel de la crise du coronavirus (Actuarial Observatory of the Coronavirus Crisis) is a unique initiative of the Institut des actuaires (Institute of Actuaries) consisting of the establishment of a process of qualitative sociological surveying during [France's] shutdown and the two weeks following it.

Based on an idea originating from the Accroche-com agency, it was implemented by the PhD Talent team, in collaboration with the Institute of Actuaries.

The Actuarial Observatory of the Coronavirus Crisis aimed to collect, in real time, the perceptions and analyses of actuaries, women and men of all generations and from all professional backgrounds, of this unprecedented crisis.

This analysis, which was based on a sociological approach, was led by Pauline Vessely, doctor in Sociology of Culture and associate researcher at CERLIS.

The collection of views was done through:

- weekly collective interviews carried out with 10 representative groups; and
- self-administered questionnaires.

All the data collected will give rise to several types of feedback.

This report reproduces the observations made with respect to operational matters:

- How did the companies continue to operate?
- What are the consequences for the sectors?
- How will they manage the induced risks?
- What are the expectations for the future?

WHAT LESSONS?

Continuing Business Activities: Business Continuity Planning (BCP) and Risk Management

- BCPs are essential:
 - Remote working was a new reality for 90 percent of the workforce, mobilizing adaptability and responsiveness.



- The implementation was all the more effective than the constraint had been anticipated (in material, managerial terms, etc.).
- Risk management procedures have limitations:
 - the difficulty of assessing the risks in an emergency situation;
 - the multiplication of processes subject to human hazards;
 - the means made available in the event of the occurrence of risks; and
 - the interconnection of risks.
- Remote working itself generates new risks:
 - psychosocial, linked to the reconciliation of professional activity and personal space;
 - security/confidentiality, for the same reason; and
 - cyber: data protection, multiplication of flows, use of personal equipment.

Impacts on the Insurance Sector

- Beyond the operational aspects, the crisis will have significant effects on individual sectors, expected on the 2020 results, but especially 2021 and, probably, 2022.
- The impacts will be different depending on the diversification of activities and products, and dependent on:
 - the resumption of economic activity,
 - the level of contributions/charges, and
 - the postcrisis relationship with policyholders.
- The crisis has revealed new needs in insurance, and also in terms of insured relationships, which could impact the businesses.
- The quantification of impacted activities (losses and gains) will not reach a relevant level of confidence until the last quarter of 2020.

ACTIONS TO BE IMPLEMENTED NOW

Since the impossible is no longer so, prepare for it:

- by generalizing and refining the BCPs, integrating an urgent, qualitative and quantitative investigation of cyber and psychosocial risks linked to their implementation;
- by expanding the monitoring of risks: no longer just what we have observed, but what we could observe; and
- by developing a transversal approach to risks, to improve operational management.

At the Level of the Individual Sectors, Reflections to Be Initiated Without Delay

- On products and contributions, customer relations:
 - New risks and new organizational contexts call for a rethinking of the guarantees offered to policyholders.
 - As a corollary, the question of their financing arises.
 - An expected improvement in the insured relationship calls for new services and new approaches.
- Monitor future impacts on the activity:
 - Compensation for operating losses (if applicable), work stoppages, partial unemployment, health portability and especially asset portfolio, are the main reasons for concern.

Within Organizations, a Functioning Office Will Be Reinvented

- Working from home: a relevant tool but carrier of new risks
 - The introduction of widespread and intensive remote working has stimulated new ways of working.
 - In terms of profitability, improvements should be anticipated for both companies and individuals.
- New risks must be considered:
 - the psychosocial risks already mentioned;
 - cyber risk, to be understood urgently via:
 - ◊ a qualitative analysis;
 - ◊ an analysis in terms of time and availability;
 - ◊ a differentiated analysis by economic sector.
- Digitalization, a development that has become urgent:
 - Digitalizing a maximum of tasks/functions would facilitate the management of health risk by optimizing the possibility of remote work.
 - Digitalization is therefore returning to the top of the agenda.

QUESTIONS TO ASK FOR THE FUTURE

The call for a *proactive* rather than reactive approach to risk management

- The crisis calls for in-depth reflection on how to manage temporality on two levels:
 - How to build scenarios without historical data?
 - How to combine action and reflection in times of crisis?
- Risk mapping is deemed useful, with two avenues to follow:
 - the documentation and
 - the imagination.

- The observed interconnection of risks suggests a transversal reading, and not a global one.
- Documenting the recent experience should make it possible to adapt the BCPs, with the aim of improving the operational management of such events.

Questioning Models—to the Heart of Actuarial Science

- One observation: The models are far from the reality of such an extreme crisis.
- Transformations are therefore inevitable, especially in terms of:
 - taking into account the interconnection of risks,
 - impact on mortality tables, and
 - simultaneity of pandemic risk/decline in assets.
- Beyond that, there is a need to revisit the culture of figures, the limits of tools and methods:
 - How to produce figures that resonate with human reality?
 - How to open up actuarial science to other disciplines (in general and throughout professional life)?

Contribute to the Reflection on the Positioning of the Sector

- The reputation of the insurance industry has suffered from the crisis. Actuaries can take part in its overhaul:
 - by promoting (and enhancing) virtuous behavior for both insurers and policyholders; and

- by teaching insurance and how it works.

- Adapt the regulatory framework to better serve the general interest
 - The regulatory framework contains a paradox: stability, but also a relative “rigidity” of the system.
 - It should, in the future, motivate the reflection of all stakeholders to take into account, in particular, the possible occurrence of such a context.
 - The involvement of actors on the ground with regulators, perceived as too limited, will need to be strengthened.

Work Toward an Open-Minded Culture of Risk and Its Businesses

- The crisis has changed the approach to risk:
 - observation of a paradox of the precautionary principle, which reinforces the need (real or perceived) for control, even though reality contradicts the possibility of eliminating all risk; and
 - appearance of new risks arising from risk aversion (sedentary lifestyle vs. health risk), which must be monitored.
- Risk education is becoming a new collective issue: actuaries can contribute to the dissemination of a “reasonable” risk culture, also conducive to a better understanding of the issues and professions.
- Science (actuarial science in particular), its approach and its resources can and must be useful for enhanced decision making: How to communicate it better? ■



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ASOP 56, Modeling, and the Practicing ERM Professional

By Ken Williams

Editor's note: In a previous issue of this newsletter we highlighted the importance of the new Actuarial Standard of Practice 56 that is coming into effect Oct. 1, 2020. While the focus of the earlier article was broader model governance, this article from Ken Williams tailors specifically to enterprise risk management practitioners.

Shelia is an FCAS for a midsize multiline insurance company responsible for a small enterprise risk management (ERM) department. Her department is tasked with developing and maintaining capital enterprise risk models that are used to evaluate extreme risk and to allocate capital to different financial units. Her department is also responsible for monitoring and mitigating all financial risk for the organization. Shelia has a small staff: two aspiring actuarial candidates and an analyst with a background in statistical modeling.

Shelia's department created an ERM capital allocation model that uses many inputs, such as an economic scenario generator to assist with interest rate and market projections. The ERM capital allocation model also uses information from catastrophe models that were developed by a consulting firm the company hired.

What are Shelia's professional requirements in her duties? What type of guidance is available for her to ensure that she is meeting applicable standards of practice?

In compliance with the Code of Professional Conduct, all actuaries are bound to apply all applicable standards of practice within the areas of their assignments. For actuaries practicing in the United States in the area of ERM, compliance often means knowing and applying three Actuarial Standards of Practice (ASOPs): ASOP 46, Risk Evaluation in Enterprise Risk



Management; ASOP 47, Risk Treatment in Enterprise Risk Management; and the recently introduced ASOP 55, Capital Adequacy Assessment. But these are not the only ASOPs that the ERM actuary is responsible for knowing. For developing and using models, Shelia needs to be aware of the new ASOP 56, Modeling, which is effective Oct. 1, 2020.

BACKGROUND ON ASOP 56

ASOP 38, Using Models Outside the Actuary's Area of Expertise, is currently the only ASOP that addresses modeling. ASOP 38 was developed in 2000, a time when catastrophe models were just starting to work their way into property ratemaking. Notably, ASOP 38 applies only to property-casualty work, rendering it less useful to ERM practitioners who often take more holistic views of multiline organizations.

As modeling became more prevalent in actuarial work, the Actuarial Standards Board (ASB) began developing a more robust set of ASOPs and looked at expanding ASOP 38 to apply to more practice areas. Through the work of the ASB, ASOP 56 was developed. ASOP 56 went through several drafts over many years before being approved in December 2019 and effective for actuarial work after Oct. 1, 2020. In addition to the new ASOP

56, the current ASOP 38 is in the process of being revised to be Catastrophe Modeling for All Practice Areas, but the changes are yet to be approved.

HOW THE MODELING ASOP APPLIES TO ERM PRACTITIONERS

ASOP 56 has the important distinction of applying not only to actuaries who are building models, but also to actuaries who use models developed by others. The first line of ASOP 56 states: “This actuarial standard of practice (ASOP or standard) provides guidance to actuaries when performing actuarial services with respect to designing, developing, selecting, modifying, using, reviewing, or evaluating models (1.1).” ASOP 56 goes on to read: “An actuary using a model developed by others in which the actuary is responsible for the model output is subject to this standard.” In this statement, ASOP 56 declares that any actuary using model results in their actuarial work must follow the standard of practice in reviewing and using the model.

As with almost all standards of practice promulgated by the ASB, ASOP 56 defines several important terms that are used throughout the standard, including *data*, *input*, *intended purpose* and *model risk*.

After the definitions follows the requirements and considerations an actuary must adhere to. The reviewing actuary’s first requirement is to know the model’s intended purpose. The standard sets forth several requirements for the actuary who is building or reviewing the model, including evaluating model structure (3.1.4), verifying data appropriateness (3.1.5) and completing an assumptions review (3.1.6).

Once comfortable with the model’s intended purpose, the actuary is required by ASOP 56 to have a basic understanding of the model whether the actuary is expressing an opinion or communicating the model results. Among the considerations an actuary must understand about the model used are important dependencies, major sensitivities and known weaknesses or limitations that could have material implications.

Often when using models, the ERM actuary will rely on models that others have used or will rely on experts who are more

familiar with the field being modeled. This may be the case for Shelia when using the catastrophe models developed by the consulting firm. The modeling standard allows for such reliance but does set forth requirements that the actuary have a basic understanding of the model. Documenting one’s reliance on others when using the model is also an important requirement.

Just as ERM practitioners evaluate all risk through the ERM control cycle, a similar process must be done for models, including an ERM model whose intent may be to evaluate risk of the company. Two of the most important pieces of reviewing a model—and possibly the most important considerations for an ERM actuary—are evaluating and mitigating model risk. The standard has several requirements for model evaluation and mitigation, including model testing, validating output, peer reviewing the model, evaluating governance and controls, and reviewing potential opportunities for model misuse. For most ERM actuaries, these processes and functions are what they are doing every day as part of the ERM control cycle.

ASOP 56 concludes with requirements for documentation and disclosures. For the modeling standard of practice, Shelia is **required** to disclose several things, such as stating the intended purpose of the model, any material inconsistency in the assumptions, any unreasonable output based on the assumptions, material limitations and weaknesses, and the extent of reliance on others or experts. Beyond the ASOP, these disclosures should also be extremely helpful for Shelia in answering the first wave of questions from model users.

As a self-regulated profession, it is of utmost importance that actuaries follow our professional standard. This new modeling ASOP is an important addition to our standards of practice and gives all actuaries, including Shelia, a valuable resource to ensure that their modeling work is completed with actuarial skill and care. ■



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