The COVID-19 Pandemic: Insights and Implications for Insurers

Hosted by the International Insurance Society and The Institutes

Daniel Zimmerman, M.D.
Julianne Callaway
Tim Rozar

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Agenda

Opening Remarks
Michael J. Morrissey, President and Chief Executive Officer, International Insurance Society (IIS)

The Medical View
Daniel Zimmerman, M.D., Senior Vice President and Chief Medical Director, Global Support Team

Research Highlights
Julianne Callaway, Vice President and Actuary, Strategic Research

A Look to the Future
Tim Rozar, Senior Vice President, Chief of Staff to the CEO

Q&A
Michael J. Morrissey, President and Chief Executive Officer, International Insurance Society (IIS)
The Medical View

Daniel Zimmerman, M.D.
Senior Vice President and Chief Medical Director,
Global Support Team
The Medical View

- Epidemiology and Trends
- Prevention
- Clinical Manifestations
- Treatment
- Recovery and Immunity
Epidemiology and Trends

Terminology

SARS-CoV-2 – the name of the virus
COVID-19 – the name of the disease caused by the virus

- Impact of social distancing
  - Differing strategies: Sweden

- Opening-up strategies
  - Testing and contact tracing
  - “Suppress and lift”
  - Mobile phone apps

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Prevention

- Masks and face coverings
- Social distancing
- BCG vaccine – protective?

Coalition for Epidemic Preparedness Innovation

- Created in 2017
- Stimulate and accelerate the development of vaccines against emerging infectious diseases and enable access to these vaccines for people during outbreaks
- Moving quickly to rapidly develop vaccines against COVID-19
- [www.cepi.net](https://www.cepi.net)

Vaccine update

- Leveraging prior research
- Accelerating the timeline – collaboration
- Many candidate vaccines and strategies*
- Safety and efficacy
- Long-term protection needed
- Older individuals – immune response
- Mass production
- Acceptance of vaccine by people?

*virus, viral vector, nucleic acid, protein-based

Clinical Manifestations

Risk factors for serious disease
- Age 65 and older
- People in nursing home or LTC facility
- Chronic lung disease
- Serious heart conditions
- Immunocompromised
- Certain cancers
- Obesity, BMI >30
- Diabetes
- Chronic kidney disease
- Liver disease

Unexpected consequences
- Kidney failure requiring dialysis
- Cardiac “injury”
- Neurological symptoms including stroke
- Abnormal clotting of blood
- Liver damage
- Children with emerging inflammatory condition

Rates of hospitalization increase with age

CDC – adapted from U.S. Government Image – MMWR 17 Apr 20
Treatment

Remdesivir
Convalescent plasma
Other antivirals
Azithromycin
Monoclonal/polyclonal antibodies
Hydroxychloroquine and chloroquine (antimalarials)
Stem cells and other cells

Use caution when reviewing and interpreting results of clinical trials

Longer Life Foundation
RGA collaboration with Washington University in St. Louis School of Medicine
Cutting-edge research
www.longerlife.org
LinkedIn/Twitter

Novel technologies being employed: cloning of SARS-CoV-2 proteins in human cells to identify how they interact to identify druggable targets
Recovery and Immunity

A very complex issue…

More questions than answers!

- What is the correlation between resolution of symptoms and length of viral shedding?
- Could there be long-term health consequences in those who recover from COVID-19?
- Are antibodies protective?
- What if someone has a low or undetectable level of antibody?
- Is there a risk of reinfection?
- What is the quality of antibody tests now available?
- Will it be possible to issue “immunity certificates”? 
Research Highlights

Julianne Callaway, FSA, ACAS, MAAA
Vice President and Actuary, Strategic Research
Challenges

Evolving landscape of data and expert guidance

Procedural Changes
- Limiting tests to hospitals
- Counting probable cases and deaths, not just confirmed

Under-/Overcounting
- Only counting hospitalized COVID-19 deaths
- Dying from another cause while also having COVID-19

Government Interventions
- Societal changes impact mortality experience
- These changes impact expert model projections
Research Approach

Data
- Government data
- Academic institutions
- Scientific literature

Wide-Ranging Expertise
- Epidemiological
- Actuarial
- Advanced analytics
The COVID-19 mortality rate is much higher (roughly 20 times greater) for people over age 60 compared to those under age 60.

The age shape of COVID-19 mortality experience is very different from that of previous pandemics.
All-Cause and COVID-19 Mortality Differences by Gender

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- The COVID-19 Gender Mortality Ratio (GMR) is generally higher than the all-cause GMR, suggesting that there is a bigger sex differential in COVID-19 than in all-cause mortality.

- Possible explanations for worse male COVID-19 experience:
  - Lifestyle
  - Behavioral
  - Biological
COVID-19 Gender Mortality Ratios by Age Group

- Male COVID-19 mortality experience is typically about twice the COVID-19 mortality experience of females.
- The differences are more pronounced at ages 60-69 than at older ages.
According to the U.S. CDC, the majority of COVID-19-related hospitalized patients have an underlying medical condition.

Nearly 90% of COVID-19-related hospital admissions in the U.S. involve co-morbidities.
The Diamond Princess cruise ship offers a rare opportunity to understand features of the virus that are hard to investigate in the wider population:

- Represents experience from affluent, generally healthy people
- All passengers were tested, allowing for analysis of:
  - Asymptomatic prevalence
  - Estimates of Infection Fatality Rates
- Over half of the passengers were aged 60+ and this was the only age group that experienced deaths; many who died had underlying health conditions
## Data Sources

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<tr>
<td>Italy</td>
<td>Epicentro - Higher Institute of Health</td>
<td>4.23.2020</td>
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<tr>
<td>Netherlands</td>
<td>National Institute for Public Health and the Environment</td>
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<td>South Korea</td>
<td>Korea Center for Disease Control and Prevention</td>
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<td>Spain</td>
<td>Ministry of Health, Consumption and Social Welfare</td>
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<td>United Kingdom</td>
<td>Office for National Statistics</td>
<td>4.17.2020</td>
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<td>Belgium</td>
<td>Belgian Scientific Institute of Public Health, Sciensano</td>
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<td>U.S.</td>
<td>Centers for Disease Control and Prevention</td>
<td>4.25.2020</td>
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A Look to the Future

Tim Rozar, FSA, CERA, MAAA
Senior Vice President, Chief of Staff to the CEO
Looking Back to Look Forward

If you’ve seen one, you’ve seen…one

- Limited data points to analyze
- Every situation unique
  - Epidemiology
  - External influences
  - Response capabilities
- Must avoid complacency or overconfidence

https://www.visualcapitalist.com/history-of-pandemics-deadliest/
Primary Determinants of Impact

- **Medical**
  - Disease characteristics
  - Healthcare delivery capacity
  - Therapeutics
  - Secondary ripple effects (often surprising, e.g. motor vehicle accidents)

- **Behavioral**
  - Mitigation actions
  - Consumer/intermediary trends
  - Government, central bank, and regulatory actions
  - Adverse selection

- **Financial**
  - Impact of mitigation
  - Balance sheet resilience
  - Macro-economic conditions
Potential Long-Term Impact on Insurance Industry

More questions than answers…

Medical  
- Long-term impact on COVID-19 survivors
- Mortality improvement trends
  - Short-term vs. longer-term
  - Research and medical advances
  - Behavioral changes
- Evolution of risk assessment
- Investment in expertise

Behavioral
- Demand dynamics
  - Perception of value of insurance/reinsurance
  - Distribution channels
  - Risk transfer by companies
- Optionality, adverse selection, and fraud
- Regulatory/ratings
  - Coverage requirements
  - Extended grace periods
  - Capital ratios
- Trust
  - Models, financial strength, social responsibility

Financial
- Balance sheet impacts
  - Asset portfolios
  - Recalibration of capital models
- Strategic business analysis
- Impact of stimulus efforts
  - Austerity, interest rates, inflation
- Consumer
  - Unemployment
  - Disability
  - Disposable income

Medical
- Behavioral
- Financial
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Q & A
Additional Questions

rgare.com/webinar-contacts