Hot Notes™

HOT NOTES • VOLUME 22, ISSUE 8 • SEPTEMBER/OCTOBER 2022

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CALIFORNIA CIRCULAR LETTER

On June 30, the California Insurance Department issued a circular letter reminiscent of the 1/18/19 circular letter from the New York Department of Financial Services.

Their primary concern is "irresponsible use of Big Data" catalyzing unfair discrimination against protected classes.

All of these were proscribed: credit information, home ownership data, social media, education level, Internet use, geographic location tracking, selfies, etc. et al.

Actuarial evidence of underwriting protective value is specifically singled out as "immaterial" in this context.

Applicants must be fully informed about reasons for adverse underwriting action.

Due diligence falls to "insurers and licensees" under the eagle-eyed scrutiny of the insurance department.

Which state is next? Ohio? Delaware? Washington?

Tick tock...

https://insureintell.com/insurance-commissioner-takes-action-stop-bias-and-discriminatory-use-consumer-data-insurance

THE STAGGERING COST OF SMOKERS' AMNESIA

Doug Ingle FALU is hands down the most capable American underwriter when it comes to understanding and using statistical methodology for mortality assessment.

He just had the unique opportunity to dissect the implications of smokers' amnesia using a mammoth 18+ million applicant database.

Doug found that 1 in 3 tobacco-using 2022 life insurance seekers lied about their tobacco indulgence at the time they applied. Compared to 2015, this is 40% larger portion of applicants.

Bottom line = over the ensuing 10 years the present value of future death benefits resulting from this nondisclosure exceeded $4 billion!

Doug concludes his summary of these revelations by asking:

How much bigger might this problem be for individual life products that forgo lab testing?

Doug's commentary on his findings is posted the websites of both Clinical Reference Laboratory (CRL) and ExamOne.

InsureIntell

Top 10 most read articles from Insureintell.com ending August 31, 2022:

1. COVID's Complex and Persisting Mortality Ripples
2. Whither Underwriting?
3. The DSM-5 is Revised! Should Insurers Care?
4. Immunotherapy: Transforming Cancer Survival
5. Staying in the Bike Lane: Extreme Sports - An Underwriting Series
6. Cancer Genomics, Liquid Biopsies and Personalized Medicine: The Impact on Life Insurance
7. What Insurers Need to Know About the 2022 Monkeypox Outbreak
8. Advances in Neurotechnology Poised to Impact Life and Health Insurance
9. Insurance Commissioner Takes Action to Stop Bias and Discriminatory Use of Consumer Data by Insurance Companies
10. Life Reinsurers Find Hope Even as COVID-19 Lingers, Mortality Rates Shift

OUTTAKES

"AI technologies such as machine learning have the potential to both mitigate and propagate bias. As these tools become even more central to insurance, regulators need to ensure all consumers are treated fairly."

Andrew Mais
Connecticut Insurance Department Commissioner

"Attestations by Insurers that they're complying with rules barring proxy discrimination are worthless."

Daniel Schwarcz
University of Minnesota Law School

Hats WAY OFF to AHOU!

The latest AHOU bulletin as I was writing this issue asked if anyone is interested in the new AHOU Mentoring Program.

Bravo!

There is nothing we need more to expand the prowess of our less experienced brothers and sisters than a mentoring program, passing along the savvy insights and wisdom of our elite veterans.

Companies used to do a lot of mentoring.

Not any more...thanks to the rabid rush to get undertrained risk assessors into production with 7 figure signature limits.

If you are a wizened underwriting veteran, please, grab this opportunity to fortify our professional community!

Well done AHOU. You make me proud to be a member!

Now please read our interview with the architect of this program, AHOU President Jennifer Johnson. It is on pages XX of this issue!

Smoking and Drinking

A new paper by Man-Kit Lei (University of Georgia) and coworkers looked at impact of tobacco and alcohol on accelerated epigenetic aging.

In the introduction to their study the authors observe that "...decades of studies have established smoking and excessive alcohol consumption as the first and third leading non-COVID19-related preventable causes of premature morbidity and mortality."

They also lament that underreporting of both has fueled "inconsistencies in the literature".

One of the coauthors Dr. Rob Philibert (University of Iowa, Behavioral Diagnostics) sent us a copy of this study.

In his cover letter he points out this sobering takeaway from their findings:

"94% of all the common mortality prediction is secondary to drinking and smoking."

Lei. Epigenetics. E-published 7/22

Excess Non-COVID Mortality

This perplexing phenomenon continues to be seen worldwide. These are the 3 latest reports:

Alberta, Canada - leading cause of 2021 mortality called "other ill-defined and unknown causes"...a category that did not exist prior to the pandemic. 57% increase in these deaths in 2021.

Australia - 18% increase in non-COVID deaths.

The Brightest Minds in Underwriting Innovation

RGA IS LEADING THE WAY IN UNDERWRITING INNOVATION. Our robust ecosystem of solutions helps insurers on their unique journey toward underwriting transformation. Our relationships with leading-edge insurtechs and startups are unlocking new opportunities for numerous clients. And most of all, **our people** continue to apply their bright minds and incredible experience to blaze new trails for the industry.

RGA is home to people like **Maria Beaulieu**.

- ✓ 22 years of life insurance industry experience
- ✓ Expertise across the value chain, including underwriting processing technology, end-to-end digital application management, and new data sources
- ✓ Strong relationships with key industry insurtechs
- ✓ Recognized leader in digital health data and EMRs

"The importance of an underwriter's role in the digital future of our industry cannot be understated. We are at an inflection point where technology can help us mitigate risk while also becoming more consumer centric. The resulting advancements will allow us to reach the underinsured and provide coverage at a place and price point that meets their needs.

I am beyond fortunate to be in a position to help shape that future and to work for a company that understands just how important it is to make financial protection accessible to all."

RGA

Learn how RGA, our solutions, and our people can help you.

Visit www.rgare.com/ecosystem to hear our team share more about our solutions ecosystem, and contact us at cmsteam@rgare.com to discuss your unique path to underwriting transformation.

Spain - 4000 excess non-COVID deaths in May 2022. This is the report from Spain:

https://afipn.com.au/4000-excess-deaths-in-spain-during-may-as-media-calls-for-answers/

And one new domestic disclosure.

Globe Life's 2nd quarter non-COVID death claims were $10 million higher than expected.

According to Cyril Tuohy in his 8/1 article from Life-Annuity Specialist, most of them were due to lung, CV and neurological pathologies.

Interesting list, no?

Photoplethysmography (PPG)

PPG is a novel non-invasive technology that uses a light source and a photodetector at the surface of skin to measure aspects of blood circulation.

Is PPG a potential digital underwriting asset?

No.

Because it is vulnerable to the perception that it can be used like a selfie to detect facial changes that would constitute unfair discrimination.

In other words, it has dismal prospects for surviving regulatory scrutiny.

If you're curious there's a detailed discussion of PPG at RGA's website:

https://www.rgare.com/knowledge-center/media/research/what-lies-beneath-photoplethysmography-(ppg)-solutions-for-insurance

Bogus Alzheimer Research

There have recently been two bogus papers on Alzheimer disease in leading publications (Science, Nature) with faked evidence and plagiarism!

I just got the lowdown on this from Dr. Rob Philibert at Behavioral Diagnostics.

He's concerned that there's much more of this shameful behavior going on out there and not just in AD research.

If you're motivated by an obsession with owning "shiny sh-t" the willingness to cut corners - and much worse - may become irresistible.

The take-home here is to trust your judgment as an underwriting professional. If you do, there will be times when your decision on a case will be at odds with some study findings.

Life goes on.

If you need reassurance (no pun!) ask your medical director...

...recognizing as you do that the final decision must always rest with you.

That's how you keep your company's mortality, as they say, in the "black."

Rule #1 - Consider the Source

If you want to know what's going on in underwriting, ask an underwriter!

A recent article at widely-read Think Advisor purported to share insights into how data from "outside data streams" are deployed in contemporary risk appraisal.

I say "purported" because key statements attributed to their source are at loggerheads with reality:

- Milliman can "get down to the Zip Code level and do predictive analytics around that"
- Simplified issue "is typically a couple of yes/no questions..."

- In accelerated underwriting, answering yes to some questions could cause insurers to "gather the prescription data."

Would the author of that article have been better served if she'd asked a real underwriter now doing consulting or perhaps a VP of reinsurance underwriting?

Think Advisor. June 6

Great Eats in Wisconsin

The Wisconsin State Fair is the place to be every August if you're hankering to partake of unique culinary concoctions.

Which of these mouthwatering 2022 novelties most excites your tastebuds:

An apple smothered in chocolate and bugs - or - a curried bratwurst?

You can't make this kind of stuff up!

Greendale Patch. July 15

This mercifully concludes OUTTAKES!

AHOU MENTORING PROGRAM: An Interview With AHOU President Jennifer Johnson

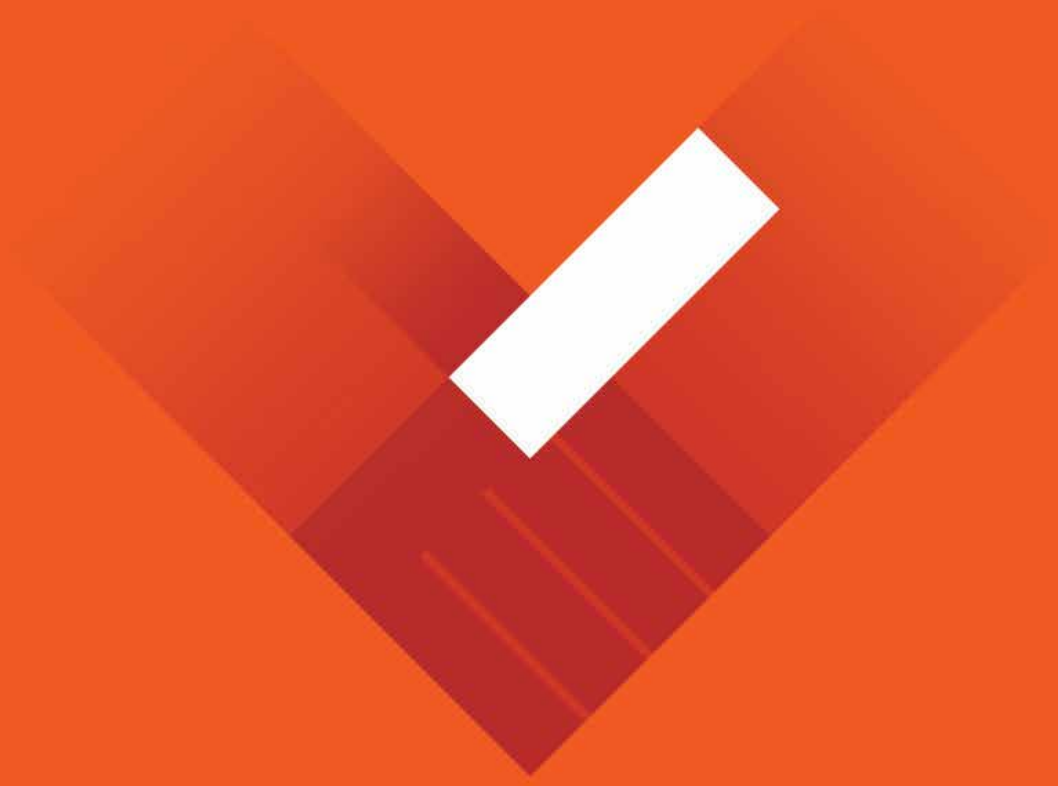
Jennifer is the architect of this program. I asked her a few key questions about this long-overdue innovation...

How do you define mentoring?

I will start with a personal story. Our company started a formal mentoring program three years ago. I was excited about the idea and immediately began filling out the application. Around the same time, my manager informed me that she was planning to retire in about a year, which totally threw me for a loop. She and I had been working together on innovation projects for about eight years. We worked together so well as a team, that this announcement rocked my world. The news also opened my eyes to other possibilities for my career. I asked myself if I thought I could step up into this role. While I have led industry volunteers in our industry, I didn't have a lot of experience managing a team of reinsurance professionals. So, I asked myself what skills I need to develop to put myself into consideration for this position? It was at that point I decided to change my application status from mentor to mentee.

As a mentee, I was paired up with a wonderful man from Mexico who leads a group of health insurance professionals in Latin America. Although we work in different geographic areas and lines of business, we found a ton of common ground around leadership skills. I learned a lot from my discussions with him, and he told me that he was also able to learn from

PartnerRe



Your reinsurance partner.

As you navigate today's changing market, you'll need a partner who you can count on for innovative solutions – a partner who listens to your challenges in order to uncover new opportunities that foster your ongoing success – because strong partnerships bring success both today and for years to come.

PartnerRe
Your reinsurance partner.

me. I planned our meetings for every two weeks. It was my responsibility to determine the topics we would discuss and to prepare my comments based on what my future needs might be. Ultimately, this was such a great experience, and I learned a lot from our time together.

So, for me, the definition of a mentor is an experienced person with whom you can discuss areas for development; a trusted advisor by whom you can run your thoughts and ideas; and from whom you can collect insights and benefit from their experience – both successes and failures.

Did you think that, overall, mentoring is less common now than in the past? If so, why do you think mentoring fell out of favor?

I think we are all working at such a fast pace that sometimes we lose sight of the importance of taking time to really think about 1) what you want the trajectory of your career to be, and 2) what tools are needed to help you get there. We get bogged down trying to finish our daily quotas and keeping up with our work, but ultimately, taking the time to talk to a mentor can provide insights, creativity, and different ways to look at the issues facing us. As a result, we might come up with faster, more effective ways of accomplishing our goals. We all have so much to offer based on our own perspectives, and getting other peoples' perspectives can open us up to new ideas and different ways to look at the issues we all face.

When does the AHOU's new Mentoring Program commence?

We are in the early stages of our planning process. For now, the biggest help you can provide is filling out the mentoring survey to help us build a program that meets the needs of AHOU's membership. The survey is located at: **2022 AHOU Mentoring Program Interest Survey**

We ask that you complete this survey by Friday, September 16.

Our plan is to start by adding training in the form of On the Risk articles, webinars, and AHOU presentations aimed at teaching people best practices for being both a mentor and mentee. Then, we hope to gather names of people interested in mentoring on specific topics.

We are hoping to get this in place for early 2023. We also want to offer continuing education credits for the time spent in preparation for this mentoring program. Those details are still being worked out.

What AHOU executive position will oversee this program?

For 2023-2024, my plan is to continue working on this project as Past President, but we haven't decided if that will ultimately be the executive position responsible for overseeing this project.

What is expected of a volunteer mentor?

While this is still being finalized, I can say that for this program to be most beneficial, the mentee needs to take an active role in the mentoring relationship. The mentee must be the person who plans the agendas and lays out the topics they want to learn from their mentor. The mentor will also need to take time to provide the mentee with information to help them grow their knowledge. My mentor provided details about training he had done in the past, as well as suggesting books on leadership, topics he thought would be useful to me, and just talking about issues he faced in leading his team. It is also necessary for both parties to gain trust in each other to be able to be completely open and honest.

I know this is a harder task when working outside our own companies, but I still think if we talk about

concepts and not specific strategies our individual companies are employing, this can be done.

Some companies don't have the resources to conduct a program like this, and I am hoping that by developing a member offering like this, we can fill a gap for companies that don't have a formal mentoring program. At the very least, we can provide tips and best practices to help client companies consider building a program of their own.

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Thank you Jennifer!

I encourage all AHOU members to participate in your survey.

Jennifer Johnson, FALU
AHOU President

SOCIAL MEDIA TROLLING

This is the 2nd report we've done on studies about the odious endeavor.

Jose (University of Pennsylvania) and 6 coworkers reported on Face Book comments predictive of binge drinking. They did a 2017-18 online survey and got 4739 usable responses. Mean age was 43.

Then they determined how often certain word and phrases appeared in posts. Examples include:

- Partying/going out
- Drinking words (beer. wine, drinking)
- Swear words [examples omitted; use your imagination!]
- "dude" and "chick"

Adjustments were made for their use in low-risk contexts such as references to religion (God, faith, prayer); what you're apt to hear at AA meetings and so on.

They described social media as a "...readily available, rich and under-tapped resource to understand important public health problems in alcohol use."

This is final sentence in their paper:

"Social media language, therefore, offers great promise in addressing the historic problem of alcohol morbidity and mortality..."

We are fortunate to have regulators that prevent something so outrageous that it would poison our relationship with consumers!

Jose. Alcohol: Clinical and Experimental Research. 46(2022):8363

CONTEMPORARY ORAL FLUID TESTING: An Interview with Danny Collins, FALU

I've known Danny since he was Chief Underwriter at Southern Farm Bureau Life in Jackson, Mississippi. After a distinguished underwriting career, he was recruited to represent OraSure in our industry.

With the frenetic pace of change in underwriting practices and resource deployment, it's time for an update on oral fluid tests. I asked Danny if he'd agree to being interviewed for Hot Notes. He did and here's what he had to say:

How has oral fluid evolved as a viable alternative to blood and urine tests?

For certain age and face amount requirements, oral fluids have virtually replaced blood and urine.

When oral fluids were introduced 20+ years ago the testing offered was cotinine, cocaine and HIV. Within the past 3 years it has expanded. We now offer it for codeine, morphine, heroin, hydromorphone, hydrocodone, oxymorphone, oxycodone, fentanyl and methamphetamines. Moreover OraSure is working with our lab partners to find further ways to expand oral fluid testing in underwriting,

What are the advantages of oral fluid testing?

There was such a negative perception of urine collection that when I first introduced oral fluids to the agents many years ago, I got a standing ovation! Which is understandable because oral fluid collection can be done anywhere at any time in just a few minutes with no bathrooms or paramedical personnel required.

Oral fluid testing in the lab is also rapid and highly efficient. The quicker turn around means the policy can be approved and the agent paid sooner. Moreover, oral fluid is cost-effective, has great protective value, and uses an FDA sanctioned device

In today's environment of simplified and accelerated underwriting, what are you hearing from insurers in regard to oral fluid experience and concerns?

I am not aware of any concerns about oral fluid use. Clients always want more testing done with the oral fluids, but we are limited by the amount of fluid that is collected and confirmation testing that would occur on positive test results.

I have been told by some insurers that 30-50% of the applications being submitted on putative nonusers of tobacco are testing positive for cotinine. This doesn't take into consideration the number of cases that test positive for cocaine or other drugs of abuse. The applicant will always have an advantage over the carrier if their intention is to select against the company. By making oral fluid testing available we are offering a layer of protection against adverse selection not otherwise available. Indeed, some companies do first dollar testing on applications and their mortality experience is significantly better than companies not using oral fluids.

How has the current pandemic impacted oral fluid collections?

With agents and proposed insureds in a "locked down environment" insurance companies struggled. So did the oral fluid business.

Companies looked for ways to improvise and adapt.

Intelligent underwriting: Reimagining life insurance underwriting

Life and Annuity carriers are looking for a competitive advantage. It's why they're applying technology and digital platforms such as the Accenture Life Insurance & Annuity Platform (ALIP) to capitalize on four underwriting trends: automated, digital, data-driven and fluidless. They're rethinking the underwriting function with these four trends in mind to drive new business and higher levels of service and efficiency.

Artificial Intelligence (AI) is key

Combined with automation, underwriting platforms and interconnected ecosystems, AI holds the power to differentiate insurers and their offerings providing a compelling competitive advantage. This paper explores several ways Accenture is working with insurers, using these technologies to reimagine the underwriting experience and produce results.

Four trends accelerating underwriting transformation:

01 Automated **02 Digital**

03 Data driven **04 Fluidless**

Read our latest point of view and find out why leading life insurers look to the Accenture Life & Annuity Platform as their foundation for driving underwriting innovation and performance.

www.accenture.com/ALIPNBUW

Many that once required agents to have the proposed insured present when the application was completed are now allowing the application to be completed virtually. Companies that required paramedicals, bloods and oral fluid, waived those requirements. My prediction is we will see the impact of those decisions in the next 3-5 years in the form of adverse mortality.

Once companies take something away from the agents, it is hard to start the process again. New agents hired in the last few years have never collected an oral fluid sample. Fortunately, the OraSure website has a video that allows agents to watch and understand the collection process and completing the paper work. At the end of the video, the agent can take a test and upon completion and passing the test, can print a certificate of completion for oral fluid collection. The video and test take only about 10 minutes.

Is OraSure working on any new tests or developments?

Working with Clinical Reference Lab, we will soon make available an "observed" self-collected oral fluid collection process. This is going to be a game changer for many insurers that want remote collection capability.,

There are also additional new developments being considered for future deployment.

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Thank you Danny for sharing your insights and perspectives on oral fluid with Hot Notes readers!

Danny Collins FALU, FLMI, ACS

Danny worked 42 years in underwriting for Southern Farm Bureau Life. He finished his career as Vice President responsible for New Business, Underwriting, Policy Issue and Document Management. He oversaw the development of an Underwriting Workstation that was, even by today's standards, well ahead of its time.

Danny is a former president of the Southeastern Home Office Underwriters' Association. He joined Orasure 5 years ago and has been representing them to life insurers ever since.

AN INTERVIEW WITH LEWIS GOLDMAN AND BRIAN LANSRATH: Using Sikka Risk Indicators With HealthPiQture Data

When I first heard that ExamOne's HealthPiQture and Sikka's dental risk indicators would be bundled together for life underwriting, I was - to say the least - intrigued by the potential payoff for insurers.

I asked Lewis Goldman (Sikka) and Brian Lanzrath (ExamOne) if they would team up to share their respective points of view on this undertaking by responding individually to 5 questions.

They said "yes" so read on...

What is the value of oral care data in life underwriting and how can dental procedures be used to stratify mortality risk?

Brian: Useful underwriting data derived from dental records generally falls into two broad classes: information on established risk factors that may be recorded in dental records (either through clinical notes taken by the licensed provider of self-reported health history by the patient at the time of the visit), and the intrinsic predictive value of dental procedures and statuses themselves.

The first group includes indicators for diagnoses such as heart disease, cancer, and - critically - tobacco use. It will likely be the initial focus of most early adopters, as information of this type can be readily integrated into existing underwriting rules systems, and will be well-accepted by underwriters, agents, and reinsurers.

These results are essentially electronic health records, in the broadest sense, emerging from dental encounters and distilled to a set of straightforward yes/no indicators. The tobacco flag, in particular, is valuable not only due to its large and well-known implications for mortality, but because tobacco status is only rarely available from other electronic data sources, such as ScriptCheck, LabPiQture, or Medical Claims. **In fact, Sikka is the best single source of data on Tobacco use other than a cotinine test.**

There are a number of studies that have documented the correlation between oral health and mortality Sikka has done a great deal of work establishing the relationship between such procedures/statuses (periodontal disease, missing teeth, etc.) and incorporating these insights into a numeric risk score. While less immediately familiar to underwriters, this also offers substantial potential value to the risk-assessment process, particularly in stratifying mortality risk. Sikka's LECA(™) Score has been shown to predict mortality better than a widely used risk score based on prescription drug history.

How are Sikka's risk indicators integrated into ExamOne's data offerings and what information is provided?

Brian: Sikka's condition-specific flags (for tobacco, diabetes, cancer, and hypertension, among others) are available either through LabPiQture or as a stand-alone product. For each condition, we report whether evidence for that disease is present, the age of that evidence, and an excerpt of the original doctor's notes/ self-report establishing that condition. As with most FCRA-compliant products, the lookback

hr | Ascent supports efficient underwriter training and evidence based underwriting decisions

hr | Ascent – Hannover Re's online underwriting manual

hr | Ascent
The global guide for life underwriting

hr | Ascent is Hannover Re's all-inclusive, online underwriting manual that caters to a broad spectrum of underwriting conditions of varying degrees of complexity. Highly intuitive and frequently updated, hr | Ascent's dynamic nature, coupled with the manual's powerful search engine, enables our customers to respond rapidly and competitively, saving time in the evaluation of life insurance risks.

hr | Ascent features:

Enhanced underwriting – A cutting-edge underwriting resource for evidenced-based ratings on over 500 medical conditions, supported by an intuitive design and a state of the art technology platform

LTC Hybrid – A comprehensive module to support underwriting for LTC/life hybrid products, leveraging ratings that were recently updated in 2020

Innovative calculators – Features over 25 calculation engines, facilitating underwriters' evaluation of cases with complex medical histories and financial situations

Training resources – Provides educational support for developing junior underwriters and continuing education opportunities for seasoned professionals with images, illustrations, training videos and articles

Ask an underwriter – A direct connection to Hannover Re's experienced underwriting team for questions about an impairment or a specific case answered within 6 business hours

ReWard – An innovative data-driven credit program designed to award a mortality discount against substandard risks

If you are not currently a Hannover Re reinsurance client and would like to lease the hr | Ascent underwriting manual, contact us.

To learn more about hr | Ascent, contact:
Hannover Life Reassurance Company of America
Jodi McDonald, FALU, FLMI
Vice President, Facultative Underwriting
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www.hannover-re.com
Member of the Hannover Re Group

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period is seven years.

Lewis: In terms of data delivery, it is available in real time via the HealthPiQture API feed for automated or accelerated underwriting, or can be used for individual or portfolio review either in production or as part of a post-issue audit.

What incremental value do you see Sikka's indicators adding as part of HealthPiQture's data set?

Brian: The most immediate incremental value is in the tobacco indicator. Tobacco is -justifiably- the central non-demographic risk factor used in underwriting today. As carriers have sought fluidless underwriting solutions, though, the availability of this status has waned. Prescription histories will sometimes reveal past smoking-cessation efforts, and LabPiQture can incidentally capture it in some percentage of encounters, but until recently there simply has been no comprehensive substitute for the traditional urine cotinine test. Self-disclosure is unreliable and has become more so in recent years.

Even setting aside the enormous value of the other health indicators (which can provide additional validation for a key condition such as diabetes, hypertension, or cardiovascular disease), we expect the tobacco flag alone to provide a protective value exceeding the cost by nearly an order of magnitude.

Lewis: In addition, since the indicators are delivered in real time, they can also reduce or eliminate the need for additional data or tests, speeding up the underwriting process and reducing costs.

You maintain that these data can be used for both Automated or Accelerated Underwriting through HealthPiQture? Can you give us a couple of examples?

Brian: Like any other data source which can provide a window into past diagnostic history, the flags made available by Sikka can be a direct input into any automated or accelerated process. Evidence of serious medical history such as cancer would be a knock-out for most accelerated processes, and the lack of such evidence can increase the confidence in the acceleration decision.

Lewis: For a product such as Simplified Issue Term, which is often an automated decision, Sikka's data can provide information on disease states or conditions that can be used for real time risk classification or knock-out. Sikka is also working on more indicators such as COVID history which will be available later this year.

Would you expect this data to be more relevant/valuable in specific demographic subsets of applicants or for certain types of products?

Brian: The percentage of younger applicants who regularly visit the dentist is substantially larger than the percentage scheduling regular check-ups, or who have significant prescription history. Tobacco indicators tend to be most valuable in two types of applicant populations: those with high tobacco prevalence, and those with higher tobacco non-disclosure. Since prevalence and non-disclosure are negatively correlated (low-tobacco populations have higher non-disclosure among the smokers that do exist), these two groups jointly comprise a large majority of all applicant pools.

Lewis: In addition, Sikka can provide additional data, particularly for younger applicants who don't get regular checkups, that might not be available through other sources.

Thanks gents!

Your responses to my questions are both thorough and crystal clear.

I expected nothing less!

Lewis Goldman
SIKKA Insurance Business Leader

Lewis Goldman is the Business Leader of the Insurance division of sikka.ai's Sikka Insights. Prior to joining sikka.ai, he worked in insurance as the head of marketing and product for Global Life Distribution and the MetLife direct to consumer life insurance business. Lewis utilizes his 25+ years of experience leveraging data for disruptive innovation within the insurance and financial industry to help bring sikka.ai to the forefront of alternative data sources for life insurance underwriting. He is a graduate of Harvard University and Columbia University Business School, and he also teaches marketing at Iona College.

Brian Lanzrath
ExamOne Director of Analytics

Brian Lanzrath is the Director of Analytics at ExamOne, Inc. His main areas of professional focus include predictive modeling for mortality and fraud, as well as the development of analytics-driven quality metrics for producers, paramedical examiners, and underwriters. His work has been published in multiple industry journals, including Hot Notes, On the Risk and the Journal of Insurance Medicine, and he is a regular speaker on applications for big data and analytics in the life insurance industry.

CRIMINAL HISTORY RECORDS FOR LIFE UNDERWRITING: An Interview with Mikele Oldani (Choice Screening)

American underwriters now have access to the state of the art in criminal record histories. The source is a novel underwriting resource provider that offers its services to life insurers.

After getting feedback about Choice Screening from several close friends that attended the 2022 AHOU Conference, I had some questions.

To get answers, I connected with Mikele Oldani at Choice Screening.

Who is Choice Screening?

For the past eighteen years, Choice Screening has successfully provided compliant and reliable background checks in the pre-employment space. We have recently refined our criminal and financial search products so they will be a highly productive resource for life underwriters.

Researchers are FCRA certified. Using our proprietary technology they are able to verify records rapidly and reliably, accessing data locations other screening companies fail to search. As a result, we either uncover felony and misdemeanor criminal records or we clear an individual quickly and efficiently.

If it is all public record information, what makes your service and its products special in an underwriting context?

We often joke in our office about the disservice Hollywood does to our industry. Television shows such as CSI portray gathering criminal history as easy as clicking a button to instantly receive a rap sheet.

In the real-world access to verified public records is far more complicated!

Each state protects and disseminates them differently. Some jurisdictions report records consistently to the National Criminal Database, others house their own statewide search, certain states delegate the process to the individual counties, and some of those counties still have archaic paper record systems.

We have years of experience navigating this landscape, enabling us to get the details insurers need to appraise applicants with criminal histories.

The Insurance Industry is highly regulated. Are your searches fully compliant?

Working with highly regulated industries is not new to us.

Our commitment to excellence is demonstrated by exceptional technology and data security, plus in-depth search products. Our Director of Compliance oversees FCRA compliance, auditing, and continued institutional improvement. Our Disputes Department quickly handles any adverse action directly with the applicant.

And we are proud to hold an accuracy rate of 99.99%.

How do you respond when insurers question the value of an in-depth criminal background check?

It all boils down to this one simple fact: you don't know what you don't know. And given their mortality implications you can't afford not to know about felonies and more serious misdemeanors.

Insurance seekers are disposed to "forget" to report a criminal history just as readily as they lie about using tobacco and grossly understate robust alcohol intake. I am always blown away by the severity of the criminal records of applicants that deny having any history of such endeavors!

I invite you to let Choice Screening run a retro study so you can see how many records we uncover that you missed using less comprehensive options.

- - - -

Bravo Mikele!

Your responses are spot on, affording Hot Notes readers a clear look at what Choice Screening brings to their table.

Mikele Oldani
Choice Screening

A University of Denver graduate, Mikele began her business career in medical sales. During this time, she was often asked: "did my nurse pass a background check?" Little did she know that this seemingly small, yet important question would send her down a career path of background screening services.

Mikele joined Choice Screening in 2018. Through education, technology, and compliance, she works with clients to ensure that due diligence programs are best aligned with company goals. In her free time, she enjoys tennis, reading murder mysteries and spending time with her husband Tony, and goldendoodle George.

Thank You

for being a part of our past, present, and future

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U-SHAPED HDL-C MORTALITY

Liu and 13 Emory University Medical School colleagues dissected the relationship between HDL-C levels and mortality in subjects with known coronary disease.

They did this using data from 2 sources. We will cover the larger one (UK Biobank cohort), with 14,478 CAD-afflicted persons, average age 62 and followed for 8.9 years.

Subjects were sorted into 5 subsets based on HDL-C level.

These are a few of the enlightening revelations:

	HDL-C (mg/dL)				
	< 30	30-40	40-60	60-80	> 80
Frequent Drinking	19%	29%	44%	54%	62%
Diabetes Mellitus	41%	27%	16%	8%	11%
Prior MI	61%	57%	50%	43%	36%
All-Cause Mortality	19%	14%	11%	12%	17%

The frequent drinking distribution is consistent with regarding high HDL-C (80+ in men, 100+ in women) as increasing the odds of alcohol use disorder. GGT is ideal when underwriting these cases.

The % with DM or prior heart attack is inverse to HDL-C, consistent with low HDL-C being a potent marker for adverse CAD consequences.

After adjusting for 14 risk factors Liu et al reported these all-cause mortality hazard ratios. We're including data from the other source as well.

	All-Cause Mortality Hazard Ratios UK Biobank and Emory CV Biobank Cohorts	
	UK	Emory
	HDL-C	Hazard Ratios
< 30	1.33	1.22
30-40	1.00	0.97
40-60	1.00	1.00
60-80	1.29	1.20
> 80	1.96	1.63

Both are steeply U-shaped.

Let's say we have two 50-something male applicants . Both had an MI 5 years ago with stable, asymptomatic CAD in the interim. And they have same current TC (total cholesterol) level of 160 mg/dL.

The first chap has an HDL-C of 30, which results in a TC:HDL-C ratio of 5.3.

The other fellow has an HDL-C of 80; thus, a 2.0 TC:HDL-C ratio.

By convention - *and based on most companies' preferred criteria* - 2.0 is far more favorable than 5.3.

Except in this case where it is a worse risk because of the high HDL-C.

What we underwriters really need is an identical study done on subjects free of known CAD.

Liu. JAMA Cardiology. 7(2022):672

ADDICTION Rx IN AUD AND THE RISK OF ALCOHOLIC LD

Vannier and his 6 Harvard coworkers assessed the impact of medical addiction Rx on the risk

of alcoholic liver disease (ALD) in patients with alcohol use disorder (AUD).

Their study population consisted of 9635 subjects, average age 54, followed for a mean interval of 10 years.

41% were treated medically for alcohol addiction and at study commencement they tended to be worse mortality risks than those who were untreated:

	Addiction Rx	
Medical History	**Yes**	**Nov**
Viral Hepatitis	16%	10%
Psych Disorder	94%	79%
Nicotine Dependence	54%	37%
Drug Use Disorder	50%	28%

Treated patients started Rx on average 1.7 after their AUD diagnosis and those that developed alcoholic LD did so roughly 5 years later.

One addiction therapy drug - acamprosate - correlated with a heightened risk of alcoholic liver disease (adjusted odds ratio 2.59).

The other 5 used here - gabapentin, topiramate, baclofen, naltrexone and disulfiram - reduced the risk...and except for disulfiram, they all did so significantly.

Bottom Line: applicants deemed potentially insurable after recovering from AUD are less likely to have alcoholic liver disease if treated with any of the 6 most widely-used drugs except acamprosate.

Vannier. JAMA Network Open. 5(2022):e2213014

PREDIABETES, DIABETIC COMPLICATIONS AND MORTALITY

Are our life underwriting guidelines for prediabetes too liberal?

Prediabetes is diagnosed when an individual's fasting and/or postprandial glucose levels are elevated...but not high enough to make a diabetes mellitus (DM) diagnosis. It is also present when HbA1-c is between 5.7% and 6.4% (39-47 mmol/mol).

We now have the quintessential asset for addressing the matter of prediabetes complications and mortality question: a so-called "umbrella review" of 16 articles encompassing 95 meta-analyses of prospective studies!

Let's look at the key findings from this unique investigation by Schlesinger and her 6 coworkers at Heinrich Heine University in Dusseldorf:

- The risk of adversities is higher in IGT than in IFG or when prediabetes is based on HbA1-c.
- Overall, prediabetes confers increased risks of CV disease, cardiac sudden death, stroke, heart failure, atrial fibrillation, peripheral arterial disease, kidney disease and several malignancies (liver, pancreas, bile ducts, stomach, colon)
- All-cause mortality is 8% to 25% higher than it is when glucose is normal
- Deaths due to CV disease are 20%-30% greater
- The overall risk of dementia is 18% to 47% higher
- Prediabetes is the #1 risk factor for type 2 diabetes mellitus (T2DM).

Bottom line: prediabetics are not legitimate candidates for accelerated underwriting or approval on a preferred risk basis.

Schlesinger. Diabetologia. 65(2022):275

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PERIODONTAL DISEASE (PD) AND CV DISEASES

Ngamdu (Brown University Medical School) and 8 coauthors from 4 prominent academic medical centers investigated the relationship between PD and CVD.

They used data on 2830 adults age 30 and over from the 2013-14 NHANES survey.

26% had stage III/IV (severe) periodontitis. They were at significantly higher risk of cardiovascular disease with an adjusted hazard ratio of 3.59.

Patients that acknowledged fair/poor gum health also had substantially greater odds of CVD compared to subjects reporting good gum health (HR 2.17).

These findings are consistent with dozens of prior investigations.

Now that we have access to dental records as an underwriting resource, severe periodontal disease should be included in guidelines and those infernal risk calculators for coronary artery disease.

Ngamdu. American Journal of Cardiology. E-published 6/27

PSYCH DISORDERS AND ALCOHOL INDULGENCE

"...approximately 18.4% of adults report binge drinking and 5.1% have alcohol use disorder."

Jo-Anne Puddephatt and Laura Goodwin
University of Liverpool
Addiction. 117(2022):1543

These 2 investigators from the University of Liverpool's Psychology Department did a systematic review and meta-analysis of the association between prevalent mental disorders and alcohol use in the general adult population.

Their assessment consisted of 51 studies.

They grouped common psych diagnoses into 2 broad categories: mood disorders and anxiety/phobic disorders.

These are their findings of greatest relevance to mortality and morbidity underwriting:

- The odds ratios (ORs) for alcohol use disorder (AUD) in mood and anxiety/phobic disorders were 2.00 and 1.94 respectively.
- The OR for moderate-to-severe AUD in common psych disorders was 2.19 compared to 1.71 for mild AUD.
- In the studies that included data on bingeing, the prevalence of binge drinking was 3.7 times greater in those with a common psych disorder.

In their discussion of the study's revelations they specifically mentioned increased drinking as a way of coping with mental health difficulties. Anything in applicant medical records consistent with drinking to cope is a huge **RED FLAG**.

It is worth noting that anxiety/phobic disorders are nearly as impactful as mood disorders in the context of alcohol-related conditions.

This is significant because our guidelines for rating anxiety disorders and most phobias are predictably more liberal compared to mood disorders.

Puddephatt. Addiction. 117(2022):1543

ECG ABNORMALITIES IN T2 DIABETES

Fact: Cardiovascular disease is the leading cause of death in type 2 DM.

Fact: ECGs help identify individuals with occult coronary artery disease, many of whom are asymptomatic when they apply for insurance.

Given these two consensus facts, it is helpful for us to consider the prevalence of more common ECG findings in 8068 individuals that are part of a larger study of type 2 diabetics.

Harms and his 6 Dutch coworkers distinguished between minor and major ECG findings:

MINOR	MAJOR
Minor QRS Changes	Major QRS Changes
Minor ST-segment Changes	Major ST-segments
RBBB	LBBB
PACs (APCs)	IV Block
PVCs (VPCs)	Atrial Fibrillation/Flutter

Overall 16% of subjects had minor ECG changes and 13.1% had major electrocardiographic findings.

Among those with no CVD history, 14.9% had minor ECG changes and 9.1% had major ones.

The latter is an imposing statistic and may be due in part to diabetic sensorial autonomic neuropathy resulting in asymptomatic (silent) ischemia.

ECG abnormalities were more common in those with moderate-to-high estimated risks of coronary disease. The ECG changes most apt to be impacted on this basis were AV blocks, IV blocks and arrhythmias.

These are the multivariate risk factors for major ECG abnormalities in the diabetic subjects:

	Odd Ratio
Hypertension	2.92
Male Gender	2.01
eGFR 30-60	1.56
Higher HbA1-c	1.10

Requiring insulin in addition to an oral drug as well as being a current or former smoker tended toward significance with ORs of 1.24. 1.22 and 1.13 respectively.

Bottom line: these findings may be helpful when reviewing your underwriting practices.

Harms. Journal of Diabetes and its Complications. 35(2021):107810

MORTALITY IN NAFLD

NAFLD is the acronym for nonalcoholic fatty liver disease.

Simon (Harvard) and her team of American, Swedish and British coworkers analyzed mortality across what they call the “histological spectrum of NAFLD.”

Their study cohort consisted of 10,568 adults with biopsy-proven NAFLD, each one matched to 5 control individuals free of known NAFLD.

Mean age was 52 and the average follow-up internal was 14 years.

This is the distribution of histologic findings on the biopsies of their subjects:

Simple Steatosis (SS)	67.2%
Noncirrhotic NASH (NCN)	15.7%
Non-Fibrotic NASH (NFN)	11.5%
Cirrhosis (C)	5.6%

It is interesting to compare the prevalence of common NAFLD comorbidities on this basis:

	SS	NFN	NCN	C
CV Disease	18%	21%	25%	28%
Dyslipidemia	5%	9%	14%	12%
Diabetes	8%	13%	18%	26%

These are the multivariate-adjusted all-cause mortality hazard ratios (HRs):

	Mortality HR
Controls	1.00
Simple Steatosis	1.71
NASH without Fibrosis	2.14
Noncirrhotic NASH	2.44
Cirrhosis	3.79

Lastly, they determined the "20-year absolute excess risk of mortality compared to the general population" as follows:

Simple Steatosis	10.7%
NASH without Fibrosis	18.5%
Noncirrhotic NASH	25.6%
Cirrhosis	49.4%

The shocker, if you will, is the excess mortality in simple steatosis. This prevalent condition has been generally regarded as free of any significant degree of mortality risk.

Not true...in this large, biopsy-based study with lengthy follow-up!

And based on this study, NAFLD is not a candidate for accelerated underwriting.

When nonalcoholic steatosis (NASH) is present, the mortality is formidable even in the absence of significant fibrosis.

And cirrhotic NAFLD in uninsurable because it is at high risk for decompensation as well as hepatocellular carcinoma.

Pop quiz: what pattern of liver enzymes are we most likely to encounter in simple steatosis?

Answer: modestly elevated ALT, little or no increase in AST and normal GGT.

Simon. Gut. 70(2021):1375

COVID-19 UPDATE

Note: COVID-19 is abbreviated as C-19 throughout this section

COVID-19 may have mostly accelerated deaths from people in poor health already who may have otherwise died earlier than the average person in their age group.

Stuart Silverman FSA
Principal and Consulting Actuary
Milliman, New York City
June 7, 2022

Coach refuses C-19 vaccine, fired for it, now sues university

I'm a closet Washington State Cougars fan so this got my attention.

They fired their head football coach for exercising a constitutional right.

Now he is suing the school for $25 million.

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I hope he kicks their [deleted cuss words].

How long does C-19 remain in the body?

- Longer the flu or common cold viruses
- On average, it continues shedding the virus for one month and in "super-spreaders" for up to 110 days
- 4% have detectable C-19 in feces for 7 months

It is suspected but as yet unproven that the persistent presence of the virus increases the risks of Long C-19 as well as its severity

Stoker-Walker. British Medical Journal. 377(2022):o1555
Rubin. Journal of the American Medical Association. 327(2022):2175

"Contaminated" C-19 Study

Lin and 6 coworkers reported on how long the Moderna jab protected against symptomatic C-19.

The level of protection "was still high even 200 days after the dose."

Wow!

The rest of the story...

4 out of 5 "study supervisors" and both docs with "full access to all data" have history of research funding by Moderna, 2 work for Fauci's National Institute of Allergy and Infectious Disease, 1 each acknowledge receipt of $$$ from Pfizer and the Gates Foundation respectively.

I think these associations undermine the study's verisimilitude.

If I was the editor I'd have rejected it.

Take-Home Message: be sure to check author affiliations whenever studies trumpet the merits of C-19 vaccines or drugs, especially if there are many millions of dollars at stake.

Lin. JAMA Network Open. 5(2022):e2215984

Sudden Adult Death Syndrome (SADS)

SADS is an umbrella term to describe unexpected deaths in young people that is used when a post-mortem cannot find an obvious cause for the individual's demise.

Increased COVID-related SCD appears to be due, at least in part, to a recent history of infection and/or vaccination that induces inflammatory and immune impairment that injures the heart.

Philip B. Maffetone and Paul B. Laursen
Frontiers in Sports and Active Living
4(2022):829093

The incidence has surged in the past 18 months (= since vaccine rollout) and a SADS registry is being organized in Melbourne, Australia.

An Israeli study found that the incidence paralleled the rollout of C-19 vaccine in that country as well.

Life insurance premium rates at age 39 and younger are not priced to accommodate a significant increase in deaths...

Sun. Scientific Reports. 12(2022):6978.

Alcohol Issues in C-19

Alcohol use disorder (AUD), undisclosed tobacco use and understated weight are the dominant Achilles heels of accelerated underwriting. The best AUD screening assets (GGT, blood alcohol) are not done on accelerated cases and rarely found on LabPiQture or in e-medical records.

These are the latest ETOH developments of interest to us:

Kerr et al looked at C-19 pandemic alcohol use patterns. The found "substantial increases in the prevalence of DSM-5 moderate to severe AUDs."

Yeo (Cedars Sinai, Los Angeles) and 5 colleagues reported double digit increases in observed to expected AUD mortality all age groups and both genders. All-cause mortality increased 18.3%. They concluded that the pandemic "had a disproportionate association with AUD-related death..."

Bailey(University of Nebraska Medical Center) and her 10 coworkers matched 25,583 C-19 patients with AUD to over 1.3 million C-19 control that were free of alcohol use disorder. After full adjustment AUD had significantly higher odds (odds ratio 1.55) of death or hospice referral.

Acharya (Drexel University) and Dhakal (University of Georgia) found that household expenditures on alcohol increased 28.6% during the pandemic. Low-income/less educated households cut alcohol spending while "wealthy and more educated consumers spent more [on ethanol] during the pandemic."

Kerr. Alcohol: Clinical & Experimental Research. 46(2022):1050
Yeo. JAMA Network Open. 5(2022):e2210259
Bailey. Alcohol: Clinical & Experimental Research. 46(2022):1023
Acharya. PLoS One. 17(2022):e0268068

C-19 Vaccine Induced Myocarditis and Pericarditis

Le Vu from the French equivalent of FDA and 8 colleagues probed this matter.

They could not detect asymptomatic /mild cases "that would not require hospitalization" (yet!).

Nevertheless, they still found "strong evidence" of both disorders following mRNA (Pfizer, Moderna) C-19 vaccination.

How refreshing, coming from an entity that actually serves the citizenry!

Le Vu. Nature Communications. 13(2022):3633

Long C-19

MUST READ Commentary by Dr. Achim Regenaur (Partner Re)

In English, Spanish and Korean at this link
https://www.partnerre.com/opinions_research/covids-complex-and-persisting-mortality-ripples/

Petersen and her 9 Danish associates dissected Long C-19 prevalence in 176 Faroes Islands cases with at least 1 symptom persisting a median of 168 days after onset.

Top 5 persistent symptoms:

1. Fatigue
2. Anosmia
3. Dysgeusia
4. Dyspnea
5. Headache

They found just one risk factor that was significant after multivariate adjustment: self-reported daily medication use (odds ratio 2.34).

Pop-Vicas (University of Wisconsin) and her coinvestigators did a study involving patients at 3 healthcare systems in 2 midwestern states.

They identified these multivariate risk factors for Long C-19:

	Odd Ratio
Female Gender	1.75
7+ acute phase symptoms	3.65

Even amid the COVID-19 pandemic,

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These were potent univariate predictors

Immunosuppression	6.33
Asthma	1.99
Obesity	1.93

Asymptomatic C-19 reduced the Long C-19 risk 42%.

Pop-Vicas. Infection Control and Hospital Epidemiol. E-pub 4/6/22

Will this happen if the extent of vaccine-mediated deaths is finally acknowledged by mainstream medicine?

An anecdote by Dr. Harvey Risch (Emeritus Professor of Epidemiology, Yale): insurance companies that are paying early and unexpected mortality claims for people when actuaries evaluated that they would live longer than they had.

Now these companies are going to go back against the vaccine manufacturers due to the conflicting information they received then and now from medical professionals as it related to vaccinations and mortality.

https://expose-news.com/2022/08/06/expect-insurance-to-sue-vaccine-manufacturers/

C-19 Vaccine Law Changed in Costa Rica

"Today [3 August] vaccines are no longer mandatory and any action against someone who does not want to be vaccinated is a violation of the law,"

Rodrigo Chaves
President of Costa Rica
August 3

Ivermectin and Remdesivir

A Brazilian study reported a huge reduction in C-19 mortality based on a prospective observational study.

Kerr and her 8 coworkers analyzed data on 159,560 adult cases of C-19 in one city. 71% used ivermectin and 29% did not.

First they found a 49% and 32% lower risks of C-19 infection in those with regular and irregular ivermectin use, respectively, when compared to nonusers.

Hospitalization rates were dramatically lessened, while C-19 and all-cause mortality was 86% and 92% lower in regular users, and 84% and 51% less in irregular users, again compared to those foregoing ivermectin.

A University of Miami investigation found ivermectin mortality was almost 70% lower than that with remdesivir. The authors were forced to retract their abstract in the International Journal of Infectious Disease.

Meanwhile the final results of the DisCoVeRy trial of remdesivir recommended against its use in hospitalized C-19 patients.

Which makes sense considering it had no significant value in this population.

Kerr. Researchgate.net. July 2022
Efimenko. International Journal of Infectious Disease. 116(2022):S40
Ader. Lancet Infection. 22(2022):764[letter]

Novavax COVID-19 Vaccine

The FDA has granted "emergency use" privileges to Novavax, which is already used in Canada and Down Under as Nuvaxovid.

The following has been shared by Julie Comber, PhD, a prominent freelance science writer, and

others.

It has been portrayed by some as a "traditional vaccine" because it uses protein-based technology that's been around for decades...which is bollocks [British for B.S,] because Novavax contains a novel adjuvant substance called Matrix-M, based on a spiked protein.

Matrix-M has been linked to autoimmune disease. Serious systemic effects have been documented in up to 12.1% in Novavax recipients.

A German study reported significantly higher adverse event rates with Novavax than approved (in Germany) versions of Moderna and Pfizer mRNA vaccines.

The European Medicines Agency mentions severe anaphylaxis and is investigating the risks of myocarditis and pericarditis.

Free Speech and COVID-19

The Attorney General of Louisiana in suing the Biden administration for allegedly colluding with social media giants to suppress free speech about the pandemic virus.

A federal court has granted their request for expediting discovery.

Louisiana AG Eric Schmitt sad on Twitter that "no one has had a chance to look under the hood before - now we do."

The early batches of what Pfizer sent to the FDA - to be fully released within 12 months per court order - are revelational in this regard.

The Sneezing Phenomenon

First we were told sneezing hamsters can spread the virus.

Now Thai scientists have demonstrated this with pet cats as well.

My neighbor has a sneezing turtle.

Do you think...?

Nah...

Msalllapaty. Nature. June 29.

This concludes our September/October COVID-19 UPDATE.

RESTLESS LEG SYNDROME A HOT NOTES REVIEW

I've been intrigued by RLS for years and I decided to take a closer look at the most recent literature.

The result is this Q/A style review that will tell you all you need to know - and more - from a mortality underwriting perspective.

What is RLS?

A sensory-motor neurological disorder characterized by an irresistible urge to move one's legs, resulting in brief, repeated and involuntary rhythmic leg contractions during sleep or restful wakefulness, usually accompanied by leg discomfort.

These are called periodic limb movements.

Periodic limb movements in sleep (PLMS) occur in RLS but more often as a solitary painless phenomenon wherein the patient is typically unaware it is happening until told by a sleep partner who's tired of getting kicked!

What are the 2 types of RLS?

Primary (idiopathic) and secondary

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Primary RLS can first manifest at any age from 5 to 90. A positive family history is fairly common. The vast majority of cases we see are primary.

Secondary RLS, as the name implies, is provoked by an underlying condition. End stage renal disease (ESRD) and iron (Fe) deficiency (which may or may not manifest with Fe anemia) are the most frequent causes.

How common is RLS?

1.5-2.7% in the general population.

The prevalence is higher in major depressive disorder (MDD), ranging from 10% to 49% in various studies. It is also found in roughly 10-12% with Fe anemia.

What are the diagnostic criteria?

These were set by the International Restless Leg Syndrome Study Group:

Essential Criteria (all must be met)

1. An urge to move the legs.
2. Unpleasant sensations in the legs starting or worsening during times of rest or inactivity (sitting or lying down).
3. Symptoms eradicated by movement such as walking or stretching.
4. Only occurring or worse in the evening and at night.
5. Symptoms cannot be explained by any other cause

Supportive Criteria

1. Family history in first degree relatives (natural parents and/or siblings).
2. Response to dopamine treatment.

Is there a biomarker used in RLS diagnosis?

Not that I could find after reading the most recent reviews.

What are the most common comorbidities?

- Depression is probably #1
- Night eating syndrome (31% in 1 study)
- Crohn disease (27%)
- Panic disorder (4%-5%)
- Generalized anxiety disorder (3%-4%)
- Hypochondria

How is RLS treated?

Iron therapy in Fe deficiency and dialysis in ESRD.

Abstaining from caffeine and alcohol may be beneficial

The rest is pharmacological and there is considerable debate among experts as to which drugs to use in primary RLS.

1st Line:
- Carbidopa/Levodopa
- Tramadol
- Codeine
- Pregabalin
- Gabapentin

2nd Line:
- Ropinirole
- Pramipexole
- Transdermal rotigotine

Refractory
- Oxycodone
- Low dose methadone

There is no drug that cures RLS.

What is the relationship between RLS and cardiovascular disease?

There has been a slew of studies:

- The CVD odds ratio in the Sleep Heart Health Study was 2.1 vs. controls without RLS.
- In another study, the odds of CAD were 2.9-fold greater.
- CVD risk was 1.7 higher after 3 years of chronic RLS and almost 4 times greater in veterans.
- In another veteran study there was no risk of CVD events and a 27% reduced MI risk.
- In a 2022 study of subjects with obstructive CAD the risk of MI or death was 2-fold-increased in males only.

Clearly there is more CVD and CAD in chronic RLS than in the general population.

Is RLS associated with significant excess mortality?

Yes.

Here are the findings from the largest and most recent investigations:

- 2019 meta-analysis of 13 studies:
  1. All-cause mortality hazard ratio (HR) 1.52
  2. Community-based studies only HR 1.80
- Nurses' Health Study reported an insignificant 12% increased HR
- In U.S. veterans study HR was 1.88
- In another "men only" investigation of guys without chronic diseases the RLS mortality HR was 1.39
- Suicide risk 2.7 times greater than in persons free of RLS. They also had a 3-fold higher probability of suicidal ideation (27%)

Bottom line:

1. **All applicants with RLS should undergo drilldown questioning such that the underwriter has enough information to know if medical records are needed.**
2. **All cases managed with 2nd line or higher (refractory) risk Rx and/or with a history of psychiatric or CV comorbidities should have medical record review.**

Almuwaqqat. American Journal of Cardiology. 162(2o22):41
Auvinen. Nordic Journal of Psychiatry. E-published February 22
Cubo. Tremor and Other Hyperkinetic Movements 17(2022):9
Didato. International Journal of Environmental Research and Public Health. 17(2020): 3658
Hoek. European Journal of Gastroenterology and Hepatology. 27(2015):951
Silber. Mayo Clinic Proceedings. 96(2021):1921
Takahara, Digestive Diseases and Sciences. 26(2022):185
Vlasie. Experimental and Therapeutic Medicine. 22(2022):185
Wipper. Sleep Medicine Clinics. 16(2021):279
Winkelman. Sleep. 45(2022):szab212

SENTINEL NODE METASTASES IN THIN MELANOMA

70% of melanomas diagnosed nowadays satisfy the criteria for thin lesions (< 1.0 millimeters in measured thickness).

Only 4.5% of thin melanomas have sentinel lymph node (SLN) biopsies.

Walker and his team of 15 Canadian, Aussie, American and Dutch melanoma-ologists sought to determine the risk factors predicting positive SNL biopsies in thin (stage T1) cutaneous melanoma.

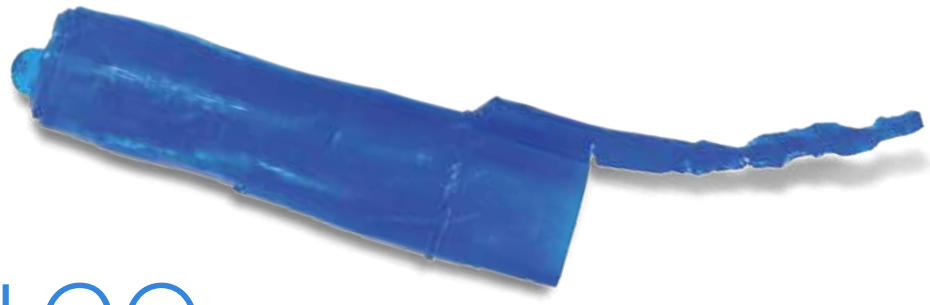
They did a retrospective review of patients treated at 5 melanoma tertiary care centers in Europe and North America. 676 patients were included.

Their median age was 56.

53 (7.8%) had a positive SLN biopsy.

After multivariate assessment of risk factors only 2 were independently predictive of SLN metastasis:

1. Measured thickness:



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Thickness (mm)	% SLN Bx Positive
< 0.75	2.5%
0.75-0.84	6.3%
0.85-0.94	9.8%
0.95-1.04	10.3%

2. Mitotic rate:

Mitoses/mm^3	% SLN Bx Positive
0-1	4.5%
2-3	9.1%
> 3	12.3%

Unfortunately they did have enough data to include regression.

The authors acknowledge that these cases represent a carefully selected cohort with high-risk features.

That said, thin lesions at the thicker end of the spectrum and those with greater mitotic activity have higher mortality in most studies I have seen.

Bottom line: a higher flat extra and/or a longer number of flat extra years should be used in these cases.

Walker. Annals of Surgical Oncology. E-published June 8

CORONARY FLOW RESERVE (CFR) AND MORTALITY

Kelshiker (Imperial College) and his London-based coworkers began the report of their 2022 meta-analysis with this definition of CFR:

"Coronary flow reserve (CFR) describes the ratio by which coronary blood flow can be augmented by exercise, stress or microcirculatory vasodilation."

They noted that CFR measurement is now endorsed worldwide as a diagnostic tool for identifying microvascular angina.

CFR can be measured non-invasively with echocardiograms, MRI and PET scans.

This meta-analysis includes 16 studies with 8446 subjects reporting on mortality and 60 investigations encompassing 35,498 individuals to pinpoint the risk of the full spectrum of MACE (major adverse cardiac events).

The mortality event rate was 24.3% if CFR was impaired vs. 6.7% when it was deemed normal.

The MACE rates were 26.4% vs. 7.9% on the same basis.

The meta-analyzed hazard ratios were formidable:

Outcome	Hazard Ratio
Mortality	3.78
MACE	3.42

In isolated microvascular dysfunction, abnormal CFR had a mortality hazard ratio of 5.44

The HR for MACE in diabetics with abnormal CFR was sky high at 7.47.

A preserved CFR had a protective effect against adverse outcomes. It probably deserves to be credited against debits for CAD risk factors much the same as a negative stress echo.

The authors conclude with 2 observations:

1. Impaired CFR in those with or at high risk for CAD is strongly associated with death and the MACE spectrum.
2. It is time for CFR to be deployed routinely for diagnosis and risk stratification.

This study is well worth a look by those who set underwriting guidelines for ischemic heart disease.

Kelshiker. European Heart Journal. 43(2022):1582

CUTANEOUS PSEUDOLYMPHOMA

A team of 3 pathologists from 3 US medical schools did an elaborate review of lymphoma-esque skin conditions that are actually benign reactive - as opposed to neoplastic - proliferations.

These lesions often do a spot-on job of mimicking cutaneous lymphoma

Underwriters don't need to know most of this stuff but I think it's worthwhile to identify the two forms we're most likely to encounter.

The presentation dermatologists encounter most frequently - relatively speaking, because all of them are quite uncommon - is diagnosed as cutaneous lymphoid hyperplasia (CLH).

It most often presents as a solitary red nodule, papule or plaque; usually on the scalp, ear lobes, face and upper chest.

10-15% are multifocal and they're even more suspicious when spotted by patients or GPs that refer them to dermatologists.

CLH are especially suspect when they have a high cell proliferation rate, typically detected with Ki-67 staining.

They may occur as a response to Rx, infectious agents and toxins, autoimmune disorders, coexisting with neoplasms, or idiopathic (no apparent cause).

Atypical lymphoid hyperplasia (ALH) is a diagnostic subset that is more worrisome because it looks more like a malignancy.

It distorts the architecture of skin tissues and has suspicious features in the lymphocytes that make look more like lymphoma than CLH. There may also be multiple lesions at various sites.

The index of suspicion for malignancy is high and extensive testing including biopsies may be needed to rule out (mostly) cutaneous marginal zone lymphoma.

If the applicant is referred to a dermatologist by his GP we usually make it our business to find out why.

I consider ALH uninsurable but have little doubt most affected applicants will get an offer eventually.

Khalil. Journal of Cutaneous Pathology. E-published June 3

STUFF

Time for some short reports from recent studies and articles that may the helpful to underwriters.

Epigenetic Marker for Lung Cancer

A brand-new study confirms what was reported earlier by Danish investigators.

Namely that an epigenetic marker has unusually robust efficacy in detecting long-timer smokers at high risk for lung carcinoma.

It is even more effective when combined with pack-years of coffin nail consumption, according to an 8-year follow-up of 3081 National Lung Screening Trial participants.

The authors observe that women may have the same risk of lung cancer as men despite smoking significantly less.

Will this DNA methylation test become the "HbA1-c of lung cancer"?

There's no place Like home

APPS
PARA MEDICAL SERVICES

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Philibert. Epigenetics. E-published August 3.

Does GDM Matter?

Gestational diabetes mellitus usually resolves postpartum…but leaves the individual at higher-than-average risk for type 2 DM.

Cui and 3 Medical College of Wisconsin [Go Badgers!] associates assessed the impact of GDM on the odds of long-term T2DM complications.

2494 participants with T2DM in the 2018 NHANES national survey were sorted based on whether they had also had GDM (14% said yes).

A GDM history was independently and significantly associated with more MIs (adjusted odds ratio = 2.53). They were also twice as likely to be diagnosed with CAD when compared to women free of GDM.

I consider a history of GDM a **YELLOW FLAG** for acute coronary syndrome (ACS) in T2DM cases with other adverse CV risk factors.

Cui. Journal of Diabetes Complications. 36(2022):108282

Anhedonia

This psychopathology symptom is defined by Pizzagalli (Harvard) as "the loss of pleasure or lack of reactivity to pleasurable stimuli."

In their review of anhedonia two Beijing psychiatry professors observe that anhedonia may also manifest as social withdrawal, lack of motivation and/or a reduced level of activity.

Antidepressants don't alleviate the condition. Antipsychotics are needed and Aripiprazole apparently gets the highest marks in this regard.

Bottom line: anhedonia is a huge RED FLAG in any context including as a stand-alone observation by a psychiatrist or psychologist.

Pizzagalli. American Journal of Psychiatry. 179920220;458
Su. General Psychiatry. 35(2022):e100724

Crohn Disease and Psychiatric Disorders

Umar and his UK colleagues probed the incidence of psychiatric conditions in CD patients treated in primary care.

They matched each Crohn patient to 4 controls and calculated these hazard ratios:

	HR
Deliberate self-harm	1.51
Anxiety disorder	1.38
Depression	1.36

Umar. Alimentary Pharmacology & Therapeutics. E-pub June 30

2-4 cm Papillary Thyroid Carcinomas

9 Chinese researchers looked for high mortality risk factors in large newly-diagnosed PTC.

In 424 cases, 57.5% had at least 1. The findings with mortality implications included:

> 3 positive LN with extranodal extension	24.8%
Gross extrathyroidal extension	18.6%
Vascular invasion	10.8%
TERT somatic gene mutations	2.6%
Distant metastases	1.2%

Many misguided insurers dismiss PTC out of hand; some go off the rails telling applicants to not even bother disclosing a PTC history..

A 5-question drilldown could dodge a costly bullet here.

Choi. Journal of Clinical Endocrinology and Metabolism. E-published 8/1

cACLD

I haven't previously seen this acronym for "compensated advanced chronic liver disease."

These cases often remain asymptomatic a decade or longer before decompensation or giving rise to of hepatocellular carcinoma (HCC).

According to Rowe (University of Leeds) et al cACLD is "most frequently identified through [unexpected] abnormal liver tests."

Rowe. Journal of Hepatology. 77(2022):293

Post-Traumatic Epilepsy (PTE)

PTE is a potential consequence of a traumatic brain injury.

Karlander and his 3 Swedish associates investigated PTE's mortality risk, using registry data on 111,947 TBI cases between 2000 and 2010 with follow-up through 2017.

Those who developed PTE had an overall mortality hazard ratio of 2.3. The HR was markedly higher (7.8) in younger individuals.

Karlander. Journal of Neurology. E-published July 19

CV Deaths after Venous Thromboembolism (VTE)

A multidisciplinary team of 13 colleagues at Brest Teaching Hospital in France identified the risk factors for CV death in 3988 VTE patients at their facility.

10.7% succumbed to CV causes over a median follow-up of 5 years.

These are the multivariate mortality risk factors:

	Hazard Ratio
Age > 50 at diagnosis	3.22
Hypertension	2.11
Current (vs .never) tobacco use	1.87
Cancer-associated VTE	1.73
Atrial fibrillation	1.67
Past (vs. never) tobacco use	1.43
Unprovoked VTE	1.42

There were 2 factors that significantly reduced the death risk:

- Use of direct oral anticoagulants in lieu of vitamin-K antagonists
- Post-VTE treatment for > 3 months

Noumegni. Thrombosis and Hemostasis. E-published June 18

CV Events in Astronauts

In the remote event you get an application on an astronaut, Charvat (Houston, Texas) et al reassure us that - so far - there has not been any appreciable extra mortality linked to this occupation.

However, their hazard ratio for major CV events is 2.41, raising questions about adverse physical effects from prolonged space flight.

What effect will this have on a manned mission to Mars, expected in the next 20 years?

Charvat. Mayo Clinic Proceedings. 97(2022):1 237

This concludes STUFF reports in this issue.

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"MASK UP TO KEEP IT UP"

...is the absolutely scandalous title of a recent study by a female endocrinological sexologist and her (predominantly female) Italian coworkers.

The essence of their terrifying message is that ED is far more common (28% vs. 9%) in men with a history of COVID-19.

And this C-19-mediated nightmare is independent of the subject's age and psychological status.

A Nigerian literature review showed that the underlying mechanism is viral suppression of testosterone manufacture.

With no curative intervention looming, insurers that match folks with compatible carnal practices may wish to include a COVID history question on their application form!

Sansone. Andrology. 9(2021):1053
Adeyemi. Aging Male. 25(2022):202

SEPTEMBER QUOTES OF EXCEPTIONAL MERIT

To learn who rules over you, simply find out who you are not allowed to criticize.

Voltaire

If democracy dies, it will take a long and mighty struggle to get it back. In the interim, the personal damage to millions of Americans will be irreparable.

Steven Harper
Northwestern University Law School

15 Baltimore neighborhoods have lower life expectancies than North Korea.

Richard Eskow
The Zero Hour
August 3, 2022

The Donner Party had a better chance of survival than the current Republicans.

Brian Karem
Salon
July 28

How many more deaths can this country endure, how many more innocent children will be killed before a mass movement arises that can bring this brutal social order to an end?

Henry A. Giroux
Distinguished scholar in critical pedagogy

MOVIES

Have you taken note of the absolute glut of kiddy kidnapping films?

Paramount put big bucks into their rendition, signing Ethan Hawke to play The Grabber...then dissuaded target market viewers by calling it

THE BLACK PHONE

✪✪✪✪

This one is special thanks largely to resplendent performances by middle schoolers!

When serial killer Hawke grabs prepubescent (and uber-resourceful!) Finney, he unwittingly adds the lad's clairaudient sister as another very special adversary.

There's more here than jump scares, which helps to explain critic and audience tomatometer scores of 83% and 89% respectively, a seldom-seen pattern in this genre.

Warning if you have little kids: Finney's little sister uses the F-word repeatedly. Why? Where do they find screenplay writers with such [p----poor] judgment?

All things considered, I liked it.

- - - - - - -

KIMI

✪✪✪✪

is a near future version of those infuriating concoctions like Alexa.
It is also a film about Angela, an agoraphobic, blue-haired, remote-working analyzer of KIMI stealth recordings for a Seattle startup that bestows obscene gobs of money on its creepy corpulent CEO.

What could account for those screams Angela hears on one KIMI recording?

Determined to find out, Angela pursues an answer unrelenting up the corporate food chain.

Bad call...and with that comes a 20 minute give or take outburst of frankly frenetic proportions.

Directed by Steven Soderbergh and the remarkable Zoe Kravitz as Angela it is no surprise that the critics tomatometer score was 92%.

The 52% from audience raters is, well, inexplicable unless it played exclusively in nursing homes!

This is a winner even if an improbable one.

- - - - -

OCCUPATION

✪✪✪

is a long-winded account of Aussies battling aliens for the survival, as fate would have it, of both Homo sapiens and the reptilian hordes.

I didn't find any characters or those who portrayed them to be memorable.

That said, it was entertaining and far better than 90% of American alien invasion offerings (that are predictably direct-to-video klunkers).

48% Tomatometer rating by critics is actually higher than expected and an 87% from viewers underscores the high dose of rousing entertainment.

The climax will surprise you.

- - - - -

As is often the case, "skillfully written" and "impeccably performed" do not necessarily denote an emotionally pleasant way to spend 98 minutes.

I was lured by the director (Tim Roth) and the leads (Ray Winstone & Tilda Swinton) to give

THE WAR ZONE
✪✪✪✪
a go.

Son and daughter in tow, they fled London for Devon for a "fresh start."

15-year-old Tom is sullen, missing his longtime mates. His 18-year-old sister, Jessie, is upbeat.

Then Tom incidentally witnesses the unthinkable.

It was said that some disgusted patrons fled the theater. Couldn't have been too many given the 83% "thumbs up" Tomatometer score, further embellished with an 84% from critics.

Tom (Freddie Cunliffe, an actor I now follow) has no outlet for his fury. The dry-mouthed viewer senses there will be blood.

Just so.

- - - - -

After watching a mainstream bust (**MEN✪**) I had just enough time before "lights out" to see if I made bad call adding
ROSE PLAYS JULIE
✪✪✪✪✪
to my eclectic streaming queue.

Low and behold it would be "best in show" among the 52 films I saw in August...

...and this despite a pathetic 38% audience score.

For once the critics (95%) were spot on!

Ann Skelly is fabulous as Rose the adopted veterinary student at Dublin University with remarkably intense eyes and an obsession with finding out the identities of her birth parents.

Kudos as well for her "father" - best described as the pathologically insistent sperm donor - archeologist Peter (Aiden Gillen).

Sorry, no spoilers this time other than to caution that if you knuckle down and stay the course, despite the early minutes, you're in for in a unique cinematic experience.

- - - - -

I'm not a legit film reviewer. All MOVIES amounts to is a hardcore movie buff calling it as he feels it. The art part's over my pay grade.

Perhaps this mea culpa helps explain why I'm giving 4 stars to a tale that got a 23% critic score!

Titled cleverly as
FIREFLIES IN THE GARDEN
✪✪✪✪
it features some serious talent: Willem Dafoe, Julia Roberts, Emily Watson and Ryan Reynolds.

Dafoe's is a psychopath father. A monster laying waste to the Ryan Robert's childhood with Julie Roberts as the ineffectual spouse who finally explodes, if only to retain her sanity. Emily Watson is an aging Dafoe's wife/apologist hell-bent to keep silently seething Reynolds from getting his righteous 16 ounces of prime Dafoe flesh.

How can we make Hot Notes better for you?

Anyone keen to inherit Hot Notes on my passing?

I haven't been this comfortable in years predicting the Green Bay Packers' return to the Super Bowl. Where they are destined to battle with the Buffalo Bills.

Peace,

Hank and the HGI Team

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