



Interview With Jong-Gyu Won, President and CEO of Korean Reinsurance Company

By Mark Swanson

The largest reinsurer you might not have heard of? Korean Re has quietly become the 10th largest reinsurer in the world by gross premium. Its CEO sat down for a conversation with Reinsurance News.

Jong-Gyu Won joined Korean Re in 1986 in the marine department. Since then, he has taken on various positions, beginning with representing the New York liaison office, as head of accounting, and as managing director supervising the accounting, marine, and claims and survey departments. From 2011 to 2013, he worked as the executive managing director. In 2013, Mr. Won was named president and chief executive officer.

Mark Swanson (MS): Mr. Won, could you tell us about your personal interests?

JGW: I am a huge fan of classical music. Korean Re is a corporate sponsor of the Seoul Philharmonic Orchestra (SPO). To share the joy of music with all of the employees, families and partners of Korean Re, we hold the SPO/Korean Re New Year's Concert as an annual event. I hope that by enjoying live music, employees and their families get to relieve stress and get refreshed.

MS: Please tell us about your company.

JGW: Korean Re has led our nation's reinsurance industry since its establishment in 1963. It was originally a state-owned corporation, which was privatized in 1978. Starting from only non-life business, we have since diversified our portfolio to life and to overseas markets. Korean Re has grown significantly over the past decade while maintaining a solid position in our domestic market.



Future prospects in Korea are not as bright as before since the local reinsurance market is fully saturated and competition is increasing. Under these circumstances, we believe the future lies in going global. In order to enhance our competitiveness, we have continued to raise our profile worldwide by actively entering overseas markets.

MS: Could you expand on these efforts to grow your business outside Korea?

JGW: Korean Re is currently operating in 11 locations in Asia, North America and Europe, our Zurich subsidiary being the newest. Shanghai is next, followed by our first Latin American office in Colombia.

MS: Tell us more about the life and health business of Korean Re and its activities around the world.

JGW: Life and health (L&H) business has been an important growth engine for Korean Re. Currently, the L&H business represents over a third of the entire portfolio, and we aim to bring the percentage up to 50 percent. In our current L&H portfolio, over two-thirds of our gross premium is from outside Korea. Our overseas L&H business, with customers in North America, Latin America, China, Japan and other countries, is growing rapidly and contributing to the company's overall strategy.

MS: Currently, what is the biggest challenge regarding the Korean life and health market?

JGW: The domestic life and health insurance market is facing regulatory change. The newly revised Korean solvency regime (K-Insurance Capital Standard, or K-ICS) and the new international financial reporting standard (IFRS 17) are expected to be implemented in 2022, which will require insurers to raise additional capital. We expect to encounter diverse reinsurance needs as a result of these changes. Of course, we are ready for these changes and will solidify our leadership position in the domestic market by developing and providing tailored services for our clients.

I believe one of the most important tasks of a CEO is to motivate his or her people to build their skills and capabilities and realize their potential to the fullest so they can feel proud of what they do at work. As CEO, your job is not just about making decisions and executing what needs to be done.

MS: Could you please briefly describe the position of North American life and health business?

JGW: North America is the world's largest life and health insurance market and it comprises a significant amount of our overseas L&H portfolio already—in fact, 2020 is our 10th year being a reinsurance provider in both U.S. and Canadian markets. We are actively pursuing new clients, new partnerships and new opportunities. We not only support yearly renewable term (YRT) mortality reinsurance, but support specific needs on retaining certain aggregated risks and provide facultative service, as well.

MS: Compared to peers, what makes Korean Re special as a L&H reinsurer in the U.S. and Canadian markets?

JGW: Even though we are a reinsurer domiciled outside of North America, we are flexible and easy to do business with. Since the beginning, we have had a strong partnership with RMA of Toronto, Canada, who represents us in the U.S. and Canadian markets. RMA helps insurance companies and Korean Re to conduct reinsurance business with each other, just as easily as if Korean Re were a U.S. or Canadian reinsurer. However, in the end, Korean Re is the party that provides the capacity, retains the risk, and makes all the decisions regarding pricing, terms and conditions.

Though we are under the strict supervision of the insurance regulator of Korea, there could be regulatory or accounting differences we can utilize when we do business in North America. Recently, the introduction of principle-based reserving (PBR) in the U.S. has raised questions about reinsurance strategies—we may have much more flexibility on designing solutions than on-shore reinsurers. For instance, we may be able to provide multi-year rate guarantees at a lower cost. In all cases, we provide the same reinsurance credit as on-shore reinsurers.

MS: Can you comment on your company's future strategies?

JGW: Since our entry into North American markets, our appetite has been for mortality risk using YRT structures. To date, this emphasis has served us well; however, we are seeing demand for newer forms of risk transfer because of new types of risk coming into the market. We also see some companies seeking additional reinsurance in situations like concentrations on single sites, certain employer groups or households.

Larger U.S. reinsurers often have little or no capacity available in such situations, while, without a legacy portfolio, we are able to provide our full capacity of up to US\$ 10 million per person. In response to market needs, in the longer term, we are planning to increase per person capacity and raise net retention level, bringing even more capacity to companies who need it.

Another way of responding to new demands would be expanding our scope to various reinsurance structures other than traditional ones. It includes facultative for individual and group life, and non-proportional coverage of individual or group. Moreover, as a reinsurer having long-standing business relationships with life insurance companies not only in Korea but in other Asian countries, we have extensive expertise in morbidity risks, which are more commonly insured in Asia than in North America. I believe our expertise can help us provide unique and competitive solutions for these types of risks.

In terms of underwriting, more and more U.S. and Canadian companies are interested in accelerated underwriting—we see a similar trend here in Korea. As the largest Korean reinsurer, we are providing not only reinsurance solutions but comprehensive packaged solutions for products applying new underwriting

methods. When proposing reinsurance solutions, I believe our expertise in the Korean market can be helpful.

MS: What makes a good chief executive?

JGW: I believe one of the most important tasks of a CEO is to motivate his or her people to build their skills and capabilities and realize their potential to the fullest so they can feel proud of what they do at work. As CEO, your job is not just about making decisions and executing what needs to be done. You should also know about how to motivate your people to do their best on the job because they are the ones who actually do the work! They should be allowed and encouraged to maximize their potential to do their job in the best way possible. That encouragement should come from the CEO possibly by means of an effective reward system that gives proper credit to those who deserve it. I believe the success of an organization depends on each and every member of the organization doing their best in their respective capacity.

MS: What do you think is an essential part in guiding your organization?

JGW: In running an organization, caring for company culture is essential. I always have “true communication” on top of my list. Hoping for active communication within our workplace, I myself try to reach out to employees first. Recently I started one-on-one talks with our employees to have a direct conversation with every one of them. This would take a few years to complete, but it is worth a try. I believe communication among employees, including myself, will bring better teamwork leading to increased satisfaction and productivity. ■



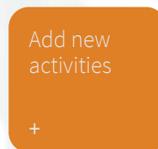
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The Expanding Diabetes Classification Matrix: Types 1, 2 and More ...

By Dr. Karneen Tam

As today's medical and technological advances continue to be utilized and applied to Diabetes mellitus (DM), a newer and even more complex framework for the disease is emerging, which may help us further our understanding of it. This article explores the most recent classification update and some of the newer thinking emerging about DM.

Diabetes mellitus (DM) has been found in humans for centuries. Over the years, the classification and categorization of its spectrum has undergone many iterations, mirroring science's ever-developing understanding of this complex disease. As today's medical and technological advances continue to be utilized and applied to DM, a newer and even more complex framework for the disease is emerging, which may help us further our understanding of it. This article explores the most recent classification update and some of the newer thinking emerging about DM.

WHY IS CLASSIFICATION NEEDED?

Classification is a tool used in scientific disciplines, partly as a naming system and partly to organize existing knowledge. In medicine, classification systems for diseases are useful, as they not only include causes, underlying mechanisms, progression and natural history, they also contribute to the development of new treatment approaches.¹

The goal of disease classification is to standardize diagnoses. This, in turn, can enable a better understanding of a disease's epidemiology, even across geographic regions. Standardized classification can also promote ongoing discussion and cohesive research into the what and how of diseases. Grouping together disease subsets that share similar prognoses and responses to specific treatment plans may guide clinical treatment approaches.²



RISK INDUSTRY IMPLICATIONS

Classification of any disease changes over time as newer and fuller information and knowledge emerge. We find ourselves in an age of great information expansion, made possible by technological tools that include large-scale genome studies and the ability to rapidly process and share large quantities of data from around the world at speeds unimaginable only a decade ago.

For DM, these advances, which are improving the understanding of clinical risk and disease progression prediction, and enabling the discovery of specific disease-targeted treatments, may significantly enhance risk estimation, stratification and underwriting. These advances may also present the possibility of a personalized approach to DM risk prediction.

DM CLASSIFICATION: OVER THE YEARS

The history of DM's classification reflects the conundrum and wonder of the phenomenon of raised blood glucose (hyperglycemia) as well as the struggles and triumphs experienced by people living with the disease and by the medical fraternity members committed to their care.

As a species, we humans have been living with diabetes for a very long time. A possible description of Type 1 DM (T1DM) was documented by Egyptians about three millennia ago, highlighting the symptoms of emaciation, thirst and frequent urination.³

As early as the fifth century A.D., two forms of DM had been observed and described: one occurring in older, fatter people, and the other in younger, thinner people, who had shorter lifespans.⁴

The need for classification of DM types was acknowledged by the mid to late 19th century, but a formal classification system was not established until 1965. In that year, the World Health Organization (WHO) first published its DM classification sys-

tem. The system used four age-band categories to organize children, teens and young adults, young to middle-aged adults and the elderly with DM. Other forms of diabetes that did not conform to the age-band system, such as brittle, insulin-resistant, gestational, pancreatic, endocrine and iatrogenic, were listed as well.⁵

The 1980 classification update, a consensus proposed by the National Diabetes Data Group (NDDG) and endorsed by both the WHO Expert Committee on Diabetes and the WHO Study Group on DM, is the foundation upon which subsequent updates have been built. This system was the first to recognize the Type 1 and Type 2 classes and included a category for gestational diabetes as well as an “others” category. It received global acceptance and adoption.⁶

The 1999 WHO classification update introduced subtype categories for T1DM and T2DM that explained the mechanisms causing the different types.⁷ T1DM was divided into autoimmune and idiopathic subtypes, while T2DM was divided into predominantly insulin-resistant and predominantly insulin-secretory defects subtypes. Gestational DM and “other” types made up the remaining DM classifications. A clear attempt was also made to show the progressive nature of DM by listing the five clinical states within each DM type:

- Normal glucose tolerance
- Impaired glucose regulation
- Insulin not required for control
- Insulin required for control
- Insulin required for survival

This classification framework showed DM’s heterogeneity in genesis and clinical presentation, and a nuanced appreciation that the progression of metabolic dysfunction in DM may be reversible.

Over the next two decades, debates emerged with focus on defining hyperglycemia levels for diagnosing DM, gestational diabetes and intermediate hyperglycemia. However, the basic approach to classifying T1DM, T2DM and gestational diabetes remained largely the same.

THE 2019 WHO CLASSIFICATION UPDATE

The newest revision to WHO’s DM classification system, released in 2019, is its first revision in 20 years. In the executive summary, the revision committee acknowledged that knowledge gaps remain in the causes and pathophysiology of DM, and that classification is further confounded by the rapid changes in DM epidemiology among the young. Consequently, the subtype categories under both T1DM and T2DM have been removed, and a “hybrid” category introduced to describe atypical cases with features of both DM types.

In addition, the “other” category—now called “other specific types”—has grown significantly. This is an expected outcome of

the growing knowledge of the relevant genetics, molecular bases and metabolic processes in DM. Table 1 provides a brief overview.¹

Table 1
Types of Diabetes Mellitus

Class	Subclass
Type 1	
Type 2	
Hybrid forms	<ul style="list-style-type: none"> • Slowly evolving immune-mediated diabetes of adults • Ketosis-prone T2DM
Other specific types	<ul style="list-style-type: none"> • Monogenic diabetes <ul style="list-style-type: none"> » Monogenic defects of beta cell function » Monogenic defects in insulin action • Diseases of the exocrine pancreas • Endocrine disorders • Drug- or chemical-induced • Infection-related diabetes • Uncommon specific forms of immune-mediated diabetes • Other genetic syndromes associated with diabetes
Unclassified diabetes	
Hyperglycemia first detected in pregnancy	<ul style="list-style-type: none"> • DM in pregnancy • Gestational DM

Source: World Health Organization (WHO). 2019. Classification of Diabetes Mellitus. Geneva: April. <https://www.who.int/publications-detail/classification-of-diabetes-mellitus>.

This revision reflects several important elements. It acknowledges that DM phenotypes can vary significantly. Newer tests and analyses have enabled the identification of more DM subtypes.

The current approach for DM classification may also not be sufficiently timeproof and could become outdated. A more fundamental approach to DM’s diagnostic model and classification might be needed.

Two novel approaches are emerging, which are still being examined, studied and validated by peer groups: the palette model and DM clusters.

THE PALETTE MODEL

In genome-wide association studies (GWAS) in which the genetic characteristics of DM populations were studied, many genetic variants have been identified as having causative potential for DM. The number of variants identified so far is in the several hundreds and rising, but only a handful of these have been determined to have significant causative effect when it comes to DM. Most have only weak effects on its manifestation but may contribute toward collective risk if occurring together.

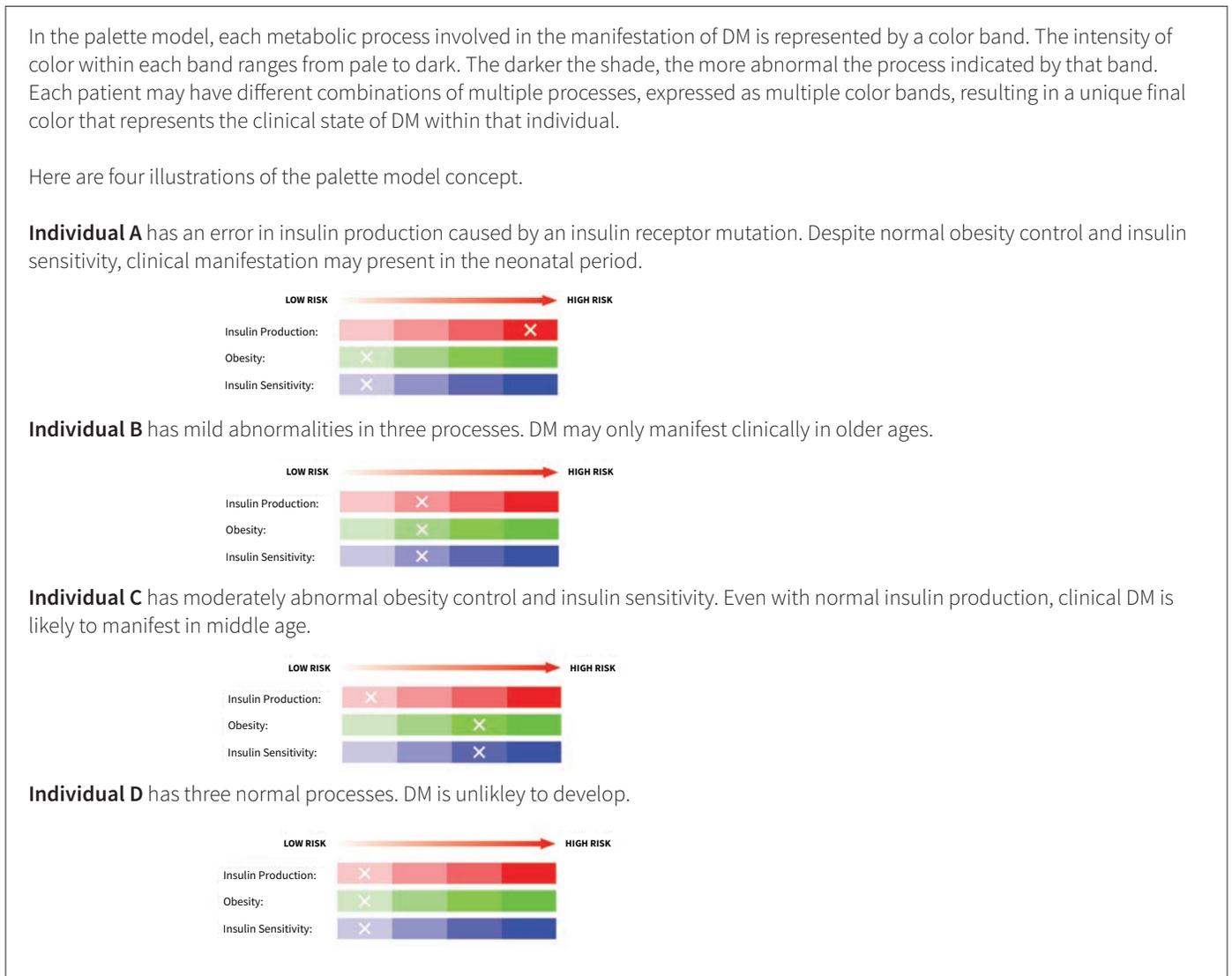
In most cases, DM results not from failure of one single biological process but from the incremental impact of dysfunctions in multiple processes. These errors produce an accumulation of disordered systems over variable time periods culminating in hyperglycemia, except in cases where a highly potent genetic mutation is present that could, in isolation, cause abnormal glucose metabolism. Monogenetic diabetes is just such a case.

At the Oxford Centre for Diabetes, Endocrinology and Metabolism, Mark I. McCarthy and his team have been doing extensive research into the genetics of DM. Using their findings and knowledge from other genetic research, this team has developed the palette model as an explanation for the full spectrum of DM as a continuum of disorders.

The model reflects the genetic basis of DM's disease physiology. It proposes that each person has a unique genetic makeup with its specific susceptibility to (or protection from) developing DM. The genetic susceptibility is determined by the accumulation of at-risk genetic variants that govern underlying metabolic processes contributing toward DM development. Multi-factorial influences further act on this risk over time, which may result in the variable clinical manifestation of DM.

Examples of metabolic processes involved may include obesity development, insulin production, insulin sensitivity, glucagon production and pancreatic cell autoimmunity. These processes would be associated with various identified genetic variants in the GWAS.

Figure 1
The Palette Model: A Graphic Explanation



Source: McCarthy, Mark I. 2017. Painting a New Picture of Personalised Medicine for Diabetes *Diabetologia* 60, no. 5:793–99. [published correction appears in *Diabetologia* May 2017: 940]. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6518376/>.

This model provides an alternative paradigm for understanding DM: its heterogeneity, the mechanisms that can lead to it, its onset and its clinical outcomes. It can represent overt DM in newborns to late-onset mild DM in the elderly and has been validated by empirical studies that support the approach.⁸

McCarthy and his team are developing a polygenic risk score that might improve the ability to predict an individual’s risk of developing DM. This could help find individuals at risk for DM earlier so that specific dysfunctions can be targeted for reversal—an improvement that could have the potential to translate to overall disease burden reduction.⁹

Although genetic testing might turn out to have some applicability in DM, genetic studies are still primarily a research tool, not yet available to the wider clinical community. Also, the role of genetics as an explanation for the presentation of a multifactorial disorder such as DM is still limited. Non-genetic internal and external factors play significant roles in the manifestation of diabetes.

Ultimately, the palette model may provide a useful conceptual framework to explain the mechanism of DM, but its utility value to the broader clinical community is limited at this time.

DM CLUSTERS

A team led by Emma Ahlqvist of Lund University in Sweden is looking at existing clinical and biochemical biomarkers as a way to classify DM’s many manifestations. Some of the biomarkers may be examples of process outcomes cited in the palette model. Using data analysis, this team hopes to improve the mapping of the clinical course of diabetes from diagnosis to end-organ damage.

Ahlqvist’s team retrospectively analyzed the data of 15,000 patient records from Swedish and Finnish registries with a follow-up period of eight years and from the analysis identified

five diabetes subtype clusters. The biometric parameters used included insulin resistance, beta cell function, auto-antibodies against islet cells, A1c levels, age at diagnosis and body mass index (BMI). Genetic information was not used, as the study only looked at clinical and biochemical biomarkers already available.¹⁰

A pattern was identified from one database and then validated against other available datasets. Five clusters of diabetes types emerged, with each cluster identified according to certain characteristics. This is illustrated in Table 2.

This clustering system demonstrates the heterogeneity in DM’s clinical presentation. Clusters 3, 4 and 5, for example, would have been classified as T2DM in the WHO 2019 system. This classification also predicted certain clinical outcomes for the different types: One cluster was more prone to developing eye complications while another to developing kidney disease.¹¹

Other clinicians have already echoed the usefulness of DM type-clustering as a way to optimize treatment approaches.¹² Yet another data-driven analysis conducted by a different team demonstrated that basic clinical features could be equally predictive of DM risk.¹³

If this pattern is validated in longer follow-up analyses and with other population groups, it could prove a useful prediction tool for long-term DM risk projections. This could facilitate better planning for potentially preventive treatment and perhaps more effective disease management. The prerequisite for its utility is the availability of data for the parameters used, including auto-antibodies, insulin resistance and beta cell function measures.

Other researchers are also exploring this clustering in other geographic areas with different ethnic groups. Further results are expected.

Table 2
DM’s Five Clusters

Cluster	Name	Description
1	Severe autoimmune diabetes (SAID)	Early onset, antibody-positive; patient tends toward low BMI, insulin-deficient, poor metabolic control; correlates to current T1DM or latent autoimmune diabetes of adulthood (LADA)
2	Severe insulin-deficient diabetes (SIDD)	Like T1DM but negative for antibodies; high A1c levels, and highest occurrence of eye complications
3	Severe insulin-resistant diabetes (SIRD)	Insulin-resistant, high BMIs, highest occurrence of kidney disease
4	Mild obesity-related diabetes (MOD)	High BMIs, not insulin resistant, relatively younger age of onset
5	Mild age-related diabetes (MARD)	Older age onset, modest metabolic changes

Source: Ahlqvist, Emma, et al. 2018. Novel Subgroups of Adult-Onset Diabetes and Their Association with Outcomes: A Data-Driven Cluster Analysis of Six Variables. *The Lancet Diabetes & Endocrinology* 6, no. 5:361–69. [https://www.thelancet.com/journals/landia/article/PIIS2213-8587\(18\)30051-2/fulltext](https://www.thelancet.com/journals/landia/article/PIIS2213-8587(18)30051-2/fulltext).

SUMMARY

DM is a highly variable condition in its genesis, its natural progression and its associated disease burdens. The disease process is likely determined by an interplay between a patient's genes and environment. Genomic studies have helped unlock a better understanding of the molecular processes involved in DM and have updated much of science's understanding of this disorder. Possible interventions and solutions have also been identified from these studies.

Analyses of the large and newly available data cohorts may use collected information to help organize our knowledge, which may yield significant clinical relevance if followed up over longer time periods and validated across wider population groups.

The portal through which DM is viewed is evolving and the details of its classification framework are under continuous review and revision. The growing information and knowledge bases of this field means our understanding of its disease spectrum is ever sharpening and a personalized diabetes model may eventually be within our grasp. ■



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It's Time to Talk Principle-Based Reserving

By Alijawad Hasham and Michael Mabee

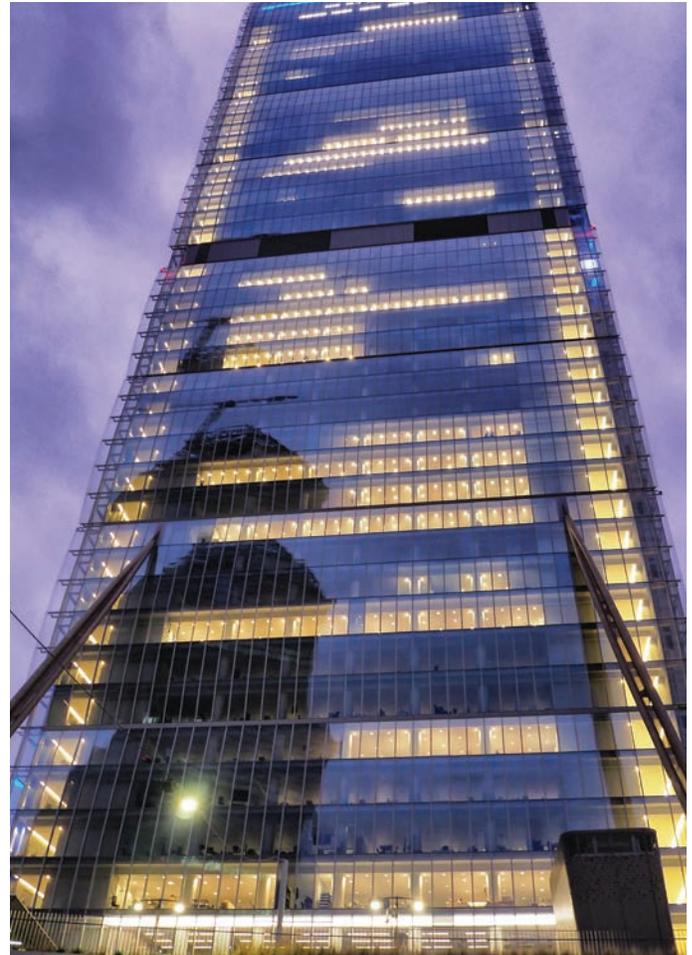
It's time to talk principle-based reserving (PBR). Few people outside of senior leaders and actuaries are familiar with PBR, and yet its large impact is only beginning in the industry.

Few people outside of senior leaders and actuaries are familiar with principle-based reserving (PBR), and yet its large impact is only beginning in the industry.

PBR is an updated approach to statutory-reserve requirements that was introduced by the National Association of Insurance Commissioners (NAIC). It went into effect Jan. 1, 2017, but the NAIC provided a three-year transition period before PBR became mandatory on Jan. 1, 2020.

Here's a look at what's changed, and what you should be prepared for.

The “one size fits all” approach is now being phased out. The claim-paying obligation of an insurer is dependent on reserving calculations, so changing the standard will have a definite impact on the price of insurance.



WHY THE NAIC TOOK ACTION

Before diving into the details of the new law, it's important to understand how insurers estimated reserves previously.

Prior to PBR, a rules-based approach to reserving was adopted by insurers to calculate capital needs. But because uniform assumptions and formulas were prescribed by state laws and regulations, it caused excessive reserves for some insurance products and inadequate reserves for others. In addition to updating this uniform approach, there were concerns by the NAIC that reserves calculated under those valuation standards didn't accurately reflect the features and risk profiles of certain products.

The “one size fits all” approach is now being phased out. The claim-paying obligation of an insurer is dependent on reserving calculations, so changing the standard will have a definite impact on the price of insurance. A high reserve may raise the cost of the policy, while a low reserve may impact the claims paying ability of an insurer.

THE NEW CALCULATION

Principle-based reserving, at its core, requires insurers to make complex calculations and establish assumptions based on their actual company experience, with additional margins added for prudence. This will result in substantial changes to processes, information technology systems and internal controls, and will introduce inter-company variability in capital required to back life-insurance policies. PBR will require insurers to calculate up to three separate reserve requirements and perform an assessment of internal control over their process to perform PBR valuations. An actuarial report must be filed with the insurance company's domicile state and made available upon request.

WHAT SHOULD YOU DO

While working through PBR implementation, here are tips to make it a successful transition:

- **Familiarize yourself with key recent amendments made to the NAIC's Valuation Manual.** These include clarifications on mortality assumption-setting—for example, how mortality aggregation for credibility works, disallowance of capping face amounts in studies, and the post-level-term (PLT) deterministic reserve limitation being seriatim—and a bevy of additional disclosure requirements for the PBR actuarial report. For a deeper dive on the impact of mortality credibility—one of the key drivers of the level of reserves—under a principle-based approach, check out this recent Society of Actuaries and Swiss Re publication.¹

- **Make allowance for product filing delays.** These may occur because of new or refiled products getting to market simultaneously.
- **Engage with your reinsurers earlier in the pricing process.** That's because reinsurance cash flows will influence the price and profitability of your product. Also ask how they may be able to assist you with your pain points. ■



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