2018 CCA Annual Meeting Summaries

This document contains the session summaries from the 2018 CCA Annual Meeting held October 21-24, 2018 in Colorado Springs, Colorado.

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Duties include writing a brief description of specific sessions, collecting continuing education forms, and other duties as requested by the moderator.

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Session 102

Accounting Topics

Speakers:

- Rachel Barnes – Mercer
- Stephen Breeding – Ernst & Young LLP
- Aaron Rothstein – Buck
- Session Moderator: Joseph P. Strazemski – Buck

Session Assistant: Kevin Morrison – River and Mercantile Solutions

Background

This session aims to help the consulting actuary determine if the actuarial assumptions used for valuing your pension plans are reasonable and what needs to be done to ensure they are. The speakers discuss the recent mortality table regulations, related SOA updates, and other major demographic assumptions. Topics taken into consideration include experience studies, materiality, satisfying auditor reviews, and the governing Actuarial Standards of Practice (ASOPs).

Summary

Mr. Strazemski highlighted that assumptions setting is an essential responsibility of an actuary and discussed considerations that go into setting appropriate assumptions, including guidance from the ASOPs.

ASOP 4 provides guidance around selection and communication of assumptions for measuring pension obligations and determining pension plan costs or contributions. The standard details the actuary's responsibility when using an assumption set by another party or a prescribed assumption set by law.

ASOP 21 provides guidance to reviewing actuaries and responding actuaries in connection with financial audits, reviews, and examinations. This includes roles and responsibilities, as well as how the reviewing actuary and responding actuary should communicate.

ASOP 25 discusses the selection or development of credibility procedures and other factors to relevant experience when developing assumptions. Experience studies are very important and are among items requested when transitioning a new client. ASOP 35 provides additional guidance when selecting demographic and other non-economic assumptions for measuring pension obligations. ASOP 41 includes guidance on disclosing assumptions within an actuarial communication, including when the assumption is prescribed by law or prescribed by another party.

ASOP 51 is a recent standard that covers the assessment and disclosure of risk when performing a funding valuation for a pension plan. This provides guidance on how to communicate the risk that actual results may differ from expectations. ASOP 51 is effective for measurement dates on or after November 1, 2018.

Mr. Breeding added that while actuarial standards require assumptions to be "best estimates," this is not always synonymous with being reasonable for the purpose for which they are being selected. Auditors will want to understand any significant source of gains and losses, as this may be an indicator that an assumption needs to be updated.

Auditors will also want to know the last time an experience study was performed.

Both ASC 715 and IAS 19 permit the use of shortcuts, provided results are reasonably expected to be materially consistent. This can be challenging as there are different concepts around "materiality" (e.g. plan level, company level, etc.).

An entity will have its own view of materiality and an auditor will have their view. It's important for the actuary to be in close communication with the client and the client's auditor. Materiality thresholds also differ depending on the purpose of the calculation. For example, plan audits under ASC 960 typically have a lower materiality threshold than financial audits under ASC 715.

The unit of accounting is the plan. Although a "best estimate" should be consistent across all plans, there may be situations where assumptions should or should not be the same for all plans. Actuaries should be careful about making simplifying assumptions across all plans where those plans are inherently different or cover different populations. Using benefit-weighted mortality for a pension plan and headcount-weighted mortality for an OPEB plan is an example of when different assumptions may be justified.

Ms. Barnes discussed the use of mortality experience to develop plan-specific mortality tables. New rules make incorporating plan experience easier for funding valuations, as it introduces a simpler method and requires fewer deaths (100 over 2-5 years). Generational mortality projections must still be used on the plan-specific rates.

The plan-specific tables must be sent to the IRS for approval at least 7 months before the beginning of the plan year, and the review period is 180 days. If still supportable, the tables may apply up to 10 years, though population changes greater than 20% need to be sent to the IRS for approval.

In developing plan-specific tables, data may need to be separated by plan, gender, and annuitant vs. non-annuitant. Data can be aggregated across the control group, but data outside the control group (e.g. industry table) are not allowed to be used. Other restrictions apply around timing, participant age, and disability status.

Once the mortality experience has been analyzed, credibility theory must be applied. If not fully credible, then partial credibility must be applied to the resulting tables, blended with the standard tables, based on the number of actual deaths. There are many other things to consider when analyzing and setting mortality rates as Ms. Barnes detailed in her materials.

Using plan-specific mortality provides confidence that the assumption is a best estimate, which should help minimize gains and losses related to mortality. The same experience study could be used to support an alternative mortality table for accounting, which should create more balance sheet predictability. For plans with higher mortality experience, using a plan-specific table can reduce PBGC premiums and contribution requirements, though the opposite could also occur.

Mr. Breeding added that collar adjustments and headcount vs. benefit-weighted mortality rates should be considered to determine the base mortality. If data is credible and using plan-specific mortality would be material, then accounting firms will expect these tables to be used for accounting purposes.

The mortality projection scales, the "MP" scales, typically reflect an additional year of mortality data. Because this additional data was in existence on or prior to a measurement date, even though it had not yet been published, the revealing of this information is considered a "Type 1 Subsequent Event". Therefore, the new "evidence" must be assessed

prior to issuing financial statements to determine if it is materially different from the prior estimates. Remember that the materiality threshold for ASC 960 may be lower than that under ASC 715.

Using plan-specific mortality tables may help avoid the rush of updating results to reflect the latest "MP" scale. For example, MP-2018 reflects 2016 mortality data. If the plan-specific mortality tables already reflect experience through 2016, then this new information is not "new" relative to the mortality assumption being used. Therefore, it would not be a Type 1 Subsequent Event.

Mr. Rothstein discussed demographic assumptions other than mortality and offered suggestions and considerations. Periodic review of assumptions is important, which can be accomplished through gain/loss analysis and experience studies. Materiality should be considered for all assumptions.

The termination assumption should reflect a balance of plan population experience, recent events, and current policies. The current assumption may no longer be reasonable after a major demographic change (e.g. layoff). Recent trends in when workers are retiring should be considered when setting termination and retirement assumptions. A blend of retirement rates may need to be considered after termination and before final retirement age.

The disability assumption should consider the eligibility definition and the relationship to payment of retirement benefits. The demographic profile and behavior of covered employees should also be considered.

The retirement assumption should reflect anticipated experience, which will be influenced by economic factors and changes in employee behavior. The assumption should line up with the plan's administrative practice around late retirement and required minimum distributions.

Optional form utilization should be included in assumptions, if material. Calculations should reflect changes in the actuarial equivalence basis. External economic and social factors could influence optional form elections, as would how available forms of payment are communicated to participants and how their relative value is disclosed. Potential future lump sum windows should also be considered.

Mr. Breeding added that auditors like to see more frequent updates to significant assumptions. The termination assumption is more material for plans with early retirement subsidies and especially for OPEB plans. Where plan experience supports it, the retirement assumption should extend beyond Normal Retirement Age, and calculations should reflect actuarial increases, where applicable. Retirement assumptions for current deferred vested participants should also reflect plan experience as well as be considered in combination with the retirement assumption for current active participants who are assumed to terminate in the future.

The disability assumption is typically not material unless the disability benefit is highly subsidized or the assumed rates are extremely high. The lump sum election percentage tends to be material, but other optional forms tend to be less significant, unless a subsidized form exists.

Mr. Rothstein concluded the session by stressing the importance of focusing on the big picture. Gains and losses should be monitored annually to highlight any inconsistencies in assumptions, but observing the interrelationship of the different assumptions and any patterns that develop over time are equally as important.

Session 104

Medicare Advantage and Part D Workshop

Speakers:

- Dave Tuomala – Optum
- JoAnn Bogolin – Bolton
- Dan Hoffman – Optum

Session Assistant: Tim Ryan, Optum

Medicare Advantage Landscape

The Medicare Advantage marketplace continues to move toward zero-premium offerings as the percentage of total plans with no member premium has increased from 37% in 2016 to 39% in 2018, to 44% in 2019. As pressure increases to maintain or create zero-premium offerings, many are wondering how long revenue can continue to keep pace with costs before these offerings become untenable. There is some thought that risk scores still have not been optimized and that there may be continued room for growth with the ever-changing list of regulations creating new opportunities on the revenue side. However, at some point with medical and administrative costs continuing to rise, plans will need to make difficult decisions on whether to prioritize the zero-dollar premium plans and the membership that comes with them, or to prioritize earnings, in order to preserve market valuation.

On the quality side of the landscape, the enrollment-weighted Stars average continues to hover around 4.0 for the fourth consecutive year according to the Centers for Medicare/Medicaid (CMS) fact sheet on 2019 Star Ratings. There is, however, a slight increase in the percent of members in a 4-Star or higher plan in the 2019 data. For Prescription Drug Plans (PDPs), the enrollment-weighted star rating has dropped considerably from 3.62 in 2018 to 3.29 in 2019. A large portion of this decrease was caused by lower ratings in adherence measures as well as an increase in complaints about the plans. These decreases may be driven by changes in one or two large plans. Despite stagnant or decreasing overall averages, there appears to be better geographic coverage amongst highly-rated plans. There is at least one highly-rated option available in most geographic areas for both Medicare Advantage (MAPD) plans and PDPs.

2019 and Potential 2020 CMS Changes

The Affordable Care Act (ACA) insurer fee was lifted for 2019 and it is currently unclear what will happen in 2020 and beyond. With the uncertainty around such a large portion of the non-benefit expenses in Medicare Advantage, many health plans chose to add benefits or programs or adjust their pricing relativities in 2019 rather than decrease premiums. The rationale behind this is that the rates may be increased again in 2020 and the plans would rather keep premiums as stable as possible rather than passing on cost instability to members. It appears health plans will need to continue to tiptoe this line for the foreseeable future as there is no current long-term fix in the pipeline.

Another change CMS started to roll out for 2019 Medicare Bids was a loosening of the interpretation in the uniformity rules. For the first time on a standard bid, health plans could offer benefits that targeted members with certain diagnoses. The uniformity requirement now means that all members must be covered if they meet certain disease characteristic qualifications. Plans started to incorporate these benefits in 2019, but it likely that this option will start to take off in 2020 as vendors

and plans have a full year to think through the possibilities and optimize benefit offerings to members.

Looking forward to 2020 MAPD bids, many of the large unknowns are on the Part D side. Specifically, the potential switch to incorporate rebates at the point-of-sale would require large changes to the way health plans approach Part D bids. This and other potential legislative changes would likely require CMS to re-work significant portions of the Part D bid instructions and offer plans specific guidance on how to handle the new rules. Due to the large implications of the potential changes being talked about on Part D and the amount of work it would take to transition away from the current structures, it is perhaps likely these changes will get pushed back to 2020 or never be implemented.

Provider-Owned Health Plans

There is a lot of interest in the marketplace about the advantages and disadvantages of Provider-Owned Health Plans. In order for a provider group to start a health plan, the group must have a reasonably large population (perhaps 10,000 members) to get off the ground and have a chance to break even within a few years. There are two main barriers to starting a provider-owned health plan with fewer members. First, it may be difficult to generate enough revenue to offset fixed administrative expenses. Second, it may be difficult to gain leverage in negotiations with vendors without a larger membership base.

In addition to questions around the feasibility of starting up health plans, provider groups also need to ask themselves hard questions about how they would actually perform as a health plan. Specifically, they need to be honest with themselves about if they are good at the things health insurance companies need to do that provider groups are not always focused on. Do they effectively manage costs? Do they code well enough to optimize risk scores and revenue? If a provider group can honestly assess itself on these questions and generate a large enough member base there are definite advantages to having the health plan and provider sides integrated and this model will likely continue to expand in the market place.

Big Picture Issues

With the forthcoming changes in physician payments due to the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA) on many health plans' minds, there is much discussion on how to properly forecast physician costs. Since each physician may eventually have his or her own fee schedule and a health plan may effectively have thousands of fee schedules to manage, modeling physician charges using traditional methods may become impossible. So far, most plans have not made any adjustments and continue to project physician trends as they have been. Plans will need to make a decision shortly as to whether they want to dedicate a large number of resources to detailed fee-schedule modeling or if a high-level assumption will continue to be enough. There may be a middle ground to explore by making assumptions based on geographic area using Star Ratings and other quality measures that are publicly available.

Finally, another large topic that is relatively ambiguous at this point is what a health plan can and should do with Social Determinants of Health data. Currently, most plans are not using the various economic and social variables that are becoming more and more available. However, there are some plans and researchers that have begun to show how this data may have promise for health plans. Some areas where this data could be especially useful are care management and the projection of costs for dual-eligible populations. It is still unclear if the benefits to health actuaries will outweigh the costs of acquiring this type of data, and there will likely be pushback from regulators and/or the public if this type of data is widely used in setting healthcare premiums.

Session 107

Who Owns the GASB Assumptions – Actuaries vs. Accountants

Speakers:

- Paul Angelo – Segal Consulting
- Jeff Markert – KPMG LLP
- Michael de Leon – Deloitte Consulting LLP
- Session Moderator – Lance Weiss – Gabriel Roeder Smith & Company

Session Assistant – Kenneth Herbold – Texas Pension Review Board

Background

Governmental Accounting Standards Board (GASB) Statement No. 68 basically defers to the Actuarial Standards of Practice (ASOPs) for determining how actuarial assumptions should be developed/selected for purposes of accounting disclosures. However, the audit community is taking a more active role in reviewing actuarial assumptions. This session brings together a plan actuary (Paul Angelo), a plan auditor (Jeff Markert) and a plan auditor's "actuarial specialist" (Michael de Leon) to discuss who is responsible for the GASB assumptions.

Summary

The actuary and the auditor must coordinate their work product on an annual basis. This works best if discussions on the selection of actuarial assumptions between the actuary and auditor start before the GASB actuarial report is prepared. When this discussion happens after the GASB report has already been prepared, it can appear that the auditor is challenging the actuary's work. According to Mr. Markert, the goal is not to challenge the actuary's work, but to fully understand the actuary's thought process when developing and selecting the assumptions.

Where do the assumptions come from?

For retirement plans, most financial reporting for the plan and the plan sponsor rely on the funding assumptions prepared for the plan's actuarial funding valuation. For OPEB plans, however, there is generally no actuarial prefunding so there are no funding assumptions or "plan" financial disclosures.

GASB states that actuarial assumptions must be in conformity with ASOPs. However, the ASOPs allow for deviations as long as a disclaimer identifying the deviation is included. GASB No. 82 has effectively closed this "loophole" requiring a "strict" adherence to the ASOPs. Further, ASOPs no longer include the "best estimate" concept and instead require that assumptions are "reasonable." However, the best estimate concept continues to be included in the accounting literature (i.e. term best estimate is not directly referenced in GASB No. 68, but the concept that the measurement of the liability should be a best estimate continues in the general auditing and accounting guidance). Mr. Markert notes the ASOPs can be viewed as boundaries, but management must still own the assumptions and the combination of assumptions should produce management's best estimate of the liability as of the measurement date.

Can assumptions for accounting and funding valuations be different?

The question "Can assumptions for accounting and funding valuations be different?" was posed to the panelists. Mr. Markert said yes, funding is different than accounting. Mr. Angelo indicated he would be uncomfortable and thinks the answer should be no because inevitably someone will be accused of "lying." The audience was also polled and responded approximately 50% "yes" and 50% "no."

The following examples were discussed where financial reporting assumptions may differ from the funding assumptions:

- The long-term assumed rate of return is used as the discount rate and the plan selects a gradual "step-down" for funding purposes. The "ultimate" rate is most likely the best estimate for this assumption.
- The valuation date and the measurement date differ and the plan has elected a change in assumptions for the next valuation which

will occur on the measurement date. The updated assumptions are most likely the best estimate assumptions.
- The valuation date and/or the measurement date fall in-between full experience study dates. The actuary may need to provide evidence that a review of the assumptions has occurred.
- The actuary and the employer disagree regarding what is the best estimate. If the actuary selects a discount rate of 4.75% and the employer selects a discount rate of 5.00%, using 5.00% may be acceptable as long as 5.00% is reasonable.

In addition, the auditor has other considerations, such as how the plan provisions may impact the attributes they are testing and if pension and OPEB testing should be different. Historically, OPEB assumptions have been more difficult to challenge because of the lack of "formality" so auditors have deferred to actuaries. However, this is changing as auditors recognize they have access to more information regarding the actual plan benefits where actuaries generally rely on plan provisions provided by the employer.

Who is the "auditor specialist" and what do they do?
The auditor specialist can be an actuary employed by the auditing firm or an outside consulting actuary hired by the auditing firm. They assist the auditors by reviewing the "management specialist" (i.e., the plan's consulting actuary) to provide some level of confidence that the actuarial calculations are reasonable. This entails reviewing the assumptions for reasonableness, ensuring sufficient documentation for the assumptions is available and if not, providing estimates to help determine the reasonableness. The specialist helps the auditors understand the risks associated with pension and OPEB liabilities to help focus the auditors testing procures on the items that present the most significant risks. They also help the auditor understand the impact of any errors or disagreements in the assumptions.

Who is responsible?

Task	Auditor	Specialist
Understand and document management's process for annually selecting key actuarial assumptions, including linkage of assumptions to the plan	X	
Annually meet with management's specialists to corroborate or enhance understanding of management's process for annually selecting key actuarial assumptions.	X	X
Evaluate the appropriateness of each key actuarial assumptions to determine if it appears reasonable.	X	X

What is the auditor looking at?
The auditor must obtain an understanding of the actuarial methods and assumptions and assess their reasonableness and the consistency of their application.

Documentation is the key to defending methods and assumptions if the plan experiences issues in the future. The auditor's goal should be to get sufficient documentation to understand the process and to have a clear understanding of both how and why the assumptions were selected. The auditor's goal should not be to challenge the actuary's work. An experience study does not always provide sufficient insight into the process to provide this information.

Auditors will generally focus on the primary cost drivers. In addition to the long-term assumed rate of return/discount rate, these generally include mortality and retirement assumptions plus salary scale (if the benefit is pay based) for pension plans; and base year claims costs, healthcare cost trend rates, and participation rates for OPEB plans. For

modeling the long-term healthcare cost trend rates, the Getzen Model has significant support.

The long-term assumed rate of return supporting documentation should consider that the assumption is forward looking, is based on an analysis of expected returns correlated to the target asset allocation as of the measurement date (i.e. uses forward looking capital market assumptions), and that the inputs (i.e. inflation, individual rates for each asset class) are reasonable based on the plan investments, investing strategy and market conditions

Historically there has been a wide variation in deference to the "management specialist" (i.e. the plan's consulting actuary), but the AICPA is beginning to push for more auditor review and management ownership of the assumptions.

What else was discussed?
Single and agent plans

- Employer auditor is solely responsible for determining sufficiency and appropriateness of audit evidence over actuarial assumptions

Cost-sharing plans

- Primarily use plan auditor opinion on net pension/OPEB liability in accordance with AU-C 805, Special Considerations – Audits of Single Financial Statements and Specific Elements
- Limited high level procedures over actuarial assumptions performed

Mr. Markert reiterated several times the auditor is not there to challenge the actuary's assumptions, but it is imperative they are able to understand "the why" and have sufficient documentation for that to occur.

Session 201

Dialogue with the PBGC

Speakers:

- Erika Barnes - PBGC, Assistant General Counsel
- Jim Donofrio - PBGC, Chief Negotiating Actuary
- Amy Viener - PBGC, Acting Chief Policy Actuary

Session Assistant: Lee Townsend – MassMutual

Background

This session provided an open forum for practitioners to address their questions to a panel comprised of employees of the Pension Benefit Guaranty Corporation (PBGC). Speakers also presented changes to the missing participant program, streamlined disaster relief, and distress termination pre-filing consultation, as well as enhancements to the My PAA online filing system.

Summary

The session began with Ms. Viener, Acting Chief Policy Actuary at PBGC, presenting the expansion of the Missing Participant Program for defined contribution plans and certain other defined benefit plans not otherwise covered by the PBGC for plan years that end on or after January 1, 2018. PBGC will now allow plan sponsors to transfer benefits associated with missing participants to the PBGC, who will provide the benefits when the participant is found. Alternatively, the plan sponsor can provide details regarding another payer and the PBGC will communicate that information to the participant when found. Missing participant forms can be found on the PBGC website, under the "Employers & Practitioners" tab, under "Forms For Employers & Practitioners" in the left column. Note that there are separate forms for plans terminating before 1/1/2018 versus on or after 1/1/2018.

PBGC now allows an extended due date for disaster relief any time the Internal Revenue Service (IRS) issues relief. Plan sponsors wishing to use the disaster relief must notify the PBGC no later than the extended due date (the notification is part of the premium filing; if the plan sponsor will be submitting after the extended due date, PBGC asks that plan sponsor send an email prior to the extended due date to communicate they are seeking disaster relief). PBGC suggests that even if a plan sponsor is planning on filing by the extended due date, they should consider sending PBGC an email to avoid unnecessary notifications from PBGC. Certain post-event notices and reportable events are excluded from the streamlines disaster relief (e.g. missed contributions and solvency).

PBGC requests that plan sponsors considering distress termination conduct pre-filing consultation with the PBGC. This entails a discussion about the appropriateness of the distress termination process and a review of high level historical financials and the other criteria of qualifying for a distress termination. Sponsors can schedule a call with the PBGC by reaching out at distress@pbgc.gov.

PBGC has made enhancements to the My PAA online filing system, adding checking capabilities that may not be available in other private sector software. In addition, there is the ability to check the status of the filing in real time. All post-2016 PBGC mail correspondence regarding the plan can now also be found in My PAA.

PBGC has also added Staff-level Q&A to its website, where answers to many frequently asked questions can be found. This is accessible from the "Other Guidance" web page.

The session was then turned over to Ms. Erika Barnes, Assistant General Counsel at the PBGC. Ms. Barnes reviewed recent negotiated settlements and litigation, including
Page/Collins v. PBGC, where it was found that PBGC did not owe court fees, ending a 20 year settlement, and FBOP v. PBGC, where it was found that IRS incorrectly sent tax refunds to the plan sponsor that should have been paid to PBGC. PBGC was able to recover these funds as part of the litigation.

In wrapping up the session, Mr. Jim Donofrio, Chief Negotiating Actuary for the PBGC, led a discussion on the financial condition of the PBGC. Mr. Donofrio discussed the differences between the Single and Multiemployer programs and the varying levels of benefit guarantees. An example of a recent insolvency was shown, where approximately 3,000 retirees in a multiemployer plan were receiving benefits when the plan ran out of money. PBGC guarantees covered the majority of benefits for retirees with small dollar benefits, but nearly half of the retirees saw dramatic cuts to their benefits (in the extreme cases the PBGC guarantee only covered a third of the benefits for the retirees with larger benefits).

The PBGC net position for both programs in 2017 was a deficit position, but the multiemployer program had a deficit of over $60B (the single employer plan deficit was approximately $10B). Based on a projection, the multiemployer program is expected to run out of money in 2025, largely driven by a small but significant group of plans expected to fail in the next decade. The projection illustrated that recent legislation allowing suspension of benefits was not having a material impact on the program's funded position. After the multiemployer program runs out of money, benefits would be limited to the premiums collected, which would mean further reductions to retiree benefits, paying less than 20 cents on the dollar of benefits owed.

In conclusion Mr. Donofrio noted that there is a November deadline for a Joint Select Congressional Committee to provide findings on ways to solve the multiemployer funding concerns, potentially including higher premiums, mandated benefit cuts, low interest loans, and bankruptcy reform. At the current outlook, plans covering 1.5M participants are in critical and declining status, meaning the plans are expected to be insolvent within the next 20 years.

Note: The PBGC has not reviewed nor approved this summary.

Session 202

Preparation for a Successful Plan Termination

Speakers:

- Michael Clark – River and Mercantile Solutions
- Sonja Coffin – Fidelity Investments

Session Assistant: Maureen McClain – River and Mercantile Solutions

Plan termination is a long and complex process that requires advanced planning to ensure a successful outcome. Our speakers focus on two areas of preparedness that plan sponsors and their advisors should consider before a plan termination begins: funded status and data remediation.

Funded Status

Regularly tracking funded status estimates on a plan termination basis can help a plan sponsor effectively plan for their final contribution and avoid the pitfall of overfunding.

Unknown factors make it difficult to pinpoint what plan termination liability will be in advance, so estimates may be communicated as a range. For example, the proportion of benefits paid as lump sums versus an annuity purchase will depend on lump sum take-up rates and the plan's mix of retired and deferred participants. Annuity purchase pricing for retirees is generally in line with PBO liability when using realistic assumptions, while pricing for deferred participants will depend on the complexity of plan provisions. Various case studies demonstrate how the range of estimated liability may vary based on a plan's characteristics. A plan with mostly retiree liability is fairly predictable, and may be estimated within a range of 1-2%. A plan with more deferred liability and/or complex plan provisions may have a wider estimated liability range of 10-12%.

It is also important to understand the risks of funded status changes under different market scenarios. Various case studies are examined to demonstrate potential sensitivities to various market shocks, such as interest rate and equity market volatility. Plan sponsors may explore liability driven investing and/or derivative strategies to reduce funded status risk leading up to plan termination.

Data Remediation

While the timing for plan termination may be unique to each company's financial situation, there are macroeconomic factors that could accelerate the timetable for many plans. With plan sponsors funding up due to tax reform and rising interest rates, there could be a run to the market to terminate. If this happens, there may be a small fraction of the $3 trillion in pension assets that could be absorbed by the insurance market for a given year. This is why data remediation should be a priority to plan sponsors.

Data remediation is the process of discovering, researching, and resolving all plan data issues. Plan sponsors are often unaware of the degree to which gaps exist in plan data because the data quality required for day-to-day administration is less rigorous than the data quality required upon termination. Bad data not only increases the cost of termination, it also increases fiduciary and legal risks

and may ultimately result in the cancellation of a plan termination altogether.

A number of areas of data remediation are covered in this session. For example, a death audit should be conducted to identify unreported participant and beneficiary deaths. Old non-vested terminations and lump sum cash-out participants should be reviewed to ensure no benefits are due. Qualified domestic relations orders should be checked to make sure benefits have been split correctly. An address search should be conducted to check for bad addresses and identify lost participants so that an effort can be made to find them.

Accrued benefit calculations must be certified, if not already certified when the plan was frozen. Additionally, conducting a complete calculation audit can help identify any prior calculation errors that were made. If errors exist, they may be corrected through a Voluntary Correction Program (VCP) filing. All historical data used in the calculation of the accrued benefits must also be collected to include in the Notice of Plan Benefits that is sent to participants.

Plan sponsors must ensure that all aspects of plan administration are cleaned up as well. The plan document should be reviewed by ERISA counsel so that retroactive remedial amendments may be adopted to correct plan document issues before termination. Certain plan provisions may also be amended to simplify administration procedures, which can result in more favorable annuity purchase pricing. For example, redundant or underutilized forms of payment may be removed, calculation of vesting service may be changed to an elapsed time method, and disability eligibility rules may be changed to use an objective, rather than subjective, definition (e.g. Social Security definition).

In Summary

Being prepared for plan termination is important to avoid issues during the termination process. Preparation includes understanding the trust termination liability, risks of funded status changes, reviewing data requirements for completeness and ensuring all administration practices are compliant with the plan document and regulatory requirements.

Session 205

Developments in Large Carrier Networks and Emerging Specialty Services Part 2.

Speakers:

- Alan J. Silver – Willis Towers Watson
- John E. Horvath – Anthem
- Wendy Kinney – Castlight
- Kate Unsworth – Castlight

Session Assistant: Cheryl Ham – Aon

Background

This session is the second session in a four-part series on emerging solutions in large carriers and emerging specialty service vendors. This session features Anthem and Castlight. Anthem is an independent licensee of the Blue Cross Blue Shield Association. Castlight is a specialty vendor that offers a platform to connect all of an employer's healthcare and benefit resources, with a focus on making it easy for employees to navigate healthcare and live happier, healthier and more productive lives.

Anthem

Anthem is focused on delivering the right care in the right setting, based on quality and efficiency. Mr. Horvath shared a story about an article that identifies the Top Doctors in Colorado Springs. It turns out that the ranking was determined based on voting from peers. That is not how Anthem nor the general population should determine the quality providers.

Currently 31% of Anthem's claim spend is flowing through value-based care contracting arrangements. Mr. Horvath shared metrics to show how value-based care contracting is driving improved results at Anthem. The metrics include 5% net savings, $1.8 billion total savings, 13.8% fewer inpatient days, 9.6% savings on inpatient days and 5.3% savings on outpatient care.

Mr. Horvath explained that expanding value-based care arrangements is not about shrinking the network size, but instead about getting doctors more and better data so that they can be more effective. Using data and analytics to do this is important. To start, this includes identifying markets with the greatest opportunity for improvement, identifying conditions that drive cost and utilization, and then evaluating the performance of the providers that are managing the care. Sharing this data with providers is important so that they understand how they are performing.

Mr. Horvath shared an example about a client in Dallas with high out-of-network spend. Analysis was performed to determine who is going out-of-network and why. The outcome of this is that for 2019 the client is requiring members to choose one of three primary care physician (PCP) groups for coordinating care with soft steering to high performing specialists. There are aligned incentives and designated referral patterns for the PCP groups. The expectation is that the client will realize 12% savings. Anthem is working on similar solutions in other markets.

Anthem is also using analytics to identify personalized interventions for members. As part of this they evaluate member clinical risks, ability to engage the member, financial risk and savings opportunity to determine the personalized

interventions. It is early so results are currently directional, but Anthem believes they will be able to bend trend in the range of 0.5% to 1.9%. This is through steerage, not narrowing the network size.

Anthem is also using analytics to drive provider match tools. Machine learning is used to find the best providers for members based on their conditions and risk profile. They are using data across the whole health care ecosystem to drive improved outcomes and financial results.

Castlight

Castlight started as a transparency company where the member had to initiate the interactions. They have evolved into providing care guidance to members and engaging the total population. The current total population solution is called Complete Health Navigation. Anthem utilizes a version of this for their members called Engage.

Ms. Kinney explained that the Complete Health Navigation platform integrates Castlight features and other existing employer programs to create one unified user experience. Castlight features include wellbeing – incentives, communities, health assessments; care guidance/navigate care, educate and provide support; engagement hub – personalized messaging, benefits information, targeted communications. This is all brought together and powered by an intelligence engine called Castlight Genius™.

Ms. Kinney explained that Castlight delivers value to employers along three dimensions, including direct cost savings, program engagement and employee satisfaction. In the direct cost savings dimension Castlight studies show a 1.25% to 1.75% reduction in medical costs. In the engagement dimension Castlight has been able to impact engagement of third party benefit programs by two to four times. In employee satisfaction, Castlight has an AppStore rating of 4.7 and a Net Promoter Score (likeliness to recommend) of 62.

Ms. Unsworth described how Castlight uses retrospective DxCG risk scores to create risk cohorts ranging from very low to very high risk. They are then able to look at how medical cost spend and measures such as utilization of preventive services and ER utilization compare for Castlight users versus non-Castlight users in each risk cohort.

Ms. Unsworth also described how Castlight Genius™ uses data to guide members to the right care. The segmentation engine takes in real-time user preferences, user behaviors, claims and employer data to build a personal user profile that evolves over time. Then the recommendation engine determines and delivers personalized program, behavior, care option and incentive recommendations. The recommendation engine also helps to determine the right channel for the message and engages each member with personalized campaigns. Ms. Unsworth shared an example of how this works in practice for a member that is a diabetic. She emphasized that getting members to engage in programs when they are healthy is important so that they know where to go when they need care. She believes personalized messages are critical to get people to engage.

Session 207
ASOPs 4, 27, and 35

Speakers:

- David L. Driscoll – Buck Global, LLC
- David T. Kausch – Gabriel, Roeder, Smith & Company
- Paul Angelo – Segal Consulting

Session Assistant: Brad L. Armstrong – Gabriel, Roeder, Smith & Co.

Background

In March of 2018, the Actuarial Standards Board (ASB) issued Exposure Drafts (EDs) for Actuarial Standards of Practice (ASOPs) 4, 27 and 35 with proposed changes to standards affecting actuarial valuations for all pension plans, including public sector plans. Some of the changes would require all plans to disclose a "reasonable" actuarially determined contribution, and constrain how it is determined. In addition, and perhaps most notably, actuaries would be required to disclose an "investment risk defeasement measure," which is a particular version of what financial economists call the "market value liability." Comments are due July 31 and will be reviewed and discussed at the ASB and its Pension Committee. In this session actuaries close to this process discuss the proposed changes and the comments received, with a focus on how these changes would affect actuarial practice for public sector plans.

Summary

Mr. Driscoll led off the session focusing on the new requirements of the three EDs. ASOP 4 provides guidance on measuring pension obligations and costs, ASOP 27 provides guidance on the selection of economic assumptions for measuring pension obligations and ASOP 35 provides similar guidance for demographic assumptions.

The new requirements of the ASOP 4 ED include a disclosure in funding valuations of an investment risk defeasement measure (IRDM). The IRDM is the value of accrued benefits under the Unit Credit cost method using discount rates consistent with market yields for a hypothetical bond portfolio whose cash flows reasonably match the pattern of benefits expected to be paid in the future and other assumptions chosen in accordance with the requirements of ASOPs 27 and 35. While many large private sector plans may already be calculating a value that effectively complies with the proposed measure, public sector plans do not. Many small private plan actuaries, public plan actuaries, and organizations representing the interests of their clients have been critical of the proposed measure.

The new requirements of the ASOP 4 ED also include restrictions on amortization methods. An amortization method must avoid negative amortization at all times or provide for installments that increase no faster than expected payroll growth AND amortize unfunded liability over a "reasonable" time. A reasonable time should limit the period of negative amortization and consider the duration of the actuarial accrued liability, the source of the unfunded liability, and the funded status of the plan. These new requirements would mainly affect public sector plans and

particularly those using an open amortization. Recent guidance from the American Academy of Actuaries (AAA), the Conference of Consulting Actuaries (CCA), the Government Finance Officers Association (GFOA), and the Society of Actuaries (SOA) all recommended similar restrictions on amortization methods. Emerging practice can be seen at publicplansdata.org where the number of plans reporting the use of "level percent open" has dropped by 50% over the five year period from 2012 to 2017.

The new requirements of the ASOP 4 ED also include considering the reasonableness of any output smoothing method employed by the actuary. Output smoothing is often viewed more favorably than traditional actuarial approaches to reducing volatility in pension contributions and can be "more intellectually appealing." Above all, an output smoothing method must avoid systematic understatement of actuarially determined contributions. Again, this requirement would generally only affect public sector plans.

The new requirements of the ASOP 4 ED include a gentle "raising of the bar" for gain-and-loss analysis which oblige the analysis to differentiate between investment gains and losses and those arising from other sources. This will affect all pension funding valuation reports that do not already provide this minimum differentiation.

Lastly, the new requirements of the ASOP 4 ED include a calculation of an actuarially determined contribution that satisfies the reasonableness criteria of ASOP 4. This would affect public sector plans with fixed employer contribution rates.

The new requirements of the ASOP 27 ED represent clarification rather than change that any phasing of assumptions must be reasonable at each measurement date and that economic assumptions must be reviewed at each measurement date to verify their continued reasonableness.

The new requirements of the ASOP 35 ED include the provisions that any phasing of assumption changes must be reasonable at each measurement date and with respect to mortality assumptions, the actuary is directed to consider the use of recently published mortality tables and if it is decided against their use, the actuary must determine the assumption is reasonable and should disclose justification and credibility, i.e., the actuary needs to validate older mortality tables for continued appropriateness.

Mr. Kausch took the podium for his discussion on the comments received on the EDs by the ASB and some background on the IRDM.

The Transmittal Memorandum for the ASOP 4 ED asked two questions. The first question was whether the IRDM discount rates based upon either U.S. Treasury yields or yields of very high quality fixed income debt securities were appropriate. If not, what rate choice would you suggest? The second question was mainly targeting fixed rate public sector plans with fixed employer contribution rates and if the reasonable actuarially determined contribution described an appropriate contribution allocation procedure for this purpose. If not, what would you suggest? The ASB received a near record 67 comments, about half of which were from public sector actuaries, systems, or organizations. Many of the comments focused on the IRDM and did not offer an answer to either question. Many commenters thought

the ED was too prescriptive and referred to ASOP 1, Section 3.1.4. Some comments thought the IRDM disclosure requirement should be removed, while others sought to keep or even strengthen the IRDM disclosure requirement. Those in favor of removal gave reasons such as the IRDM does not allow for variable plan design, traditional unit credit is inappropriate for public sector plans, the SOA Blue Ribbon Panel uses the same actuarial cost method as for funding, Precept 8 would restrict disclosure on the basis of resulting misuse, and IRDM is not an appropriate measure of investment risk.

Expanding on the Precept 8 concerns about disclosing IRDM, some commented that IRDM is really a solvency liability from financial economics. Others thought that no amount of description or limitation will prevent IRDM from being misused by other parties. Mr. Kausch countered that it is okay for the IRDM to be a solvency liability and IRDM is not the sole liability calculation required. Further, Mr. Kausch points out that if an actuary understands there is more than one liability measure, then the actuary should be able to explain the differences and there are at least two Issue Briefs from the AAA on the subject. Virtually all actuarial calculations are technical and difficult to explain. Comparing and contrasting different perspectives can enhance and broaden conversations, and by the way, solvency liability measures are already out there.

For background on the IRDM, the roots date back as far as 2008 when the Public Interest Committee (PIC) of the AAA concluded that retirement plans should disclose consistent measures of the economic value of plan liabilities and assets, and the AAA Board should ask the ASB to take expedited action to develop appropriate ASOPs to address this issue. The ASB at the time looked at recommendations and did not see enough merit to take immediate action, and coincidentally, the Governmental Accounting Standards Board (GASB) was about to issue new standards for reporting on public sector pension plans. The pension ASOPs had a large volume of recent changes already. In February of 2014, the Report of the Blue Ribbon Panel on Public Pension Plan Funding was released and reopened the idea that ASB involvement was necessary. The ASB issued a Request for Comments on the topic of ASOPs and Public Plan Funding and Accounting in July 2014. After receiving over 50 comment letters, the ASB created the Pension Task Force (PTF). The PTF sought consensus on multiple issues including if additional guidance for public plans is needed and if a market-based value of liabilities disclosure should be required. The PTF held public hearings, considered all input, and issued a report with suggestions. The ASB directed its Pension Committee to incorporate the PTF's suggestions into the ASOPs, e.g., solvency value, reasonable actuarially determined contribution, and assumptions should require an affirmative statement of reasonableness. During the same timeframe, the CCA issued a White Paper on Public Plan Funding recommending best practices based on the existing ASOPs.

The IRDM was the name that the Pension Committee gave to the solvency value. The PTF used solvency and settlement interchangeably, but since there was a diversity of opinion on what each meant, a new name was created. The ASOP 4 ED requires the IRDM be included in all funding valuations. The IRDM is calculated based on benefits accrued as of the measurement date, traditional unit credit,

market discount rates for a cash flow matching portfolio, and other assumptions under ASOPs 27 and 35. The value of the IRDM to intended users is that it can provide better understanding of the assets needed to secure benefits accrued as of the measurement date, better understanding of the risk to members if the sponsor doesn't make sufficient contributions, and it can become part of plan's risk assessment.

The IRDM is a measure of the liabilities of the plan for benefits accrued to date, if the future investment risk is eliminated by investing in assets with an expected yield equal to current bond yields. So IRDM is not so much a direct measure of risk; rather it is a measure of the absence of investment risk. It is, however, a risk measure when compared to something else such as assets or another liability measure. The IRDM helps in a discussion of the contribution/risk tradeoff. In an asset/liability framework, the liability is considered to be a negative asset in the portfolio. The IRDM (less the market value of assets) may also be considered a Coherent Risk Measure, a measure being used globally in the context of modern finance and enterprise risk management. One final point made was that IRDM is independent of the investment allocation, so it limits some of the subjectivity associated with different investment policies.

Mr. Angelo took the podium to discuss the market pricing debate, the three new ASOP EDs, and also a soon to be effective ASOP 51 on risk assessment and disclosure for pensions.

The market pricing debate has been raging for at least a decade. The IRDM is just the latest rebranding of the myriad of market pricing disclosures put forth by the financial economics apologists. The ASB already gave this topic thorough consideration over a period of three years in their reviews of ASOPs 4 and 27 including the 2008 request from the AAA PIC. Ultimately, the 2013 revisions to ASOPs 4 and 27 neither define how to measure a "Market-Consistent" present value nor require the disclosure of one. Instead, the 2013 revisions stress the "purpose of the measurement" when measuring pension obligations or determining costs under ASOP 4 and when selecting a discount rate under ASOP 27. Interestingly, market-consistent measurements are included as a possible purpose, so the market pricing model is both a type of measure *and* a purpose.

More recent ASB activity on public pension plans includes the July 2014 Request for Comments on ASOPs and Public Pension Plan Funding and Accounting which references 2013 ASOPs, appoints a PTF to review comments, and scheduled a July 2015 Hearing on Public Plan Issues. The PTF issued a report in February 2016 with suggestions to include a "Solvency Value" and other suggestions on assumptions and funding policy. Eventually, the ASB issues the three EDs in April 2018 which are the central topic of this session.

Around the same time, from late 2014 to September 2017, the ASB issued two exposure drafts and a final version of ASOP 51. The final version does not require any numerical assessment, although the first ED had a periodic quantitative assessment for "large plans." The standard states that numerical risk assessments may include various tests or stochastic modeling and a comparison of an actuarial present value (APV) using a discount rate derived from minimal-risk investments to a corresponding APV from the funding valuation. This is not the solvency value or the IRDM. The discount rate is the same, but the APV is

developed using a level cost liability measure similar to a disclosure recommended by the SOA BRP.

The subsection of the ASOP 4 ED describing the IRDM was mentioned again. The ASOP 4 ED is recharacterizing the Solvency Value as the IRDM, "an obligation measure to reflect the cost of effectively defeasing the investment risk of the plan." The ASOP 4 ED gives no further justification for disclosing the IRDM. The PTF Report suggests that the true Market Value of Liabilities (Solvency Value) is plan specific. The PTF Report gives three reasons for a Solvency Value Disclosure: it may be misleading to show traditional values by themselves, disclosure provides important information about risk, and disclosure will help advance the actuarial profession. Only the second reason made it into the ASOP 4 ED.

The ASB PTF Report asserts that a solvency liability gives intended users an understanding of how much the plan sponsor would need in assets to secure the pension promises and provides information about the amount of investment risk being taken. Since the IRDM is intended to be a solvency liability, it measures the cost to eliminate investment risk (or the savings from taking investment risk), but the IRDM does not measure the possible results of investment risk. Therefore, the IRDM quantifies risk aversion, not risk management. As a risk measure, it is not a very useful one.

If the IRDM or other Solvency Value measures are essential measures of risk, why wasn't it required or even included under ASOP 51? The measure mentioned in ASOP 51 would use the cost method for funding, not an accrued benefit value. This could be considered an investment risk defeasement measure. The IRDM is actually a theoretical settlement value. Recall that the selection of the discount rate and cost method depend on the "purpose of the measurement." If a plan cannot actually settle accrued benefits at market rates, what is the purpose of this measure? As noted, it is not particularly useful as a measure of ongoing investment risk. Under ASOP 1, the ASOPs are generally "not narrowly prescriptive." The IRDM is most definitely narrowly prescriptive guidance and does not provide important information about risk.

Mr. Angelo's most important slide was a recap of having a "purpose of the measurement." An accrued benefit measure using a risk free discount rate can serve three distinct purposes: it can be the "Solvency Value" required as an input for a financial economist's model, it can be the settlement value offered by a multiple employer plan when one of those employers withdraws, or it can show what the plan would cost if invested in low risk assets using the same cost method as used for funding (otherwise it is both a longevity and investment risk defeasement measure). The PTF Report acknowledges all three purposes. The ASOP 4 ED cites only the last of these purposes and distorts the measure by prescribing the unit credit cost method. If the IRDM is not changed, the ASB is deviating from its standard approach to guidance.

Session 301

So You Think You're Smarter Than a New EA?

Speakers:

- Jason Melbye – October Three LLC
- Lauren Meyer – River and Mercantile Solutions
- Robert D Gentry – Anthem

Session Assistant: Robert Grider – Stanley, Hunt, DuPree & Rhine, Inc.

So you think you're smarter than a new EA was an interactive session that allowed attendees to test their Enrolled Actuaries knowledge from recent exam questions. The attendees were provided a question and given five minutes to work the problem and submit their answer via their smart phone or tablet. Attendees were given points for correct answers and how quickly they were able to answer the problem. At the conclusion of each question the session speakers led a discussion on the problem and what the key information was in each problem as well as what were some of the "traps" that could lead to an incorrect answer. The speakers were able to get through nine questions during the session covering a variety of topics.

Questions:

1. Question 32 from EA-2, Segment L in 2018: This question was a True/False question regarding whether or not a Plan Sponsor was required to reduce their funding standard carryover balance in order to increase their AFTAP to 80%. The answer was False and the main point in the question was that the plan did not provide for accelerated distributions from the plan.

2. Question 3 from EA-2, Segment L in 2017: This question was a benefit calculation question that required the test taker to recall the Top-heavy benefit requirements. These requirements included only using pay during the period the plan was deemed top-heavy and using the correct averaging period of 5 years to determine the top-heavy benefit (versus the 3 year averaging period for the plan benefit).

3. Question 49 from EA-2, Segment F in 2014: This question was a liquidity shortfall calculation where the individual was required to recall the liquidity shortfall formula as well as getting past the possible trap of not including administrative expenses if paid from the trust.

4. Question 52 from EA-2, Segment F in 2017: This question was a test on the timing of credit balance elections and reductions and when they are deemed to occur in comparison to where they might have been made chronologically. The key was to recall that a plan sponsor election to "reduce" the funding balance as of the beginning of the plan year is deemed to occur on the valuation date and not the date of election. Whereas the election to "apply" a funding balance is deemed to have occurred as of the election date.

5. Question 42 from EA-2, Segment F in 2017: This question required the calculation of minimum required contribution under alternative scenarios due to a change in the actuarial value of assets. With this problem the key was to make sure that a shortfall amortization charge was created in the second scenario and also to

roll up the contribution requirements from 1/1 to 7/1.

6. Question 5 from EA-2, Segment L in 2018: A 401(a)(26) testing question that reviewed minimum participation rules for a defined benefit plan that has at least one highly compensated employee. Answering the question correctly required the actuary to correctly determine the non-excludable employee count, specifically around employees who terminated during the year. Terminated employees can only be excluded if they worked less than 500 hours AND they were eligible to participate but failed to benefit under the plan due to not satisfying the plan's minimum service or hours requirement. In this problem, excluded terminated managers (who were not eligible to participate) led to the wrong answer.

7. Question 27 from EA-2, Segment L in 2016: Another nondiscrimination testing question where the individual needed to determine non-excludable employees when an employer sponsors two (2) plans and the plan's eligibility requirements differ. The employer aggregated the plans for IRC Section 410(b) testing purposes. Here the trick was to remember that in order to be excludable an employee must fail to satisfy all sets of eligibility requirements for all plans that are aggregated for testing purposes.

8. Question 28 from EA-2, Segment F in 2017: A question that required the attendees to determine a credit balance using the Multiemployer plan rules. This question dove in to the mechanics of when to apply interest to the various components of the calculation and the need to establish an additional base in the 2nd year of the calculation.

9. Question 44 from EA-2, Segment F in 2017: This final question was a review on calculating the funding target for a participant when lump sum payments are assumed. Treasury regulation 1.430(d)-1(f)(4)(iii)(B) requires that for funding purposes, a lump sum must be valued using the 417(e) mortality (post-retirement) and using the funding valuation segment interest rates. Using the plan's interest rate for lump sum calculations (minimum 417(e) segment rates) results in the wrong answer.

Overall the session was a fun interactive way that attendees could work through old exam problems and recall a handful of the various pitfalls that they may encounter as they work through their own client situations.

Session 304

Health Plan Applications of Predictive Analytics

Speakers:

Yi-Ling Lin – The Terry Group
Gary Stanford – Health Care Service Corporation

Session Assistant: Bobby Schenck – The Terry Group

Predictive analytics will be an integral part of the actuarial skillset as we move into the future. This session aims to provide practical applications of predictive analytics from both a consulting and health plan perspective through general introductory information and case studies.

Data Analytics Introduction

The scope of data analytics work can be described through four categories: descriptive, diagnostic, predictive, and prescriptive/decision-informing. Actuaries are traditionally well versed with the first two categories which explain "what happened" and "why did it happen." The full value of data analytics is realized as you move into the second two categories which explain "what will happen" and "how do I influence what will happen." As actuaries, we often have access to a wealth of data and it is important to figure out how to use the data to drive strategy by moving into the second two categories.

There are many current and emerging applications of data analytics in US healthcare including dashboards/reporting, trends exploration and forecasting, pricing, claims reserving, risk scoring/risk stratification/risk adjustment, fraud detection, and many more. Some of these applications are historically done within the scope of the first two categories, but it is possible to provide more value by moving them towards the second two. Claims reserving is a good example, where the tools of predictive analytics can be combined with detailed claims data to improve accuracy relative to more traditional methods.

The data analytics toolbox of methodologies and common healthcare applications applicable to each include generalized linear regression/logit models (risk scoring/risk adjustment, plan design/choice modeling, product conversion), survival/Markov models (disease progression, claims reserving), time series (trend forecasting, stress testing), classification/clustering (fraud identification, targeted marketing, high cost group stratification, provider referral patterns), and deep learning (text processing).

Many of the non-traditional methodologies in the toolbox fall into the classification of non-linear machine learning models. A key attribute of these models is that they don't assume any relationships between independent variables (or features) and the dependent variable (or target). In using these models there is no need to have prior knowledge of the distribution, to carefully select features, or to manually identify potential interactions. Something to keep in mind with these models is that they can be difficult to interpret, which can be an issue when it comes to explaining results to clients or to regulators. The results won't be as nice as coefficients in a traditional linear regression, which are easy to explain and understand.

A specific set of non-linear machine learning models is the decision tree and its variants. The different variants of the decision tree include bagging (or bootstrap aggregation), random forest, and boosting. These represent powerful tools for predictive analytics modeling. Each of these methodologies has pros and cons relating to overfitting and interpretability which should be carefully considered depending on the specific situation being modeled.

XGBoost is a specific algorithm which is a very efficient implementation of boosted trees. It is

consistently used to win Kaggle data science competitions and is available in both Python and R. It is a tool worth investigating for any future predictive analytics work.

Case Study: Choice Modeling

A practical application of predictive analytics is choice modeling which is the focus of the first case study. It is common for an employer group to want to know the enrollment impact of changing the medical plans it offers employees. It is important to predict who will pick certain plans for financial and other types of modeling.

The process of data visualization is an important step in any predictive analytics workflow. Data visualization is a tool which can be used to help figure out which features to include in the modeling and for model evaluation. This case study illustrates the power of data visualization by showing that the "total monthly payroll deductions excluding medical" feature (which is a feature developed from the combination of several variables from the data to represent risk tolerance) has a lower variance for current CDHP enrollees than High Option enrollees. This could point to CDHP enrollees having a more similar risk tolerance profile to each other than High Option enrollees.

This case study utilizes a heterogeneous logit model for the choice modeling. It is built around a two-stage setup. The first stage is to estimate the model parameters using the current employer's plan structure and participant data. The features included in the model are attributes of the plans themselves (i.e. deductible, out of pocket, contribution, etc.), risk tolerance (using the feature mentioned above), expected claims, and more. The model is run to understand the relationships between the inputs and the plan elections for each of the participants. From this you get the model function coefficients for each participant.

The selection of features such as those in this included in this model often relies on subject matter expertise along with data visualization work discussed above. Data scientists know the algorithms, but do not necessarily have expertise around healthcare or the client which is a place where actuaries can provide value in the process.

The second stage is to change the plan attribute inputs (contributions and plan designs) and then use the function coefficients developed in the first stage to develop a probability of selecting each of the new plan options for each participant. The results of this specific case study show that people are more likely to choose a higher actuarial value plan option within the proposed plan structure, which is visualized through a histogram which shows what percentage of members in each original option chooses the new options. In general, the results of this type of modeling can be used to inform business decisions and identify areas for further studies.

Another powerful feature of this modeling is that simulations can be run using the plan choice probabilities and estimated claims. Running these simulations makes it possible to provide statistically developed ranges instead of just a point estimate for employer savings. This provides value to the employer by showing the estimated variability of possible results on top of the best estimate point value which can be used to make a more informed decision.

Case Study: Measuring Physician Performance

The second case study focuses on two different aspects of measuring physician performance. Measuring physician performance is an important part of a health plan's analytics with many practical applications: helping to build better networks, helping to guide members to the highest performing physicians, improving physician performance by sharing results, and informing contracting and negotiation.

Episodes of care are a common basis for measuring performance. Episodes of care primarily fall into two types: procedure/event and condition/diagnosis. The first groups all claims/services related to a procedure (such as knee replacement) and the latter groups all claims/services related to treatment of a condition (such as osteoarthritis of the knee). The latter is more appropriate for measuring physician performance.

Episode grouper software captures episode type, episode severity and some comorbidity factors, but this does not capture all the relevant factors that affect the cost of an episode of care. Other factors include geographic area, plan/network, eligibility/duration, socioeconomic factors, and consumer behavior/preferences. Taking all of these into account, there are several thousand different variables involved with episode cost modeling. It is likely that the variables are not independent, that there are many interactions, and that it is an unknown distribution. This is where non-linear machine learning models such as XGBoost, discussed earlier, can be used.

In this case study, running XGBoost helps to outline the important variables in episode allowed cost. Episode group and stage categories from the episode grouper software capture 50% of explainable variance in episode allowed cost. Including patient demographics and comorbidities into the model inputs results in a 27.8% improvement in accuracy.

With any predictive analytics modeling, it can be important to zoom in on specific variables. In this case study looking at the preventative episode allowed cost by age shows that newborns, infants and patients over age 50 are higher on average (due to immunizations and increased screenings). This points to the need for episode costs to be adjusted to ensure fair comparisons across different populations.

Another way data analytics can help with measuring physician performance is through analyzing shared patient connections or referral patterns. There are algorithms which create visualizations of these connections and of each provider's efficiency level. The visualizations use spacing to represent the importance of the connection between different providers. The different bases of the visualizations discussed provide insight into the relationships between physicians, physician groups, and facilities, which enables development of more cohesive networks and management of network leakage.

An individual physician view of shared connections may show that their performance doesn't look great because they are referring to or sharing patients with less efficient specialists. It enables insight into how physicians can change referral behavior in order to improve their own overall measured performance (keeping in mind any potential legal issues with sharing this kind of data).

A community view provides broader views across all physicians and facilities in a market providing insights into how they share patients and cluster into closely connected communities. This view can show if the problem is the physician or the community in which they practice generally.

A market view can highlight distinct communities which providers cluster into and the relationships between them. This view shows the different "networks" within the network. In this view, physicians within clusters share patients. You can use this view to build narrow networks starting from the clustered providers, adding in any missing specialist types as needed.

Session 306

Global Healthcare Trends

Speakers:

- Stephen Caulk – Aon
- Miguel Santos – Aon
- Wil Gaitan – Aon

Session Coordinator: Al Phelps – Arthur J. Gallagher & Co.

Background

This session addresses various themes and their impact on healthcare trends around the world including risk factors, cost elements, workforce and population trends, and the impact of technology and delivery models. Global themes include the push for lower cost increases, centralized provider negotiations, limits on litigation and judge/jury awards, wellness and preventive services and simpler administration. The session included a review of healthcare models in the US, Canada, Germany, Netherlands, France and the UK.

Non-communicable diseases (diabetes, cardiovascular, cancer) that result from lifestyle risk factors (high blood pressure and cholesterol, physical inactivity, smoking) will play an increasing role, representing 54% of costs for low/middle income countries by 2030 and 89% for high income countries. Globally healthcare spending continues to increase and exceeds 4% in almost every region of the world. The employer's share of costs continues to increase as well, with most common expenses being hospitalization, outpatient care and prescription drugs. Employer mitigation initiatives are focused on wellness (vaccines, physicals, detection, education), cost containment (deductibles, coinsurance), access/delivery restrictions, plan design changes (cost sharing, allowances) and provider networks.

Global net healthcare cost trend (net of general inflation) decreased from 5.3% to 4.9% from 2018 to 2019. The highest net trend is 8.5% for Latin America and lowest is 3.0% for Europe. The top cost drivers are growing demand (more middle class), aging workforce, lifestyle risks, cost shifting from social systems, new technologies and drugs and increasing regulation.

Country Models: United States

The US system covers over 300 million people and continues to be the most expensive (17.1% of GDP, 61% private, per capita spending of USD $10,209). Healthcare adds 25% to employment costs with the employer paying about 64%; this does not include significant additional out-of-pocket costs to the employees under most health plans. The US also has the most complicated delivery system in the world, including government (Medicare, Medicaid, military, government workers) and private (employer, individual) systems. It's the only system that includes 9% uninsured individuals. Significant issues include population health, aging and long-term care.

Country Models: Canada

The Canadian system (11.5% of GDP, 30% private, per capita costs of USD $4,826) is significantly simpler and less costly. Healthcare adds 11% to employment costs with the employer paying 65%. The system includes federal and provincial social plans, plus supplemental private plans focused on pharmacy. Significant issues include waiting lines, no national pharmacy plan, population aging and long-term care.

Country Models: Germany

The German system (11.3% of GDP, 15% private, per capita cost of USD $5,729) is the most expensive in Europe and primarily provided via comprehensive statutory healthcare. Healthcare adds 18% to employment costs shared equally between employees and employers. Significant issues include high rates of surgical interventions, aging population, smoking, alcohol consumption and obesity. The system has low waiting times and includes long-term care.

Country Models: The Netherlands

The Dutch system (10.1% of GDP, 19% private, per capita cost of USD $5,386) includes comprehensive mandatory coverage via private health insurers. Healthcare adds 18% to employment costs with employers paying only 38%. Mandated coverage includes expensive long-term care and the government funds the cost of healthcare for children. Issues include overuse of inpatient care, mental/behavioral disorders and cancer. Unlike many other countries, obesity and alcohol consumption are not significant.

Country Models: UK

The UK's universal system (9.7% of GDP, 22% private, per capita spending of USD $4,264) is paid primarily out of general tax revenues. Supplemental employment costs are only 1.3% with the employer paying 100%. The private system is growing due to long waiting times in the social system. Significant issues include smoking, obesity, population aging and long-term care.

Country Models: France

The complex French system (11.5% of GDP, 17% private, per capita cost of USD $4,902) includes both social healthcare and mandated private insurance. Healthcare adds 17% to employment costs with employers paying 88%. Healthcare is considered a human right with equal access for all. The social system operates at a deficit, with significant issues related to cancer and overweight individuals.

Session 307

Effect of Public Retirement Plans on Credit Rating

Speakers

- Michael J. de Leon - Deloitte Consulting LLP
- Todd Nathan Tauzer – S&P Global Ratings
- Leslie H Richmond – Build America Mutual (BAM)

Session Assistant: Phillip Souzek – Deloitte Consulting

Background

This intent of this session is to highlight the importance of public retirement plans in determining the credit worthiness of a public entity. The magnitude of an entity's retirement obligations can impact its rating from credit agencies and the insurability of municipal bonds it may issue. Different rating agencies and municipal bond insurers consider the obligations using different metrics, and the entity's actuary can help both the entity, its rating agencies and other stakeholders understand the obligation.

Summary

A 2018 survey of municipal bond analysts found that the most important issue facing municipal bonds today is unfunded public pension obligations. It further found that approximately half of analysts believed that a majority of state and local plans are or will be severely underfunded. The concern is that pension and Other Postemployment Benefit (OPEB) payments can rise to such burdensome levels as to crowd out public employers' ability to afford services for taxpayers and even debt service payments.

More than 80% of states have S&P ratings that are AA or better (including AA+ and AAA). However, several large states have ratings AA- or lower (including A+, A, A- and BBB-). Those states include California, Pennsylvania, Connecticut, Kentucky, New Jersey and Illinois. There have been 12 upgrades and 25 downgrades to state's S&P credit ratings since 2012.

Debt servicing often accounts for between 2% and 10% of States annual spending. Pension and OPEB plans can account for a similar portion of annual government expenditures or more, and are likely to continue to grow faster than total expenditures going forward. Some cities pay even more toward these three costs, over 30% in total in the worst cases.

By managing their pension and OPEB obligations with prudent assumptions and contribution policies, states and local municipalities alike can improve how rating agencies view their expected long-term debts and liabilities. Retirement actuaries are ideally positioned to prepare and educate their clients on these topics.

Retirement Specific Considerations

Each rating agency and municipal bond insurer has its own unique considerations in assessing the impact of pension and OPEB plans on credit worthiness. Generally, these firms consider 1) quantitative metrics and 2) qualitative considerations.

Although the specifics of the quantitative metrics vary, agencies are generally concerned with determining a reasonable magnitude of both the

total obligation and the ongoing annual cost. Reasonable efforts typically include evaluating the discount rate in some way as well as assessing other significant assumptions and funding methods. Some analysts adjust plan liabilities to a single discount rate in an effort to enhance comparability.

Qualitative considerations are also wide and varied but generally fall into the categories of predictability, stability and flexibility. A common theme is to recognize an entity's efforts to reform its overall benefit obligation and annual costs. Changes in assumptions or methods that impact only the measurement of the obligation but not the actual cost of the plan can have an adverse impact on the qualitative analysis of a plan. These include amortization period and discount rate.

Session 401

ASOP 51: How Does Risk Look Now?

Speakers:

- Bruce Cadenhead – Mercer
- Harold Cooper – Segal Consulting
- Tammy Dixon – Segal Consulting
- Malichi Waterman – Segal Consulting
- Malcolm Merrill – Nyhart

Session Assistant: Janet Brazelton – City and County of San Francisco

Forecasting pension costs is not exact science. We know we're going to be wrong. The genesis of ASOP 51 began with the Actuarial Standards Board's July 2014 request for comments on ASOPs and public plan funding and accounting. After two exposure drafts, Actuarial Standard of Practice No. 51 was adopted in September 2017.

ASOP No. 51 applies to actuaries when performing funding or pricing valuations, or other risk assessments, and is effective for all such work products with a measurement date on or after November 1, 2018. This ASOP does not apply to work under the Multiemployer Pension Relief Act for 2014 (MPRA) or to work on other post-employment benefits (OPEB). It does not apply to work on social insurance programs or the determination of accounting expense or liabilities. It also does not apply to advising the plan sponsor on the management or reduction of risk. ASOP 51 is intended as a guidance on assessment and disclosure of risk that actual future measurements may differ significantly from expected future measurements.

The new standard asks that actuaries identify risks that may reasonably be anticipated to significantly affect the plan's future financial condition. It is intended to help users of the actuarial report gain a better understanding of risks inherent in measuring pension plan obligations. The actuary is not required to evaluate the ability or willingness of the plan sponsor to make contributions when due, nor is the actuary required to assess the likelihood of changes in law.

The actuary selects the methods for assessment. Numerical calculations are not required, and the actuary can consider practicalities such as usefulness, reliability, timeliness, and cost efficiency. The actuary selects the assumptions for assessment and although experts or principles may be considered, the selection should reflect the actuary's professional judgment.

The traditional funding valuation model typically bases contributions on a single "best estimate" scenario. Although self-correcting over the long-term as periodic remeasurements capture the effects of deviations from the "best estimate," this model doesn't capture the likelihood or magnitude of these deviations. For example, what is the potential level of year-over-year volatility from gains and losses or what is the potential magnitude of changes in assumptions? The single scenario valuation model can result in misunderstandings of asymmetrical plan designs or embedded options. Although many of us already use scenario or stochastic analyses to capture risk, the ASOP requires us to at least discuss risk factors, if not to quantify them.

Many risk factors are common to all types of plans such as investment risk, longevity, and other demographic risks. Some risks are specific to the type of benefit formula or the plan sponsor's funding rules. Cash balance plans might have a high investment risk if there is low correlation between assets and liabilities but a small longevity risk if participants primarily take lump sums. Traditional plans that pay lump sums might be at risk if the lump sum take-rate increases and there are larger reductions in assets than in liabilities due to annuity substitution which measures the lump sum at stabilized rates rather than current rates. Wear-away of interest rates could have a substantial impact on liabilities for most plans, as could the jump in liability expected due to deferral of the new IRS mortality table. While most single-employer plans are not subject to contribution risk, as it is defined in the ASOP, a multiple employer plan may have a similar risk profile to a multiemployer plan and may therefore be subject to contribution risk.

Risks specific to public sector plans include plan designs with cost-of-living adjustments and DROPs where members commence pension benefits while continuing to work and receive a salary. There may be substantial risk that actual contributions are not made in accordance with the plan's funding policy or that payroll growth falters causing contributions based on pay to fall short. There may be consulting issues with assessing risk as media and think tanks with agendas make their own interpretations of the actuary's reports. Multiemployer plans also may have consulting issues surrounding managing fees and media coverage.

Additional detailed assessment of risks should be recommended by the actuary if, in the actuary's professional judgment, it would be significantly beneficial for the intended user to understand the risks identified. Factors to consider include the size of the plan or the size of the plan relative to the plan sponsor, the funded status of the plan, the plan's asset allocation, or any relevant characteristics of the contribution allocation procedure (such as backloading under percent of payroll amortization methods). The sponsor's ability to absorb plan risks will influence this recommendation. Many single employer private plan sponsors do already consider risk factors of the plan and may have already acted to manage, reduce, or transfer risk. These plan sponsors are generally interested in effects on expense and their balance sheet, but these aspects are beyond the scope of ASOP 51.

Public sector plan actuaries may be more likely to recommend a detailed assessment if the plan size is large compared to the sponsor's budget or if the plan sponsor delays or fails to make contributions. Multiemployer plan actuaries may consider net cash-flows and cash outflow as a percentage of assets (i.e. burn rate), possible insolvency, or the rate of employer withdrawals and dependency on withdrawal liability payments when recommending a detailed assessment.

ASOP 51 also requires that the actuary calculate and disclose plan maturity measures that, in the actuary's professional judgement, are significant to understanding the risks associated with the plan. Examples include the ratio of assets to payroll (and to contributions if multiemployer or public plan), the ratio of retired life liability to total liability, and the ratio of benefit payments to contributions. The actuary should also provide commentary on the significance of these plan maturity measures.

Finally, the new standard asks the actuary to identify and disclose reasonably available relevant historical values that are significant to understanding the risks identified. The actuary should provide commentary on the significance of these measures. Examples include participant counts, covered payroll, actuarial gains and losses (investment and non-investment), and the actuarially determined contribution.

In situations where one or more risks identified by the actuary have been assessed by another party

(e.g. another actuary or an investment advisor), the actuary may rely on the outside assessment to partly or fully satisfy ASOP 51 requirements if, in the actuary's professional judgment, such outside assessment is consistent with the ASOP's requirements.

Session 402

Nondiscrimination Testing Topics

Speakers:

- Maria M Sarli – Willis Towers Watson
- Audrey Cervas – Buck
- Daniel Balsam – Fidelity Investments
- Moderator: Amy E Ayres – Willis Towers Watson

Session Assistant: David Pratt Ward – DMBA

Overview:

Nondiscrimination Testing Topics fall under five general categories of nondiscrimination testing gotchas, hybrid plan testing, cross testing, proposed legislative relief for closed plans, and late breaking nondiscrimination testing developments.

Nondiscrimination testing gotchas include the condition that both employer-provided (Internal Revenue Code "IRC" Sec. 411) and employee-provided benefits must be tested. For employee-provided benefit testing contributions must be uniform or must be disaggregated into "plans" that have uniform employee contributions that satisfy coverage and amounts testing. If a plan is closed, it must exclude, or be amended to exclude employees under age 21 and 1 year of service from the testing population. In order for a defined benefit ("DB") plan to be aggregated with a defined contribution ("DC") plan for testing they must either meet a cross-testing gateway or qualify for an exemption. If the DB lump sum is subsidized then it will not fall under the same benefits, rights and features ("BRF") as the DC lump sum. Rev. Proc. 93-42 provided for a 3-year testing cycle, however, it can't be relied on when there is reason that the test might fail. Also, if using beginning of year ("BOY") snapshot date, one still must test actual benefits for the year based on substantiation quality data. On audit, the Internal Revenue Service ("IRS") may deem certain minimum benefits or creative testing approaches to not have substance and thus cause failures and additional costly corrections. A "frozen plan" may be deemed to not be frozen if IRC Sec. 415 limit increases are permitted to take effect.

The IRC describes a **hybrid plan** as an "Applicable Defined Benefit Plan" while the regulations describe them as a "Statutory Hybrid Plan." These plans either provide a hypothetical account credited with pay credits and interest credits for the participant (Cash Balance Plan ("CBP")) or the participant's lump sum benefit is the accumulation of final average compensation (Pension Equity Plan ("PEP")). Regulation 1.401(a)(4)-8(c) provides CBP safe harbor where a whipsaw calculation for lump sums (no less than account balance) is based on a standard mortality table and either a standard interest rate or the plan's interest crediting rate to convert to an annuity. CBP interest crediting rate options now include a fixed rate (up to 6%) which is to be specified in the plan or a variable interest rate which may be based on various indexes. The normal accrual rate ("NAR") for a CBP may occur on either an annual method or an accrued to date method. Most valuable accrual rates ("MVAR") for a CBP include only the pay credit when the annual method is used or the account balance when the accrued to date method is used.

Combined Plan Testing ("**Cross Testing**" or "New Comparability Testing") occurs when a CBP is tested with a DC plan that provides a non-elective contribution and meets the Gateway Test. Plans aggregated for IRC Sec. 401(a)(4) purposes must have the same plan year.

IRC Sec. 401(a)(26) requires that a plan benefit the lesser of 50 employees or 40% of the employees of the employer, and benefits must be "meaningful." Initially the IRS indicated that an annual normal retirement benefit accrual of at least 0.5% of pay per year is "meaningful." This may be problematic if interest crediting rates in CBP are low (e.g. Treasury rates, or low market return rates).

Cross Testing allows DC plan contributions to be tested on an accrual or benefits basis. Contributions are valued as an annuity at a testing age (generally 65). Younger nonhighly compensated employees ("NHCEs") accumulated interest credits create larger benefit accruals than older highly compensated employees ("HCEs"). For testing, a standard interest rate (between 7.5% and 8.5% compounded annually) and a standard mortality (1.401(a)(4)-12) must be used. A comment was made that the mortality assumption generally only has significant impact when a participant is active beyond their normal retirement age or testing age. Cross testing may use either an "annual" or "accrued to date" method. The most valuable accrual rate is set equal to the normal accrual rate for a DC plan if aggregated with a DB plan; or, the DB accrual may be converted to a DC allocation rate. The Gateway Test is satisfied if either NHCE allocations are at least 1/3 of highest HCE rate (deemed to be met if HCEs receive 5% of IRC 415(c)(3) compensation), there are broadly available allocation rates, gradual age or service schedule, or uniform target benefit allocation. The Gateway Test does not apply for the Average Benefit Percentage Test ("ABPT"). ABPT can be calculated on an accrual basis without satisfying the Gateway Test. In aggregated DB/DC plan testing, if passing is based on being primarily DB in character, then the normal accrual rate from DB plans must exceed the equivalent accrual rate from DC plans for at least 50% of NHCEs. Temporary relief is provided by IRS Notice 2014-05 (extended by Notice 2018-69) for closed DB plans. Core BRFs (single sums, loans, ancillary benefits, benefit commencement dates) must be tested for current availability.

Proposed Legislation provides Closed Plan Relief for Coverage Testing (410(b)), Amounts Testing (401(a)(4)), and Minimum Participation (401(a)(26)). It can be applied retroactively to the 2014 Plan Year. Closed BRF or plan must satisfy testing for year of closure and the next two (2) years. Also, terms of benefits/coverage cannot change after closure in a significantly discriminatory manner. For this relief the plan must be closed before 9/21/2016 or have no "substantial increase" in value/coverage of benefits/BRF for the five (5) years it was in effect before closure. For no "substantial increase" one compares the last year of the 5-year period to first year to verify number of people covered or the BRF provided is not 50% greater. One can aggregate nonelective, 401(m) (if 401(k) is also aggregated) 403(b) match or nonelective) and Employee Stock-ownership Plan ("ESOP") in DC Cross Testing with "make whole" contributions. With general relief, when closed and frozen plans satisfy relief at closing they are treated as satisfying 401(a)(26). In response to a question, it was verified that the actual match is used for testing not the match formula.

Session 403

Finding Nemo: Lost Participants and Related Plan Administration

Speakers:

- Dominic DeMatties – Alston & Bird LLP
- Scott E. Kropf – Buck Global, LLC
- Fred C. Lindgren – Fidelity Investments
- Jeremy P. Olszewski – Fidelity Investments (Moderator)

Session Assistant: Caroline L. Pisacka – Fidelity Investments

Background

There has been increased focus on locating terminated vested participants when they are required to commence their plan benefits. This session will help the actuary understand the administrative and legal issues related to this increased focus faced by single employer pension plans, as well as, discuss treatment for valuation and reporting for government filings.

Summary

Lost participants have received increased attention in recent years during Department of Labor (DOL) and Internal Revenue Service (IRS) plan audits. These agencies found insufficient practices to find these participants, but have yet to issue comprehensive guidance on what it means for a participant to be missing. The lack of guidance creates challenges for fiduciaries who have a duty to act "solely in the interest" of participants and beneficiaries.

Stated potential violations include failure to provide required documents, e.g. the Annual Funding Notice, commencing participants by required benefit commencement dates and notifying participants of de-risking activity. DOL Field Assistance Bulletin (FAB) 2014-01 provides the steps fiduciaries should take "before abandoning efforts to find a missing participant and obtain distribution instructions." However this only applies to terminating defined contribution plans, but can serve as a guideline for other plans.

An Employee Plans (EP) memo to IRS Field Agents, issued in October 2017, notes that there is no violation of required minimum distributions if steps similar to those steps outlined in FAB 2014-01 are followed to find participants. The PBGC's focus on lost participants is generally in the context of plan termination purposes. A participant whose address is unknown or is unresponsive is deemed lost. There is a mandatory search program using a commercial search locator if the monthly benefit is greater than $50.

Actuaries need direction from the plan administrator whether a participant is deemed lost. Question #2 of the 2004 Blue Book notes "IRS staff has advised the PBGC that the benefit attributable to the participants…is disregarded for purposes of determining the plan's current liability." This means the participants are excluded for the funding liabilities and variable-rate premium liabilities, but still included in the flat-rate premium. Similar treatment may be applied for accounting liabilities, but it is ultimately the plan administrator and auditor's decision. In addition to the flat-rate premium counts, lost participants are included in the Form 5500 counts. The Annual Funding Notice references the Form 5500 counts and it is expected lost participants should receive the notice. Plan administrators should confirm with counsel.

There are many administrative challenges for plan sponsors in terms of commencing non-respondents. The primary argument in favor of auto-commencing

participants is that the plan avoids any operational failures. While this is important, there is no guarantee the checks will be received or cashed by the correct participants and in the event the participant comes forward, there will be data updates once the form and actual beneficiary is known. In the event a participant is found and the benefits have yet to begin, plan administrators need to consider the commencement process. Once participants are located there are several administrative issues to consider for participants less than age 70 ½. First is the annuity starting date which is dependent on whether the plan document permits deferrals after age 65. Spousal consent is not required for the default form-of-payment after age 65. An alternative is to permit a retroactive annuity starting date in which a past and current date is offered to the participant. The Qualified Joint and Survivor is the default form of payment, for those past normal retirement date or with a missed minimum required distribution date absent a correction. If a retroactive date is used, reasonable interest must be provided for missed payments. One possible basis is to use the plan's definition of actuarial equivalence in effect at the first distribution. Participants beyond the age of 70 ½ will have an annuity starting date of age 70 ½ (unless employed after that date) and are unable to elect a lump sum.

In closing, lost participants create many challenges for plan administrators due to the lack of guidance and definition of the term. Plan fiduciaries should familiarize themselves with reasons why participants become lost and establish a process to find them and distribute benefits to them. Fiduciaries should ensure that they have: a definition of lost participants consistent with the plan document, an outline of any efforts to contact the participant and a written process for reinstatement. Of course, a balance must be found between good faith compliance with issued regulations and the risk and expense to the business.

Session 405

Just When You Thought You Knew Everything about Healthcare

Speakers:

- Tami Simon, JD – The Segal Group
- Chip Kerby – Liberte' Group LLC

Session Assistant: Joan Ogden – Joan Ogden Actuaries

The regulatory and legislative environment in Washington, DC is in gridlock, with agencies skipping the regulatory process and instead using FAQ guidance to get information into the public domain, while in Congress there has been no healthcare benefits legislation to date. IRS enforcement of the Employer Mandate applicable under the ACA to employers with 50 or more full time employees is taking the form of 226J letters, which require 30-day response, and address Employer Shared Responsibility Payment amounts. Penalties include "A" penalties related to essential coverage and "B" penalties related to unaffordability. Cross-referencing the data in the IRS letter with employer records is essential, as it has been noted the letters are frequently wrong, and in this process the employer is presumed guilty until proven innocent. Further, employers are cautioned to review wellness program designs, should ACA and GINA regulations lapse. Employer wellness programs are lower on the EEOC priority list, however, and there appear to be differences between wellness programs offered inside health plans versus those offered outside health plans.

Department of Labor is signaling enhanced enforcement of Mental Health Parity issues. Guidance is available at https://www.dol.gov/agencies/ebsa. The original law from 1996 required parity in annual and lifetime dollar limits. This was expanded in 2008, with regulations in 2013 to include both quantitative and nonquantitative limitations (QTLs and NQTLs). Some of the key questions are centered around the meaning of "comparable" and "processes, strategies, evidentiary standards or other factors". The Self-Compliance Tool, found under the above referenced website, provides information, including an illustrative list of NQTLs, with testing requirements and factors considered in the design. Disclosure requirements are extensive, and the Draft Disclosure Template notes that plan sponsors and health insurance issuers should be prepared to provide additional documentation upon request. While the DOL cannot regulate TPAs, it can put pressure on employers to lean on those TPAs.

Several HSA enhancement bills passed the House, including HR 6199 which expanded HSA eligibility, permitted the rollover of specified amounts in a health FSA or HRA into an HSA in connection with a compatible HDHP, and expanded certain reimbursements. HR 6311 passed, which would permit, among other provisions, the contribution to an HSA by individuals covered under Medicare Part A, and would also increase annual contribution limits.

The House Ways & Means Committee approved HR 3798 which would revise several ACA provisions, including the definition of a full-time employee and a delay of the Cadillac tax, but ultimate passage by the House is uncertain.

Department of Labor continues to aggressively audit health and welfare benefit plans for compliance with ERISA and ACA requirements. The first notice of an impending DOL audit is a letter to the plan sponsor accompanied by a "document information request", with a stipulation that the documents must be provided within 10 days. The current document request list includes 54 categories of information, many of which have subcategories as well. Some of the document requests are redundant and others are vague or simply unclear. Consultants are encouraged to contact clients and discuss audit preparedness, including but not limited to identifying the responsible party or parties who can provide the documentation, as well as identifying any possible documentation gaps. Using legal counsel to request consultant input or assistance can preserve attorney/client privilege.

Public Law 115-263 (formerly S 2554) now bans pharmacist "gag clauses", which may appear in contracts between a plan's PBM and contracted pharmacies. Plan sponsors should confirm in writing with their PBMs that such gag clauses are not imposed.

A "laundry list" of "to do's" includes ensuring ACA compliance is in place, reviewing wellness program incentives and mental health and substance use disorder coverage, and considering plan design changes with regard to the Cadillac tax. Plans and their consultants should monitor HSA- and ACA-related legislation and make sure HIPAA materials/training are current. Future benefit trends center around personalization and may include financial education, student loan assistance, flex-work schedules, holistic elder benefits, and voluntary benefits.

Session 406

Global Pension Plan Management

Speakers:

- Douglas Carey – Retired Global Consulting Actuary
- John Ashton – Johnson & Johnson
- Chantal Bray – HSBC
- Martin Rondeau – AIG

Session Assistant: Al Phelps – Arthur J. Gallagher & Co.

Background

Responsible management of pension plans around the world requires careful attention to many factors, including governance, compliance and risk mitigation, as well as de-risking strategies. This session examines the approaches followed by three very diverse businesses: medical and consumer goods (Johnson & Johnson), banking (HSBC) and finance and insurance (AIG).

The global gap between actual and required retirement savings is increasing over 5% per year (USD $400 trillion by 2050) as a result of increasing life expectancies, access to supplemental pensions, low investment returns, inadequate retirement savings, pressures to limit/reduce social security and large populations working in the informal sector.

Company Background and Governance

J&J has over 100 plans in 60 countries, including open DB plans in the US and many countries. Plans cover 130,000 employees with 200,000 total plan participants. DB liabilities represent 9% of market cap. Pension plans are governed by the Pension and Benefits Committee of the Board, which includes the Global Benefits Department (HR), Benefit Investment Committee and Benefits Investment Team (Treasury), plus local trustees/fiduciary committees.

HSBC has 141 plans in 58 countries, with few open DB plans. Plans cover 230,000 employees with 430,000 total plan participants. DB liabilities represent 2% of the balance sheet. Pensions fall under both the Group Head of Pensions (HR) and the Global Head of Pension Risk (dual reporting into Finance, Risk). Risk owners are the local trustee/fiduciary boards appointed by the local management, with risk stewards ultimately being the Group Risk Committee.

AIG has 70 plans in 55 countries, many of which are unfunded end-of-service plans. Plans cover 50,000 employees and DB deficits represent 0.9% of the balance sheet. Unlike HSBC, risk management specific to pensions is not a major organizational concern. Plans are managed via the International Benefits team with general risk governance overseen by financial risk, technology and operational risk and business unit risk committees.

Plan, Investment and Design Management

J&J has traditionally managed its plans on a decentralized basis with responsibility shared by Treasury and HR, but moving toward a more centralized structure. Pensions are small relative to the size of the Company and are well funded and significant free cash flow exists, so asset allocation focuses on the return needed to cover liability growth without excess risk. Over time they will reduce equity allocations (still 70/30 split) as funded status permits. Benefits design is focused on balancing expense volatility via financial efficiency. A key element is collaboration to manage conflicting needs of stakeholders, with the Global Benefits Retirement team being the shepherd for the process.

HSBC's current focus is de-risking. Risk management includes not only financial risk, but also business

model risks (such as sustainability), operational risks (such as information and cyber security) and thematic risks (such as third party management). Pension risk management includes appropriate local market benefits, efficient use of bank capital (DC over DB), minimal HSBC investments, member engagement, communication and governance related to third parties. Because of capital rules, pension deficits consume capital that cannot be used for the business. Sustainability based on the UN sustainable development goals increasingly enters into investment decisions, including both DB assets and DC fund options.

Following the financial crisis, AIG moved from completely decentralized benefits decisions with no corporate oversight to the creation of an International Benefits center of excellence. Their focus is not traditional volatility, investment or longevity risk, but rather HR risks such as mobility, attraction & retention and data privacy. They have focused on design principles that balance organizational and local priorities and align with their comparator group. Most of their pension risk is concentrated in the US, Japan and the UK where local retirement committees include members from HR, Finance, Treasury, Legal and Risk Management.

De-Risking Strategies

A recent focus for J&J includes formation of an IORP in Belgium that covers Belgium, Ireland and the Netherlands. Another area is the move toward lump based formulas (mostly cash balance) so that plans can be scaled in size in the event of significant downsizing (no large plans for small active operations).

As HSBC has been focused on traditional de-risking since 2005, one focus today is moving to professional trustees and plan management and DC master trust schemes where possible. For DC plans, they focus on lower cost platforms, more financial literacy and personalized/automated nudges to retirement planning.

AIG's focus is more traditional cost savings opportunities. One strategy was a lump sum offering to terminated vested participants where the offer paid for itself in less than two years; the biggest challenge was clean participant data. Another strategy was consolidation of 25 different plans in Japan; this carried significant cost due to interest rates and additional funding, but has resulted in less volatility.

Session 407

31 Flavors of Derisking

Speakers:

- Bob Conlin, – Secretary, Wisconsin Department of Employee Trust Funds (ETF)
- Joseph P. Newton – Gabriel Roeder Smith & Company
- R. Paul Schrader – Retired Consulting Actuary
- Koren L. Holden – Colorado Public Employees' Retirement Association (PERA)

Session Coordinator/Recorder: Adrienne Ostroff – Deloitte Consulting LLP

What is Risk?

Risk is defined as results deviating from expected, but is usually used in the context of bad news. Our role as an actuary is to identify, quantify and determine appropriate ways to mitigate the risks associated with defined benefit plans. These risks may be obvious in some cases, but others may require additional analysis to uncover. Our goal is to answer the question, "Can this risk be effectively lessened, shared, re-directed, and/or managed?"

Risk Measures for Defined Benefit Plans

The release of ASOP 51 sets the stage for required assessment and disclosure of risk. This leads to new or expanded disclosure for some plans and will lead to questions on how to assess, measure, communicate and manage risks for all. Adoption of this ASOP is required for plans with valuation dates on or after 11/1/2018. The timing of this adoption lends itself to the right time to assess which risk measures will be most effective for plan sponsors who operate in the public sector. The stakeholders and limitations under which these plans operate create a unique set of risks that should be evaluated using innovative and customized approaches.

The ultimate goal of any plan remains the same, to provide an adequate and efficient retirement benefit to all participants, while stabilizing costs to the employer and/or employees. Two proposed approaches to meeting this goal while minimizing risk are the implementation of a variable plan design and the utilization of a hybrid funding structure.

Typically, plans in the public sector operate under the "Traditional Risk Outcome," that is to say that if experience is unfavorable, contributions (usually employer contributions) would increase. This approach is flawed given that employer contributions are typically mandated by Statute and may require an extensive approval process to be modified. One solution to resolve this issue is to use a "Modified Risk Outcome," where benefits vary in response to unfavorable experience. There are many questions that need to be addressed in order to implement such a plan design, including the trigger for changes in design (i.e. funded ratio, maximum tolerable employer and/or member contributions) and which features could and should be varied automatically with plan experience.

Other potential de-risking strategies include hybrid plan designs with a DC component, variable cost-of-living-adjustments, shared member/employer contribution increases, floating retirement age, benefit buy-outs, adjustment of actuarial assumptions/methods, and modification of investment strategy.

Success Stories: Wisconsin Retirement System (WRS)

WRS has successfully implemented a variable defined benefit structure with some defined contribution-like features. The system has achieved its goals of full funding and relatively stable rates by establishing a higher-of-two formula between a

money purchase account and a standard final average pay formula. Annuity adjustments take place during bad times *and* good, modifying the in-pay benefits up or down based on the performance of the fund. The result is a system with accountability split between the retirees and the State in a manner that makes both parties proud of the health of the system.

Success Stories: South Dakota Retirement System (SDRS)

Similarly, the shared risk model was implemented at SDRS and resulted in achieving the goal of full funding based on market value of assets during 30 of the last 34 years. The system, which operates under a fixed contribution structure, and now, a variable benefit structure has benefited from strong governance and adheres to a shared risk funding policy. The approach requires discipline and attention but has resulted in positive results for all parties in the form of a secure retirement benefit and stable contribution rates for employees and the employer.

Impact of the Implication of Various De-risking Strategies

The Case Study introduced during the session compared the average costs and associated volatility for a traditional defined benefit plan, a traditional defined contribution plan, and a variable hybrid plan with an alternative funding strategy. The results demonstrate that the hybrid plan provides the best balance of current cost, annual volatility, and funded ratio management. Contingent benefit provisions allow for prudent investment risks to be taken in order to seek better returns, without substantially increasing future funding risks.

Conclusion

As the public sector defined benefit world continues to evolve, we should be proposing innovative risk management approaches to our clients. By proactively discussing potential risk factors and getting ahead of the next market downturn, we can collaborate with plan sponsors to design creative risk-sharing approaches that will honor the service of those currently in-pay, and sustain future generations of retirees to come.

Session 501

Walking through a Standard Plan Termination

Speakers:

- Lawrence Scherer – Findley
- Kevin Morrison – River and Mercantile
- James E. Turpin – The Turpin Consulting Group, Inc.
- Bela Palli – PBGC

Session Assistant: Lauren Meyer – River and Mercantile Solutions

Background

This session walks through the steps of a single employer standard plan termination. The session is organized into four sections: 1) overview of stakeholders and steps to complete a standard termination, 2) the distribution phase, 3) key differences for small plans, and 4) a PBGC perspective on common filing errors and PBGC audits.

Summary

Roles Overview and Steps

Mr. Scherer opened the session by walking through the roles and responsibilities of nine parties involved in the planning and execution of a standard plan termination. The key parties identified are: the project manager, plan administrator, actuary, investment advisor, legal, company/plan sponsor, trustee, annuity placement advisor, and insurance company. The project manager, often fulfilled by the actuary, has one of the most important roles: keeping track of the numerous due dates that are dependent on other dates and triggers.

There are many considerations and tasks to be completed in advance of plan termination. These are discussed at a high level but not covered in depth, as Session 202: Preparation for a Successful Plan Termination focuses on these tasks in more detail.

The steps on the "roadmap" to termination (slide 17) are discussed, beginning with the decision to terminate and ending with the final Form 5500 filing. A formal plan termination typically takes 12-18 months to complete. The PBGC website also provides a detailed roadmap with helpful guidance. Within this section, we review reasons a plan sponsor may or may not want to wait for a favorable Determination Letter from the IRS. Mr. Scherer also discusses the initial communication to participants and the PBGC informing them of the termination. Plan sponsors may want to include "FAQs" with the initial plan termination notice, as this is typically the first time participants are hearing about the termination.

A correction is noted to slide 31 regarding extensions to the Form 501 due date -- an extension cannot be requested. Ms. Palli from PBGC notes that if a plan is struggling to meet the Form 501 submission deadline due to the inability to compile the proof of distribution documentation (especially in large plans), they should contact the PBGC via phone or email. The PBGC may allow additional time for submission of the Form 501 and the proof of distribution if the plan certifies via email that all benefit distributions were made timely. Ms. Palli stated that PBGC continues to approve requests for extensions to complete benefit distributions if it finds compelling reasons why it was not administratively feasible for the plan to take required action. An example is when a plan has

difficulty finding an insurance company from which to purchase irrevocable commitments. Ms. Palli offered that plan sponsors can reach out to the PBGC if this happens and the PBGC can help by providing a list of insurance companies compiled from recently submitted Form 501s.

Distribution Phase

Mr. Morrison led a discussion on the distribution phase of a plan termination, including election packets, lump sum payments, and the annuity placement process. During the benefit election process, it is important to allocate resources to locating and following-up with participants. Requirements around lump sum distribution thresholds, default IRAs, spousal consent, and missing participants are also discussed.

Starting on page 38, considerations for the annuity purchase process are discussed. Any participants who didn't elect a lump sum in the prior step will need to be included in the annuity purchase. Mr. Morrison discusses additional data elements, such as job description and location, which are beneficial to provide when soliciting quotes from insurers. Certain plan characteristics could reduce the number of bidding insurers and impact pricing. However, insurer preferences are fluid, so it is recommended to stay in touch with the market. Insurers are typically very busy later in the calendar year, so timing the plan termination to avoid an annuity placement in Q4 can help maximize the number of bidding insurers.

Finally, this section goes into detail on evaluating quotes and selecting the insurer. The selection process is a fiduciary responsibility around which Department of Labor Interpretive Bulletin 95-1 (DOL 95-1) provides guidance. DOL 95-1 provides six considerations that, among other things, should be included when selecting "the safest available annuity provider." Sample analysis and charts are provided to illustrate each of these six considerations. Plan sponsors should work with a qualified annuity placement advisor who acknowledges their role as a fiduciary in the annuity purchase process, or should understand the limitations if they do not.

Small Plan Terminations

Mr. Turpin led a discussion surrounding differences and key focus areas for small plans. Timing, planning and communication are important in any plan termination but are especially important for small plans where the adviser circle is likely smaller and the actuary ends up filling many roles. Small plan terminations can result in other complications that, if not discussed ahead of time, could lead to frustrated clients. For example, buying annuities for small plans can be difficult.

Other differences for small plans include consulting around illiquid assets, Determination Letter filing considerations, underfunded plans, and plan permanence. These, as well as others, are discussed in more detail on the presentation slides.

As mentioned earlier, the PBGC website has helpful instructions for navigating the termination process, including majority owner considerations.

PBGC Commentary

Ms. Palli from the PBGC led off by discussing when plans can terminate in a standard termination and majority owner considerations. Common filing errors seen by the PBGC are listed out in the session presentation. Many errors revolve around properly executing the termination timeline. The PBGC always reaches out to filers before issuing a notice of non-compliance.

As a reminder, once a termination starts, lump sums cannot be paid (or irrevocable commitments purchased) unless they are in the normal course of business.

The PBGC audits a statistically significant number of standard plan terminations and currently audits all plans with more than 300 participants and a random sample of smaller plans. So far this year, 400 audits

have been closed with 25% of them having some level of non-compliance resulting in outreach to the plan sponsor. The PBGC enforces Title IV of ERISA which is separate from IRS' Determination Letter review.

Plan administrators are required to retain records supporting the calculation and valuation of benefits and assets for at least six years after the date the Form 501 is filed. When onboarding a new client, actuaries should obtain all data used in the calculation of frozen benefits from the prior actuary. PBGC requires this information to verify benefits.

Ms. Palli is unable to complete her presentation due to lack of time but encourages attendees to review slides and reach out to PBGC if needed.

Session 502

CURRENT TOPICS FOR DC PLANS

Speakers:

- Lisa Canafax – Mercer
- Anthony Davis – Fidelity
- Michael Horton – Willis Towers Watson
- Moderator: Craig Rosenthal – Mercer

Session Assistant: Joseph Grondin – Willis Towers Watson

Background

This session provides a background on the various types of defined contributions plans, outlines plan design and operational compliance issues and explores emerging trends and hot topics in retirement planning including retirement readiness, accumulation and decumulation retirement income strategies.

Design Elements – types of plans and kinds of contributions

Mr. Horton reviewed the characteristics of various types of defined contribution plans, including profit sharing and money purchase qualified retirement plans, non-qualified retirement plans and health savings accounts.

He contrasted the differences between 401(k) plans and 403(b) qualified plans, provided an overview of the characteristics and advantages of various small DC plan types, and reviewed basic qualification rules for all qualified DC plans set forth under IRC Section 401(a). Mr. Horton then explained the unique features of Roth plans compared to pre-tax DC plans and shared survey data on the increasing popularity of Roth plans with plan sponsors and employees.

Mr. Horton contrasted participation, funding and accumulation features of deferred compensation and DC SERPs to qualified DC plans. He then reviewed the features, rules and advantages of Health Savings Accounts as an alternative DC retirement plan option.

Non-discrimination testing and its impact on plan design

Mr. Davis provided a high level review of non-discrimination testing required for DC plans. He explained that ADP and ACP testing is used to test for discrimination of employee contributions and company matching benefits and the importance of testing considerations when it comes to setting plan design. He reviewed Safe Harbor plan formulas and requirements and their attractiveness to plan sponsors due to being exempt from ADP and ACP testing. Mr. Davis then reviewed testing rules and design considerations associated with IRC Section 410(b) coverage testing and IRC Section 401(a)(4) benefits testing.

Many plan sponsors have closed their defined benefit plans to new entrants and are now struggling to satisfy coverage testing rules since their plans cover an increasing proportion of highly paid employees compared to their general workforce. IRS Notice 2018-69 (extension of Notice 2014-05) provides temporary relief for certain defined benefit plans that were closed to new entrants prior to December 31, 2013. Without permanent relief, many plan sponsors will eventually not be able to meet coverage testing rules and their defined benefit plans may become disqualified.

Behavioral economics and retirement readiness

Employees are generally risk averse and much prefer avoiding a loss as opposed to realizing an equivalent gain. They tend to avoid change and have a bias towards the Status Quo. The Status Quo bias impacts plan design leading to popular features such as auto-

enrollment, auto-escalation, streamlined investment funds and target date funds. Ms. Canafax added the next generation of asset accumulation features may include personalized target date funds, Roth auto-enroll and enhanced choice.

Employers are coming up with creative ways to help their employees save for retirement and emergencies. Abbott Labs recently announced its going to provide a 401(k) "match" for those paying down student debt. This concept gained a lot of attention but is not a good fit for most employers' plan designs and adds significant administrative complexity. Some employers are allowing employees to allocate a portion of their contributions to "Rainy Day Funds" until a balance threshold is reached to help meet unforeseen expenses.

Retirement Readiness is a concept that employers are using to encourage employees to plan and save for retirement. The goal is to accumulate enough wealth, by a targeted retirement age, to provide an adequate income replacement in retirement to cover living expenses including health care, inflation and longevity risk. Employers often provide employees tools and resources to properly plan for retirement, however, employee engagement is key to success.

Decumulation strategies

Ms. Canafax shared data that indicates retirees often don't spend the assets they've accumulated during their working career. The majority of retirees limit their spending to match their income and do not spend down their assets. Ms. Canafax adds that if retirees are showing behavioral bias and not spending down their assets, there are considerations for tools and support to help them do so.

Mr. Rosenthal adds a potential goal should be to allocate discretionary spending across retirement years proportionate to one's ability to maximize enjoyment of retirement dollars. People fear they will outlast their money and underspend their retirement income as a result. Annuities are not currently widely offered in DC plans as plan sponsors may feel they are not fairly priced. Access to annuities will allow employees to purchase deferred or immediate income streams at retirement, spend down their assets over their lifetime, and provide protection against longevity and inflation. Alternatively employees can draw down their assets at a fixed percentage per year. This provides a stable income and inflation protection but doesn't support additional cash needs, discretionary spending or eliminate longevity risk.

Session 504

Health Analytics

Speakers:

- Thi Montalvo – Willis Towers Watson
- Keegan Fisher – Providence St. Joseph Health
- Jayodita Sanghvi – Grand Rounds

Session Assistant: David Hawkins – Newport Group

Plan Sponsors are using enhanced analytical methods that go beyond traditional claims-based measurements to gain deeper insight into cost drivers and develop a more efficacious health plan for their employees. With a large portion of healthcare costs concentrated in a relatively small portion of the healthcare consumer population, enhanced health analytics provides an opportunity for substantial improvements in efficiency as well as overall population health.

Background

Many plan sponsors implement wellness programs or other benefit modifications intended to bend their cost curve and improve employee satisfaction and health, but fail to plan for a rigorous post-implementation analysis to evaluate its success or to identify areas of strength or weakness. An effective analysis consists of careful organization, or measurement, of the available data. It is important to note that a measurement strategy is a critical foundation, and that data volume, as well as a data warehouse, should not be considered a measurement strategy, but rather the components the drive the strategy. This strategy often merges predictive analytics, optimization, simplicity, query-driven analytics and other factors to provide insight into the sources and drivers of cost and performance of a plan sponsors' overall healthcare program.

Traditional vs. Enhanced Analytics

A traditional analytics approach would typically involve collecting data such as age, gender, location, usage or frequency, cost of service and possibly a health risk score or other biometric marker. These data assist in identifying the source of healthcare program costs, but are limited in their ability to manage or optimize costs, especially prospectively.

An enhanced analysis builds on these basic metrics, but may include additional data such as care preference, financial profile, risk tolerance, personal traits and others. The additional data provides correlations that point to the "why", rather than just the "what", of healthcare costs.

Cohort Matching

Matched Cohort Analysis is one example of an enhanced analytical method which incorporates the additional data to assign a propensity score to individuals independent of their participation in a wellness initiative. Comparing participants to nonparticipants within the same cohort (age, gender, health risk score, work responsibilities, personal habits, etc.), reduces the "noise" associated with general comparisons which are not cohort-specific.

Interestingly, in a specific case examined from the employer side, the enhanced analysis revealed increases in PMPY costs, while utilization simultaneously declined. This was largely attributable to the closing of gaps in care identified by the wellness program, and resulted in a negative ROI for the first year of the program. This deferred ROI benefit is particularly evident in the use of hypertensive and obesity (diabetes) related services, which are widely prevalent conditions but are to a

high degree undiagnosed. Use of these services increased, with a concomitant increase in cost. However, the dramatic reductions in utilization of services such as inpatient admissions and avoidable ER visits, as well as increases in disease management services are trends which will have a mitigating impact on plan costs over the long term.

Provider Matching

Enhanced health analytics also offers opportunities to improve the pairing of patients and providers. The use of non-clinical data (e.g., language, risk tolerance, work habits, etc.) in addition to more traditional clinical measurements can improve the patient-provider relationship, which translates into better communication and, ultimately, to improved medical advice and medication adherence. Grand Rounds has developed a predicative analytics model which correlates medication adherence and population-level hospitalizations, which shows a perfectly inverted relationship, and underscores the impact that a good patient-provider match can have on costs.

Summary

As wellness programs and other health plan initiatives mature, the value of both claim and non-claim based data analysis of has become a important tool in developing a deeper insight into the efficacy of health plan design features. Purposeful analytic strategies that are thoughtfully designed and regularly reviewed can reap substantial participant and employer benefits.

Session 505

What's Happening with Prescription Drugs?

Speakers:

- Amy Whaley – Willis Towers Watson
- Kristin McKee – Willis Towers Watson
- Virginia Rivas – Mercer
- Cindy Giambrone – MemorialCare

Session Assistant: Stephanie Calandro – Willis Towers Watson

Background:
This session will address current hot topics in pharmacy, from both the employer (plan sponsor) and provider perspectives. In particular, we will discuss the market landscape of pharmacy benefit managers (PBMs), point-of-sale prescription drug rebates, the opioid epidemic in the United States, and managing pharmacy risk from the perspective of an accountable care organization.

Summary:
Ms. McKee presented and responded to questions on the PBM market landscape and point-of-sale rebates.

PBM Market Landscape
The PBM market is in a state of perpetual flux. Recent merger and acquisition (M&A) activity suggests several different arrangements involving PBMs and the provision of healthcare services.

United Healthcare's (UHC's) acquisitions of OptumRx and Catamaran are examples of a health plan acquiring a PBM, enabling UHC to provide both carve-in and carve-out PBM services. UHC also owns hospital systems and provider groups and, as such, is simultaneously participating in the provision, management, and administration of healthcare services including pharmacy benefit management.

Cigna's recent acquisition of Express Scripts (ESI) is a second example of a health plan acquiring a PBM. The merged company has indicated it does not intend to build out pharmacies or facilities in order to participate in the delivery of healthcare in the U.S.

CVS Health's acquisition of Aetna is currently seeking approval of state regulators. This acquisition is an example of a PBM acquiring a health plan. Press releases indicate plans to utilize CVS's existing brick and mortar stores to expand medical care and care management services provided by Aetna. The intent is for the combined organization to be a U.S. healthcare market disrupter.

Amazon.com Incorporated, Berkshire Hathaway Incorporated, and JPMorgan Chase & Company have announced plans for a joint venture that would also disrupt the delivery of prescription drugs.

Point-of-sale Rebates
Prescription drug rebates ("rebates") are an avenue by which drug manufacturers financially incent drug wholesalers, PBMs, and ultimately employer-sponsored healthcare plans ("employer plans") to promote use of their drugs over those of competitors. Rebates are the mechanism by which patients are steered to particular drug therapies, similar to how a medical network steers patients to particular facilities and doctors.

Traditionally, rebates are credited to employer plan sponsors months beyond the point at which a prescription is filled (i.e., the point-of-sale).

Point-of-sale (POS) rebates recognize a portion of the rebate that is anticipated for a particular drug at each script fill. In cases where the member's cost-share is not a copayment and the member has not yet satisfied his/her annual out-of-pocket maximum, the rebate at point-of-sale would generally lower the member's cost-share. The remainder of rebates is trued-up and paid to the plan after the point-of-sale, similar to the true-up that occurs in a traditional lagged arrangement. A member's cost burden in the deductible phase of high deductible health plans (HDHPs) is what has initiated recent interest in POS rebates.

Ms. McKee provided three numerical examples of how POS rebates are applied in practice.

When evaluating the option of implementing POS rebates on behalf of a client, consulting actuaries should consider the following implications.

1. POS rebates are effectively administered as an increased discount to the cost of prescription drugs. From a data perspective, embedding both contractual discounts and rebates within the discount data field limits a plan sponsor's ability to audit its PBM's performance against contractual provisions.
2. Only brand drugs are rebated, whereas lower cost generic drugs are commonly available. POS rebates may be lowering a patient's cost share for a therapy that is not cost-optimal.
3. Plan sponsors commonly allocate lagged rebates toward lowering payroll deductions or premiums all covered members. Shifting rebates to only utilizers of brand drugs may increase payroll/premium costs for all members.
4. Over the course of a benefit plan year, a patient utilizing high cost medication(s) will commonly hit his/her annual limit on out-of-pocket patient costs, meaning the employer plan will ultimately cover one hundred percent of healthcare costs beyond that out-of-pocket maximum. By lowering a patient's out-of-pocket costs, POS rebates can delay the point in the year at which the plan begins covering costs in full.
5. POS rebates are administratively more complex for a PBM to administer than are lagged rebates, which may result in higher administrative fees for a plan and its members
6. Either the PBM or the employer may fund POS rebates to patients and, for either party, there is an opportunity cost to this earlier cash flow.
7. Members may experience volatility in out-of-pocket costs when POS rebates are in place. The employer plan then must appropriately address the associated member "noise."
8. Each PBM's capabilities to administer POS rebates are not identical. Administrative differences may be a barrier to periodically changing PBMs when it is otherwise clinically and/or financially advantageous to do so.
9. Employer groups that have changed from POS rebates to a traditional lagged crediting method experienced significant disruption.

Ms. McKee recommends an employer considering POS rebates first identify the objective(s) it intends to target and then consider alternative approaches to achieving these objectives.

The Impact of the Opioid Epidemic on Employers

Ms. Rivas referenced the opioid epidemic that is present in the U.S. It impacts employers not only because employer-sponsored plans cover claims for opioid prescriptions that may ultimately be abused, but also since employers suffer the costs of absenteeism, lost productivity, accidents, higher overall healthcare costs, and talent shortages

associated with opioid use and abuse. Ms. Rivas described the roles of carriers, prescribers, employers, and communities in improving the state of this epidemic.

PBMs have typically addressed potential opioid abuse at the point of processing claims. Traditional programs include fraud, waste, and abuse detection to identify claimants with multiple opioid prescribers. This detection occurs after a claim is submitted for payment. Emerging approaches focus on prevention in order to impact the opioid crisis before scripts are filled. Examples include requiring that prescribers comply with the guidelines issued by the Centers for Disease Control (CDC), investing in provider education, and implementing quantity limits and other edits within claims processing.

For its part, the provider community should complete carrier-required education, comply with CDC guidelines, cooperate and coordinate with PBMs' prescription drug monitoring programs, have candid conversations with patients to explain the risks of opioid use, and also inquire about family history and social factors to better understand a patient's predisposition to drug abuse. In particular, dentists and sports medicine specialists have a significant opportunity to impact the crisis since opioids are commonly prescribed for wisdom tooth removal and sports injuries at ages when the human brain is most susceptible to opioid addiction (i.e., patients under age 25). Providers treating younger patients have a crucial role since opioid abusers are at risk of beginning heroin use once their prescription opioid supply is depleted.

Employers are initiating training for managers and employees to recognize symptoms of opioid abuse in their reports and colleagues. They are also educating employees on substance abuse treatment benefits available through their employer-sponsored employee assistance programs and medical/Rx plans. Employers can mandate drug-testing as a prerequisite to employment, have drug-free workplaces, and also educate employees on accident prevention. Employers have an opportunity to educate employee patients to advocate for themselves by asking for a smaller days' supply of opioids from their prescriber.

Community programs to address the opioid crisis are expanding. Select states mandate use of a state database for prescribers/pharmacists to reference and populate for each opioid prescription prescribed/filled. Some cities have "safe" opioid infusion centers to reduce accidental overdoses. Police and fire departments, and sometimes friends and family of users, keep a supply of Naloxone on hand to reverse overdose. Communities have also implemented take-back programs that allow anyone to anonymously submit opioid drugs for safe disposal.

Ms. Rivas concluded by reinforcing that employees who return to work after opioid addiction recovery miss fewer days of work than other employee cohorts.

Pharmacy Risk Management from the Provider Group Perspective

Ms. Giambrone described MemorialCare and her role within the health system. MemorialCare is a system of hospitals and provider groups in Southern California. It is sought after as "the place to practice pharmacy" by pharmacists in the region. MemorialCare takes on financial risk by providing care through both managed care/health maintenance organization and accountable care organization (ACO) products.

Ms. Giambrone's role, which is a new role within MemorialCare, is to manage the pharmacy risk of its ACO business. MemorialCare has ACOs with Aetna, Anthem, and via direct contracts with Boeing, and it assumes both upside and downside risk for the cost of prescription drug treatment to its ACO members. MemorialCare's prescription drug cost is measured based on reimbursements to pharmacies without

any rebates from drug manufacturers. Ms. Giambrone described the challenges of building out a framework and infrastructure to identify, measure, monitor, and manage the ACO's pharmacy risk, as compared to the safeguards already in place on the counterpart managed care business.

For the care provided to ACO patients, MemorialCare's pharmacy data was initially incomplete, fragmented among the different payers, captured in inconsistent formats, and not collected timely enough for actionable analysis. Upon joining MemorialCare, Ms. Giambrone aspired to transform MemorialCare's data collection efforts so that comprehensive pharmacy data would be available to analyze and share data back with providers. MemorialCare's managed care data was already being shared with providers for purposes of provider profiling and monitoring performance improvement.

Ms. Giambrone has effectively collected MemorialCare's ACO pharmacy claims data from its three ACOs within a common data warehouse, enabling her to perform data analysis on complete data, develop common and consistent reporting, and establish cost targets. MemorialCare now leverages its ACO pharmacy data warehouse for experience monitoring, financial reconciliations, and discussions with high cost providers. MemorialCare also uses real-time triggers to push messages to providers at the point of prescribing.

Ms. Giambrone has spearheaded care intervention initiatives focused on rheumatoid arthritis and Hepatitis C specialty drug use, as well as opioid use. She works closely with MemorialCare's case managers and also collaborates with a network of pharmacy risk managers at other ACOs. Her aim is to promote the practice of precision medicine within MemorialCare's ACOs; that is, targeting the right treatment to the right patient at the right time.

Ms. Giambrone closed the discussion by emphasizing the importance that care management interventions be timely. In the case of pharmacy, she believes interventions need to occur at the point of prescribing.

Session 507

Public Sector Mortality: New Tables, Administrative Issues and Credibility Measures

Speakers:

- Kevin Woodrich - Cheiron
- James Berberian - Buck
- Elizabeth Wiley - Cheiron

Session Assistant: Andy Blough – Indiana Public Retirement System

Background

On August 28, 2018, the Retirement Plans Experience Committee (RPEC) of the Society of Actuaries released an exposure draft of a mortality study on public-sector pension plans. Comments on the exposure draft were due by October 31, 2018. This session provided an overview of the exposure draft report and mortality tables. Kevin Woodrich and James Berberian are members of RPEC, although they were not speaking on behalf of RPEC at this session.

Naming Conventions

Because of the number of tables produced, the naming convention of the tables is critical to accurately describe the information. Participant subgroups considered include employees, who are actives currently not in payment; retirees, who are former actives now receiving an annuity that were not disabled at retirement; disabled retirees, who are former actives now receiving an annuity that were disabled at retirement; contingent survivors, who are beneficiaries over 17 years of age who have outlived their associated active or retired member; and juvenile, who are surviving beneficiaries under the age of 18.

The data collected is for calendar years 2008 – 2013, leading to a central year of 2010 (July 1, 2010 – June 30, 2011, due to plan years of submitting programs). Because these tables are a result of public-sector data, the tables are collectively referred to as "Pub-2010".

Additionally, the following job categories were considered in constructing the tables: teachers, including school or university teaching staff but excluding all other school and university staff; safety, including police officers, correctional officers, and firefighters; and general, which is anyone not in the other job categories. These job categories lead to more specific tables and naming within the study: PubT-2010, PubS-2010, and PubG-2010, respectively.

Tables described using PubT-2010, PubS-2010, or PubG-2010 contain amounts-weighted probabilities of death for the entire subpopulation. The amounts considered were salaries for active members and the benefit being paid for in-pay participants. Additional modifiers to the tables are ".H" for headcount-weighted, (A) for above-median, and (B) for below-median. For example, PubT.H-2010(B) indicates the headcount-weighted, below-median teachers group.

Data

Data requests were distributed by the National Association of State Retirement Administrators in August 2015. In addition to the participant and job categories referenced above in the naming section, data was also collected on geographic region and salary/benefit levels. In total, 35 public pension systems comprising 78 public pension plans submitted data. There were a total of about 46.2

million exposure lives and 579,000 deaths. The speakers observed that this is considerably more information than the RP-2014 study, which collected data on approximately 10.5 million exposures and 228,000 deaths.

Multivariate Analysis

Researchers at Northern Illinois University completed the multivariate analysis on the data collected. The most significant predictors of mortality were determined to be amount and job category. Above and below median tables were deemed more reliable and administratively feasible than four quartiles. Although geographic region and the duration from retirement have some predictive capacity, it was significantly less than the amount and job category variables. Researchers also determined that retiree mortality differed sufficiently from contingent survivor mortality to support a separate contingent survivor subpopulation and mortality table.

Audience members asked questions about the salary and benefit amounts provided in the above-median and below-median tables. Questions included the data elements of pay in the employee tables and the presence of other retirement plans (notably Social Security) in the retiree tables. The speakers pointed out that each system submitted data in conjunction with the data request, and it is possible that data contains a mixture of data elements for each of these amounts. Thus, the median point for salary and benefit amount presented in the exposure draft report should be considered an indicator and not a precise amount. In addition, the speakers noted that amounts given in the exposure draft report are averages as of FYE 2011, and would need to be adjusted for use in later years.

Mortality Tables

The result of the statistical analyses above is a large number of new mortality tables released with the exposure draft. A total of nine categories of mortality tables were developed, each with gender and weighting (amount-weighted and headcount-weighted) probabilities of death. This includes combinations of the three job categories, and employee and retiree tables. In addition, two disabled retiree mortality tables were created, one for public safety corresponding with the public safety employee and retiree tables, and one non-public-safety table comprised of the combined teacher and general table data. The contingent survivors table is combined across all job categories.

Comparisons

The speakers compared the new exposure draft tables to three existing mortality tables: RP-2000 projected with Scale BB, RP-2014 backed up to 2006 and projected with MP-2017, and RP-2014 white collar backed up to 2006 and then projected forward with MP-2017. Speakers presented visualizations of the ratio between the mortality probabilities over relevant ages from the new table divided by the prior table - an “actual over expected” ratio. Ratios over 1.0 indicated an increase in the probability of mortality from the prior table, while ratios under 1.0 indicated a lower probability of mortality from the prior table.

Presenters also compared deferred-to-62 annuity factors from the exposure draft tables compared to the factors generated under the three mortality tables given above.

While the Pub-2010 mortality tables generally present lower probabilities of mortality than their RP-2000 and RP-2014 counterparts, the speakers focused on a few interesting observations. With regard to disabled mortality, disabled public safety mortality rates were much lower than predicted by the RP-2014 disabled mortality tables. The likely explanation is that the definition of disability in public safety roles is likely a lower threshold than in a corporate, general public employee, or teacher job category. When comparing the annuity factors generated from the total subpopulation, above-median, and below-median Pub-2010 tables,

speakers observed that the below-median tables result in a greater decrease than the above-median tables which result in an increase: the penalty for below-median mortality is greater than the reward for above-median mortality, when evaluated on an amounts basis.

Credibility Considerations

Although the data set generating the Pub-2010 mortality tables is significantly larger than the RP-2014 data set, it was not uniform across job categories. There are relatively few exposures and deaths in certain categories, for example female disabled retirees and male contingent survivors. While the data collected is more than in the RP-2014 study, thus allowing for the creation of additional categories of mortality tables, actuaries should take into account the level of experience used to build each table.

Administrative Issues

Speakers and audience members discussed a variety of administrative issues. For example, the use of contingent survivor mortality in the calculation of joint and survivor optional form factors could be applied using different approaches, such as (1) assuming the contingent annuitant has same mortality basis as the member, (2) assuming the contingent annuitant has the same mortality basis as the member while the member is alive, then switches to contingent survivor mortality, or (3) assuming the contingent annuitant always has the contingent survivor mortality. Other approaches are possible. Speakers demonstrated the range of outcomes from approach (1) to (3).

If a Board adopts one of the new mortality tables for performing funding valuations, it may be stipulated by the plan sponsor's code that those same new mortality tables be used for other administrative issues, such as service purchase calculations and portability agreements.

Speakers observed that no combined mortality table is provided because it would reflect more information about the timing of retirement in the different job categories than the mortality at certain ages. For example, employees classified as public safety tended to retire earliest, while teachers tended to retire latest. Therefore, a hypothetical combined retiree mortality table would present a higher observed proportion of public safety mortality rates at early retirement ages and then phase in to general and teacher mortality rates at the later retirement ages. RPEC decided that such mortality tables would not be useful due to these biases.

Session 601

Optimizing Employee Saving Strategies

Speakers:

- James Nichols – Voya Financial
- Matthew Avery – Fidelity Investments
- Grace Lattyak – Aon

Session Coordinator: Rob Bacher – ConocoPhillips

Background

Savings Plans have become the main vehicle for retirement income. This session aims to explore ways employees can maximize their retirement savings through various vehicles, including: pre- and post-tax 401(k) contributions, health savings accounts (HSA), matching and non-matching employer contributions, tax efficient drawdown strategies and individual retirement accounts (IRA).

Summary

James opened the discussion around the many choices and challenges people face with saving for retirement and ways we can improve outcomes using a broader lens and behavioral finance.

As the human brain works in irrational ways and with limited dollars available, people do not often make good decisions when it comes to saving for retirement. People are busy, people want simplicity and avoid conflict. Too much choice is overwhelming and often results in inaction. Almost 50% of American's lack the savings to meet a $400 emergency expense, 60% of American's spend more than they earn, and almost 50% have saved less than $50,000 towards retirement. Not a rosy picture for many.

James then shared the need to make it easier for people to save for retirement and reframe the messaging to employees to help them understand and appreciate the importance of saving early and often. Tools and techniques such as auto-enrollment and auto escalation have shown to have a positive influence on outcomes. Recent studies have shown that higher default auto-enrollment rates do not meaningfully impact opt-out rates, so setting a higher level may help employees. Overall, plan sponsors need to work with their plan administrators to develop targeted messaging and programs to ensure employees have a better chance of meeting their retirement needs.

Then Matt provided an overview of some of the different employer sponsored retirement vehicles and their taxation, including pre-tax, post-tax and Roth 401(k), health savings accounts (HSA), flexible spending accounts (FSA) and non-qualified deferred compensation plans. Matt then shared sample employee decision process and some of the choices an employee may consider on where to spend their pay check. In addition to the employer plans shared above, this included individual retirement accounts (IRA) and 529 accounts used to save for higher education expenses.

Matt then commented on the increasing trend towards high deductible health plans (HDHPs) and the associated use of an HSA, not only for current medical expenses, but also as a retirement savings vehicle. An HSA has a triple-tax advantage as the contributions go in tax-free, any investment earnings grow tax deferred and upon distribution for qualified medical expenses you pay no tax. While we are

seeing more people making use of an HSA as a retirement savings tool, utilization for savings is still low.

Matt then discussed some strategies to manage taxation in retirement using different approaches that would be dependent upon each person unique circumstances. The discussion included laddering different sources of retirement savings, Roth conversions and conversion of after-tax contributions into Roth to maximize tax efficiency.

Grace started her discussion by share some survey results on the distribution of retirement income surplus or shortfall by current savings level and noted that two-thirds of workers were more than 2x pay away from accumulating enough to maintain their preretirement standard of living if they were to retire at age 67. The biggest indicator of retirement adequacy was how much someone saves.

Workers at various pay levels have different retirement challenges, with lower income workers less likely to be able to reduce their pre-retirement standard of living than higher income workers. Grace then shares the savings rates by age and income with the savings rate generally positively correlated with both age and income level. The general saving rule of thumb shared was a total (employee plus employer) of 16% of pay starting at age 25 is necessary for a more successful retirement savings outcome.

Grace then shared illustrations of the retirement income impact of having the same contribution made through one's career but using either: 1) all pre-tax, 2) all Roth and 3) pre-tax with a portion of the dollars saved going into to an HSA and the tax implications throughout and on the account value at age 67. This was done for both a low-income and high-income employee.

Grace concluded her presentation talking about the need for employers to help their employees, that one size does not fit all and the importance of communicating and providing employees with tools and resources.

Session 602

ACCOUNTING TOPICS

Speakers:

- Nick C. Thornley – Ernst & Young
- Grant Peterson – PricewaterhouseCoopers
- Abednigo Sibanda – KPMG
- Jim Verlautz – Mercer
- Session Recruiter/Moderator: Robert W. Bruechert – Willis Towers Watson

Session Assistant: Kevin Morrison – River and Mercantile Solutions

Background

This session highlights the current hot topics in accounting for retirement and other benefit plans and provides corporate auditors' perspectives. The session touches on new accounting strategies, recent updates to accounting standards and disclosure requirements, differences between IFRS and US GAAP accounting, and basic concepts of deferred tax accounting.

Summary

Mr. Thornley discussed actuarial/auditor interactions, the changes in Accounting Standards Update (ASU) 2017-07, subsequent events, and settlement accounting.

Accounting considerations for an auditor most often focus on materiality and consistency. Materiality may be 2-3% but differs for every plan sponsor as it is based on internal financial metrics. Mr. Thornley cited a large client of his where the materiality threshold is as low as 0.1%. Methods used by an actuary should be consistent with prior periods and with the overall company accounting policy (e.g. not just the accounting for the pension and OPEB plans). Actuaries need to be in communication with plans sponsors and their auditors, to avoid running into materiality or consistency issues.

Accounting Standards Updates ("ASU") are used to introduce changes to US GAAP. ASU 2017-07 does not change the calculation of Net Periodic Benefit Cost (NPBC) under Accounting Standards Codification (ASC) 715 but clarifies where it is reflected in a plan sponsor's income statement. Service Cost is to be reported with other compensation costs arising from services rendered by employees during the period (i.e. operating income or "above the line"). All other components of NPBC are reported separately (i.e. outside of operating income or "below the line"). This may make special accounting (e.g. settlements) more palatable for plan sponsors. ASU 2017-07 may also affect capitalization of assets (recognition over a future period) as now only service cost is eligible for this treatment. ASC 715-30 does not specify where the administrative expenses load should be reflected (only ASC 715-60 does), so consultants should discuss the appropriate treatment with plan sponsors and auditors.

A subsequent event is an event or transaction that occurs after the balance sheet date but before financial statements are issued or are available to be issued. There are two types of subsequent events: Type 1 events or transactions that provide additional evidence about conditions that existed at the balance sheet date and Type 2 events or transactions that provide additional evidence about conditions that did not exist at the balance sheet date. Release of new MP mortality projection scales by the Society of Actuaries are Type 1 events, as they reflect mortality experience that existed at the measurement date but was not yet published. Type

1 events should be recognized in the financial statements and may require adjustments to the financial statements, if material. Law changes enacted after the measurement date (e.g. lump sum mortality tables) are not required to be considered.

Settlement accounting references in ASC 715-30-35-79 through -91 and 715-30-55-140 through -151 are commonly followed by most actuaries, with the most common approach being to measure settlement accounting when it is first triggered (see below) and perhaps again quarterly or at fiscal-year-end. ASC 715-30-55-167 and -168 contain additional guidance around when and how often to reflect settlement accounting that is not often applied correctly. "Practical expedient" allows settlement payments to be treated like normal benefit payments if total settlement is less than the "Service Cost + Interest Cost" threshold. Practical expedient is applied based on an estimate of expected settlement payments and should be reassessed for each reporting period (e.g. quarterly, annually), and therefore settlement accounting does not need to wait until it is triggered to be recorded.

Mr. Peterson discussed pension discount rate methodologies and amortization period methodologies, starting with a brief history of discount rate methodologies, from the index approach, to spot-rate yield curve, to individual bond portfolio models.

There had been a steady trend from the spot-rate yield curve method to the individual bond models, as it provided a higher discount rate and lower liabilities. This trend has stopped, as the spot rate approach for calculating pension expense has become more popular. The SEC has objected to using an individual bond model in combination with the spot rate method.

Historically, there has been scant market data for bonds maturing longer than 30 or 40 years from present. These long-term bonds are becoming more common, and there is no provision in ASC 715 prohibiting the use of long-term bonds for discount rate setting purposes. However, there are questions and challenges around how to incorporate these bonds.

Other questions still exist around how to build a bond yield curve, including the use of make-whole callable bonds (these are generally included but not always) and how many rating agencies to consider to determine "high quality" criteria.

ASC 715 generally requires amortization of gains/losses over the "average remaining service period of active employees expected to receive benefits under the plan," which could be interpreted as either remaining service at the Company and not tied to benefit accruals or as future service while accruing benefits. If plan participants are "all or almost all inactive," average remaining life expectancy can be used instead of average remaining service. ASC 715 is not prescriptive as to how "all or almost all inactive" criteria is applied. One interpretation is that active participants become "inactive" when benefit accruals are frozen. Consistency is important when applying the amortization period.

Mr. Sibanda discussed the spot rate approach for calculating pension expense and ASU 2018-14. The spot rate method calculates service and interest cost by applying the respective spot rate to the expected benefit payment for that maturity year. This results in a lower interest cost (10-20% is typical) but also affects the amount eligible for capitalization under the new presentation of pension cost (ASU 2017-07).

Because the yield curve is applied to the respective cash flows (Pension Benefit Obligation (PBO) or service cost) to calculate certain components, there will be a different single discount rate for PBO, interest cost, and service cost. Each single discount rate should be disclosed, as should the method used to calculate interest and service cost.

Moving to this method can be treated as a change in estimate (no retrospective application), and in September 2015, the SEC indicated it would not object to the method. However, because the spot rate method has been around for a few years, changing to this method now requires a change in facts and circumstances to justify going to the spot rate method (i.e. why are you changing now when you could have before?).

Proposals have been made to the SEC to allow plans to use bond matching in combination with the spot rate method, but so far the SEC has turned them down.

ASU 2018-14 updates disclosure requirements with the goal of improving the effectiveness of the information provided, while weighing the cost of providing this information to the resulting benefit. The changes in the ASU that will affect most actuaries' work are: elimination of disclosures of AOCI amounts to be amortized in following year and the effect of 1% changes in healthcare trend rates, and addition of disclosures of interest crediting rate and reasons for significant gains and losses.

ASU 2018-14 is effective for public business entities for fiscal years ending after December 15, 2020 (2021 for all other entities), but early adoption is permitted. Retrospective application is required for all periods presented in financial disclosures.

Mr. Verlautz provided a comparison of reporting requirements under IAS 19 and ASC 715, an update to deferred tax accounting through ASU 2018-02, and a discussion of differences in accounting for pension plans and deferred compensation contracts.

In general, IAS 19 is principles based, while ASC 715 is rules based. Under IAS 19, there is still ongoing thinking about how to set an appropriate discount rate, but it can't be a settlement rate, and most auditors will not allow bond models or above-mean yield curves. IAS requires more immediate recognition of gains/losses (e.g. past service costs, no gain/loss amortization, no market-related value of assets) and is more restrictive on asset valuations (e.g. discount rate used for "expected return" and ceiling applied to surplus assets). Special accounting for curtailments and settlements also differs in terms of how triggered, when recognized, and what is valued. Depending on the language in a group annuity contract, liabilities may be fully settled under ASC but not under IAS.

Actuaries usually provide results gross of taxes, but tax-paying companies must prepare financial statements that reflect the effect of taxes. A deferred tax is the difference between the tax paid to the IRS (based on taxable earnings) and the income tax expense reported on financial statements (based on GAAP earnings). This also includes the tax effect on the change in AOCI. The Deferred Tax Asset (DTA) is the accumulation of all prior deferred taxes.

When tax rates change, the DTA is adjusted, but there needs to be an entry to balance it out. Under ASC, the entire entry is always an expense (IAS rules are different). Because net AOCI can never change, this adjustment causes a "stranded tax effect" and absent of plan termination, there previously was no way to get rid of this amount. ASU 2018-02 allows companies to transfer the stranded amount from AOCI to retained earnings, only with respect to the 2017 tax act.

Pension plans are accounted for under ASC 715, while deferred compensation contracts are accounted for under ASC 710. ASC 710 is not as detailed as ASC 715 and there are many differences, so it's important to know which standard applies. Participation provisions, consistency of benefit provisions, and having an SPD are ways to distinguish a pension plan from a deferred compensation contract.

Session 603

Daily Small Plan Consulting Issues

Speakers:

- Lance Paul Roteman – Northeast Professional Planning Group
- David R. Godofsky – Alston & Bird, LLP
- Richard O. Goehring – Richard O. Goehring, Inc.

Session Assistant: Lauren Meyer – River and Mercantile Solutions

Introduction

Small plan pension consultants face myriad issues on a daily basis. Our panelists discuss common issues including hot topics around tax reform and share their own consulting experiences.

Controlled Group Issues

Many issues arise from not properly identifying the controlled group. Most often, our clients can't answer themselves what is their controlled group. As the actuary, we should be asking probing questions at intake and every year thereafter to ensure we understand the controlled group. Getting the data is a critical step.

Take a "know your client" approach and have some back and forth to make sure you get the right data. Consider "the clueless client" and how to consult with them. Sometimes it's not just asking the right questions but also explaining why you're asking. For example, you are asking about the client's other businesses for controlled group determination purposes and not necessarily business growth purposes (which is what the client might otherwise assume).

Lastly, consider consulting opportunities around the controlled group conversation. For example, transferring some ownership to a manager might in some circumstances relieve issues elsewhere.

Plan Document Issues

Recent Tax Court Memo 2018-92 Val Lanes Rec Center v. Commissioner could be a useful reference in situations where a signed amendment can't be located.

IRS Audits

Before giving anything to the IRS auditor, gather all of the requested information and review the year to be audited. Data will be their first and easiest area of review. Ideally, you would prepare data, plan documents and other documentation for review in advance. Don't underestimate the power of presenting well-organized files to the auditor. If you do find problems, point them out to the auditor in advance along with the impact if possible.

Tax Reform – Using DB plan to get Pass Through Deduction

Why is Section 199A relevant to prospective clients? Individuals have an opportunity to magnify their tax deduction from DB contributions. Furthermore, with tax reform removing many of the previously available deductions, a qualified plan deduction may be more valuable.

Section 199A deductions are three-part:
20% Qualified Business Income (QBI) + 20% REIT income + 20% qualified publicly traded partnership (PTP) income. The deduction is also subject to a few lesser of calculations.

Our work impacts the QBI portion of the above equation. For many individuals, deductions are phased out for joint filers with taxable income over $315,000 and all other filers over $157,500 (in 2018, inflation adjusted thereafter). Using a DB plan to lower taxable income to these levels can create additional tax savings over the savings already resulting from the DB plan. This is the very high level explanation; the client's accountant should advise. Note there is a phase-in range for the taxable income threshold, so even lowering taxable income to levels above these could be beneficial.

How do we know all these amounts for our clients? Talk to their accountant or review Schedule K-1.

The session presentation includes additional details on tax reform rules including numerical examples illustrating potential tax savings. The presentation also outlines other daily small plan consulting issues related to plan administration, 415 limits, required minimum distributions, and plan terminations.

Session 607

GASB 74/75 Implementation and Lessons Learned From GASB 67/68

Speakers

- Jeannie Chen – Deloitte Consulting
- Jeff Markert - KPMG
- Mary Beth Redding – Bartel Associates
- Moderator: David Kershner – Buck

Session Assistant: Phillip Souzek – Deloitte Consulting

Background

Government Accounting Standards Board (GASB) Statement 74 provides financial reporting requirements for pre-funded state and local governmental Other Postemployment Benefit (OPEB) plans, replacing GASB 43. It is effective for fiscal years beginning after June 15, 2016. GASB 75 provides financial reporting requirements for state and local governmental OPEB plan sponsors, replacing GASB 45. It is effective for fiscal years beginning after June 15, 2017. This session provides information on 1) implementation considerations, 2) funded plan issues and 3) unique OPEB considerations.

Implementation Considerations

Jeff Markert spoke to implementation considerations related to the new standards, including the benefits covered, plan boundaries and selection of a measurement date.

The benefits covered under the 74/75 standards include medical, dental, vision, hearing, Medicare Part D; and sometimes death benefits, life insurance, disability and long-term care (when not provided through a trust)

Medicare Part D benefits are generally considered a part of the plan and are valued by actuaries. However, in the case of an Employer Group Waiver Program, Medicare Part D benefits are not included in the plans' obligation.

The details of the OPEB plan valued, including population covered and degree of cost-sharing provided, are based on the substantive plan, or the OPEB plan as understood by employer and plan members. This may include written documentation but is certainly not limited as such.

If a qualifying trust exists, then that trust defines the boundaries of the plan. Qualifying trusts have the following attributes. They contain irrevocable employer contributions and earnings, the assets are dedicated to providing OPEB, and are legally protected from creditors.

When no trust exists, defining the boundaries of the plan becomes more complicated. Because the concept of the plan is only relevant for employer reporting in this situation, it is more flexible. Any assets are that of the employer and do not impact the Net OPEB Liability or the calculation of the crossover date.

Funded Plan Issues

Mary Beth Redding summarized some common issues confronted by plans that are pre-funded in an OPEB trust, based partially on her experience with several pre-funded plans in California.

The crossover test was discussed in detail, noting that although sensitive to small changes, plans with an intent to fully fund generally pass the crossover test, even after consideration of the normal cost for future hires as noted below. In the case when a plan that has little or no intention to reach fully funded status does pass the crossover test, an actuary should use professional judgment to ensure they are comfortable with the discount rate used.

Employer contributions were also discussed at length. Benefit payments, although not always formally passing through the trust, are considered a pass through when a trust exists. Benefit payments from implicit subsidy benefits must also be estimated if necessary and included as contributions.

Unique OPEB Considerations

Jeannie Chen touched on a variety of considerations that are unique to OPEB plans, and which therefore are unique to GASB 74/75 in comparison to GASB 67/68.

Several actuarial assumptions, particularly demographic assumptions, can and should often leverage the results of the experience study performed by a pension plan covering the same or a similar population as the OPEB plan. Consideration should also be given to the similarity of eligibility for benefits and if liability weighted assumptions are used. Salary scale assumptions and inflation should also be consistent, as a rule.

Actuarial assumptions that are either unique to, or particularly important to OPEB plans include the discount rate as calculated using the crossover test, health care trend, participation rate, medical plan election and percentage electing spousal coverage.

Jeannie also touched on some of the more nuanced implications of the GASB 74/75 standards. Namely, the discount rate that is used in calculating OPEB expense and the variety of methods used to determine proportionate share. The most appropriate method can depend on type of plan and funded status, but most importantly the proportionate share must be based on the long-term contributions funding plan benefits.

Session 708

Engaging Today's Age-Diverse Workforce

Speakers

Moderator: Tom Terry – The Terry Group
Mary Moreland – Abbott
Dawn Rich
Sandeep Singh – Mondelez International

Session Assistant: Jody Carreiro – Osborn, Carreiro & Associates

Overview

The presenters shared their insight and opinions about the way the generational differences among employees are affecting their work in the communication and the development of various employee benefits. Each presenter shared thoughts on generational differences and personal examples of how they have been demonstrated with US employees as well as international employees.

Generational or Stage of Life Differences

The moderator set the stage by referencing recent study questions about how people view the other generations. The majority (72%) viewed the difference between older and younger generations and how they work as an issue that poses challenges sometimes or often. There are also differences when asking workers from different generations about their wants or values in their work environment. A key question that he posed for the panelists was based on their experience - were these differences real or are they more a factor that workers, as they have always been, are at various stages of life?

There is more commonality than we might think at first. All employees want to grow and develop in their careers; they want to be rewarded appropriately for their good work; they all want to be a part of something bigger than themselves and have a positive impact on the world. But, there are some real differences in the "how" or the style with which different groups of employees work to achieve these goals. The consultant must work with the clients to understand the commonalities and find ways to meet those goals.

Since the panelists all work for international companies, there was discussion about whether the generational issues we discuss in the US are truly global issues. Examples were discussed as to how European units are more focused on the aging workforce and talent shortages than generational issues. The Asian workforce is about stage of life planning more than differences in generation. There is some movement toward benefits in that area that are based upon the stage of life, that is, the benefits are provided somewhat differently as an employee ages through their career. Even within the US, there are differences by region that can often outweigh any observable generational difference.

It was suggested that it is just lazy to bucket all employees into various generations. But, we must recognize that it is helpful to recognize the differences within a group of employees. The adage for consultants applies here very well, that is, you must know your client. The consultant must not only know the individuals they are working directly with but work to understand the interests and concerns of the employees of the client, generational or other.

There have always been three or four identifiable generations in the workforce. The Millennial generation is now the largest generation in the US workforce. Companies have to recognize, but not generalize the groups that work for them to be able to make best use of their talent. Evolution of corporate policies tend to reflect the wants of the dominant generation.

Where Consultants Add Value in This Discussion

There were various real world examples of programs that were implemented and worked well and others which did not, such as a benefits app that only lasted a short time because few could or would use it. The key factors to successful implementation of benefits

most often expressed were communication and engagement. Benefits departments must provide these to employees and consultants need to provide this to the corporate client as well.

Communication. All panelists expressed this point. There is a need to determine how employees like to receive information and then provide it in that way. More than once it was noted that communication must be in multiple forms to meet the needs and learning styles of all employees, whether face-to-face, on paper, or electronic. It is helpful to assess the differences in generational values to create customized, targeted messages. The core values of generations need to be recognized to include everyone in the conversation.

There is a lot of discussion about company values and branding. Good communications about benefits will make sure that those values resonate with all members of the organization. One example discussed concerned a replacement of the health care plan. It was considered to be in line with the overall goals of the company. But, as with all change, there were a lot of questions and concerns, in particular a lot of the employees liked their co-pays and didn't want to give them up. The communication plan included creating and using age/service heat maps to develop communication tools that addressed the particular concerns within the different groups.

All good communication requires that a provision is made to provide, receive and act upon honest feedback. We have moved beyond the proverbial "suggestion box" and have many ways to collect that feedback. This will help with knowing the strengths and weaknesses of benefit packages, of employers and of employees.

Engagement. Within this context, you must learn and understand the specific needs of employee groups, generational or otherwise. It was suggested in multiple location companies, that management needs to spend time in those locations to know the employees and what is going on at that location.

The generational issues can be used to an advantage. Employees should be educated on strengths of themselves and others. This can be used to facilitate collaboration across teams and work groups. This can also be used in development of benefit packages that work for the entire company. There is an increased focus on diversity and inclusion. This should be reflected in generational diversity as well.

Good benefits, effectively communicated to employees, can tell those outside a lot about your company environment and values. So for every generation, we need to understand the story we are telling about the companies we serve.