



46 - Reserving 101 for Health Actuaries

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Reserving 101 for Health Actuaries

Session 46

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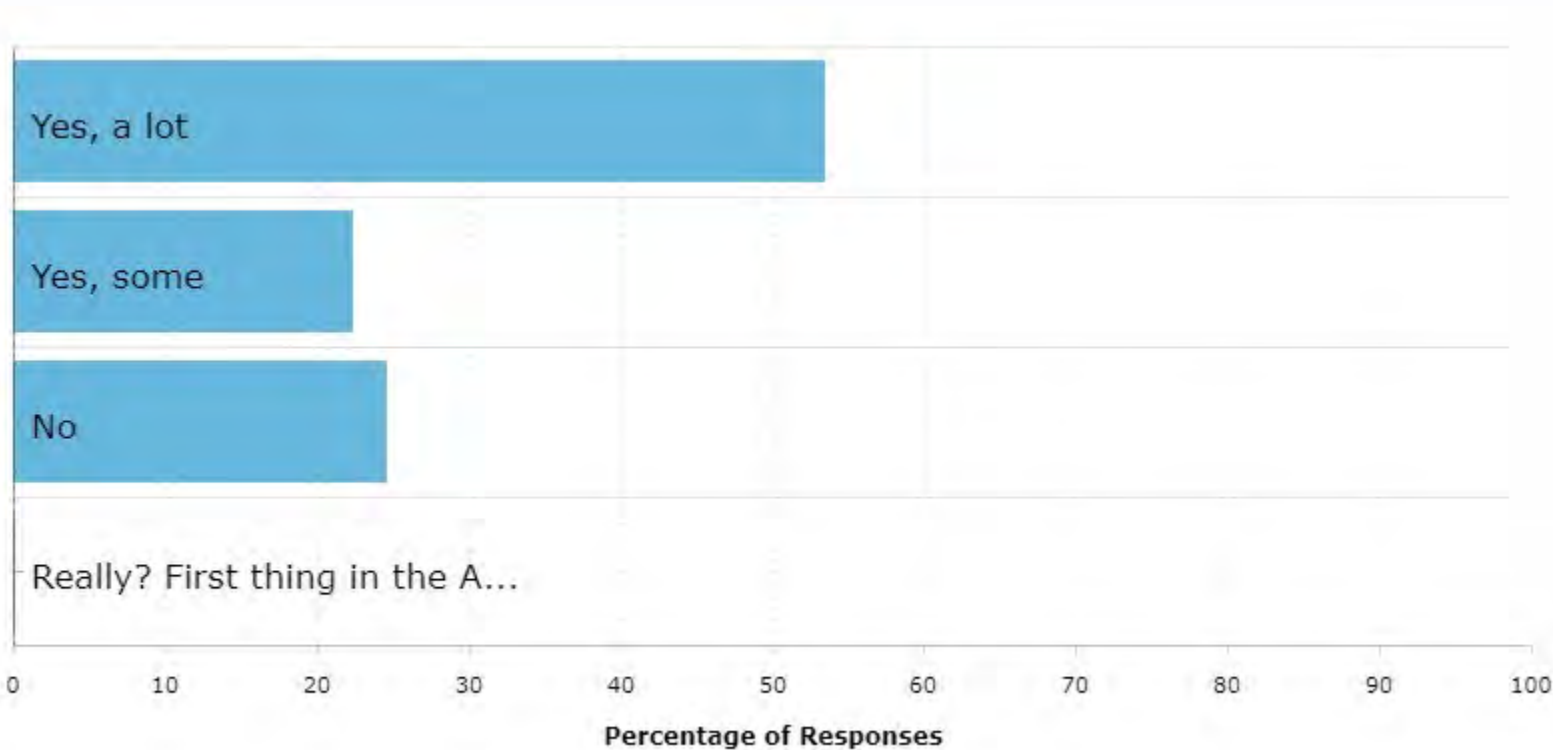
Limitations

- *The views expressed in this presentation are those of the presenter, and not those of Milliman. Nothing in this presentation is intended to represent a professional opinion or be an interpretation of actuarial standards of practice.*

Polling 1: Have you calculated health claim reserves?

- A. Yes, a lot
- B. Yes, some
- C. No
- D. Really? First thing in the AM?

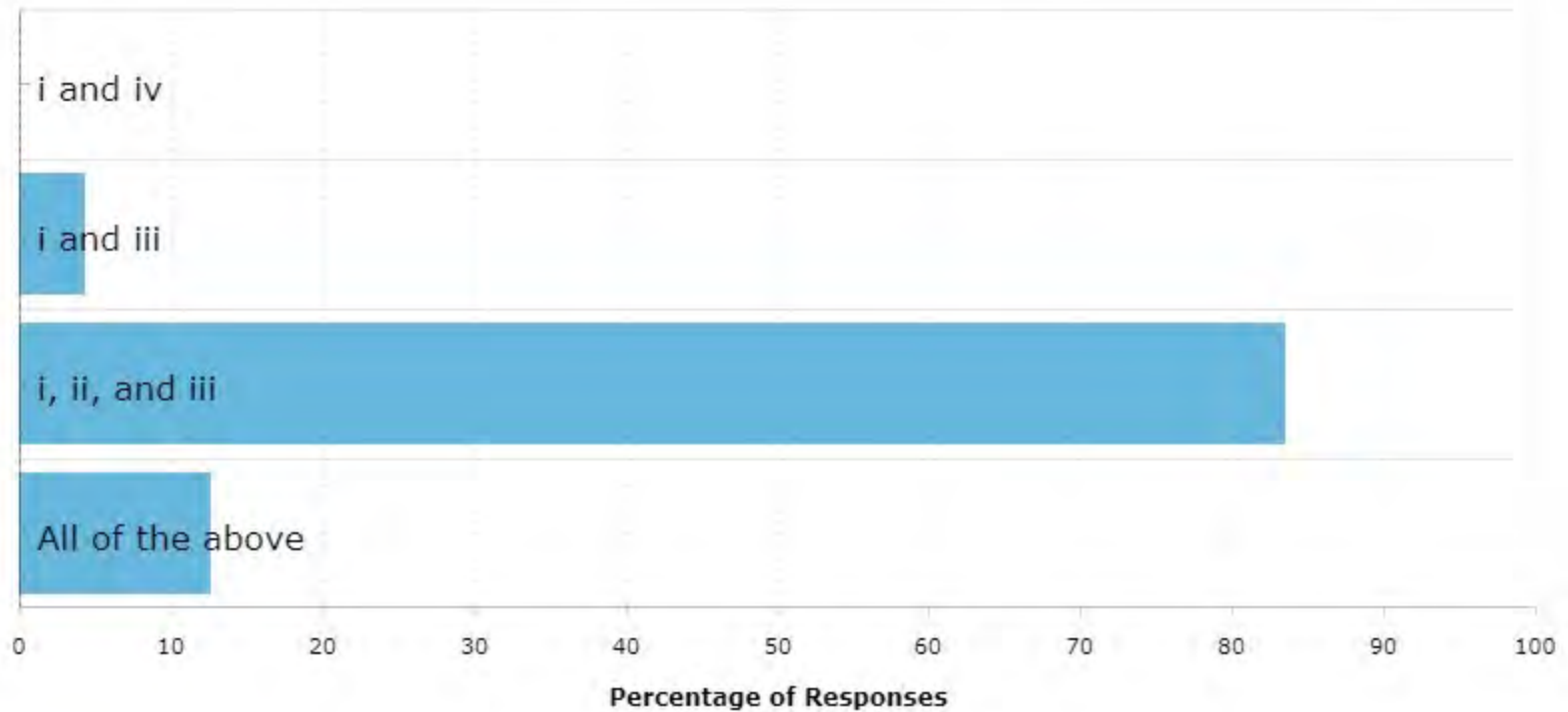
Poll: Have you calculated health claim reserves?



Polling 2: What's the point of reserving?

- i. Help achieve a matching of revenue to expense
 - ii. Required by law or regulation
 - iii. Important for accurate valuation of the entity
 - iv. Means of keeping actuaries as the corporate scapegoat
-
- A. i and iv
 - B. i and iii
 - C. i, ii, and iii
 - D. All of the above

Poll: What's the point of reserving?



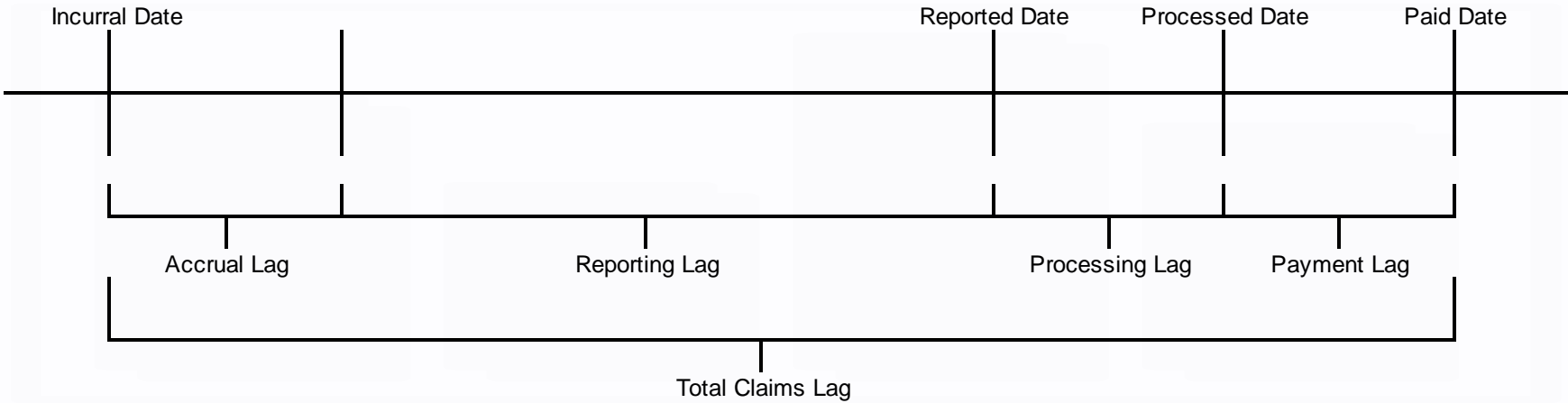
Definitions and terminology

- Incurred claims – claims for which the carrier has a liability under its insurance contract, i.e., an obligation to pay.
- Incurred date - the date a claim becomes a liability of a plan or carrier in accordance with the terms of the health benefit plan.
- Paid claims – a claim that has been reported, processed, and for which a check or monetary transfer has been issued.
- Paid date – the date a claim shows up in the financial reports as paid, i.e. when the claim amount hits the carrier's trial balance or ledger.

Definitions and terminology (continued)

- Processed claim – a claim that has been reported and processed, but has not yet been paid. A carrier may process claims continually, but only issue checks every other week, or only on Fridays.
- Reported claim – a claim that is known, i.e., has been reported, on or before the valuation date.
 - Claims in a claims lag grid could be recorded by date reported instead of by date paid. However, the liability resulting from the reserve analysis would be understated. This liability amount should be increased by the amount of claims reported but not yet paid as of the valuation date.
 - Claims reported but not yet paid as of the valuation date can be difficult to estimate, particularly for those claims that have not yet been processed and a dollar value assigned.

Components of the Claims Lag



Claims lag and the components of claims lag

- Accrual lag – a claim cannot be reported until it is completed or has been accrued. An example is a hospital confinement in process. As another example, if liability is defined by when an accidental injury occurs, services that define the liability amount may not be performed for a few days to a few weeks later, depending on when the insured member seeks treatment for the injury.
- Reporting lag – once a claim is completed it must then be reported to the carrier before it can be processed and then paid. Some claims, drugs submitted on a paper basis as an example, may be put in a shoebox and only submitted once a year. Conversely, drugs submitted electronically have very quick reporting lags.

Claims lag and the components of claims lag

- Processing lag – once a claim has been reported it must be processed in order to determine the amount of the carrier's obligation. This claims turnaround time is usually only one to three days. However, if another carrier is involved, through a COB or subrogation settlement, a longer processing lag can be expected. Incomplete information on the claims submission will also lead to process delays.
- Payment lag – once a claim has been processed, a check may not be immediately issued. Perhaps checks are only written on Fridays, or every other week, thereby creating a payment lag.

Definitions and terminology (continued)

- Claims in course of settlement (ICOS) – statutorily defined as a claim that has been reported, is under investigation, but no dollar amount has yet been assigned the claim.
- Due and unpaid (D&U) claims – statutorily defined as a claim that has been reported, a dollar amount assigned to the claim, but for which no payment has yet been made.
- Incurred but not yet paid (IBNP) claims:
 - Incurred but not yet reported (IBNR) claims
 - Reported but not yet processed claims (ICOS)
 - Processed but not yet paid claims (D&U)

Definitions and terminology (continued)

- Cash flow testing - The process of projecting and comparing, as of the valuation date, the timing and amount of asset and obligation cash flows after the valuation date.
- GAAP reserves – reserve established under Generally Accepted Accounting Principles to measure experience under rules established by the Financial Accounting Standards Board (FASB) and the American Institute of Certified Public Accountants (AICPA).

Purposes of unpaid claims analyses

- Financial statement preparation
- Trend analysis
- Financial forecasts
- Rate calculations, experience studies, pricing
- Special studies:
 - Age/gender studies
 - Large case experience rating
 - Alternative funding settlements
 - Actual/expected benefit analyses
 - Group size studies
 - Area studies
 - Provider risk sharing settlements

Reconciliation

- Reconciling the aggregate claims paid in the financial report of the carrier with the claims paid in the claims lag grid.
- Why is this necessary?
- Reconciliation will help ensure that all lines of business and product types are being accounted for in the reserve analysis.
- The idea is to identify those items that are reflected in the financial reports but not the lag reports, and vice versa.
- The reconciliation should be done in as much detail as possible, i.e. by reserve cell, but at least in total.

Definitions and terminology (continued)

- Loss adjustment expense (LAE) liability - the liability as of a valuation date for the expense of administering claims to be paid after the valuation date that have been incurred as of such date
- Unearned premium reserve – an asset entry representing premiums that have been collected and entered in the ledger, but are actually allocated to a period of time after the valuation date.
- Active life (policy) reserves – the combination of contract reserves and unearned premium reserves.

Claims lag grid (“claims triangle”)

- This is the historic detail of actual claim amounts paid split into the time period in which they were paid (or processed) and the time period in which they were incurred.
- The time period predominantly used for reporting medical coverage is month. Although generated on a monthly basis, the claims lag grids are often rolled up into quarterly, semi-annual, or annual claims lag grids for additional analysis.
- Rarely are reserves analyzed more frequently than monthly. To complete such an analysis the claims lag grid would need to be constructed using the shorter time period; a week-by-week paid and incurred grid, as an example.

Sample Claims Lag Grid

Lag Triangle		Incurral Month																	
		Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18
Payment Month	Jul-17	23,098																	
	Aug-17	191,018	19,287																
	Sep-17	74,592	186,572	22,918															
	Oct-17	32,981	71,652	201,872	26,174														
	Nov-17	16,273	31,098	69,802	197,263	25,452													
	Dec-17	6,326	19,872	37,625	63,776	182,731	24,387												
	Jan-18	4,237	8,102	13,198	32,654	76,198	178,253	27,634											
	Feb-18	4,287	5,273	7,102	16,287	32,761	71,628	198,263	20,187										
	Mar-18	870	1,928	3,178	6,938	14,287	29,817	72,837	227,309	29,108									
	Apr-18	523	491	408	4,263	6,198	17,628	38,290	69,473	235,192	18,725								
	May-18		123	1,079	2,763	2,389	7,362	17,623	31,982	64,945	210,827	21,829							
	Jun-18	173		365	1,066	1,128	3,847	8,578	15,283	34,287	73,846	173,647	27,463						
	Jul-18		1,520	4		1,089	516	4,283	7,338	16,734	39,283	79,340	185,623	20,191					
Aug-18			3		527	457	7	201	6,230	4,272	16,192	30,187	77,263	189,272	18,292				
Sep-18						303	376	273	1,723	1,538	7,878	18,209	29,361	65,398	215,209	24,090			
Oct-18							108	1,323		4,912	8,187	16,239	34,928	68,495	210,298	21,638			
Nov-18								100	238	191	2,108	8,858	19,273	29,108	68,322	220,198	19,287		
Dec-18											391	1,980	9,152	17,263	32,987	72,309	207,194	24,398	

Claims reserve

- Statutorily defined as
 - “reserve”
 - a loss has occurred on or before the valuation date, but the service has not been rendered
 - plus “liability”
 - a service has been rendered but the claim has not been paid as of the valuation date.
- Most medical claims are “liabilities” according to this definition.

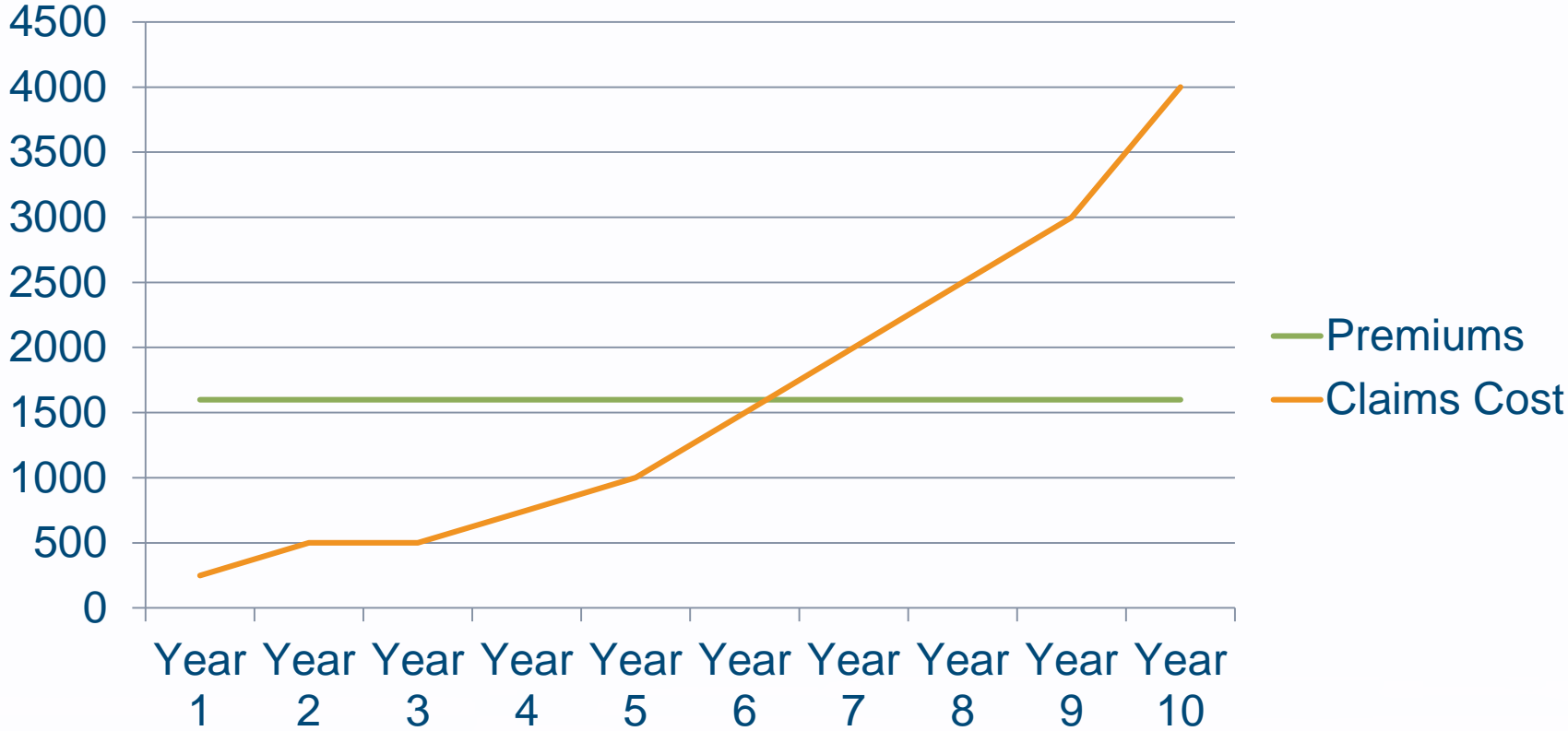
Claims reserve (continued)

- An example of a “reserve” according to this definition is short-term disability whereby the claim has been incurred, the liability created, prior to the valuation date and yet some weekly payments will be due and payable beyond the valuation date. The present value of these future claims, along with all incurred but unreported claims as of the valuation date, constitute the claim “reserve”.
- The “liability” represents all the claims incurred prior to the valuation date, for which the weekly payments are due but have not yet been paid as of the valuation date.

Contract reserve

- Reserve set up when a portion of the premium collected in the early durations is meant to help pay for higher claims costs arising in later durations. Also called “additional reserves”, “benefit reserves”, or “policy reserves.”
- Examples of a need for a contract reserve include:
 - Entry age-rated (level premium) products
 - Attained age-rated products with durational morbidity patterns
 - Coverage that has a rate guarantee whereby the claims costs are anticipated to increase faster during the guarantee period than the premiums. (If the actual increase in claims exceeds that expected in the original pricing of the rate guarantee, the need for a premium deficiency reserve may also be appropriate.)

Contract reserve graph



Reserving Cells or “Contract Groupings”

- Actuarial Standards Board (ASB) - The actuary should consider separate development of incurred claims for each category that may exhibit different lag patterns, costs per exposure unit, trends, or exposure unit growth rates.
- Categories might be further refined to more accurately analyze or project costs and utilization data, for example by:
 - Method of payment (such as electronic vs. manual)
 - Type of contract
 - Place of service
 - Premium rating method
 - Demographic factors
 - Distribution method
 - Provider risk-sharing arrangements

Factors affecting choice of method

- Change in claims payment patterns
- Changes in backlog or inventory
- Changes in enrollment
- Variation in results
- Changes in trends
- Seasonality
 - Some coverages or plans show more seasonal claims patterns than others.
 - Multiple years of data are required according to the NAIC Guidance Manual to reasonably estimate the impact of seasonal effects.

Claims inventory (backlog) and processing system changes

- Changes in claims software or hardware
- Changes in the way the software assigns incurral dates
- Staffing levels, holidays, weekends, and/or operational problems
- Changes in the ability of providers to electronically submit claims
- The most common shifts in completion patterns are actually caused by the carrier's own claims processing operations.
 - A simple workday lost to a power outage can often be identified as a change in lag pattern in that month.

Claims inventory (backlog) and processing system changes – Potential solutions

- An average payment per claim can be used to convert the inventory on-hand on the valuation date, or the change in inventory from a previous valuation date, into an estimated dollar impact.
- This estimate can be used to adjust lag factors used in the reserve analysis or to directly adjust the estimate resulting from the reserve analysis.
- In making an inventory-based adjustment, it is important to understand the driver of the change in inventory levels.

Scrubbing the data

- Are there any holes or blank lines where data would be expected to appear?
- Is any data reported the same in adjacent lines (duplicates)?
- Are any claims paid before they were incurred?
- Have previously reported amounts stayed the same?
- Are there any large negative claims?
- Are there any unusual monthly cells?
- Are there any unusual payment patterns?
- Are there any unusually large claims?
- Are there any unexpected changes in enrollment?
- Is the monthly enrollment different from other cells that should have the same enrollment?
- Is the monthly enrollment different than that used in previous reserve analyses?

Large catastrophic claims

- ASB - Large claims can distort claim payment patterns or historical per-unit claim levels that the actuary considers when developing incurred claim estimates.
 - The actuary should consider how large claims impact the particular method being employed to determine incurred claim estimates and make appropriate adjustments.
- All claims above a specified threshold can be grouped into a separate reserve cell for analysis on its own.
- Large claims often have longer lag times between incurral and payment dates when compared to average claims lag times.

Large catastrophic claims (continued)

- Including such a claim can distort historical claims payment patterns.
 - If left in the claims lag grid, the ripple effect on completion factors can result in a reserve estimate that is too conservative, perhaps by a significant amount.
- However, a single large catastrophic claim *is* part of the carrier's claims history and should not be ignored for purposes of setting reserves.
 - If such a claim occurred in the past, there is a likelihood of another comparable claim occurring again.

Methods carriers have used to deal with large claims

- Leave the claim in the claims lag grid, estimate reserves, and
 1. live with the potential conservatism, or
 2. reflect the suspected conservatism by reducing the reserve margin that would otherwise be included.
- Remove the claim entirely, estimate reserves, and
 1. look to any margins to support any large claims emerging as part of the runout from the valuation date,
 2. increase the estimate by a specific margin for large claims, or
 3. increase the resulting amount by an estimate of unreported claims.
- Large case management, or a pre-admission certification process, can be used to identify and quantify unreported large claims.

Calculation Methods

- Completion factor (“Development”) method
 - Using a longer time period helps smooth completion factors; however, detail is lost regarding monthly variations of seasonality that, perhaps, should be examined depending on the purpose of the analysis. Annual completion factors are sometimes useful in that seasonality is not an issue.
- Pure premium projection (or “exposure” or “projection”) method
 - The pure premiums utilized are per capita claims costs. Most often, these are per member per month claims costs (PMPM).
 - Uses historical monthly PMPM claims costs projected forward with trend to estimate PMPM claims costs during the last few months preceding the valuation date.
 - The biggest variable with projecting PMPM claims costs is trend.

Calculation Methods (continued)

- Pure premium projection method (continued)
 - It is important to consider using this method if there has been a slowing down or speeding up of the processing of claims during the four or five months preceding the valuation date.
 - This method is also useful if there is limited data available.
- Loss ratio method
 - Similar analytic approach as the pure premium method described above. However, the estimates of incurred claims for the months preceding the valuation date are based on applying projected loss ratios (incurred claims over premium earned) to earned premiums.
- Multiplicative (“Completion Ratio”) Method
 - Method to consider if there has been a slowing down or speeding up of the processing of claims during the 4-5 months pre val date.
 - Also useful if there is limited data available (only 18 month history)

Sample Combined Completion Factor and Pure Premium Method

Incurral Month	Members	Paid Amount		Selected Completion Factors	Incurred Amount		Outstanding Total
		Total	Per Mbr Per Mo		Per Mbr Per Mo	Total	
7/17	3,189	\$354,378	\$111.13	1.000	\$111.13	\$354,378	\$ -
8/17	3,018	345,921	114.62	1.000	114.62	345,921	-
9/17	3,124	357,551	114.45	1.000	114.45	357,551	-
10/17	3,092	351,711	113.75	1.000	113.75	351,711	-
11/17	2,917	342,993	117.58	1.000	117.58	342,993	-
12/17	2,991	333,821	111.61	1.000	111.61	333,821	-
1/18	3,107	368,090	118.47	1.000	118.47	368,091	1
2/18	3,276	380,948	116.28	1.000	116.30	380,994	47
3/18	3,397	386,314	113.72	0.999	113.80	386,579	265
4/18	3,178	371,854	117.01	0.999	117.14	372,277	423
5/18	3,200	333,898	104.34	0.998	104.55	334,563	665
6/18	3,210	346,787	108.03	0.997	108.41	347,999	1,212
7/18	3,198	338,214	105.76	0.987	107.15	342,658	4,444
8/18	2,997	348,367	116.24	0.967	120.16	360,109	11,742
9/18	3,015	335,697	111.34	0.915	121.66	366,810	31,113
10/18	3,187	314,145	98.57	0.824	119.57	381,076	66,931
11/18	3,101	226,481	73.03	0.621	117.61	364,704	138,223
12/18	3,153	24,398	7.74	0.065	118.78	374,528	350,130
Total		\$5,861,567				\$6,466,764	\$605,197

Calculation Methods (continued)

- Reserve projection method
 - Restated claims reserves from historical valuation dates are projected forward to the current valuation date, adjusting for trend in claims costs and changes in enrollment.
 - This method may not produce appropriate results if there has been a slowing down or speeding up of the processing of claims since the prior valuation date.
- Case reserve method
 - Claims reserves are developed by estimating the ultimate claim amount of a reported claim and subtracting any amounts paid prior to the valuation date for that claim.
- Average size claim method
 - Applied to a count of open claims in a given category
 - Recognize different coverages, secular patterns, and inflation

Sample Reserve Projection Method – Example

	Amount
Restated Liability From 6/30/2018	\$577,977
Trend From 6/30/2018 to 12/31/2018 (6 months)	1.062
Current Enrollment (last three months prior to 12/31/2018)	9,441
Prior Enrollment (last three months prior to 6/30/2018)	9,588
Estimated Liability 12/31/2018	\$604,128
	Amount
Restated Liability From 12/31/2017	\$561,606
Trend From 12/31/2017 to 12/31/2018 (12 months)	1.127
Current Enrollment (last three months prior to 12/31/2018)	9,441
Prior Enrollment (last three months prior to 12/31/2017)	9,000
Estimated Liability 12/31/2018	\$663,840

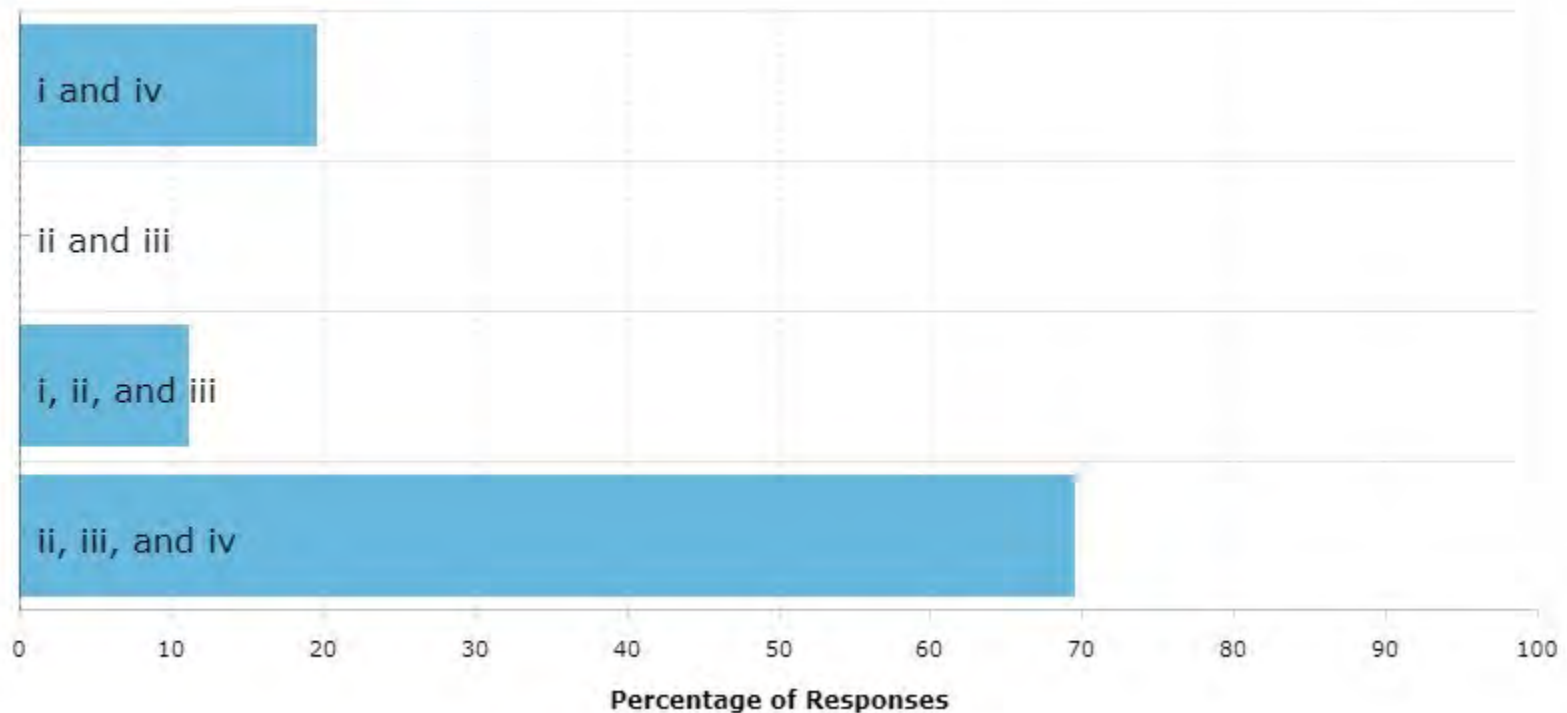
In the above example a trend of 1% per month, or 12.7% annually, is used.

Polling 3: Based on the last example, what is missing from the reserve projection method?

- i. Conservatism
- ii. Changes in Inventory
- iii. Seasonality
- iv. Impact of Large Claims

- A. i and iv
- B. ii and iii
- C. i, ii, and iii
- D. ii, iii, and iv

Poll: Based on the last example, what is missing from the reserve projection method?



Calculation Methods (continued)

- Tabular method
 - The application of a factor based on prior experience to a volume measure (for example, number of individual claims) to estimate unpaid claims liabilities for reported claims. This method is commonly used for disability income and long-term care contracts.
- Combined methods
 - Often, two or more of the methods described above are used to develop outstanding claims liability estimates. Going back to our example, the completion factor method can be used to develop incurred claims estimates for all but the last two or three months, and then the pure premium method can be used to develop the outstanding claims estimates for these months.
 - You could also incorporate other methods for reasonability checks.

Monitoring of results

- In all actuarial endeavors, we need to compare the actual to expected to see how we did in our estimates.
- Start by restating prior reserves and financial results
- This will help determine what the actual margins in the previously reported claims reserves were
- The restated financial results and/or incurred values will reflect actual experience patterns/trends
- This will result in better understanding the implications of the reserve estimation techniques and to investigate potential ways to improve the process

Margin Requirements

- Good and sufficient
 - A “good” estimate is one that is neither too liberal nor too conservative, i.e., not too low or high as to be unreasonable or a bad estimate.
 - A “Sufficient” estimate is one that is conservative, i.e., is high enough.
- Methods of expressing the margin
 - An amount that has an X% likelihood of being sufficient
 - An amount that is expected to produce a reserve that is sufficient in C out of D years.
 - An amount equal to the best estimate reserve amount plus Y%.
- Methods of determining the margin
 - Explicitly by using best estimate assumptions
 - Implicitly by using conservative assumptions

Margin Requirements (continued)

- Impact on financial results:
 - \$100 increase in reserve margin = \$100 less profits for the year = \$100 less surplus at the end of the year
- Considerations in setting the level of margins
 - Should be consistent from year-to-year.
 - If consistent from a dollar viewpoint, incurred claims and profit or loss reported during the year will be correct, whereas the relative degree of risk protection changed.
 - If consistent from a percentage perspective, the relative degree of risk protection will not have changed, but the incurred claims and profit or loss reported during the year will be distorted.

Margin Requirements (continued)

- Should reflect the level of uncertainty. In general, less margin is required if the following situations exist
 - The block of business is large, with a stable payment pattern.
 - There is a high frequency of claims, and/or a small average payment amount per claim (low severity).
 - Actual runout claims are available at the time the reserve analysis is completed.
 - The more actual runout claims are available, less margin is required.
 - There is a large amount of information available for analysis.
 - The available data is of high quality.
 - Claims inventories are well documented and credible.
 - There is a low variance in claims cost trends.
 - There is a high degree of homogeneity in the underlying data.

Margin Requirements (continued)

- Should reflect the desired degree of conservatism
 - Relationship of the reserve amount to the company surplus amounts
→ materiality
 - What degree of conservatism is appropriate considering the financial condition of the company?

- A sense of possible ranges or outcomes should be developed
 - Based on past experience.
 - Based on several different methods, or on differing assumptions.

Reserving 101 for Health Actuaries

2019 Valuation Actuary Symposium

August 27, 2019

Agenda

- ▶ Adjustments to the Traditional Lag Based and PMPM Based Approaches
- ▶ Measuring Seasonality – A Technical Example
- ▶ Seasonality Pattern Examples
- ▶ Decisions and Issues
- ▶ Health Actuarial Opinion Considerations

Adjustments to the Traditional Lag Based and PMPM Based Approaches

- ▶ The basis of our traditional reserving approaches assumes that the historical claims payment patterns and costs per member/employee (PMPM for this presentation) are a good representation of current patterns and costs.
- ▶ Frequently, this is not the case and we must consider data external to the lag model for qualitative and quantitative information that may help us in choosing recent month PMPMs or revised completion factors.

Adjustments to the Traditional Lag Based and PMPM Based Approaches

▶ Trend

- ▶ A factor that represents expected changes in PMPM cost from the base period (historical PMPM average chosen) to the current months where you expect to use a PMPM pick. This can cover changes in mix, utilization, age/gender or provider contract changes (cost or services).
- ▶ This may not necessarily represent long term medical trend for the block of business that you are reviewing.

▶ Claims Payment Changes / Inventory Changes

- ▶ The lag based model tends to under-reserve when claims payments slow down, and over-reserve when claims payments speed up. Requires a consideration of what the appropriate completion factors should be.

Adjustments to the Traditional Lag Based and PMPM Based Approaches

- ▶ **Claims Payment Changes / Inventory Changes Cont'd**
 - ▶ May be able to use inventory reports to consider how much backlog has been paid down/built up. This may require an assumption as to a percentage discount off of billed charges.
 - ▶ Must also consider the situation where check runs in a month vary by month. (I.e.: check runs once a week on Friday – some months have 5 Fridays versus 4 Fridays). Look at prior situations in the data to help determine appropriate completion factors.
 - ▶ Consider that the inherent under-reserving or over-reserving may be affecting your base period.
- ▶ **Large Claims**
 - ▶ Discussions with Care Management are important in determining if any large claims are outstanding and what those claims might cost.
 - ▶ Consider that part of the large claim would be considered part of the normal runout pattern.
 - ▶ Large claims or associated recoveries can distort completion factors

Adjustments to the Traditional Lag Based and PMPM Based Approaches

▶ Incurral Dating Rules

- ▶ For inpatient claims, understand when liabilities attach per the insurance contract
- ▶ Some products (critical illness) have service dates different from the incurred date
- ▶ Understand what incurral date is assigned for claims processing purposes (admission date or discharge date)
- ▶ A mismatch of the above will require some adjustments to the IBNR model
- ▶ Understand how interim bills are paid and what incurral date is assigned
- ▶ Difficult to determine incurred date for a stop loss product

▶ Paid Date Rules

- ▶ Timing differences – typically seen when using an outside administrator

Adjustments to the Traditional Lag Based and PMPM Based Approaches

▶ Seasonality

- ▶ One of the biggest drivers of historical vs current PMPM variance.
- ▶ Various Types
 - ▶ Days in Month (calendar days / work days)
 - ▶ Days in Week (assigning weights to each day for different usage)
 - ▶ Residual (covering benefit plan design impacts and other impacts)
 - ▶ Deductibles, flu season, benefit max, holidays, other behavior
 - ▶ Technical example of measuring residual seasonality to follow

▶ Authorized Days (Inpatient)

- ▶ Might be considered a third approach but is not commonly used
- ▶ Seems to be not as accurate as one might think it should be
- ▶ Need to study hindsight of this metric to determine a factor between the initial count of authorized days and ultimate paid days
- ▶ Need good understanding of current costs per day and how change in mix might affect your estimate

Adjustments to the Traditional Lag Based and PMPM Based Approaches

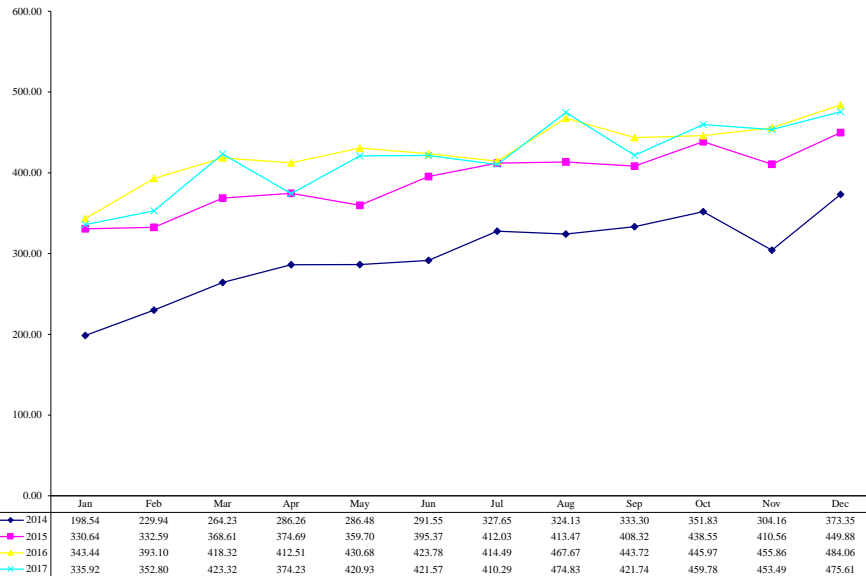
- ▶ Miscellaneous Items to Consider
 - ▶ Reinsurance
 - ▶ Are recoveries put through the lags or not?
 - ▶ Claims paid outside of the lags
 - ▶ Typically through Accounts Payable
 - ▶ Provider settlements
 - ▶ Important for your historical base period pick
 - ▶ Alternate Pricing to true up contractual arrangements
 - ▶ Not frequent
 - ▶ We have seen provider reimbursement true ups handled through temporary pricing changes
 - ▶ Need to understand if those are still in place or have ceased

Measuring Seasonality – A Technical Example

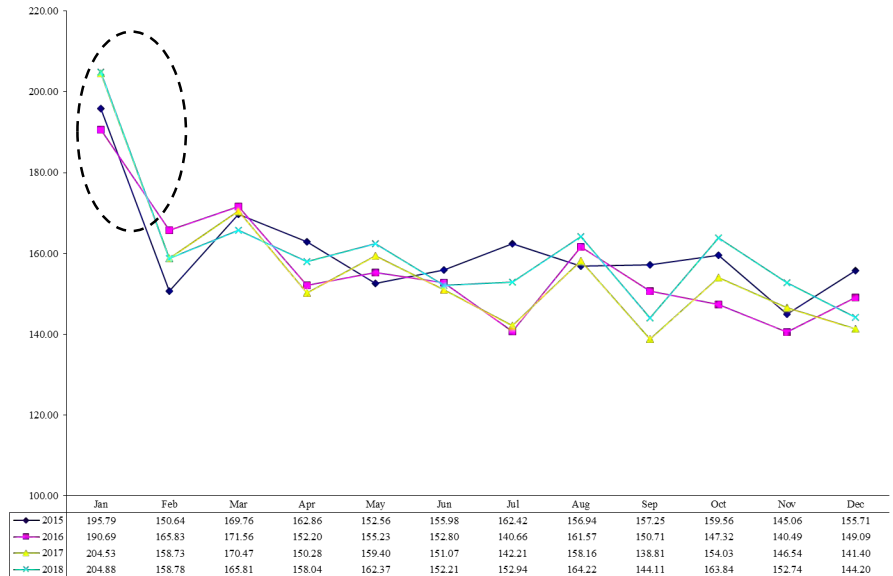
- ▶ See separate handout
- ▶ Available electronically by emailing Roger Schacht at roger.schacht@ey.com
- ▶ This example represents one way of modelling seasonality seen in incurred claims.

Seasonality pattern examples

High-deductible commercial medical

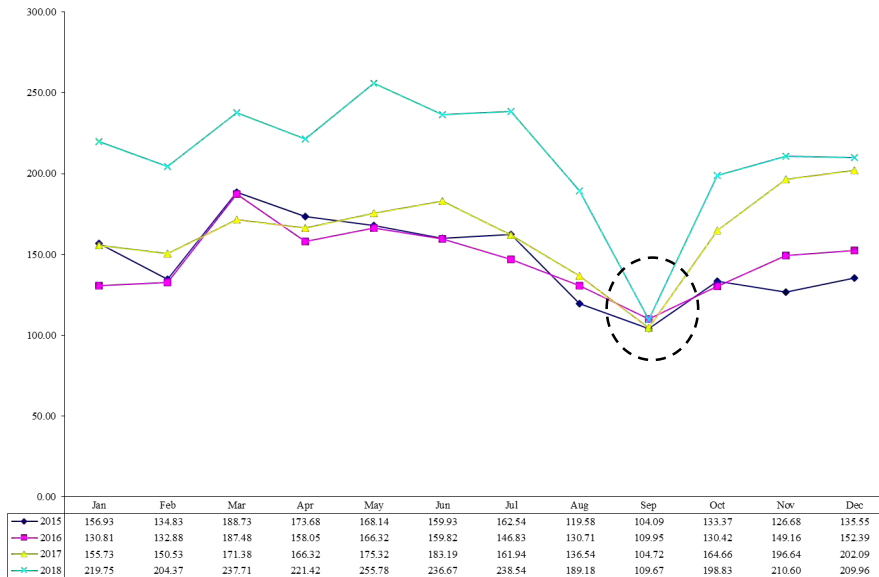


Medicare Supplement

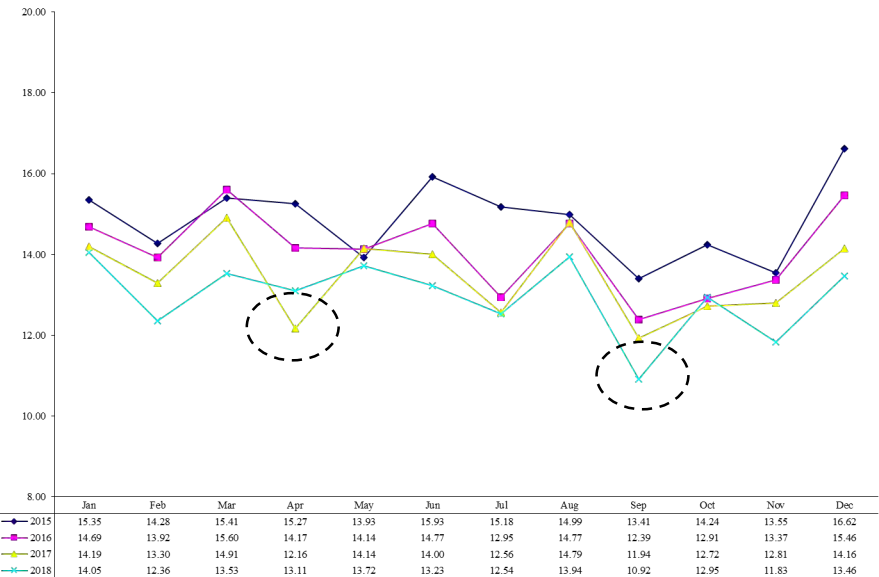


Seasonality pattern examples

Student

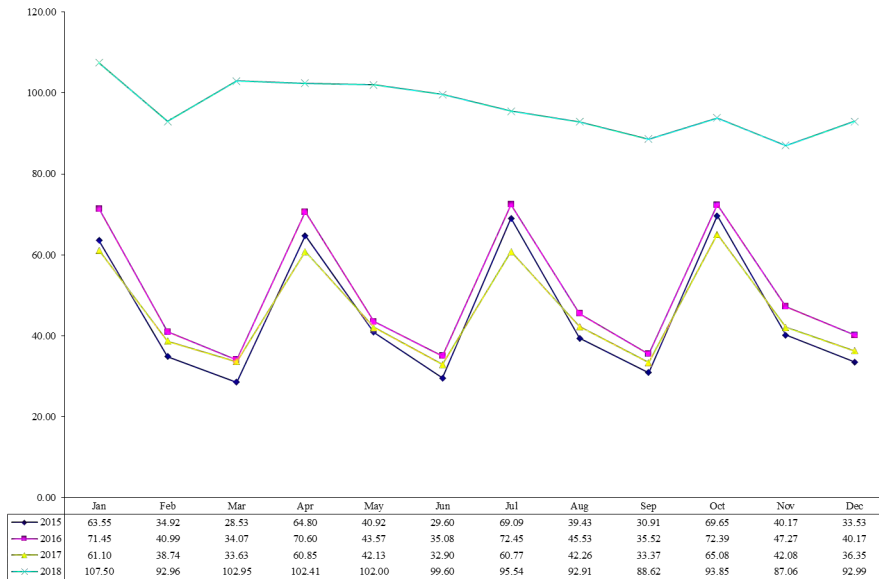


Dental

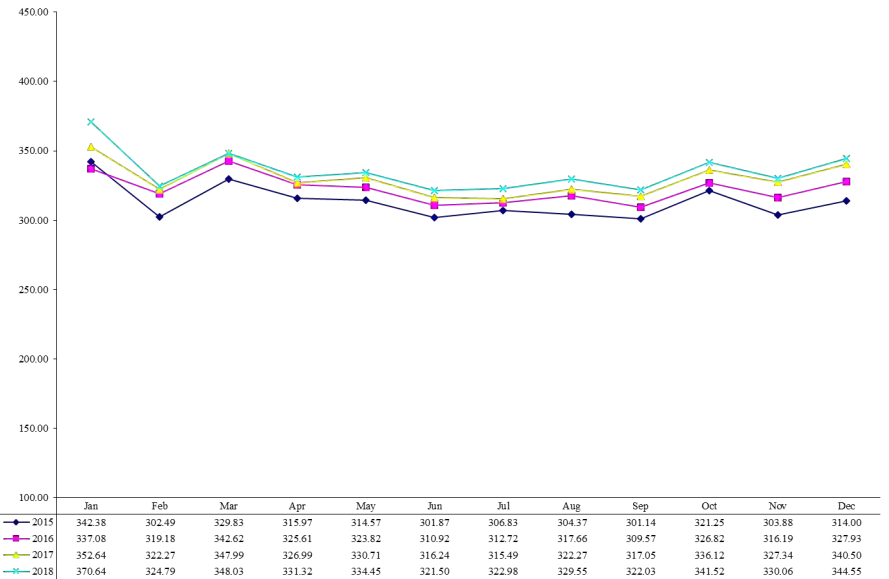


Seasonality pattern examples

Pharmacy



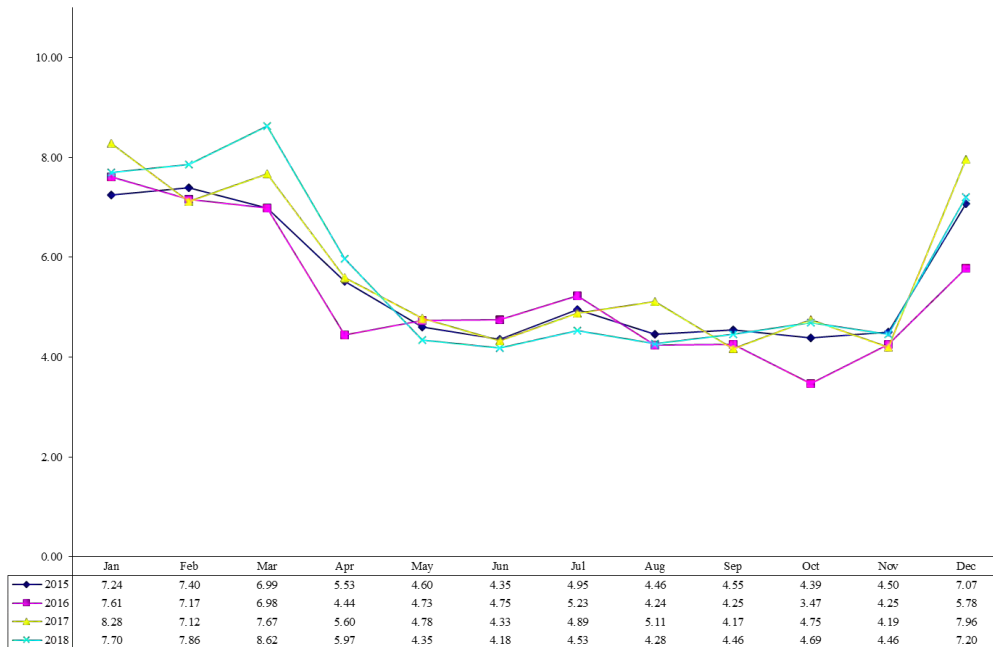
Inpatient (law of large numbers)



Polling Question

► What type of benefits would produce this seasonality?

1. College Student Plan
2. Out of Network Medicare Advantage
3. Cancer Policy
4. Medicare Supplement



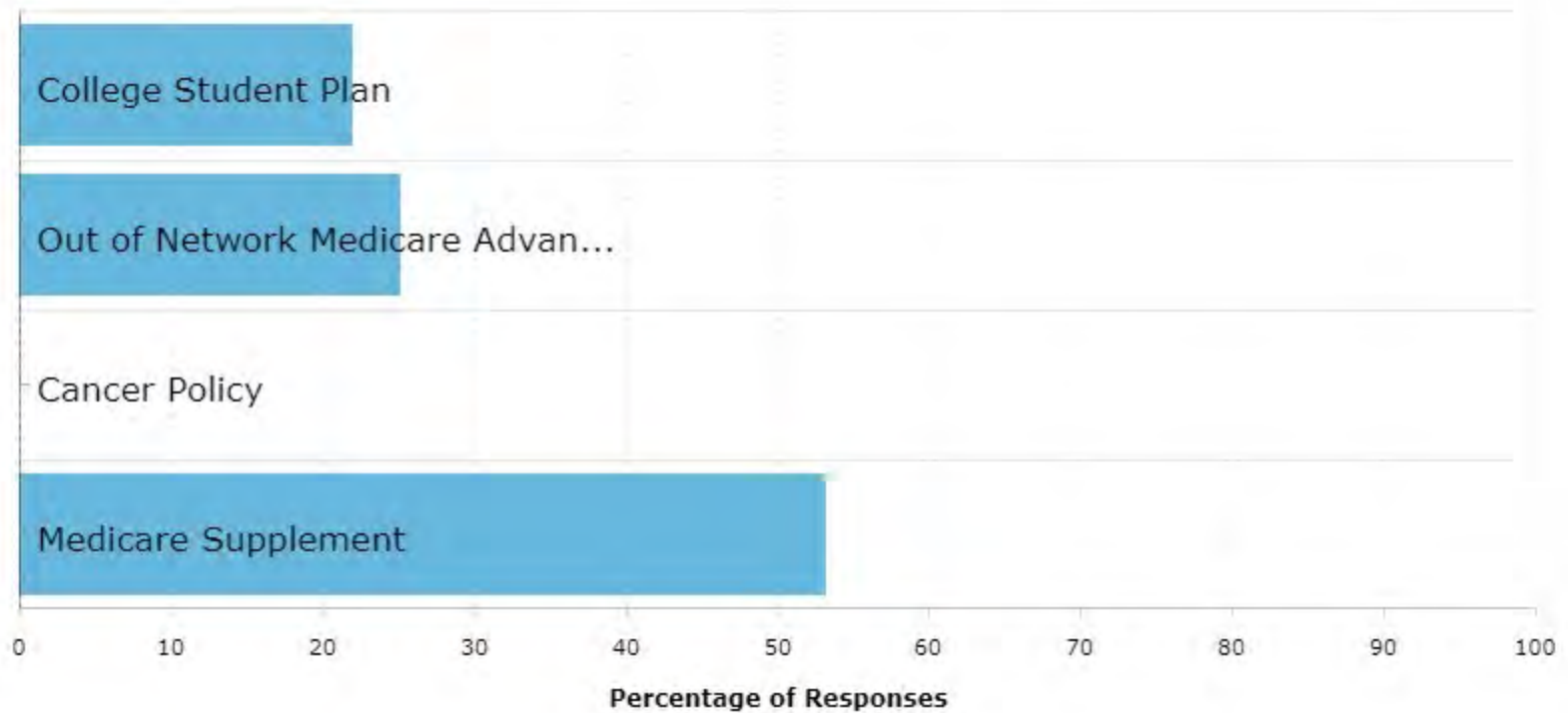
Hints:

1. An insurance company in the North East.

2.



▶ What type of benefits would produce this seasonality?



Decisions & Issues

- ▶ Granularity of analysis
- ▶ Close cycle timing
- ▶ Interdependencies with other estimates
- ▶ Integration between valuation and forecasting

Granularity of analysis

Competing tensions in deciding the level of granularity at which to perform reserve estimates:

- ▶ Homogeneity of data
- ▶ Credibility of data
- ▶ Available time for analysis
- ▶ External financial reporting needs
- ▶ Internal financial reporting needs

Close cycle timing

- ▶ Typical close process:
 - ▶ Workday 1 = Claim triangles are generated using payments through month-end
 - ▶ Workday 2 = Reconciliation processes are performed and triangles are deemed ready for use
 - ▶ Workdays 3-4 = Actuarial valuation function develops its recommended reserve estimates
 - ▶ Workdays 5-6 = Reserve recommendations are reviewed, modified, approved by management, and recorded in ledger

- ▶ What if one wanted to accelerate the close cycle?
 - ▶ Adjustment to triangles
 - ▶ Consideration of claims activity after cut off
 - ▶ Consideration of margin and using data through January cutoff

Interdependencies with other estimates

Many other items on an insurer's balance sheet may depend on the reserve estimate, including:

- ▶ Experience-rated refund liabilities for large groups
- ▶ Risk-sharing liabilities/assets with providers
- ▶ MLR-based customer rebates under the ACA (individual, small group, large group)
- ▶ MLR-based remittances to CMS under the ACA (Medicare Advantage, PDP)
- ▶ Risk-sharing liabilities/assets with State Medicaid agencies (details vary considerably from state to state)
- ▶ PDR

Integration between valuation and forecasting functions

- ▶ One of the principal inputs into each month's reserve estimate is the incurred PMPM pick for the current month
- ▶ In theory, that is also one of the principal inputs into the most recent FP&A forecast for the current month
- ▶ However, the valuation and forecasting processes may be disconnected, for a variety of reasons

Polling Question

- ▶ Actuarial Standards of Practice requires actuaries to add a margin to IBNR estimates.
 1. True
 2. False

Relevant Actuarial Standards of Practice

▶ ASOP 5

- ▶ Guidance for estimating incurred health and disability claims
- ▶ Covers risk-bearing entities such as insurance companies, managed care entities, self-funded employers, healthcare providers taking risk and government sponsored plans or entities
- ▶ Updated September 1, 2017
- ▶ Consider
 - ▶ Health plan benefit provisions
 - ▶ Economic influences such as unemployment, medical practice, catastrophic events, provider changes etc
 - ▶ Behavior of claimants
 - ▶ Claims administration practices
 - ▶ Claims seasonality
 - ▶ Credibility

Relevant Actuarial Standards of Practice

ASOP 5 Continued

- ▶ Selection risks
- ▶ Regulatory requirements
- ▶ Carve-outs

- ▶ The actuary should:
 - ▶ Understand the purpose of the work being performed and make adjustments as appropriate
 - ▶ Understand the plan provisions and whether they create obligations for services performed after the valuation date
 - ▶ “Should consider” a provision for adverse deviation
 - ▶ Time value of money
 - ▶ Consistency of assumptions and methodology

- ▶ Consider appropriate groupings of claims experience

- ▶

Relevant Actuarial Standards of Practice

ASOP 5 Continued

- ▶ Consider the appropriate methodology for estimation
- ▶ Reinsurance
- ▶ Hindsight studies
- ▶ Documentation and Actuarial communications

Relevant Actuarial Standards of Practice

ASOP 23

▶ ASOP 23 – Data Quality

- ▶ Latest revision effective April 30, 2017
- ▶ Provides guidance to actuaries when selecting data, performing a review of data, using data or relying on data supplied by others for purposes of actuarial analysis
- ▶ Also applies to actuaries preparing data for themselves or when it might be relied upon by other actuaries for purposes of actuarial analysis
- ▶ Analysis of Issues and Recommended Practices
 - ▶ Disclose data limitations if they exist
 - ▶ Consider scope of analysis and intended use in selecting data

Relevant Actuarial Standards of Practice

ASOP 23 - Continued

- ▶ Actuary should perform a review of data used
 - ▶ Understand data definitions
 - ▶ Attempt to identify questionable data or inconsistent
 - ▶ Disclose any attempts to improve the data
 - ▶ Disclose unresolved data issues
 - ▶ Compare current data to prior data for consistency, if available
- ▶ When using data, use professional judgment regarding
 - ▶ Whether data is of acceptable quality
 - ▶ Whether data requires enhancements before using – and if practical
 - ▶ Judgmental adjustments to data should be disclosed
 - ▶ If bias remains, disclose it
 - ▶ If data is inadequate, obtain different data, perform only the pieces of the assignment for which the data is suitable, or decline to complete the assignment
- ▶ Reliance on data supplied by others is ok, if disclosed
- ▶ Communications and disclosures in conjunction with ASOP 41

Relevant Actuarial Standards of Practice

ASOP 28

- ▶ ASOP 28 – last update effective December 31, 2012
- ▶ Opining actuary should be familiar with:
 - ▶ the NAIC blank
 - ▶ Any state valuation requirements
 - ▶ NAIC actuarial guidelines
 - ▶ Instructions to the blank for wording and requirements
- ▶ Actuarial Qualification Standards
 - ▶ *Qualification Standards for Public Statement of Actuarial Opinions*
 - ▶ Document as part of your annual certification
- ▶ Specific Opinion Items
 - ▶ Good and sufficient provision
 - ▶ Provision for all actuarial items that ought to be established
 - ▶ Material changes in assumptions disclosed

Relevant Actuarial Standards of Practice

ASOP 41

- ▶ ASOP 41
 - ▶ Actuarial Communications
 - ▶ Effective May 1, 2011
 - ▶ Requirements for Actuarial Communications
 - ▶ Form, Content, Clarity and Timing
 - ▶ Must identify the actuary responsible for the communication
 - ▶ Actuarial Report
 - ▶ A report should be created if the actuary intends for the findings to be relied upon by the intended user
 - ▶ The report should detail the findings, methods used, procedures, assumptions (including those required by law) and data used
 - ▶ Consider disclosures with respect to uncertainty, conflicts of interest, reliance on others, responsibility for data and assumptions and subsequent events
 - ▶ Deviation from guidance

Relevant Actuarial Standards of Practice

ASOP 42

▶ ASOP 42

- ▶ Health and Disability actuarial assets and liabilities other than liabilities for incurred claims
- ▶ Effective August 1, 2018
- ▶ Mostly out of scope of the incurred claims setting being discussed here today but..
- ▶ Loss adjustment expense (LAE/CAE) is usually based on a percentage of the IBNR

Margins

- ▶ Good and sufficient provision in the actuarial opinion
- ▶ Historically, and across the industry, health reserves have been recorded at the same levels for GAAP and STAT, implying a margin on both accruals.
- ▶ The perception of margin by accountants can vary. We have seen the true concept of GAAP applied, meaning the reserves should be a best estimate, to an interim approach where margin is acceptable but must be justified, to the conservative approach consistent with STAT where the reserves are good and sufficient.