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Current Issues in Property and Casualty

Best practices case reserves for U.S. workers' compensation

By Robert Briscoe

The establishment and maintenance of case reserves is common accepted practice in the management of workers' compensation programs throughout the United States. Across the industry, almost all insurance organizations and third-party administrators (TPAs) expend significant resources on maintaining case reserves. There remains, however, a very wide range in the quality of the case-reserving practices across the insurance industry and among TPAs handling self-insured workers' compensation claims.

Two basic approaches to estimating case reserves have historically dominated claims practices in the industry. One approach is referred to as *point estimate* case reserves. Under this approach, the claims handlers tasked with establishing case reserves are instructed to consider only the data available at the point in time they are estimating the case reserve. Speculation as to the outcome of the claim beyond the current known facts is discouraged. The other approach is referred to as *reserving to ultimate*. The goal of reserving to ultimate is to establish a case reserve on each open claim intended to encompass all future payments associated with the cost of that claim through its final disposition. Of course, many claims organizations do not effectively enforce the approach they operate under and in the end often get a mixture of the two approaches.

Casualty actuaries are not greatly concerned as to which case-reserving philosophy or combination of philosophies are used, only that they are applied consistently over time. If only a few years of historical data are available, then case reserves are increasingly important to casualty actuarial valuations, as they contain the only information about the potential size of ultimate losses other than industry development information.

Case reserves are, however, used for other important purposes beyond actuarial valuations, including experience modification calculations as an early warning system for the emergence of individual large claims, for changes in the types of claims being underwritten, and for workers' compensation law changes that impact claims costs, and, perhaps most important, as a financial goal for the claims handler to work toward.

This paper will discuss best practices in the context of case reserving workers' compensation claims to ultimate, which should be the best practices goal. The discussion will start by outlining the data items that should be considered in setting a best practices case reserve and continue with a discussion of the merits of having those data items in discrete data fields as opposed to recording them in adjustor claims notes. The mathematical issues surrounding the use of mortality tables, benefit escalations, and probabilities in the calculation of case reserves for claims that will be open for long periods of time, will be discussed. Finally, issues associated with the frequency of case reserve updates, authority limits, and the recognition of the ultimate cost of the claim, even if the claim has exceeded specific excess limits, will be discussed.

The 50 states and several federal U.S. workers' compensation systems each pose unique case-reserving situations based on the local statute, regulations, and practices. There can be no single best practices solution applicable to the 50-plus disparate systems. There are, however, sufficient commonalities in the general structure of U.S. workers' compensation systems, in the medical conditions and treatments for work-related injuries, and in the human condition with respect to dependence on disability benefits, to establish a strong general set of data items that are applicable to all workers' compensation claims.

Once this generalized data is collected and recorded, the case-reserving environment can be customized to fit the specific workers' compensation jurisdiction. This paper will discuss that common starting base set of data items and explore how to best utilize them in setting case reserves.

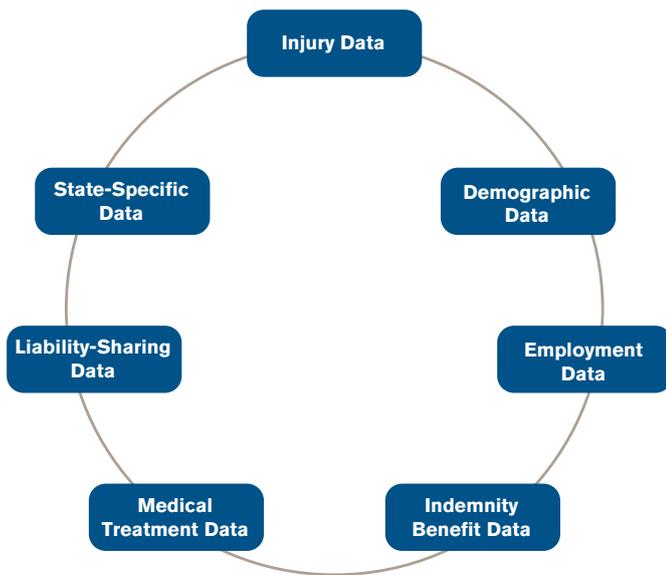
Workers' compensation claims vary widely in the length of time the claim is open and therefore require a case reserve. Most claims close within a month or two after the injury. Case reserves on small claims that close quickly can be set on a mechanical basis, e.g., each claim gets the same reserve as it opens, or, if set judgmentally by a claims handler, can fall into a narrow,

essentially mechanical range. Such reserves can be considered a best practices reserve as long as the case reserve amount is a reasonable reflection of expected payments (e.g., based on historical payments made on similar claims), and claims for serious injuries are identified and reserved separately. Best practices case reserving does not necessarily involve large volumes of small claims or inordinate resources. It does involve the relatively small number of claims that do not close soon after the injury. These claims, because they do not close, accumulate over time so that after a few years of writing workers' compensation business or operating as a self-insured employer, each adjuster will be managing a portfolio of such claims. It is important not to view efforts to set best practices case reserves as a process that will touch large volumes of claims and consume significant resources.

Data items that should be considered in the setting of workers' compensation case reserves

The data necessary to a best practices case reserve can be organized into the following seven categories:

Figure 1: Data categories



The **injury data** includes the date of the injury, the state having jurisdiction, the results of the investigation of the injury as to whether it arose from employment covered by the carrier and, if it occurred in the course and scope of employment, the results of the investigation as to possible subrogation against third parties, and data as to the specific body parts injured. Other data items such as the location and time of the injury, the class code of the employer classification system for the claim, and other injury-related data should be collected to round out the best practices data set.

The **demographic data** includes the claimant's date of birth, marital status, spouse date of birth, ages of minor children, information as to the claimant's life situation such as home

ownership, rental of apartments or other living quarters, job status of spouse or other family members, child support issues, and other life situations that may impact the outcome of the claim.

The **employment data** includes the claimant's occupation(s) at the time of the injury, current employment if he or she has returned to work, education, other job skills, termination status if terminated from employment, return-to-work prospects, language issues, criminal history if applicable, pertinent dates (such as date of hire, termination, and return to work on modified or full duty), and data on ongoing restrictions with respect to lifting, standing, bending, climbing, or other restrictions.

The **indemnity benefit data** should include the claimant's average weekly wage, information on any dispute over that wage, any concurrent employment issues, current indemnity benefit being paid, expected permanent disability benefits to be paid, data as to when maximum medical improvement (MMI) is expected, if an opinion on MMI has been opined by the claimant's doctor or an independent medical examination (IME) doctor, expected disability rating, information regarding a scheduled benefit if applicable, and, if permanent disability is expected to be paid at a different rate, then the current temporary total disability (TTD) benefit and what the different benefit is expected to be.

The **medical treatment data** should include all body parts alleged by the claimant to have been injured or aggravated by the injury, information as to which body parts have been accepted and which rejected, and, if rejected, the results of any contest or dispute resolution. The principal body part for which ongoing treatment is expected should be named. The data should also include all drugs currently prescribed, all comorbidities present, and all distinct treatments performed, such as the name of the surgery, the result, and the name of the medical device (pain pump, spinal cord stimulator, knee replacement), as well as when the device was implanted and the frequency of refills or replacements.

The **liability-sharing data** should include eligibility/acceptance data regarding second injury funds, other special funds, apportionment with other carriers or employers, and information on subrogation with third parties.

The **state-specific data** should include status and benefit data that is unique to a particular jurisdiction. Generally, it is best to have separate discrete data fields for state-specific data that occur alongside the general workers' compensation status information for the same data item. This way, readers of the data can see the general status of the claim with state-specific descriptions that lead to specific benefits, eligibility, or other claims.

Storing the data

Workers' compensation claim databases store relatively little claims data in individual data fields beyond that required for financial and unit statistical plan reporting to state agencies and rating bureaus. The rest of the data needed to set a case reserve is almost always stored in the adjuster's notes. Historically, this

has kept workers' compensation claims systems relatively simple in terms of database structure but continuously requires claims handlers and supervisors to read and update claim notes to understand what is happening to a claim across its life. Storing data in claims notes, instead of separate fields with data entries controlled to be uniform, precludes searching quickly and easily for specific claim situations and producing all but the simplest reports.

Many carriers and TPAs have supported the current situation largely because creating specific fields for claim data in a claim database leads directly to requirements that the data be obtained and filled in. While it cannot be apparent to anyone that a key data item is missing from a large volume of claim notes, it is readily apparent if a required field is not filled in, and may lead to criticisms of the claims handlers.

Some attempts to put data in discrete fields have been made, but they are almost always claims organizations that only receive claims from a single or small number of states or are in response to new rating bureau unit reporting requirements. Inevitably, these claims systems become so highly customized to the small number of jurisdictions that the systems are not usable in other jurisdictions. They also end up containing fields associated with processing the claim, not setting case reserves.

Many existing claims systems were designed and implemented 10 or more years ago. It is not unusual to see 20- and even 30-year-old claims systems still in use today. While many large-scale improvements in database design, ease of development, and speed have been made in the last 10 years, few claims organizations have taken full advantage of them.

Using modern database software to record key information in discrete data fields is fundamental to producing best practices case reserves efficiently. While best practices case reserves can be created and maintained from claim notes, creation and updates are time-consuming.

The advantages of discrete data field storage are:

- Value lists, check boxes, and radio button sets can be used to standardize data entry so that reliable searches can be done and to make data entry as easy as possible.
- Entries can be updated as the data changes.
- All of the fields can be used in reports.
- If new claims systems are brought online, the data can easily be moved to new discrete data fields.

It should be noted that the use of discrete data fields does not entirely replace the need for adjustor claim notes. It will always be necessary to record information that does not fit into a set of discrete data fields or that needs additional context to fully explain a complex situation. The use of discrete data fields will minimize

the need to cut and paste old claims notes with just one more sentence reflecting the new current claim situation. Large claims notes summarizing the facts and circumstances of a claim are routinely cut and pasted with small changes to reflect the current situation, adding substantially to the volume of overall notes and the time it takes to read through them to understand the current claim situation.

What are the disadvantages? One obvious one is that a standardized and uniform data field set may not capture the context necessary in a specific situation that is vital for understanding the claim. Thus, relying completely on a simple set of data fields with a fixed number of choices as to the words used to describe the claim is tempting; claims notes must continue to be used to fully capture the full sense of a claim and the resulting case reserve. Simple is not necessarily better with respect to specific data fields vs. claims notes. A combination of specific data fields and continued reliance on claims notes that are reduced in number and length through the use of specific data fields leads to best practices.

Traditional incurred vs. outstanding case reserves

Many older claims systems record reserves as an initial reserve estimate that is then reduced by payments and increased or decreased by changes in reserves. While widely used in workers' compensation, the method arose from liability claims that generally see fewer payments and reserve changes than are seen in workers' compensation claims. Terminology can become confusing when reserves are recorded this way, because the original estimate of the value of the claim minus payments made to date plus the net of up or down reserve changes is often called the *reserve*. To obtain the outstanding case reserve representing the remaining estimate of future payments, the amount paid to date must be subtracted from the total incurred loss value. Use of this method is arguably not a best practice, as it is often very difficult to follow the many adjustments up and down to the true outstanding reserve. Rather than saying, "*I am adding \$10,000 to the current incurred loss,*" it is preferable to say, "*I am changing the current outstanding reserve of \$30,000 to \$40,000.*" While most modern workers' compensation systems track outstanding reserves separately from amounts paid to date and total incurred values, the changes to the reserves are often couched in terms of the old terminology. The necessity of recording the reasons for the increases or decreases in case reserves in claims notes is greatly complicated by the use of the old incurred tracking system, which often results in large, difficult-to-follow claims notes.

The mathematics of best practices case reserves for lifetime payments

Different workers' compensation claims will inevitably pay benefits to injured workers and to providers for different lengths of time. Even within a claim, different benefits pay for different lengths of time. Any case reserve is fundamentally either a periodic benefit paid for a specific length of time or an estimate of a settlement the claimant may take. The lengths of time involved can vary from days

or weeks to the life of the claimant and/or the lives of his or her survivors. When the lengths of time involve the life of the claimant, mortality tables are used. There are two ways in which a mortality table can be used to estimate the ultimate benefits that will be paid to an individual:

- A life expectancy calculation
- A life annuity calculation

Of the two, life expectancies are simpler to calculate. A single life expectancy value is multiplied by the periodic benefit. A life annuity is much more complex, requiring that the periodic benefit be multiplied by a series of factors representing the reduction that is due to mortality spanning the full possible future life span of the individual, e.g., the number of years between the claimant's current age and the end of the mortality table (100, 110, or 120 years).

Life expectancy and life annuity calculations return the same answer if the periodic benefit remains unchanged for each future year and the nominal answer is the only one sought. Differences between the two calculations only become apparent when the periodic benefit varies across the future of the claim (medical inflation, cost of living adjustments for an indemnity benefit, offsets against Social Security benefits), or if the value sought is adjusted for the time value of money (present value, or PV).

Differences arise from life expectancy versus life annuity calculations because a life expectancy value is the future point in time when half of a group of individuals of the same starting age will have died. The rest of the group will live longer—some perhaps to the end of the mortality table. Changes to benefits past that midpoint are not considered in a life expectancy calculation, and the period of time used in any PV calculation is less than the actual period of the payout of the ultimate benefits.

The life annuity calculation, on the other hand, projects the actual future cash flow, including all future adjustments to the benefit stream, and then applies a declining set of factors representing future year-by-year expected deaths. The resulting cash flow will not represent the cash flow for the individual claim because it cannot be known exactly when that person will die, but if the cash flows from a group of claimants are added together, they do represent the actual cash flow of the group. If the group is sufficiently large, the cash flows will represent a reasonable estimate of the actual future cash flow.

Life insurance and pension calculations are based on life annuity calculations, not on life expectancy calculations.

Life annuities can be used in a similar manner as life expectancies if age-by-age factors are precomputed combining mortality, present values, and, if applicable, escalations. Such combined factors are published by workers' compensation rating bureaus for widows death benefits and life indemnity awards. Case reserves calculated with such factors are commonly called tabular case reserves. Such factors are typically based on the claimant's age alone. In certain

circumstances, if the claimant dies of a work-related injury, such factors become more complex because the age difference between the claimant and the spouse must be part of the calculation.

Self-insured employers typically book liabilities in their financial statements on a discounted, present value basis. Normally, such PVs are calculated from payout patterns calculated from paid loss development projections. These calculations, depending on the size of the data triangle, may or may not fully capture the length of the payout of the tail claims and do not provide information on individual claims. To the extent that PV case reserves are useful in the allocations of reserves to operating units or to ongoing contracts, life annuity calculations may provide the best answer.

Weighing alternative outcomes

Aside from the issues of life durations of indemnity and medical benefits, best practices case reserves should consider alternative outcomes. If a serious claim can result in either a permanent partial disability (PPD) award for a fixed duration or a life permanent total disability (PTD) award, the dollar value of both potential benefits should be calculated and combined with probabilities. If a settlement is a likely outcome, then that value and appropriate probabilities should be included. Other probabilities may include the possibility of a second injury fund recovery and/or apportionment of parts of the benefits to another employer or to a subrogation recovery. However the various possible outcomes are combined, the details of the calculations should be documented so that the case reserve can be modified as events unfold.

Best practices case reserves require more than a one-time calculation. All case reserves must be updated across the life of the claim, and the frequency of updates can be as important as the initial case reserve calculation procedures. Ideally, a case reserve should be updated as soon as a fact emerges to trigger an update. If the benefit is payable for life, the case reserve must be recalculated each year, because mortality factors are not uniform from age to age. As such, simply subtracting the annual benefit paid from the initial reserve to get a new outstanding reserve at the beginning of the next period will be incorrect.

Some claims organizations update case reserves on the same cycle they require claims handlers to post a claim summary report to the file—60 or 90 or 120 days. Those claims organizations operate within best practices with respect to the frequency of updates. Some organizations only update case reserves when the outstanding reserve sinks to an uncomfortable level—clearly not a best practice.

Case reserve authority limits often play a role when an outstanding reserve actually gets adjusted on the books of the company. Claims handlers are routinely given dollar limits as to how much authority they have to increase a reserve. If the reserve increase is over the limit, then supervisors or committees, which may be slow to act, must approve it, thus delaying the increase. Best practices are in place when large increases early in a claim are not necessary

because the initial case reserve recognized the potential severity of the claim and/or when new facts dictate a reserve increase (or decrease) that is implemented with minimum delay.

It is a generally recognized best practice to set case reserves on a gross basis, i.e., the ultimate liability of the claim before recognition of specific excess insurance or reinsurance. An all-too-frequent failure of best practices is for the claims handlers to realize that a claim is clearly going to exceed the self-insured retention or reinsurance retention and stop processing reserve increases, keeping the outstanding case reserve just below or just above the limit.

Summary of best practices

Best practices with respect to workers' compensation case reserves consider a broad range of injury, demographic, employment, indemnity and medical, liability-sharing, and state-specific data, preferably captured in discrete data fields whose input is controlled so as to be able to do reliable searches. The reserves should be updated frequently. If authority limits are imposed on claims handlers, decisions to increase case reserves beyond those limits should be made quickly. Gross case reserves that recognize the full ultimate payout of the claim should be maintained regardless of the fact that the claim is approaching or has exceeded specific excess insurance or reinsurance retention levels.

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