

# Tools to Track and Measure WC Cost / Claim Data

Presented to The Facilities, Tooling and Risk Management Panel Joint Committee Meeting



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# Evolution From Paper



# Evolution of Computer Claims Software

- Level I. Paper Files - Electronic Loss Runs (Financial Data Only)
  - 1960s - starting place for all modern claims systems
  - Some claims shops still there - usually not WC shops due to volume of data and payments



## Level II.

- Level II. Paper Files, Basic Computer Claim Record, Computer Running Notes / Diaries, Computerized Check Issue
  - Where many systems are today
  - Limited number of fields in computer claim record - mostly financial information
  - Loss runs may have significant non-financial claim information over older systems but are still limited in data
  - Checks are issued efficiently
  - Paper file and running notes are relied on to actually work the file



# Level III.

- Level III. Electronic imaging of Documents / Paperless Systems
  - All the features of Level II., plus:
    - More fields in main computer record.
    - Access to imaged documents.
    - No paper files, or paper files that are just chronological drop files of incoming documents.
    - Often will have separate medical bill re-pricing software, either attached or running independently.



# Databases

- Purpose-Built 1st Generation Languages
- 2nd Generation Database Systems
- SQL with Front Ends
- Disk-Based Databases
- Hybrids



# Things Often Lacking in Level II. & III. Systems

- Older systems often lack point and click interface - increasingly unfamiliar to younger workers who are used to the web page metaphor.
- Almost all were designed for old 640 vs 480 computer screens - information is displayed in small sets on many separate windows regardless of the size of your current monitor.
- Raw claim data is often difficult to import or export.
- Links to other software are often difficult or impossible.



# What's New?



# New From Old

- If the old system is based on a SQL database, it's possible to build new front ends with modern software using the existing tables.
- Even without a new front end, data can be extracted from SQL tables and viewed and worked with using Excel or other databases.
- While size used to be a problem, and still is for Excel which has a limit to the number of rows, other inexpensive desktop software tools will allow you to work with millions of records.



# Data Storage Limitations

- Cheap high-capacity data storage has eliminated the historic restrictions on how much data can be stored.
- Large storage capacities now means we can keep copies of claims records online with payments and reserves as they were on prior dates.
- Managing how data is input may still present some limitations, but useful data can now be stored with virtually no limitation.



# New Tools

- Modern database tools - either front ends to SQL databases, or disk-based databases - have many field control structures that allow you to control how data is entered. Most of these structures are now familiar as web-based data entry tools. Most databases have more and better such tools than available on web pages.
  - validation on text entries
  - radio buttons
  - check boxes
  - pull down and pop-up menus
- Codes are no longer necessary to record data!



# New Tools

- Medical billing for WC is now done almost exclusively using Diagnosis and Procedure codes, presenting new opportunities to learn what you are paying for and from which medical providers.



# New Ways To Use The Tools

- A limited number of fields on a small computer window is better than a paper claim file, but....
- Grouping related fields on larger windows to present users with decisional data is better.
- Presenting such groupings in a vertical format like a web page so the user can scroll down and understand the claim before making the next decision is better yet.



## If...

- If your present system makes the user move through large numbers of windows with a limited number of fields on each, you are getting decisions made on each claim in a vacuum without a comprehensive view of the entire claim.
- If your system makes the user click on one or more lines or controls before they can see an entire running note - no one is reading the notes.
- The harder it is to view all the important fields in a claim record in a claims system, the less likely it is that claim handlers will take the time to look.



# To Scroll Or Not To Scroll...

- Surprises in claim handling occur because things happen we can't conceive of in advance.
- If you don't know what to look for, you can't order up a loss run or other report.
- Most older systems were not built with a basic function of any database - the ability to scroll from one record to another - instead you can only look up one claim at a time.
- One of the best ways to see what is going on is to be able to search for a group of claims or payment records and then scroll from one to the next looking at a rich set of data fields.



# Data Mining

- Data mining got a lot of play in the late 1990s but, for the most part, proved to be more hype than substance.
- Limited, controlled data mining does exist in Workers Compensation and can provide useful information.
- The key is getting good, consistent data and keeping the objectives of the exercise limited in scope.
- Medical payment data is especially useful because the diagnosis and procedure codes are extensive and highly controlled.



# Case Reserves

- Case reserves have a number of purposes including use in actuarial valuations, early warning of impending problems, and perhaps most importantly as the financial goal of the claim handling.
- Case reserving, especially medical case reserving, is more an art than a science and is difficult to teach other than “by example” using real claims.
- The insurance industry and large TPA’s are having difficulty keeping people in place who can do reasonable medical case reserves, and therefore medical case reserving is suffering.



# New Approaches To Case Reserving

- Virtually all claims systems nationwide have a limited number of fields for case reserves.
  - Indemnity
  - Medical
  - Expense
  - Sometimes Legal and/or Rehab
- Workers Compensation benefits, of course, have many more subtypes, such as:
  - For Indemnity:
    - Temporary Total Disability
    - Temporary Partial Disability
    - Permanent Partial Disability
    - Permanent Total Disability
    - Vocational Rehabilitation



# New Approaches to Case Reserving

- For Medical:
  - Doctors
  - Hospital
  - Drugs
  - Physical Rehabilitation
- For Expenses:
  - Investigations
  - Legal
- With the proper software setup, case reserves can be built up in layers using specific subtypes of Indemnity, Medical and Expenses. When this is done, it is easier for the claims handler and/or other parties to understand the case reserve.



# Case Reserving Life Pay-Out Claims

- Some claims, primarily Permanent Total Disability and Death Benefit claims, have an obvious life pay-out of Indemnity benefits.
- Other claims have more subtle potential life pay-outs, including Permanent Partial Indemnity claims that may re-open, and/or claims with ongoing medical benefits.
- Special methods and techniques are necessary to get actuarially-correct case reserves for such claims. While the methods are not new from an actuarial perspective, seeing them used in WC case reserving is new.



# Life Expectancies vs. Life Annuities

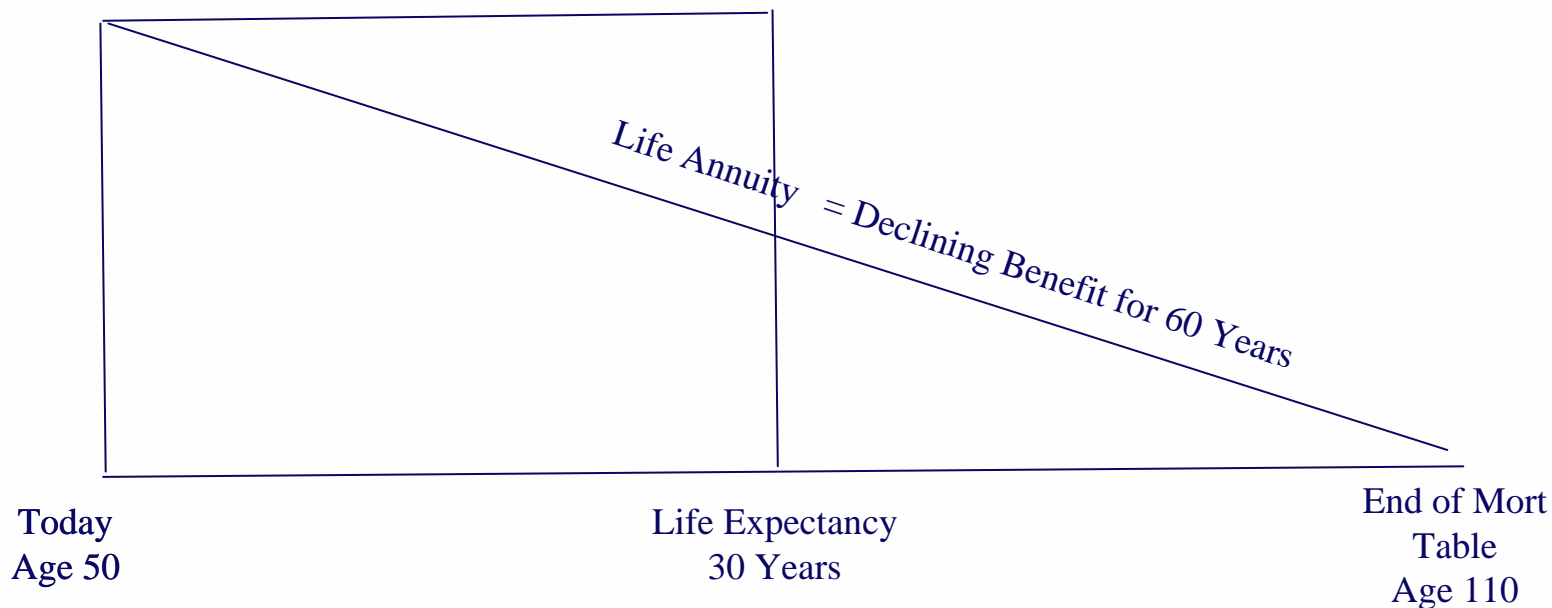
- Life pay-out claims in U.S. WC are typically valued using life expectancy calculations:
  - Both methods start with a mortality table.
  - A life expectancy (LE) value is the number of years half of a group of people all the same age will have died; e.g. For a 50 year old the male LE value at age 50 will be around 30 years from most modern mortality tables.
  - If a claimant is receiving \$30,000 per year in Indemnity benefits, the ultimate pay-out of the claim will be  $30 * \$30,000 = \$900,000$ .
  - Life expectancies produce correct answers as long as the benefit does not escalate and the only answer needed is the undiscounted value.



# Life Expectancies vs. Life Annuities

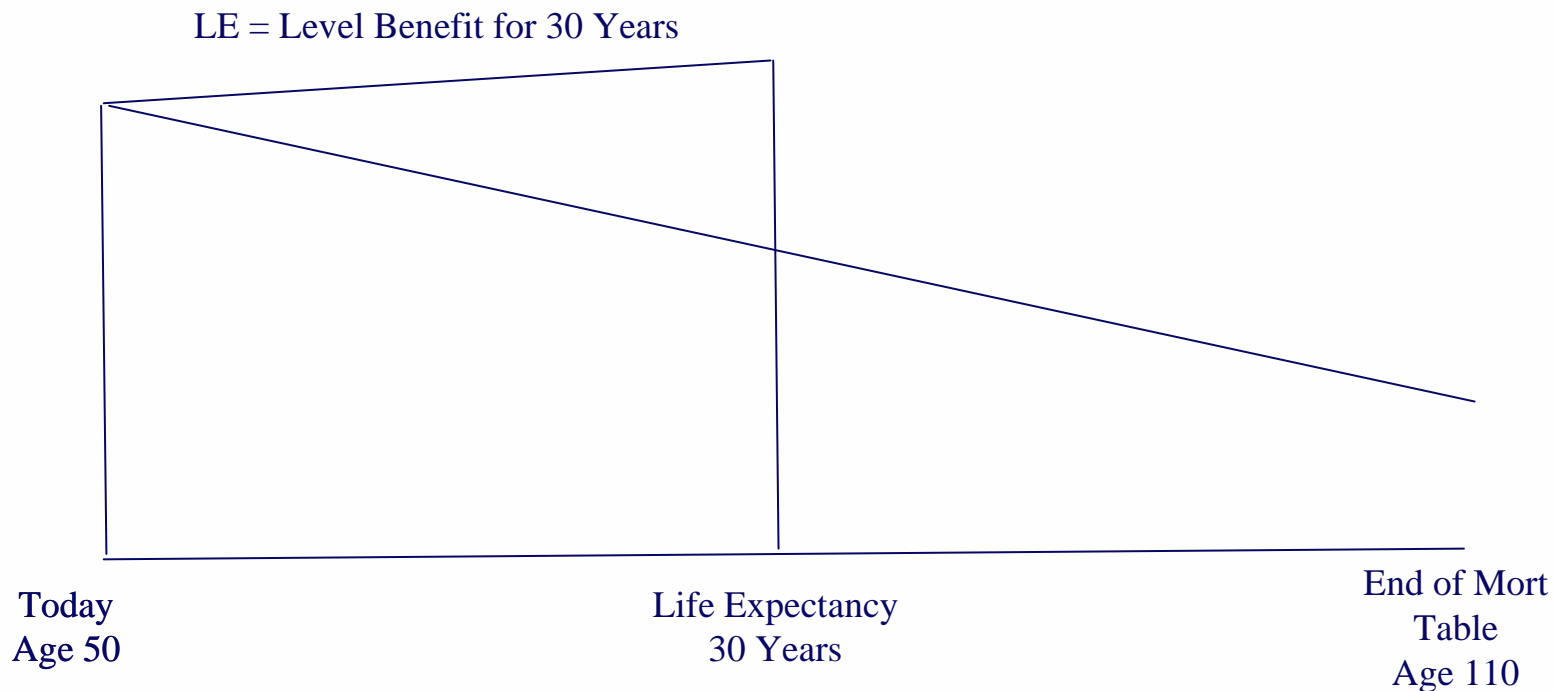
- If, however, the Present Value of the benefit pay-out is the desired answer, life expectancies do not work because the PV of the level stream of payments for half the possible pay-out is not the same as the PV of the declining pay-out stream of a group of individuals of the same age.

LE = Level Benefit for 30 Years



# Life Expectancies vs. Life Annuities

- Also, if the benefit escalates due to cost of living (Indemnity) or Medical escalation, the life expectancy does not produce the correct answer since escalation can occur past the LE point.



# Life Annuity Calculations Are Complex

- Life annuity calculations are too complex to be done by hand but can be computerized.
- Some of the major casualty insurance companies that do a lot of WC do them in their actuarial departments - primarily for reinsurance commutations.
- Milliman has commercial software combining multi-element case reserving with life annuities.
- Why do I want to do complex calculations when the answer, even though wrong, is in the right ballpark?



# Cash Flows

- If you combine life annuity cash flows from individual claims into one cash flow for a group of claims (the larger the better), you get the real cash flow for the group!



# Other New Things

- **Statistical Case Reserving Software**
  - Commercial software is out there to do case reserves without human effort or intervention.
  - Assuming it works and produces reasonable reserves for a group of claims, you still lose your financial goal for the claim handler - best you can expect is an average financial result.
- **Structured Settlements**
  - The number of life companies selling these has greatly increased - good deals available.
  - How do you know how good the deal is? You can't without a life annuity (that's what the structured settlement company is using).



# Other New Things

- Early Intervention Case Management
- Pain Management /
- Settlements agreeing to limited pay-outs of medical benefits
- Medicare Set Aside Trusts



# Questions

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