



# Actuarial Systems: Implementation and Change Management

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## Agenda

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1. Introduction to Long Term Care Insurance Claims
2. Claims Costs versus First Principles Modeling
3. Our Project
4. Steps for Change
5. Lessons Learned



## Introduction to Long Term Care Insurance Claims

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- How do LTC claims work?
  - A policy can only be on a single claims at one time
    - Exposures are healthy lives, not total lives
  - Payment stream, not a single payout like a life insurance death claim

## Claims Cost vs First Principles Modeling

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- What is a claims cost?
  - The expected incurred claims for a unit of inforce coverage
  - Exposures are total lives inforce without regard to claims status
  - The expected incurred claim is the present value of the expected claim payments

## Claims Cost vs First Principles Modeling

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- How are claims costs calculated?

$$\text{Claims Cost} = \text{Frequency} \times \text{Severity} \times \text{J-Factor}$$

where

**Frequency** = Incidence Rate of Claims as a % of Healthy Lives

**Severity** = Utilization Rate of Available Benefits  
x  
Length of Stay (Mortality and Recovery)

**J-Factor** = The Ratio of Healthy Lives over Total Lives

## Claims Cost vs First Principles Modeling

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- Why Change Modeling Basis?

- Experience Studies:

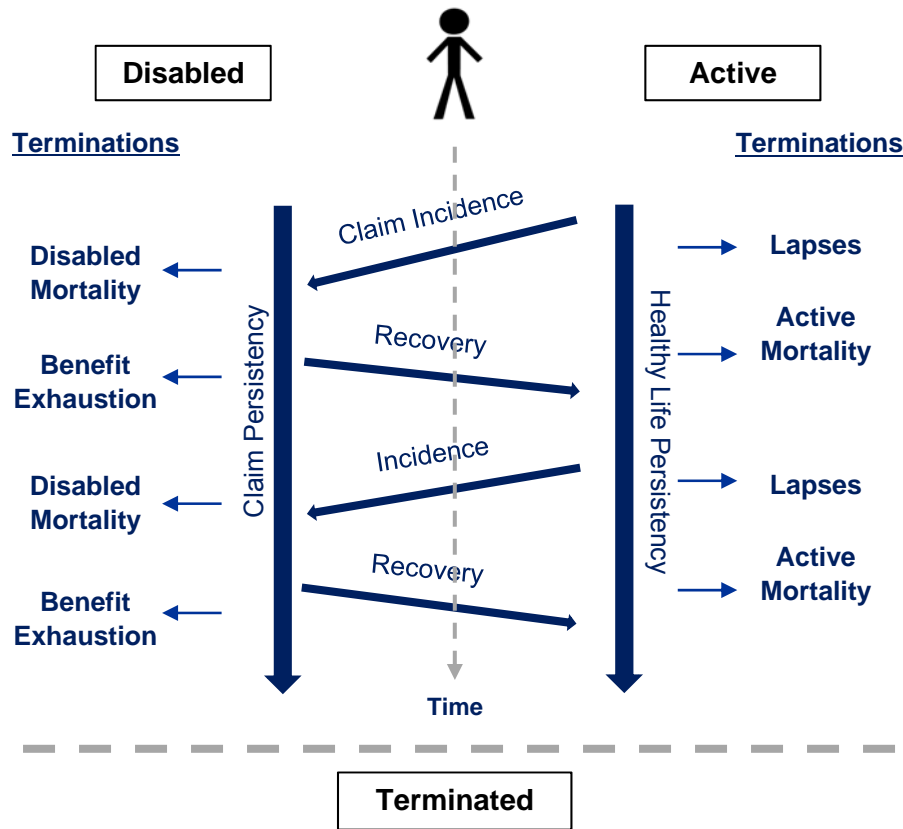
**Actual Incurred Claims ÷ Expected Incurred Claims**

- No Transparency into any of intermediate pieces of the claims

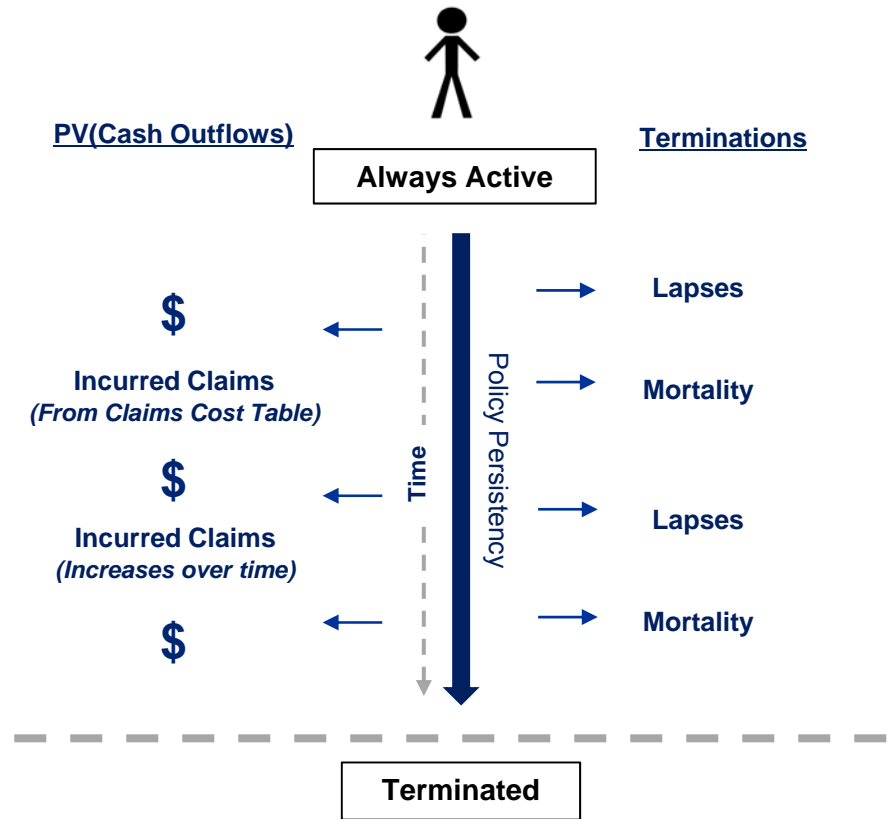
- First Principles modeling addresses this issue

# Claims Cost vs First Principles Modeling

First Principles Modeling



Claims Cost Modeling



## Claims Cost vs First Principles Modeling

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- What did we do?
  - Needed to position ourselves to move to First Principles world
    - Built a new Experience Studies system
    - **Built a new Projections and Valuation system**



## Our Project

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- Holistic Model
  - Valuation and Projections together
- Move from Claims Cost to First Principles Modeling
- Data Driven



## Steps for Change

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- Project Planning
  - Working Backwards
  - Holistic View
  - Timing and Resources
  - Testing Plan



## Steps for Change

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- Preparation
  - Designing Specifications
  - Gathering Data
  - Experience Studies
  - Setting up IT Environment
  - Training



## Steps for Change

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- Implementation
  - Coding
  - Inventory Extract Development (inputs)
  - Reporting (outputs)



## Steps for Change

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- Developing Controls
  - Process Maps
  - Technical & Peer Reviews
  - Future Change Controls (setting up framework)



## Steps for Change

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- Communication
  - Management Buy-In
  - Internal Customers (i.e. Finance, Tax, ERM, etc.)
  - Approvals (internal & external)



## Steps for Change

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- Tracking Progress
  - Project Management
  - Flash Meetings
  - Reporting Out to Others



## Steps for Change

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- Testing
  - Aggregate Level
  - Seriatim Level
  - Single Cell (i.e. Audit Trails, Unit Testing)
    - Assumption Validation
    - Model Algorithm





## Steps for Change

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- Documentation
  - Initial
  - Ongoing
  - Final



## Lessons Learned

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- Key Lessons from Implementation & Change Management
  - Planning
  - Definition
  - Communication
  - Big Picture

