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Valuing the Cost of Presumptive Benefits

Public Safety Employees – State of Nevada

September 6, 2012

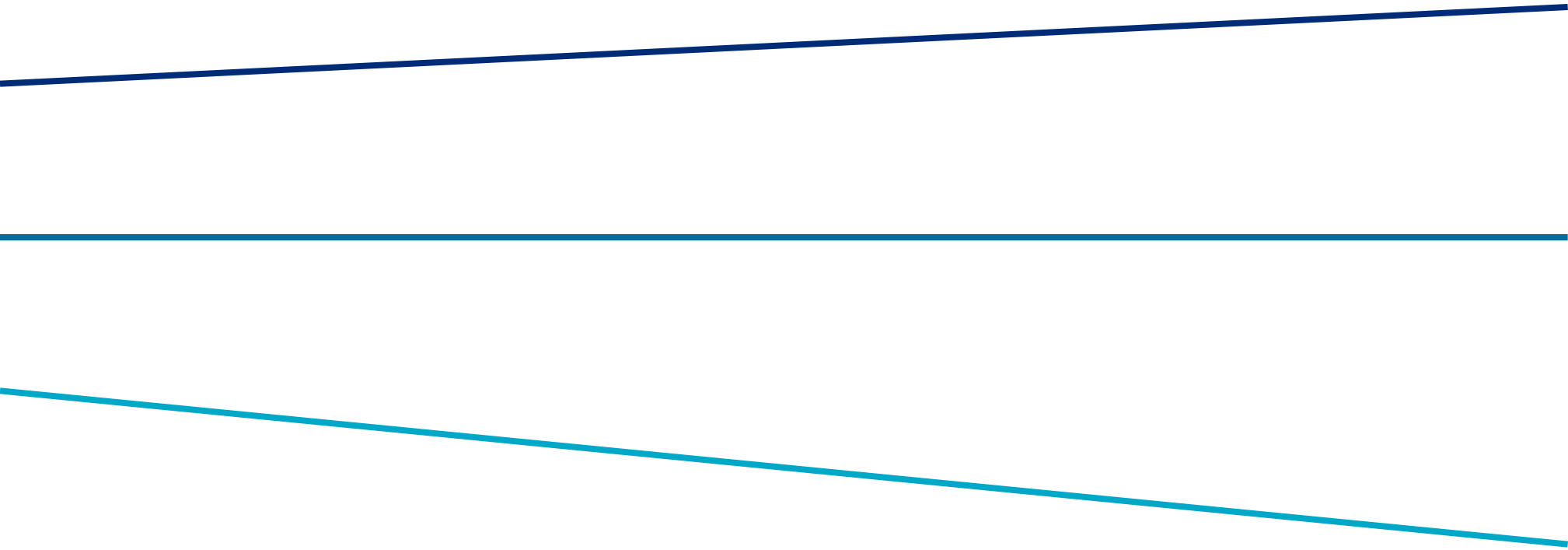
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Topics for Discussion

- Understanding the Exposure
- Understanding the Claims
- Data Provided
- Components of Unpaid Cost
- Frequency
- Severity
- Analysis

Understanding the Exposure



Understanding the Exposure

- Specific diseases contracted by Public Safety Officers are presumed to have developed due to employment
 - NRS 617.453 → cancer as occupational disease of firefighters
 - NRS 617.455 → lung disease as occupational disease of firefighters, police officers, and arson investigators
 - NRS 617.457 → heart disease as occupational disease of firefighters, police officers, and arson investigators
 - NRS 617.485 → hepatitis as occupational disease of firefighters, police officers, and emergency medical attendants
 - NRS 617.487 → hepatitis as occupational disease of certain other police officers

Understanding the Exposure

- Broad Range of Diseases Listed by Statutes

Cancers –	Bladder	Brain	Colon	Kidney
	Lymphoma	Liver	Skin	Prostate
	Thyroid			

Statute specifically states that list is not exclusive and that if an employee can reasonably demonstrate exposure to a carcinogen known to be reasonably associated with a specific cancer, the disease is presumed to have arisen out of employment

Heart and Lung Disease statutes are broad and non-specific

- Timing of disease emergence is not relevant
 - Coverage under the statutes is for life

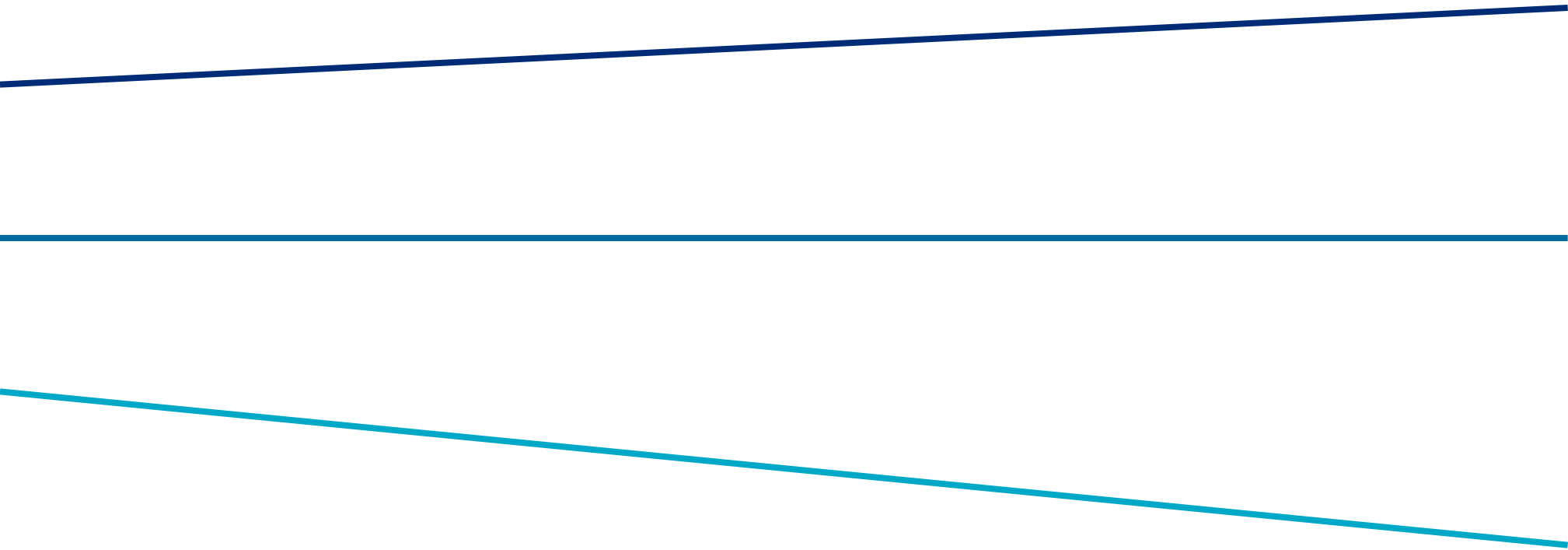
Understanding the Exposure

- Key Elements
 - Differentiation from typical workers compensation exposure
 - Cancer typically not covered → consider WTC personnel
 - Heart attack while working might be covered
 - Rebuttable presumption – in theory
 - Very difficult to deny claims
 - “Successes” include:
 - Getting employees back to work and avoiding PTD status
Ex: Thyroid Cancer, Heart Ailments, etc.
 - Won lawsuit regarding indemnity benefits for retirees
→ Retirees entitled to medical only if they are not working
 - Thyroid Cancer

Understanding the Exposure

- Key Elements
 - Vesting period ranges from 2 to 5 years employment
 - Some statutes specify continuous employment
 - Some statutes limit post-employment filings
 - NRS 617.453 (Cancer/Firefighters) → must file within 60 months of termination
 - Hepatitis statutes → must file within one year of termination
 - One statute (lung disease) limits the ability to rebut claims
 - “A disease of the lungs is conclusively presumed to have arisen out of...employment of a person who has been employed in a full-time continuous...for five years or more”
 - Statutes require physical examination and testing upon employment and during the course of employment

Understanding the Claims



Understanding the Claims

- Introduction
 - Two Claim Types
 - Permanent Partial Disability (PPD)
 - Includes true PPD and Medical Only (terminated/retirees)
 - Permanent Total Disability (PTD)
 - Presumptive Benefit Claims are, in general, infrequent
 - Approximately 8 claims reported per year
 - Ratio of PPD to PTD is 3:1
 - Approximately 150 claims reported over ~20 years

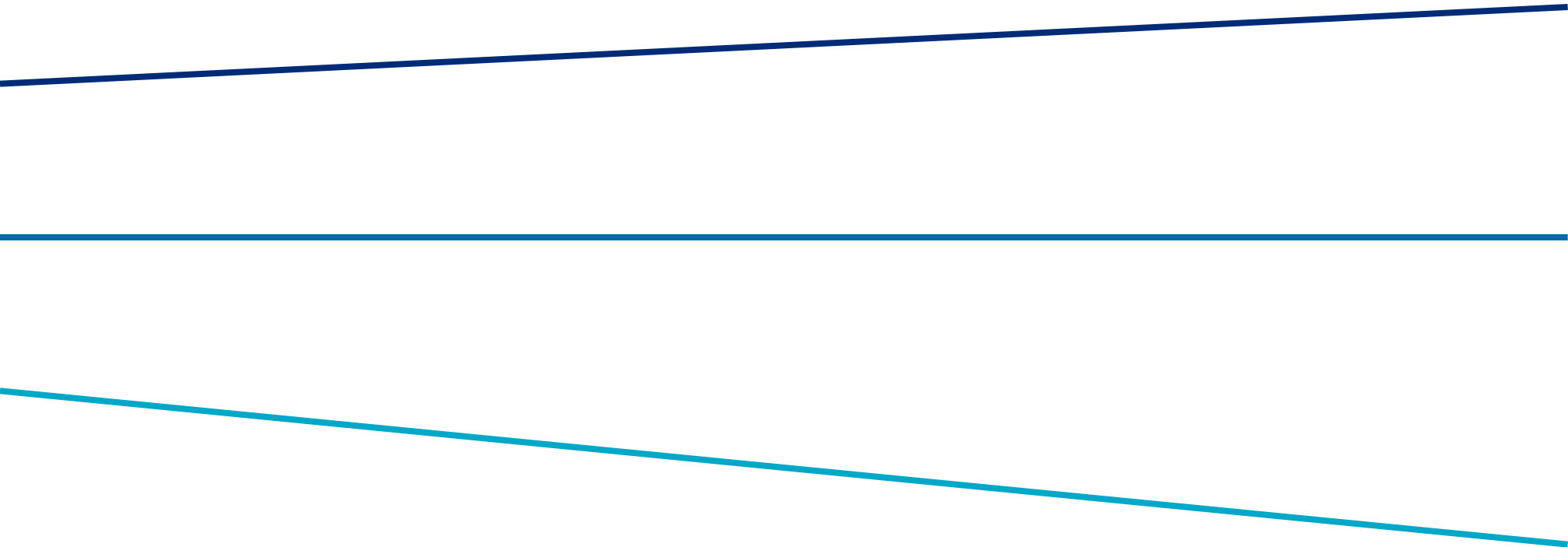
Understanding the Claims

- Permanent Partial Disability
 - Relatively low cost (2011 claims)
 - ~ \$100,000 medical
 - ~ \$40,000 indemnity
 - Claimants can and do file multiple claims
 - PPD disability for different diseases
 - Claimants on PTD will file and be awarded PPD for other diseases covered under the statutes
 - Claims are filed both by active employees as well as terminated/retired employees

Understanding the Claims

- Permanent Total Disability
 - Very high cost – dependent on age at award
 - Medical → ~ \$14,400 per year at 2011 cost level
 - Increased annually at assumed inflation rate
 - Assumption of annual average cost is very broad: actual cost and incidence varies by individual claim
 - Indemnity → \$41,432 per year at 2011 cost level
 - This is maximum benefit under Nevada statute in 2011
 - 2.3% COLA as per Nevada statute
 - \$41,432 is incremented for wage inflation for future claims
 - 50 year old claimant → \$3,600,000 claim in 2011
 - 2.3% COLA; 7.0% Medical inflation; Undiscounted

Data Provided



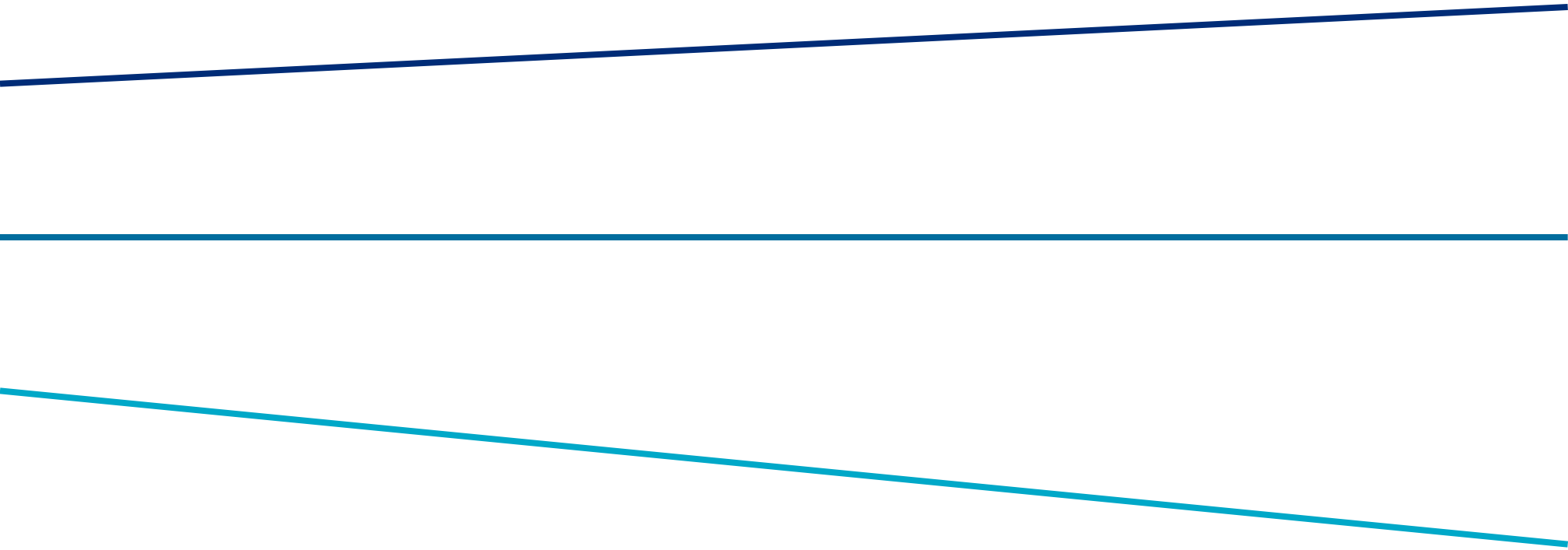
Data Provided

- Employee Census
 - Name
 - Gender
 - Date of Birth
 - Date of Hire
 - Date of Termination (if applicable)
 - Date of Death (if applicable)

Data Provided

- Claimants
 - Name
 - Gender
 - Occupation
 - Date of Birth
 - Date of Hire
 - Date of Injury
 - Claim Type
 - Indemnity Payments
 - Indemnity Case Reserves
 - Medical Payments
 - Medical Case Reserves
 - Employee Status (Active/Terminated) at Filing

Components of Unpaid Cost



Components of Unpaid Cost

- Components
 - Cost of Reported Claims
 - Pure IBNR
 - Earned Pension Component of Active Workforce
 - This is the primary focus of this analysis

Components of Unpaid Cost

- Cost of Reported Claims
 - Case reserves are assumed to be adequate for PPD and PTD claims
 - If claims are newly reported, with low case reserves, client will alert us as to expected cost of claims
 - Subsequent observations show minimal changes to reported losses on reported claims
 - Indemnity: fixed (PPD) or tabular (PTD)
 - Medical
 - Case reserves represent realistic estimates of future medical costs
 - Development is expected but difficult to measure
 - Recommend case reserves for reported claims be carried at an undiscounted value to provide for contingency of case development

Components of Unpaid Cost

- Pure IBNR – PTD Claims
 - Assume no unreported claims
 - Client is informed immediately of all presumptive benefit claims
 - Reserves are established immediately, or, client informs us of likely cost of claim
 - It is possible that a claim filed within a few weeks of valuation date (pipeline) is not in the data → not likely, has not occurred yet.
 - PTD claims are generated only by active employees

Components of Unpaid Cost

- Pure IBNR – PPD Claims
 - Assume no unreported claims
 - Same underlying reasons as PTD
 - Client is aware of all presumptive benefit claims
 - Reserves established immediately
 - Pipeline claims not likely
 - PPD claims may be filed by active AND inactive employees
 - Claims filed by inactive employees are technically pure IBNR
 - Date of Loss is last day worked
 - These claims have been intentionally, but incorrectly, grouped with “pension component”

Components of Unpaid Cost

- Pension Component – ***Focus of Analysis***
 - Claims where date of loss has not yet occurred

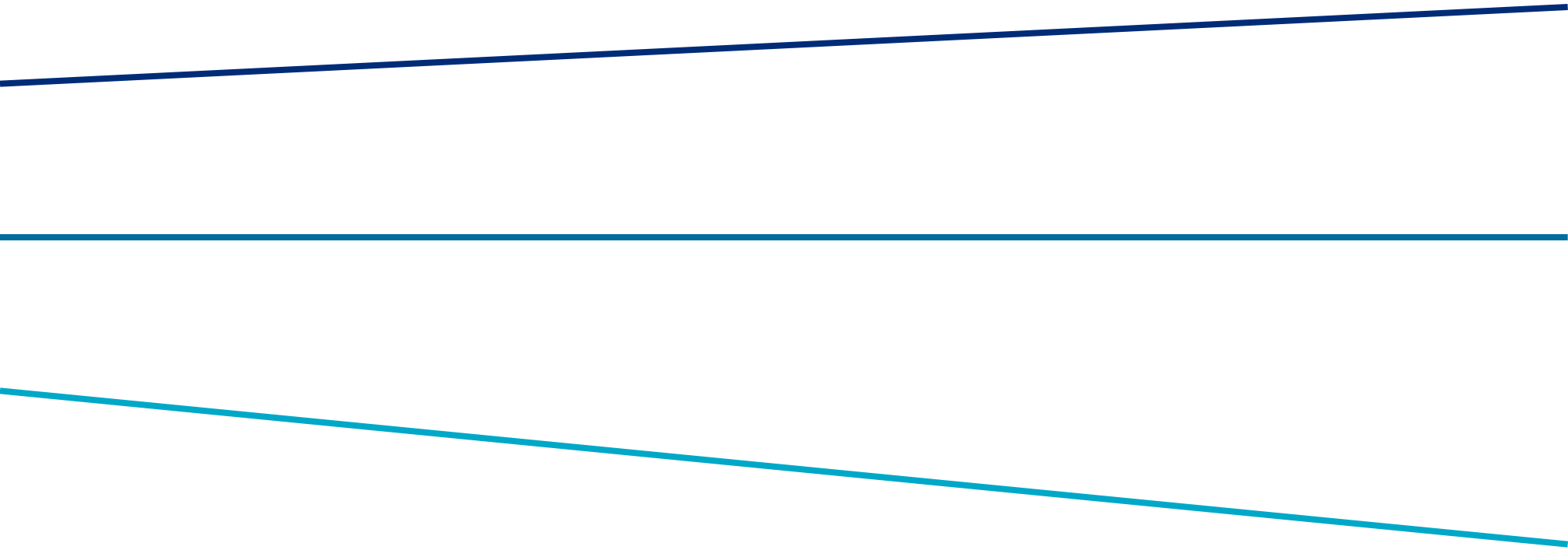
 - PTD Claims
 - Only active workforce will file PTD claims
 - Closed population
 - Specific assumptions regarding vesting (5 years) and retirement

 - PPD Claims
 - Claims are filed by active and retired employees
 - Active Employees → same considerations as PTD
 - Inactive Employees → true IBNR, but grouped with pension component

Components of Unpaid Cost

- Pension Component
 - Contribution to unpaid claim cost is present value of expected claim cost reduced to reflect only the average portion of work life earned
 - Frequency Severity Approach for analysis

Frequency

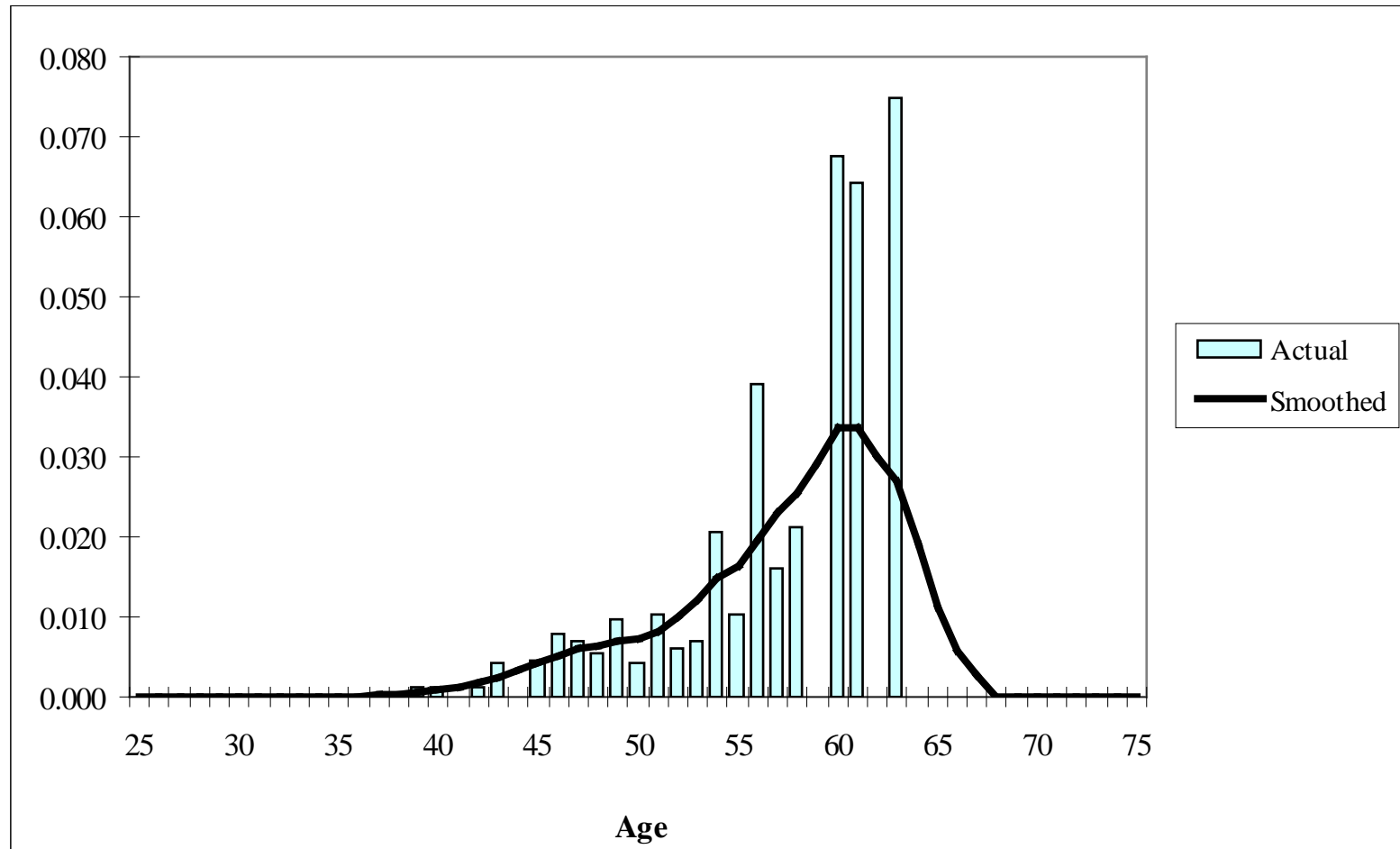


Frequency

- Units of Exposure
 - PTD: years worked, by age, from date vested to retirement
 - PPD: years lived, by age, from date vested until death
 - Individually for fire and police
 - All employees categorized either as police or fire officer
 - Example - EMT with fire, corrections with police
- Empirical and smooth results are displayed on the following pages

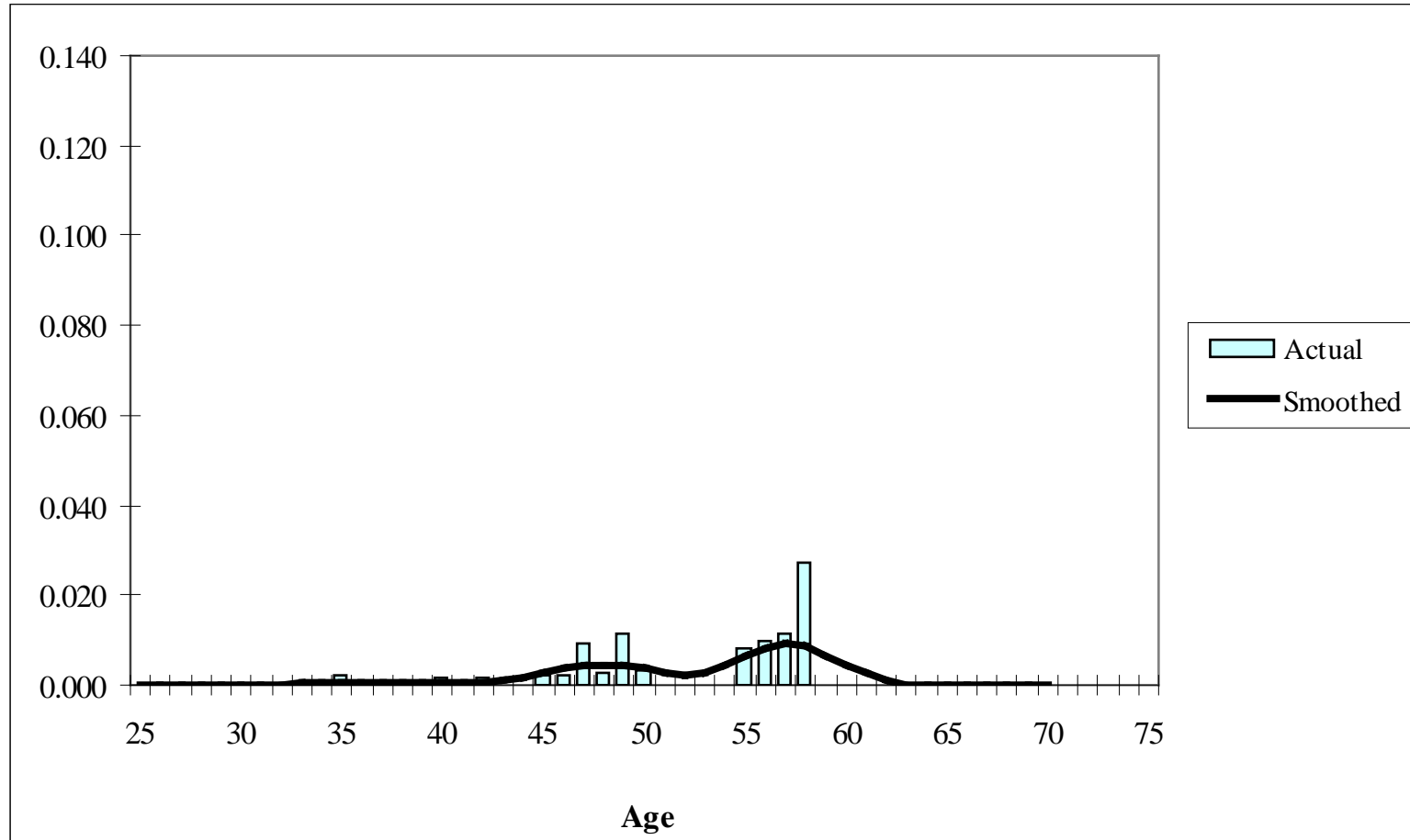
Frequency

Frequency of PTD Claims by Age - Fire



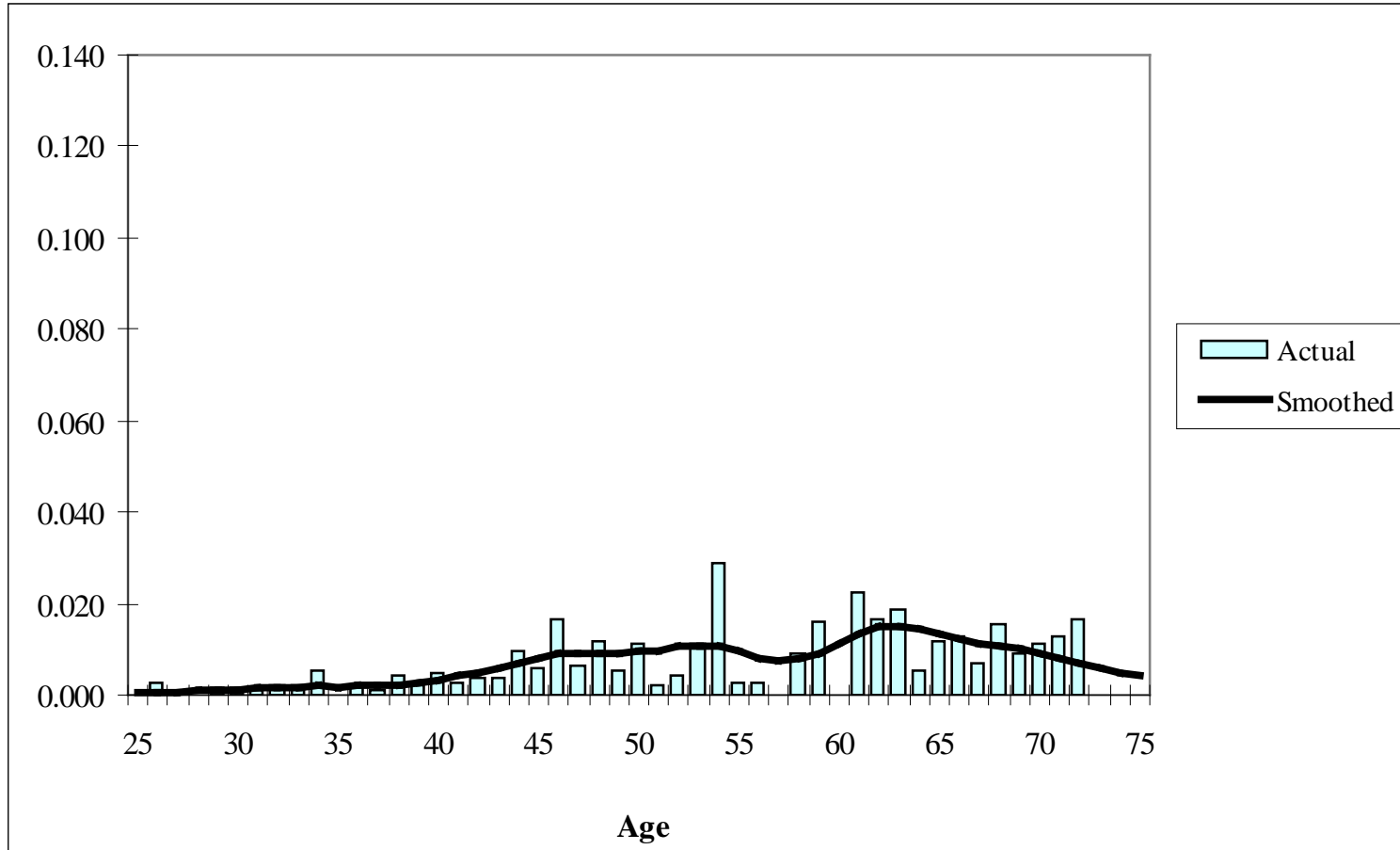
Frequency

Frequency of PTD Claims by Age - Police



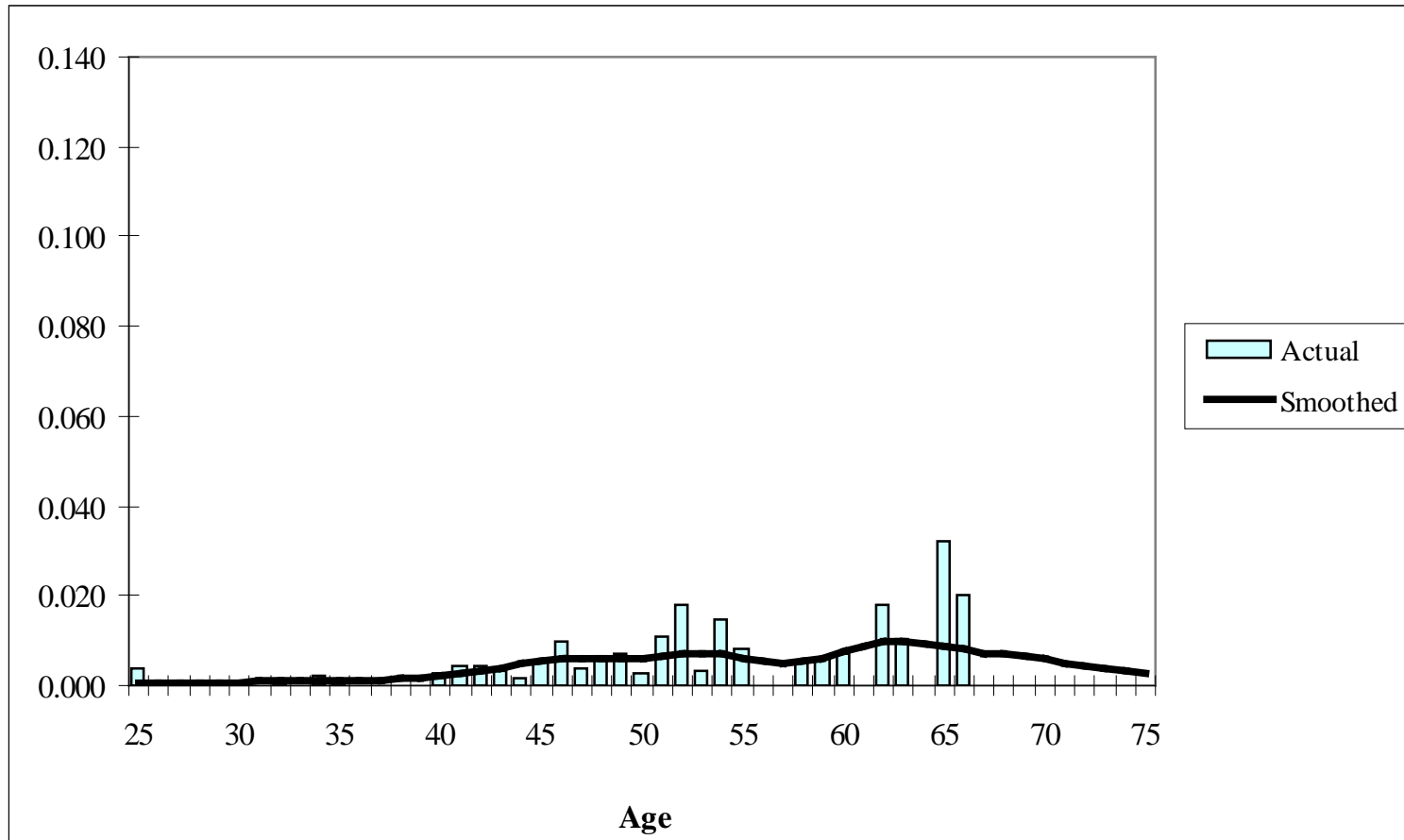
Frequency

Frequency of PPD Claims by Age - Fire



Frequency

Frequency of PPD Claims by Age - Police



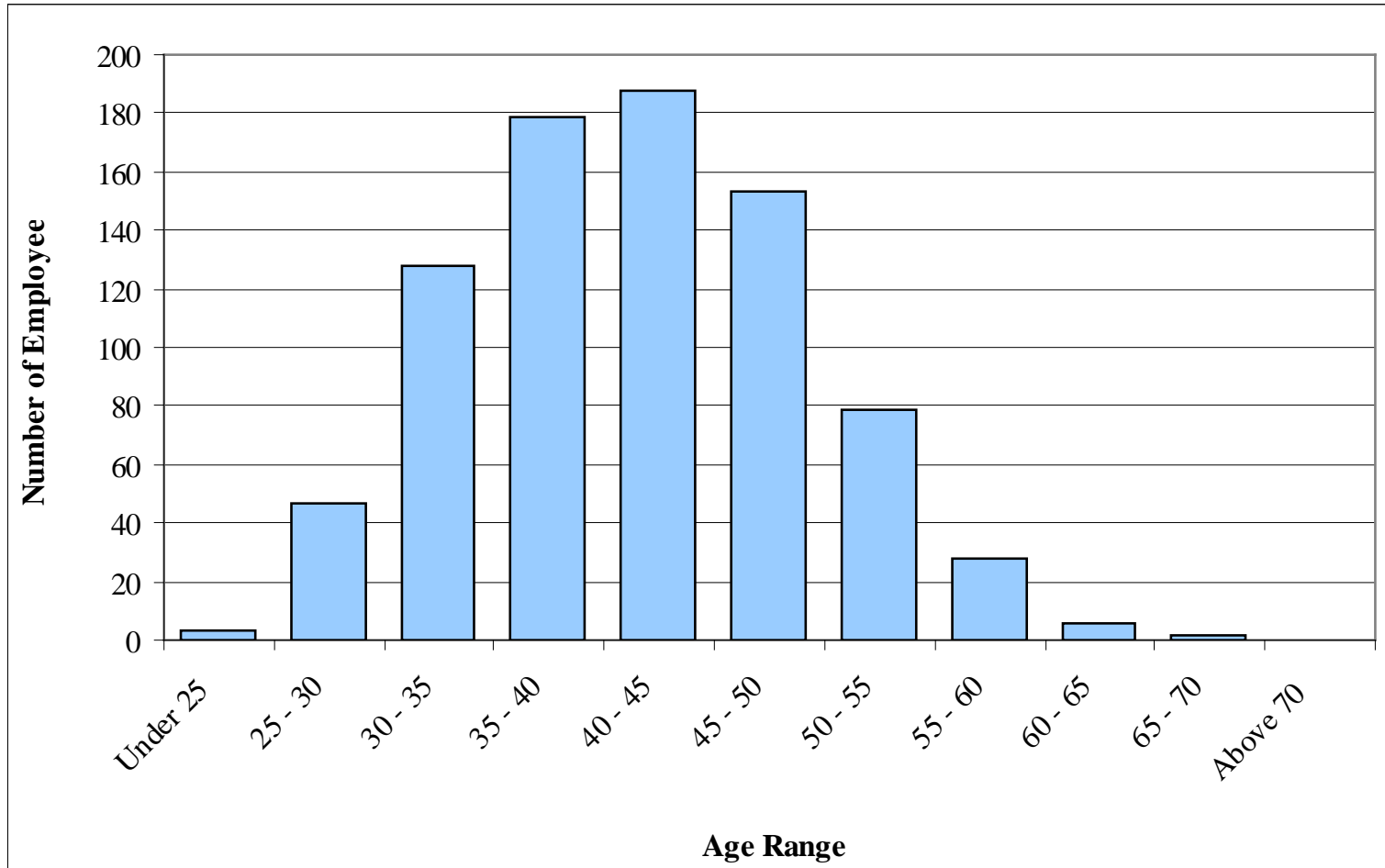
Frequency

- Process is to filter the following employee distributions through the frequency distributions
 - Active employee distribution for PTD
 - Active, living PTD, and terminated employee distribution for PPD

Frequency

Active Employee Distribution

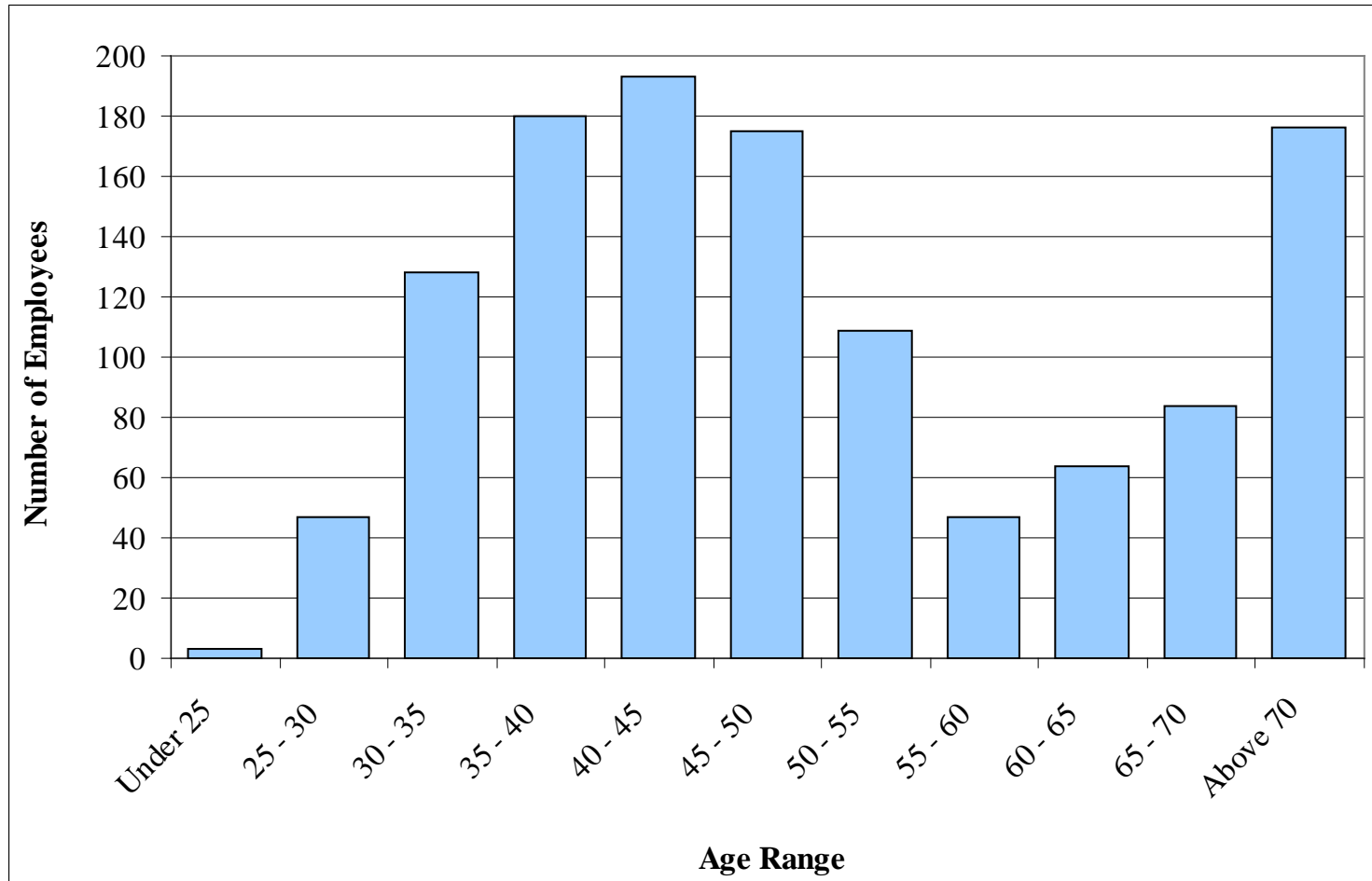
(All occupations – analysis is separately for fire/police)



Frequency

Active, Living PTD, and Retired Employee Distribution

(All occupations – analysis is separately for fire/police)



Frequency

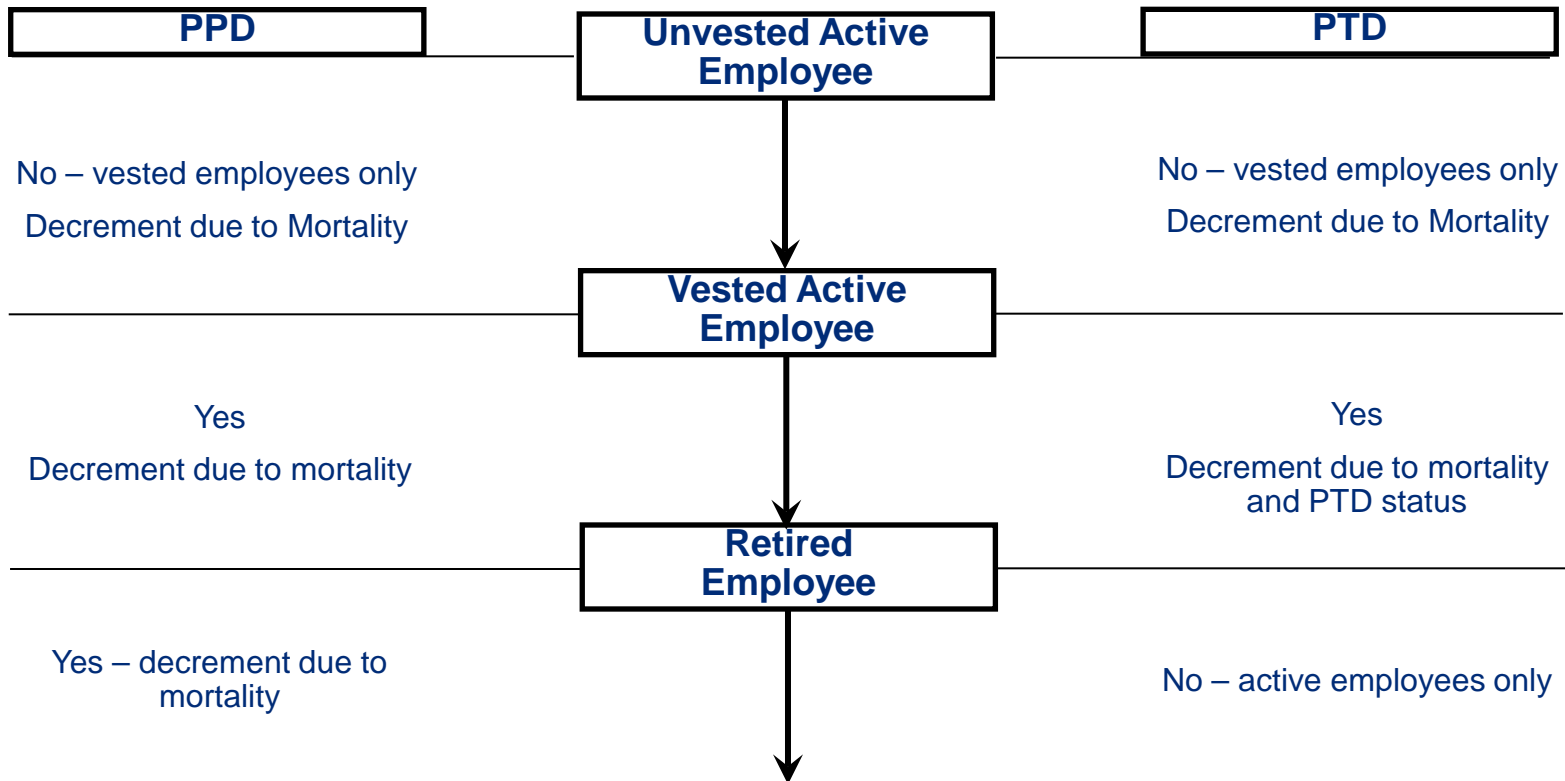
- PPD
 - Exposure Base
 - All active employees – contribute only after vesting (assume 5 years)
 - All living inactive employees we know about
 - Retirees (no indemnity)
 - PTD Claimants (no additional indemnity)
 - “Filter” through Frequency Model
 - Decrement (remove from exposure base) only due to mortality
 - Multiple PPD awards
 - PTD claimants can receive PPD award for another disease

Frequency

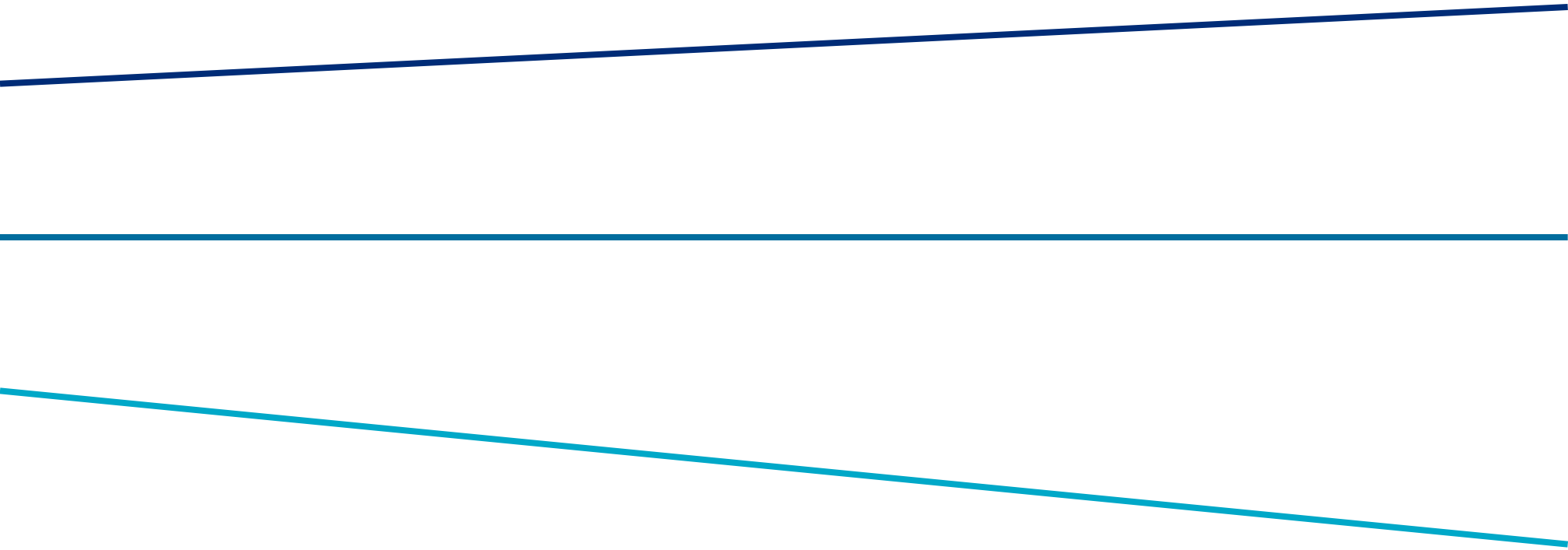
- PTD
 - Exposure Base
 - All active employees – contribute only after vesting
 - “Filter” through Frequency Model
 - Decrement (remove from exposure base) only if:
 - Claim is generated
 - Death
 - Retirement

Frequency

- Pension Component - Algorithm



Severity



Severity

- PPD Claims
 - Indemnity
 - \$40,000 based on reported claims data (2011 costs)
 - Assume 5 year payout
 - Indemnity Component Removed at retirement or if currently a PTD
 - Medical
 - \$100,000 based on reported claims data (2011 costs)
 - Assume a 13 year payout
 - Independent of age

Severity

- PTD Claims
 - Indemnity
 - Public Safety Officers receive maximum benefit with 2.3% COLA
 - Compensation for all employees will generate maximum benefit
 - Maximum benefit indexed 3.0% for wage inflation for future claims
 - Maximum benefit determined by state average weekly wage
 - SAWW assumed to inflate annually at 3.0%
 - Maximum benefit represents first year payment
 - Subsequent 2.3% COLA is statutory

Severity

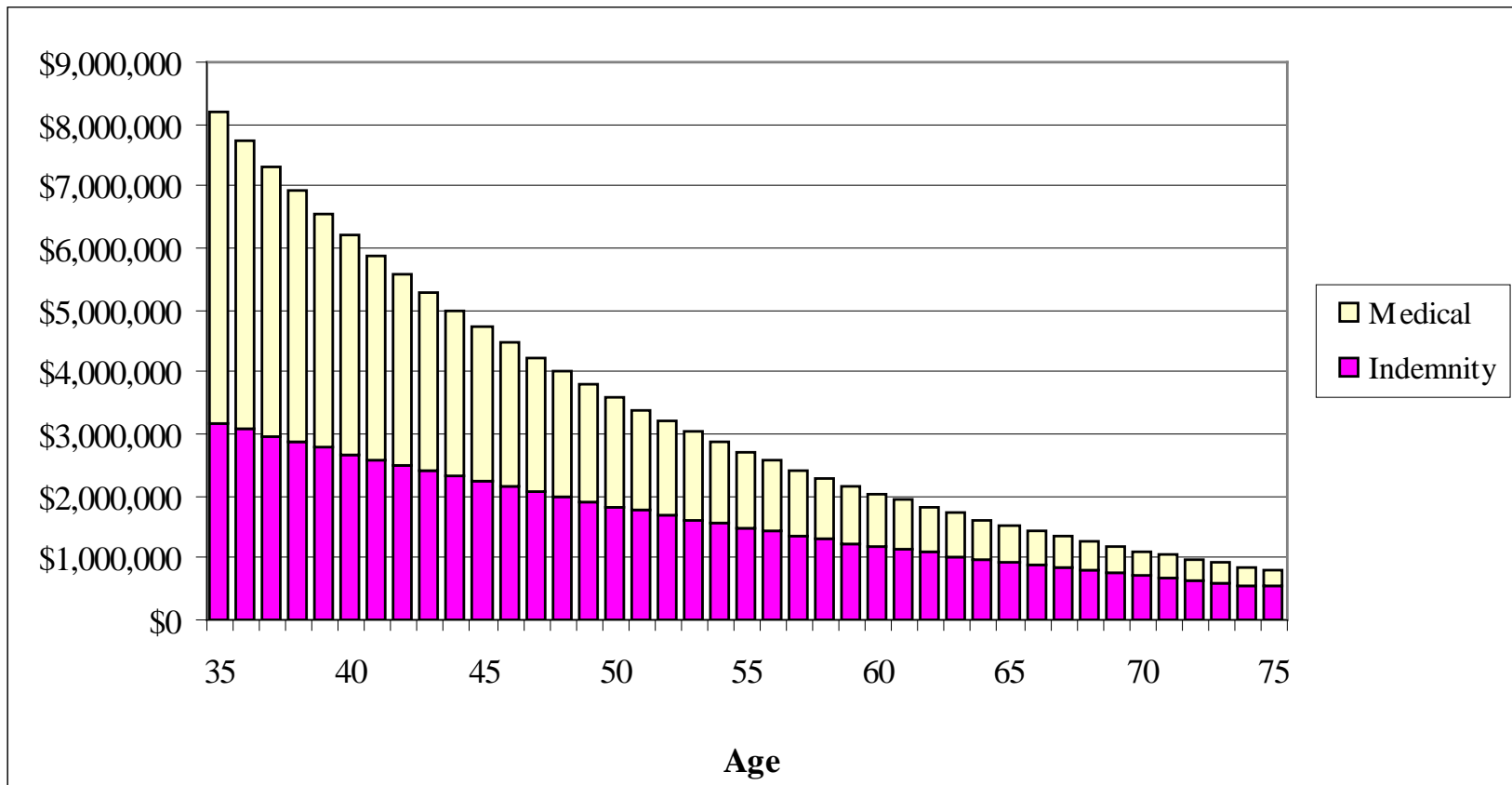
- Medical
 - Measured average annual medical cost of \$14,400 at 2011 cost level
 - Lifetime Medical
 - Indexed for 7.0% inflation

- General Population Mortality
 - 2010 Social Security Administration
 - Not indexed for improvement to mortality
 - Not decremented for greater mortality
 - Not adjusted for continuation of benefits to surviving spouse
 - Adjustments to mortality will impact precision, not accuracy

Severity

Severity of PTD Claims by Age (Undiscounted)

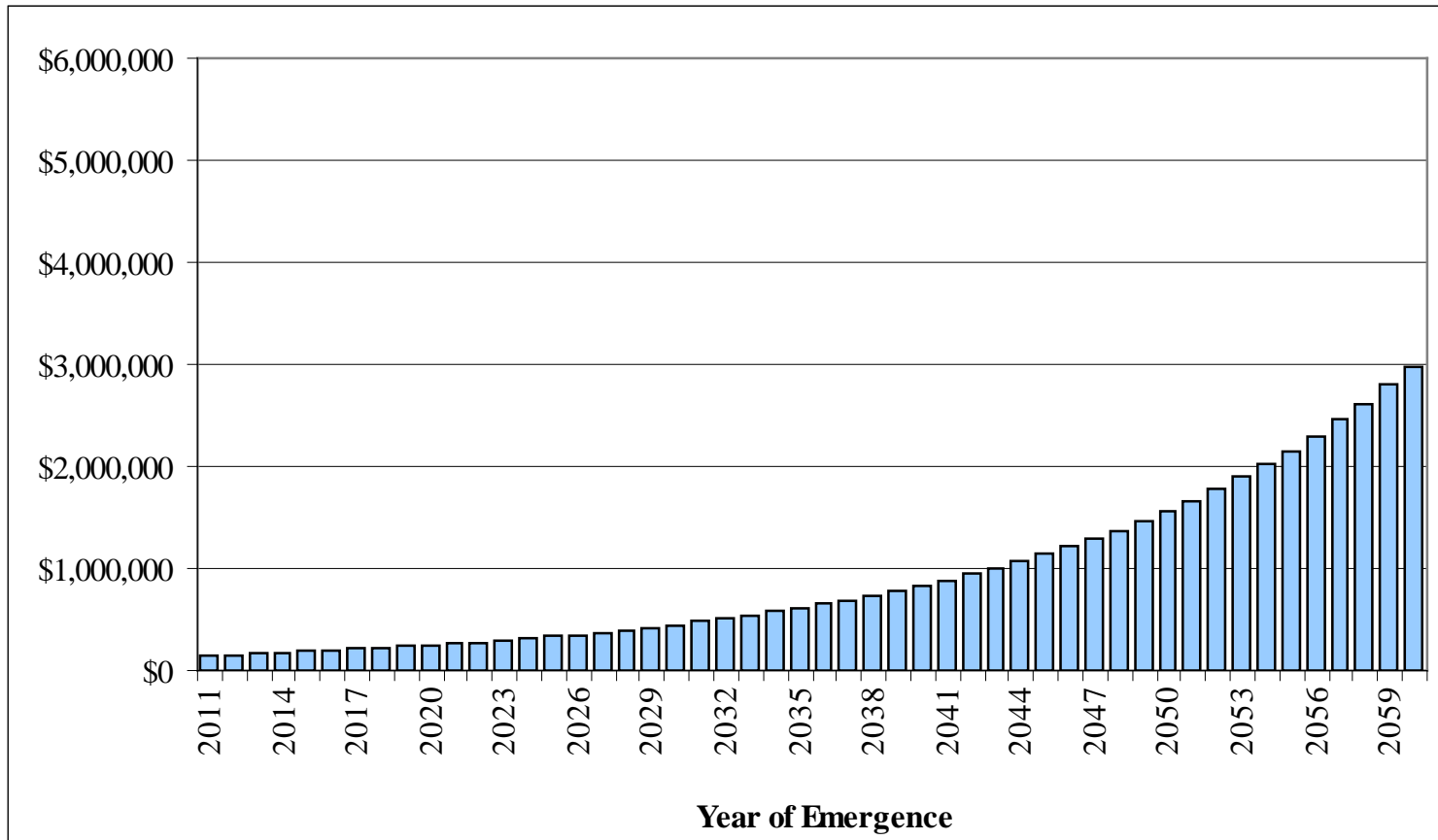
January 1, 2011 Benefit Level; 7.0% Medical Inflation; 2.3% COLA



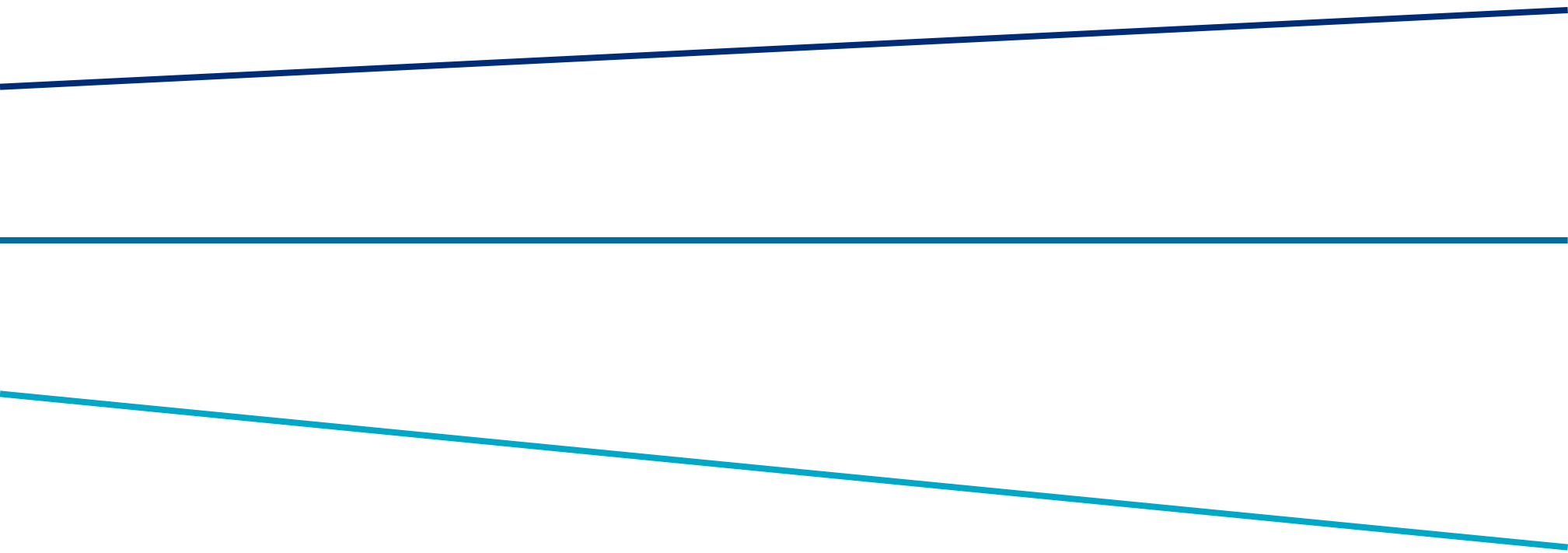
Severity

Severity of PPD Claim by Year of Loss

Undiscounted for Investment Income

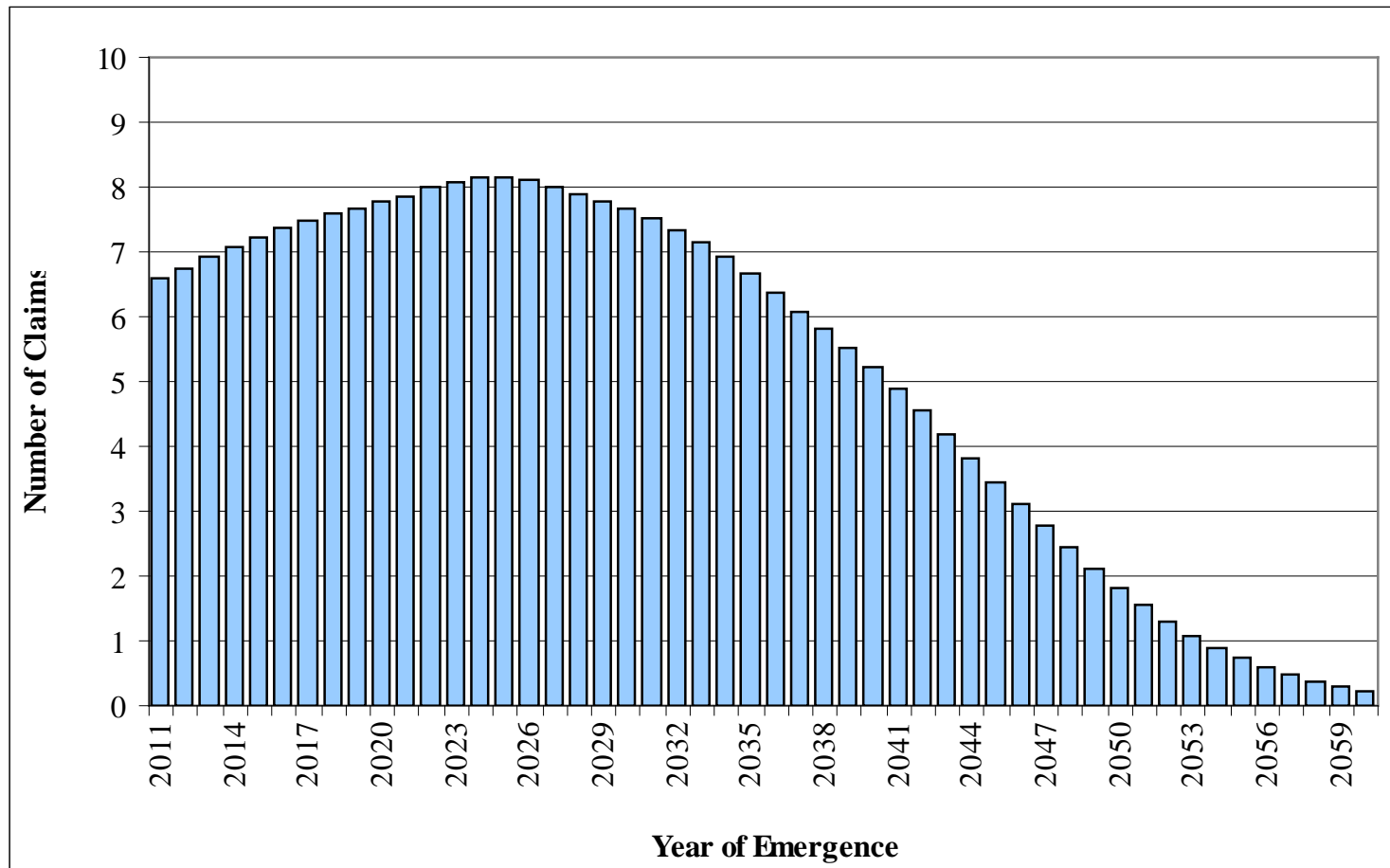


Analysis



Analysis

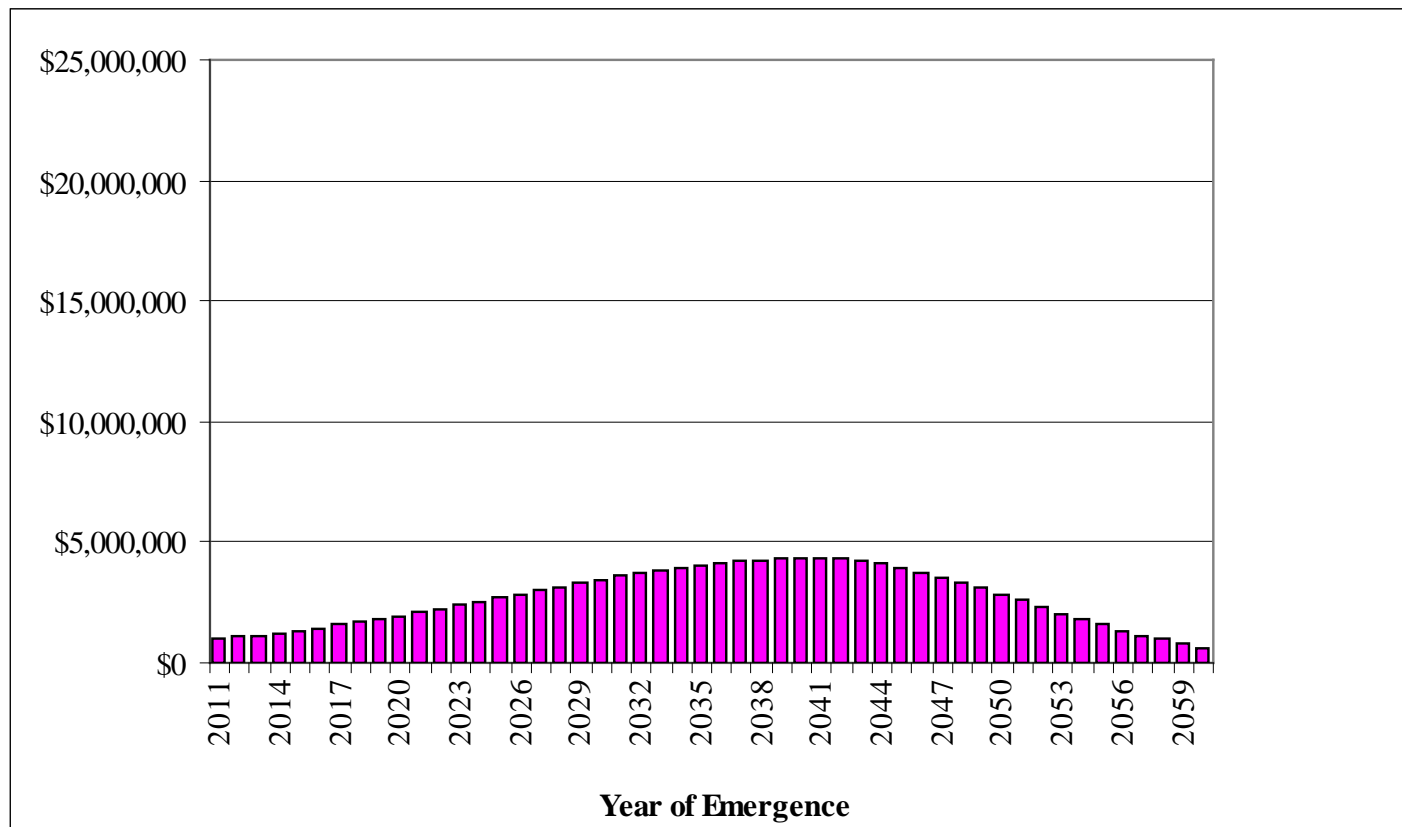
Emergence of PPD Claims by Year of Loss



Analysis

Total Aggregate Cost of PPD Claims by Year of Loss

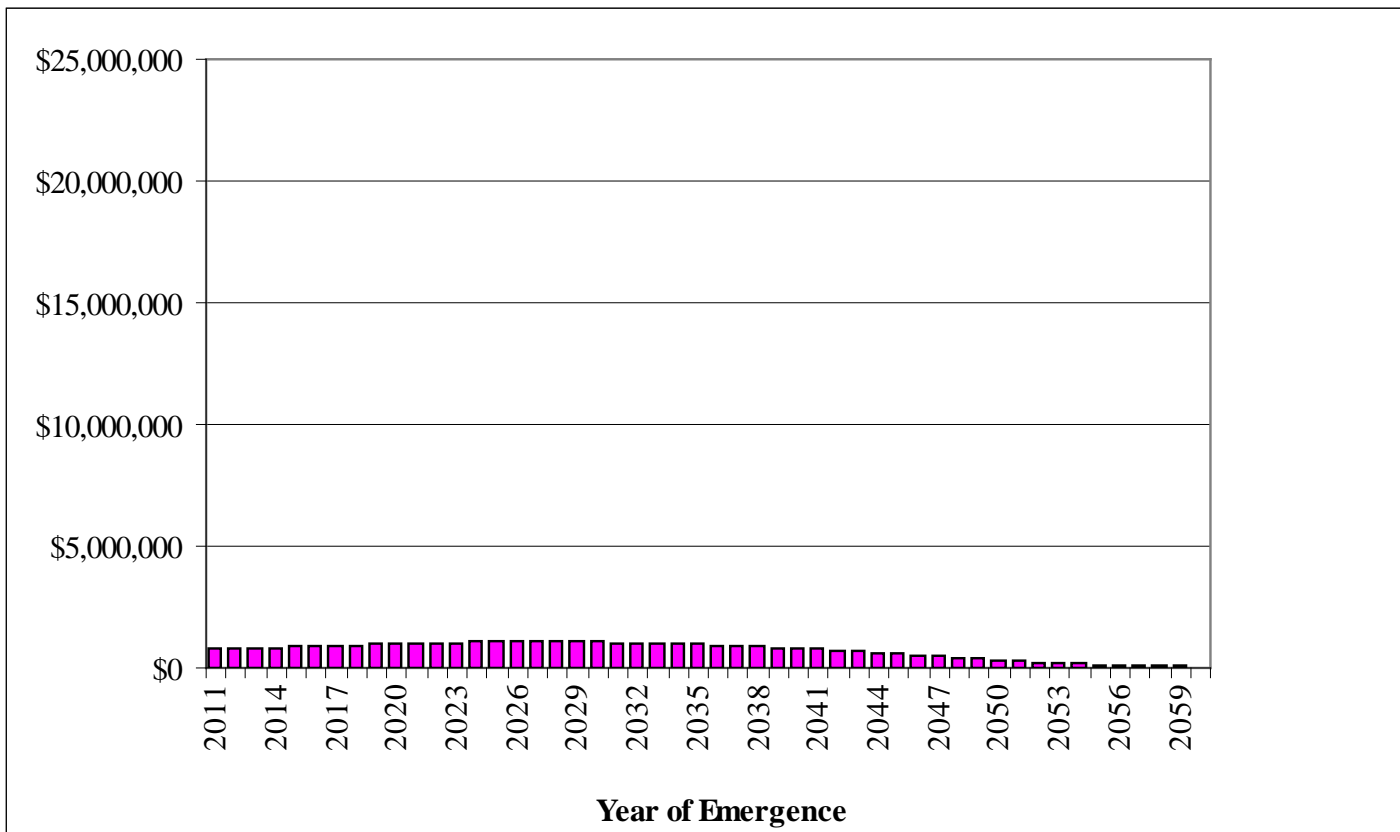
Undiscounted for Investment Income



Analysis

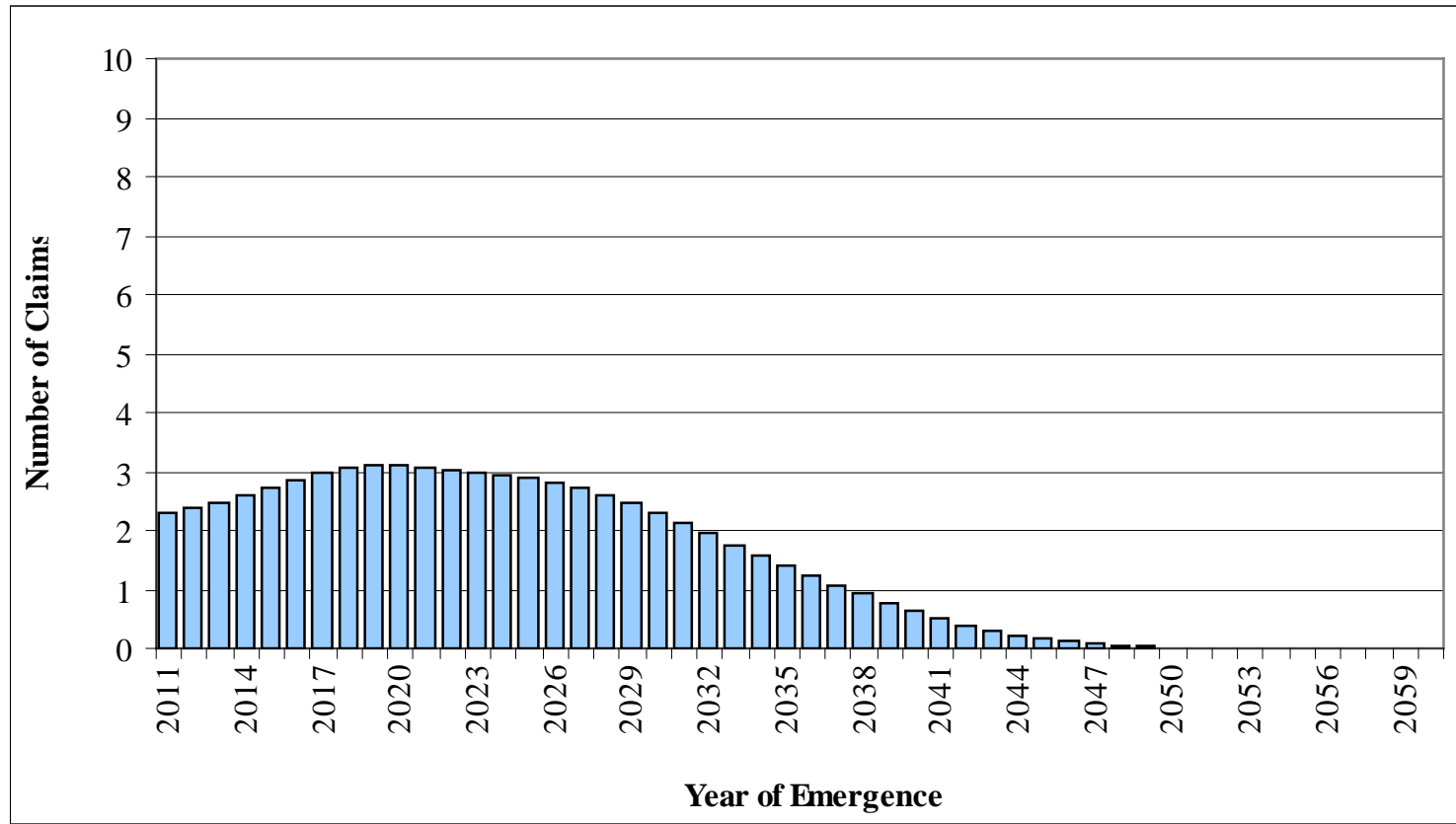
Total Aggregate Cost of PPD Claims by Year of Loss

5% Annual Interest Rate Discounted to January 1, 2011



Analysis

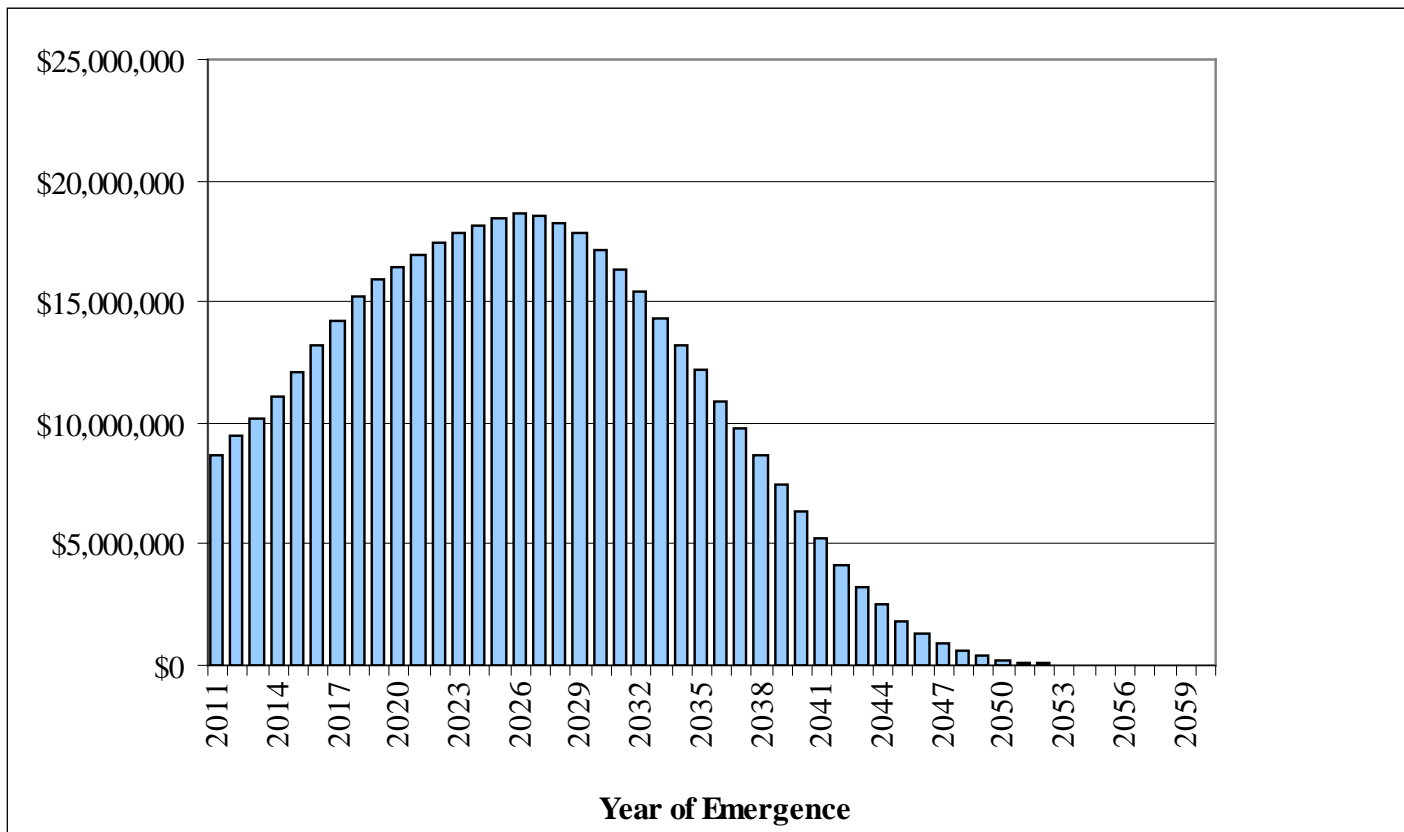
Emergence of PTD Claims by Year of Loss



Analysis

Total Aggregate Cost of PTD Claims by Year of Loss

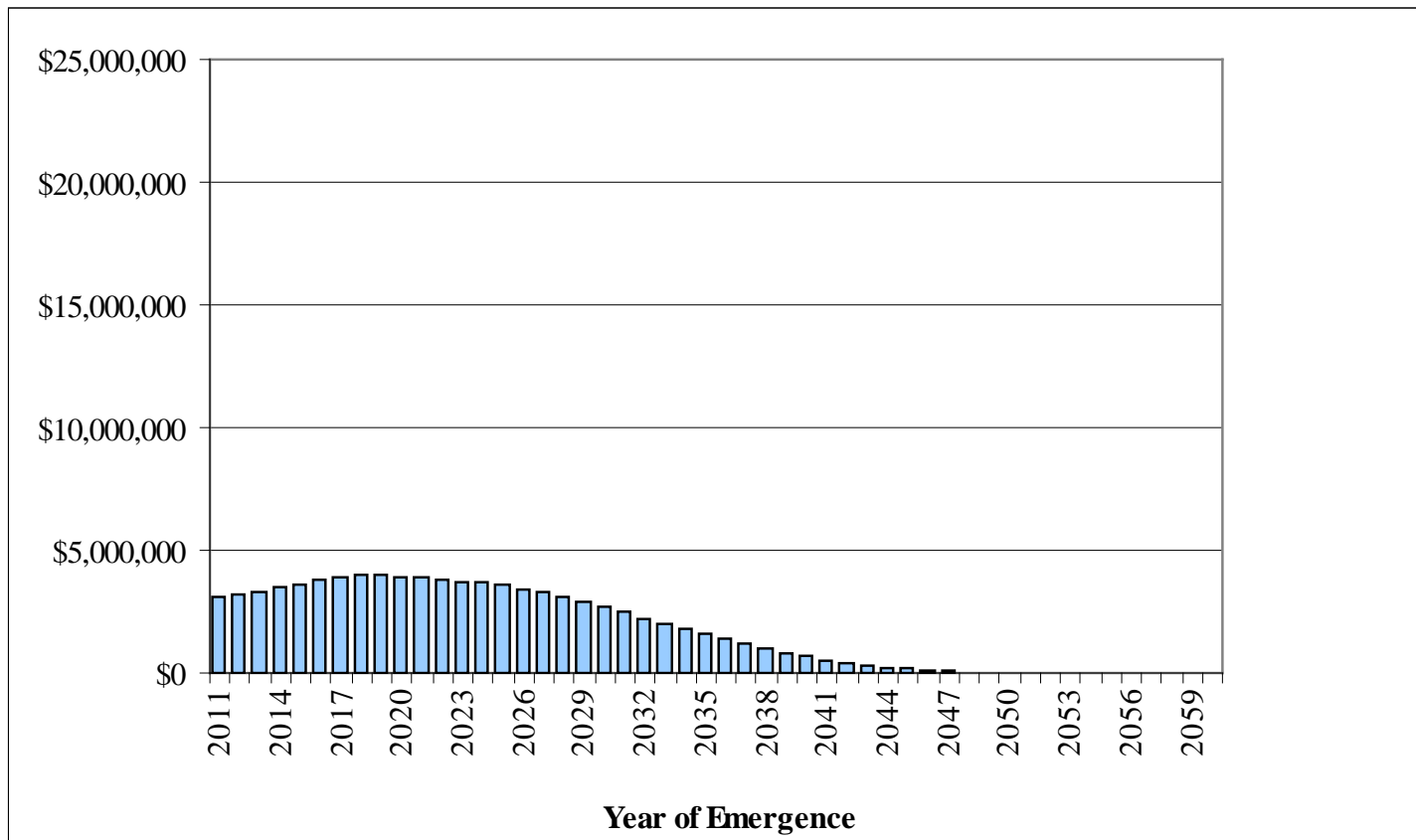
Undiscounted for Investment Income



Analysis

Total Aggregate Cost of PTD Claims by Year of Loss

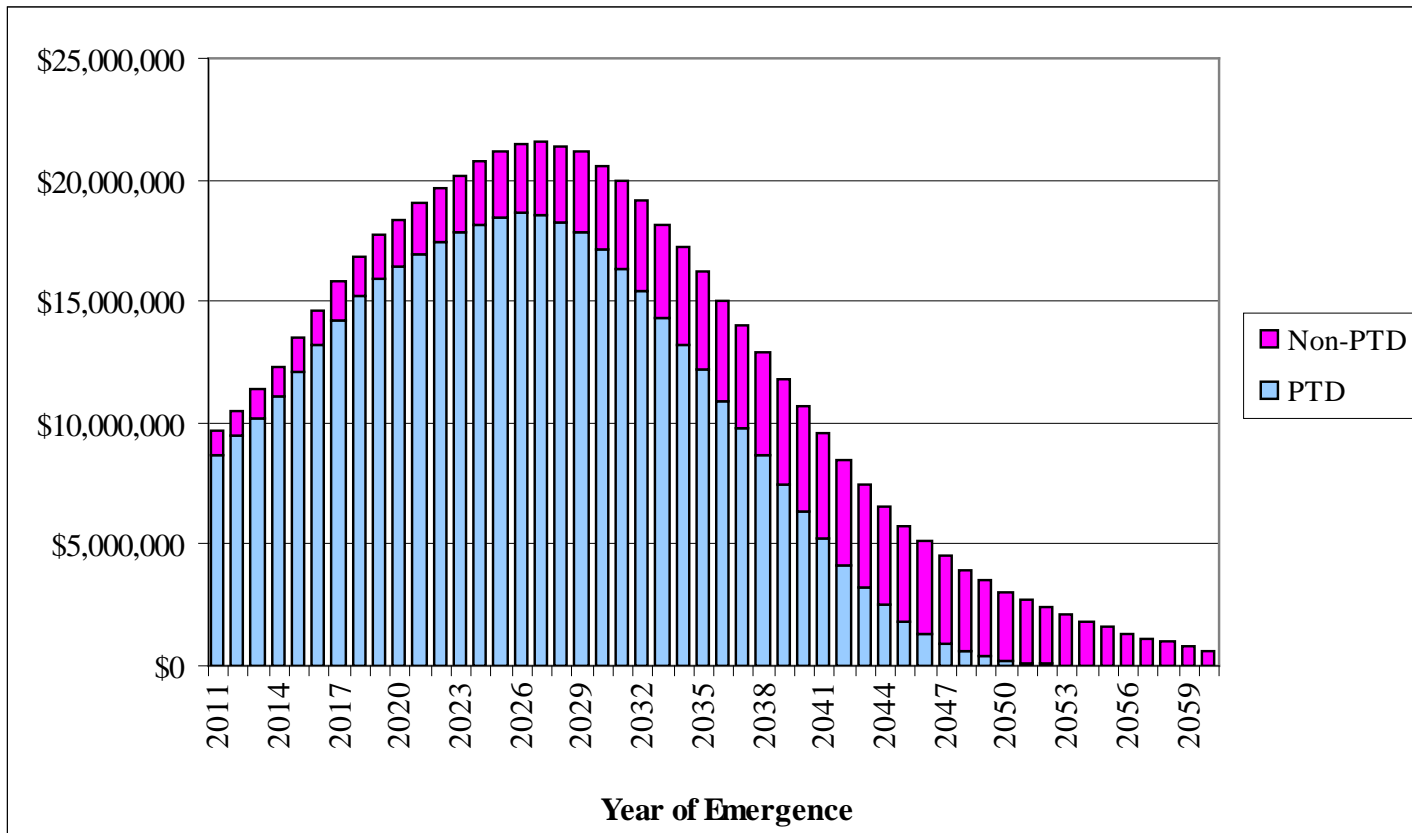
5% Annual Interest Rate Discounted to January 1, 2011



Analysis

Total Aggregate Cost of All Claims by Year of Loss

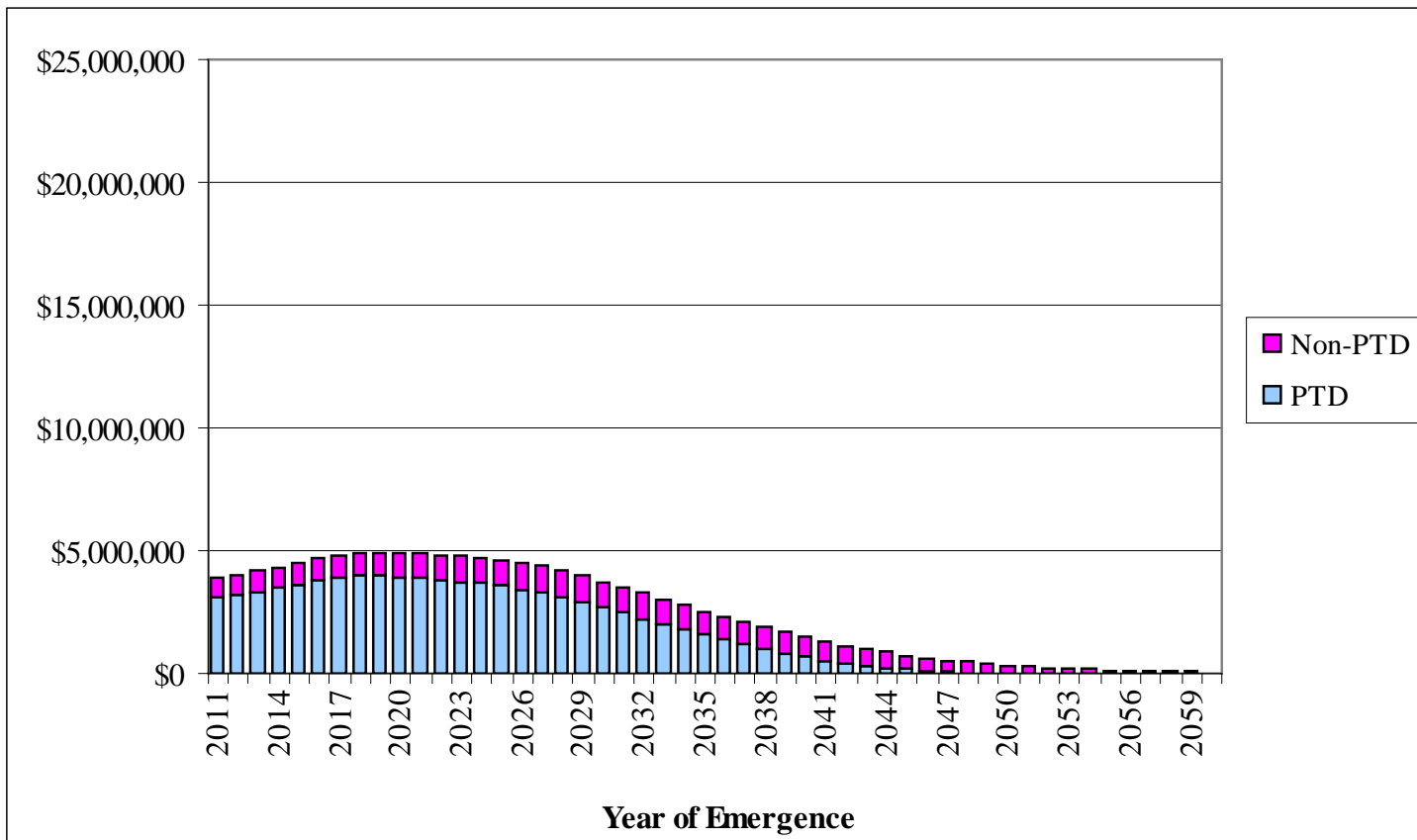
Undiscounted for Investment Income



Analysis

Total Aggregate Cost of All Claims by Year of Loss

Annual Interest Rate Discounted to January 1, 2011



Analysis

Unpaid Benefit Costs as of January 1, 2011 (in millions)

Details by Reserve and Claim Type

3.0% Annual Wage Inflation

7.0% Annual Medical Inflation

Future Claims Cost

Claim Type	Nominal	Discounted at				
		3%	4%	5%	6%	7%
PTD	\$441.0	\$157.1	\$116.1	\$87.5	\$67.2	\$52.5
PPD	137.0	58.0	45.1	35.7	28.7	23.4
Total	\$578.0	\$215.1	\$161.2	\$123.2	\$95.9	\$75.9

Case Reserves

Claim Type	Nominal	Discounted at				
		3%	4%	5%	6%	7%
PTD	\$16.6	\$16.6	\$16.6	\$16.6	\$16.6	\$16.6
PPD	2.4	2.4	2.4	2.4	2.4	2.4
Total	\$18.9	\$18.9	\$18.9	\$18.9	\$18.9	\$18.9

Total Case Reserves and Future Claims Cost

Claim Type	Nominal	Discounted at				
		3%	4%	5%	6%	7%
PTD	\$457.6	\$173.6	\$132.7	\$104.1	\$83.8	\$69.1
PPD	139.4	60.4	47.5	38.1	31.0	25.7
Total	\$596.9	\$234.0	\$180.2	\$142.1	\$114.8	\$94.8

Total Case Reserves and Future Claims Cost Reflecting 40% Earned Work Life

Claim Type	Nominal	Discounted at				
		3%	4%	5%	6%	7%
PTD	\$193.0	\$79.4	\$63.0	\$51.6	\$43.4	\$37.6
PPD	57.2	25.6	20.4	16.6	13.8	11.7
Total	\$250.1	\$104.9	\$83.4	\$68.2	\$57.3	\$49.3

Questions

