



Mortality Improvements in South Africa: What is going on?

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Agenda

1. My question
2. Why do people die
3. What do we know about South African mortality
4. What are the financial impacts
5. Where to from here

My questions

- Question 1: Why do South African actuaries not seem to care all that much about mortality improvements?
- Question 2: What is actually going on with mortality in South Africa?

We are in a very different place to our developed world colleagues

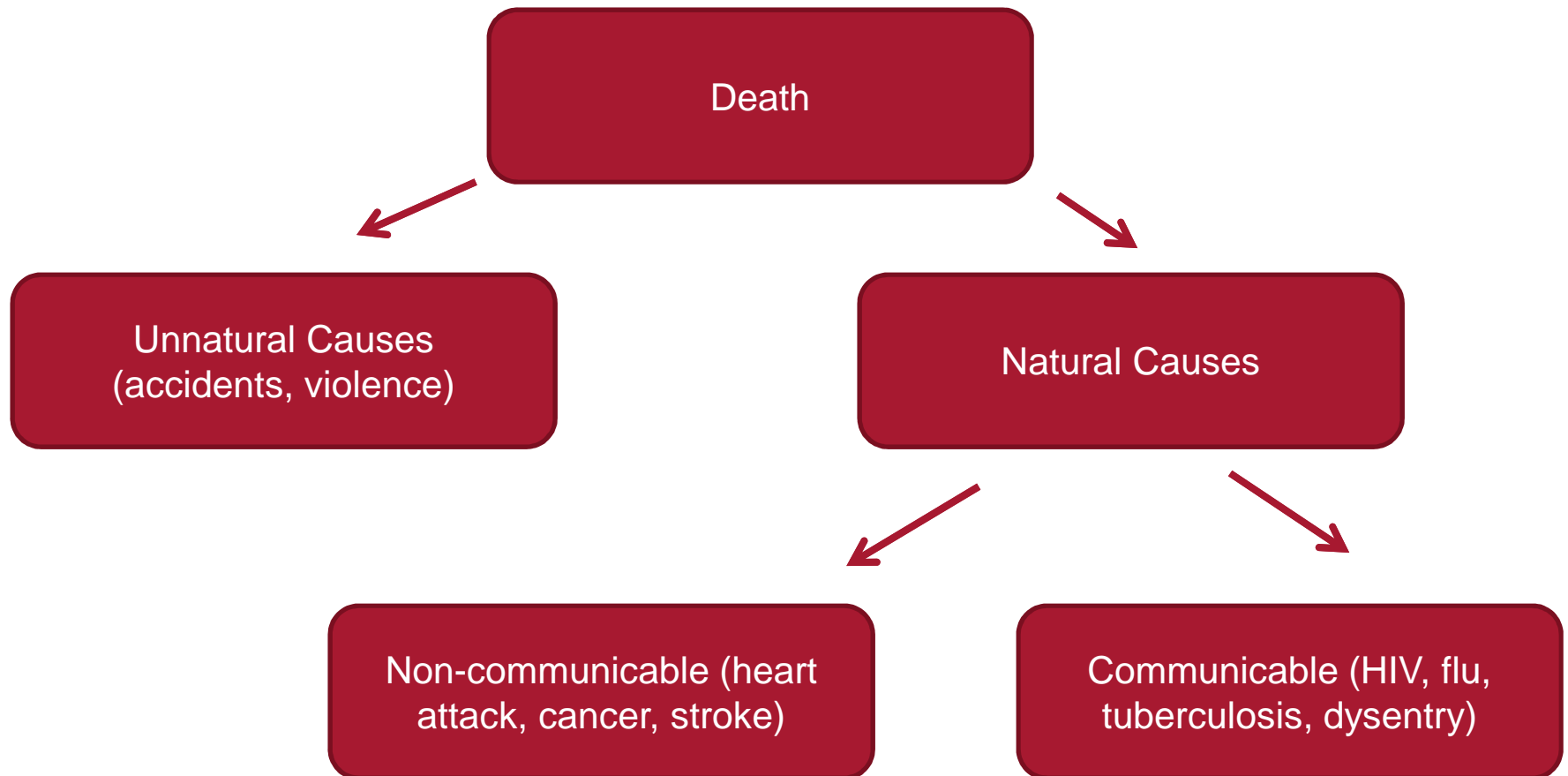


- Developed countries have excellent data and are doing very detailed analysis on mortality improvement by disease
- Mortality improvements are a very high priority in developed countries
- So what do we know, and what do we need to do?

Life Expectancy

Key	UK	US	Brazil	India	SA
Life expectancy at birth (years)	80	79	73	65	54
Life expectancy at age 60 (years)	23	23	21	16	17

Why do people die



All Cause Mortality

Country	Communicable	Non-communicable	Accidental	All Causes
United Kingdom	36	401	25	462
United States	34	418	53	505
Brazil	97	534	76	707
India	363	685	99	1,174
South Africa	983	635	72	1,691

- Deaths per 100,000 population
- WHO statistics

Non-communicable Mortality

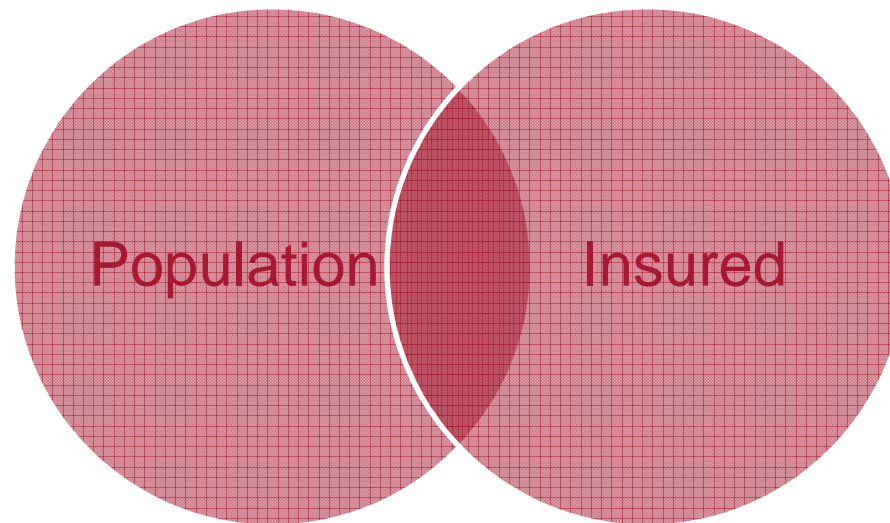
Country	Cancer	Cardiovascular	Respiratory
United Kingdom	137	142	34
United States	124	156	34
Brazil	115	237	44
India	75	317	154
South Africa	155	262	62

Non-natural Cause Mortality

Country	Road Traffic Accident	Violence	Other	All Accidents
United Kingdom	5	1	20	26
United States	14	6	32	52
Brazil	22	28	25	75
India	19	5	76	100
South Africa	20	29	23	72

South Africa

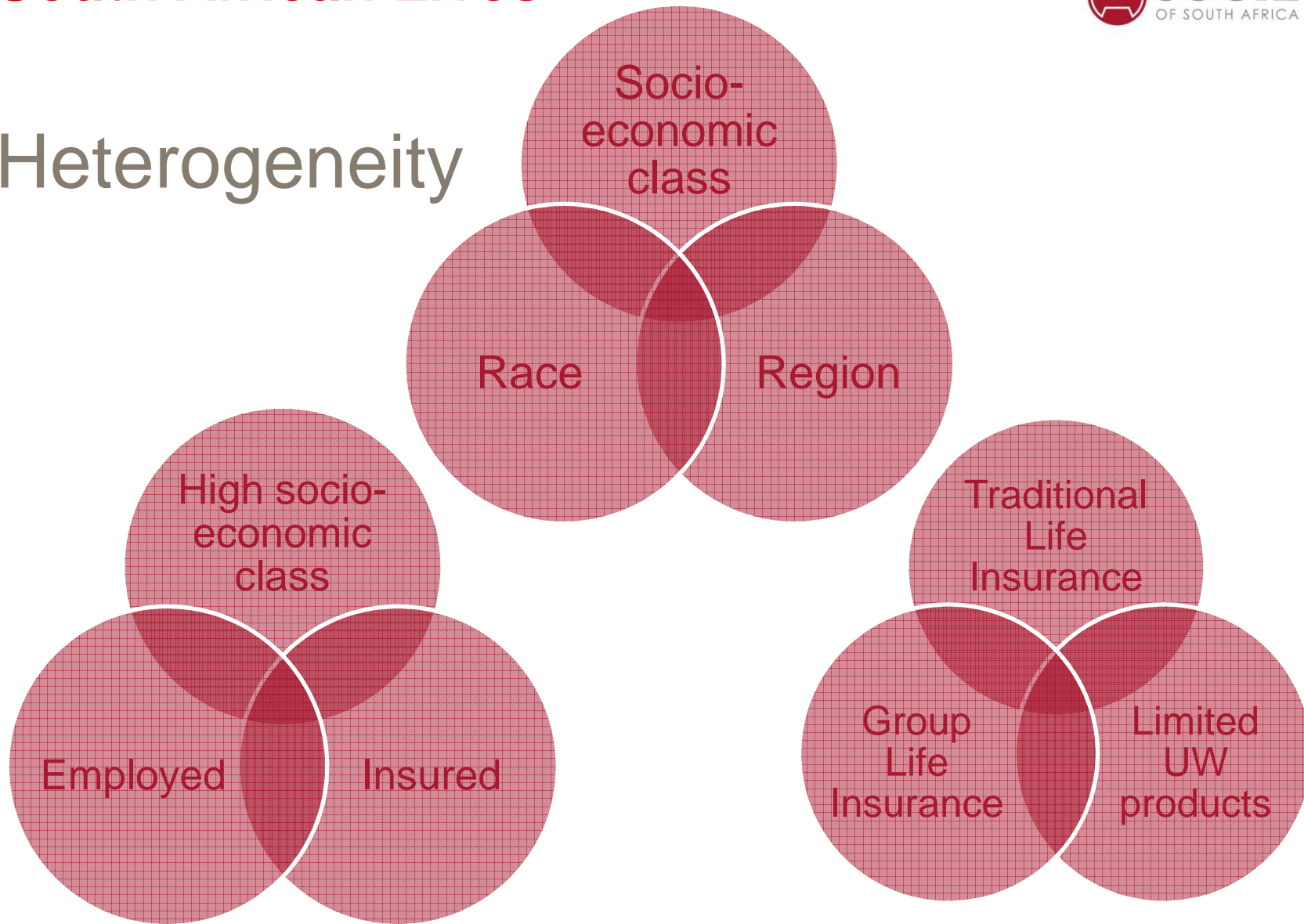
South African Lives



Diversity is great but.....

South African Lives

Heterogeneity



South African Lives

- Different drivers of mortality within each group drive mortality improvements
- At **population level** - external forces
 - AIDS & Anti Retro Virals (ARV)
 - Social upliftment
 - Primary Health Care
 - Income & Education -> middle class
- **Traditional insurance** market
 - Medical advances
 - Similar drivers to UK and US?

Data

South African Data

- The biggest obstacle?
- Population Tables
 - South African Life Tables (SALT)
 - Since 1921 - last tables 1984 -1986 (by race)
 - Statistics South Africa post 1986 (combined)
 - Table for the period 1996 to 2001 (Dorrington, *et al* 2004)
 - Currently updating this for 2004 to 2009
- What about Insurance Tables

South African Data

- Insurance investigations
 - Assured Lives Mortality
 - Continuous Statistical Investigations (CS):
 - 1999 – 2002, 1995 – 1998 & 1991 – 1994
 - 2004 – 2008 but end of this year
 - Annuitant Mortality
 - CSI Annuitant Report 2001-2004
 - Annuitant Mortality Investigation, 1995 – 1999
 - Standard Tables
 - SA85-90 Mortality Tables (Dorrington, RE, & Rosenberg, SB 1996)
 - SA56-62 Mortality Tables (Report: Mortality Standing Committee 1974)
 - South African Annuitant Standard Mortality Tables 1996–2000

Mortality Improvement Research

- South African Annuitant Standard Mortality Tables 1996–2000
- Mortality improvements observed but disregarded :
 - The implied improvements of 3% for men and 6% for woman were much higher than those observed in the UK.
 - The period over which the trends were looked at was too short
 - The improvements seen were not consistent with other mortality studies conducted
 - The pattern of the improvements did not match that observed in the UK either.

South African Mortality Improvements

SA Mortality Improvements

- Crude calculations based on
 - SALT since 1921 - last tables 1984 -1986 (by race)
 - Table for the period 1996 to 2001 (Dorrington, *et al* 2004)

SA Mortality Improvements

- Looked at three scenarios in terms of duration

	Period	Years	Number of tables used
Long Term	1948 – 1998	50	7
Medium Term	1975 – 1998	23	4
Short Term	1982 – 1998	16	2

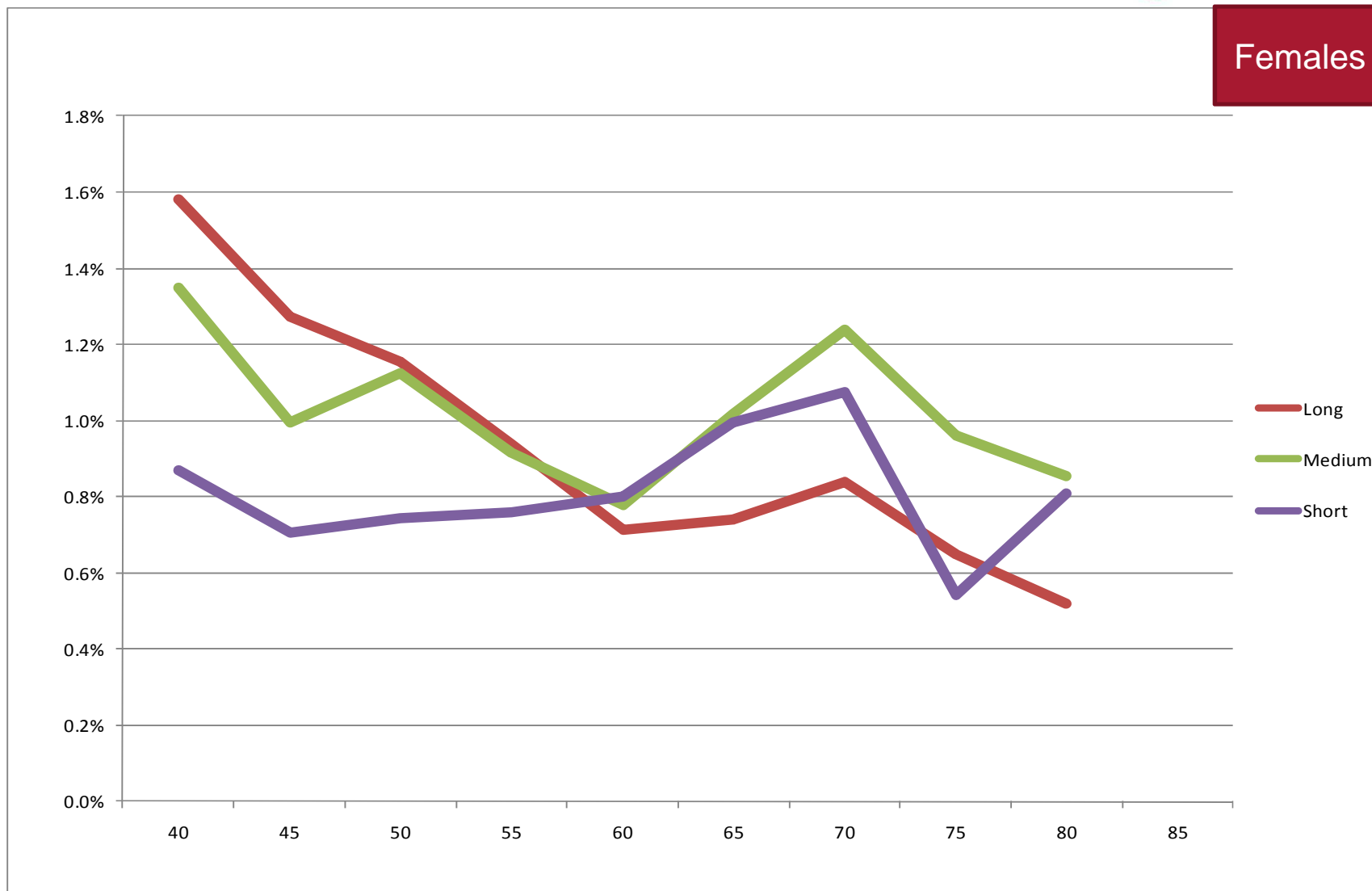
Crude Improvement Factors SA tables

Males



Crude Improvement Factors SA tables

Females

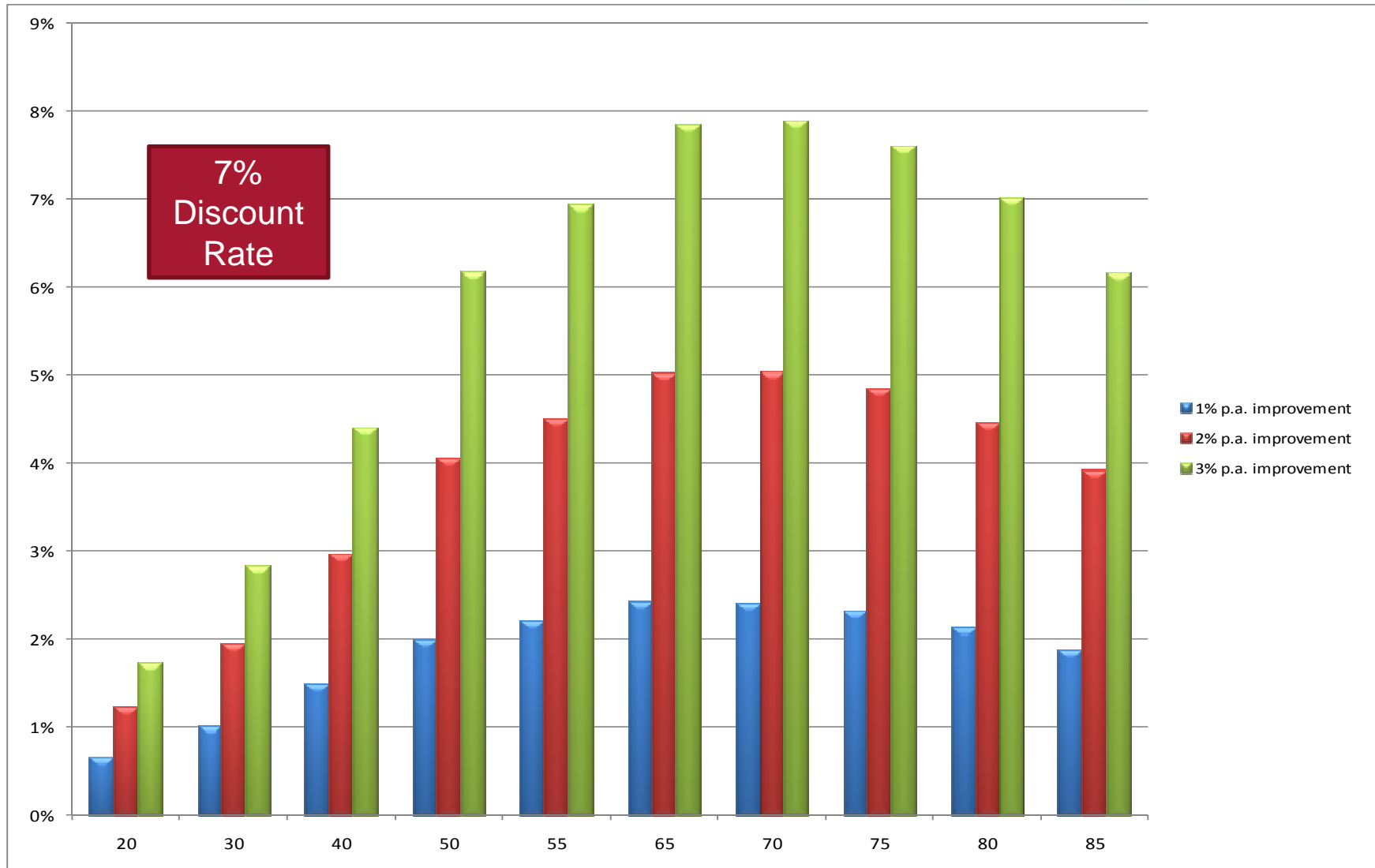


Impact of Mortality Improvements

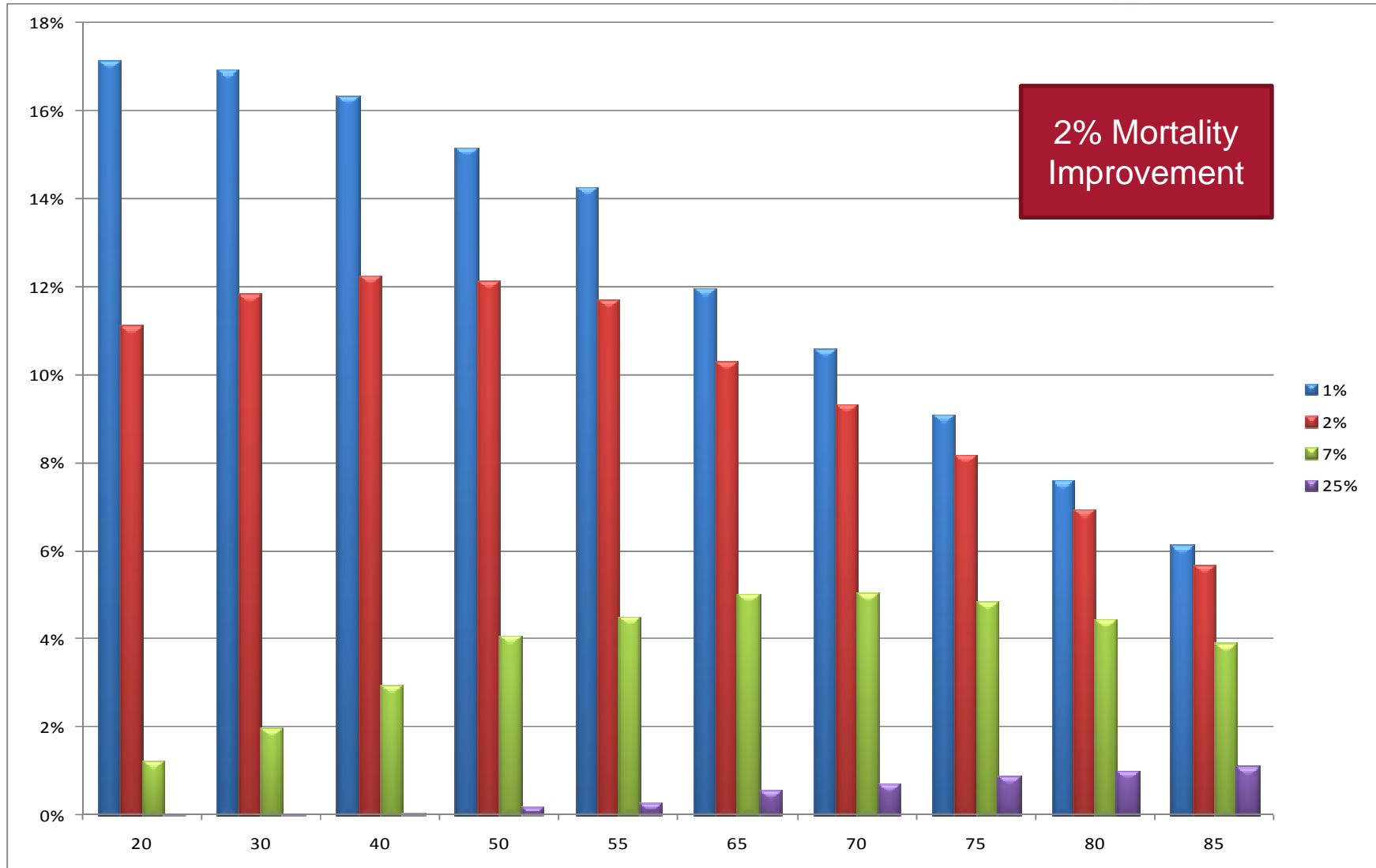
Impact of Mortality Improvements

- What does a 1% mortality improvement mean to me?
- Annuities and Insurance Products
- Impact on Present Value or Annual Level Premium
- Impact of interest rates

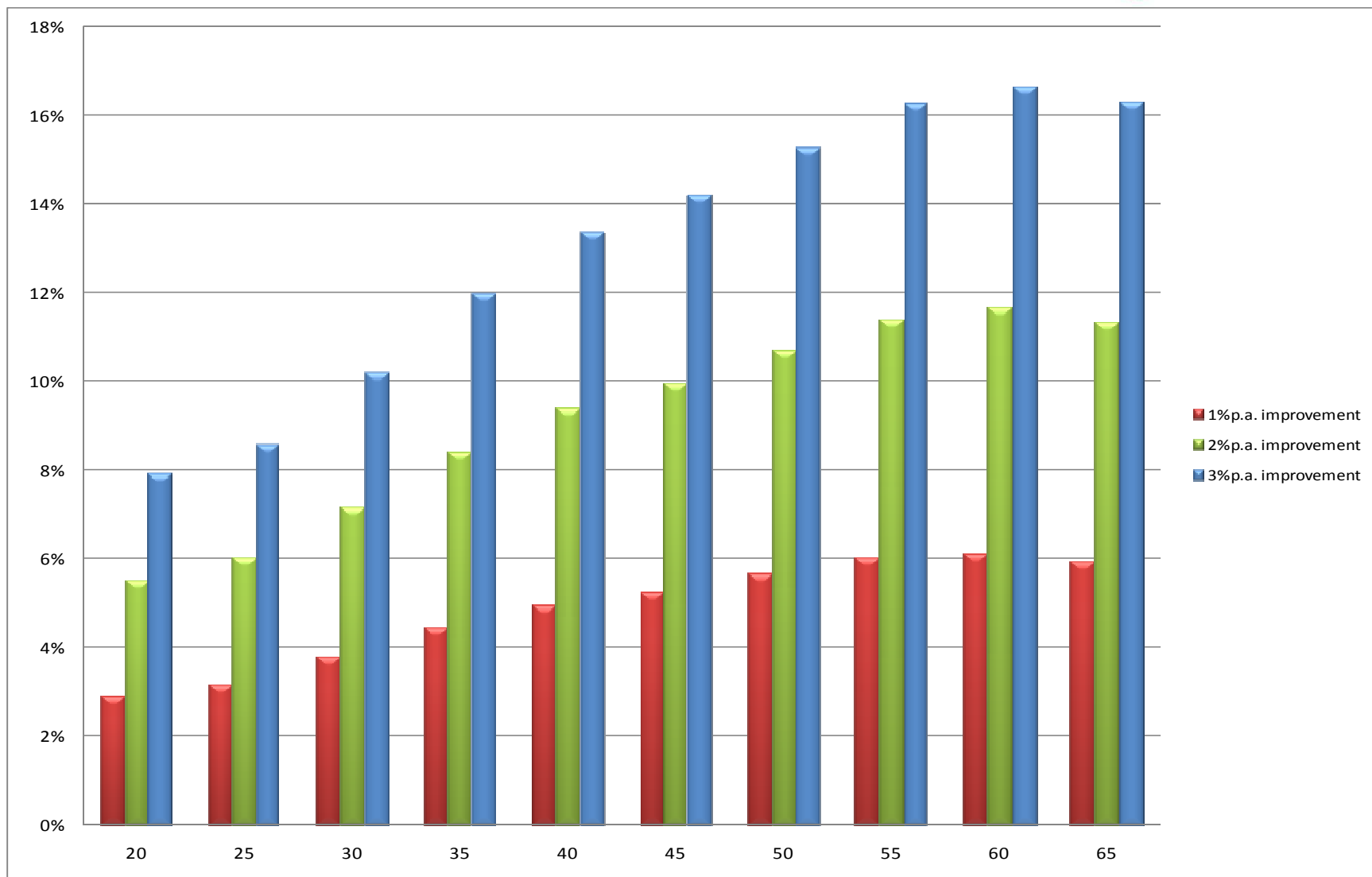
Increase in Present Value of Annuity



Increase in Present Value of Annuity



Reduction in Level Premium for WOL



Industry Views

South African Actuaries



- Surveyed members of Life Assurance and Retirement Matters
Committees of the Actuarial Society of South Africa
- 32 surveyed from Life Insurers and Consulting Actuaries
- Looking to ascertain
 - General views of mortality improvements
 - Views of research available
 - Assumptions being used in market
 - Importance of the topic

South African Industry Survey

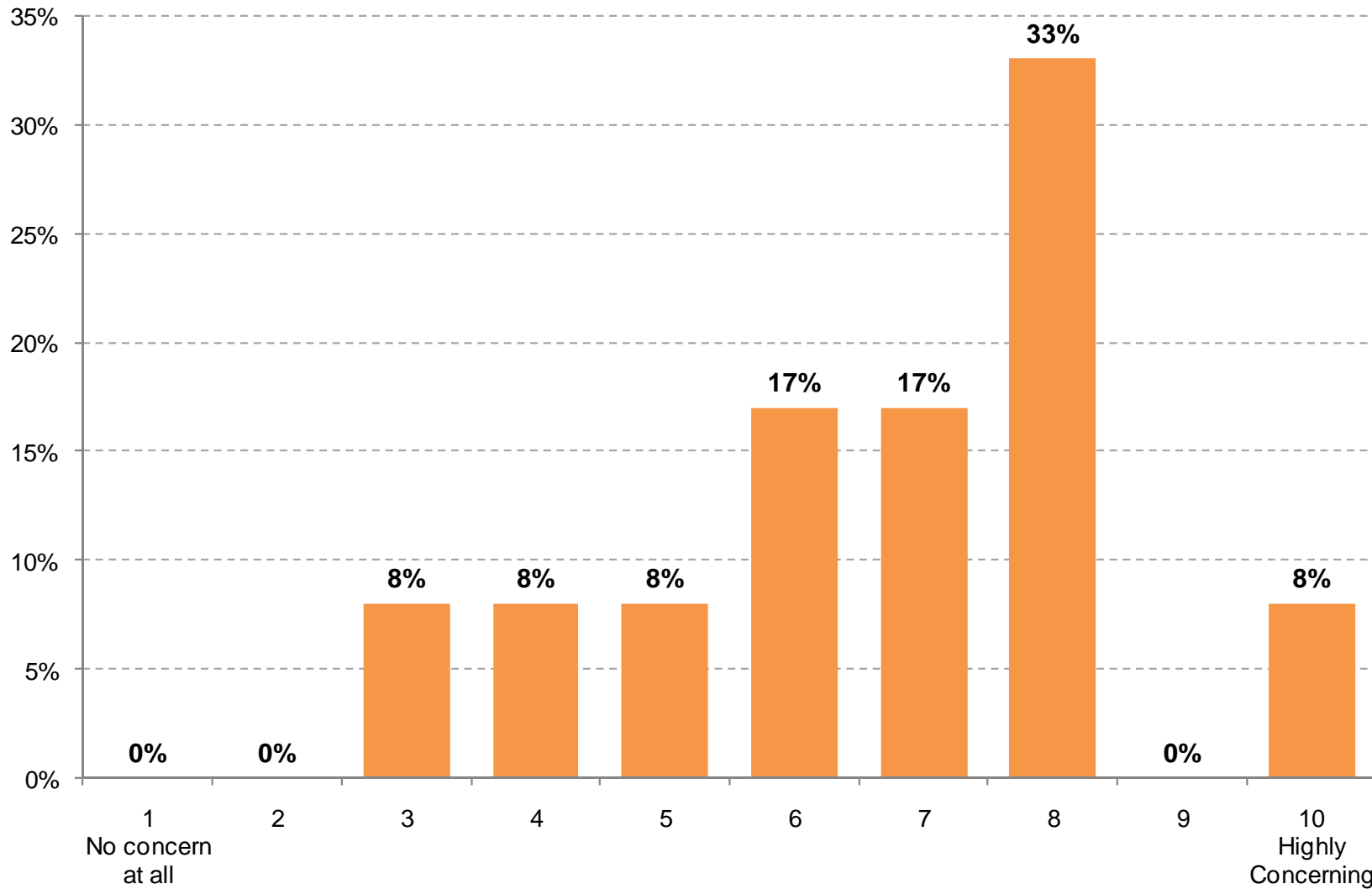


- Work completed by the CSI is outdated and / or inconclusive
- Not enough reliable data in the SA industry to enable a credible mortality improvement analysis
- A lack of appreciation for the extent of longevity risk - other risks (e.g. HIV AIDS) have taken priority
- The resources in the industry are committed towards the most pressing short-term issues
 - Solvency Assessment and Management (Solvency II)
 - Treating Customers Fairly

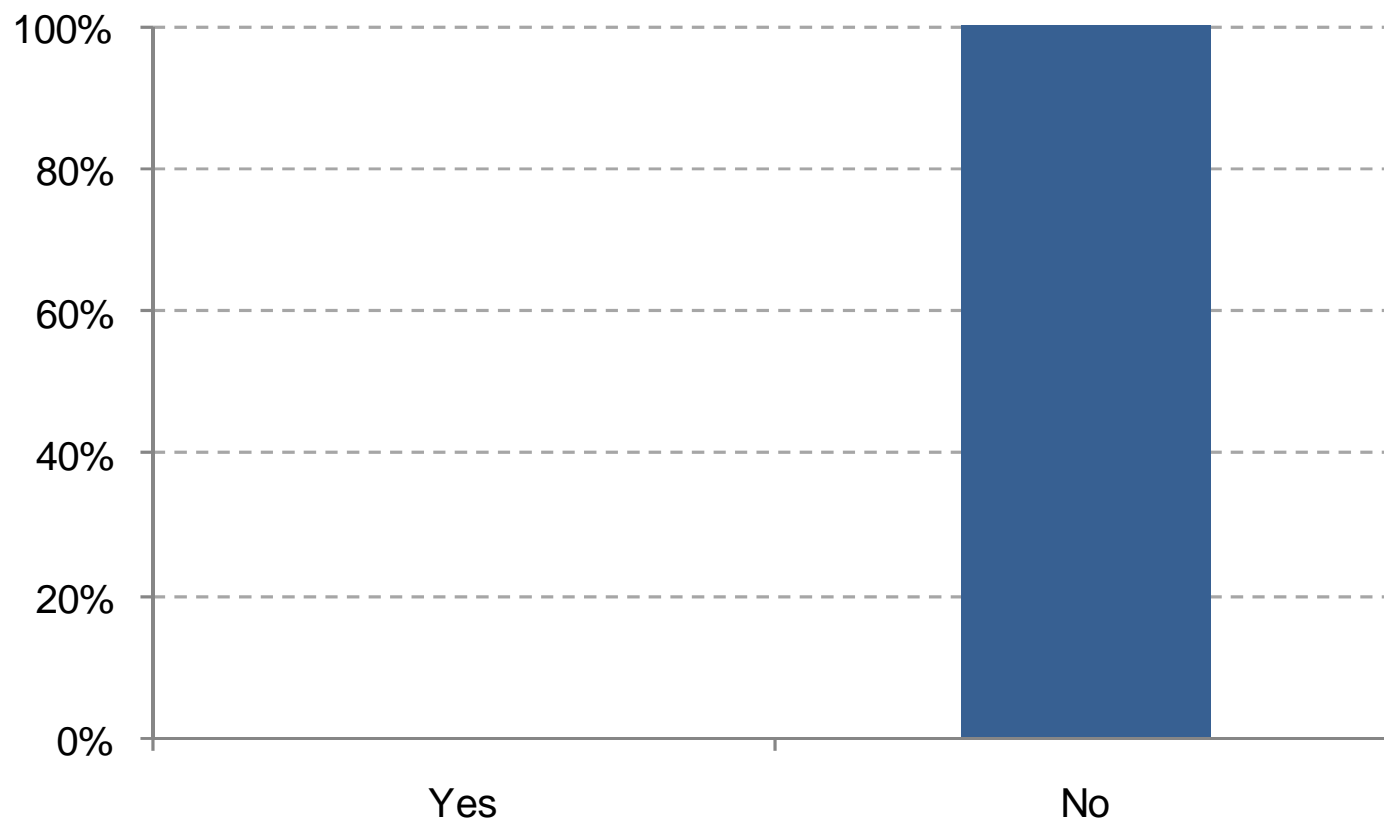
South African Industry Survey

- There is an overreliance on the research emanating from the United Kingdom
 - results from the UK are adjusted for use in SA (without substantive evidence for the adjustments) or;
 - they aren't adjusted and there is concern that these are then overly conservative.
 - There is some concern that this could have negative implications under the new "Treating Customers Fairly" framework.
 - Pension fund trustees have taken actuaries to task for assumptions set by reference to overseas longevity

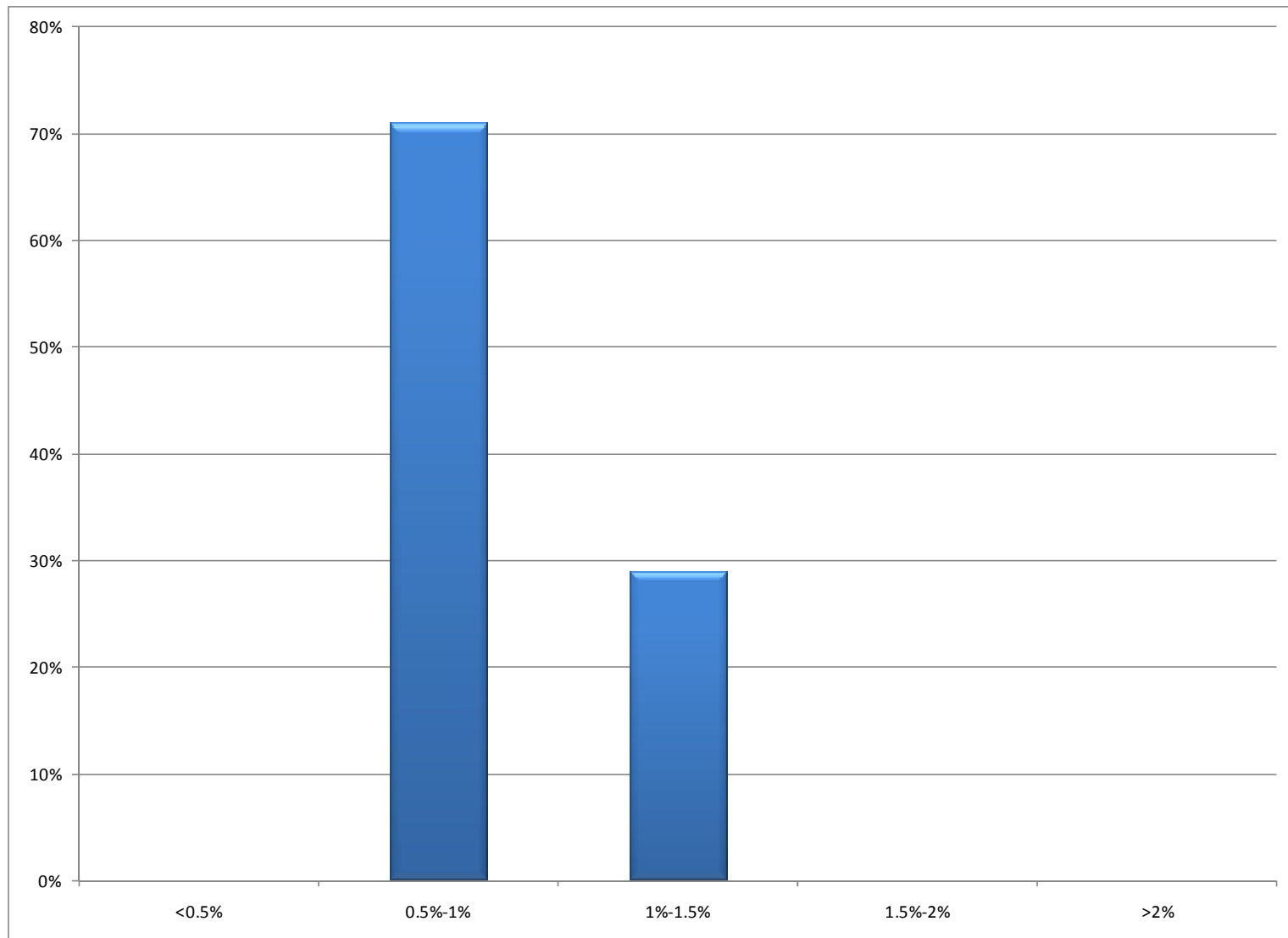
Are Mortality Improvements a Concern?



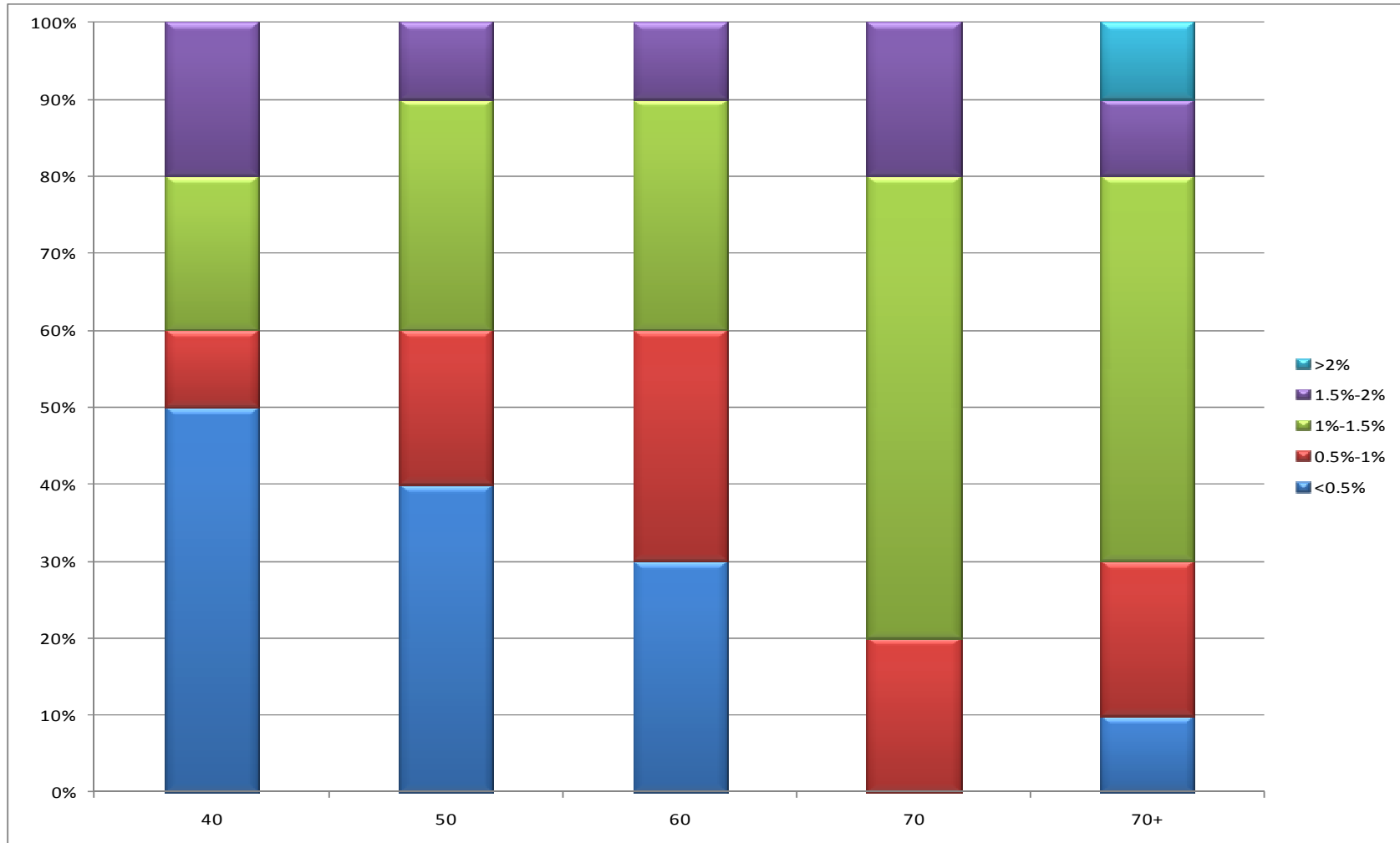
Enough SA Specific Research?



Average Long-term mortality improvement experienced?



Mortality Improvement Assumptions



Conclusion

- An issue that seems to be very important
 - Based on views of those surveyed
 - Potential financial / economic impact
- Moving to action
 - Response to HIV and AIDS
- Solution
 - Longevity Committee?
 - Ensuring your data can be used for this purpose?
 - More involvement at national level?
 - Dedicate resources?