MORTALITY PROJECTIONS

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Mortality Projections

- Brief description of the method of projecting mortality

- Show results

- Address the questions of projecting mortality by cause of death

Method of Projecting Mortality

☐ **Annual central death rates are the key variables used in the projections.**

    ❑ Central death rates for the starting year

    ❑ Annual rates of decline in the central death rates

Method of Projecting Mortality: Rates of decline in central death rates

- Historical average annual declines in central death rates are calculated
  - Over the most recent 20 year period (1986-2006)
  - For 21 age groups, 2 sexes, and 7 causes of death
- Ultimate average annual declines in central death rates are adopted by the Trustees
  - Reached in the 24th year following the year of the Trustees Report (2034)
  - For 5 age groups, 2 sexes, and 7 causes of death.
- Formula is used to transition from the average annual declines over the historical period to the ultimate rates of decline
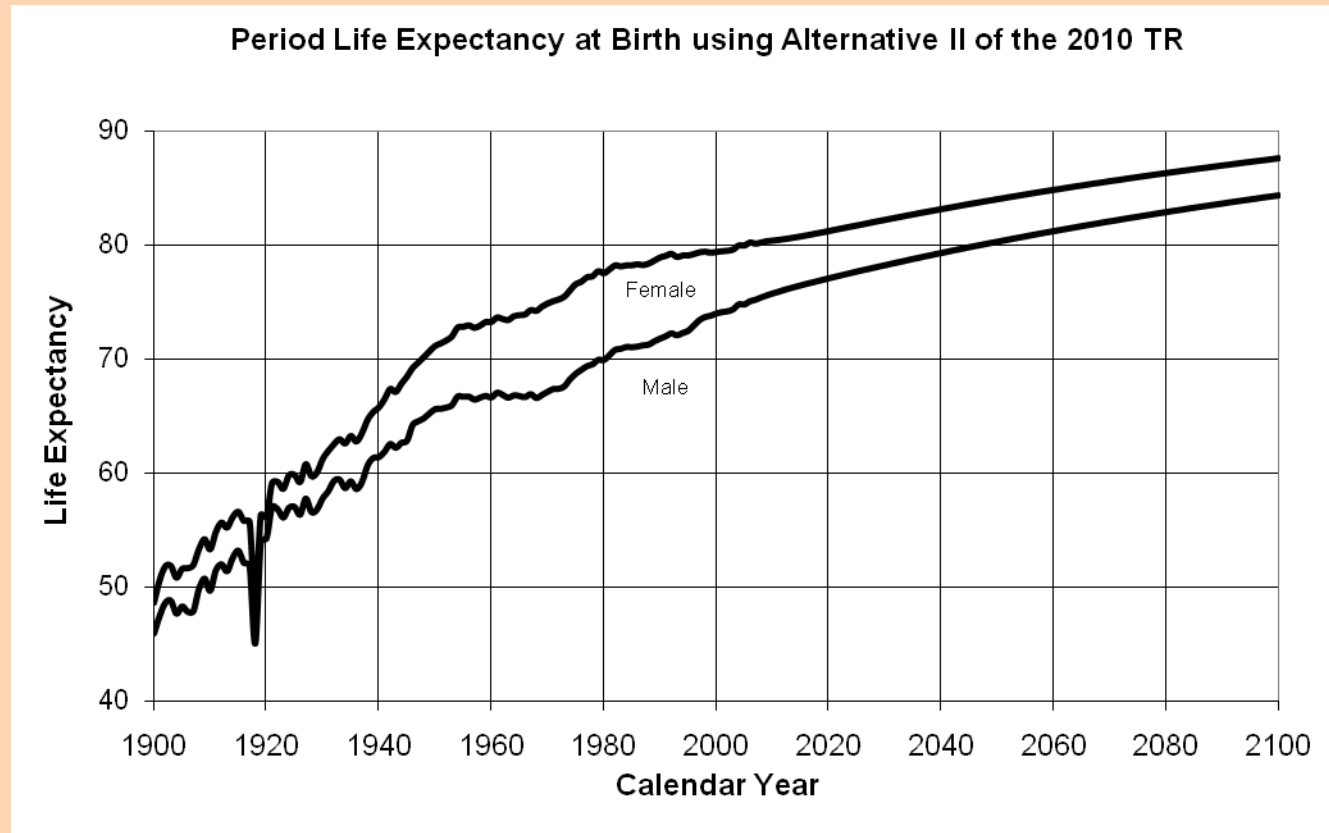
Mortality Results: Average Annual Rate of Decline in Age-Adjusted Central Death Rates

	Males			Females		
	Total	0-64	65+	Total	0-64	65+
1900 - 1936	0.72%	1.45%	0.20%	0.84%	1.64%	0.31%
1936 - 1954	1.57%	2.30%	1.18%	2.37%	3.78%	1.77%
1954 - 1968	-0.23%	0.03%	-0.35%	0.73%	0.74%	0.72%
1968 - 1982	1.77%	2.43%	1.49%	2.16%	2.45%	2.05%
1979 - 2006	1.09%	1.54%	0.92%	0.46%	1.03%	0.28%
1982 - 2006	1.12%	1.54%	0.97%	0.43%	0.99%	0.26%
1900 - 2006	**0.90%**	**1.48%**	**0.59%**	**1.36%**	**2.05%**	**1.03%**
2006 - 2034	0.92%	1.19%	0.84%	0.75%	1.07%	0.67%
2034 - 2084	**0.77%**	**1.00%**	**0.70%**	**0.76%**	**1.03%**	**0.70%**

Based on the intermediate assumptions
of the 2010 Trustees Report

Life Expectancy at Age 0

Period Life Expectancy at Birth using Alternative II of the 2010 TR

Life Expectancy at Age 65

Period Life Expectancy at Age 65 using Alternative II of the 2010 TR
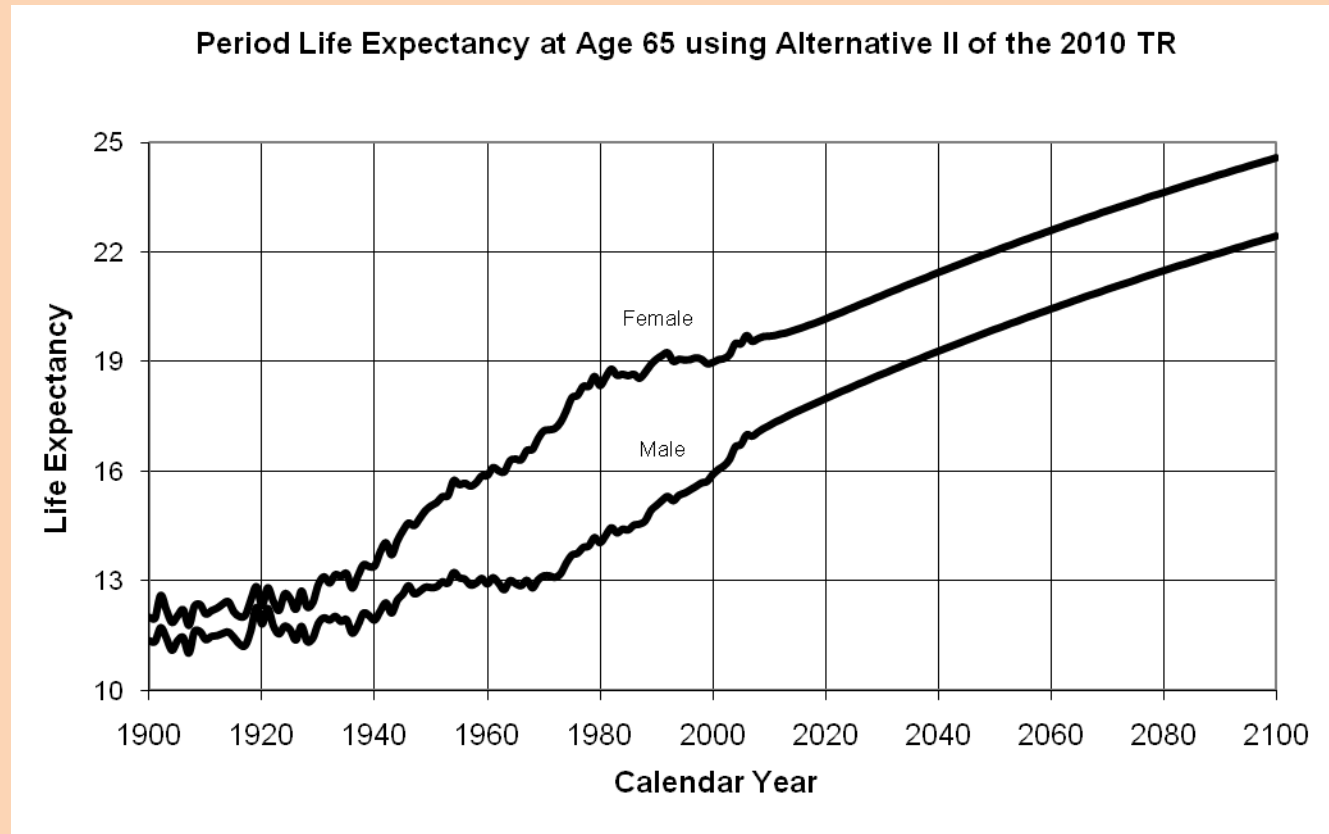
☐ In the past, the reduction of mortality rates has varied greatly by cause of death. In assessing past experience and future possible improvement in mortality, we believe it is useful to understand the variations in mortality by cause of death.

Projecting Mortality by Cause of Death

- The seven causes in the current mortality methodology are used as components in determining overall mortality.

- The resulting overall mortality is closely monitored for reasonableness and results in iterative change if unreasonable.

Projecting Mortality by Cause of Death

Annual Rates of Reduction in Central Death Rates for Age Group 65-84 by Sex and Cause:

Ages 65 - 84	Male	Female
	Ultimate	Ultimate
Heart Disease	2.2%	2.2%
Cancer	0.8	1.0
Vascular Disease	2.0	2.0
Violence	0.5	0.5
Respiratory Disease	0.3	0.3
Diabetes Mellitus	0.3	0.3
Other	0.3	0.3

Projecting Mortality by Cause of Death

Annual Rates of Reduction in Central Death Rates for Age Group 65-84 by Sex and Cause:

Ages 65 - 84	Male		Female	
	1979-2006	Ultimate	1979-2006	Ultimate
Heart Disease	3.0%	2.2%	2.7%	2.2%
Cancer	0.5	0.8	-0.5	1.0
Vascular Disease	2.8	2.0	2.2	2.0
Violence	0.8	0.5	0.1	0.5
Respiratory Disease	0.2	0.3	-2.9	0.3
Diabetes Mellitus	-2.4	0.3	-1.3	0.3
Other	-0.6	0.3	-1.7	0.3

Projecting Mortality by Cause of Death

- Results in a deceleration of the rate of decline in overall mortality as time marches forward.

- Both the 2003 and the 2007 Technical Panels recommended dropping separate projections by cause of death

- However, the concept of deceleration was endorsed by the 2003 and 2007 Technical Panel.

Projecting Mortality by Cause of Death

Effect of using cause of death in mortality projections

		Males			Females		
		Total	0-64	65+	Total	0-64	65+
2034-	*2059*	0.82%	1.04%	0.75%	0.81%	1.07%	0.75%
2059-	*2084*	0.73%	0.97%	0.66%	0.71%	1.00%	0.65%
2034-	*2084*	**0.77%**	**1.00%**	**0.70%**	**0.76%**	**1.03%**	**0.70%**

Based on the intermediate assumptions
of the 2010 Trustees Report