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Canadian Pensioners Mortality Improvement Rates by Data Source and Income: Impact on Life Expectancy and Present Value of an Annuity

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Canadian pensioners have experienced significant mortality improvement rates over the period ending in 2007. Recent findings on this topic by the presenter have been published by the Canadian Institute of Actuaries in 2013 (« *The Canadian Pensioners Mortality Table, Information on mortality for the triennial period ending December 31st, 2007 with data as at December 31st, 2008*» and « *The Canadian Pensioners Mortality Table, Historical Trends in Mortality Improvement and a Proposed Projection Model based on CPP/QPP data as at December 31st, 2007* »). The proposed projection model in the latter report was designed to fit some constraints for simplicity purposes, such as using a single projection scale by gender, irrespective of income level or data source (Quebec Pension Plan, Canada Pension Plan, both plans combined). Furthermore, the model used a set of three fixed future improvement rates, each held constant for a definite period, instead of a series of interpolated improvement rates.

This presentation will show the impact of relaxing these constraints, in consideration of the discrepancies observed in the recent history of mortality improvement rates as a function of gender, income and data source. Comparisons of various deterministic interpolation methods will be mentioned. The impact of using different sets of mortality improvement rates will be shown by measuring variations in the values of complete life expectancy or the present value of an annuity.