



Office of the Superintendent of
Financial Institutions Canada

Bureau du surintendant des
institutions financières Canada

Old Age Security Program Mortality Experience

Actuarial Study No. 17

June 2016
Office of the Chief Actuary



OSFI
BSIF

Canada

Office of the Chief Actuary
Office of the Superintendent of Financial Institutions Canada
12th Floor, Kent Square Building
255 Albert Street
Ottawa, Ontario
K1A 0H2

Facsimile: (613) 990-9900
E-mail address: oca-bac@osfi-bsif.gc.ca

An electronic version of this report is available
on our Web site: www.osfi-bsif.gc.ca

TABLE OF CONTENTS

	Page
I. Executive Summary.....	9
A. Purpose	9
B. Scope	9
C. Main Findings.....	9
D. Conclusion	13
II. Data and Methodology	14
A. Data Source and Validation.....	14
B. Methodology used for Calculating Mortality Rates	15
III. OAS Beneficiaries Mortality	16
A. Introduction	16
B. Benefit Eligibility and Amount	16
C. Overall Mortality Experience for Year 2013	19
D. Comparison of OAS and Population Mortality (2011)	26
E. Life Expectancies	27
IV. OAS Beneficiaries Mortality by Type of Benefit.....	29
A. Introduction	29
B. Mortality Experience by Type of Benefit for Year 2013	29
C. Life Expectancies by Type of Benefit	33
V. OAS Beneficiaries Mortality by Marital Status and Type of Benefit	35
A. Introduction	35
B. Mortality Experience by Marital Status and Type of Benefit for Year 2013	35
C. Life Expectancies by Marital Status and Type of Benefit.....	40
VI. OAS Beneficiaries Mortality by Place of Birth.....	44
A. Introduction	44
B. Mortality Experience by Place of Birth for Year 2013	44
C. Life Expectancies by Place of Birth	47
VII. OAS Beneficiaries Mortality Improvement Rates.....	49
VIII. Conclusion	59
IX. Annex – Detailed Tables by Year, Age and Sex	60
X. References and Acknowledgements	96

LIST OF TABLES

	Page
Table 1 Life Expectancies at Age 65 (2013).....	12
Table 2 OAS Beneficiaries (as at December 31 st).....	19
Table 3 OAS Beneficiaries Deaths (1999-2013).....	20
Table 4 Comparison of OAS Beneficiaries Deaths to Vital Statistics Deaths (2008-2012).....	22
Table 5 OAS Beneficiaries Exposures (2013).....	22
Table 6 Crude OAS Beneficiaries Mortality Rates (2013).....	23
Table 7 Graduated OAS Beneficiaries Mortality Rates (2013).....	24
Table 8 OAS Beneficiaries and Population Mortality (2011)	26
Table 9 OAS Beneficiaries Life Expectancies (2013).....	27
Table 10 OAS Beneficiaries and Population Life Expectancies at Age 65 (1999-2013)	27
Table 11 Beneficiaries by Type of Benefit (as at December 31 st 2013)	29
Table 12 Deaths by Type of Benefit (2013).....	30
Table 13 Exposures by Type of Benefit (2013)	30
Table 14 Mortality by Type of Benefit (2013).....	32
Table 15 Life Expectancies by Type of Benefit (2013).....	33
Table 16 Evolution of Life Expectancies at Age 65 by Type of Benefit (1999-2013).....	33
Table 17 Beneficiaries by Marital Status and Type of Benefit (as at December 31 st 2013).....	35
Table 18 Deaths by Marital Status and Type of Benefit (2013)	36
Table 19 Exposures by Marital Status and Type of Benefit (2013).....	37
Table 20 Graduated Mortality by Marital Status (2013).....	37
Table 21 Male Mortality by Marital Status and Type of Benefit (2013)	38
Table 22 Female Mortality by Marital Status and Type of Benefit (2013).....	39
Table 23 Life Expectancies by Marital Status (2013).....	40
Table 24 Evolution of Life Expectancies at Age 65 by Marital Status (2001-2013).....	40
Table 25 Life Expectancies by Marital Status and Type of Benefit (2013).....	41
Table 26 Evolution of Life Expectancies at Age 65 by Marital Status and Type of Benefit (2001- 2013)	42
Table 27 Beneficiaries by Place of Birth (as at December 31 st 2013)	44
Table 28 Deaths by Place of Birth (2013).....	45
Table 29 Exposures by Place of Birth (2013)	45
Table 30 Graduated Mortality by Place of Birth (2013)	46

Table 31	Life Expectancies by Place of Birth (2013)	47
Table 32	Evolution of Life Expectancies at Age 65 by Place of Birth (1999-2013)	48
Table 33	OAS Beneficiaries Average Annual Mortality Improvement Rates	49
Table 34	OAS Beneficiaries and Population Average Annual Mortality Improvement Rates	51
Table 35	Average Annual Mortality Improvement Rates by Type of Benefit (1999-2013)	52
Table 36	OAS and CPP Annual Mortality Improvement Rates – Males	55
Table 37	OAS and CPP Annual Mortality Improvement Rates – Females	57
Table 38	OAS Beneficiaries by Age and Sex (as at December 31st)	60
Table 39	OAS Beneficiaries Deaths by Age and Sex (1999, 2006 and 2013)	61
Table 40	OAS Beneficiaries Exposures by Age and Sex (1999, 2006 and 2013)	62
Table 41	OAS Beneficiaries Graduated Mortality Rates by Age and Sex (1999, 2006 and 2013)	63
Table 42	Life Table of OAS Beneficiaries (2013)	64
Table 43	OAS Beneficiaries to Population Mortality Ratios (2011)	65
Table 44	OAS Beneficiaries by Type of Benefit (as at December 31 st 2013)	66
Table 45	OAS Beneficiaries Deaths by Type of Benefit (2013)	67
Table 46	OAS Beneficiaries Exposures by Type of Benefit (2013)	68
Table 47	Graduated Mortality Rates and Ratios by Type of Benefit – Males (2013)	69
Table 48	Graduated Mortality Rates and Ratios by Type of Benefit – Females (2013)	70
Table 49	Life Table of OAS Beneficiaries without GIS (2013)	71
Table 50	Life Table of OAS Beneficiaries with GIS (2013)	72
Table 51	OAS Beneficiaries by Marital Status and Type of Benefit – Males (2013)	73
Table 52	OAS Beneficiaries by Marital Status and Type of Benefit – Females (2013)	74
Table 53	OAS Beneficiaries Deaths by Marital Status and Type of Benefit – Males (2013)	75
Table 54	OAS Beneficiaries Deaths by Marital Status and Type of Benefit – Females (2013)	76
Table 55	OAS Beneficiaries Exposures by Marital Status and Type of Benefit – Males (2013)	77
Table 56	OAS Beneficiaries Exposures by Marital Status and Type of Benefit – Females (2013)	78
Table 57	Graduated Mortality Rates and Ratios by Marital Status – Males (2013)	79
Table 58	Graduated Mortality Rates and Ratios by Marital Status – Females (2013)	80
Table 59	Life Table of OAS Married Beneficiaries (2013)	81
Table 60	Life Table of OAS Single Beneficiaries (2013)	82
Table 61	Male Graduated Mortality Rates by Age, Marital Status and Type of Benefit (2013)	83
Table 62	Female Graduated Mortality Rates by Age, Marital Status and Type of Benefit (2013)	84
Table 63	Life Table of OAS Married Beneficiaries without GIS (2013)	85

Table 64	Life Table of OAS Married Beneficiaries with GIS (2013)	86
Table 65	Life Table of OAS Single Beneficiaries without GIS (2013)	87
Table 66	Life Table of OAS Single Beneficiaries with GIS (2013)	88
Table 67	OAS Beneficiaries by Place of Birth (2013)	89
Table 68	OAS Beneficiaries Deaths by Place of Birth (2013)	90
Table 69	OAS Beneficiaries Exposures by Place of Birth (2013)	91
Table 70	Graduated Mortality Rates and Ratios by Place of Birth (2013)	92
Table 71	Life Table of OAS Beneficiaries Born In Canada (2013)	93
Table 72	Life Table of OAS Beneficiaries Born Outside Canada (2013)	94
Table 73	Life Expectancies at Age 65 by Type of Benefit, Marital Status and Place of Birth	95

LIST OF CHARTS

	Page
Chart 1 Distribution of OAS Beneficiaries Deaths (1999 and 2013)	21
Chart 2 OAS Beneficiaries Exposures by Age (2013).....	23
Chart 3 Crude OAS Beneficiaries Mortality Rates (2013)	24
Chart 4 Females to Males Graduated Mortality Ratios (2013).....	25
Chart 5 Crude and Graduated OAS Beneficiaries Mortality Rates (2013).....	25
Chart 6 OAS Beneficiaries to Population Mortality Ratios (2011)	26
Chart 7 Evolution of OAS and Population Life Expectancies at 65 (1999-2011).....	28
Chart 8 Evolution of OAS Life Expectancy at Age 65 by Gender (1999-2013).....	28
Chart 9 Exposures by Type of Benefit (2013)	31
Chart 10 OAS Beneficiaries Mortality Ratios by Type of Benefit (2013)	32
Chart 11 Evolution of Life Expectancies at Age 65 by Type of Benefit (1999-2013).....	34
Chart 12 OAS Beneficiaries Mortality by Marital Status (2013)	38
Chart 13 Mortality Ratios by Marital Status, and Type of Benefit - Males (2013).....	38
Chart 14 Mortality Ratios by Marital Status and Type of Benefit - Females (2013)	39
Chart 15 Evolution of Life Expectancies at Age 65 by Marital Status (2001-2013).....	41
Chart 16 Life Expectancies at Age 65 by Marital Status and Type of Benefit (2001-2013).....	43
Chart 17 OAS Beneficiaries Mortality Ratios by Place of Birth (2013)	46
Chart 18 Evolution of Life Expectancies at Age 65 by Place of Birth (1999-2013).....	48
Chart 19 OAS Beneficiaries Mortality Improvement Rates	50
Chart 20 OAS Beneficiaries Mortality Improvement Rates by Type of Benefit (1999-2013).....	53
Chart 21 Mortality Improvement Rates of OAS and CPP by Type of Benefit– Males 65-74	55
Chart 22 Mortality Improvement Rates of OAS and CPP by Type of Benefit – Males 75-89	56
Chart 23 Mortality Improvement Rates of OAS and CPP by Type of Benefit– Females 65-74	57
Chart 24 Mortality Improvement Rates of OAS and CPP by Type of Benefit– Females 75-89	58

I. Executive Summary

A. Purpose

The OAS basic pension is a monthly benefit available to most Canadians 65 years of age or older, who meet residence and legal status requirements. The OAS basic pension is subject to a repayment amount or recovery tax for those with income exceeding a specified level. The OAS program also includes a Guaranteed Income Supplement (GIS) which is a monthly benefit paid to residents of Canada who receive a full or partial OAS basic pension and who have little or no other income.

This study is the third OAS mortality study published by the Office of the Chief Actuary (OCA). Similar to the two preceding OAS mortality studies (Actuarial Studies Nos. 5 and 11), this study excludes OAS benefits paid under international agreements and covers only benefits paid under the domestic OAS program. The availability of an administrative OAS beneficiaries database provided by Service Canada allows a more accurate measurement of the level and trend in mortality experienced by the oldest portion of the Canadian population over the period from 1 January 1999 to 31 December 2013. The longer experience period of this study, relative to its two predecessors provides for the analysis of changes in trends of mortality within the experience period. This study accounts for over 64 million life-years of exposure and about 2,753,000 deaths.

The OCA will use the results of this study to assess the mortality characteristics of the overall Canadian population and of OAS program beneficiaries when producing its next triennial OAS Actuarial Report.

B. Scope

Section II describes the data and methodology used to analyze the OAS program beneficiaries mortality experience. Section III presents the overall mortality experience of OAS beneficiaries. Also included in section III is a comparison with the Canadian population mortality (taken from the Canadian Human Mortality Database¹ (CHMD) for year 2011).

A comparison of mortality rates by type of benefit is presented in Section IV while Section V presents the level of mortality by marital status and type of benefit. Section VI presents the level of mortality by place of birth. Section VII next presents an analysis of the trends in mortality improvement rates over the experience period. A conclusion of the study then follows in Section VIII. Detailed tables are provided in the Annex of the study, and lists of the references used and contributors to the study are provided at the end.

Throughout this study, the terms “OAS” and “OAS program” are used interchangeably to refer to the OAS program. Also, all life expectancies presented in this study refer to period life expectancies (i.e., without assumed future mortality improvements).

C. Main Findings

Life Expectancies of OAS Beneficiaries

- In 2013, the life expectancies at age 65 for OAS beneficiaries are 18.9 years for males and 21.8 years for females. These are 2.8 years and 1.9 years higher than the corresponding life expectancies observed in 1999. As such, the gap in life expectancies between females and males decreased from 3.8 years in 1999 to 2.9 years in 2013.

¹ Website address <http://www.bdlc.umontreal.ca/chmd/index.htm>

- Based on the more recent mortality data for 2013, at ages 65 to 80, female OAS program beneficiaries experience mortality rates that are about two thirds of those for males.
- In 2011, life expectancies at age 65 for the overall Canadian population as reported in the 2011 CHMD are 18.9 years for males and 21.8 years for females. These population life expectancies are 0.3 year higher than the life expectancies of overall OAS beneficiaries which are 18.6 years for males and 21.5 years for females.
- Older Canadians are living longer but the growth in life expectancy of 1.6 months per year over the most recent period from 2010 to 2013 has been lower than the 2 months per year experienced over the previous decade. Similar trends have been observed in the United States and in the United Kingdom.

Life Expectancies by Type of Benefit

- In 2013, the life expectancy at age 65 for males not receiving the GIS benefits is 19.7 years, which compares to 17.1 years for those receiving the GIS. The corresponding life expectancies at age 65 for females are 22.7 years for those not receiving the GIS, compared to 20.4 years for GIS beneficiaries.
- Over the last 15 years, for both sexes combined, low income beneficiaries (those receiving GIS) have seen their life expectancy increase by more than two years; about the same pace as those with higher income (those not receiving GIS).
- The gap in life expectancies at age 65 between beneficiaries not receiving the GIS and those receiving the benefit has shown little variability over the period 1999 to 2013. In 1999, the differential was 2.5 years for males and 2.1 years for females, while in 2013 the differential is 2.7 years for males and 2.2 years for females.

Life Expectancies by Marital Status and Type of Benefit

- In 2013, the life expectancies at age 65 are 20.0 years for married males and 16.5 years for single males. The corresponding life expectancies at age 65 for married and single females are 23.0 years and 20.8 years.
- In 2013, singles experience mortality that is about twice the level of married beneficiaries for both sexes at age 65.
- The gap in life expectancies at age 65 between married and single beneficiaries has remained relatively stable for both sexes over the period 2005 to 2013. In 2005, the differential by marital status was 3.8 years while the differential for females was 2.2 years. In 2013, the differentials between married and single beneficiaries are 3.5 years and 2.1 years for males and females, respectively.
- In 2013, for both sexes in general, single beneficiaries in receipt of the GIS have the lowest life expectancies while married beneficiaries not receiving the GIS have the highest life expectancies.

Life Expectancies by Place of Birth

- OAS beneficiaries born outside Canada experience lower mortality than those born in Canada. This may be explained by the “healthy immigrant effect”¹, which results from several factors,

¹ Vang Z., Sigouin J., Flenon A., and Gagnon A. 2015, The Healthy Immigrant Effect in Canada: A Systematic Review. Population Change and Lifecourse Strategic Knowledge Cluster Discussion Paper Series: Vol 3: Iss. 1, Article 4.

including medical and employability screening prior to entry to Canada as well as cultural and lifestyle characteristics.

- In 2013, the life expectancies at age 65 are 20.3 years for male OAS beneficiaries born outside Canada and 18.4 years for those born in Canada. The corresponding life expectancies for females at age 65 are 23.1 years and 21.3 years.
- The gap between the life expectancies at age 65 of OAS beneficiaries born outside Canada and those born in Canada has increased for both sexes over the period 1999 to 2013. In 1999, the differential by place of birth was 1.5 years for males and 0.9 of a year for females. In 2013, the differential by place of birth for both males and females is 1.9 years.

Mortality Improvements

- The average annual mortality improvement rate for males in the age group 65 to 74 over the period 1999 to 2013 has been 2.8%, and this compares to a level of 1.8% over the more recent period 2010 to 2013. In comparison, for the same age group, the average annual mortality improvement rate for females has shown little change, standing at 1.8% for both the 1999 to 2013 and 2010 to 2013 periods.
- For both sexes, mortality improvements for beneficiaries in receipt of the GIS have generally been lower than for beneficiaries not receiving the GIS. Over the period 1999 to 2013, for ages 65 to 74, those in receipt of the GIS experienced an average annual mortality improvement rate of 2.1% and 1.4% for males and females, respectively. These compare to average annual improvement rates of 3.2% for males and 2.1% for females not in receipt of the GIS. These improvement rates have been somewhat lower over the more recent period 2010 to 2013.
- The average annual mortality improvement rates for OAS beneficiaries are at the same levels as those derived from the general population mortality (CHMD 2011) and those that were assumed for the 12th OAS Program Actuarial Report for the first five years of the projections (2010-2014). Over the period 1999 to 2013, average annual mortality improvement rates of beneficiaries not receiving the GIS and beneficiaries receiving a high CPP retirement pension have been generally at the same level. Over the period 1999 to 2013, for the age group 65 to 74, male beneficiaries not receiving the GIS experienced an average annual improvement rate of 3.2% compared to 3.5% for CPP beneficiaries with a high pension. For females, the improvement rates have been 2.1% and 1.8%, respectively.

Other Observations

Table 1 Life Expectancies at Age 65 (2013)

Type of Benefit	Number of Years		
	Males	Females	Female – Male Differential
OAS program	18.9	21.8	2.9
OAS with GIS (low-income)	17.1	20.4	3.3
OAS without GIS (middle to high income)	19.7	22.7	3.0
Differential without and with GIS	2.6	2.3	
Single	16.5	20.8	4.3
Married	20.0	23.0	3.0
Differential Married and Single	3.5	2.2	
OAS with GIS Single (low-income)	15.1	19.9	4.8
OAS without GIS Single (middle to high income)	17.7	21.8	4.1
Differential without GIS and with GIS Single	2.6	1.9	
OAS with GIS Married (low-income)	18.6	21.4	2.8
OAS without GIS Married (middle to high income)	20.4	23.5	3.1
Differential without GIS and with GIS Married	1.8	2.1	
Born in Canada	18.4	21.3	2.9
Born outside of Canada (immigrants)	20.3	23.1	2.8
Differential immigrants and born in Canada	1.9	1.8	

In 2013:

- Middle to high income seniors not in receipt of GIS, are expected to receive their benefits for about two and a half years more than low-income seniors in receipt of GIS.
- Married seniors are expected to receive their benefits between two to three and a half years more than single seniors. This difference is more pronounced for males than for females.
- Middle to high income single seniors not in receipt of GIS are expected to receive their benefits between two and two and a half years more than low-income single seniors in receipt of GIS.
- Middle to high income married seniors not in receipt of GIS are expected to receive their benefits for two years more than low-income married seniors in receipt of GIS.
- Middle to high income married female seniors not in receipt of GIS are expected to receive their benefits for eight years more than low-income single male seniors in receipt of GIS (15.1 vs. 23.5 years).
- Seniors born in abroad are expected to receive their benefits for two years more than those born in Canada.

D. Conclusion

In general, this study confirms the results that were obtained by the previous OAS program beneficiaries mortality studies. The analysis by type of benefit received shows that beneficiaries who do not receive the GIS experience lower mortality relative to the mortality of those beneficiaries who receive the GIS. The analysis by marital status shows that beneficiaries who are married experience lower mortality relative to the mortality of single beneficiaries. The analysis by place of birth shows that beneficiaries who were born outside Canada experience lower mortality compared to beneficiaries born in Canada.

The study also reveals that mortality improvement rates over the more recent period from 2010 to 2013 have been somewhat lower than improvement rates experienced over the longer period from 1999 to 2013.

II. Data and Methodology

A. Data Source and Validation

The main source of data for this study is an administrative seriatim (i.e., by non-identifiable individual record) OAS program beneficiary database that was provided to the OCA by Service Canada which is the administrator of the OAS program. The OAS database contains information on the amount of regular monthly benefits received by each OAS program beneficiary along with the associated payment status (i.e., whether in pay, suspended or terminated) at each December 31 for years 1999 to 2013 inclusive. The OAS database allows for the identification of those receiving the GIS benefit in addition to the basic OAS pension due to having no or very low income¹.

The Canada Revenue Agency (CRA) database available to the OCA was also used for this study to confirm the date of death and determine the marital status, if that information was not available solely from the OAS database.

Data validation was performed on all data records. The validation indicated that only a small portion of all beneficiary records (less than 0.1% of records) had incorrect or missing data, and thus were discarded. Also, due to data limitations more credibility should be attached to the marital status classification for years 2005 to 2013 as opposed to years 2001 to 2004.

This study is based on the number of deaths and life-years of exposures determined for each class of OAS beneficiaries. In this study, for any given calendar year, the term “life-years of exposures” (or simply “exposures”) at age “ x ” last birthday (i.e. attained age as at the last birthday) is defined as the amount of time for which a beneficiary was exposed to the risk of death at age “ x ” during that year.

- For beneficiaries who are age “ x ” on 1 January of a calendar year, life-years of exposures at age “ x ” are measured from January 1st to the earliest of a beneficiary’s time of death or time he/she reaches age “ $x+1$ ”.
- For beneficiaries who are age “ $x-1$ ” on 1 January of a calendar year, life-years of exposures at age “ x ” are measured from the time a beneficiary reaches age “ x ” to the earlier of the beneficiary’s time of death or the end of the calendar year.
- For new beneficiaries who come into pay at age “ x ” during a given calendar year, life-years of exposures at age “ x ” are measured from the time an individual becomes a beneficiary to the earlier of the beneficiary’s time of death, time they reach age “ $x+1$ ”, or the end of the calendar year.
- For new beneficiaries who come into pay at age “ $x-1$ ” during a given calendar year, life-years of exposures at age “ x ” are measured from the time the new beneficiary reaches age “ x ” to the earlier of the beneficiary’s time of death or the end of the calendar year.

Throughout this study, the terms “OAS” and “OAS program” are used interchangeably to refer to the OAS program. Also, all life expectancies presented in this study refer to period life expectancies (i.e., without assumed future mortality improvements).

¹ The level of income used to determine the level of GIS entitlement as defined under the *Old Age Security Act* excludes any benefits received from the OAS program, employment income up to \$3,500, and other amounts.

B. Methodology used for Calculating Mortality Rates

This section provides a general overview of the methodology used in the development of the mortality rates of OAS beneficiaries over the experience periods running from 1 January 1999 to 31 December 2013.

The graduated OAS beneficiary mortality rates are derived using the following two-step process:

1. Crude Mortality Rates

For all beneficiary subclasses, the crude mortality rate for a given calendar year, age “ x ”, and sex is defined as the probability that a person of age “ x ” will die between ages “ x ” and “ $x+1$ ” during the given year. Crude mortality rates are usually calculated by simply dividing the relevant number of deaths by the number of life-years of exposures (defined above) over the given year or period. For this study, annual crude mortality rates are determined using the Product-Limit Estimator (PLE) method, also known as the Kaplan-Meier Product-Limit Estimator method by using the survival rates (see Appendix B of Actuarial Study No.11). For the overall OAS program experience, the highest ages for which the crude mortality rates were judged to be statistically credible are age 96 for males and 100 for females.

2. Graduated Mortality Rates

For a given calendar year, the crude OAS beneficiaries mortality rates by year, age, sex, and various other subclasses (i.e. by type of benefit, marital status and place of birth), were graduated through the age dimension to reflect a compromise between smoothness and fit. A graduation method was used to produce smoothed rates up to the highest advanced age, such that the trend in mortality over that age and the previous three ages was deemed to provide the best fit for convergence to the ultimate mortality rates at age 120 of 700 deaths per 1,000 males and 650 deaths per 1,000 females.

III. OAS Beneficiaries Mortality

A. Introduction

This section presents the overall mortality of OAS beneficiaries over the period 1999 to 2013. One of the objectives of this study is to develop mortality adjustment factors that reflect the differences between OAS beneficiary mortality and general population mortality for the purpose of the actuarial valuations of the OAS program. The term “general population” in this study is used to refer to the population of Canada, as this is very close to the population covered by the OAS program. As was done in the previous two OAS mortality studies, the OAS benefits provided through the International Agreements have been excluded from this study.

B. Benefit Eligibility and Amount

OAS Basic Pension

The OAS basic pension is a monthly benefit available, on application, to anyone aged 65 or over who meets the residence and legal status requirements specified in the *Old Age Security Act*.

To be eligible for a OAS basic pension, a person must be 65 years of age or over, and

- must be a Canadian citizen or a legal resident in Canada on the day preceding the approval of his or her application; or
- if the person no longer lives in Canada, must have been a Canadian citizen or a legal resident of Canada on the day proceeding the day he or she stopped living in Canada.
- must have resided in Canada for a minimum of 10 years after reaching age 18. To receive the OAS pension outside the country, a person must have lived in Canada for at least 20 years after reaching age 18.

As of 1 January 2011, the OAS pension is not payable to any individual incarcerated in an institution as per the provisions of the *Eliminating Entitlements for Prisoners Act*.

The amount of a beneficiary’s OAS pension is determined by how long he or she has lived in Canada, according to the following rules:

- A person who has lived in Canada, after reaching age 18, for periods that total at least 40 years may qualify for a full OAS basic pension.
- A person who has not lived in Canada for 40 years after reaching age 18 may still qualify for a full pension if, on 1 July 1977, he or she was 25 years of age or over, and
 - lived in Canada on that date, or
 - had lived in Canada before that date and after reaching age 18, or
 - possessed a valid immigration visa on that date.

In such cases, the individual must have lived in Canada for the 10 years immediately prior to the approval of the application for the pension. Absences during this 10-year period may be offset if, after reaching age 18, the applicant was present in Canada before those 10 years for a total period that was at least three times the length of absence. In this instance, however, the applicant must also have lived in Canada for at least one year immediately prior to the date of the approval of the application. For example, an absence of two years between the ages of 60 and 62 could be offset by six years of presence in Canada after age 18 and before reaching age 55.

- A person who cannot meet the requirements for the full OAS pension may qualify for a partial pension. A partial pension is earned at the rate of $1/40^{\text{th}}$ of the full monthly pension for each complete year of residence in Canada after reaching age 18. Once a partial pension has been approved, it may not be increased as a result of additional years of residence in Canada. As an example, an individual with 20 complete years of residence in Canada at the time of application for the OAS pension would be entitled to 50% (or $20/40$) of the maximum monthly OAS pension for the remainder of his/her lifetime.

Effective 1 July 2013, individuals may opt to defer receiving the OAS basic pension by up to five years after the eligible age in exchange for a higher pension. The deferred pensions are actuarially adjusted upward by 0.6% per month for each month after age 65, up to a maximum of 36% after five years of deferral. The upward adjustment to the pension is permanent.

The OAS basic pension is subject to income tax. The maximum monthly pension payable at age 65 was \$570.52 during the second quarter of 2016. The OAS basic pension is adjusted quarterly in line with changes in the Consumer Price Index (CPI).

The amount of pension paid to persons with high incomes is reduced through a provision of the *Income Tax Act* often referred to as the “OAS Recovery Tax”. For benefits payable in 2016, the reduction applies to individuals whose total net annual income exceeds \$73,756 for that year. For every dollar of income above this limit, the amount of basic pension is reduced by 15 cents.

Guaranteed Income Supplement

The GIS is a monthly benefit paid to residents of Canada who receive an OAS basic pension (either the full amount or a partial amount) and who have little or no other income.

To receive the GIS, a person must be receiving an OAS basic pension. Payment of the GIS may begin in the same month as payment of the basic pension.

The amount of the GIS to which a person is entitled depends on his or her length of residence in Canada, marital status (single or married), and income as defined under the *Old Age Security Act*. The amount of GIS monthly payments may increase or decrease according to reported changes in the previous year’s income. However, in cases where there is a loss of pension income, an estimate of income may be substituted for the income of the previous year.

In general, income as defined under the *Income Tax Act* is included subject to certain deductions in determining eligibility for the GIS. Deductions from income include any payments received under the OAS program (basic pension, GIS, and Allowance benefits) and employment income up to \$3,500. If the person is married (or living in a common-law relationship), the combined income of the person and his or her spouse or common-law partner is taken into consideration. However, a spouse or common-law partner who becomes involuntarily separated due to, for example, incarceration or institutionalization of her or her spouse or partner, is considered to be single in regard to determination of the GIS benefit. Unlike the OAS basic pension, the GIS is not subject to income tax.

The GIS is not payable outside Canada beyond a period of six months following the month of departure from Canada, regardless of how long the person lived in Canada. To be entitled to a full GIS benefit, persons admitted to Canada after 6 March 1996 and persons qualifying for benefits from 2001 onward must have resided in Canada for at least 10 years after reaching age 18. If a person to whom either of these conditions applies has less than 10 years of residence, a partial benefit is provided, subject to certain conditions. The partial benefit is calculated at the rate of $1/10^{\text{th}}$ of the amount of the full benefit for each complete year of residence in Canada after age 18. The proportion payable is

recalculated each year, taking into account additional residence in Canada during the previous year, building gradually to a full benefit after 10 years.

There are two rates of payment for a GIS benefit. The single rate applies to single individuals – including widowed, divorced or separated persons as well as individuals who have never married and to persons for whom their spouses or common-law partners do not receive either the OAS pension or Allowance. The single rate also applies to spouses or common-law partners who become involuntarily separated from their spouses or partners as mentioned above. Effective 1 July 2011, income-tested top-up benefits are payable to GIS recipients. During the second quarter of 2016, the maximum monthly GIS single benefit (including the top-up) was \$773.60. At income limits of \$17,304 and \$4,592, no GIS single benefit and no top-up (singles), respectively, are payable.

The married rate applies both to legally married couples and to couples living in common-law relationships, where either both spouses are OAS pensioners or where one spouse is eligible for the Allowance benefit. During the second quarter of 2016 the maximum monthly GIS married benefit (including the top-up) was \$512.96. At income limits of \$22,848 and \$7,648, no GIS married benefit and no top-up (couples), respectively, are payable.

A special provision applied to persons who receive a partial OAS pension. In this case, the supplement is increased by the difference between the maximum OAS pension and the partial OAS pension in order to provide the same combined monthly pension and supplement to beneficiaries with the same level of income. The additional amount may result in the supplement exceeding the maximum GIS payable.

All GIS benefits are adjusted quarterly in line with changes in the CPI. No actuarial adjustment is applied to GIS benefits payable to OAS pensioners who defer receiving their basic pensions in exchange for actuarially-adjusted higher pensions.

C. Overall Mortality Experience for Year 2013

1. Beneficiaries

Historical data on the number of OAS beneficiaries by age and sex are presented in Table 2. As females live longer than males, female beneficiaries are on average distributed more toward the advanced ages. In 2013, 30% of female beneficiaries are aged 80 and over compared to 23% for males. There were over 7,300 centenarians in 2013, of which 84% were females.

The number of male beneficiaries has increased by 50% from 1.6 million in 1999 to 2.4 million in 2013. Over the same period, the number of female beneficiaries increased by 36%, from 2.1 million in 1999 to 2.9 million in 2013. The steeper increase in the number of male beneficiaries can be attributed to the higher mortality improvement rates for males over that period.

Table 2 OAS Beneficiaries (as at December 31st)

Age Group	Males					
	Number			Distribution		
	1999	2006	2013	1999	2006	2013
65-69	522,167	574,894	804,006	33%	31%	34%
70-74	436,540	479,164	589,277	28%	26%	25%
75-79	321,697	382,348	425,080	20%	21%	18%
80-84	174,708	245,693	305,556	11%	13%	13%
85-89	85,901	115,667	164,834	5%	6%	7%
90-94	26,234	37,687	59,062	2%	2%	3%
95-99	4,953	6,902	10,588	0%	0%	0%
100+	532	661	1,145	0%	0%	0%
Total	1,572,732	1,843,016	2,359,548	100%	100%	100%

Age Group	Females					
	Number			Distribution		
	1999	2006	2013	1999	2006	2013
65-69	563,291	618,800	861,422	27%	26%	30%
70-74	523,835	538,532	646,396	25%	23%	22%
75-79	457,350	480,257	502,549	22%	20%	17%
80-84	297,170	383,240	408,189	14%	16%	14%
85-89	182,040	231,032	283,076	9%	10%	10%
90-94	73,886	100,845	141,696	3%	4%	5%
95-99	19,087	26,105	37,859	1%	1%	1%
100+	2,896	3,723	6,229	0%	0%	0%
Total	2,119,555	2,382,534	2,887,416	100%	100%	100%

Tables 38 to 43 in the Annex show various statistics related to OAS program beneficiaries by individual age and sex.

2. Deaths

Table 3 presents the number of deaths by age group and sex. The deaths are tabulated on an age last birthday basis. Over the period 1999 to 2013, there were 1.3 million male deaths and 1.4 million female deaths. Of the 201,329 deaths in 2013, there were 2,832 classified as centenarians (82% being females). The median age at death of males increased by 2.8 years, from 78.9 years in 1999 to 81.7 years in 2013, while for females it increased by 2.4 years, from 83.4 to 85.8 years over the same period. Female deaths are distributed more toward the older ages compared to males, because of females' greater longevity.

Table 3 OAS Beneficiaries Deaths (1999-2013)

Age Group	Males						
	Number				Distribution		
	1999-2013	1999	2006	2013	1999	2006	2013
65-69	157,240	11,547	9,666	11,574	13.8%	11.4%	12.1%
70-74	208,549	15,676	13,221	13,661	18.7%	15.6%	14.3%
75-79	261,982	18,543	17,479	16,121	22.1%	20.6%	16.8%
80-84	282,303	16,800	18,951	20,058	20.0%	22.3%	21.0%
85-89	233,167	13,173	14,688	18,996	15.7%	17.3%	19.8%
90-94	124,222	6,138	8,261	11,484	7.3%	9.7%	12.0%
95-99	36,046	1,716	2,259	3,324	2.0%	2.7%	3.5%
100+	5,094	217	328	507	0.3%	0.4%	0.5%
Total	1,308,603	83,810	84,853	95,725	100.0%	100.0%	100.0%
Median Age	80.4	78.9	80.5	81.7			

Age Group	Females						
	Number				Distribution		
	1999-2013	1999	2006	2013	1999	2006	2013
65-69	102,071	6,910	6,474	7,844	7.8%	6.8%	7.4%
70-74	145,136	10,496	9,354	9,688	11.8%	9.9%	9.2%
75-79	210,264	15,241	14,068	12,768	17.2%	14.8%	12.1%
80-84	283,819	17,554	19,415	18,742	19.8%	20.5%	17.7%
85-89	321,032	18,835	20,467	23,441	21.2%	21.6%	22.2%
90-94	247,513	13,038	16,325	21,303	14.7%	17.2%	20.2%
95-99	109,570	5,360	7,063	9,493	6.0%	7.5%	9.0%
100+	24,919	1,255	1,575	2,325	1.4%	1.7%	2.2%
Total	1,444,324	88,689	94,741	105,604	100.0%	100.0%	100.0%
Median Age	84.7	83.4	84.5	85.8			

Chart 1 shows the change in the distribution of deaths by age and sex from 1999 to 2013. It clearly illustrates that the median age at death for both males and females has increased over time as the distribution has shifted to the right. In 2013, the highest number of deaths occurred at age 83 for males and age 90 for females.

Chart 1 Distribution of OAS Beneficiaries Deaths (1999 and 2013)

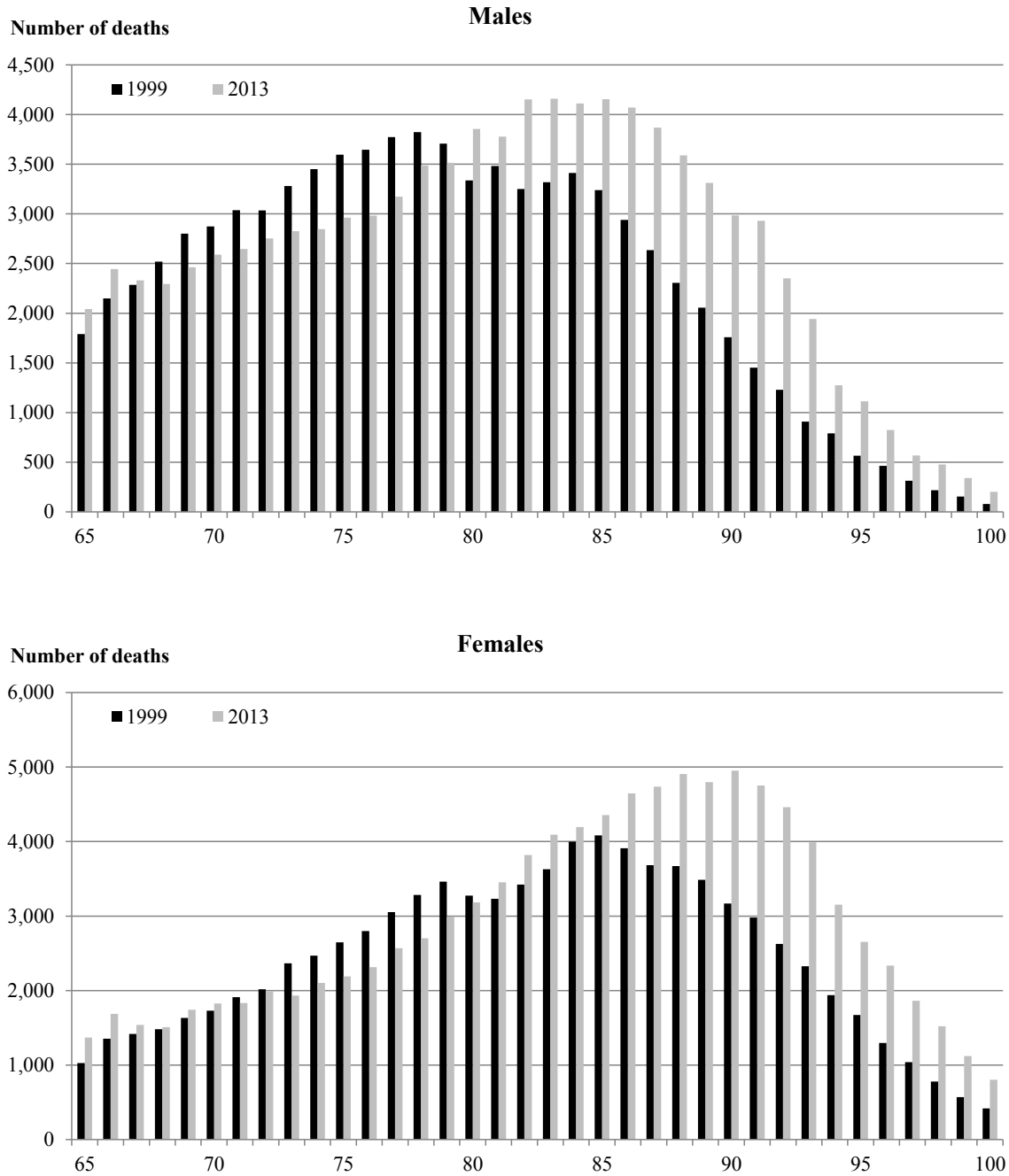


Table 4 shows, by age group and sex, a comparison of the number of deaths from the OAS database with the number of deaths reported by Statistics Canada (official Vital Statistics for Canada) over the period 2008 to 2012. For ages 65 to 69, the lower number of OAS deaths compared to the Vital Statistics may be explained by recipient rates for OAS benefits being less than 100%. This could be due to the fact that a portion of the population does not apply for OAS benefits by age 70 because of either not being eligible or opting to defer their pension in order to accumulate more years of residence before receiving their OAS benefits. For ages 70 and above, the number of deaths from Vital Statistics is lower than that from the OAS database. The larger number of deaths as reported from the OAS program when compared to Vital Statistics is due to the fact that Vital Statistics exclude Canadians who die outside Canada while the OAS program includes them.

Table 4 Comparison of OAS Beneficiaries Deaths to Vital Statistics Deaths (2008-2012)

Age Group	Males			Females		
	OAS	Vital Statistics ⁽¹⁾	Ratio OAS to Vital Statistics	OAS	Vital Statistics ⁽¹⁾	Ratio OAS to Vital Statistics
65-69	53,126	53,786	0.988	35,490	36,032	0.985
70-74	64,803	63,530	1.020	46,300	45,645	1.014
75-79	84,346	82,547	1.022	66,076	64,984	1.017
80-84	99,657	97,334	1.024	95,443	93,721	1.018
85-89	88,392	86,023	1.028	117,199	114,971	1.019
90+	64,063	62,726	1.021	143,850	141,563	1.016
Total	454,387	445,946	1.019	504,358	496,916	1.015

(1) The number of deaths for the period 2008 to 2012 is from official Vital Statistics from Statistics Canada, Deaths database (CANSIM Table 102-0504).

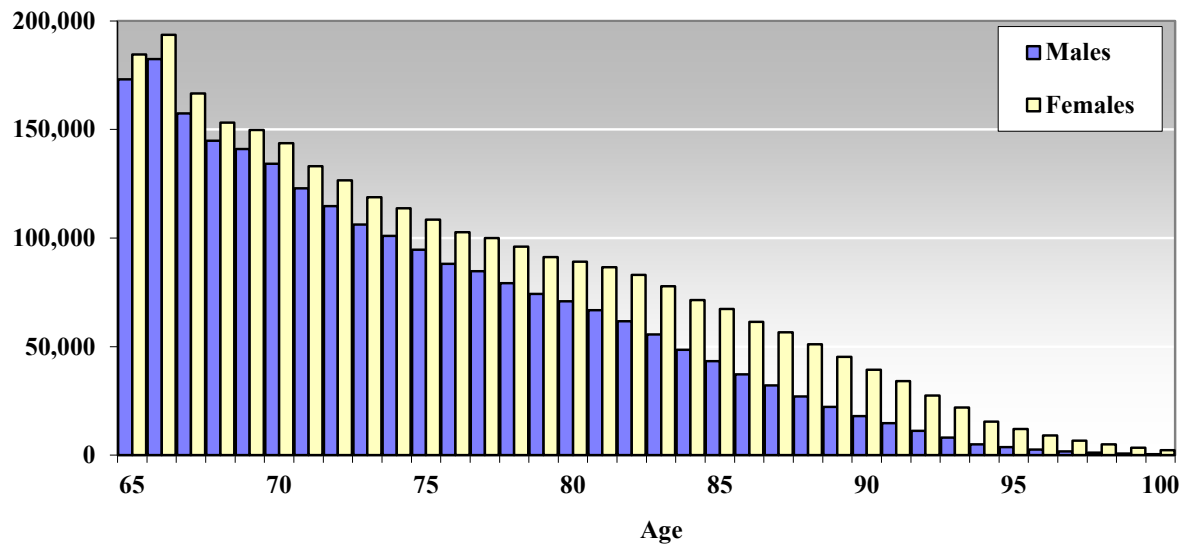
3. Exposures

Consistent with the number of beneficiaries shown in Table 2, Table 5 shows that as females live longer than males, female exposures are on average distributed more toward the advanced ages. Chart 2 shows that females have more exposures than males at every age because of females' greater longevity.

Table 5 OAS Beneficiaries Exposures (2013)

Age Group	Exposures			Distribution		
	Males	Females	Both Sexes	Males	Females	Both Sexes
65-69	798,834	847,910	1,646,744	34.3%	29.7%	31.8%
70-74	579,174	635,740	1,214,915	24.8%	22.3%	23.4%
75-79	421,053	498,305	919,358	18.1%	17.5%	17.7%
80-84	303,354	408,061	711,415	13.0%	14.3%	13.7%
85-89	161,984	281,735	443,719	6.9%	9.9%	8.6%
90-94	56,969	138,218	195,187	2.4%	4.8%	3.8%
95-99	9,967	36,183	46,149	0.4%	1.3%	0.9%
100+	1,000	5,702	6,702	0.0%	0.2%	0.1%
Total	2,332,334	2,851,855	5,184,189	100.0%	100.0%	100.0%

Chart 2 OAS Beneficiaries Exposures by Age (2013)



4. OAS Beneficiaries Mortality Rates

a. Crude OAS Beneficiaries Mortality Rates by Age and Sex

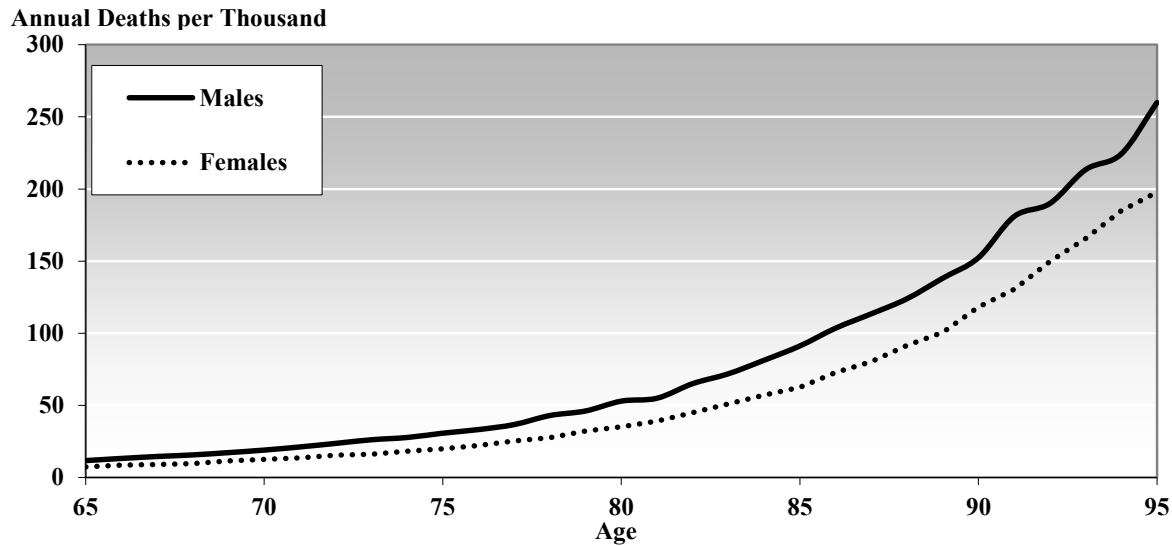
The crude OAS program beneficiaries mortality rates for the year 2013 by age and sex are presented in Table 6. The ratio of female to male mortality rates is an indicator of the average shorter lifetime of males. However, although males experience a higher level of mortality, the relative gap between the two sexes shows variation by age.

The progression of the crude mortality rates by age and for each sex for year 2013 is displayed in Chart 3. Males experience a higher level of mortality than females at all ages. At ages between 70 and 80, females experience a level of mortality that is about two-thirds the mortality of males. After age 80, the ratio generally increases.

Table 6 Crude OAS Beneficiaries Mortality Rates (2013)

Age	Annual Deaths per Thousand		Ratio Females to Males
	Males	Females	
65	11.8	7.4	0.63
70	19.1	12.6	0.66
75	30.8	19.9	0.65
80	53.0	35.1	0.66
85	91.2	62.7	0.69
90	152.4	118.2	0.78
95	259.9	197.8	0.76
100	345.4	301.9	0.87

Chart 3 Crude OAS Beneficiaries Mortality Rates (2013)



b. Graduated OAS Beneficiaries Mortality Rates by Age and Sex

The graduated and extended mortality rates by age and sex and corresponding ratios of female to male mortality rates for the year 2013 are presented in Table 7.

Table 7 Graduated OAS Beneficiaries Mortality Rates (2013)

Age	Annual Deaths per Thousand		Ratio Females to Males
	Males	Females	
65	11.9	7.5	0.63
70	19.3	12.5	0.65
75	30.8	20.2	0.66
80	51.6	35.4	0.69
85	90.7	63.6	0.70
90	156.3	117.1	0.75
95	251.5	201.7	0.80
100	371.3	305.1	0.82
105	506.5	422.4	0.83
110	610.6	536.8	0.88
115	675.4	616.7	0.91
120	700.0	650.0	0.93

Although male OAS beneficiaries experience higher mortality than female beneficiaries, the relative gap declines significantly with age, with mortality between the sexes converging at the older ages. This is reflected in the rising female to male mortality ratio with age shown in Table 7 and Chart 4. At ages 65 to 80, female OAS beneficiaries experience mortality rates that are about two thirds the rates for males. By age 95, mortality rates for females are 80% of the rates for males. The crude and graduated mortality rates for both sexes are shown in Chart 5.

Chart 4 Females to Males Graduated Mortality Ratios (2013)

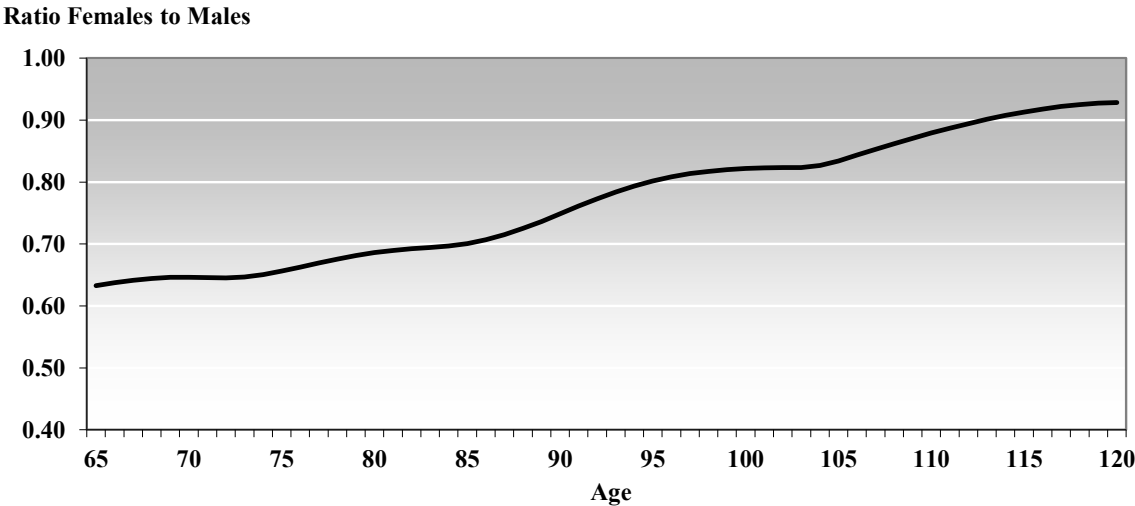
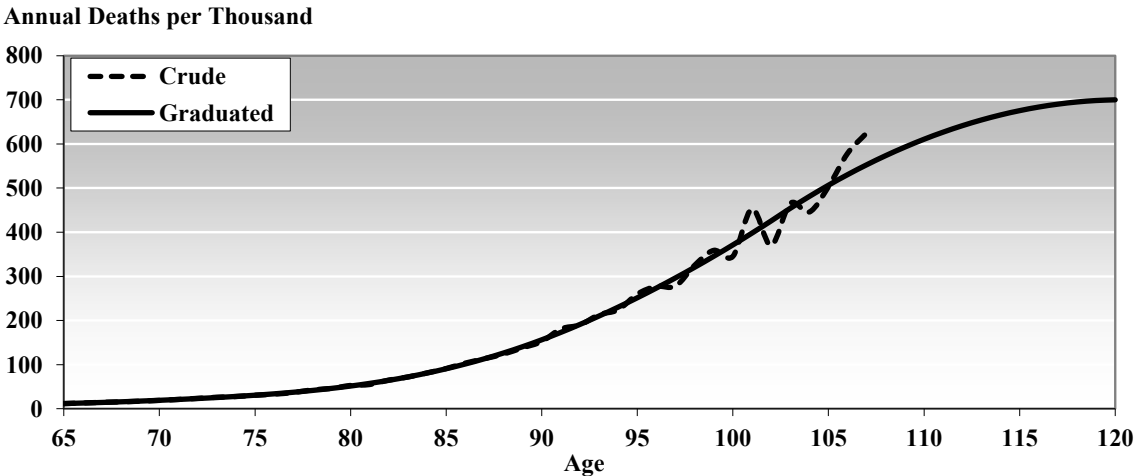
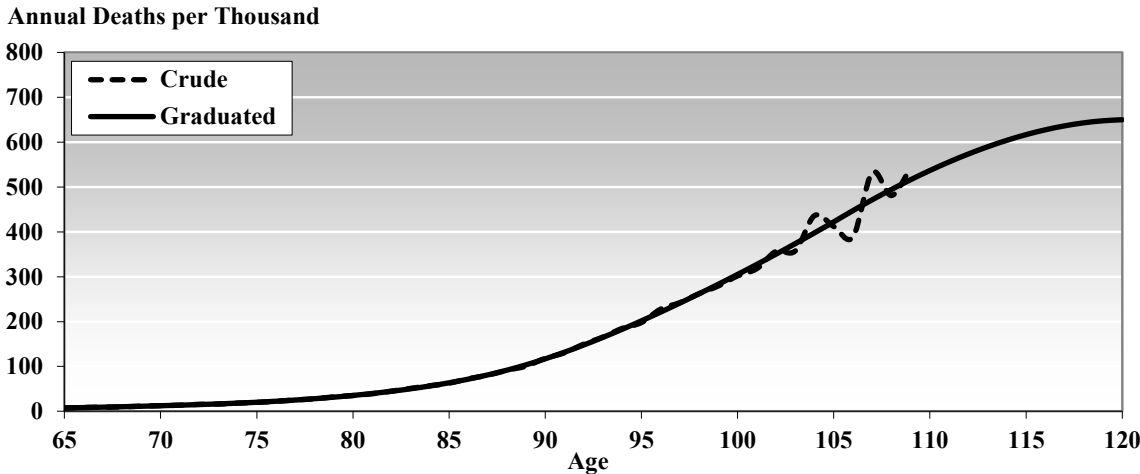


Chart 5 Crude and Graduated OAS Beneficiaries Mortality Rates (2013)

Males



Females



D. Comparison of OAS and Population Mortality (2011)

Since OAS beneficiaries represent a substantial portion of the older Canadian population, the mortality rates of OAS beneficiaries are compared to those of the population of Canada for the year 2011. The year 2011 was the most current year for which data on population mortality from the Canadian Human Mortality Database (CHMD) were available at the time of this study. For comparison purposes, mortality rates from the 2011 CHMD Life Tables for Canada were graduated by age and sex and extended to age 120.

Table 8 and Chart 6 show the ratios of OAS beneficiaries to population mortality rates by age and sex for the year 2011. For both sexes in 2011, OAS beneficiaries mortality rates are higher than for the population. In 2011, the overall mortality of OAS beneficiaries is 4% higher for males and 3% higher for females relative to the overall Canadian population mortality as reported in the 2011 CHMD. The mortality difference is particularly higher (i.e. 5%) for both males and females in the age group 70 to 80.

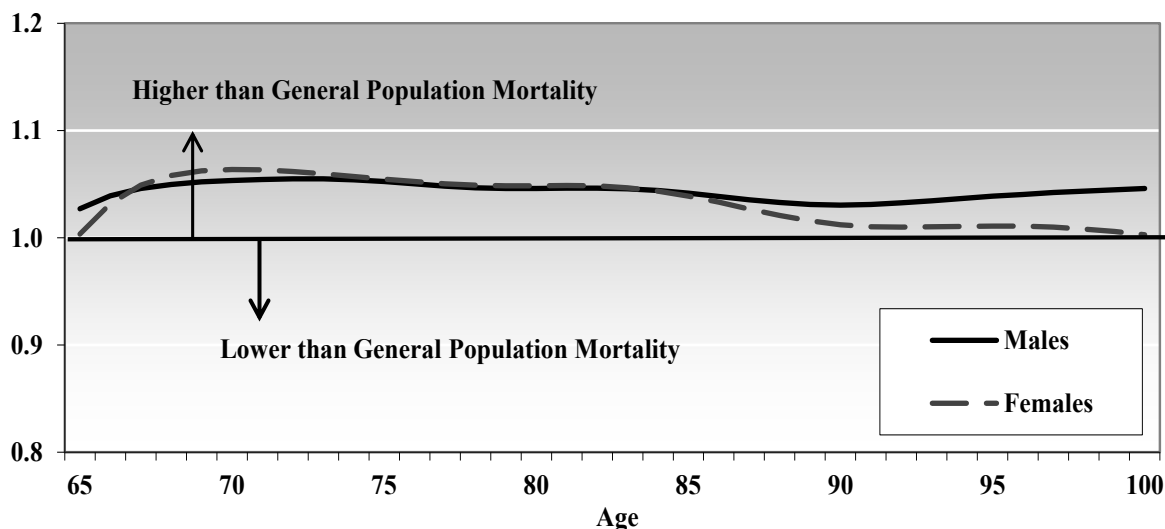
An important reason that may explain the difference between the OAS and population mortality rates is the differences between the population census survey data used by the CHMD in constructing its Life Tables for Canada and the OAS administrative data used for this study.

Table 8 OAS Beneficiaries and Population Mortality (2011)

Age	Males			Females		
	Annual Deaths Per Thousand		Ratio OAS to Population	Annual Deaths Per Thousand		Ratio OAS to Population
	OAS	Population ⁽¹⁾		OAS	Population ⁽¹⁾	
65	12.0	11.7	1.03	7.8	7.8	1.00
70	20.1	19.1	1.05	13.0	12.2	1.06
75	32.4	30.8	1.05	21.1	20.0	1.05
80	54.3	51.9	1.05	36.7	35.0	1.05
85	95.3	91.5	1.04	65.7	63.2	1.04
90	160.9	156.2	1.03	120.8	119.3	1.01
95	254.2	244.8	1.04	205.0	202.7	1.01
100	368.3	352.1	1.05	309.2	308.3	1.00

(1) Canada Population mortality rates are based on graduated rates from the CHMD 2011 Life Tables for Canada. OCA calculations.

Chart 6 OAS Beneficiaries to Population Mortality Ratios (2011)



E. Life Expectancies

1. OAS Beneficiaries Life Expectancies

Table 9 shows life expectancies for OAS beneficiaries for the year 2013. The gap in life expectancies between female and male OAS beneficiaries reduces as age increases. At age 65, the gap between female and male life expectancies is 2.9 years, while the difference reduces to 0.9 of a year at age 90.

Table 9 OAS Beneficiaries Life Expectancies (2013)

Age	Males	Females	Difference (Females – Males)
65	18.9	21.8	2.9
70	15.2	17.7	2.5
75	11.7	13.9	2.2
80	8.7	10.4	1.8
85	6.1	7.5	1.3
90	4.2	5.1	0.9

2. Evolution of Life Expectancies and Comparison with Population

Table 10 shows, for both sexes, the evolution over the period 1999 to 2013 of the life expectancies at age 65 of OAS beneficiaries and the general population. As OAS beneficiaries experience higher mortality than the general population. In 2011, life expectancies at age 65 for the overall Canadian population as reported in the 2011 CHMD are 18.9 years for males and 21.8 years for females. These population life expectancies are 0.3 year higher than the life expectancies of overall OAS beneficiaries which are 18.6 years for males and 21.5 years for females. As shown in Chart 7, the difference in life expectancies at age 65 between OAS beneficiaries and the general population increased between 1999 and 2011 and has evolved similarly for both sexes. The evolution of life expectancies of OAS beneficiaries of both sexes at age 65 from 1999 to 2013 is also shown in Chart 8. In 2013, the life expectancies at age 65 for OAS beneficiaries are 18.9 years for males and 21.8 years for females. These are 2.8 years and 1.9 years, respectively, higher than the corresponding life expectancies observed in 1999. As such, the gap in life expectancies between females and males has decreased from 3.8 years in 1999 to 2.9 years in 2013.

Table 10 OAS Beneficiaries and Population Life Expectancies at Age 65 (1999-2013)

Year	Life Expectancy at Age 65						
	Males			Females			
	OAS	Population	Difference (Pop - OAS)	OAS	Population	Difference (Pop – OAS)	Difference OAS Females - Males
1999	16.1	16.3	0.2	19.9	20.1	0.2	3.8
2000	16.5	16.7	0.2	20.1	20.3	0.1	3.6
2001	16.7	16.9	0.2	20.3	20.4	0.1	3.5
2002	16.9	17.0	0.2	20.3	20.4	0.1	3.5
2003	17.0	17.2	0.2	20.5	20.6	0.1	3.5
2004	17.3	17.5	0.2	20.6	20.8	0.1	3.3
2005	17.5	17.7	0.2	20.7	20.9	0.2	3.2
2006	17.8	18.0	0.3	21.0	21.2	0.2	3.2
2007	17.8	18.0	0.3	21.0	21.2	0.2	3.2
2008	18.0	18.2	0.2	21.1	21.3	0.2	3.1
2009	18.2	18.4	0.3	21.3	21.6	0.2	3.1
2010	18.5	18.7	0.3	21.4	21.7	0.3	3.0
2011	18.6	18.9	0.3	21.5	21.8	0.3	2.9
2012	18.7	n/a	n/a	21.7	n/a	n/a	3.0
2013	18.9	n/a	n/a	21.8	n/a	n/a	2.9

Table 10 reveals that OAS beneficiaries are living longer. However, the average increase in life expectancy at age 65 has slowed down recently. Between 2000 and 2010, the average increase was 2 months per year (from 18.3 to 20.0 years) which compares to a lower average increase over the most recent period 2010 to 2013 of 1.6 months per year (from 20.0 to 20.4 years). This recent slowdown¹ in mortality improvements is analyzed further in Section VIII of this study.

Chart 7 Evolution of OAS and Population Life Expectancies at 65 (1999-2011)

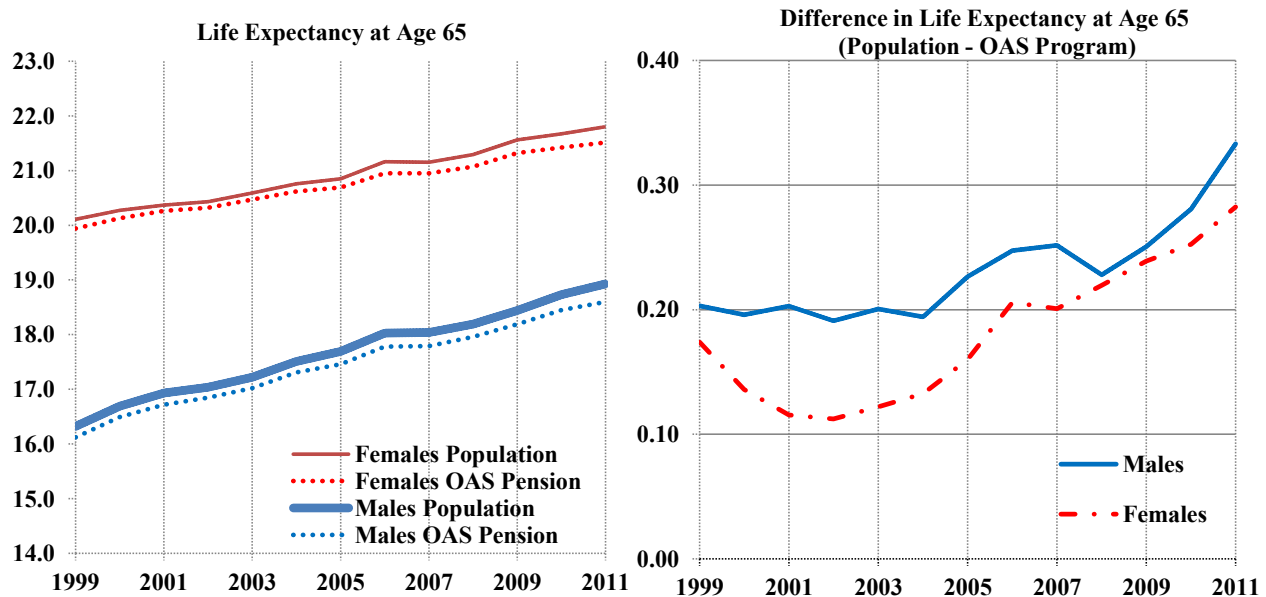
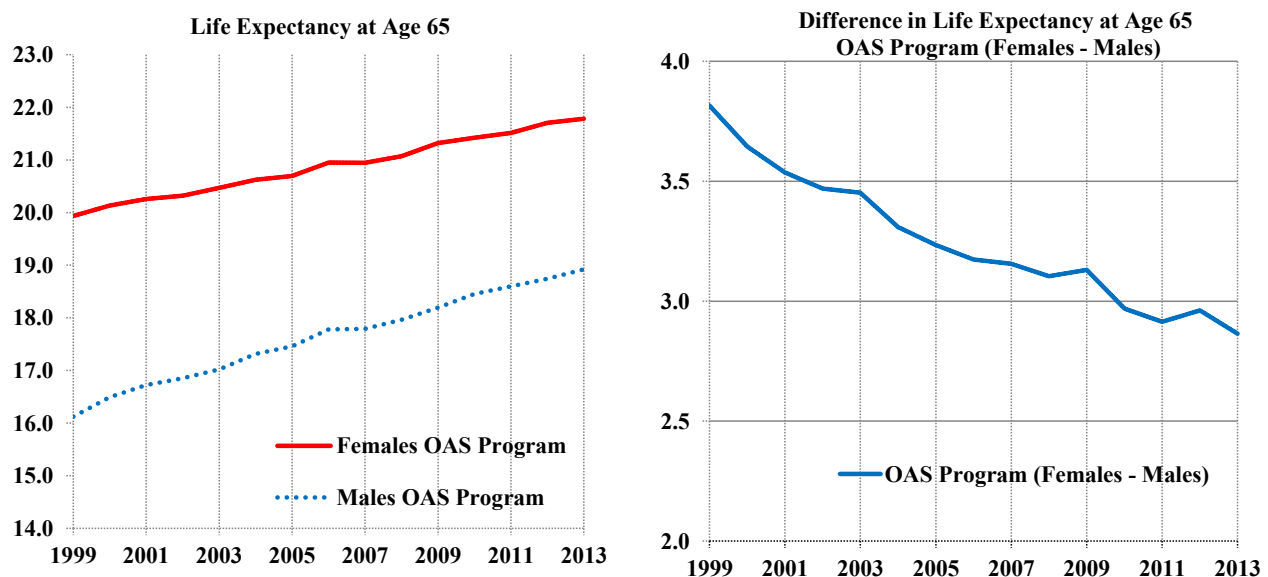


Chart 8 Evolution of OAS Life Expectancies at Age 65 by Sex (1999-2013)



¹ This recent slowdown in mortality improvements has also been observed in the United States and the United Kingdom (see <https://www.soa.org/Research/Experience-Study/Pension/research-2015-mp.aspx> and <http://www.actuaries.org.uk/research-and-resources/documents/cmi-working-paper-83-recent-mortality-england-wales>).

IV. OAS Beneficiaries Mortality by Type of Benefit

A. Introduction

This section presents the results of the study on the mortality of OAS program beneficiaries by type of benefit defined by whether an OAS beneficiary receives the GIS because of low income or does not receive the benefit. Previous OAS program mortality studies prepared by the OCA (Actuarial Studies Nos. 5 and 11) showed that individuals with higher income, i.e. OAS beneficiaries without GIS benefits, experience lower mortality than individuals with lower income, i.e. OAS beneficiaries with GIS benefits.

B. Mortality Experience by Type of Benefit for Year 2013

1. Beneficiaries by Type of Benefit

The number of beneficiaries by age, sex and type of benefit received in 2013 are presented in Table 11. In aggregate for all age groups, the proportion of male beneficiaries receiving the GIS is 28% compared to 38% of female beneficiaries. This is consistent with the fact that females have on average lower levels of income than males. The differential in the proportion of male and female beneficiaries receiving the GIS increases at the older ages. For the age group 65 to 69, the proportion of males with the GIS is 23% compared to 27% for females, while for the age group 90 to 94, the corresponding proportions are 33% for males and 54% for females.

Table 11 Beneficiaries by Type of Benefit (as at December 31st 2013)

Age group	Males			Females		
	without GIS	with GIS	Proportion with GIS	Without GIS	with GIS	Proportion with GIS
65-69	616,245	187,761	23%	624,769	236,653	27%
70-74	423,138	166,139	28%	420,703	225,693	35%
75-79	292,731	132,349	31%	301,797	200,752	40%
80-84	206,504	99,052	32%	227,624	180,565	44%
85-89	110,302	54,532	33%	145,139	137,937	49%
90-94	39,288	19,774	33%	65,612	76,084	54%
95-99	6,130	4,458	42%	14,524	23,335	62%
100+	565	580	51%	1,929	4,300	69%
Total	1,694,903	664,645	28%	1,802,097	1,085,319	38%

Tables 44 to 50 in the Annex show various statistics related to the OAS program by individual age, sex and type of benefit.

2. Deaths by Type of Benefit

Table 12 presents the number of deaths by age, sex, and type of benefit in 2013. In aggregate for all age groups, the proportion of males with the GIS at death is 38% compared to 53% for females. This reflects that on average females live longer than males and that an increasing proportion of females receive GIS benefits at age advances. For the age group 65 to 69, the proportion of males who were receiving the GIS at death is 38% compared to 43% for females. For the age group 90 to 94, the corresponding proportions are 34% for males and 56% for females.

Table 12 Deaths by Type of Benefit (2013)

Age Group	Males			Females		
	without GIS	with GIS	Proportion with GIS	without GIS	with GIS	Proportion with GIS
65-69	7,178	4,396	38%	4,502	3,342	43%
70-74	8,063	5,598	41%	5,121	4,567	47%
75-79	9,645	6,476	40%	6,486	6,282	49%
80-84	12,504	7,554	38%	9,220	9,522	51%
85-89	12,246	6,750	36%	11,018	12,423	53%
90-94	7,619	3,865	34%	9,397	11,906	56%
95-99	2,060	1,264	38%	3,529	5,964	63%
100+	253	254	50%	693	1,632	70%
Total	59,568	36,157	38%	49,966	55,638	53%

3. Exposures by Type of Benefit

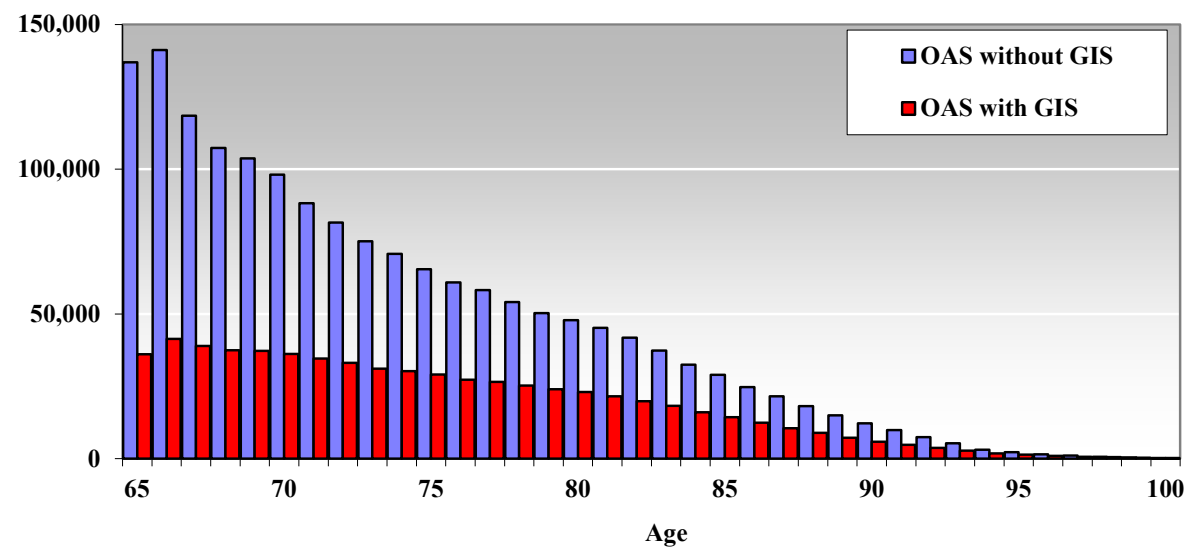
Table 13 shows that exposures by age group, sex, and type of benefit are consistent with the distribution of beneficiaries shown in Table 11. In general, female exposures exceed that of males for each type of benefit because of females' greater longevity. The age structure of the amount of exposures by type of OAS benefit received in 2013 for each sex is shown in Chart 9.

Table 13 Exposures by Type of Benefit (2013)

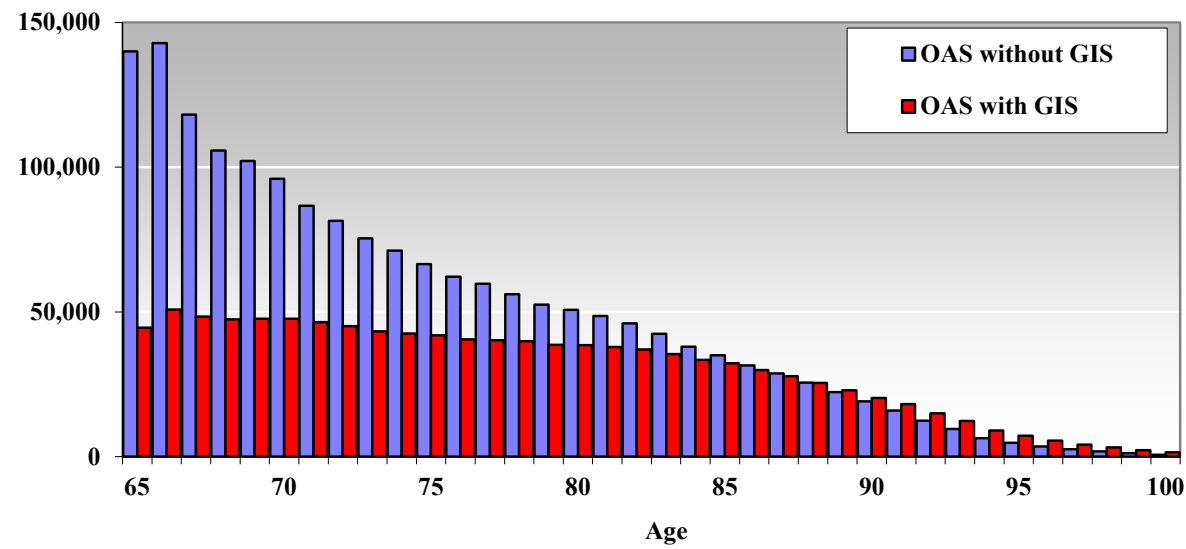
Age Group	Males			Females		
	without GIS	with GIS	Proportion with GIS	without GIS	with GIS	Proportion with GIS
65-69	607,706	191,128	24%	609,050	238,860	28%
70-74	413,835	165,339	29%	410,694	225,046	35%
75-79	289,009	132,044	31%	297,090	201,215	40%
80-84	204,675	98,679	33%	225,736	182,325	45%
85-89	108,379	53,605	33%	143,350	138,385	49%
90-94	37,937	19,033	33%	63,474	74,744	54%
95-99	5,953	4,014	40%	13,872	22,311	62%
100+	511	489	49%	1,782	3,920	69%
Total	1,668,002	664,332	28%	1,765,049	1,086,806	38%

Chart 9 Exposures by Type of Benefit (2013)

Males



Females



4. Graduated OAS Program Mortality Rates by Type of Benefits

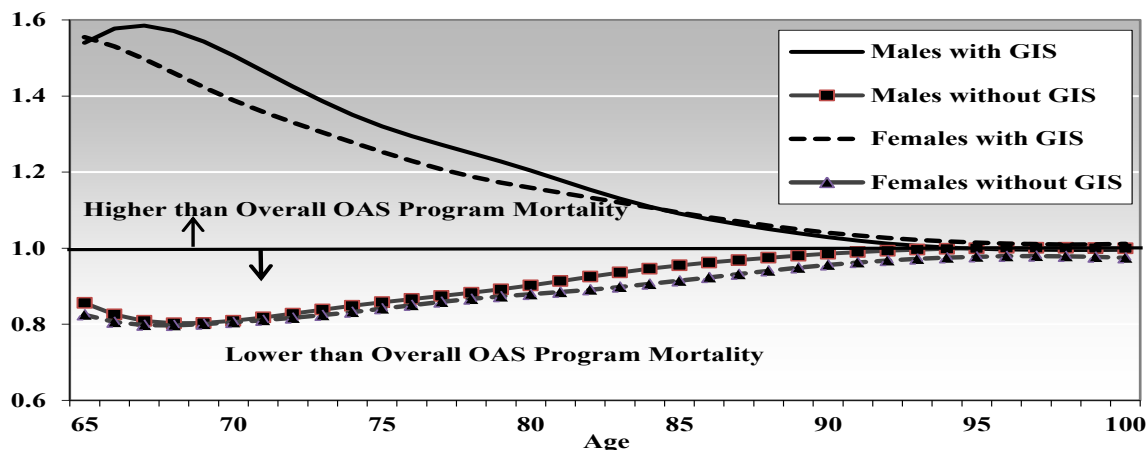
A comparison of mortality rates by type of benefit received is shown in Table 14 and Chart 10. Those beneficiaries not in receipt of the GIS experience lower mortality than that of overall OAS beneficiaries, while those who receive the GIS experience higher mortality. In 2013, GIS beneficiaries aged 65 have experienced mortality that is 54% higher than the overall OAS population and about twice the level of those not receiving the GIS. In comparison, beneficiaries not receiving the GIS, aged 65, experience mortality that is 14% lower than the overall OAS population. In both cases however, there is convergence to the overall OAS program mortality as age increases.

Table 14 Mortality by Type of Benefit (2013)

Males						
Age	Overall	without GIS	Ratio without GIS to Overall	with GIS	Ratio with GIS to Overall	Ratio With to Without GIS
65	11.9	10.2	0.86	18.3	1.54	1.80
70	19.3	15.6	0.81	29.1	1.51	1.86
75	30.8	26.4	0.86	40.7	1.32	1.54
80	51.6	46.5	0.90	62.1	1.20	1.33
85	90.7	86.6	0.95	99.0	1.09	1.14
90	156.3	154.0	0.99	160.8	1.03	1.04
95	251.5	251.5	1.00	251.5	1.00	1.00
100	371.3	371.1	1.00	371.3	1.00	1.00

Females						
Age	Overall	without GIS	Ratio without GIS to Overall	with GIS	Ratio with GIS to Overall	Ratio With to Without GIS
65	7.5	6.2	0.82	11.7	1.55	1.88
70	12.5	10.0	0.81	17.3	1.39	1.72
75	20.2	17.0	0.84	25.3	1.25	1.49
80	35.4	31.1	0.88	41.0	1.16	1.32
85	63.6	58.2	0.91	69.6	1.09	1.20
90	117.1	111.9	0.96	121.8	1.04	1.09
95	201.7	197.2	0.98	204.6	1.01	1.04
100	305.1	297.4	0.97	308.6	1.01	1.04

Chart 10 OAS Beneficiaries Mortality Ratios by Type of Benefit (2013)



C. Life Expectancies by Type of Benefit

1. Comparison of Life Expectancies by Age, Sex, and Type of Benefit (2013)

Table 15 shows life expectancies for beneficiaries by age, sex, and type of benefit received. The life expectancy of beneficiaries without the GIS is higher than for beneficiaries with the GIS. In 2013, the life expectancy at age 65 for males not receiving the GIS is 19.7 years compared to 17.1 years for those receiving the GIS. The corresponding life expectancies at age 65 for females are 22.7 years and 20.4 years. For both sexes, the difference in life expectancies between those without and with the GIS reduces as age increases.

Table 15 Life Expectancies by Type of Benefit (2013)

Age	Males				Females			
	Overall	without GIS	with GIS	Difference	Overall	without GIS	with GIS	Difference
65	18.9	19.7	17.1	2.7	21.8	22.7	20.4	2.2
70	15.2	15.8	13.8	2.0	17.7	18.4	16.7	1.7
75	11.7	12.2	10.9	1.3	13.9	14.5	13.2	1.2
80	8.7	8.9	8.2	0.7	10.4	10.8	10.0	0.8
85	6.1	6.2	6.0	0.3	7.5	7.7	7.3	0.5
90	4.2	4.2	4.2	0.0	5.1	5.2	5.0	0.2

2. Evolution of Life Expectancies by Type of Benefit (1999-2013)

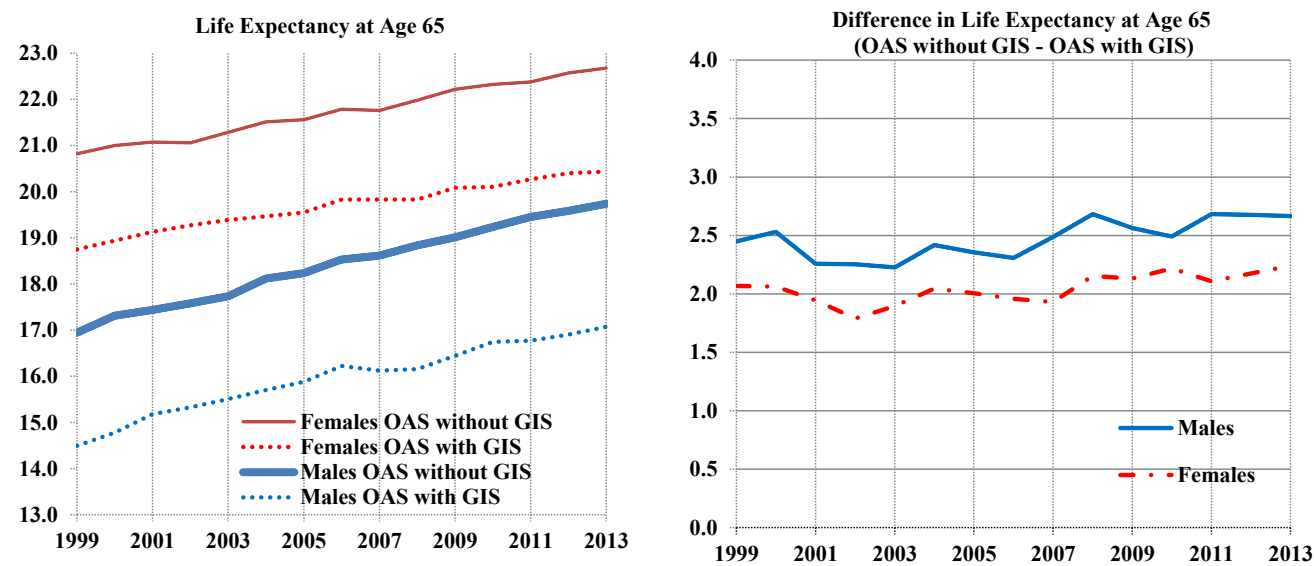
Table 16 and Chart 11 show the evolution of life expectancies at age 65 by type of benefit over the period 1999 to 2013. The difference in life expectancies at age 65 between beneficiaries not receiving the GIS and those in receipt of the benefit has shown little variability over the period, although for males it was somewhat greater. In 1999, the differentials are 2.5 years for males and 2.1 years for females, while in 2013, the differentials are 2.7 years for males and 2.2 years for females.

Over the last 15 years, for both sexes combined, low income beneficiaries (those receiving GIS) have seen their life expectancy increase by more than two years; about the same pace as those with higher income (those not receiving GIS).

Table 16 Evolution of Life Expectancies at Age 65 by Type of Benefit (1999-2013)

Year	Males				Females			
	Overall	Without GIS	With GIS	Difference	Overall	Without GIS	with GIS	Difference
1999	16.1	16.9	14.5	2.5	19.9	20.8	18.8	2.1
2000	16.5	17.3	14.8	2.5	20.1	21.0	18.9	2.1
2001	16.7	17.4	15.2	2.3	20.3	21.1	19.1	1.9
2002	16.9	17.6	15.3	2.3	20.3	21.1	19.3	1.8
2003	17.0	17.7	15.5	2.2	20.5	21.3	19.4	1.9
2004	17.3	18.1	15.7	2.4	20.6	21.5	19.5	2.0
2005	17.5	18.2	15.9	2.4	20.7	21.6	19.6	2.0
2006	17.8	18.5	16.2	2.3	21.0	21.8	19.8	2.0
2007	17.8	18.6	16.1	2.5	20.9	21.8	19.8	1.9
2008	18.0	18.8	16.2	2.7	21.1	22.0	19.8	2.2
2009	18.2	19.0	16.4	2.6	21.3	22.2	20.1	2.1
2010	18.5	19.2	16.7	2.5	21.4	22.3	20.1	2.2
2011	18.6	19.5	16.8	2.7	21.5	22.4	20.3	2.1
2012	18.7	19.6	16.9	2.7	21.7	22.6	20.4	2.2
2013	18.9	19.7	17.1	2.7	21.8	22.7	20.4	2.2

Chart 11 Evolution of Life Expectancies at Age 65 by Type of Benefit (1999-2013)



V. OAS Beneficiaries Mortality by Marital Status and Type of Benefit

A. Introduction

This section presents the results of the study on the mortality of the OAS program beneficiaries by marital status and type of benefit. The results presented are consistent with previous OAS program mortality studies prepared by the OCA which show that married OAS beneficiaries experience lower mortality than their single counterparts. Results for years 2001 to 2004 by marital status should be interpreted with caution due to data limitation on marital status for those years.

B. Mortality Experience by Marital Status and Type of Benefit for Year 2013

1. Beneficiaries by Marital Status and Type of Benefit

The number of beneficiaries by age, sex, marital status, and type of benefit in 2013 is presented in Table 17. In aggregate for all age groups, the proportion male beneficiaries without the GIS who are married is 78% compared to 59% for those with GIS benefits. Overall, the proportion of female beneficiaries without the GIS who are married is 58% compared to 29% for those with GIS benefits. For all age groups and both sexes, those with the GIS are more likely to be single than those without the GIS, especially at the older ages. As well, for all age groups and both benefit types, females are more likely to be single compared to males due to females' greater longevity, especially at the older ages.

Table 17 Beneficiaries by Marital Status and Type of Benefit (as at December 31st 2013)

Age Group	Males									
	Overall		without GIS				with GIS			
	Married	Single	Married	Single	%Married	%Single	Married	Single	%Married	%Single
65-69	597,745	206,261	490,769	125,476	80%	20%	106,976	80,785	57%	43%
70-74	443,832	145,445	342,814	80,324	81%	19%	101,018	65,121	61%	39%
75-79	316,422	108,658	232,899	59,832	80%	20%	83,523	48,826	63%	37%
80-84	215,122	90,434	154,472	52,032	75%	25%	60,650	38,402	61%	39%
85-89	102,988	61,846	72,661	37,641	66%	34%	30,327	24,205	56%	44%
90-94	30,533	28,529	21,366	17,922	54%	46%	9,167	10,607	46%	54%
95-99	3,910	6,678	2,491	3,639	41%	59%	1,419	3,039	32%	68%
100+	272	873	137	428	24%	76%	135	445	23%	77%
Total	1,710,825	648,723	1,317,610	377,293	78%	22%	393,215	271,430	59%	41%

Age Group	Females									
	Overall		without GIS				with GIS			
	Married	Single	Married	Single	%Married	%Single	Married	Single	%Married	%Single
65-69	537,568	323,854	437,498	187,271	70%	30%	100,070	136,583	42%	58%
70-74	367,774	278,622	281,449	139,254	67%	33%	86,325	139,368	38%	62%
75-79	240,115	262,434	176,595	125,202	59%	41%	63,520	137,232	32%	68%
80-84	141,978	266,211	102,746	124,878	45%	55%	39,232	141,333	22%	78%
85-89	59,328	223,748	43,032	102,107	30%	70%	16,296	121,641	12%	88%
90-94	14,625	127,071	10,864	54,748	17%	83%	3,761	72,323	5%	95%
95-99	1,419	36,440	1,050	13,474	7%	93%	369	22,966	2%	98%
100+	99	6,130	75	1,854	4%	96%	24	4,276	1%	99%
Total	1,362,906	1,524,510	1,053,309	748,788	58%	42%	309,597	775,722	29%	71%

Tables 51 to 66 in the Annex show various statistics related to the OAS program by individual age, sex, marital status, and type of benefit.

2. Deaths by Marital Status and Type of Benefit

Table 18 shows that as females live longer than males, the probability of being single at death is higher for females than for males. There is also variation by sex, age group, marital status, and type of benefit as to being single at death. For example, 39% of males without the GIS were single at death, at ages 85 to 89 compared to 50% for those in receipt of GIS benefits. For females, 74% of beneficiaries without the GIS were single at death, at ages 85 to 89, compared to 90% for those who received the GIS.

Table 18 Deaths by Marital Status and Type of Benefit (2013)

Age Group	Males									
	Overall		without GIS				with GIS			
	Married	Single	Married	Single	%Married	%Single	Married	Single	%Married	%Single
65-69	6,712	4,862	4,901	2,277	68%	32%	1,811	2,585	41%	59%
70-74	8,384	5,277	5,804	2,259	72%	28%	2,580	3,018	46%	54%
75-79	10,226	5,895	6,918	2,727	72%	28%	3,308	3,168	51%	49%
80-84	12,545	7,513	8,549	3,955	68%	32%	3,996	3,558	53%	47%
85-89	10,820	8,176	7,456	4,790	61%	39%	3,364	3,386	50%	50%
90-94	5,508	5,976	3,907	3,712	51%	49%	1,601	2,264	41%	59%
95-99	1,191	2,133	834	1,226	40%	60%	357	907	28%	72%
100+	116	391	71	182	28%	72%	45	209	18%	82%
Total	55,502	40,223	38,440	21,128	65%	35%	17,062	19,095	47%	53%

Age Group	Females									
	Overall		without GIS				with GIS			
	Married	Single	Married	Single	%Married	%Single	Married	Single	%Married	%Single
65-69	3,828	4,016	2,780	1,722	62%	38%	1,048	2,294	31%	69%
70-74	4,429	5,259	3,045	2,076	59%	41%	1,384	3,183	30%	70%
75-79	4,870	7,898	3,281	3,205	51%	49%	1,589	4,693	25%	75%
80-84	5,323	13,419	3,570	5,650	39%	61%	1,753	7,769	18%	82%
85-89	4,114	19,327	2,812	8,206	26%	74%	1,302	11,121	10%	90%
90-94	1,909	19,394	1,372	8,025	15%	85%	537	11,369	5%	95%
95-99	328	9,165	239	3,290	7%	93%	89	5,875	1%	99%
100+	25	2,300	22	671	3%	97%	3	1,629	0%	100%
Total	24,826	80,778	17,121	32,845	34%	66%	7,705	47,933	14%	86%

3. Exposures by Marital Status and Type of Benefit

Table 19 shows the distribution of the exposures for the year 2013, by sex, age group, marital status, and type of benefit. Again, as females generally live longer than males, the proportion of exposures related to single rather than married beneficiaries is higher for females than for males for both benefit types, especially at the advanced ages.

The significant difference by age and sex in the distribution of life-years of exposure by marital status can be observed. For example, in 2013, for the age group 65 to 69, the proportion of males (in terms of life-years of exposure) not in receipt of the GIS who are married is 80%, while for females the corresponding proportion is 70%. For the age group 90 to 94, these proportions are much lower at 54% for males and 17% for females. For the age group 65 to 69, the proportion of males in receipt of the GIS who are single is 43%, while for females the corresponding proportion is 58%. For the age group 90 to 94, these proportions are 55% and 95% for males and females, respectively.

Table 19 Exposures by Marital Status and Type of Benefit (2013)

Age Group	Males									
	Overall		without GIS				with GIS			
	Married	Single	Married	Single	% Married	% Single	Married	Single	% Married	% Single
65-69	593,176	205,658	483,894	123,811	80%	20%	109,282	81,846	57%	43%
70-74	436,020	143,154	335,282	78,553	81%	19%	100,738	64,601	61%	39%
75-79	312,872	108,181	229,926	59,082	80%	20%	82,945	49,099	63%	37%
80-84	212,983	90,371	153,132	51,542	75%	25%	59,850	38,829	61%	39%
85-89	100,750	61,234	71,400	36,979	66%	34%	29,350	24,255	55%	45%
90-94	29,212	27,758	20,662	17,274	54%	46%	8,550	10,483	45%	55%
95-99	3,638	6,329	2,421	3,532	41%	59%	1,217	2,797	30%	70%
100+	216	784	127	384	25%	75%	89	400	18%	82%
Total	1,688,866	643,469	1,296,844	371,159	78%	22%	392,022	272,310	59%	41%

Age Group	Females									
	Overall		without GIS				with GIS			
	Married	Single	Married	Single	% Married	% Single	Married	Single	% Married	% Single
65-69	526,387	321,523	426,467	182,583	70%	30%	99,920	138,940	42%	58%
70-74	359,621	276,120	274,731	135,963	67%	33%	84,890	140,157	38%	62%
75-79	235,852	262,453	173,811	123,279	59%	41%	62,041	139,173	31%	69%
80-84	139,932	268,129	101,981	123,755	45%	55%	37,951	144,374	21%	79%
85-89	57,829	223,906	42,529	100,821	30%	70%	15,300	123,085	11%	89%
90-94	13,949	124,269	10,542	52,932	17%	83%	3,407	71,337	5%	95%
95-99	1,328	34,854	1,001	12,871	7%	93%	327	21,984	1%	99%
100+	86	5,616	68	1,714	4%	96%	18	3,902	0%	100%
Total	1,334,985	1,516,869	1,031,130	733,919	58%	42%	303,855	782,950	28%	72%

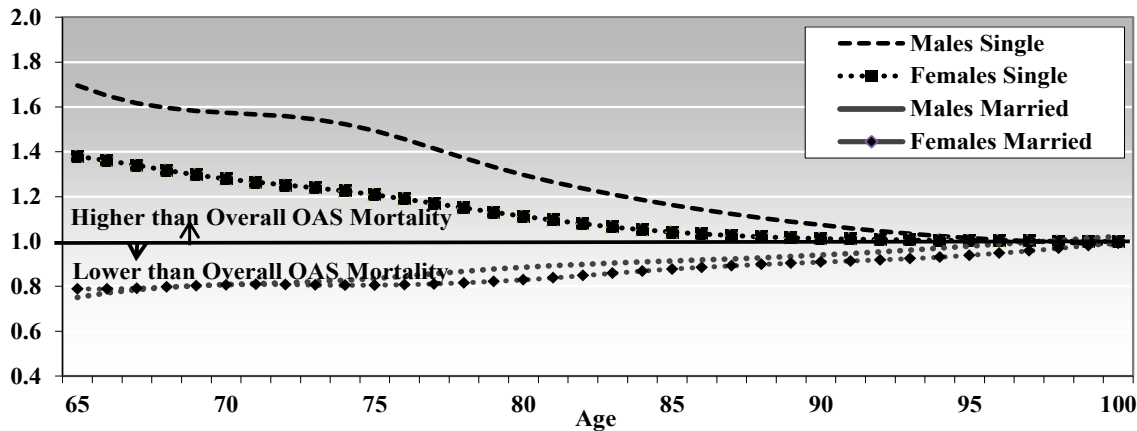
4. Mortality by Age and Marital Status

Table 20 and Chart 12 show a comparison of mortality by age, sex, and marital status. Males generally experience more of a mortality differential by marital status than females. The mortality ratio of single to married males is higher than for females at all ages except the very oldest. In 2013, at age 65, married males and females experience mortality that is about 20% to 25% lower than for the overall program. In comparison, at age 65, male singles experience mortality that is 70% higher than for the overall program, and females experience mortality that is 38% relative to the overall program. As a result, singles mortality is about twice the level of married for both sexes at age 65. For both sexes, married and singles, mortality gradually converges to the overall level as age increases.

Table 20 Graduated Mortality by Marital Status (2013)

Age	Males						Females					
	Overall	Married	Ratio Married to Overall	Single	Ratio Single to Overall	Ratio Single to Married	Overall	Married	Ratio Married to Overall	Single	Ratio Single to Overall	Ratio Single to Married
65	11.9	8.9	0.75	20.2	1.70	2.26	7.5	5.9	0.79	10.4	1.38	1.75
70	19.3	15.6	0.81	30.4	1.57	1.95	12.5	10.1	0.81	15.9	1.28	1.59
75	30.8	25.7	0.84	46.0	1.49	1.79	20.2	16.3	0.80	24.4	1.21	1.50
80	51.6	45.7	0.89	66.9	1.30	1.47	35.4	29.3	0.83	39.4	1.11	1.34
85	90.7	82.9	0.91	105.5	1.16	1.27	63.6	55.8	0.88	66.3	1.04	1.19
90	156.3	146.9	0.94	167.9	1.07	1.14	117.0	106.3	0.91	118.5	1.01	1.12
95	251.5	246.3	0.98	255.3	1.01	1.04	201.7	189.2	0.94	202.5	1.00	1.07
100	371.3	379.7	1.02	366.8	0.99	0.97	305.3	302.8	0.99	305.1	1.00	1.01

Chart 12 OAS Beneficiaries Mortality by Marital Status (2013)



5. Mortality by Marital Status and Type of Benefit

Table 21 and Chart 13 show a comparison of male mortality rates by age, marital status, and type of benefit. Single males in receipt of the GIS experience the highest mortality at most ages. For example, at age 65, single male GIS beneficiaries experience mortality that is more than twice that of the overall OAS population. Single males not receiving the GIS experience mortality that is mostly higher than for married GIS beneficiaries. Married males not receiving GIS benefits experience the lowest mortality except at the very advanced ages. All subgroups show convergence to overall program mortality as age advances.

Table 21 Male Mortality by Marital Status and Type of Benefit (2013)

Age	Overall	without GIS					with GIS				
		Married	Ratio Married to Overall	Single	Ratio Single to Overall	Ratio Single to Married	Married	Ratio Married to Overall	Single	Ratio Single to Overall	Ratio Single to Married
65	11.9	8.4	0.70	16.8	1.41	2.01	11.9	1.00	26.5	2.22	2.23
70	19.3	13.8	0.71	23.3	1.21	1.69	22.1	1.15	39.1	2.03	1.77
75	30.8	23.7	0.77	37.9	1.23	1.60	31.7	1.03	55.5	1.80	1.75
80	51.6	42.8	0.83	59.3	1.15	1.39	53.2	1.03	76.5	1.48	1.44
85	90.7	80.2	0.88	101.2	1.12	1.26	89.3	0.98	111.9	1.23	1.25
90	156.3	145.6	0.93	165.8	1.06	1.14	151.7	0.97	169.9	1.09	1.12
95	251.5	246.3	0.98	254.8	1.01	1.03	247.9	0.99	255.3	1.01	1.03
100	371.3	378.3	1.02	366.8	0.99	0.97	379.7	1.02	367.4	0.99	0.97

Chart 13 Mortality Ratios by Marital Status, and Type of Benefit - Males (2013)

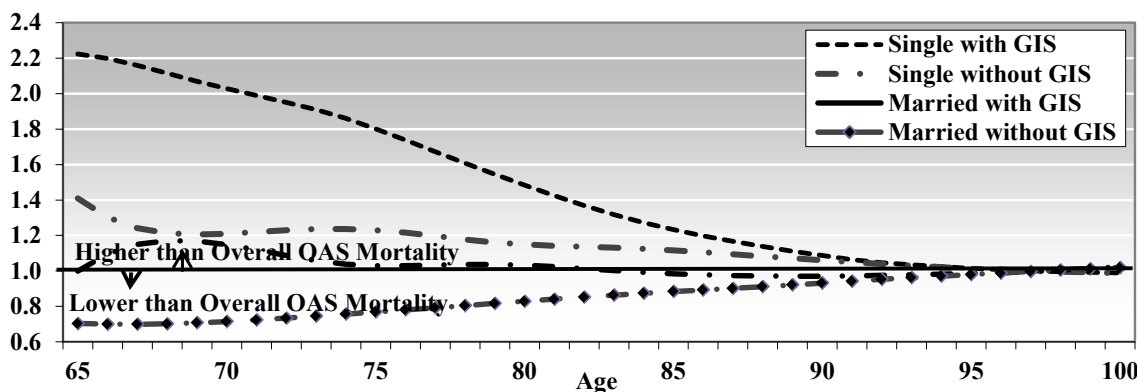
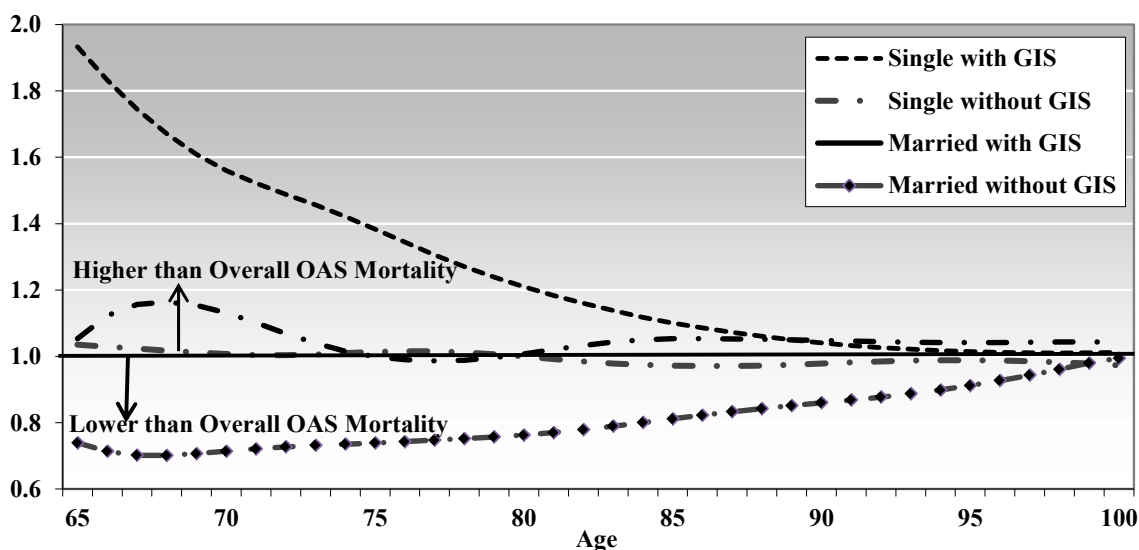


Table 22 and Chart 14 show female mortality by age, marital status, and type of benefit. Females experience lower mortality than males for all subgroups. Single female GIS beneficiaries experience the highest mortality, except at the very advanced ages. The mortality ratio for single female GIS beneficiaries relative to the overall program, which is 1.94 at age 65, converges more rapidly to 1.0 with increasing age compared to males. Married female GIS beneficiaries experience mortality that is somewhat higher than for single females not receiving the GIS. As well, single females not receiving the GIS experience mortality that is similar to the overall program level, with mortality ratios relative to the program close to one at all ages. Married females not in receipt of GIS benefits experience the lowest mortality at all ages compared to other subgroups. All subgroups show convergence to the overall program mortality as age increases.

Table 22 Female Mortality by Marital Status and Type of Benefit (2013)

Age	Overall	without GIS					with GIS				
		Married	Ratio Married to Overall	Single	Ratio Single to Overall	Ratio Single to Married	Married	Ratio Married to Overall	Single	Ratio Single to Overall	Ratio Single to Married
65	7.5	5.6	0.74	7.8	1.03	1.40	7.9	1.05	14.6	1.94	1.84
70	12.5	8.9	0.71	12.5	1.01	1.41	14.1	1.13	19.4	1.56	1.38
75	20.2	14.9	0.74	20.5	1.01	1.37	20.2	1.00	28.0	1.38	1.38
80	35.4	27.0	0.76	35.4	1.00	1.31	35.6	1.01	42.8	1.21	1.20
85	63.6	51.6	0.81	61.8	0.97	1.20	67.0	1.05	70.0	1.10	1.05
90	117.1	100.6	0.86	114.4	0.98	1.14	122.6	1.05	121.8	1.04	0.99
95	201.7	183.9	0.91	199.3	0.99	1.08	210.0	1.04	204.5	1.01	0.97
100	305.1	303.5	0.99	297.0	0.97	0.98	318.5	1.04	308.7	1.01	0.97

Chart 14 Mortality Ratios by Marital Status and Type of Benefit - Females (2013)



C. Life Expectancies by Marital Status and Type of Benefit

1. Life Expectancies by Marital Status (2013)

Table 23 shows the life expectancies for beneficiaries by age, sex, and marital status. For both males and females, the life expectancies of married beneficiaries are higher than those of single beneficiaries. In 2013, the life expectancies at age 65 are 20.0 years for married males and 16.5 years for singles. The life expectancies at age 65 for females are 23.0 years for married beneficiaries and 20.8 years for singles. For both sexes, the difference in life expectancies between married and single beneficiaries reduces as age increases.

Table 23 Life Expectancies by Marital Status (2013)

Age	Males				Females			
	Overall	Married	Single	Difference Married - Single	Overall	Married	Single	Difference Married - Single
65	18.9	20.0	16.5	3.5	21.8	23.0	20.8	2.1
70	15.2	16.0	13.3	2.7	17.7	18.7	17.0	1.7
75	11.7	12.4	10.4	1.9	13.9	14.8	13.5	1.3
80	8.7	9.1	7.9	1.2	10.4	11.1	10.2	0.9
85	6.1	6.4	5.8	0.6	7.5	7.9	7.4	0.5
90	4.2	4.3	4.1	0.3	5.1	5.4	5.1	0.3

2. Evolution of Life Expectancies by Marital Status (2001-2013)

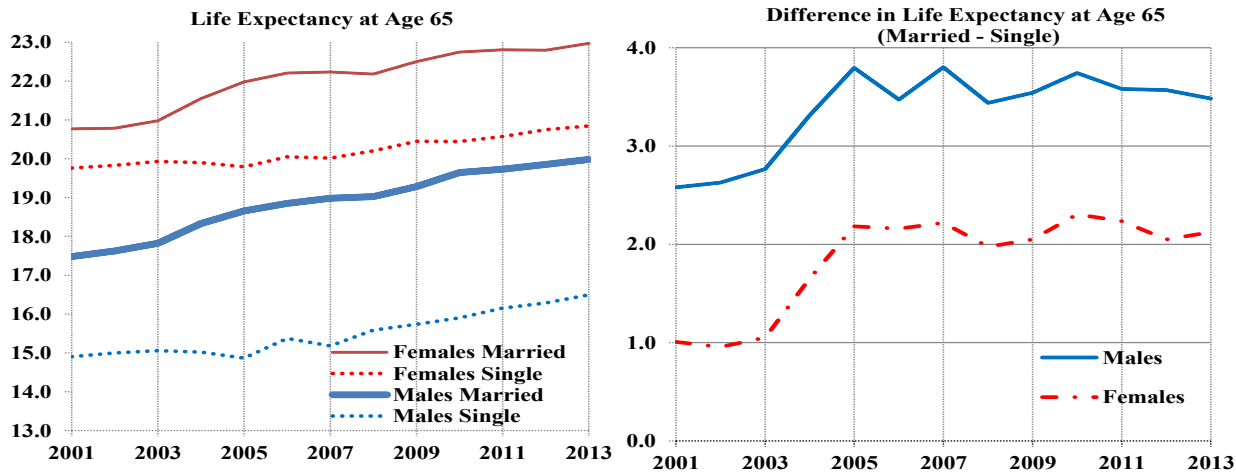
Table 24 and Chart 15 show the evolution of the life expectancy at age 65 by sex and marital status for the period 2001 to 2013. Since 2005, for both sexes, the gap in life expectancies at age 65 between married and singles has remained relatively stable. In 2005, the differential by marital status for males is 3.8 years, while the differential for females is 2.2 year. In 2013, the differentials between married and single beneficiaries are 3.5 years and 2.1 years for males and females, respectively.

Table 24 Evolution of Life Expectancies at Age 65 by Marital Status (2001-2013)⁽¹⁾

Year	Males				Females			
	Overall	Married	Single	Difference Married - Single	Overall	Married	Single	Difference Married - Single
2001	16.7	17.5	14.9	2.6	20.3	20.8	19.8	1.0
2002	16.9	17.6	15.0	2.6	20.3	20.8	19.8	1.0
2003	17.0	17.8	15.1	2.8	20.5	21.0	19.9	1.1
2004	17.3	18.3	15.0	3.3	20.6	21.6	19.9	1.7
2005	17.5	18.7	14.9	3.8	20.7	22.0	19.8	2.2
2006	17.8	18.8	15.4	3.5	21.0	22.2	20.1	2.2
2007	17.8	19.0	15.2	3.8	20.9	22.2	20.0	2.2
2008	18.0	19.0	15.6	3.4	21.1	22.2	20.2	2.0
2009	18.2	19.3	15.7	3.5	21.3	22.5	20.5	2.1
2010	18.5	19.6	15.9	3.7	21.4	22.7	20.4	2.3
2011	18.6	19.7	16.2	3.6	21.5	22.8	20.6	2.2
2012	18.7	19.9	16.3	3.6	21.7	22.8	20.7	2.0
2013	18.9	20.0	16.5	3.5	21.8	23.0	20.8	2.1

(1) Results for years 2001 to 2004 by marital status should be interpreted with caution due to data limitation on marital status for those years.

Chart 15 Evolution of Life Expectancies at Age 65 by Marital Status (2001-2013)⁽¹⁾



(1) Results for years 2001 to 2004 by marital status should be interpreted with caution due to data limitation on marital status for those years.

3. Life Expectancies by Marital Status and Type of Benefit (2013)

Table 25 shows the life expectancies for both sexes by age, marital status, and type of benefit. For a given marital status, life expectancies of beneficiaries without the GIS are higher than for beneficiaries receiving the benefit. For those beneficiaries without GIS benefits, married males, aged 65, are expected to live on average 20.4 years or 2.7 years longer than single males (17.7 years). In comparison, for the same benefit subgroup and age, married females are expected to live on average 23.5 years or 1.7 years longer than single females (21.8 years).

For GIS beneficiaries, married males, aged 65, are expected to live on average 18.6 years or 3.5 years longer than single males (15.1 years). For the same benefit subgroup and age, married females are expected to live on average 21.4 years or 1.5 years longer than single females (19.9 years). For both sexes in general, single GIS beneficiaries experience the lowest life expectancies relative to the other subgroups, while married beneficiaries not in receipt of the GIS experience the highest life expectancies.

Table 25 Life Expectancies by Marital Status and Type of Benefit (2013)

Age	Males							
	Married	Married without GIS	Married with GIS	Difference Married without – with GIS	Single	Single without GIS	Single with GIS	Difference Single without – with GIS
65	20.0	20.4	18.6	1.8	16.5	17.7	15.1	2.6
70	16.0	16.4	15.0	1.4	13.3	14.2	12.2	1.9
75	12.4	12.6	11.7	0.9	10.4	11.0	9.8	1.2
80	9.1	9.3	8.7	0.5	7.9	8.2	7.6	0.6
85	6.4	6.5	6.2	0.2	5.8	5.9	5.7	0.2
90	4.3	4.3	4.3	0.1	4.1	4.1	4.1	0.0
	Females							
	Married	Married without GIS	Married with GIS	Difference Married without – with GIS	Single	Single without GIS	Single with GIS	Difference Single without – with GIS
65	23.0	23.5	21.4	2.1	20.8	21.8	19.9	1.9
70	18.7	19.2	17.4	1.8	17.0	17.8	16.4	1.4
75	14.8	15.2	13.7	1.5	13.5	14.0	13.1	0.9
80	11.1	11.4	10.2	1.2	10.2	10.6	10.0	0.6
85	7.9	8.2	7.3	0.9	7.4	7.6	7.3	0.3
90	5.4	5.5	5.0	0.6	5.1	5.2	5.0	0.2

4. Evolution of Life Expectancies by Marital Status and Type of Benefit (2001-2013)

Table 26 and Chart 16 show the evolution of life expectancies at age 65 for both sexes by marital status and type of benefit received for the period 2001 to 2013. For married males, from 2001 to 2013, the life expectancy at age 65 for those not in receipt of the GIS increased by 2.6 years, from 17.8 to 20.4 years. For those receiving the GIS, the increase was 2.1 years, from 16.5 to 18.6 years. As such, the difference in life expectancies at age 65 between married males without the GIS and those receiving the benefit increased from 1.3 to 1.8 years over the period. For married females not receiving the GIS, life expectancies at age 65 increased by 2.5 years, from 21.0 to 23.5 years and by 1.4 years, from 20.0 to 21.4 years for those receiving the benefit. As such, the difference in life expectancies at age 65 for married females without the GIS and those receiving the GIS increased from 1.0 year to 2.1 years over the period.

For single males, from 2001 to 2013, the life expectancy at age 65 for those not receiving the GIS increased by 1.6 years, from 16.1 to 17.7 years. For those receiving the GIS, the increase was 1.9 years, from 13.2 to 15.1 years. As such, the difference in life expectancies at age 65 between single males without the GIS and those receiving the benefit decreased from 3.0 to 2.6 years over the period. For single females, life expectancies at age 65 increased by 1.0 year, from 20.8 to 21.8 years for those without the GIS, and by 1.2 years, from 18.7 to 19.9 years for those receiving the benefit. Consequently, the difference in life expectancies at age 65 for single females without the GIS and those receiving the benefit slightly reduced from 2.1 to 1.9 years over the period.

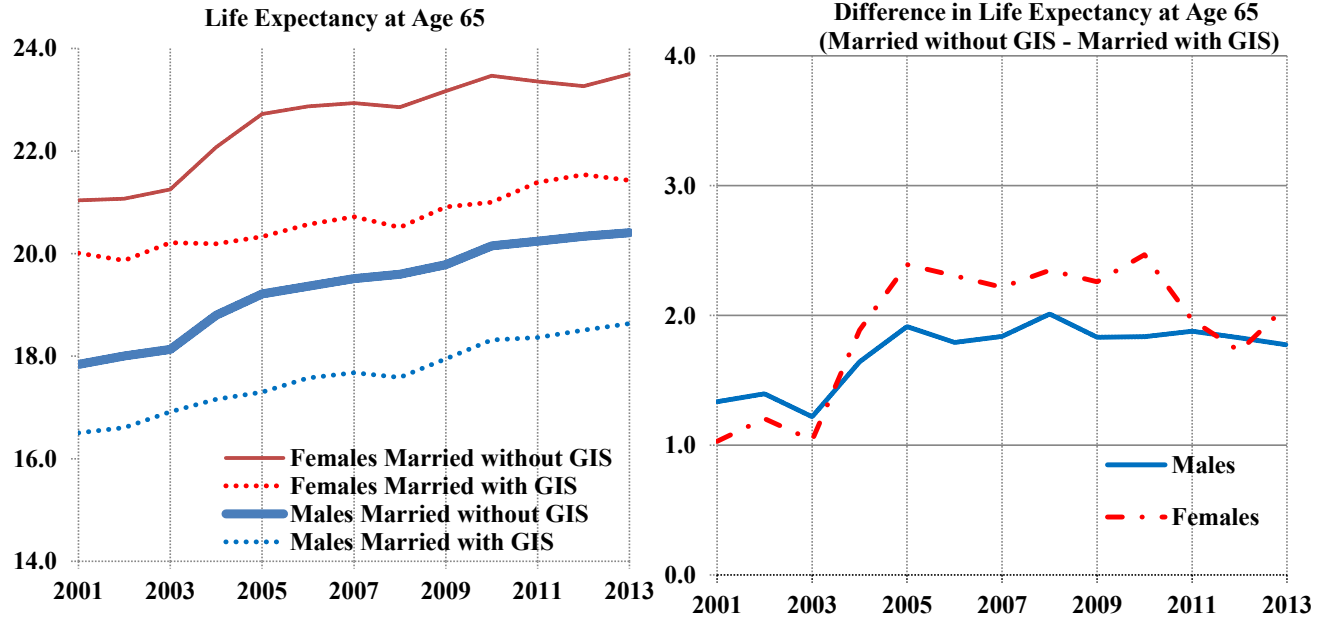
Table 26 Evolution of Life Expectancies at Age 65 by Marital Status and Type of Benefit (2001-2013)⁽¹⁾

Males						
Year	Married without GIS	Married with GIS	Difference	Single without GIS	Single with GIS	Difference
2001	17.8	16.5	1.3	16.1	13.2	3.0
2002	18.0	16.6	1.4	16.2	13.5	2.7
2003	18.1	16.9	1.2	16.3	13.5	2.8
2004	18.8	17.2	1.6	16.2	13.6	2.6
2005	19.2	17.3	1.9	15.7	13.8	1.8
2006	19.4	17.6	1.8	16.3	14.2	2.1
2007	19.5	17.7	1.8	16.2	13.9	2.3
2008	19.6	17.6	2.0	16.8	14.1	2.6
2009	19.8	17.9	1.8	16.9	14.4	2.5
2010	20.1	18.3	1.8	16.9	14.6	2.3
2011	20.2	18.4	1.9	17.4	14.7	2.7
2012	20.3	18.5	1.8	17.5	14.9	2.6
2013	20.4	18.6	1.8	17.7	15.1	2.6
Females						
Year	Married without GIS	Married with GIS	Difference	Single without GIS	Single with GIS	Difference
2001	21.0	20.0	1.0	20.8	18.7	2.1
2002	21.1	19.9	1.2	20.8	18.9	1.8
2003	21.3	20.2	1.0	21.0	19.0	2.0
2004	22.1	20.2	1.9	20.8	19.1	1.7
2005	22.7	20.3	2.4	20.6	19.1	1.4
2006	22.9	20.6	2.3	20.8	19.4	1.4
2007	22.9	20.7	2.2	20.8	19.4	1.4
2008	22.9	20.5	2.3	21.1	19.4	1.7
2009	23.2	20.9	2.3	21.4	19.6	1.8
2010	23.5	21.0	2.5	21.3	19.6	1.7
2011	23.4	21.4	2.0	21.5	19.7	1.7
2012	23.3	21.5	1.7	21.7	19.8	1.9
2013	23.5	21.4	2.1	21.8	19.9	1.9

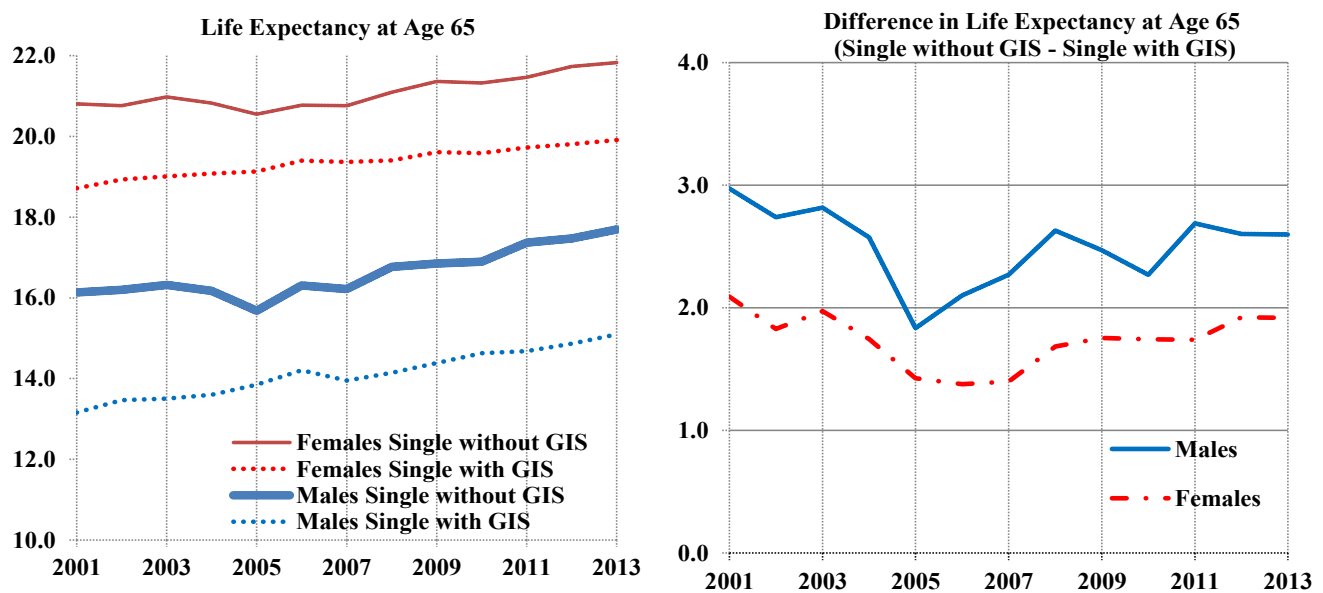
(1) Results for years 2001 to 2004 by marital status should be interpreted with caution due to data limitation on marital status for those years.

Chart 16 Life Expectancies at Age 65 by Marital Status and Type of Benefit (2001-2013)⁽¹⁾

Married



Single



(1) Results for years 2001 to 2004 by marital status should be interpreted with caution due to data limitation on marital status for those years.

VI. OAS Beneficiaries Mortality by Place of Birth

A. Introduction

This section presents the results of the study on the mortality of OAS beneficiaries by whether they were born in Canada or born outside Canada. The results of this study are consistent with the previous OAS program mortality studies prepared by the OCA (Actuarial Studies Nos. 5 and 11), which showed that OAS beneficiaries born outside Canada experience lower mortality than those born in Canada. This may be explained by the “healthy immigrant effect”¹ that results from several factors, including medical and employability screening prior to entry to Canada as well as cultural and lifestyle characteristics.

First, people in poor health are less likely to migrate to another country. In addition, all potential immigrants to Canada are subject to medical screening. Moreover, immigrants to Canada are partially selected on the basis of employability, which would imply a certain status of health. As new immigrants tend to be healthy, they experience greater life expectancies than those who had immigrated years earlier. Lastly, cultural and lifestyle characteristics of immigrants may also contribute to their relative better health and increased longevity.

B. Mortality Experience by Place of Birth for Year 2013

1. Beneficiaries by Place of Birth

Table 27 shows the proportion of OAS beneficiaries by age group, sex, and place of birth. Overall, about 30% of beneficiaries were born outside Canada. Except for beneficiaries at advanced ages, there is little variation in the proportion of beneficiaries who were born outside of Canada.

Table 27 Beneficiaries by Place of Birth (as at December 31st 2013)

Age Group	Males			Females		
	Born in Canada	Born Outside Canada	Proportion Born Outside Canada	Born in Canada	Born Outside Canada	Proportion Born Outside Canada
65-69	580,583	223,423	28%	622,676	238,746	28%
70-74	413,340	175,937	30%	458,320	188,076	29%
75-79	287,849	137,231	32%	349,114	153,435	31%
80-84	206,088	99,468	33%	290,296	117,893	29%
85-89	108,859	55,975	34%	195,286	87,790	31%
90-94	39,070	19,992	34%	100,696	41,000	29%
95-99	7,348	3,240	31%	28,987	8,872	23%
100+	645	500	44%	4,038	2,191	35%
Total	1,643,782	715,766	30%	2,049,413	838,003	29%

Tables 67 to 72 in the Annex show various statistics related to the OAS program by individual age, sex, and place of birth.

¹ Vang Z., Sigouin J., Flenon A., and Gagnon A. 2015, The Healthy Immigrant Effect in Canada: A Systematic Review. Population Change and Lifecourse Strategic Knowledge Cluster Discussion Paper Series: Vol 3: Iss. 1, Article 4.

2. Deaths by Place of Birth

Table 28 shows that there is little variation in the proportion of deaths by age, sex, and place of birth, except at ages 100 and over. For age groups between 65 and 99, the proportion of deaths for those born outside Canada varies between 22% and 31% for males and between 20% and 29% for females. At ages 100 and above, the corresponding proportions increase to 43% for males and 34% for females.

Table 28 Deaths by Place of Birth (2013)

Age Group	Males			Females		
	Born in Canada	Born Outside Canada	Proportion Born Outside of Canada	Born in Canada	Born Outside Canada	Proportion Born Outside of Canada
65-69	9,075	2,499	22%	6,314	1,530	20%
70-74	10,479	3,182	23%	7,662	2,026	21%
75-79	11,855	4,266	26%	9,779	2,989	23%
80-84	14,395	5,663	28%	14,160	4,582	24%
85-89	13,182	5,814	31%	16,637	6,804	29%
90-94	8,006	3,478	30%	15,710	5,593	26%
95-99	2,482	842	25%	7,591	1,902	20%
100+	291	216	43%	1,534	791	34%
Total	69,765	25,960	27%	79,387	26,217	25%

3. Exposures by Place of Birth

Table 29 shows the proportion of exposures by age group, sex, and place of birth. For both sexes, the slight increase by age in the proportion of exposures of those born outside Canada reflects the fact that those born outside Canada live longer than those born in Canada. At ages 100 and older, the proportion of those born outside Canada increases significantly for both sexes.

Table 29 Exposures by Place of Birth (2013)

Age Group	Males			Females		
	Born in Canada	Born Outside of Canada	Proportion Born Outside of Canada	Born in Canada	Born Outside of Canada	Proportion Born Outside of Canada
65-69	571,774	227,060	28%	609,318	238,592	28%
70-74	405,177	173,997	30%	449,782	185,959	29%
75-79	284,725	136,328	32%	346,509	151,796	30%
80-84	204,764	98,589	32%	290,337	117,725	29%
85-89	106,857	55,127	34%	193,859	87,875	31%
90-94	38,274	18,695	33%	99,764	38,454	28%
95-99	7,166	2,801	28%	28,259	7,924	22%
100+	585	415	42%	3,785	1,917	34%
Total	1,619,322	713,012	31%	2,021,613	830,241	29%

4. Mortality by Place of Birth

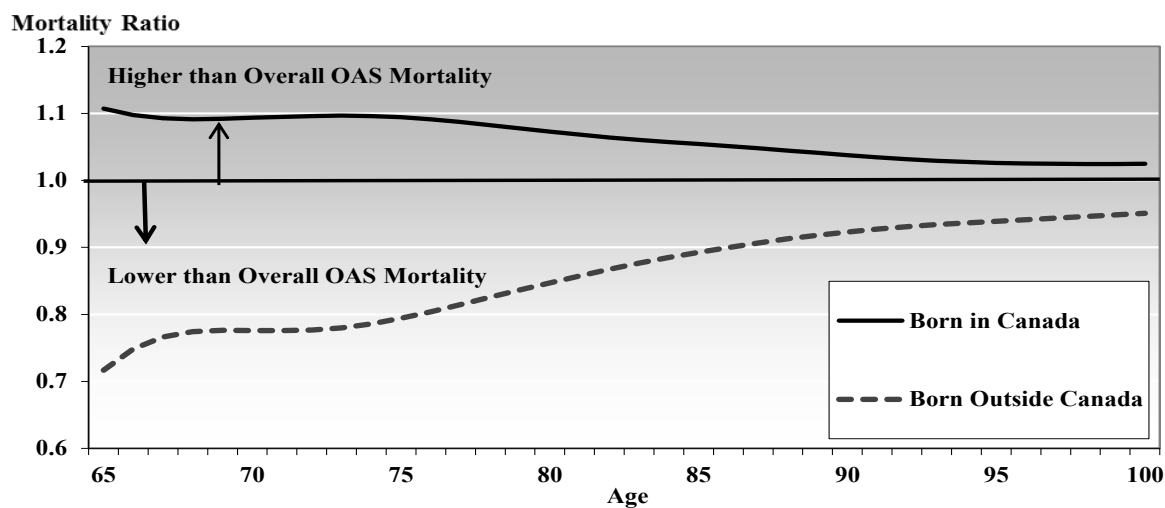
Table 30 and Chart 17 show that for both sexes, mortality at age 65 for those born in Canada is 11% higher than the overall OAS program mortality. In comparison, for both sexes, mortality at age 65 of those born outside Canada is 30% lower compared to the overall OAS program. In both cases, mortality converges to that of the overall program as age increases.

Table 30 Graduated Mortality by Place of Birth (2013)

Age	Males					Females				
	Overall	Born in Canada	Ratio Born in Canada to Overall	Born Outside Canada	Ratio Born Outside Canada to Overall	Overall	Born in Canada	Ratio Born in Canada to Overall	Born Outside Canada	Ratio Born Outside Canada to Overall
65	11.9	13.2	1.11	8.5	0.72	7.5	8.4	1.11	5.3	0.70
70	19.3	21.1	1.09	15.0	0.78	12.5	14.0	1.12	8.7	0.70
75	30.8	33.7	1.09	24.5	0.79	20.2	22.5	1.11	15.0	0.74
80	51.6	55.3	1.07	43.7	0.85	35.4	38.2	1.08	28.6	0.81
85	90.7	95.7	1.05	81.0	0.89	63.6	66.3	1.04	57.4	0.90
90	156.3	162.2	1.04	144.3	0.92	117.1	119.2	1.02	111.9	0.96
95	251.5	258.1	1.03	236.2	0.94	201.7	205.4	1.02	189.2	0.94
100	371.3	380.5	1.02	353.1	0.95	305.1	311.4	1.02	286.5	0.94

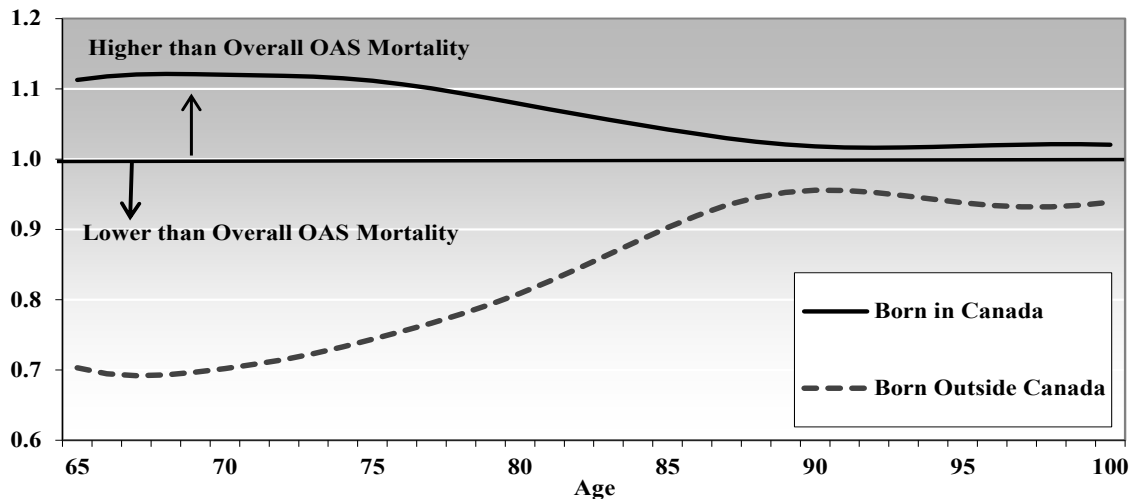
Chart 17 OAS Beneficiaries Mortality Ratios by Place of Birth (2013)

Males



Females

Mortality Ratio



C. Life Expectancies by Place of Birth

Table 31 shows the life expectancies by place of birth. For males, the life expectancies at age 65 are 20.3 years for OAS beneficiaries who were born outside Canada and 18.4 years for those born in Canada, for a difference of close to 2.0 years. For females, the life expectancies at age 65 are 23.1 years for beneficiaries who were born outside Canada and 21.3 years for those born in Canada, a difference also of close to 2.0 years. For both sexes, the difference in life expectancies by place of birth reduces as age increases.

Table 31 Life Expectancies by Place of Birth (2013)

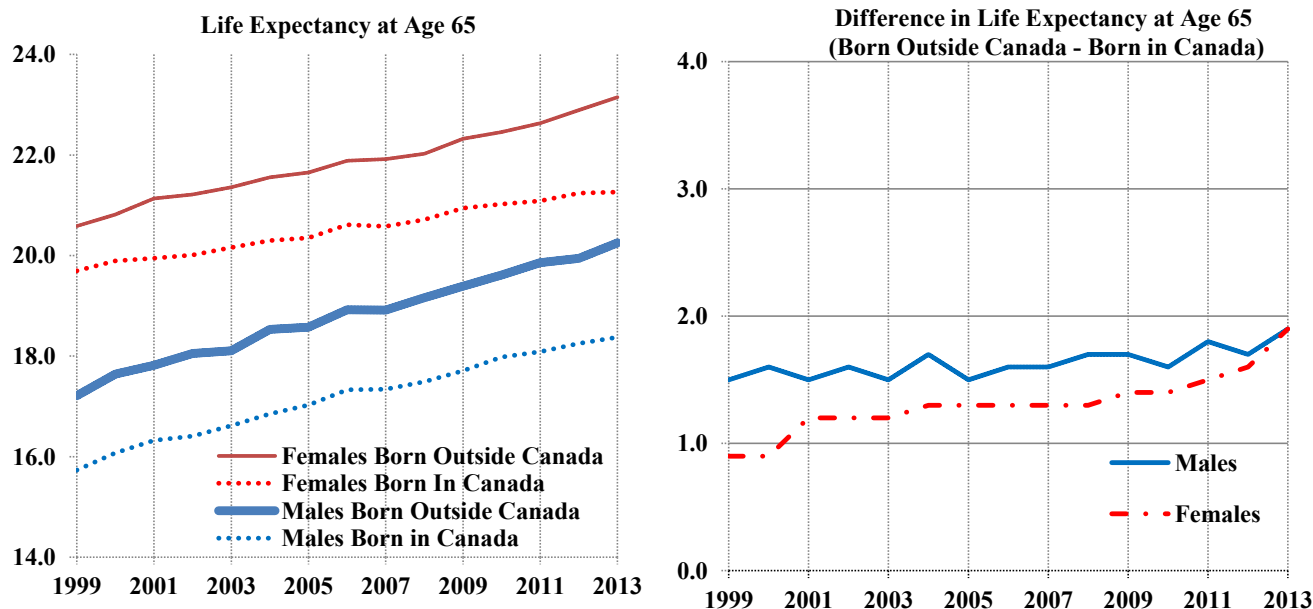
Age	Males				Females			
	Overall	Born Outside Canada	Born In Canada	Difference Born Outside – In Canada	Overall	Born Outside Canada	Born In Canada	Difference Born Outside – In Canada
65	18.9	20.3	18.4	1.9	21.8	23.1	21.3	1.9
70	15.2	16.3	14.7	1.6	17.7	18.8	17.3	1.6
75	11.7	12.6	11.4	1.2	13.9	14.7	13.6	1.2
80	8.7	9.3	8.4	0.8	10.4	11.0	10.2	0.8
85	6.1	6.5	6.0	0.6	7.5	7.8	7.4	0.4
90	4.2	4.4	4.1	0.4	5.1	5.3	5.0	0.3

Table 32 and Chart 18 show that, for both sexes over the period 1999 to 2013, the gap between the life expectancies at age 65 of OAS beneficiaries born outside Canada and those born in Canada has increased. In 1999, the differential by place of birth was 1.5 years for males and 0.9 of a year for females. By 2013, the differential by place of birth for both males and females increased to 1.9 years.

Table 32 Evolution of Life Expectancies at Age 65 by Place of Birth (1999-2013)

Year	Males			Females		
	Born Outside Canada	Born In Canada	Difference Born Outside – In Canada	Born Outside Canada	Born In Canada	Difference Born Outside – In Canada
1999	17.2	15.7	1.5	20.6	19.7	0.9
2000	17.6	16.1	1.6	20.8	19.9	0.9
2001	17.8	16.3	1.5	21.1	19.9	1.2
2002	18.1	16.4	1.6	21.2	20.0	1.2
2003	18.1	16.6	1.5	21.4	20.2	1.2
2004	18.5	16.9	1.7	21.6	20.3	1.3
2005	18.6	17.0	1.5	21.7	20.4	1.3
2006	18.9	17.3	1.6	21.9	20.6	1.3
2007	18.9	17.3	1.6	21.9	20.6	1.3
2008	19.2	17.5	1.7	22.0	20.7	1.3
2009	19.4	17.7	1.7	22.3	20.9	1.4
2010	19.6	18.0	1.6	22.5	21.0	1.4
2011	19.9	18.1	1.8	22.6	21.1	1.5
2012	19.9	18.3	1.7	22.9	21.2	1.6
2013	20.3	18.4	1.9	23.1	21.3	1.9

Chart 18 Evolution of Life Expectancies at Age 65 by Place of Birth (1999-2013)



VII. OAS Beneficiaries Mortality Improvement Rates

Historical average annual mortality improvement rates measure the pace of change in mortality over time. The “improvement in mortality” indicates that mortality rates have decreased over time, which in turn has led to increased longevity. Mortality improvement rates may be used to formulate assumptions about how mortality and consequently life expectancies may evolve in the future.

1. Evolution of OAS Beneficiaries Mortality Improvement Rates

Table 33 and Chart 19 compare OAS beneficiary mortality improvement rates experienced over the period 1999 to 2013 to those experienced over the more recent period from 2010 to 2013 and to those that were assumed under the 12th OAS Program Actuarial Report for the first five years of the projections (2010-2014).

The average annual mortality improvement rate for males in the age group 65 to 74 over the period 1999 to 2013 is 2.8%, and this compares to a level of 1.8% over the more recent period from 2010 to 2013. In comparison, for the same age group, the average annual mortality improvement rate for females has shown little change, standing at 1.8% for both the 1999 to 2013 and 2010 to 2013 periods.

For the age group 75 to 89, the average annual mortality improvement rates experienced over 1999 to 2013 are 2.4% for males and 1.8% for females, which are similar to those assumed under the 12th OAS Program Actuarial Report for the first five years of the projections (2010-2014). Over the more recent period from 2010 to 2013, the average annual mortality improvement rates of 2.3% for males and 1.6% for females are slightly lower than those experienced over the longer period 1999 to 2013.

For both sexes and most age groups, the average annual mortality improvement rates for OAS beneficiaries over the period 1999 to 2013 are at levels close to or the same as those assumed under the 12th OAS Program Actuarial Report for the first five years of the projections (2010-2014). Overall, the average annual mortality improvement rates over the period 1999 to 2013 are 2.3% for males and 1.6% for females, which compare to 2.3% and 1.5%, respectively for males and females as assumed under the 12th OAS Program Actuarial Report for 2010 to 2014.

Table 33 OAS Beneficiaries Average Annual Mortality Improvement Rates

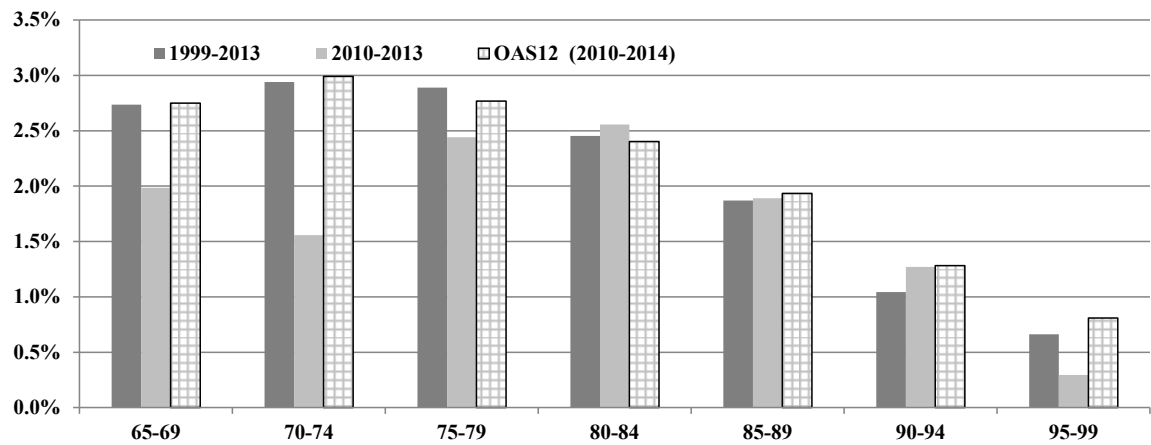
Age Group	1999-2013 ⁽¹⁾		2010-2013		12 th OAS AR (2010-2014) ⁽²⁾	
	Males	Females	Males	Females	Males	Females
65-69	2.7%	1.8%	2.0%	1.9%	2.7%	1.7%
70-74	2.9%	1.9%	1.6%	1.8%	3.0%	1.7%
75-79	2.9%	2.0%	2.4%	2.1%	2.8%	1.7%
80-84	2.5%	1.8%	2.6%	1.4%	2.4%	1.7%
85-89	1.9%	1.7%	1.9%	1.5%	1.9%	1.5%
90-94	1.0%	1.1%	1.3%	1.3%	1.3%	1.2%
95-99	0.7%	0.7%	0.3%	1.2%	0.8%	0.8%
100+	-0.1%	0.5%	2.5%	1.2%	0.5%	0.5%
Total	2.3%	1.6%	2.0%	1.5%	2.3%	1.5%
65-74	2.8%	1.8%	1.8%	1.8%	2.9%	1.7%
75-89	2.4%	1.8%	2.3%	1.6%	2.4%	1.6%

(1) Improvement rates obtained using the corresponding 2013 exposures and populations as weights.

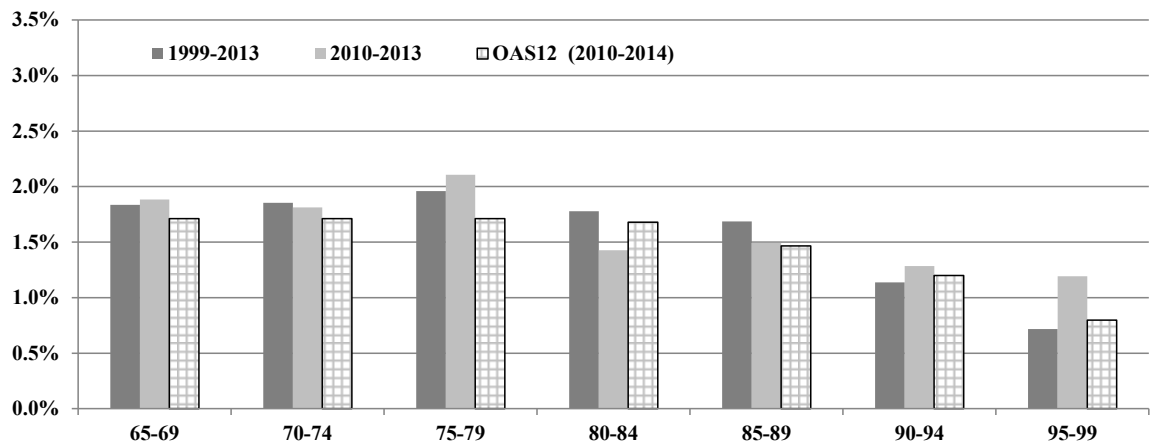
(2) 12th OAS Program Actuarial Report improvement rates for 2010-2014 are for Canada.

Chart 19 OAS Beneficiaries Mortality Improvement Rates

Males



Females



2. Comparison of OAS Beneficiaries and Population Mortality Improvements

Table 34 compares the OAS beneficiary average annual mortality improvement rates with those of the population of Canada. At the time of this study, population mortality statistics from the CHMD were available only up to the year 2011. For both experience periods examined, 1999-2011 and 2006-2011, mortality improvement rates of OAS beneficiaries for both sexes and most age groups are very similar to those observed for the general population. Over the experience period 2006 to 2011, for males in the age group 65 to 74, the mortality improvement rate for OAS beneficiaries is 2.6%, while it is 2.8% for the general population. For females in the same age group, the OAS beneficiaries mortality improvement rate is 2.0% compared to 2.2% for the population.

Table 34 OAS Beneficiaries and Population Average Annual Mortality Improvement Rates⁽¹⁾

Age Group	Males				Females			
	1999-2011		2006-2011		1999-2011		2006-2011	
	OAS	Population ⁽¹⁾	OAS	Population ⁽¹⁾	OAS	Population ⁽¹⁾	OAS	Population ⁽¹⁾
65-69	2.8%	2.8%	2.5%	2.7%	1.8%	2.0%	2.0%	2.1%
70-74	3.1%	3.1%	2.6%	2.9%	1.8%	1.9%	1.9%	2.2%
75-79	2.9%	2.9%	2.8%	2.9%	1.9%	2.1%	1.9%	2.1%
80-84	2.5%	2.8%	2.3%	2.2%	1.8%	2.2%	1.5%	1.7%
85-89	1.8%	2.1%	1.8%	2.3%	1.7%	1.8%	1.7%	2.1%
90-94	0.9%	1.2%	1.5%	1.7%	1.1%	1.2%	1.2%	1.1%
95-99	0.7%	1.1%	0.7%	1.0%	0.6%	0.8%	0.6%	0.7%
100+	-0.5%	-0.1%	0.4%	0.6%	0.4%	0.4%	1.0%	0.2%
Total	2.4%	2.5%	2.2%	2.4%	1.5%	1.7%	1.5%	1.7%
65-74	3.0%	3.0%	2.6%	2.8%	1.8%	1.9%	2.0%	2.2%
75-89	2.4%	2.6%	2.3%	2.4%	1.8%	2.0%	1.7%	2.0%

(1) Population mortality improvement rates are based on CHMD data for Canada using the 2011 population as weights. OCA calculations.

3. OAS Beneficiaries Mortality Improvement Rates by Type of Benefit

a. Comparison by Type of Benefit

Table 35 and Chart 20 show mortality improvement rates for the period 1999 to 2013 by age group, sex, and type of benefit received. For both sexes, mortality improvements for GIS beneficiaries have generally been lower than for OAS beneficiaries not receiving the GIS. For example, over the period 1999 to 2013, for ages 65 to 74, GIS beneficiaries experienced average annual mortality improvement rates of 2.1% for males and 1.4% for females, which compare to average annual improvement rates of 3.2% for males and 2.1% for females not receiving the GIS. As shown in the next section, these improvement rates have been somewhat lower over the more recent period 2010 to 2013.

Males and females aged 65 to 74 experience a larger difference in mortality improvement rates by type of benefit than for those aged 75 to 89. For males aged 65 to 74, the absolute difference is 1.1% (3.2% without the GIS compared to 2.1% with the GIS). For males aged 75 to 89, the corresponding difference is 0.2% (2.5% without GIS compared to 2.3% with GIS). For females, the differences in mortality improvement rates by type of benefit received are 0.7% for ages 65 to 74 (2.1% without GIS compared to 1.4% with GIS) and 0.3% for ages 75 to 89 (1.9% without GIS compared to 1.6% with GIS).

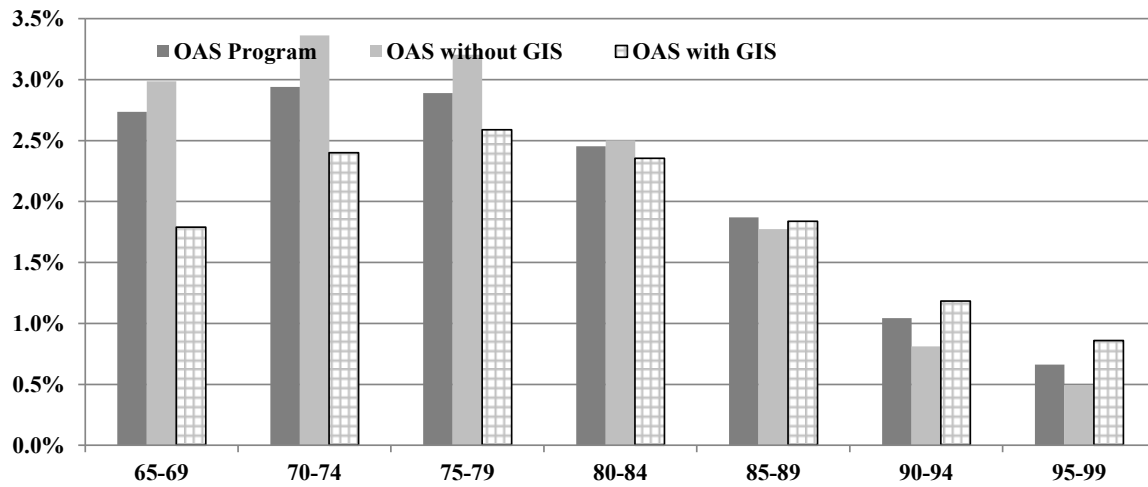
Table 35 Average Annual Mortality Improvement Rates by Type of Benefit (1999-2013)

Age Group	Males				Females			
	Overall	without GIS	with GIS	Difference	Overall	without GIS	with GIS	Difference
65-69	2.7%	3.0%	1.8%	1.2%	1.8%	2.0%	1.2%	0.8%
70-74	2.9%	3.4%	2.4%	1.0%	1.9%	2.1%	1.6%	0.5%
75-79	2.9%	3.2%	2.6%	0.6%	2.0%	2.1%	1.8%	0.3%
80-84	2.5%	2.5%	2.4%	0.1%	1.8%	1.8%	1.5%	0.3%
85-89	1.9%	1.8%	1.8%	-0.1%	1.7%	1.8%	1.5%	0.3%
90-94	1.0%	0.8%	1.2%	-0.4%	1.1%	1.2%	1.0%	0.2%
95-99	0.7%	0.5%	0.9%	-0.4%	0.7%	0.9%	0.6%	0.3%
Total	2.3%	2.4%	2.1%	0.4%	1.6%	1.7%	1.3%	0.4%
65-74	2.8%	3.2%	2.1%	1.1%	1.8%	2.1%	1.4%	0.7%
75-89	2.4%	2.5%	2.3%	0.2%	1.8%	1.9%	1.6%	0.3%

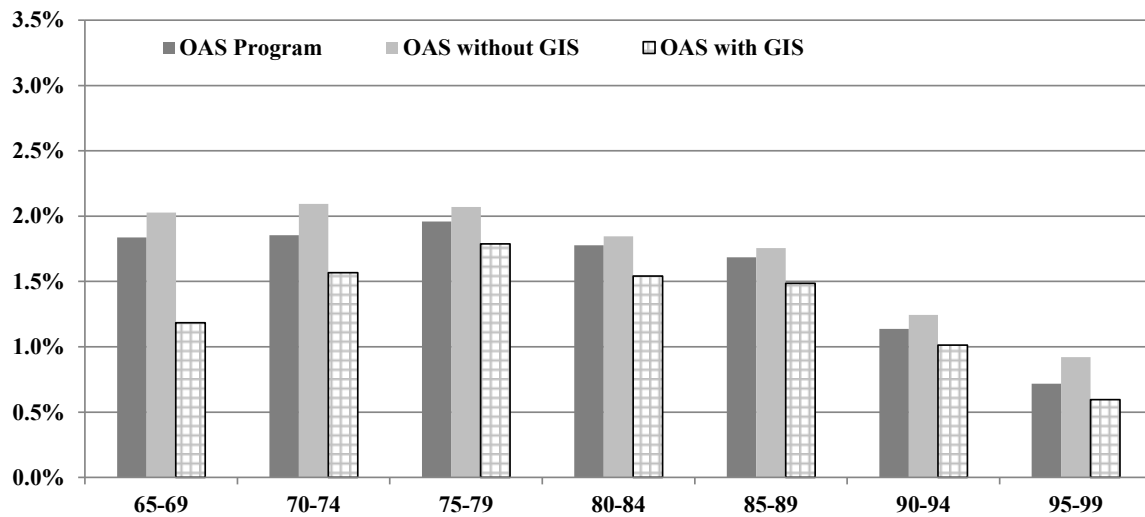
Although mortality improvement rates have been lower for those receiving the GIS, the gap in life expectancies at age 65 between those with and without GIS as nonetheless remained relatively stable over the 1999 to 2013 period (as is shown in previous Table 16). This results from the fact that their lower mortality improvement rates apply to much higher mortality rates and as such the absolute reduction in the mortality rate is similar to those without GIS where higher mortality improvement rates apply to much lower mortality rates.

Chart 20 OAS Beneficiaries Mortality Improvement Rates by Type of Benefit (1999-2013)

Males



Females



b. Comparison of OAS and CPP Retirement Mortality Improvements¹

This section compares on an overall basis as well as by type of benefit received, the OAS and CPP retirement mortality improvement rates experienced over the period 1999 to 2013 and over the more recent period 2010 to 2013.

Average annual mortality improvement rates of OAS beneficiaries associated with a higher standard of living (i.e. those without GIS benefits) are compared to the rates of CPP retirement beneficiaries who, at the start of their benefit, receive at least 99.5% of the maximum CPP retirement pension (i.e. a “CPP High Pension”). As well, the average annual mortality improvement rates of OAS beneficiaries associated with a lower standard of living (i.e. those who receive the GIS benefit) are compared to the rates of CPP retirement beneficiaries who initially receive less than 37.5% of the maximum CPP retirement pension (i.e. a “CPP Low Pension”).

Males

Table 36 shows that, for males aged 65 to 74, the average annual mortality improvement rates for all types of benefits (OAS without and with the GIS, and CPP high and low pensions) are lower over the recent period 2010 to 2013 compared to the longer period from 1999 to 2013. In comparison, for males aged 75 to 89, the average annual mortality improvement rates for all types of benefits have remained at about the same level over both the 1999-2013 and 2010-2013 periods.

Over the period 1999 to 2013, male average annual mortality improvement rates between beneficiaries not in receipt of the GIS and beneficiaries in receipt of a high CPP retirement pension have been generally at the same level. For example, for the 1999-2013 period, male beneficiaries aged 65 to 74 not receiving the GIS experienced an average annual improvement rate of 3.2% compared to 3.5% for CPP beneficiaries with a high pension.

Chart 21 shows that over the period 2010 to 2013, for males aged 65 to 74, average annual mortality improvement rates are lower than those assumed under the 12th OAS Program Actuarial Report for years 2010 to 2014 (2.9%). In comparison, Chart 22 shows that for the same period, for males aged 75 to 89, average annual mortality improvement rates have been at about the same levels as those assumed under the 12th OAS Program Actuarial Report for years 2010 to 2014 (2.4%).

¹ CPP figures are based on Actuarial Study No. 16 “Canada Pension Plan Retirement, Survivor and Disability Beneficiaries Mortality Study” published in June 2015.

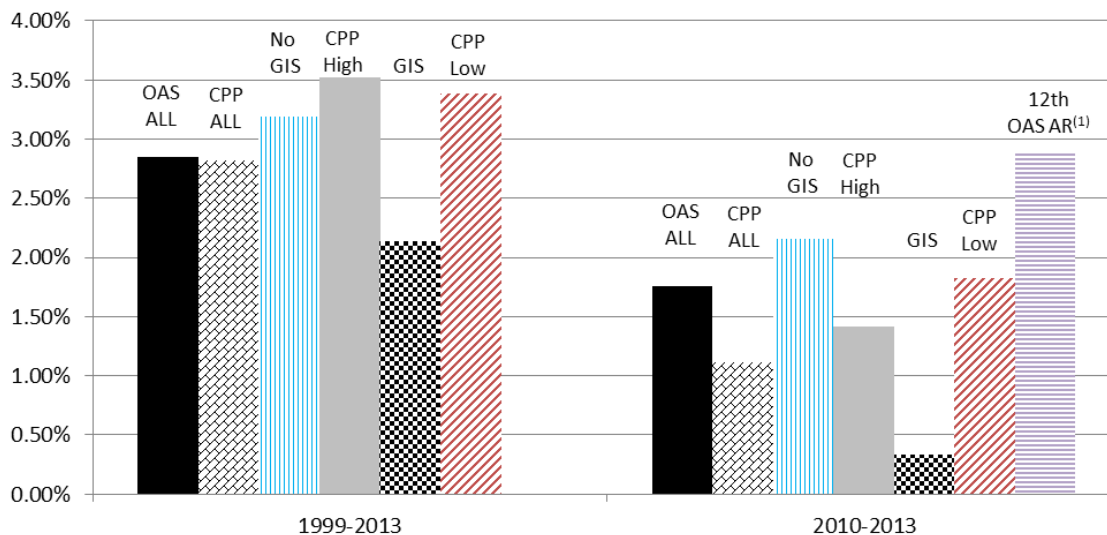
Table 36 OAS and CPP Annual Mortality Improvement Rates – Males

Average Annual Mortality Improvement Rates 1999-2013						
Age Group	OAS Overall	CPP Overall	OAS without GIS	CPP High	OAS with GIS	CPP Low
65-69	2.7%	2.7%	3.0%	3.3%	1.8%	3.3%
70-74	2.9%	3.0%	3.4%	3.7%	2.4%	3.4%
75-79	2.9%	2.8%	3.2%	3.4%	2.6%	3.4%
80-84	2.5%	2.4%	2.5%	2.5%	2.4%	2.8%
85-89	1.9%	1.9%	1.8%	1.9%	1.8%	2.2%
90-94	1.0%	1.1%	0.8%	0.9%	1.2%	1.6%
95-99	0.7%	0.7%	0.5%	0.3%	0.9%	1.4%
Total	2.3%	2.3%	2.4%	2.5%	2.1%	3.0%
65-74	2.8%	2.8%	3.2%	3.5%	2.1%	3.4%
75-89	2.4%	2.3%	2.5%	2.2%	2.3%	2.7%

Average Annual Mortality Improvement Rates 2010-2013							
Age Group	OAS Overall	CPP Overall	OAS without GIS	CPP High	OAS with GIS	CPP Low	12 th OAS AR ⁽¹⁾
65-69	2.0%	0.7%	2.0%	4.6%	0.9%	1.6%	2.7%
70-74	1.6%	1.5%	2.3%	-0.4%	-0.1%	2.0%	3.0%
75-79	2.4%	2.4%	2.9%	3.6%	1.8%	2.9%	2.8%
80-84	2.6%	2.3%	2.7%	3.2%	2.4%	2.5%	2.4%
85-89	1.9%	1.8%	1.9%	2.4%	1.9%	2.6%	1.9%
90-94	1.3%	0.7%	0.6%	0.4%	2.4%	0.8%	1.3%
95-99	0.3%	-0.4%	-0.4%	0.0%	1.4%	-1.6%	0.8%
Total	2.0%	1.7%	2.1%	2.3%	1.6%	2.2%	2.3%
65-74	1.8%	1.1%	2.2%	1.4%	0.3%	1.8%	2.9%
75-89	2.3%	2.2%	2.5%	3.0%	2.1%	2.7%	2.4%

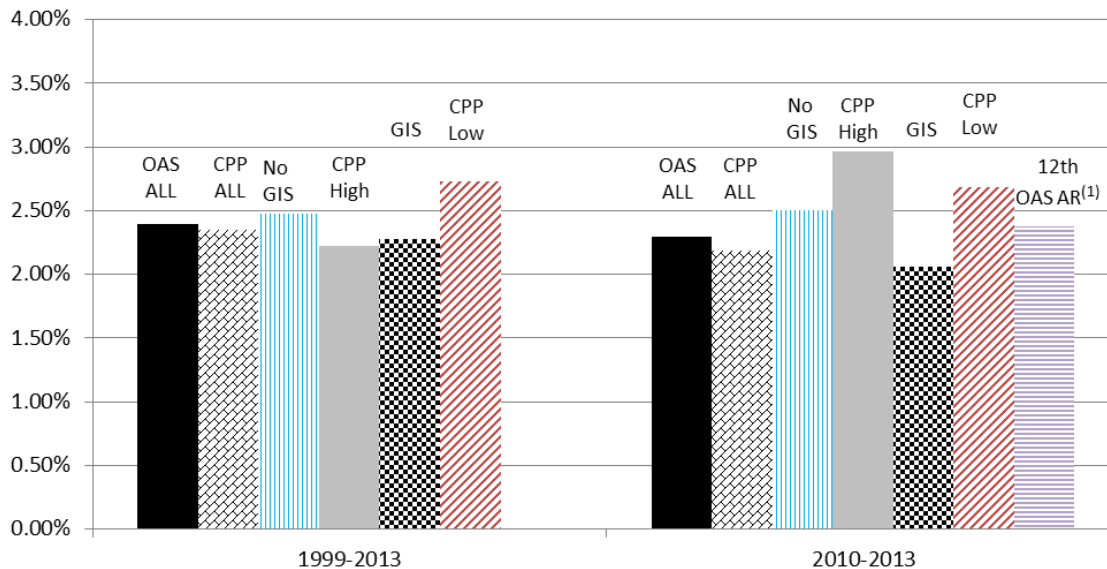
(1) 12th OAS Program Actuarial Report period of 2010 to 2014.

Chart 21 Mortality Improvement Rates of OAS and CPP by Type of Benefit– Males 65-74



(1) 12th OAS Program Actuarial Report period of 2010 to 2014.

Chart 22 Mortality Improvement Rates of OAS and CPP by Type of Benefit – Males 75-89



(1) 12th OAS Program Actuarial Report period of 2010 to 2014.

Females

Table 37 and Chart 23 show that, for females aged 65 to 74, average annual mortality improvement rates experienced for all OAS benefit types remained at similar levels over the periods 2010-2013 and 1999-2013. For females aged 75 to 89, average annual mortality improvement rates experienced for all types of OAS and CPP benefits are generally lower over the 2010-2013 period compared to 1999-2013.

Over the period 1999 to 2013, female average annual mortality improvement rates between beneficiaries not in receipt of the GIS and beneficiaries in receipt of a high CPP retirement pension have been at similar levels. For example, over the period 1999 to 2013, female beneficiaries aged 65 to 74 not in receipt of the GIS experienced an average annual improvement rate of 2.1% compared to 1.8% for CPP beneficiaries with a high pension.

Chart 24 shows that, for the period 2010 to 2013, for females aged 75 to 89, average annual mortality improvement rates experienced for all OAS and CPP benefit types have been at about the same level as that assumed under the 12th OAS Program Actuarial Report for years 2010 to 2014 (1.6%).

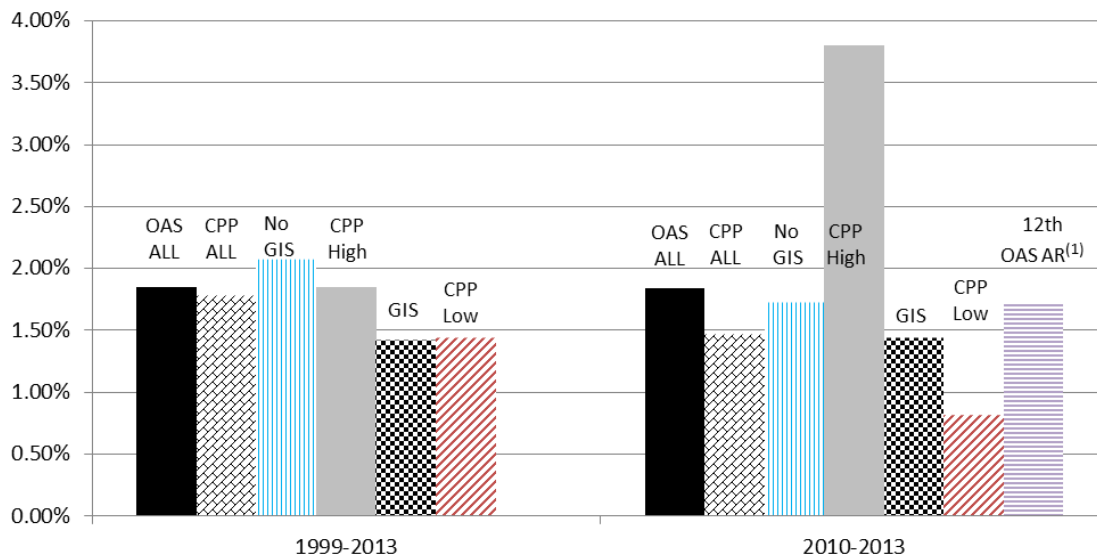
Table 37 OAS and CPP Annual Mortality Improvement Rates – Females

Average Annual Mortality Improvement Rates 1999-2013						
Age Group	OAS Overall	CPP Overall	OAS without GIS	CPP High	OAS with GIS	CPP Low
65-69	1.8%	1.7%	2.0%	1.3%	1.2%	1.2%
70-74	1.9%	1.8%	2.1%	2.2%	1.6%	1.6%
75-79	2.0%	1.9%	2.1%	2.0%	1.8%	1.7%
80-84	1.8%	1.9%	1.8%	1.6%	1.5%	2.0%
85-89	1.7%	1.8%	1.8%	1.1%	1.5%	1.9%
90-94	1.1%	1.2%	1.2%	0.9%	1.0%	1.4%
95-99	0.7%	0.7%	0.9%	1.4%	0.6%	0.7%
Total	1.6%	1.7%	1.7%	1.4%	1.3%	1.7%
65-74	1.8%	1.8%	2.1%	1.8%	1.4%	1.4%
75-79	1.8%	1.8%	1.9%	1.3%	1.6%	1.8%

Average Annual Mortality Improvement Rates 2010-2013							
Age Group	OAS Overall	CPP Overall	OAS without GIS	CPP High	OAS with GIS	CPP Low	12 th OAS AR ⁽¹⁾
65-69	1.9%	1.4%	2.0%	7.0%	0.9%	0.1%	1.7%
70-74	1.8%	1.5%	1.5%	1.5%	1.8%	1.3%	1.7%
75-79	2.1%	2.0%	2.6%	5.5%	1.6%	2.3%	1.7%
80-84	1.4%	1.4%	1.6%	1.7%	1.2%	1.0%	1.7%
85-89	1.5%	1.5%	1.5%	-0.5%	1.4%	1.1%	1.5%
90-94	1.3%	0.9%	0.9%	2.1%	1.5%	0.4%	1.2%
95-99	1.2%	0.6%	1.3%	1.7%	1.1%	1.1%	0.8%
Total	1.5%	1.4%	1.6%	2.1%	1.4%	1.1%	1.5%
65-74	1.8%	1.5%	1.7%	3.8%	1.4%	0.8%	1.7%
75-79	1.6%	1.6%	1.8%	1.6%	1.4%	1.4%	1.6%

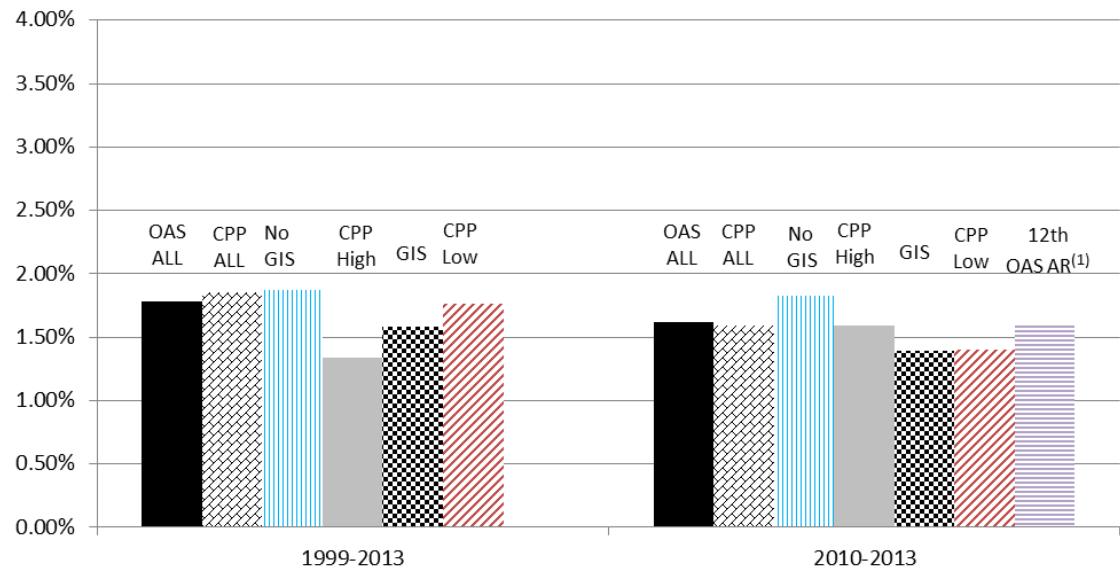
(1) 12th OAS Program Actuarial Report period of 2010 to 2014.

Chart 23 Mortality Improvement Rates of OAS and CPP by Type of Benefit– Females 65-74



(1) 12th OAS Program Actuarial Report period of 2010 to 2014.

Chart 24 Mortality Improvement Rates of OAS and CPP by Type of Benefit– Females 75-89



(1) 12th OAS Program Actuarial Report period of 2010 to 2014.

VIII. Conclusion

In general, this study confirms the results that were obtained by the previous OAS program mortality studies. The analysis by type of benefit received shows that beneficiaries who do not receive the GIS experience lower mortality relative to the mortality of those beneficiaries who receive the GIS. The analysis by marital status shows that beneficiaries who are married experience lower mortality relative to the mortality of single beneficiaries. The analysis by place of birth shows that beneficiaries who were born outside Canada experience lower mortality compared to beneficiaries born in Canada.

The study also reveals that mortality improvement rates over the recent period from 2010 to 2013 have been somewhat lower than improvement rates experienced over the longer period from 1999 to 2013.

IX. Annex – Detailed Tables by Year, Age and Sex

Table 38 OAS Beneficiaries by Age and Sex (as at December 31st)

Age	Males			Females		
	1999	2006	2013	1999	2006	2013
65	103,125	122,689	166,242	110,780	131,350	181,826
66	105,086	120,784	182,967	111,256	129,162	195,576
67	106,866	114,934	168,251	114,236	123,482	179,000
68	104,044	111,825	145,242	113,660	120,330	154,360
69	103,046	104,662	141,304	113,359	114,476	150,660
70	94,718	102,659	136,493	107,730	112,283	146,165
71	92,162	98,772	127,153	106,949	110,037	137,235
72	87,409	94,867	115,494	104,465	107,078	126,924
73	83,457	91,854	108,771	103,044	103,994	121,568
74	78,794	91,012	101,366	101,647	105,140	114,504
75	73,713	86,620	96,536	98,735	103,134	110,101
76	68,365	84,003	88,833	94,510	101,417	103,716
77	64,539	75,060	85,201	92,197	94,833	99,946
78	59,908	71,263	79,980	87,969	92,213	96,505
79	55,172	65,402	74,530	83,939	88,660	92,281
80	42,660	59,921	70,286	67,552	85,024	87,654
81	38,820	54,917	67,294	64,326	81,854	86,791
82	34,377	48,869	61,799	58,640	77,257	82,877
83	30,887	43,210	57,411	54,855	71,675	79,227
84	27,964	38,776	48,766	51,797	67,430	71,640
85	24,778	33,952	43,986	47,870	61,387	67,218
86	20,287	29,034	37,917	41,592	56,248	61,965
87	17,052	20,889	32,561	36,274	42,805	56,528
88	13,118	17,525	27,679	30,164	38,181	51,470
89	10,666	14,267	22,691	26,140	32,411	45,895
90	8,416	11,574	18,335	21,583	27,928	39,545
91	6,684	9,406	14,859	18,048	24,219	34,336
92	5,033	7,358	11,687	14,362	20,345	28,296
93	3,578	5,477	8,797	11,191	15,942	23,388
94	2,523	3,872	5,384	8,702	12,411	16,131
95	1,836	2,548	3,906	6,437	8,975	12,781
96	1,332	1,819	2,708	4,935	6,797	9,302
97	852	1,212	1,879	3,564	4,765	6,937
98	568	813	1,255	2,428	3,348	5,189
99	365	510	840	1,723	2,220	3,650
100	234	293	517	1,120	1,435	6,229
101	119	171	280	732	937	1,585
102	85	91	153	438	578	944
103	48	58	86	281	323	591
104	26	25	47	139	204	307
105+	20	23	62	186	246	383
Total	1,572,732	1,843,016	2,359,548	2,119,555	2,382,534	2,887,416

Table 39 OAS Beneficiaries Deaths by Age and Sex (1999, 2006 and 2013)

Age	Males			Females		
	1999	2006	2013	1999	2006	2013
65	1,791	1,663	2,042	1,026	999	1,369
66	2,150	1,845	2,444	1,355	1,259	1,687
67	2,285	1,973	2,330	1,417	1,350	1,538
68	2,519	2,083	2,295	1,480	1,417	1,509
69	2,802	2,102	2,463	1,632	1,449	1,741
70	2,874	2,404	2,589	1,729	1,596	1,826
71	3,037	2,419	2,646	1,912	1,728	1,834
72	3,034	2,595	2,753	2,018	1,789	1,992
73	3,280	2,774	2,826	2,367	2,044	1,934
74	3,451	3,029	2,847	2,470	2,197	2,102
75	3,595	3,249	2,963	2,646	2,375	2,189
76	3,646	3,444	2,983	2,798	2,664	2,315
77	3,773	3,443	3,174	3,052	2,851	2,569
78	3,822	3,706	3,486	3,283	2,967	2,701
79	3,707	3,637	3,515	3,462	3,211	2,994
80	3,338	3,810	3,856	3,274	3,485	3,182
81	3,482	3,825	3,777	3,233	3,540	3,452
82	3,250	3,823	4,153	3,422	3,986	3,819
83	3,319	3,713	4,160	3,628	4,033	4,093
84	3,411	3,780	4,112	3,997	4,371	4,196
85	3,239	3,548	4,155	4,084	4,447	4,354
86	2,939	3,353	4,071	3,911	4,282	4,647
87	2,635	2,821	3,869	3,684	4,051	4,736
88	2,305	2,586	3,590	3,671	3,864	4,906
89	2,055	2,380	3,311	3,485	3,823	4,798
90	1,759	2,223	2,985	3,168	3,810	4,951
91	1,451	1,983	2,930	2,980	3,594	4,751
92	1,230	1,624	2,352	2,626	3,344	4,461
93	908	1,369	1,943	2,325	3,049	3,988
94	790	1,062	1,274	1,939	2,528	3,152
95	566	796	1,113	1,672	2,139	2,653
96	464	593	824	1,298	1,754	2,335
97	313	395	569	1,040	1,345	1,864
98	218	288	477	780	1,064	1,520
99	155	187	341	570	761	1,121
100	80	145	202	419	557	804
101	71	67	144	317	369	548
102	24	47	64	196	257	396
103	13	31	48	122	151	226
104	12	21	23	89	107	168
105+	17	17	26	112	134	183
Total	83,810	84,853	95,725	88,689	94,741	105,604

Table 40 OAS Beneficiaries Exposures by Age and Sex (1999, 2006 and 2013)

Age	Males			Females		
	1999	2006	2013	1999	2006	2013
65	102,413	120,897	173,105	107,763	128,282	184,601
66	107,327	119,052	182,516	113,725	126,720	193,631
67	107,097	115,066	157,483	114,429	123,004	166,650
68	104,675	109,930	144,769	113,950	118,444	153,185
69	100,820	104,269	140,962	111,742	113,629	149,843
70	94,759	102,423	134,299	107,970	112,302	143,655
71	91,763	98,231	122,922	106,922	109,465	133,076
72	86,640	94,614	114,700	104,338	106,010	126,553
73	82,963	92,927	106,221	103,578	105,777	118,751
74	78,060	90,659	101,032	101,355	105,107	113,706
75	72,970	86,830	94,607	98,002	103,414	108,443
76	67,991	81,839	88,172	94,387	99,890	102,663
77	64,558	74,979	84,705	92,377	94,863	99,949
78	58,527	70,755	79,286	86,228	92,328	95,998
79	52,651	64,370	74,283	80,489	88,293	91,252
80	41,636	59,538	70,863	66,692	85,443	89,162
81	38,036	54,025	66,712	62,536	81,497	86,521
82	34,083	48,192	61,702	58,503	76,618	83,090
83	30,867	42,897	55,605	54,890	71,580	77,825
84	28,089	38,463	48,471	51,897	67,325	71,463
85	24,079	32,873	43,380	46,684	59,975	67,286
86	19,992	27,385	37,212	40,686	53,372	61,471
87	16,157	20,065	32,090	34,923	41,679	56,618
88	12,926	16,962	27,105	29,744	36,697	51,091
89	10,481	13,874	22,197	25,412	31,995	45,269
90	8,216	11,430	18,050	21,188	27,583	39,362
91	6,534	9,310	14,694	17,558	24,023	34,061
92	4,776	7,097	11,174	13,928	19,608	27,462
93	3,428	5,262	8,054	10,967	15,388	21,945
94	2,479	3,593	4,998	8,324	11,850	15,387
95	1,813	2,492	3,686	6,433	8,855	12,025
96	1,262	1,785	2,532	4,706	6,473	9,020
97	803	1,127	1,756	3,417	4,635	6,722
98	552	791	1,218	2,365	3,204	5,002
99	350	468	774	1,649	2,186	3,413
100	215	268	472	1,075	1,392	2,243
101	124	152	241	708	899	1,436
102	69	94	135	427	547	898
103	41	50	78	260	323	504
104	19	24	37	138	190	295
105+	21	23	36	173	237	327
Total	1,560,263	1,825,081	2,332,334	2,102,537	2,361,100	2,851,855

Table 41 OAS Beneficiaries Graduated Mortality Rates by Age and Sex (1999, 2006 and 2013)

Age	Males			Females		
	Annual Deaths per Thousand			Annual Deaths per Thousand		
	1999	2006	2013	1999	2006	2013
65	17.5	13.8	11.9	10.1	8.2	7.5
66	19.5	15.3	13.1	11.1	9.5	8.4
67	21.7	16.9	14.4	12.1	10.6	9.3
68	24.1	18.6	15.9	13.3	11.8	10.2
69	26.7	20.4	17.5	14.6	12.9	11.3
70	29.4	22.4	19.3	16.0	14.2	12.5
71	32.3	24.6	21.2	17.7	15.5	13.7
72	35.5	27.0	23.3	19.6	17.1	15.1
73	39.1	29.9	25.6	21.7	18.9	16.5
74	42.9	33.1	28.1	24.0	20.9	18.2
75	47.2	36.7	30.8	26.7	23.3	20.2
76	51.9	40.8	33.9	29.7	25.9	22.5
77	57.1	45.2	37.5	33.1	28.8	25.1
78	62.9	50.1	41.6	37.0	32.0	28.1
79	69.4	55.5	46.3	41.3	35.5	31.5
80	76.6	61.5	51.6	46.2	39.5	35.4
81	84.6	68.1	57.6	51.7	44.1	39.7
82	93.4	75.5	64.5	57.9	49.4	44.7
83	103.0	83.9	72.3	65.0	55.5	50.2
84	113.5	93.3	81.0	73.0	62.5	56.5
85	124.7	103.8	90.7	81.9	70.4	63.6
86	136.8	115.6	101.5	91.8	79.4	71.7
87	149.5	128.6	113.4	102.6	89.5	81.0
88	163.0	142.8	126.4	114.5	100.8	91.7
89	177.2	158.0	140.7	127.4	113.4	103.7
90	192.0	174.2	156.3	141.3	127.2	117.1
91	207.6	191.2	173.2	156.2	142.2	131.8
92	223.7	208.9	191.2	172.0	158.5	147.8
93	240.3	227.3	210.3	188.7	175.9	164.8
94	257.3	246.2	230.4	206.2	194.4	182.9
95	274.5	265.7	251.5	224.4	213.9	201.7
96	291.8	285.7	273.6	243.4	234.2	221.2
97	309.1	306.3	296.7	263.1	255.1	241.3
98	326.4	327.5	320.6	283.4	276.6	262.1
99	343.6	349.4	345.5	304.5	298.6	283.3
100	360.6	372.1	371.3	326.3	321.0	305.1
101	379.1	395.6	398.0	348.8	343.7	327.5
102	398.7	419.8	425.6	372.0	366.7	350.4
103	419.2	443.8	454.1	395.8	389.9	373.8
104	440.5	467.4	481.1	420.2	413.3	397.8
105	462.2	490.4	506.5	445.3	436.9	422.4
110	570.9	594.0	610.6	562.0	542.7	536.8
115	659.3	668.4	675.4	628.0	618.1	616.7
120	700.0	700.0	700.0	650.0	650.0	650.0

Table 42 Life Table of OAS Beneficiaries (2013)

Age	Males				Females			
	l_x	1,000 q_x	d_x	${}^o e_x$	l_x	1,000 q_x	d_x	${}^o e_x$
65	100,000	11.9	1,191	18.92	100,000	7.5	753	21.78
66	98,809	13.1	1,295	18.14	99,247	8.4	830	20.95
67	97,514	14.4	1,407	17.38	98,417	9.3	911	20.12
68	96,107	15.9	1,527	16.62	97,506	10.2	998	19.30
69	94,580	17.5	1,656	15.88	96,508	11.3	1,092	18.50
70	92,924	19.3	1,793	15.16	95,416	12.5	1,189	17.70
71	91,131	21.2	1,935	14.45	94,227	13.7	1,291	16.92
72	89,196	23.3	2,081	13.75	92,936	15.1	1,399	16.15
73	87,115	25.6	2,229	13.06	91,537	16.6	1,515	15.39
74	84,886	28.1	2,381	12.39	90,022	18.3	1,643	14.64
75	82,505	30.8	2,542	11.74	88,379	20.2	1,786	13.90
76	79,963	33.9	2,713	11.09	86,593	22.5	1,947	13.18
77	77,250	37.5	2,898	10.47	84,646	25.1	2,125	12.47
78	74,352	41.6	3,094	9.86	82,521	28.1	2,320	11.78
79	71,258	46.3	3,297	9.26	80,201	31.5	2,529	11.10
80	67,961	51.6	3,505	8.69	77,672	35.4	2,749	10.45
81	64,456	57.6	3,714	8.13	74,923	39.8	2,978	9.81
82	60,742	64.5	3,918	7.60	71,945	44.7	3,213	9.20
83	56,824	72.3	4,108	7.09	68,732	50.2	3,450	8.60
84	52,716	81.0	4,271	6.60	65,282	56.5	3,686	8.03
85	48,445	90.7	4,396	6.14	61,596	63.6	3,917	7.48
86	44,049	101.5	4,471	5.70	57,679	71.7	4,137	6.96
87	39,578	113.4	4,487	5.29	53,542	81.0	4,339	6.46
88	35,091	126.4	4,436	4.90	49,203	91.7	4,509	5.98
89	30,655	140.7	4,314	4.54	44,694	103.7	4,633	5.53
90	26,341	156.3	4,118	4.20	40,061	117.1	4,690	5.12
91	22,223	173.2	3,848	3.89	35,371	131.8	4,662	4.73
92	18,375	191.2	3,513	3.60	30,709	147.8	4,538	4.37
93	14,862	210.3	3,125	3.33	26,171	164.8	4,314	4.04
94	11,737	230.4	2,704	3.08	21,857	182.9	3,997	3.74
95	9,033	251.5	2,272	2.85	17,860	201.7	3,602	3.47
96	6,761	273.6	1,850	2.64	14,258	221.2	3,154	3.22
97	4,911	296.7	1,457	2.45	11,104	241.3	2,680	2.99
98	3,454	320.6	1,107	2.27	8,424	262.1	2,208	2.78
99	2,347	345.5	811	2.11	6,216	283.3	1,761	2.59
100	1,536	371.3	570	1.96	4,455	305.1	1,359	2.41
101	966	398.0	384	1.82	3,096	327.5	1,014	2.25
102	582	425.6	248	1.70	2,082	350.4	730	2.10
103	334	454.1	152	1.58	1,352	373.8	505	1.97
104	182	481.1	88	1.49	847	397.8	337	1.84
105	94	506.5	48	1.40	510	422.4	215	1.73
110	2	610.6	1	1.11	21	536.8	11	1.32
115	0	675.4	0	0.97	0	616.7	0	1.11
120	0	700.0	0	0.80	0	650.0	0	0.85

Table 43 OAS Beneficiaries to Population Mortality Ratios (2011)

Age	Males			Females		
	Annual Deaths Per Thousand		Ratio OAS to Population	Annual Deaths Per Thousand		Ratio OAS to Population
	OAS	Population		OAS	Population	
65	12.0	11.7	1.03	7.8	7.8	1.00
66	13.5	13.0	1.04	8.7	8.4	1.03
67	15.0	14.4	1.05	9.7	9.2	1.05
68	16.6	15.8	1.05	10.7	10.1	1.06
69	18.3	17.4	1.05	11.8	11.1	1.06
70	20.1	19.1	1.05	13.0	12.2	1.06
71	22.1	21.0	1.05	14.3	13.4	1.06
72	24.3	23.1	1.05	15.6	14.7	1.06
73	26.8	25.4	1.05	17.2	16.2	1.06
74	29.4	27.9	1.05	19.0	18.0	1.06
75	32.4	30.8	1.05	21.1	20.0	1.05
76	35.7	34.0	1.05	23.5	22.4	1.05
77	39.4	37.6	1.05	26.3	25.0	1.05
78	43.7	41.7	1.05	29.4	28.0	1.05
79	48.6	46.5	1.05	32.9	31.3	1.05
80	54.3	51.9	1.05	36.7	35.0	1.05
81	60.7	58.0	1.05	41.1	39.2	1.05
82	68.0	65.0	1.05	46.1	43.9	1.05
83	76.2	72.9	1.05	51.7	49.4	1.05
84	85.3	81.7	1.04	58.2	55.8	1.04
85	95.3	91.5	1.04	65.7	63.2	1.04
86	106.3	102.3	1.04	74.3	71.9	1.03
87	118.3	114.2	1.04	84.0	81.9	1.03
88	131.3	127.1	1.03	95.1	93.1	1.02
89	145.5	141.1	1.03	107.3	105.6	1.02
90	160.9	156.2	1.03	120.8	119.3	1.01
91	177.5	172.2	1.03	135.4	134.0	1.01
92	195.2	189.0	1.03	151.3	149.8	1.01
93	214.0	206.8	1.03	168.2	166.5	1.01
94	233.7	225.4	1.04	186.1	184.1	1.01
95	254.2	244.8	1.04	205.0	202.7	1.01
96	275.6	264.9	1.04	224.6	222.2	1.01
97	297.8	285.7	1.04	245.0	242.6	1.01
98	320.6	307.2	1.04	265.9	263.7	1.01
99	344.2	329.4	1.04	287.3	285.7	1.01
100	368.3	352.1	1.05	309.2	308.3	1.00
101	393.1	375.4	1.05	331.4	331.6	1.00
102	418.4	399.3	1.05	353.8	355.5	1.00
103	444.3	423.8	1.05	376.5	380.0	0.99
104	469.4	448.8	1.05	399.3	405.0	0.99
105	493.6	474.4	1.04	422.4	430.6	0.98
110	598.7	587.5	1.02	530.8	550.8	0.96
115	670.6	666.8	1.01	613.5	623.6	0.98
120	700.0	700.0	1.00	650.0	650.0	1.00

Table 44 OAS Beneficiaries by Type of Benefit (as at December 31st 2013)

Age	Males			Females		
	without GIS	with GIS	Proportion with GIS	without GIS	with GIS	Proportion with GIS
65	133,610	32,632	20%	139,483	42,343	23%
66	142,407	40,560	22%	145,830	49,746	25%
67	127,789	40,462	24%	129,015	49,985	28%
68	108,132	37,110	26%	107,221	47,139	31%
69	104,307	36,997	26%	103,220	47,440	31%
70	100,107	36,386	27%	98,744	47,421	32%
71	92,023	35,130	28%	90,160	47,075	34%
72	82,326	33,168	29%	81,872	45,052	35%
73	77,304	31,467	29%	77,817	43,751	36%
74	71,378	29,988	30%	72,110	42,394	37%
75	67,178	29,358	30%	68,287	41,814	38%
76	61,379	27,454	31%	63,027	40,689	39%
77	58,708	26,493	31%	60,160	39,786	40%
78	54,785	25,195	32%	56,970	39,535	41%
79	50,681	23,849	32%	53,353	38,928	42%
80	47,616	22,670	32%	50,293	37,361	43%
81	45,334	21,960	33%	48,994	37,797	44%
82	42,260	19,539	32%	46,224	36,653	44%
83	38,559	18,852	33%	43,613	35,614	45%
84	32,735	16,031	33%	38,500	33,140	46%
85	29,420	14,566	33%	35,296	31,922	47%
86	25,331	12,586	33%	32,017	29,948	48%
87	21,720	10,841	33%	28,994	27,534	49%
88	18,595	9,084	33%	26,016	25,454	49%
89	15,236	7,455	33%	22,816	23,079	50%
90	12,387	5,948	32%	19,418	20,127	51%
91	10,013	4,846	33%	16,248	18,088	53%
92	7,788	3,899	33%	13,000	15,296	54%
93	5,740	3,057	35%	10,316	13,072	56%
94	3,360	2,024	38%	6,630	9,501	59%
95	2,307	1,599	41%	5,149	7,632	60%
96	1,582	1,126	42%	3,609	5,693	61%
97	1,086	793	42%	2,588	4,349	63%
98	706	549	44%	1,925	3,264	63%
99	449	391	47%	1,253	2,397	66%
100	272	245	47%	787	1,632	67%
101	141	139	50%	461	1,124	71%
102	71	82	54%	297	647	69%
103	41	45	52%	191	400	68%
104	20	27	57%	83	224	73%
105+	20	42	68%	110	273	71%
Total	1,694,903	664,645	28%	1,802,097	1,085,319	38%

Table 45 OAS Beneficiaries Deaths by Type of Benefit (2013)

Age	Males			Females		
	without GIS	with GIS	Proportion with GIS	without GIS	with GIS	Proportion with GIS
65	1,393	649	32%	872	497	36%
66	1,549	895	37%	988	699	41%
67	1,409	921	40%	852	686	45%
68	1,376	919	40%	844	665	44%
69	1,451	1,012	41%	946	795	46%
70	1,521	1,068	41%	1,002	824	45%
71	1,566	1,080	41%	963	871	47%
72	1,614	1,139	41%	1,053	939	47%
73	1,640	1,186	42%	998	936	48%
74	1,722	1,125	40%	1,105	997	47%
75	1,754	1,209	41%	1,108	1,081	49%
76	1,782	1,201	40%	1,177	1,138	49%
77	1,951	1,223	39%	1,332	1,237	48%
78	2,064	1,422	41%	1,394	1,307	48%
79	2,094	1,421	40%	1,475	1,519	51%
80	2,351	1,505	39%	1,621	1,561	49%
81	2,343	1,434	38%	1,708	1,744	51%
82	2,536	1,617	39%	1,868	1,951	51%
83	2,637	1,523	37%	1,982	2,111	52%
84	2,637	1,475	36%	2,041	2,155	51%
85	2,661	1,494	36%	2,065	2,289	53%
86	2,607	1,464	36%	2,225	2,422	52%
87	2,515	1,354	35%	2,251	2,485	52%
88	2,316	1,274	35%	2,243	2,663	54%
89	2,147	1,164	35%	2,234	2,564	53%
90	1,974	1,011	34%	2,301	2,650	54%
91	1,962	968	33%	2,155	2,596	55%
92	1,574	778	33%	1,972	2,489	56%
93	1,268	675	35%	1,665	2,323	58%
94	841	433	34%	1,304	1,848	59%
95	714	399	36%	992	1,661	63%
96	527	297	36%	896	1,439	62%
97	343	226	40%	713	1,151	62%
98	276	201	42%	542	978	64%
99	200	141	41%	386	735	66%
100	99	103	51%	253	551	69%
101	77	67	47%	171	377	69%
102	33	31	48%	110	286	72%
103	23	25	52%	59	167	74%
104	10	13	57%	54	114	68%
105+	11	15	58%	46	137	75%
Total	59,568	36,157	38%	49,966	55,638	53%

Table 46 OAS Beneficiaries Exposures by Type of Benefit (2013)

Age	Males			Females		
	without GIS	with GIS	Proportion with GIS	without GIS	with GIS	Proportion with GIS
65	136,968	36,136	21%	140,033	44,568	24%
66	141,178	41,338	23%	142,847	50,784	26%
67	118,488	38,995	25%	118,217	48,433	29%
68	107,340	37,428	26%	105,775	47,410	31%
69	103,731	37,231	26%	102,178	47,665	32%
70	98,100	36,199	27%	95,977	47,679	33%
71	88,276	34,646	28%	86,634	46,442	35%
72	81,610	33,090	29%	81,480	45,073	36%
73	75,081	31,140	29%	75,418	43,333	36%
74	70,768	30,264	30%	71,186	42,520	37%
75	65,506	29,100	31%	66,563	41,880	39%
76	60,909	27,263	31%	62,128	40,534	39%
77	58,204	26,501	31%	59,710	40,239	40%
78	54,067	25,219	32%	56,113	39,884	42%
79	50,322	23,961	32%	52,575	38,677	42%
80	47,839	23,024	32%	50,683	38,478	43%
81	45,194	21,518	32%	48,606	37,915	44%
82	41,860	19,842	32%	46,058	37,032	45%
83	37,316	18,289	33%	42,398	35,427	46%
84	32,466	16,005	33%	37,990	33,473	47%
85	28,980	14,400	33%	35,040	32,246	48%
86	24,789	12,423	33%	31,577	29,894	49%
87	21,542	10,547	33%	28,820	27,798	49%
88	18,125	8,981	33%	25,620	25,471	50%
89	14,943	7,255	33%	22,293	22,976	51%
90	12,193	5,857	32%	19,106	20,256	51%
91	9,872	4,821	33%	15,943	18,119	53%
92	7,423	3,751	34%	12,448	15,014	55%
93	5,298	2,756	34%	9,616	12,330	56%
94	3,150	1,848	37%	6,362	9,025	59%
95	2,261	1,425	39%	4,788	7,237	60%
96	1,532	1,001	40%	3,515	5,505	61%
97	1,039	718	41%	2,554	4,169	62%
98	702	515	42%	1,819	3,183	64%
99	419	355	46%	1,197	2,217	65%
100	257	215	46%	706	1,536	69%
101	123	117	49%	453	983	68%
102	66	69	51%	287	611	68%
103	38	40	52%	152	352	70%
104	17	20	53%	89	206	70%
105+	9	27	74%	96	231	71%
Total	1,668,002	664,332	28%	1,765,049	1,086,806	38%

Table 47 Graduated Mortality Rates and Ratios by Type of Benefit – Males (2013)

Age	Overall	without GIS	Ratio without GIS to Overall	with GIS	Ratio with GIS to Overall	Ratio with GIS to without
65	11.9	10.2	0.86	18.3	1.54	1.80
66	13.1	10.8	0.83	20.7	1.58	1.91
67	14.4	11.7	0.81	22.9	1.59	1.96
68	15.9	12.8	0.80	25.0	1.57	1.96
69	17.5	14.1	0.80	27.0	1.54	1.92
70	19.3	15.6	0.81	29.1	1.51	1.86
71	21.2	17.4	0.82	31.1	1.47	1.79
72	23.3	19.3	0.83	33.2	1.42	1.72
73	25.6	21.5	0.84	35.5	1.39	1.65
74	28.1	23.8	0.85	37.9	1.35	1.59
75	30.8	26.4	0.86	40.7	1.32	1.54
76	33.9	29.4	0.87	43.9	1.29	1.49
77	37.5	32.8	0.87	47.7	1.27	1.45
78	41.6	36.7	0.88	52.0	1.25	1.42
79	46.3	41.3	0.89	56.8	1.23	1.38
80	51.6	46.5	0.90	62.1	1.20	1.33
81	57.6	52.6	0.91	67.9	1.18	1.29
82	64.5	59.7	0.93	74.4	1.15	1.25
83	72.3	67.7	0.94	81.7	1.13	1.21
84	81.0	76.7	0.95	89.9	1.11	1.17
85	90.7	86.6	0.95	99.0	1.09	1.14
86	101.5	97.7	0.96	109.2	1.08	1.12
87	113.4	109.8	0.97	120.5	1.06	1.10
88	126.4	123.2	0.97	132.8	1.05	1.08
89	140.7	138.0	0.98	146.3	1.04	1.06
90	156.3	154.0	0.99	160.8	1.03	1.04
91	173.2	171.4	0.99	176.6	1.02	1.03
92	191.2	189.9	0.99	193.5	1.01	1.02
93	210.3	209.5	1.00	211.5	1.01	1.01
94	230.4	230.0	1.00	230.8	1.00	1.00
95	251.5	251.5	1.00	251.5	1.00	1.00
96	273.6	273.6	1.00	273.6	1.00	1.00
97	296.7	296.7	1.00	296.7	1.00	1.00
98	320.6	320.6	1.00	320.6	1.00	1.00
99	345.5	345.5	1.00	345.5	1.00	1.00
100	371.3	371.1	1.00	371.3	1.00	1.00
101	398.0	397.3	1.00	398.0	1.00	1.00
102	425.6	424.3	1.00	425.6	1.00	1.00
103	454.1	450.4	0.99	454.1	1.00	1.01
104	481.1	475.6	0.99	481.1	1.00	1.01
105	506.5	499.7	0.99	506.5	1.00	1.01
110	610.6	603.0	0.99	610.8	1.00	1.01
115	675.4	672.1	1.00	675.6	1.00	1.01
120	700.0	700.0	1.00	700.0	1.00	1.00

Table 48 Graduated Mortality Rates and Ratios by Type of Benefit – Females (2013)

Age	Overall	without GIS	Ratio without GIS to Overall	with GIS	Ratio with GIS to Overall	Ratio with GIS to without
65	7.5	6.2	0.82	11.7	1.55	1.88
66	8.4	6.7	0.81	12.8	1.53	1.90
67	9.3	7.4	0.80	13.9	1.50	1.88
68	10.2	8.2	0.80	15.0	1.46	1.83
69	11.3	9.1	0.80	16.1	1.42	1.78
70	12.5	10.0	0.81	17.3	1.39	1.72
71	13.7	11.1	0.81	18.6	1.36	1.68
72	15.1	12.3	0.82	20.0	1.33	1.63
73	16.5	13.6	0.82	21.6	1.30	1.58
74	18.2	15.2	0.83	23.3	1.28	1.54
75	20.2	17.0	0.84	25.3	1.25	1.49
76	22.5	19.1	0.85	27.6	1.23	1.45
77	25.1	21.6	0.86	30.3	1.21	1.41
78	28.1	24.4	0.87	33.4	1.19	1.37
79	31.5	27.5	0.87	37.0	1.17	1.34
80	35.4	31.1	0.88	41.0	1.16	1.32
81	39.7	35.2	0.88	45.5	1.15	1.30
82	44.7	39.8	0.89	50.6	1.13	1.27
83	50.2	45.1	0.90	56.2	1.12	1.25
84	56.5	51.2	0.91	62.5	1.11	1.22
85	63.6	58.2	0.91	69.6	1.09	1.20
86	71.7	66.2	0.92	77.6	1.08	1.17
87	81.0	75.5	0.93	86.7	1.07	1.15
88	91.7	86.2	0.94	97.1	1.06	1.13
89	103.7	98.3	0.95	108.8	1.05	1.11
90	117.1	111.9	0.96	121.8	1.04	1.09
91	131.8	126.9	0.96	136.2	1.03	1.07
92	147.8	143.0	0.97	151.8	1.03	1.06
93	164.8	160.2	0.97	168.5	1.02	1.05
94	182.9	178.3	0.98	186.1	1.02	1.04
95	201.7	197.2	0.98	204.6	1.01	1.04
96	221.2	216.5	0.98	223.9	1.01	1.03
97	241.3	236.3	0.98	243.9	1.01	1.03
98	262.1	256.5	0.98	264.7	1.01	1.03
99	283.3	276.9	0.98	286.2	1.01	1.03
100	305.1	297.4	0.97	308.6	1.01	1.04
101	327.5	318.2	0.97	331.8	1.01	1.04
102	350.4	339.1	0.97	356.0	1.02	1.05
103	373.8	360.3	0.96	381.0	1.02	1.06
104	397.8	381.5	0.96	407.0	1.02	1.07
105	422.4	403.0	0.95	433.9	1.03	1.08
110	536.8	513.5	0.96	553.0	1.03	1.08
115	616.7	606.4	0.98	624.1	1.01	1.03
120	650.0	650.0	1.00	650.0	1.00	1.00

Table 49 Life Table of OAS Beneficiaries without GIS (2013)

Age	Males				Females			
	l_x	1,000 q_x	d_x	${}^o e_x$	l_x	1,000 q_x	d_x	${}^o e_x$
65	100,000	10.2	1,019	19.75	100,000	6.2	621	22.68
66	98,981	10.8	1,071	18.95	99,379	6.7	670	21.82
67	97,910	11.7	1,144	18.15	98,709	7.4	729	20.96
68	96,766	12.8	1,235	17.36	97,980	8.2	800	20.11
69	95,531	14.1	1,344	16.58	97,180	9.1	879	19.27
70	94,187	15.6	1,470	15.80	96,301	10.0	967	18.45
71	92,717	17.4	1,610	15.05	95,334	11.1	1,059	17.63
72	91,107	19.3	1,759	14.30	94,275	12.3	1,160	16.82
73	89,348	21.5	1,917	13.58	93,115	13.6	1,270	16.02
74	87,431	23.8	2,082	12.86	91,845	15.2	1,395	15.24
75	85,349	26.4	2,256	12.16	90,450	17.0	1,538	14.47
76	83,093	29.4	2,443	11.48	88,912	19.1	1,700	13.71
77	80,650	32.8	2,645	10.81	87,212	21.6	1,881	12.97
78	78,005	36.7	2,865	10.16	85,331	24.4	2,080	12.24
79	75,140	41.3	3,101	9.53	83,251	27.5	2,292	11.53
80	72,039	46.5	3,353	8.92	80,959	31.1	2,519	10.85
81	68,686	52.6	3,616	8.33	78,440	35.2	2,758	10.18
82	65,070	59.7	3,883	7.77	75,682	39.8	3,011	9.53
83	61,187	67.7	4,141	7.23	72,671	45.1	3,277	8.90
84	57,046	76.7	4,373	6.72	69,394	51.2	3,550	8.30
85	52,673	86.6	4,564	6.23	65,844	58.2	3,829	7.72
86	48,109	97.7	4,699	5.78	62,015	66.2	4,107	7.17
87	43,410	109.8	4,768	5.35	57,908	75.5	4,374	6.64
88	38,642	123.3	4,763	4.95	53,534	86.2	4,615	6.14
89	33,879	138.0	4,675	4.57	48,919	98.3	4,811	5.67
90	29,204	154.1	4,499	4.22	44,108	111.9	4,937	5.24
91	24,705	171.4	4,234	3.90	39,171	126.9	4,970	4.84
92	20,471	189.9	3,887	3.60	34,201	143.0	4,892	4.47
93	16,584	209.5	3,474	3.33	29,309	160.2	4,696	4.13
94	13,110	230.0	3,015	3.08	24,613	178.3	4,389	3.82
95	10,095	251.5	2,539	2.85	20,224	197.2	3,987	3.54
96	7,556	273.6	2,067	2.64	16,237	216.5	3,516	3.29
97	5,489	296.7	1,628	2.45	12,721	236.4	3,007	3.06
98	3,861	320.6	1,238	2.28	9,714	256.5	2,491	2.85
99	2,623	345.5	906	2.11	7,223	276.9	2,000	2.66
100	1,717	371.1	637	1.97	5,223	297.5	1,554	2.49
101	1,080	397.3	429	1.83	3,669	318.2	1,168	2.34
102	651	424.3	276	1.71	2,501	339.2	848	2.19
103	375	450.5	169	1.60	1,653	360.3	595	2.06
104	206	475.6	98	1.51	1,058	381.5	404	1.94
105	108	499.7	54	1.43	654	403.0	264	1.83
110	2	603.0	1	1.13	34	513.5	17	1.39
115	0	672.1	0	0.98	1	606.5	1	1.13
120	0	700.0	0	0.80	0	650.0	0	0.85

Table 50 Life Table of OAS Beneficiaries with GIS (2013)

Age	Males				Females			
	l_x	1,000 q_x	d_x	e_x	l_x	1,000 q_x	d_x	e_x
65	100,000	18.3	1,834	17.06	100,000	11.7	1,171	20.44
66	98,166	20.7	2,030	16.37	98,829	12.8	1,264	19.67
67	96,136	22.9	2,200	15.70	97,565	13.9	1,352	18.92
68	93,936	25.0	2,347	15.06	96,213	15.0	1,438	18.18
69	91,589	27.0	2,475	14.43	94,775	16.1	1,526	17.45
70	89,114	29.1	2,589	13.82	93,249	17.3	1,614	16.73
71	86,525	31.1	2,693	13.21	91,635	18.6	1,705	16.01
72	83,832	33.2	2,787	12.62	89,930	20.0	1,801	15.31
73	81,045	35.5	2,875	12.04	88,129	21.6	1,902	14.61
74	78,170	37.9	2,963	11.46	86,227	23.3	2,012	13.92
75	75,207	40.7	3,059	10.90	84,215	25.3	2,133	13.24
76	72,148	43.9	3,169	10.34	82,082	27.6	2,269	12.57
77	68,979	47.7	3,290	9.79	79,813	30.3	2,420	11.91
78	65,689	52.0	3,417	9.25	77,393	33.4	2,586	11.27
79	62,272	56.8	3,538	8.73	74,807	37.0	2,766	10.64
80	58,734	62.1	3,647	8.23	72,041	41.0	2,954	10.03
81	55,087	67.9	3,743	7.74	69,087	45.6	3,147	9.44
82	51,344	74.4	3,822	7.27	65,940	50.6	3,337	8.87
83	47,522	81.7	3,883	6.82	62,603	56.2	3,520	8.31
84	43,639	89.9	3,921	6.38	59,083	62.5	3,693	7.78
85	39,718	99.0	3,932	5.96	55,390	69.6	3,853	7.26
86	35,786	109.2	3,908	5.56	51,537	77.6	3,998	6.77
87	31,878	120.5	3,840	5.18	47,539	86.7	4,123	6.30
88	28,038	132.8	3,724	4.82	43,416	97.1	4,215	5.85
89	24,314	146.3	3,556	4.48	39,201	108.8	4,264	5.42
90	20,758	160.8	3,339	4.16	34,937	121.8	4,256	5.02
91	17,419	176.6	3,076	3.86	30,681	136.2	4,179	4.65
92	14,343	193.5	2,775	3.58	26,502	151.8	4,023	4.31
93	11,568	211.5	2,447	3.32	22,479	168.5	3,787	3.99
94	9,121	230.8	2,105	3.08	18,692	186.1	3,479	3.70
95	7,016	251.5	1,765	2.85	15,213	204.6	3,113	3.43
96	5,251	273.6	1,437	2.64	12,100	223.9	2,709	3.18
97	3,814	296.7	1,131	2.45	9,391	243.9	2,290	2.95
98	2,683	320.6	860	2.27	7,101	264.7	1,879	2.74
99	1,823	345.5	630	2.11	5,222	286.2	1,495	2.55
100	1,193	371.3	443	1.96	3,727	308.6	1,150	2.37
101	750	398.0	299	1.82	2,577	331.8	855	2.21
102	451	425.6	192	1.70	1,722	356.0	613	2.05
103	259	454.1	118	1.58	1,109	381.0	423	1.91
104	141	481.1	68	1.49	686	407.0	279	1.78
105	73	506.5	37	1.40	407	433.9	177	1.67
110	1	610.9	1	1.11	14	553.0	8	1.27
115	0	675.6	0	0.97	0	624.1	0	1.09
120	0	700.0	0	0.80	0	650.0	0	0.85

Table 51 OAS Beneficiaries by Marital Status and Type of Benefit – Males (2013)

Age	Overall		without GIS				with GIS			
	Married	Single	Married	Single	%Married	%Single	Married	Single	%Married	%Single
65	122,524	43,718	104,690	28,920	78%	22%	17,834	14,798	55%	45%
66	136,142	46,825	112,977	29,430	79%	21%	23,165	17,395	57%	43%
67	125,218	43,033	102,095	25,694	80%	20%	23,123	17,339	57%	43%
68	108,338	36,904	86,909	21,223	80%	20%	21,429	15,681	58%	42%
69	105,523	35,781	84,098	20,209	81%	19%	21,425	15,572	58%	42%
70	102,487	34,006	81,030	19,077	81%	19%	21,457	14,929	59%	41%
71	95,567	31,586	74,315	17,708	81%	19%	21,252	13,878	60%	40%
72	86,721	28,773	66,579	15,747	81%	19%	20,142	13,026	61%	39%
73	82,311	26,460	62,845	14,459	81%	19%	19,466	12,001	62%	38%
74	76,746	24,620	58,045	13,333	81%	19%	18,701	11,287	62%	38%
75	72,670	23,866	54,154	13,024	81%	19%	18,516	10,842	63%	37%
76	66,721	22,112	49,278	12,101	80%	20%	17,443	10,011	64%	36%
77	63,533	21,668	46,816	11,892	80%	20%	16,717	9,776	63%	37%
78	59,010	20,970	43,233	11,552	79%	21%	15,777	9,418	63%	37%
79	54,488	20,042	39,418	11,263	78%	22%	15,070	8,779	63%	37%
80	50,820	19,466	36,636	10,980	77%	23%	14,184	8,486	63%	37%
81	48,078	19,216	34,498	10,836	76%	24%	13,580	8,380	62%	38%
82	43,513	18,286	31,565	10,695	75%	25%	11,948	7,591	61%	39%
83	39,736	17,675	28,320	10,239	73%	27%	11,416	7,436	61%	39%
84	32,975	15,791	23,453	9,282	72%	28%	9,522	6,509	59%	41%
85	28,948	15,038	20,445	8,975	69%	31%	8,503	6,063	58%	42%
86	24,322	13,595	17,129	8,202	68%	32%	7,193	5,393	57%	43%
87	20,175	12,386	14,180	7,540	65%	35%	5,995	4,846	55%	45%
88	16,514	11,165	11,672	6,923	63%	37%	4,842	4,242	53%	47%
89	13,029	9,662	9,235	6,001	61%	39%	3,794	3,661	51%	49%
90	10,223	8,112	7,234	5,153	58%	42%	2,989	2,959	50%	50%
91	7,829	7,030	5,534	4,479	55%	45%	2,295	2,551	47%	53%
92	5,992	5,695	4,177	3,611	54%	46%	1,815	2,084	47%	53%
93	4,097	4,700	2,844	2,896	50%	50%	1,253	1,804	41%	59%
94	2,391	2,993	1,576	1,784	47%	53%	815	1,209	40%	60%
95	1,569	2,337	1,036	1,271	45%	55%	533	1,066	33%	67%
96	1,040	1,668	657	925	42%	58%	383	743	34%	66%
97	667	1,212	409	677	38%	62%	258	535	33%	67%
98	380	875	243	463	34%	66%	137	412	25%	75%
99	254	586	146	303	32%	68%	108	283	28%	72%
100	148	369	77	195	28%	72%	71	174	29%	71%
101	64	216	31	110	22%	78%	33	106	24%	76%
102	30	123	17	54	24%	76%	13	69	16%	84%
103	15	71	8	33	19%	81%	7	38	16%	84%
104	6	41	4	16	18%	82%	2	25	7%	93%
105+	9	53	0	20	1%	99%	9	33	21%	79%
Total	1,710,825	648,723	1,317,610	377,293	78%	22%	393,215	271,430	59%	41%

Table 52 OAS Beneficiaries by Marital Status and Type of Benefit – Females (2013)

Age	Overall OS		without GIS				with GIS			
	Married	Single	Married	Single	%Married	%Single	Married	Single	%Married	%Single
65	116,976	64,850	98,114	41,369	70%	30%	18,862	23,481	45%	55%
66	124,242	71,334	102,761	43,069	70%	30%	21,481	28,265	43%	57%
67	111,709	67,291	90,681	38,334	70%	30%	21,028	28,957	42%	58%
68	94,380	59,980	74,745	32,476	70%	30%	19,635	27,504	42%	58%
69	90,261	60,399	71,197	32,023	69%	31%	19,064	28,376	40%	60%
70	86,060	60,105	66,880	31,864	68%	32%	19,180	28,241	40%	60%
71	79,199	58,036	60,868	29,292	68%	32%	18,331	28,744	39%	61%
72	71,938	54,986	54,879	26,993	67%	33%	17,059	27,993	38%	62%
73	68,278	53,290	51,840	25,977	67%	33%	16,438	27,313	38%	62%
74	62,300	52,204	46,983	25,127	65%	35%	15,317	27,077	36%	64%
75	57,431	52,670	42,874	25,413	63%	37%	14,557	27,257	35%	65%
76	51,968	51,748	38,335	24,692	61%	39%	13,633	27,056	34%	66%
77	47,792	52,154	35,144	25,016	58%	42%	12,648	27,138	32%	68%
78	43,676	52,829	31,886	25,084	56%	44%	11,790	27,745	30%	70%
79	39,248	53,033	28,356	24,997	53%	47%	10,892	28,036	28%	72%
80	35,291	52,363	25,527	24,766	51%	49%	9,764	27,597	26%	74%
81	32,430	54,361	23,491	25,503	48%	52%	8,939	28,858	24%	76%
82	28,622	54,255	20,758	25,466	45%	55%	7,864	28,789	21%	79%
83	25,089	54,138	18,199	25,414	42%	58%	6,890	28,724	19%	81%
84	20,546	51,094	14,771	23,729	38%	62%	5,775	27,365	17%	83%
85	17,411	49,807	12,499	22,797	35%	65%	4,912	27,010	15%	85%
86	14,202	47,763	10,245	21,772	32%	68%	3,957	25,991	13%	87%
87	11,525	45,003	8,420	20,574	29%	71%	3,105	24,429	11%	89%
88	9,143	42,327	6,676	19,340	26%	74%	2,467	22,987	10%	90%
89	7,046	38,849	5,191	17,625	23%	77%	1,855	21,224	8%	92%
90	5,327	34,218	3,949	15,469	20%	80%	1,378	18,749	7%	93%
91	3,850	30,486	2,866	13,382	18%	82%	984	17,104	5%	95%
92	2,638	25,658	1,988	11,012	15%	85%	650	14,646	4%	96%
93	1,830	21,558	1,345	8,971	13%	87%	485	12,587	4%	96%
94	979	15,152	715	5,915	11%	89%	264	9,237	3%	97%
95	588	12,193	441	4,708	9%	91%	147	7,485	2%	98%
96	403	8,899	292	3,317	8%	92%	111	5,582	2%	98%
97	217	6,720	164	2,424	6%	94%	53	4,296	1%	99%
98	133	5,056	98	1,827	5%	95%	35	3,229	1%	99%
99	78	3,572	55	1,198	4%	96%	23	2,374	1%	99%
100	52	2,367	36	751	5%	95%	16	1,616	1%	99%
101	20	1,565	16	445	4%	96%	4	1,120	0%	100%
102	13	931	11	286	4%	96%	2	645	0%	100%
103	12	579	12	179	6%	94%	0	400	0%	100%
104	1	306	0	83	0%	100%	1	223	0%	100%
105+	2	382	1	110	0%	100%	1	272	0%	100%
Total	1,362,906	1,524,510	1,053,309	748,788	58%	42%	309,597	775,722	29%	71%

Table 53 OAS Beneficiaries Deaths by Marital Status and Type of Benefit – Males (2013)

Age	Overall		without GIS				with GIS			
	Married	Single	Married	Single	%Married	%Single	Married	Single	%Married	%Single
65	1,123	919	882	511	63%	37%	241	408	37%	63%
66	1,402	1,042	1,059	490	68%	32%	343	552	38%	62%
67	1,353	977	972	437	69%	31%	381	540	41%	59%
68	1,362	933	966	410	70%	30%	396	523	43%	57%
69	1,472	991	1,022	429	70%	30%	450	562	44%	56%
70	1,563	1,026	1,093	428	72%	28%	470	598	44%	56%
71	1,623	1,023	1,115	451	71%	29%	508	572	47%	53%
72	1,700	1,053	1,142	472	71%	29%	558	581	49%	51%
73	1,731	1,095	1,193	447	73%	27%	538	648	45%	55%
74	1,767	1,080	1,261	461	73%	27%	506	619	45%	55%
75	1,868	1,095	1,262	492	72%	28%	606	603	50%	50%
76	1,853	1,130	1,272	510	71%	29%	581	620	48%	52%
77	2,029	1,145	1,384	567	71%	29%	645	578	53%	47%
78	2,223	1,263	1,492	572	72%	28%	731	691	51%	49%
79	2,253	1,262	1,508	586	72%	28%	745	676	52%	48%
80	2,486	1,370	1,666	685	71%	29%	820	685	54%	46%
81	2,388	1,389	1,652	691	71%	29%	736	698	51%	49%
82	2,586	1,567	1,724	812	68%	32%	862	755	53%	47%
83	2,584	1,576	1,780	857	68%	32%	804	719	53%	47%
84	2,501	1,611	1,727	910	65%	35%	774	701	52%	48%
85	2,498	1,657	1,732	929	65%	35%	766	728	51%	49%
86	2,404	1,667	1,644	963	63%	37%	760	704	52%	48%
87	2,193	1,676	1,512	1,003	60%	40%	681	673	50%	50%
88	1,957	1,633	1,358	958	59%	41%	599	675	47%	53%
89	1,768	1,543	1,210	937	56%	44%	558	606	48%	52%
90	1,513	1,472	1,071	903	54%	46%	442	569	44%	56%
91	1,456	1,474	1,032	930	53%	47%	424	544	44%	56%
92	1,115	1,237	797	777	51%	49%	318	460	41%	59%
93	851	1,092	597	671	47%	53%	254	421	38%	62%
94	573	701	410	431	49%	51%	163	270	38%	62%
95	459	654	324	390	45%	55%	135	264	34%	66%
96	300	524	221	306	42%	58%	79	218	27%	73%
97	189	380	133	210	39%	61%	56	170	25%	75%
98	145	332	96	180	35%	65%	49	152	24%	76%
99	98	243	60	140	30%	70%	38	103	27%	73%
100	55	147	32	67	32%	68%	23	80	22%	78%
101	29	115	19	58	25%	75%	10	57	15%	85%
102	13	51	8	25	24%	76%	5	26	16%	84%
103	11	37	8	15	35%	65%	3	22	12%	88%
104	5	18	3	7	30%	70%	2	11	15%	85%
105+	3	23	1	10	9%	91%	2	13	13%	87%
Total	55,502	40,223	38,440	21,128	65%	35%	17,062	19,095	47%	53%

Table 54 OAS Beneficiaries Deaths by Marital Status and Type of Benefit – Females (2013)

Age	Overall		without GIS				with GIS			
	Married	Single	Married	Single	%Married	%Single	Married	Single	%Married	%Single
65	695	674	546	326	63%	37%	149	348	30%	70%
66	844	843	631	357	64%	36%	213	486	30%	70%
67	730	808	507	345	60%	40%	223	463	33%	67%
68	736	773	524	320	62%	38%	212	453	32%	68%
69	823	918	572	374	60%	40%	251	544	32%	68%
70	892	934	602	400	60%	40%	290	534	35%	65%
71	830	1,004	565	398	59%	41%	265	606	30%	70%
72	930	1,062	640	413	61%	39%	290	649	31%	69%
73	861	1,073	599	399	60%	40%	262	674	28%	72%
74	916	1,186	639	466	58%	42%	277	720	28%	72%
75	884	1,305	587	521	53%	47%	297	784	27%	73%
76	941	1,374	643	534	55%	45%	298	840	26%	74%
77	996	1,573	671	661	50%	50%	325	912	26%	74%
78	978	1,723	675	719	48%	52%	303	1,004	23%	77%
79	1,071	1,923	705	770	48%	52%	366	1,153	24%	76%
80	1,022	2,160	695	926	43%	57%	327	1,234	21%	79%
81	1,036	2,416	696	1,012	41%	59%	340	1,404	19%	81%
82	1,114	2,705	732	1,136	39%	61%	382	1,569	20%	80%
83	1,090	3,003	740	1,242	37%	63%	350	1,761	17%	83%
84	1,061	3,135	707	1,334	35%	65%	354	1,801	16%	84%
85	992	3,362	652	1,413	32%	68%	340	1,949	15%	85%
86	895	3,752	620	1,605	28%	72%	275	2,147	11%	89%
87	817	3,919	554	1,697	25%	75%	263	2,222	11%	89%
88	739	4,167	517	1,726	23%	77%	222	2,441	8%	92%
89	671	4,127	469	1,765	21%	79%	202	2,362	8%	92%
90	573	4,378	421	1,880	18%	82%	152	2,498	6%	94%
91	507	4,244	366	1,789	17%	83%	141	2,455	5%	95%
92	388	4,073	278	1,694	14%	86%	110	2,379	4%	96%
93	260	3,728	177	1,488	11%	89%	83	2,240	4%	96%
94	181	2,971	130	1,174	10%	90%	51	1,797	3%	97%
95	111	2,542	79	913	8%	92%	32	1,629	2%	98%
96	102	2,233	72	824	8%	92%	30	1,409	2%	98%
97	52	1,812	40	673	6%	94%	12	1,139	1%	99%
98	31	1,489	23	519	4%	96%	8	970	1%	99%
99	32	1,089	25	361	6%	94%	7	728	1%	99%
100	11	793	9	244	4%	96%	2	549	0%	100%
101	6	542	6	165	4%	96%	0	377	0%	100%
102	7	389	6	104	5%	95%	1	285	0%	100%
103	0	226	0	59	0%	100%	0	167	0%	100%
104	1	167	1	53	2%	98%	0	114	0%	100%
105+	0	183	0	46	0%	100%	0	137	0%	100%
Total	24,826	80,778	17,121	32,845	34%	66%	7,705	47,933	14%	86%

Table 55 OAS Beneficiaries Exposures by Marital Status and Type of Benefit – Males (2013)

Age	Overall		without GIS				with GIS			
	Married	Single	Married	Single	%Married	%Single	Married	Single	%Married	%Single
65	127,534	45,571	107,322	29,646	78%	22%	20,212	15,924	56%	44%
66	135,463	47,053	112,001	29,176	79%	21%	23,461	17,877	57%	43%
67	117,034	40,449	94,664	23,824	80%	20%	22,371	16,625	57%	43%
68	107,799	36,969	86,273	21,067	80%	20%	21,527	15,902	58%	42%
69	105,346	35,616	83,634	20,097	81%	19%	21,712	15,519	58%	42%
70	100,901	33,398	79,406	18,694	81%	19%	21,496	14,704	59%	41%
71	92,213	30,708	71,289	16,987	81%	19%	20,924	13,722	60%	40%
72	86,149	28,551	66,000	15,610	81%	19%	20,149	12,941	61%	39%
73	80,287	25,934	61,038	14,043	81%	19%	19,249	11,891	62%	38%
74	76,469	24,563	57,549	13,219	81%	19%	18,920	11,344	63%	37%
75	71,102	23,505	52,806	12,700	81%	19%	18,295	10,805	63%	37%
76	66,113	22,058	48,900	12,009	80%	20%	17,213	10,050	63%	37%
77	63,063	21,642	46,414	11,790	80%	20%	16,649	9,852	63%	37%
78	58,438	20,848	42,666	11,400	79%	21%	15,771	9,448	63%	37%
79	54,156	20,127	39,139	11,183	78%	22%	15,017	8,945	63%	37%
80	51,115	19,747	36,807	11,031	77%	23%	14,308	8,716	62%	38%
81	47,554	19,158	34,391	10,803	76%	24%	13,163	8,355	61%	39%
82	43,305	18,397	31,266	10,594	75%	25%	12,038	7,804	61%	39%
83	38,321	17,284	27,407	9,909	73%	27%	10,915	7,375	60%	40%
84	32,687	15,784	23,261	9,205	72%	28%	9,426	6,579	59%	41%
85	28,423	14,957	20,139	8,841	69%	31%	8,284	6,116	58%	42%
86	23,751	13,461	16,763	8,026	68%	32%	6,988	5,434	56%	44%
87	19,840	12,250	14,064	7,478	65%	35%	5,775	4,772	55%	45%
88	16,035	11,070	11,377	6,748	63%	37%	4,658	4,323	52%	48%
89	12,701	9,496	9,057	5,886	61%	39%	3,644	3,611	50%	50%
90	9,996	8,054	7,121	5,072	58%	42%	2,874	2,982	49%	51%
91	7,715	6,978	5,457	4,416	55%	45%	2,259	2,563	47%	53%
92	5,635	5,539	3,981	3,442	54%	46%	1,653	2,098	44%	56%
93	3,715	4,339	2,625	2,673	50%	50%	1,090	1,666	40%	60%
94	2,151	2,847	1,477	1,672	47%	53%	673	1,175	36%	64%
95	1,486	2,200	1,016	1,245	45%	55%	470	955	33%	67%
96	948	1,585	636	896	42%	58%	312	689	31%	69%
97	597	1,159	391	648	38%	62%	206	511	29%	71%
98	368	850	242	460	34%	66%	125	390	24%	76%
99	239	535	136	283	32%	68%	103	252	29%	71%
100	122	350	73	184	28%	72%	49	166	23%	77%
101	49	192	27	96	22%	78%	22	95	19%	81%
102	27	108	16	50	24%	76%	11	58	16%	84%
103	12	67	7	31	19%	81%	5	36	12%	88%
104	2	35	1	16	8%	92%	1	19	4%	96%
105+	4	32	2	7	23%	77%	2	25	6%	94%
Total	1,688,866	643,469	1,296,844	371,159	78%	22%	392,022	272,310	59%	41%

Table 56 OAS Beneficiaries Exposures by Marital Status and Type of Benefit – Females (2013)

Age	Overall		without GIS				with GIS			
	Married	Single	Married	Single	%Married	%Single	Married	Single	%Married	%Single
65	117,969	66,632	98,501	41,532	70%	30%	19,468	25,100	44%	56%
66	122,220	71,411	100,659	42,188	70%	30%	21,561	29,223	42%	58%
67	103,362	63,288	83,091	35,126	70%	30%	20,271	28,162	42%	58%
68	93,201	59,984	73,738	32,038	70%	30%	19,463	27,946	41%	59%
69	89,635	60,208	70,478	31,700	69%	31%	19,157	28,509	40%	60%
70	83,971	59,684	65,006	30,971	68%	32%	18,965	28,713	40%	60%
71	76,244	56,832	58,487	28,147	68%	32%	17,757	28,685	38%	62%
72	71,666	54,887	54,616	26,864	67%	33%	17,049	28,023	38%	62%
73	66,231	52,519	50,241	25,176	67%	33%	15,990	27,343	37%	63%
74	61,509	52,198	46,381	24,805	65%	35%	15,128	27,392	36%	64%
75	56,048	52,395	41,792	24,771	63%	37%	14,256	27,624	34%	66%
76	51,105	51,558	37,788	24,340	61%	39%	13,316	27,218	33%	67%
77	47,263	52,686	34,882	24,829	58%	42%	12,381	27,858	31%	69%
78	42,973	53,025	31,406	24,707	56%	44%	11,567	28,318	29%	71%
79	38,464	52,789	27,943	24,632	53%	47%	10,521	28,156	27%	73%
80	35,340	53,822	25,725	24,959	51%	49%	9,615	28,864	25%	75%
81	31,939	54,582	23,305	25,301	48%	52%	8,634	29,281	23%	77%
82	28,264	54,827	20,683	25,375	45%	55%	7,580	29,452	20%	80%
83	24,250	53,575	17,692	24,706	42%	58%	6,558	28,869	19%	81%
84	20,140	51,324	14,576	23,415	38%	62%	5,564	27,909	17%	83%
85	17,051	50,234	12,408	22,632	35%	65%	4,643	27,603	14%	86%
86	13,788	47,683	10,105	21,472	32%	68%	3,683	26,211	12%	88%
87	11,352	45,266	8,370	20,450	29%	71%	2,982	24,816	11%	89%
88	8,838	42,253	6,575	19,045	26%	74%	2,263	23,208	9%	91%
89	6,800	38,469	5,072	17,221	23%	77%	1,728	21,248	8%	92%
90	5,159	34,203	3,886	15,221	20%	80%	1,274	18,982	6%	94%
91	3,697	30,365	2,812	13,130	18%	82%	884	17,234	5%	95%
92	2,515	24,947	1,904	10,544	15%	85%	612	14,403	4%	96%
93	1,676	20,270	1,254	8,362	13%	87%	422	11,908	3%	97%
94	902	14,485	686	5,675	11%	89%	216	8,809	2%	98%
95	549	11,476	410	4,378	9%	91%	139	7,098	2%	98%
96	372	8,648	284	3,231	8%	92%	88	5,417	2%	98%
97	209	6,514	162	2,392	6%	94%	47	4,122	1%	99%
98	126	4,876	93	1,726	5%	95%	33	3,150	1%	99%
99	73	3,341	52	1,144	4%	96%	20	2,197	1%	99%
100	45	2,198	32	674	5%	95%	13	1,524	1%	99%
101	18	1,418	16	437	4%	96%	2	981	0%	100%
102	12	885	11	276	4%	96%	2	609	0%	100%
103	7	498	6	146	4%	96%	0	352	0%	100%
104	3	292	1	87	2%	98%	1	205	1%	99%
105+	2	325	2	94	2%	98%	1	231	0%	100%
Total	1,334,985	1,516,869	1,031,130	733,919	58%	42%	303,855	782,950	28%	72%

Table 57 Graduated Mortality Rates and Ratios by Marital Status – Males (2013)

Age	Overall	Married	Ratio Married to Overall	Single	Ratio Single to Overall	Ratio Single to Married
65	11.9	8.9	0.75	20.2	1.70	2.26
66	13.1	10.1	0.77	21.6	1.65	2.14
67	14.4	11.3	0.79	23.3	1.62	2.06
68	15.9	12.6	0.80	25.4	1.60	2.01
69	17.5	14.1	0.80	27.7	1.58	1.97
70	19.3	15.6	0.81	30.4	1.57	1.95
71	21.2	17.2	0.81	33.3	1.57	1.93
72	23.3	19.0	0.82	36.4	1.56	1.91
73	25.6	21.0	0.82	39.5	1.55	1.88
74	28.1	23.2	0.83	42.8	1.52	1.84
75	30.8	25.7	0.84	46.0	1.49	1.79
76	33.9	28.7	0.85	49.4	1.46	1.72
77	37.5	32.1	0.86	53.1	1.41	1.65
78	41.6	36.1	0.87	57.1	1.37	1.58
79	46.3	40.6	0.88	61.7	1.33	1.52
80	51.6	45.7	0.89	66.9	1.30	1.47
81	57.6	51.4	0.89	72.9	1.27	1.42
82	64.5	57.9	0.90	79.8	1.24	1.38
83	72.3	65.3	0.90	87.5	1.21	1.34
84	81.0	73.6	0.91	96.0	1.19	1.30
85	90.7	82.9	0.91	105.5	1.16	1.27
86	101.5	93.2	0.92	115.9	1.14	1.24
87	113.4	104.6	0.92	127.3	1.12	1.22
88	126.4	117.3	0.93	139.7	1.11	1.19
89	140.7	131.3	0.93	153.3	1.09	1.17
90	156.3	146.9	0.94	167.9	1.07	1.14
91	173.2	163.9	0.95	183.5	1.06	1.12
92	191.2	182.4	0.95	200.0	1.05	1.10
93	210.3	202.3	0.96	217.5	1.03	1.07
94	230.4	223.6	0.97	235.9	1.02	1.05
95	251.5	246.3	0.98	255.3	1.01	1.04
96	273.6	270.3	0.99	275.7	1.01	1.02
97	296.7	295.7	1.00	297.0	1.00	1.00
98	320.6	322.3	1.01	319.4	1.00	0.99
99	345.5	350.4	1.01	342.7	0.99	0.98
100	371.3	379.7	1.02	366.8	0.99	0.97
101	398.0	410.5	1.03	391.7	0.98	0.95
102	425.6	439.7	1.03	417.4	0.98	0.95
103	454.1	467.3	1.03	444.0	0.98	0.95
104	481.1	493.3	1.03	469.6	0.98	0.95
105	506.5	517.8	1.02	494.2	0.98	0.95
110	610.6	616.9	1.01	599.9	0.98	0.97
115	675.4	677.4	1.00	671.1	0.99	0.99
120	700.0	700.0	1.00	700.0	1.00	1.00

Table 58 Graduated Mortality Rates and Ratios by Marital Status – Females (2013)

Age	Overall	Married	Ratio Married to Overall	Single	Ratio Single to Overall	Ratio Single to Married
65	7.5	5.9	0.79	10.4	1.38	1.75
66	8.4	6.6	0.79	11.4	1.36	1.73
67	9.3	7.3	0.79	12.4	1.34	1.69
68	10.2	8.2	0.80	13.5	1.32	1.65
69	11.3	9.1	0.80	14.7	1.30	1.62
70	12.5	10.1	0.81	15.9	1.28	1.59
71	13.7	11.1	0.81	17.3	1.26	1.56
72	15.1	12.2	0.81	18.8	1.25	1.55
73	16.5	13.3	0.81	20.5	1.24	1.54
74	18.2	14.7	0.80	22.4	1.23	1.52
75	20.2	16.3	0.80	24.4	1.21	1.50
76	22.5	18.1	0.81	26.7	1.19	1.47
77	25.1	20.4	0.81	29.4	1.17	1.44
78	28.1	22.9	0.82	32.3	1.15	1.41
79	31.5	25.9	0.82	35.6	1.13	1.38
80	35.4	29.3	0.83	39.4	1.11	1.34
81	39.7	33.3	0.84	43.5	1.10	1.31
82	44.7	37.9	0.85	48.2	1.08	1.27
83	50.2	43.1	0.86	53.5	1.06	1.24
84	56.5	49.0	0.87	59.4	1.05	1.21
85	63.6	55.8	0.88	66.3	1.04	1.19
86	71.7	63.4	0.88	74.1	1.03	1.17
87	81.0	72.2	0.89	83.2	1.03	1.15
88	91.7	82.3	0.90	93.5	1.02	1.14
89	103.7	93.6	0.90	105.3	1.02	1.13
90	117.1	106.3	0.91	118.5	1.01	1.12
91	131.8	120.3	0.91	133.1	1.01	1.11
92	147.8	135.6	0.92	149.0	1.01	1.10
93	164.8	152.2	0.92	165.9	1.01	1.09
94	182.9	170.1	0.93	183.9	1.01	1.08
95	201.7	189.2	0.94	202.5	1.00	1.07
96	221.2	209.7	0.95	221.9	1.00	1.06
97	241.3	231.3	0.96	241.9	1.00	1.05
98	262.1	254.2	0.97	262.4	1.00	1.03
99	283.3	278.3	0.98	283.5	1.00	1.02
100	305.1	302.8	0.99	305.1	1.00	1.01
101	327.5	327.4	1.00	327.3	1.00	1.00
102	350.4	352.0	1.00	350.2	1.00	0.99
103	373.8	376.6	1.01	373.6	1.00	0.99
104	397.8	400.9	1.01	397.7	1.00	0.99
105	422.4	424.9	1.01	422.3	1.00	0.99
110	536.8	534.6	1.00	537.3	1.00	1.01
115	616.7	615.2	1.00	617.0	1.00	1.00
120	650.0	650.0	1.00	650.0	1.00	1.00

Table 59 Life Table of OAS Married Beneficiaries (2013)

Age	Males				Females			
	l_x	1,000 q_x	d_x	${}^{\circ}e_x$	l_x	1,000 q_x	d_x	${}^{\circ}e_x$
65	100,000	8.9	894	19.98	100,000	5.9	594	22.97
66	99,106	10.1	1,001	19.16	99,406	6.6	654	22.10
67	98,105	11.3	1,112	18.35	98,752	7.3	722	21.25
68	96,993	12.6	1,226	17.55	98,030	8.2	799	20.40
69	95,767	14.1	1,346	16.77	97,231	9.1	882	19.56
70	94,421	15.6	1,471	16.00	96,349	10.1	968	18.74
71	92,950	17.2	1,602	15.25	95,381	11.1	1,056	17.92
72	91,348	19.0	1,738	14.51	94,325	12.2	1,147	17.12
73	89,610	21.0	1,881	13.78	93,178	13.3	1,243	16.32
74	87,729	23.2	2,035	13.06	91,935	14.7	1,350	15.54
75	85,694	25.7	2,205	12.36	90,585	16.3	1,474	14.76
76	83,489	28.7	2,395	11.67	89,111	18.2	1,617	14.00
77	81,094	32.1	2,606	11.00	87,494	20.4	1,781	13.25
78	78,488	36.1	2,832	10.35	85,713	22.9	1,965	12.51
79	75,656	40.6	3,070	9.72	83,748	25.9	2,170	11.79
80	72,586	45.7	3,314	9.11	81,578	29.4	2,394	11.09
81	69,272	51.4	3,562	8.52	79,184	33.3	2,638	10.41
82	65,710	58.0	3,808	7.96	76,546	37.9	2,900	9.76
83	61,902	65.3	4,044	7.42	73,646	43.1	3,174	9.12
84	57,858	73.6	4,260	6.90	70,472	49.0	3,455	8.51
85	53,598	82.9	4,443	6.41	67,017	55.8	3,737	7.92
86	49,155	93.2	4,580	5.94	63,280	63.4	4,014	7.36
87	44,575	104.6	4,663	5.50	59,266	72.2	4,281	6.82
88	39,912	117.3	4,680	5.09	54,985	82.3	4,523	6.32
89	35,232	131.3	4,627	4.70	50,462	93.6	4,723	5.84
90	30,605	146.9	4,495	4.33	45,739	106.3	4,860	5.39
91	26,110	163.9	4,279	3.99	40,879	120.3	4,917	4.97
92	21,831	182.4	3,982	3.67	35,962	135.6	4,876	4.58
93	17,849	202.3	3,611	3.38	31,086	152.2	4,731	4.22
94	14,238	223.7	3,184	3.11	26,355	170.1	4,483	3.89
95	11,054	246.3	2,723	2.86	21,872	189.3	4,139	3.58
96	8,331	270.3	2,252	2.64	17,733	209.7	3,718	3.30
97	6,079	295.7	1,797	2.43	14,015	231.3	3,242	3.05
98	4,282	322.3	1,380	2.24	10,773	254.2	2,738	2.81
99	2,902	350.4	1,017	2.06	8,035	278.3	2,236	2.60
100	1,885	379.7	716	1.90	5,799	302.8	1,756	2.41
101	1,169	410.5	480	1.76	4,043	327.4	1,324	2.24
102	689	439.7	303	1.64	2,719	352.0	957	2.09
103	386	467.3	180	1.54	1,762	376.6	664	1.95
104	206	493.3	102	1.45	1,098	400.9	440	1.83
105	104	517.8	54	1.37	658	424.9	280	1.72
110	2	616.9	1	1.10	27	534.6	14	1.32
115	0	677.4	0	0.97	0	615.2	0	1.11
120	0	700.0	0	0.80	0	650.0	0	0.85

Table 60 Life Table of OAS Single Beneficiaries (2013)

Age	Males				Females			
	l_x	1,000 q_x	d_x	e_x^o	l_x	1,000 q_x	d_x	e_x^o
65	100,000	20.2	2,020	16.50	100,000	10.4	1,038	20.85
66	97,980	21.6	2,118	15.83	98,962	11.4	1,124	20.06
67	95,862	23.3	2,237	15.16	97,838	12.4	1,212	19.28
68	93,625	25.4	2,375	14.52	96,626	13.5	1,303	18.52
69	91,250	27.7	2,529	13.88	95,323	14.7	1,397	17.77
70	88,721	30.4	2,694	13.26	93,926	15.9	1,496	17.02
71	86,027	33.3	2,862	12.66	92,430	17.3	1,601	16.29
72	83,165	36.4	3,024	12.08	90,829	18.8	1,711	15.57
73	80,141	39.5	3,169	11.52	89,118	20.5	1,828	14.86
74	76,972	42.8	3,291	10.97	87,290	22.4	1,952	14.16
75	73,681	46.0	3,390	10.44	85,338	24.4	2,084	13.47
76	70,291	49.4	3,473	9.92	83,254	26.8	2,227	12.80
77	66,818	53.1	3,546	9.41	81,027	29.4	2,380	12.13
78	63,272	57.1	3,613	8.91	78,647	32.3	2,543	11.49
79	59,659	61.7	3,680	8.41	76,104	35.7	2,713	10.85
80	55,979	66.9	3,746	7.94	73,391	39.4	2,889	10.24
81	52,233	72.9	3,809	7.47	70,502	43.5	3,069	9.63
82	48,424	79.8	3,862	7.02	67,433	48.2	3,250	9.05
83	44,562	87.5	3,898	6.58	64,183	53.5	3,431	8.48
84	40,664	96.0	3,905	6.16	60,752	59.4	3,611	7.93
85	36,759	105.5	3,878	5.77	57,141	66.3	3,787	7.40
86	32,881	115.9	3,811	5.39	53,354	74.2	3,956	6.89
87	29,070	127.3	3,700	5.03	49,398	83.2	4,109	6.41
88	25,370	139.7	3,545	4.69	45,289	93.5	4,236	5.94
89	21,825	153.3	3,345	4.37	41,053	105.3	4,322	5.50
90	18,480	167.9	3,102	4.07	36,731	118.5	4,353	5.09
91	15,378	183.5	2,821	3.79	32,378	133.1	4,310	4.71
92	12,557	200.0	2,511	3.53	28,068	149.0	4,181	4.35
93	10,046	217.5	2,185	3.28	23,887	166.0	3,964	4.03
94	7,861	235.9	1,854	3.06	19,923	183.9	3,663	3.73
95	6,007	255.3	1,533	2.85	16,260	202.6	3,293	3.46
96	4,474	275.7	1,233	2.65	12,967	221.9	2,878	3.21
97	3,241	297.1	963	2.47	10,089	241.9	2,440	2.98
98	2,278	319.4	728	2.30	7,649	262.4	2,007	2.78
99	1,550	342.7	531	2.14	5,642	283.5	1,599	2.59
100	1,019	366.8	374	2.00	4,043	305.1	1,234	2.41
101	645	391.7	253	1.86	2,809	327.4	920	2.25
102	392	417.5	164	1.74	1,889	350.2	661	2.10
103	228	444.0	101	1.63	1,228	373.6	459	1.97
104	127	469.6	60	1.53	769	397.7	306	1.84
105	67	494.2	33	1.44	463	422.3	196	1.73
110	1	599.9	1	1.14	19	537.3	10	1.31
115	0	671.1	0	0.98	0	617.0	0	1.10
120	0	700.0	0	0.80	0	650.0	0	0.85

Table 61 Male Graduated Mortality Rates by Age, Marital Status and Type of Benefit (2013)

Age	without GIS					with GIS			
	Overall	Married	Ratio Married to Overall	Single	Ratio Single to Overall	Married	Ratio Married to Overall	Single	Ratio Single to Overall
65	11.9	8.4	0.70	16.8	1.41	11.9	1.00	26.5	2.22
66	13.1	9.2	0.70	17.1	1.30	14.4	1.10	28.8	2.20
67	14.4	10.1	0.70	17.9	1.24	16.6	1.15	31.2	2.16
68	15.9	11.2	0.70	19.3	1.21	18.6	1.17	33.6	2.11
69	17.5	12.4	0.71	21.1	1.21	20.4	1.17	36.2	2.07
70	19.3	13.8	0.71	23.3	1.21	22.1	1.15	39.1	2.03
71	21.2	15.4	0.72	25.9	1.22	23.8	1.12	42.2	1.99
72	23.3	17.1	0.73	28.7	1.23	25.4	1.09	45.5	1.95
73	25.6	19.1	0.75	31.6	1.24	27.1	1.06	48.9	1.91
74	28.1	21.2	0.76	34.7	1.24	29.1	1.04	52.2	1.86
75	30.8	23.7	0.77	37.9	1.23	31.7	1.03	55.5	1.80
76	33.9	26.5	0.78	41.2	1.22	34.9	1.03	59.0	1.74
77	37.5	29.7	0.79	44.9	1.20	38.7	1.03	62.8	1.67
78	41.6	33.5	0.80	49.0	1.18	43.1	1.04	66.9	1.61
79	46.3	37.8	0.82	53.7	1.16	48.0	1.04	71.5	1.54
80	51.6	42.8	0.83	59.3	1.15	53.2	1.03	76.5	1.48
81	57.6	48.5	0.84	65.8	1.14	59.0	1.02	82.1	1.42
82	64.5	55.0	0.85	73.3	1.14	65.4	1.01	88.3	1.37
83	72.3	62.4	0.86	81.8	1.13	72.4	1.00	95.3	1.32
84	81.0	70.8	0.87	91.1	1.12	80.4	0.99	103.1	1.27
85	90.7	80.2	0.88	101.2	1.12	89.3	0.98	111.9	1.23
86	101.5	90.6	0.89	112.2	1.11	99.3	0.98	121.6	1.20
87	113.4	102.2	0.90	124.0	1.09	110.4	0.97	132.3	1.17
88	126.4	115.2	0.91	136.9	1.08	122.8	0.97	143.9	1.14
89	140.7	129.6	0.92	150.8	1.07	136.5	0.97	156.4	1.11
90	156.3	145.6	0.93	165.8	1.06	151.7	0.97	169.9	1.09
91	173.2	163.1	0.94	181.8	1.05	168.3	0.97	184.2	1.06
92	191.2	182.1	0.95	198.7	1.04	186.4	0.98	200.0	1.05
93	210.3	202.3	0.96	216.4	1.03	205.8	0.98	217.5	1.03
94	230.4	223.6	0.97	235.1	1.02	226.3	0.98	235.9	1.02
95	251.5	246.3	0.98	254.8	1.01	247.9	0.99	255.3	1.01
96	273.6	270.3	0.99	275.4	1.01	270.4	0.99	275.7	1.01
97	296.7	295.7	1.00	297.0	1.00	295.7	1.00	297.0	1.00
98	320.6	322.2	1.01	319.4	1.00	322.3	1.01	319.4	1.00
99	345.5	349.7	1.01	342.7	0.99	350.4	1.01	342.7	0.99
100	371.3	378.3	1.02	366.8	0.99	379.7	1.02	367.4	0.99
101	398.0	406.0	1.02	391.7	0.98	410.5	1.03	393.0	0.99
102	425.6	432.8	1.02	417.2	0.98	439.7	1.03	419.3	0.99
103	454.1	458.6	1.01	442.1	0.97	467.3	1.03	446.3	0.98
104	481.1	483.3	1.00	466.5	0.97	493.3	1.03	472.2	0.98
105	506.5	506.9	1.00	490.1	0.97	517.8	1.02	497.0	0.98
110	610.6	607.3	0.99	595.1	0.97	616.9	1.01	602.3	0.99
115	675.4	673.6	1.00	669.0	0.99	677.4	1.00	672.1	1.00
120	700.0	700.0	1.00	700.0	1.00	700.0	1.00	700.0	1.00

Table 62 Female Graduated Mortality Rates by Age, Marital Status and Type of Benefit (2013)

Age	without GIS					with GIS			
	Overall	Married	Ratio Married to Overall	Single	Ratio Single to Overall	Married	Ratio Married to Overall	Single	Ratio Single to Overall
65	7.5	5.6	0.74	7.8	1.04	7.9	1.05	14.6	1.94
66	8.3	6.0	0.71	8.6	1.03	9.4	1.12	15.3	1.84
67	9.2	6.5	0.70	9.5	1.02	10.7	1.16	16.2	1.75
68	10.2	7.2	0.70	10.4	1.02	11.9	1.16	17.1	1.67
69	11.3	8.0	0.71	11.4	1.01	13.0	1.15	18.2	1.61
70	12.5	8.9	0.71	12.5	1.01	14.1	1.13	19.4	1.56
71	13.7	9.9	0.72	13.7	1.00	15.1	1.10	20.8	1.52
72	15.0	10.9	0.73	15.1	1.00	16.1	1.07	22.4	1.49
73	16.5	12.1	0.73	16.6	1.01	17.2	1.04	24.1	1.46
74	18.2	13.4	0.73	18.4	1.01	18.5	1.02	25.9	1.42
75	20.2	14.9	0.74	20.5	1.01	20.2	1.00	28.0	1.38
76	22.5	16.7	0.74	22.8	1.02	22.2	0.99	30.2	1.34
77	25.1	18.8	0.75	25.5	1.02	24.8	0.99	32.8	1.31
78	28.1	21.1	0.75	28.5	1.01	27.8	0.99	35.7	1.27
79	31.5	23.9	0.76	31.7	1.01	31.4	1.00	39.0	1.24
80	35.4	27.0	0.76	35.4	1.00	35.6	1.01	42.8	1.21
81	39.8	30.6	0.77	39.4	0.99	40.6	1.02	47.1	1.18
82	44.7	34.8	0.78	44.0	0.98	46.1	1.03	51.8	1.16
83	50.2	39.6	0.79	49.1	0.98	52.4	1.04	57.1	1.14
84	56.5	45.2	0.80	55.0	0.97	59.3	1.05	63.1	1.12
85	63.6	51.6	0.81	61.8	0.97	67.0	1.05	70.0	1.10
86	71.7	59.0	0.82	69.6	0.97	75.6	1.05	77.9	1.09
87	81.0	67.5	0.83	78.7	0.97	85.3	1.05	86.9	1.07
88	91.6	77.2	0.84	89.1	0.97	96.3	1.05	97.2	1.06
89	103.6	88.2	0.85	101.0	0.97	108.7	1.05	108.8	1.05
90	117.0	100.6	0.86	114.4	0.98	122.6	1.05	121.8	1.04
91	131.7	114.4	0.87	129.3	0.98	137.8	1.05	136.1	1.03
92	147.7	129.6	0.88	145.4	0.98	154.2	1.04	151.6	1.03
93	164.8	146.2	0.89	162.6	0.99	171.8	1.04	168.3	1.02
94	182.8	164.3	0.90	180.7	0.99	190.4	1.04	186.0	1.02
95	201.7	183.9	0.91	199.3	0.99	210.0	1.04	204.5	1.01
96	221.2	205.0	0.93	218.4	0.99	230.4	1.04	223.8	1.01
97	241.4	227.7	0.94	237.9	0.99	251.5	1.04	243.8	1.01
98	262.2	251.9	0.96	257.5	0.98	273.4	1.04	264.6	1.01
99	283.5	277.7	0.98	277.2	0.98	295.8	1.04	286.2	1.01
100	305.3	303.5	0.99	297.0	0.97	318.5	1.04	308.7	1.01
101	327.5	329.2	1.01	316.9	0.97	341.6	1.04	332.1	1.01
102	350.4	354.7	1.01	336.9	0.96	364.7	1.04	356.4	1.02
103	373.8	379.9	1.02	357.0	0.96	387.9	1.04	381.6	1.02
104	397.8	404.7	1.02	377.3	0.95	410.9	1.03	407.9	1.03
105	422.4	429.0	1.02	397.6	0.94	433.7	1.03	435.0	1.03
110	536.8	538.2	1.00	507.5	0.95	538.5	1.00	554.8	1.03
115	616.7	616.6	1.00	603.8	0.98	616.2	1.00	625.0	1.01
120	650.0	650.0	1.00	650.0	1.00	650.0	1.00	650.0	1.00

Table 63 Life Table of OAS Married Beneficiaries without GIS (2013)

Age	Males				Females			
	l_x	1,000 q_x	d_x	${}^o e_x$	l_x	1,000 q_x	d_x	${}^o e_x$
65	100,000	8.4	837	20.43	100,000	5.6	556	23.52
66	99,163	9.2	909	19.60	99,444	6.0	592	22.65
67	98,254	10.1	991	18.77	98,852	6.5	642	21.78
68	97,263	11.2	1,085	17.96	98,210	7.2	704	20.92
69	96,178	12.4	1,191	17.16	97,506	8.0	778	20.07
70	94,987	13.8	1,309	16.37	96,728	8.9	860	19.22
71	93,678	15.4	1,439	15.59	95,868	9.9	947	18.39
72	92,239	17.1	1,579	14.82	94,921	10.9	1,038	17.57
73	90,660	19.1	1,728	14.07	93,883	12.1	1,136	16.76
74	88,932	21.2	1,888	13.34	92,747	13.4	1,244	15.96
75	87,044	23.7	2,060	12.61	91,503	14.9	1,365	15.17
76	84,984	26.5	2,250	11.91	90,138	16.7	1,505	14.39
77	82,734	29.7	2,459	11.22	88,633	18.8	1,663	13.63
78	80,275	33.5	2,688	10.55	86,970	21.1	1,839	12.88
79	77,587	37.8	2,933	9.89	85,131	23.9	2,031	12.14
80	74,654	42.8	3,192	9.26	83,100	27.0	2,243	11.43
81	71,462	48.5	3,463	8.66	80,857	30.6	2,475	10.73
82	67,999	55.0	3,739	8.07	78,382	34.8	2,728	10.06
83	64,260	62.4	4,011	7.51	75,654	39.6	2,998	9.40
84	60,249	70.8	4,266	6.98	72,656	45.2	3,284	8.77
85	55,983	80.2	4,488	6.47	69,372	51.6	3,580	8.16
86	51,495	90.6	4,666	5.99	65,792	59.0	3,880	7.58
87	46,829	102.2	4,788	5.54	61,912	67.5	4,177	7.02
88	42,041	115.2	4,843	5.11	57,735	77.2	4,456	6.49
89	37,198	129.6	4,822	4.71	53,279	88.2	4,700	5.99
90	32,376	145.6	4,714	4.34	48,579	100.6	4,888	5.52
91	27,662	163.1	4,512	4.00	43,691	114.4	4,997	5.08
92	23,150	182.1	4,214	3.68	38,694	129.6	5,013	4.68
93	18,936	202.3	3,831	3.38	33,681	146.2	4,923	4.30
94	15,105	223.7	3,378	3.11	28,758	164.3	4,724	3.95
95	11,727	246.3	2,889	2.87	24,034	183.9	4,419	3.63
96	8,838	270.3	2,389	2.64	19,615	205.0	4,021	3.33
97	6,449	295.7	1,907	2.43	15,594	227.7	3,550	3.06
98	4,542	322.2	1,464	2.25	12,044	251.9	3,034	2.81
99	3,078	349.7	1,076	2.08	9,010	277.7	2,502	2.59
100	2,002	378.3	757	1.93	6,508	303.5	1,975	2.40
101	1,245	406.0	505	1.79	4,533	329.2	1,492	2.22
102	740	432.8	320	1.68	3,041	354.7	1,079	2.07
103	420	458.6	193	1.57	1,962	379.9	745	1.93
104	227	483.3	110	1.48	1,217	404.7	493	1.81
105	117	506.9	59	1.40	724	429.0	311	1.70
110	2	607.3	1	1.12	29	538.2	16	1.31
115	0	673.6	0	0.98	0	616.6	0	1.11
120	0	700.0	0	0.80	0	650.0	0	0.85

Table 64 Life Table of OAS Married Beneficiaries with GIS (2013)

Age	Males				Females			
	l_x	$1,000 q_x$	d_x	e_x	l_x	$1,000 q_x$	d_x	e_x
65	100,000	11.9	1,190	18.63	100,000	7.9	793	21.42
66	98,810	14.4	1,419	17.85	99,207	9.4	930	20.59
67	97,391	16.6	1,616	17.10	98,277	10.7	1,051	19.78
68	95,775	18.6	1,782	16.38	97,226	11.9	1,157	18.99
69	93,993	20.5	1,922	15.68	96,069	13.0	1,253	18.21
70	92,071	22.1	2,038	15.00	94,816	14.1	1,336	17.44
71	90,033	23.8	2,139	14.33	93,480	15.1	1,411	16.69
72	87,894	25.4	2,229	13.67	92,069	16.1	1,481	15.93
73	85,665	27.1	2,321	13.01	90,588	17.2	1,557	15.19
74	83,344	29.1	2,429	12.36	89,031	18.5	1,650	14.44
75	80,915	31.7	2,567	11.71	87,381	20.2	1,764	13.71
76	78,348	34.9	2,735	11.08	85,617	22.3	1,905	12.98
77	75,613	38.7	2,929	10.46	83,712	24.8	2,073	12.26
78	72,684	43.1	3,134	9.86	81,639	27.8	2,269	11.56
79	69,550	48.0	3,336	9.29	79,370	31.4	2,493	10.88
80	66,214	53.2	3,525	8.73	76,877	35.7	2,741	10.21
81	62,689	59.0	3,698	8.19	74,136	40.6	3,007	9.57
82	58,991	65.4	3,856	7.67	71,129	46.1	3,282	8.96
83	55,135	72.4	3,993	7.17	67,847	52.4	3,553	8.37
84	51,142	80.4	4,110	6.70	64,294	59.3	3,811	7.80
85	47,032	89.3	4,199	6.24	60,483	67.0	4,050	7.26
86	42,833	99.3	4,251	5.80	56,433	75.6	4,264	6.75
87	38,582	110.4	4,259	5.38	52,169	85.3	4,449	6.26
88	34,323	122.8	4,214	4.99	47,720	96.3	4,595	5.79
89	30,109	136.5	4,110	4.62	43,125	108.7	4,688	5.36
90	25,999	151.7	3,943	4.27	38,437	122.6	4,710	4.95
91	22,056	168.3	3,712	3.94	33,727	137.8	4,647	4.57
92	18,344	186.4	3,419	3.64	29,080	154.2	4,485	4.22
93	14,925	205.8	3,071	3.36	24,595	171.8	4,226	3.90
94	11,854	226.4	2,683	3.10	20,369	190.4	3,879	3.61
95	9,171	247.9	2,274	2.86	16,490	210.0	3,462	3.34
96	6,897	270.4	1,865	2.64	13,028	230.4	3,001	3.09
97	5,032	295.7	1,488	2.43	10,027	251.5	2,522	2.87
98	3,544	322.3	1,142	2.24	7,505	273.4	2,052	2.67
99	2,402	350.4	842	2.06	5,453	295.8	1,613	2.48
100	1,560	379.7	592	1.90	3,840	318.5	1,223	2.31
101	968	410.5	397	1.76	2,617	341.6	894	2.16
102	571	439.7	251	1.64	1,723	364.8	628	2.02
103	320	467.3	150	1.54	1,095	387.9	425	1.90
104	170	493.3	84	1.45	670	410.9	275	1.79
105	86	517.8	45	1.37	395	433.7	171	1.69
110	1	616.9	1	1.10	15	538.5	8	1.31
115	0	677.4	0	0.97	0	616.2	0	1.11
120	0	700.0	0	0.80	0	650.0	0	0.85

Table 65 Life Table of OAS Single Beneficiaries without GIS (2013)

Age	Males				Females			
	l_x	1,000 q_x	d_x	$\overset{\circ}{e}_x$	l_x	1,000 q_x	d_x	$\overset{\circ}{e}_x$
65	100,000	16.8	1,679	17.71	100,000	7.8	779	21.83
66	98,321	17.1	1,679	17.00	99,221	8.6	851	21.00
67	96,642	17.9	1,732	16.29	98,370	9.5	931	20.18
68	94,910	19.3	1,830	15.58	97,439	10.4	1,013	19.36
69	93,080	21.1	1,964	14.87	96,426	11.4	1,102	18.56
70	91,116	23.3	2,127	14.18	95,324	12.5	1,195	17.77
71	88,989	25.9	2,304	13.51	94,129	13.8	1,294	16.99
72	86,685	28.7	2,486	12.85	92,835	15.1	1,402	16.22
73	84,199	31.6	2,662	12.22	91,433	16.6	1,521	15.46
74	81,537	34.7	2,827	11.60	89,912	18.4	1,656	14.72
75	78,710	37.9	2,981	11.00	88,256	20.5	1,807	13.98
76	75,729	41.2	3,123	10.41	86,449	22.8	1,974	13.26
77	72,606	44.9	3,259	9.84	84,475	25.5	2,153	12.56
78	69,347	49.0	3,396	9.28	82,322	28.5	2,342	11.88
79	65,951	53.7	3,542	8.73	79,980	31.7	2,539	11.21
80	62,409	59.3	3,699	8.20	77,441	35.4	2,740	10.56
81	58,710	65.8	3,863	7.68	74,701	39.4	2,945	9.93
82	54,847	73.3	4,022	7.19	71,756	44.0	3,155	9.32
83	50,825	81.8	4,157	6.72	68,601	49.1	3,370	8.72
84	46,668	91.1	4,252	6.27	65,231	55.0	3,589	8.15
85	42,416	101.2	4,293	5.85	61,642	61.8	3,810	7.59
86	38,123	112.2	4,276	5.45	57,832	69.6	4,027	7.06
87	33,847	124.0	4,198	5.08	53,805	78.7	4,232	6.55
88	29,649	136.9	4,058	4.73	49,573	89.1	4,415	6.07
89	25,591	150.8	3,859	4.40	45,158	101.0	4,559	5.61
90	21,732	165.8	3,603	4.09	40,599	114.4	4,645	5.19
91	18,129	181.8	3,296	3.80	35,954	129.3	4,648	4.79
92	14,833	198.7	2,947	3.54	31,306	145.4	4,553	4.43
93	11,886	216.4	2,572	3.29	26,753	162.6	4,351	4.10
94	9,314	235.1	2,190	3.06	22,402	180.7	4,047	3.80
95	7,124	254.8	1,815	2.85	18,355	199.3	3,659	3.53
96	5,309	275.4	1,462	2.65	14,696	218.5	3,210	3.28
97	3,847	297.1	1,143	2.47	11,486	237.9	2,732	3.06
98	2,704	319.4	864	2.30	8,754	257.5	2,254	2.86
99	1,840	342.7	630	2.14	6,500	277.2	1,802	2.67
100	1,210	366.8	444	2.00	4,698	297.0	1,395	2.51
101	766	391.7	300	1.87	3,303	316.9	1,047	2.35
102	466	417.2	194	1.75	2,256	336.9	760	2.21
103	272	442.1	120	1.64	1,496	357.0	534	2.09
104	152	466.5	71	1.55	962	377.3	363	1.97
105	81	490.1	40	1.46	599	397.6	238	1.86
110	2	595.1	1	1.15	32	507.5	16	1.40
115	0	669.0	0	0.98	1	603.8	1	1.13
120	0	700.0	0	0.80	0	650.0	0	0.85

Table 66 Life Table of OAS Single Beneficiaries with GIS (2013)

Age	Males				Females			
	l_x	1,000 q_x	d_x	${}^o e_x$	l_x	1,000 q_x	d_x	${}^o e_x$
65	100,000	26.5	2,649	15.09	100,000	14.6	1,458	19.91
66	97,351	28.8	2,806	14.49	98,542	15.3	1,511	19.20
67	94,545	31.2	2,947	13.90	97,031	16.2	1,568	18.49
68	91,598	33.6	3,079	13.34	95,463	17.1	1,633	17.78
69	88,519	36.3	3,209	12.78	93,830	18.2	1,708	17.09
70	85,310	39.1	3,337	12.24	92,122	19.4	1,791	16.39
71	81,973	42.2	3,462	11.72	90,331	20.9	1,883	15.71
72	78,511	45.5	3,573	11.22	88,448	22.4	1,981	15.03
73	74,938	48.9	3,661	10.73	86,467	24.1	2,083	14.36
74	71,277	52.2	3,719	10.25	84,384	25.9	2,188	13.71
75	67,558	55.5	3,750	9.79	82,196	28.0	2,298	13.06
76	63,808	59.0	3,765	9.34	79,898	30.2	2,415	12.42
77	60,043	62.8	3,768	8.89	77,483	32.8	2,541	11.79
78	56,275	66.9	3,766	8.45	74,942	35.7	2,676	11.17
79	52,509	71.5	3,754	8.02	72,266	39.1	2,822	10.57
80	48,755	76.5	3,730	7.60	69,444	42.8	2,973	9.98
81	45,025	82.1	3,696	7.19	66,471	47.1	3,127	9.40
82	41,329	88.3	3,649	6.79	63,344	51.8	3,281	8.84
83	37,680	95.3	3,590	6.40	60,063	57.1	3,431	8.30
84	34,090	103.1	3,515	6.02	56,632	63.1	3,575	7.77
85	30,575	111.9	3,420	5.65	53,057	70.0	3,713	7.26
86	27,155	121.6	3,302	5.30	49,344	77.9	3,841	6.77
87	23,853	132.3	3,156	4.97	45,503	86.9	3,953	6.30
88	20,697	143.9	2,979	4.65	41,550	97.2	4,037	5.85
89	17,718	156.4	2,772	4.34	37,513	108.8	4,080	5.43
90	14,946	169.9	2,539	4.06	33,433	121.8	4,070	5.03
91	12,407	184.2	2,285	3.78	29,363	136.1	3,995	4.65
92	10,122	200.0	2,024	3.53	25,368	151.6	3,847	4.31
93	8,098	217.5	1,761	3.28	21,521	168.3	3,623	3.99
94	6,337	235.9	1,495	3.06	17,898	186.0	3,329	3.70
95	4,842	255.3	1,236	2.84	14,569	204.5	2,980	3.43
96	3,606	275.7	994	2.65	11,589	223.8	2,594	3.18
97	2,612	297.1	776	2.46	8,995	243.8	2,193	2.95
98	1,836	319.4	586	2.29	6,802	264.6	1,800	2.74
99	1,250	342.7	428	2.14	5,002	286.2	1,432	2.55
100	822	367.4	302	1.99	3,570	308.7	1,102	2.37
101	520	393.0	204	1.85	2,468	332.1	820	2.20
102	316	419.3	132	1.73	1,648	356.4	587	2.05
103	184	446.3	82	1.62	1,061	381.6	405	1.91
104	102	472.2	48	1.52	656	407.9	268	1.78
105	54	497.0	27	1.44	388	435.0	169	1.66
110	1	602.3	1	1.13	13	554.8	7	1.26
115	0	672.1	0	0.98	0	625.0	0	1.09
120	0	700.0	0	0.80	0	650.0	0	0.85

Table 67 OAS Beneficiaries by Place of Birth (2013)

Age	Males			Females		
	Born in Canada	Born Outside Canada	Proportion Born Outside Canada	Born in Canada	Born Outside Canada	Proportion Born Outside Canada
65	124,260	41,982	25%	135,072	46,754	26%
66	132,737	50,230	27%	142,050	53,526	27%
67	120,360	47,891	28%	128,075	50,925	28%
68	104,224	41,018	28%	110,948	43,412	28%
69	99,002	42,302	30%	106,531	44,129	29%
70	97,456	39,037	29%	105,539	40,626	28%
71	87,176	39,977	31%	95,622	41,613	30%
72	82,475	33,019	29%	91,704	35,220	28%
73	76,117	32,654	30%	85,634	35,934	30%
74	70,116	31,250	31%	79,821	34,683	30%
75	65,994	30,542	32%	76,690	33,411	30%
76	60,217	28,616	32%	71,360	32,356	31%
77	57,618	27,583	32%	69,350	30,596	31%
78	53,901	26,079	33%	67,322	29,183	30%
79	50,119	24,411	33%	64,392	27,889	30%
80	47,291	22,995	33%	61,811	25,843	29%
81	45,770	21,524	32%	61,878	24,913	29%
82	42,185	19,614	32%	59,531	23,346	28%
83	38,502	18,909	33%	56,426	22,801	29%
84	32,340	16,426	34%	50,650	20,990	29%
85	29,189	14,797	34%	47,027	20,191	30%
86	25,020	12,897	34%	42,860	19,105	31%
87	21,373	11,188	34%	38,593	17,935	32%
88	18,270	9,409	34%	35,169	16,301	32%
89	15,007	7,684	34%	31,637	14,258	31%
90	11,763	6,572	36%	27,135	12,410	31%
91	9,866	4,993	34%	24,399	9,937	29%
92	7,907	3,780	32%	20,438	7,858	28%
93	5,828	2,969	34%	16,740	6,648	28%
94	3,706	1,678	31%	11,984	4,147	26%
95	2,736	1,170	30%	9,847	2,934	23%
96	1,941	767	28%	7,232	2,070	22%
97	1,288	591	31%	5,312	1,625	23%
98	854	401	32%	3,918	1,271	24%
99	529	311	37%	2,678	972	27%
100	328	189	37%	1,711	708	29%
101	164	116	41%	1,078	507	32%
102	82	71	46%	635	309	33%
103	37	49	57%	334	257	43%
104	11	36	77%	146	161	52%
105+	23	39	63%	134	249	65%
Total	1,643,782	715,766	30%	2,049,413	838,003	29%

Table 68 OAS Beneficiaries Deaths by Place of Birth (2013)

Age	Males			Females		
	Born in Canada	Born Outside Canada	Proportion Born Outside Canada	Born in Canada	Born Outside Canada	Proportion Born Outside Canada
65	1,650	392	19%	1,108	261	19%
66	1,933	511	21%	1,354	333	20%
67	1,815	515	22%	1,248	290	19%
68	1,764	531	23%	1,203	306	20%
69	1,913	550	22%	1,401	340	20%
70	2,003	586	23%	1,450	376	21%
71	2,018	628	24%	1,444	390	21%
72	2,129	624	23%	1,602	390	20%
73	2,169	657	23%	1,515	419	22%
74	2,160	687	24%	1,651	451	21%
75	2,210	753	25%	1,679	510	23%
76	2,202	781	26%	1,778	537	23%
77	2,365	809	25%	1,955	614	24%
78	2,521	965	28%	2,077	624	23%
79	2,557	958	27%	2,290	704	24%
80	2,802	1,054	27%	2,429	753	24%
81	2,791	986	26%	2,653	799	23%
82	2,967	1,186	29%	2,895	924	24%
83	2,958	1,202	29%	3,073	1,020	25%
84	2,877	1,235	30%	3,110	1,086	26%
85	2,924	1,231	30%	3,163	1,191	27%
86	2,865	1,206	30%	3,319	1,328	29%
87	2,664	1,205	31%	3,366	1,370	29%
88	2,462	1,128	31%	3,446	1,460	30%
89	2,267	1,044	32%	3,343	1,455	30%
90	2,040	945	32%	3,523	1,428	29%
91	2,041	889	30%	3,433	1,318	28%
92	1,678	674	29%	3,337	1,124	25%
93	1,314	629	32%	2,948	1,040	26%
94	933	341	27%	2,469	683	22%
95	860	253	23%	2,125	528	20%
96	629	195	24%	1,863	472	20%
97	429	140	25%	1,513	351	19%
98	333	144	30%	1,214	306	20%
99	231	110	32%	876	245	22%
100	131	71	35%	591	213	26%
101	85	59	41%	420	128	23%
102	39	25	39%	249	147	37%
103	19	29	60%	123	103	46%
104	11	12	52%	77	91	54%
105+	6	20	77%	74	109	60%
Total	69,765	25,960	27%	79,387	26,217	25%

Table 69 OAS Beneficiaries Exposures by Place of Birth (2013)

Age	Males			Females		
	Born in Canada	Born Outside Canada	Proportion Born Outside Canada	Born in Canada	Born Outside Canada	Proportion Born Outside Canada
65	125,860	47,244	27%	134,308	50,293	27%
66	131,253	51,263	28%	139,553	54,078	28%
67	112,664	44,819	28%	119,473	47,177	28%
68	102,641	42,127	29%	109,105	44,080	29%
69	99,356	41,606	30%	106,880	42,964	29%
70	94,025	40,274	30%	101,915	41,740	29%
71	86,083	36,838	30%	94,591	38,485	29%
72	81,615	33,085	29%	90,859	35,694	28%
73	73,755	32,466	31%	82,927	35,823	30%
74	69,698	31,334	31%	79,489	34,217	30%
75	64,428	30,179	32%	75,130	33,313	31%
76	59,685	28,486	32%	70,840	31,822	31%
77	57,372	27,333	32%	69,674	30,275	30%
78	53,396	25,890	33%	66,978	29,020	30%
79	49,845	24,439	33%	63,887	27,366	30%
80	48,093	22,769	32%	63,214	25,948	29%
81	45,488	21,225	32%	62,088	24,433	28%
82	41,777	19,925	32%	59,367	23,724	29%
83	37,201	18,404	33%	55,339	22,486	29%
84	32,205	16,266	34%	50,330	21,134	30%
85	28,768	14,612	34%	46,812	20,474	30%
86	24,493	12,718	34%	42,191	19,280	31%
87	21,129	10,961	34%	38,659	17,960	32%
88	17,941	9,164	34%	35,108	15,983	31%
89	14,526	7,671	35%	31,090	14,180	31%
90	11,739	6,311	35%	27,360	12,002	30%
91	9,865	4,829	33%	24,417	9,644	28%
92	7,561	3,613	32%	19,934	7,528	27%
93	5,505	2,549	32%	16,173	5,773	26%
94	3,605	1,393	28%	11,880	3,507	23%
95	2,713	973	26%	9,490	2,536	21%
96	1,848	684	27%	7,125	1,895	21%
97	1,260	496	28%	5,262	1,460	22%
98	837	380	31%	3,825	1,176	24%
99	506	268	35%	2,557	856	25%
100	311	161	34%	1,635	608	27%
101	147	94	39%	1,025	411	29%
102	73	62	46%	589	309	34%
103	32	46	59%	281	223	44%
104	10	27	72%	132	164	55%
105+	11	25	70%	123	203	62%
Total	1,619,322	713,012	31%	2,021,613	830,241	29%

Table 70 Graduated Mortality Rates and Ratios by Place of Birth (2013)

Age	Males					Females				
	Overall	Born in Canada	Ratio Born in Canada to Overall	Born Outside Canada	Ratio Born Outside Canada to Overall	Overall	Born in Canada	Ratio Born in Canada to Overall	Born Outside Canada	Ratio Born Outside Canada to Overall
65	11.9	13.2	1.11	8.5	0.72	7.5	8.4	1.11	5.3	0.70
66	13.1	14.4	1.10	9.8	0.75	8.4	9.3	1.12	5.8	0.69
67	14.4	15.8	1.09	11.1	0.77	9.3	10.4	1.12	6.4	0.69
68	15.9	17.3	1.09	12.3	0.77	10.2	11.5	1.12	7.1	0.69
69	17.5	19.1	1.09	13.6	0.78	11.3	12.7	1.12	7.9	0.70
70	19.3	21.1	1.09	15.0	0.78	12.5	14.0	1.12	8.7	0.70
71	21.2	23.2	1.10	16.5	0.78	13.7	15.3	1.12	9.7	0.71
72	23.3	25.6	1.10	18.1	0.78	15.1	16.8	1.12	10.8	0.71
73	25.6	28.1	1.10	20.0	0.78	16.5	18.5	1.12	12.0	0.72
74	28.1	30.8	1.10	22.0	0.79	18.2	20.3	1.12	13.4	0.73
75	30.8	33.7	1.09	24.5	0.79	20.2	22.5	1.11	15.0	0.74
76	33.9	37.0	1.09	27.3	0.80	22.5	24.9	1.11	17.0	0.75
77	37.5	40.8	1.09	30.6	0.81	25.1	27.6	1.10	19.3	0.77
78	41.6	45.0	1.08	34.4	0.83	28.1	30.8	1.09	21.9	0.78
79	46.3	49.9	1.08	38.7	0.84	31.5	34.3	1.09	25.0	0.79
80	51.6	55.3	1.07	43.7	0.85	35.4	38.2	1.08	28.6	0.81
81	57.6	61.6	1.07	49.4	0.86	39.7	42.6	1.07	32.8	0.83
82	64.5	68.6	1.06	56.0	0.87	44.7	47.5	1.06	37.7	0.84
83	72.3	76.7	1.06	63.4	0.88	50.2	53.0	1.06	43.4	0.86
84	81.0	85.7	1.06	71.7	0.89	56.5	59.2	1.05	49.9	0.88
85	90.7	95.7	1.05	81.0	0.89	63.6	66.3	1.04	57.4	0.90
86	101.5	106.7	1.05	91.3	0.90	71.7	74.3	1.04	66.0	0.92
87	113.4	118.8	1.05	102.8	0.91	81.0	83.5	1.03	75.7	0.93
88	126.4	132.0	1.04	115.4	0.91	91.7	93.9	1.02	86.7	0.95
89	140.7	146.5	1.04	129.2	0.92	103.7	105.8	1.02	98.7	0.95
90	156.3	162.2	1.04	144.3	0.92	117.1	119.2	1.02	111.9	0.96
91	173.2	179.2	1.03	160.6	0.93	131.8	134.0	1.02	125.9	0.96
92	191.2	197.2	1.03	178.0	0.93	147.8	150.2	1.02	140.8	0.95
93	210.3	216.4	1.03	196.4	0.93	164.8	167.6	1.02	156.3	0.95
94	230.4	236.7	1.03	215.8	0.94	182.9	186.0	1.02	172.4	0.94
95	251.5	258.1	1.03	236.2	0.94	201.7	205.4	1.02	189.2	0.94
96	273.6	280.5	1.03	257.5	0.94	221.2	225.5	1.02	206.6	0.93
97	296.7	304.0	1.02	279.9	0.94	241.3	246.3	1.02	224.9	0.93
98	320.6	328.5	1.02	303.3	0.95	262.1	267.6	1.02	244.2	0.93
99	345.5	354.0	1.02	327.7	0.95	283.3	289.3	1.02	264.7	0.93
100	371.3	380.5	1.02	353.1	0.95	305.1	311.4	1.02	286.5	0.94
101	398.0	408.1	1.03	379.4	0.95	327.5	333.9	1.02	309.6	0.95
102	425.6	434.7	1.02	406.7	0.96	350.4	356.8	1.02	334.1	0.95
103	454.1	460.3	1.01	434.9	0.96	373.8	380.1	1.02	359.9	0.96
104	481.1	484.9	1.01	462.0	0.96	397.8	403.7	1.01	387.2	0.97
105	506.5	508.4	1.00	487.9	0.96	422.4	427.8	1.01	415.8	0.98
110	610.6	608.1	1.00	598.0	0.98	536.8	536.8	1.00	544.6	1.01
115	675.4	673.8	1.00	670.9	0.99	616.7	616.1	1.00	621.8	1.01
120	371.3	380.5	1.02	353.1	0.95	305.1	311.4	1.02	286.5	0.94

Table 71 Life Table of OAS Beneficiaries Born In Canada (2013)

Age	Males				Females			
	l_x	1,000 q_x	d_x	e_x	l_x	1,000 q_x	d_x	e_x
65	100,000	13.2	1,318	18.37	100,000	8.4	838	21.26
66	98,682	14.4	1,420	17.61	99,162	9.3	926	20.44
67	97,262	15.8	1,534	16.86	98,236	10.4	1,019	19.63
68	95,728	17.4	1,661	16.12	97,217	11.5	1,116	18.83
69	94,067	19.1	1,799	15.40	96,101	12.7	1,219	18.04
70	92,268	21.1	1,946	14.69	94,882	14.0	1,325	17.27
71	90,322	23.3	2,100	14.00	93,557	15.3	1,435	16.50
72	88,222	25.6	2,256	13.32	92,122	16.8	1,551	15.75
73	85,966	28.1	2,412	12.65	90,571	18.5	1,675	15.01
74	83,554	30.8	2,569	12.00	88,896	20.4	1,809	14.29
75	80,985	33.7	2,730	11.37	87,087	22.5	1,956	13.57
76	78,255	37.0	2,898	10.75	85,131	24.9	2,118	12.87
77	75,357	40.8	3,074	10.14	83,013	27.6	2,294	12.19
78	72,283	45.1	3,256	9.55	80,719	30.8	2,482	11.52
79	69,027	49.9	3,442	8.98	78,237	34.3	2,680	10.87
80	65,585	55.3	3,629	8.43	75,557	38.2	2,884	10.24
81	61,956	61.6	3,814	7.89	72,673	42.6	3,094	9.63
82	58,142	68.7	3,991	7.37	69,579	47.5	3,304	9.03
83	54,151	76.7	4,152	6.88	66,275	53.0	3,514	8.46
84	49,999	85.7	4,283	6.41	62,761	59.2	3,718	7.90
85	45,716	95.7	4,374	5.96	59,043	66.3	3,914	7.37
86	41,342	106.7	4,411	5.54	55,129	74.3	4,097	6.86
87	36,931	118.8	4,387	5.15	51,032	83.5	4,260	6.37
88	32,544	132.1	4,297	4.77	46,772	93.9	4,394	5.90
89	28,247	146.5	4,139	4.42	42,378	105.8	4,484	5.46
90	24,108	162.2	3,911	4.09	37,894	119.2	4,517	5.05
91	20,197	179.2	3,618	3.79	33,377	134.0	4,473	4.66
92	16,579	197.2	3,270	3.51	28,904	150.2	4,341	4.31
93	13,309	216.4	2,881	3.25	24,563	167.6	4,116	3.98
94	10,428	236.7	2,469	3.01	20,447	186.0	3,804	3.68
95	7,959	258.1	2,054	2.79	16,643	205.4	3,418	3.41
96	5,905	280.5	1,657	2.58	13,225	225.5	2,983	3.16
97	4,248	304.0	1,291	2.39	10,242	246.3	2,523	2.93
98	2,957	328.5	971	2.22	7,719	267.6	2,066	2.72
99	1,986	354.0	703	2.06	5,653	289.3	1,635	2.54
100	1,283	380.5	488	1.91	4,018	311.4	1,251	2.37
101	795	408.1	324	1.78	2,767	333.9	924	2.21
102	471	434.7	205	1.67	1,843	356.8	658	2.07
103	266	460.3	122	1.57	1,185	380.1	450	1.94
104	144	484.9	70	1.48	735	403.8	297	1.82
105	74	508.4	38	1.40	438	427.8	187	1.71
110	1	608.1	1	1.12	18	536.8	10	1.32
115	0	673.8	0	0.98	0	616.1	0	1.11
120	0	700.0	0	0.80	0	650.0	0	0.85

Table 72 Life Table of OAS Beneficiaries Born Outside Canada (2013)

Age	Males				Females			
	l_x	1,000 q_x	d_x	e_x	l_x	1,000 q_x	d_x	e_x
65	100,000	8.5	853	20.25	100,000	5.3	530	23.15
66	99,147	9.8	973	19.42	99,470	5.8	577	22.27
67	98,174	11.1	1,086	18.61	98,893	6.4	633	21.40
68	97,088	12.3	1,195	17.81	98,260	7.1	698	20.53
69	95,893	13.6	1,303	17.03	97,562	7.9	769	19.68
70	94,590	15.0	1,416	16.26	96,793	8.8	847	18.83
71	93,174	16.5	1,535	15.49	95,946	9.7	931	17.99
72	91,639	18.1	1,660	14.75	95,015	10.8	1,022	17.16
73	89,979	20.0	1,796	14.01	93,993	12.0	1,124	16.34
74	88,183	22.1	1,944	13.28	92,869	13.4	1,242	15.53
75	86,239	24.5	2,109	12.57	91,627	15.0	1,377	14.74
76	84,130	27.3	2,295	11.87	90,250	17.0	1,532	13.95
77	81,835	30.6	2,501	11.19	88,718	19.3	1,708	13.19
78	79,334	34.4	2,726	10.53	87,010	21.9	1,906	12.44
79	76,608	38.7	2,965	9.89	85,104	25.0	2,128	11.70
80	73,643	43.7	3,218	9.27	82,976	28.6	2,376	10.99
81	70,425	49.4	3,480	8.67	80,600	32.8	2,647	10.30
82	66,945	56.0	3,746	8.09	77,953	37.7	2,941	9.63
83	63,199	63.4	4,006	7.54	75,012	43.4	3,254	8.99
84	59,193	71.7	4,245	7.02	71,758	49.9	3,581	8.38
85	54,948	81.0	4,451	6.52	68,177	57.4	3,913	7.79
86	50,497	91.3	4,612	6.05	64,264	66.0	4,239	7.23
87	45,885	102.8	4,717	5.61	60,025	75.7	4,545	6.71
88	41,168	115.4	4,751	5.19	55,480	86.7	4,807	6.22
89	36,417	129.2	4,707	4.81	50,673	98.7	5,003	5.76
90	31,710	144.3	4,576	4.45	45,670	111.9	5,109	5.34
91	27,134	160.6	4,357	4.11	40,561	125.9	5,107	4.95
92	22,777	178.0	4,053	3.80	35,454	140.8	4,991	4.59
93	18,724	196.4	3,677	3.52	30,463	156.3	4,761	4.26
94	15,047	215.8	3,247	3.26	25,702	172.4	4,431	3.95
95	11,800	236.2	2,787	3.01	21,271	189.2	4,024	3.67
96	9,013	257.5	2,321	2.79	17,247	206.6	3,564	3.41
97	6,692	279.9	1,873	2.59	13,683	224.9	3,078	3.17
98	4,819	303.3	1,462	2.40	10,605	244.3	2,590	2.94
99	3,357	327.7	1,100	2.22	8,015	264.7	2,122	2.73
100	2,257	353.1	797	2.06	5,893	286.5	1,688	2.53
101	1,460	379.4	554	1.92	4,205	309.6	1,302	2.35
102	906	406.7	368	1.78	2,903	334.1	970	2.18
103	538	434.9	234	1.66	1,933	359.9	696	2.02
104	304	462.0	140	1.56	1,237	387.2	479	1.87
105	164	487.9	80	1.46	758	415.8	315	1.74
110	3	598.0	2	1.14	31	544.6	17	1.29
115	0	670.9	0	0.98	0	621.8	0	1.09
120	0	700.0	0	0.80	0	650.0	0	0.85

Table 73 Life Expectancies at Age 65 by Type of Benefit, Marital Status and Place of Birth

Type of Benefit	2001			2007		
	Males	Females	Female – Male Differential	Males	Females	Female – Male Differential
Benchmark (CHMD of year)	16.9	20.4	3.5	18.0	21.2	3.2
OAS program	16.7	20.3	3.6	17.8	20.9	3.1
Differential Benchmark and OAS	0.2	0.1		0.2	0.3	
OAS with GIS	15.2	19.1	3.9	16.1	19.8	3.7
OAS without GIS	17.4	21.1	3.7	18.6	21.8	3.2
Differential OAS without and OAS with GIS	2.2	2.0		2.5	2.0	
Single	14.9	19.8	4.9	15.2	20.0	4.8
Married	17.5	20.8	3.3	19.0	22.2	3.2
Differential Married and Single	2.6	1.0		3.8	2.2	
OAS with GIS Single	13.2	18.7	5.5	14.0	19.4	5.4
OAS without GIS Single	16.1	20.8	4.7	16.2	20.8	4.6
Differential without GIS and with GIS Single	2.9	2.1		2.2	1.4	
OAS with GIS Married	16.5	20.0	3.5	17.7	20.7	3.0
OAS without GIS Married	17.9	21.1	3.2	19.5	23.0	3.5
Differential without GIS and with GIS Married	1.4	1.1		1.8	2.3	
Born in Canada	16.3	19.9	3.6	17.3	20.6	3.3
Born outside of Canada (immigrants)	17.8	21.1	3.3	18.9	21.9	3.0
Differential immigrants and born in Canada	1.5	1.2		1.6	1.3	

Type of Benefit	2011			2013		
	Males	Females	Female – Male Differential	Males	Females	Female – Male Differential
Benchmark (CHMD of year)	18.9	21.8	2.9	n.a.	n.a.	n.a.
OAS program	18.6	21.5	2.9	18.9	21.8	2.9
Differential Benchmark and OAS	0.3	0.3		n.a.	n.a.	n.a.
OAS with GIS	16.8	20.3	3.5	17.1	20.4	3.3
OAS without GIS	19.5	22.4	2.9	19.7	22.7	3.0
Differential without and with GIS	2.7	2.1		2.6	2.3	
Single	16.2	20.6	4.4	16.5	20.8	4.3
Married	19.7	22.8	3.1	20.0	23.0	3.0
Differential Married and Single	3.6	2.2		3.5	2.2	
OAS with GIS Single	14.7	19.7	5.0	15.1	19.9	4.8
OAS without GIS Single	17.4	21.5	4.1	17.7	21.8	4.1
Differential without GIS and with GIS Single	2.7	1.7		2.6	1.9	
OAS with GIS Married	18.4	21.4	3.1	18.6	21.4	2.8
OAS without GIS Married	20.2	23.4	3.1	20.4	23.5	3.1
Differential without GIS and with GIS Married	1.9	1.9		1.8	2.1	
Born in Canada	18.1	21.1	3.0	18.4	21.3	2.9
Born outside of Canada (immigrants)	19.9	22.6	2.8	20.3	23.1	2.8
Differential immigrants and born in Canada	1.8	1.5		1.9	1.8	

X. References and Acknowledgements

References:

Canada. Office of the Superintendent of Financial Institutions. *Old age Security Program Mortality Experience Study, Actuarial Study No. 5*. Ottawa: Office of the Chief Actuary, 2006.

Canada. Office of the Superintendent of Financial Institutions. *Old age Security Program Mortality Experience, Actuarial Study No. 11*. Ottawa: Office of the Chief Actuary, 2012.

Canada. Office of the Superintendent of Financial Institutions. *Twelfth Actuarial Report on the Old Age Security Program as at 31 December 2012*. Ottawa: Office of the Chief Actuary, 2014.

Canada. Office of the Superintendent of Financial Institutions. *Canada Pension Plan Retirement, Survivor and Disability Beneficiaries Mortality Study, Actuarial Study No. 16*. Ottawa: Office of the Chief Actuary, 2015.

Vang Z., Sigouin J., Flenon A., and Gagnon A. 2015, The Healthy Immigrant Effect in Canada: A Systematic Review. Population Change and Lifecourse Strategic Knowledge Cluster Discussion Paper Series: Vol 3: Iss. 1, Article 4.

Omariba W. R., Ng E., and Vissandjée B. 2014, Differences between immigrants at various durations of residence and host population in all-cause mortality, Canada 1991-2006. Population Studies: A Journal of Demography 2014;68(3):339-57.

Trovato F. and Odynak D. 2011, Sex Differences in Life Expectancy in Canada: immigrant and native-born populations. Journal of Biosocial Science 2011 May;43(3):353-67.

Canada. Statistics Canada. Cansim Table 102-0504. Deaths and mortality rates, by age group and sex, Canada, provinces and territories, May 2016.

Chen, J.R. Wilkins, and E. Ng. 1996. Health Expectancy by Immigrant Status, 1986 and 1991. Health Reports. Statistics Canada. 8(3): 29-38.

University of Montreal. The Canadian Human Mortality Database (CHMD). Available at: <http://www.bdlc.umontreal.ca/CHMD/>

Society of Actuaries. Mortality Improvement Scale MP-2015.

Available at: <https://www.soa.org/Research/Experience-Study/Pension/research-2015-mp.aspx>

Continuous Mortality Investigation Limited. Recent Mortality in England & Wales, October 2015. Available at: <http://www.actuaries.org.uk/research-and-resources/documents/cmi-working-paper-83-recent-mortality-england-wales>).

Acknowledgements:

Service Canada provided data on the Old Age Security program and the Canada Pension Plan.

The Canadian Human Mortality Database, Department of Demography, Université de Montréal, was used for the historical mortality data.

The co-operation and able assistance received from the above-mentioned data providers deserve to be acknowledged.

The following people assisted in the preparation of this study:

Alain Guimond

Sari Harrel, F.S.A., F.C.I.A.

Natacha Losier

Jean-Claude Ménard, F.S.A., F.C.I.A.

Kelly Moore

Michel Montambeault, F.S.A., F.C.I.A.

Louis-Marie Pommainville, F.S.A., F.C.I.A.