

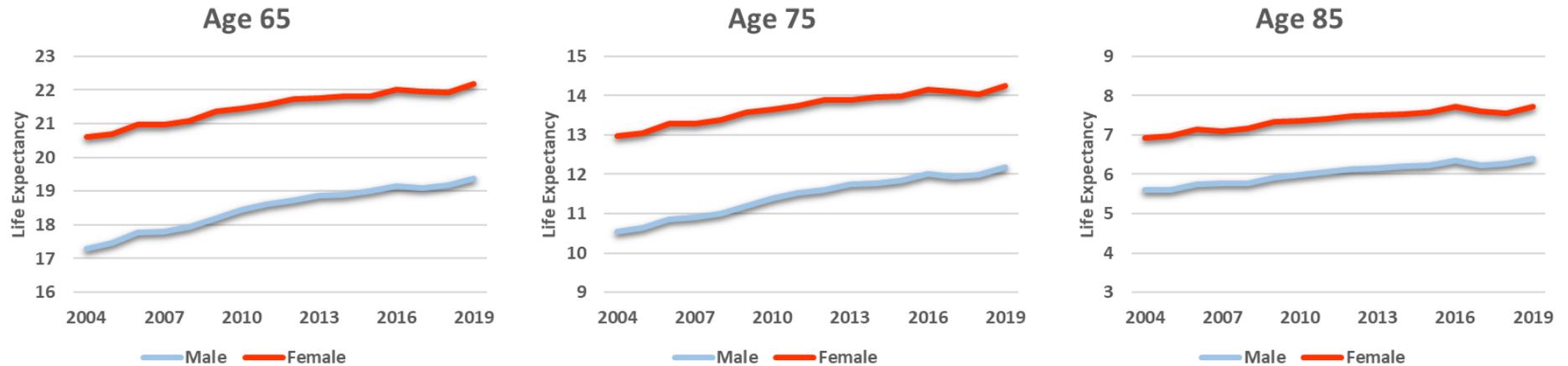


## Old Age Security (OAS) Program Mortality Experience Fact Sheet – November 2020

### Life Expectancy at Ages 65, 75 and 85

For both male and female OAS beneficiaries, life expectancy has increased over the past 15 years. For males aged 65, 75 and 85, life expectancy has increased from 17.3, 10.5 and 5.6 years in 2004 to 19.4, 12.2 and 6.4 years in 2019, respectively. Similarly, for female OAS beneficiaries aged 65, 75 and 85, life expectancy has increased from 20.6, 13.0 and 6.9 years in 2004 to 22.2, 14.3 and 7.7 years in 2019, respectively. After a recent period of stability, life expectancies at ages 65, 75 and 85 increased markedly in 2019 for both sexes. The last time life expectancies experienced a one-year percentage increase similar to or greater than in 2019 across genders and selected ages was in 2009. The next section analyses changes in life expectancy per 5-year sub-period over the past 15 years.

### Life Expectancy of OAS Beneficiaries (without future mortality improvements)

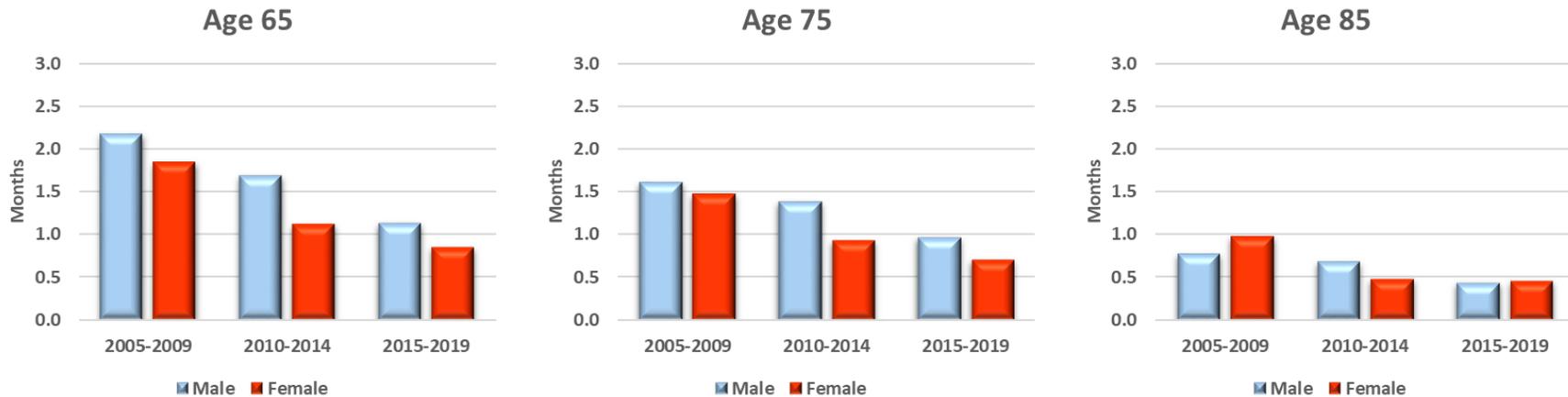




### Change in Life Expectancy at Ages 65, 75 and 85

Based on 5-year period analyses, there is a slowing trend in the pace of increases in life expectancy for both sexes. The graphs below show that the annual average increases in life expectancies for the 5-year period 2015-2019 for male OAS beneficiaries aged 65, 75 and 85 were 1.1 months, 1.0 months and 0.4 months respectively. These average increases are lower than those of the two previous 5-year periods, which stood at 1.7 months, 1.4 months and 0.7 months for 2010-2014 and at 2.2 months, 1.6 months and 0.8 months for 2005-2009. The story is similar for female OAS beneficiaries. The graphs below show that the annual average increases in life expectancies for the 5-year period 2015-2019 for female OAS beneficiaries aged 65, 75 and 85 were 0.8 months, 0.7 months and 0.4 months respectively, compared to 1.1 months, 0.9 months and 0.5 months over the 5-year period 2010-2014 and to 1.8 months, 1.5 months and 1.0 month over the 5-year period 2005-2009. Male annual increases in life expectancy at ages 65 and 75 have been higher than for women for all 5-year periods shown. However, at age 85, the average increase in life expectancy for women was notably higher than for men over the 2005-2009 period and negligibly higher over the 2015-2019 period.

**Average Annual Increase in Life Expectancy of OAS Beneficiaries (in months per year)**





## Mortality Improvement Rates

An alternate way of observing trends in life expectancy is through changes in mortality rates over time, which are measured by mortality improvement rates (MIRs). The “improvement in mortality” indicates that mortality rates have decreased over time, which in turn has led to increased longevity. Consistent with what was observed in the previous section on change in life expectancy, there is a decreasing trend in the average annual MIRs for all age groups over age 65. This trend is especially pronounced for male OAS beneficiaries in the 65-69 age group: average MIRs were 1.9% from 2004 to 2009 and from 2009 to 2014, and decreased to 0.4% from 2014 to 2019. Similarly, the average annual MIRs for female OAS beneficiaries aged 65-69 were 1.8% from 2004 to 2009, 1.5% from 2009 to 2014 and 0.4% from 2014 to 2019.

### Average Annual Mortality Improvement Rates for OAS Beneficiaries (%)

Males			
Age	2004-2009	2009-2014	2014-2019
65-69	1.9	1.9	0.4
70-74	2.9	1.4	1.4
75-79	2.7	2.3	1.3
80-84	2.2	2.2	1.5
85-89	1.7	1.6	1.0
90+	0.9	0.8	0.1

Females			
Age	2004-2009	2009-2014	2014-2019
65-69	1.8	1.5	0.4
70-74	1.9	1.2	1.4
75-79	2.3	1.6	0.8
80-84	1.8	1.4	1.1
85-89	1.7	1.1	0.9
90+	1.3	0.7	0.1

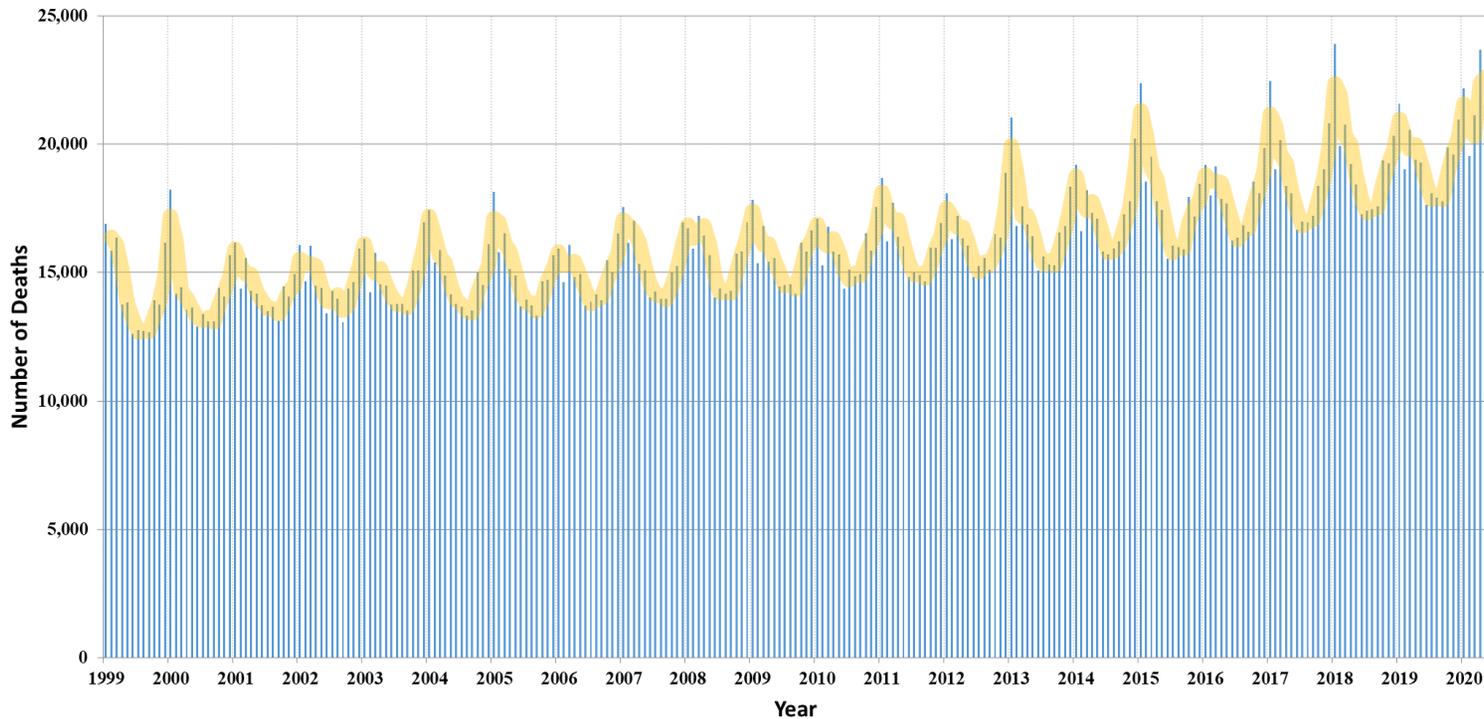
**Data and Methodology:** All calculations are based on the OAS program beneficiary database that was provided to the Office of the Chief Actuary by Service Canada which is the administrator of the OAS program. The historical average annual mortality improvement rates are derived using the best-fit log-linear method. (see chapter 4 of the SOA RP-2000 Mortality Tables Report, found here: <https://www.soa.org/experience-studies/2000-2004/research-rp-2000-mortality-tables/>).



## Number of Monthly Deaths

The following graph shows the monthly number of deaths of OAS beneficiaries (age 65 and over) from January 1999 to May 2020. Overall, due to the ageing of the Canadian population, the number of deaths has increased from 1999 to 2019. There are seasonal variations in monthly deaths with the least deaths occurring in the summer months and the most deaths normally occurring during the winter months. In particular, the maximum number of deaths occurred in December or January every year except for 2008 (March) and 2020 (April so far). For the year 2020 so far, the monthly number of deaths reached two peaks, the first in January, and the second in April as a result of the COVID-19 pandemic. The next section provides additional information on the impact of the COVID-19 pandemic on the number of deaths in 2020 so far.

**Number of Deaths per Month for OAS Beneficiaries Aged 65 and over – January 1999 to May 2020**



*Note: The data received for the first five months of 2020 is incomplete and will be subject to retroactive revisions. Adjustments to the data were made based on average historical adjustments between preliminary and completed number of deaths.*



### COVID-19 Impact on Mortality

As a result of the COVID-19 pandemic, the number of deaths in 2020 will be higher than expected. Looking at the number of OAS beneficiaries who died during the first five months of the year in 2020 and on average over the three-year period for 2017-2019, it is easily observable that there has been a surge in the number of deaths in April and May of 2020 as a result of the COVID-19 pandemic. This will translate into higher than expected 2020 mortality rates and could result in reduced life expectancies and negative mortality improvement rates at certain ages. However, due to the high level of uncertainty and incomplete data, it is too early to draw any firm conclusions on the impacts of the COVID-19 pandemic on 2020 mortality rates and life expectancies.

**Number of Deaths per Month at Ages 65 and over for January to May (OAS Beneficiaries):  
2020 and Average for Three-Year Period 2017-2019**



*Note: The data received for the first five months of 2020 is incomplete and will be subject to retroactive revisions. Adjustments to the data were made based on historical adjustments between preliminary and completed number of deaths.*



Looking beyond 2020, the outlook on future mortality rates and resulting life expectancies is also highly uncertain. It will depend on many factors including the scope of the second and other potential COVID-19 waves, the timing and effectiveness of a vaccine, the underlying life expectancy of those who died from COVID-19 in comparison to those who didn't, any long-term health effects for those who survived the virus, the effect of delayed surgeries and diagnoses, etc. The full impact will not be known for many years, and measuring it may prove to be a challenge depending on the availability of reliable and consistent data.

In response to the need for more timely information to better understand the impacts of the pandemic, Statistics Canada has begun publishing a series of articles and data tables. Provisional data on the 2020 adjusted number of deaths in Canada and excess mortality are published weekly in the following table: [Table 13-10-0784-01 Adjusted number of deaths, expected number of deaths and estimates of excess mortality, by week](#). Provisional data on the historical unadjusted number of deaths can also be found in the following table: [Table 13-10-0768-01 Weekly death counts, by age group and sex](#). Statistics Canada has also been working with the Public Health Agency of Canada to provide preliminary information to monitor confirmed cases of COVID-19. More information can be found in the following table: [Table 13-10-0774-01 Detailed preliminary information on cases of COVID-19: 6 Dimensions \(Aggregated data\), Public Health Agency of Canada](#).