

NTGPASS

Experience review 2015-2019

August 2019



NTGPASS Experience Review 2015-2019

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1. NTGPASS – Purpose of the review

In order to value the liabilities of the NTGPASS we need to make financial and demographic assumptions. This review looks at whether changes to these assumptions are required, based on the scheme's recent experience. The review period is 30 June 2015 until 30 June 2019

Financial Assumptions

Discount rate

- Scheme is unfunded, so no actual interest earned
- Approach has been to use discount rate set in line with AASB119
- This is based on yield on government bonds at valuation date.

Salary inflation

- Drives the expected value of future benefit payments
- Recent revisions have seen the salary inflation assumption reduce in line with market expectations
- This assumption is reviewed on page 6

Demographic Assumptions

Rates of retirement

- In 2016 (last review) we retained the rates of retirement from the previous review
- Industry has seen members retiring at later ages
- This assumption is reviewed on page 8

Rates of resignation

- As the average age is over 50 the resignation rate become less important
- In 2016, we applied a single unisex rate of 4% per annum
- This assumption is reviewed on page 9

Rates of death and invalidity

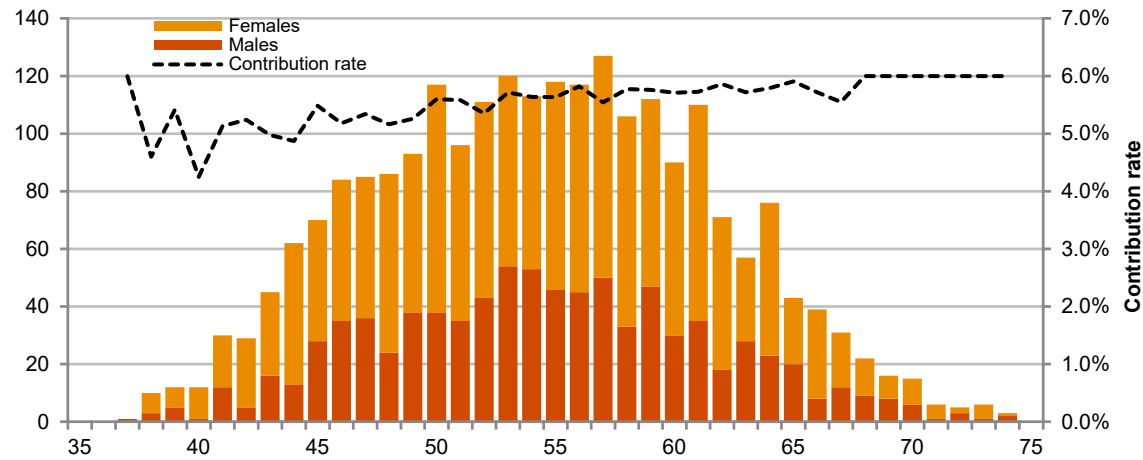
- Rates of death and invalidity are generally lower for those in NTGPASS than the general population
- We currently assume mortality rates at 40% and invalidity rates at 70% of the latest published Australian population mortality tables
- These assumptions are reviewed on page 10

*We note that the same financial and demographic assumptions are used for NTSSS whose membership is largely the same as NTGPASS

2. NTGPASS – Membership Summary (1 of 2)

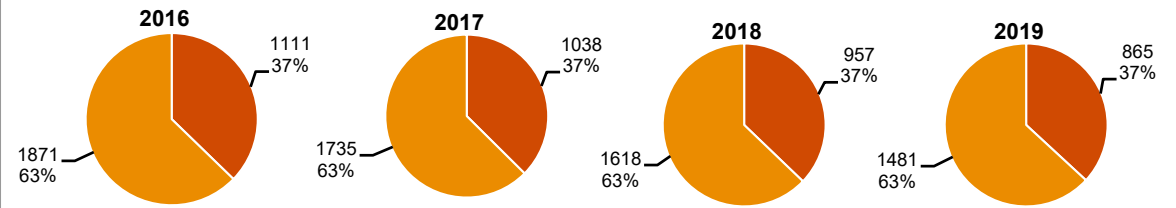
The scheme is shrinking each year, with membership falling by 7% per annum on average since 2007. Females make up the majority of membership (63%)

NTGPASS membership at 30 June 2019



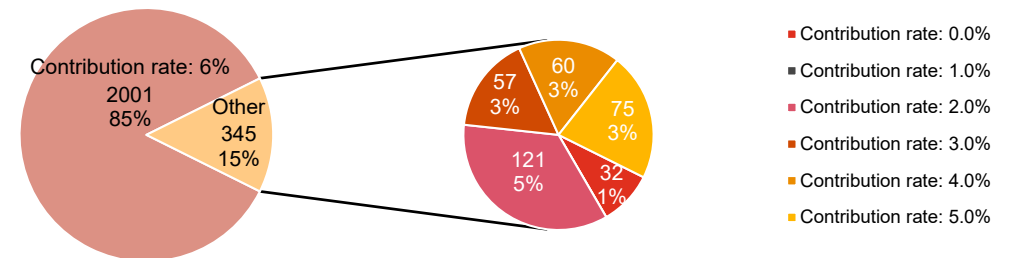
	30 June 2016	30 June 2017	30 June 2018	30 June 2019
Number	2,982 8.0% decrease	2,773 7.0% decrease	2,575 7.1% decrease	2,346 8.9% decrease
Average Age	53.3	53.9	54.5	54.9
Average Benefit Salary	\$103,508 7.2% increase	\$112,497 8.7% increase	\$110,245 2.0% decrease	\$108,273 1.8% decrease
Average Benefit points	113.5 4.9 increase	118.3 4.8 increase	122.7 4.4 increase	126.7 4.0 increase

- As scheme closed in 1999, youngest members are in their late 30s
- The percentage of females has remained stable at 63% from 2016 to 2019



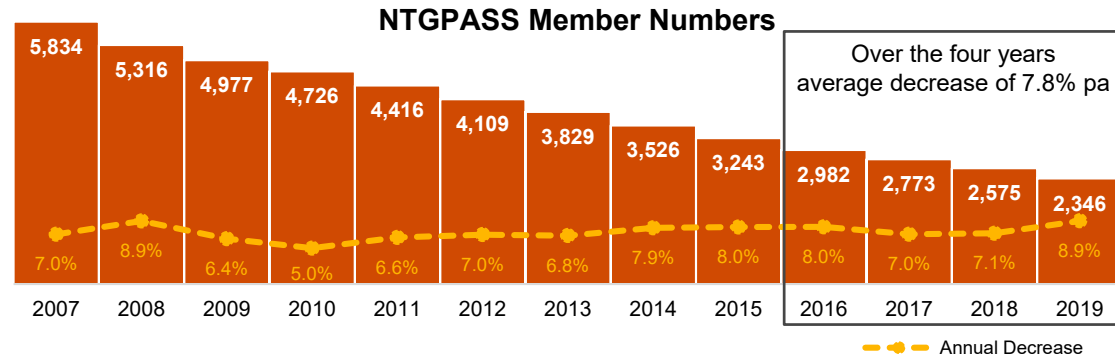
- The average age is rising, as might be expected
- The average benefit salary has been decreasing since 2017, impacted by AWE indexation (see next page)
- The contribution rate rises with age, steadily rising to 6% per annum at age 65. Current average is 5.6% per annum

Distribution of contribution rate as at 30 June 2019

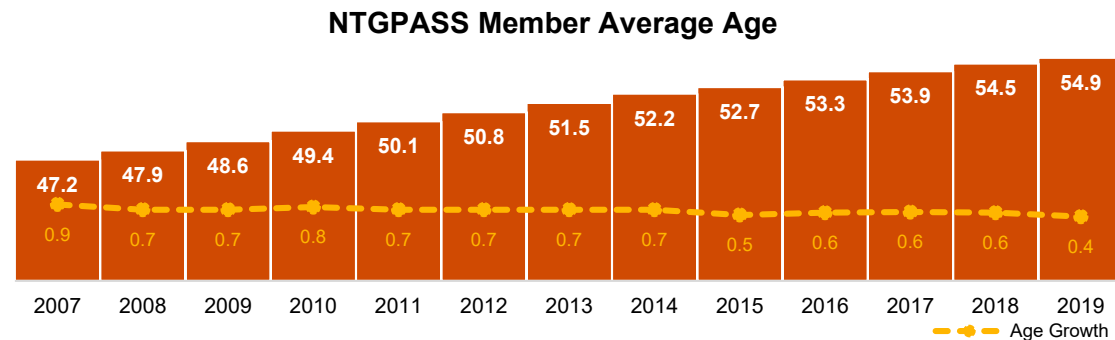


2. NTGPASS – Membership Summary (2 of 2)

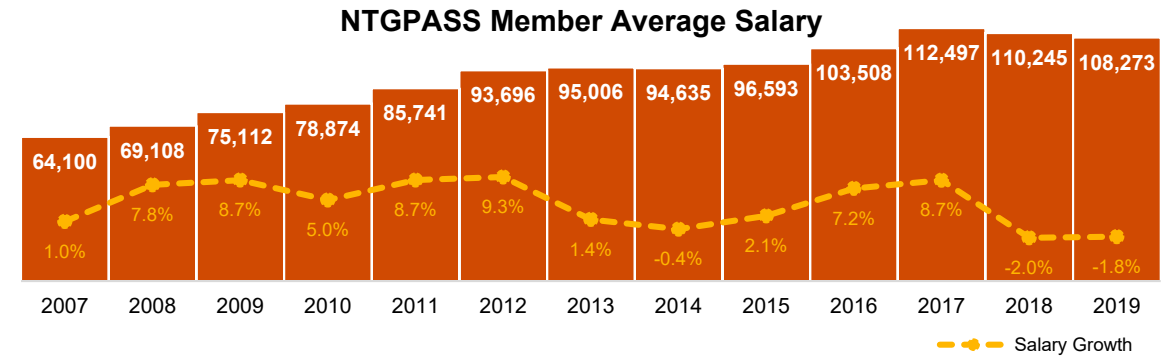
Decreasing membership, and increasing average age and benefit points over the period.
Recent trend of decreasing average benefit salary due to AWE indexation



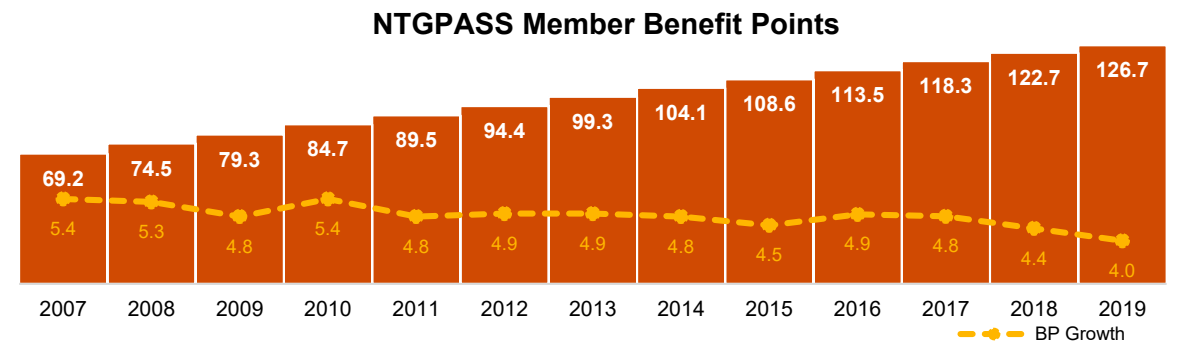
- As expected of a closed scheme, the number of members has been decreasing as defined benefit members leave employment
- Since 2007, the rate of members leaving the scheme has been stable at just over 7% per annum
- There are 2,346 members remaining as at 30 June 2019



- As the Scheme has been closed since 1999, we expect that the average age will increase over time
- Over the years, there has been steady increase, with average age of 54.9 as at 30 June 2019



- We have seen a decrease in average benefit salary since 2017, due mainly in the fall in the AWE indexation over the period
- The average salary of the Scheme as at 30 June 2019 is just over \$108,000



- Member benefit points have been increasing at a stable but decreasing rate over the years which is in line with the contribution rate
- The Scheme's average benefit points as at 30 June 2019 is 126.7, which is equivalent to approximately 3.2 times benefit salary or \$346,000

3. NTGPASS - Salary Inflation

Salary inflation has been slightly lower than expected for continuing members (2.9% versus an expected 4%) and future expectations are for lower salary inflation. The long term rate of 3.0% per annum remains appropriate.

- The salary inflation assumption that will be used for the AASB119 valuation at 30 June 2019 is 2.5% per annum until 2020-21 and 3.0% per annum ongoing from 2021-22, as advised by the Department of Treasury
- Over the past four years the average change in benefit salary for current members has been 2.8% per annum, with decreases since 2017 due to AWE indexation
- The lower than expected salary inflation is driven by the NT average weekly earnings rate (AWE), as benefit salary is an AWE indexed average. NT AWE was 0.1% as at 30 June 2019, so salaries have increased largely in line with expectation but AWE has fallen quite dramatically over the period
- NTSSS average salary inflation (not indexed) for same members were, on average, 3.3% per annum over the past four years
- We believe that the scheme’s experience over recent years supports the proposed decrease in the salary inflation assumption from the Department of Treasury

For current members at	30 June 2016	30 June 2017	30 June 2018	30 June 2019
Average Benefit Salary for current members only	\$103,522	\$112,562	\$110,154	\$108,273
Average increase for current members only	7.2%	8.7%	(2.0%)	(1.8%)
NT AWE increase	3.5%	6.2%	3.0%	0.1%
Average NTSSS Salary (no AWE indexation) for current NTGPASS members	\$103,203	\$106,508	\$109,396	\$113,032
Average increase for current members only	4.2%	3.2%	2.7%	3.3%

4. NTGPASS – Experience 2015 – 2019

Actual exits were lower than expected (87%) over the four year period from 1 July 2015 to 30 June 2019

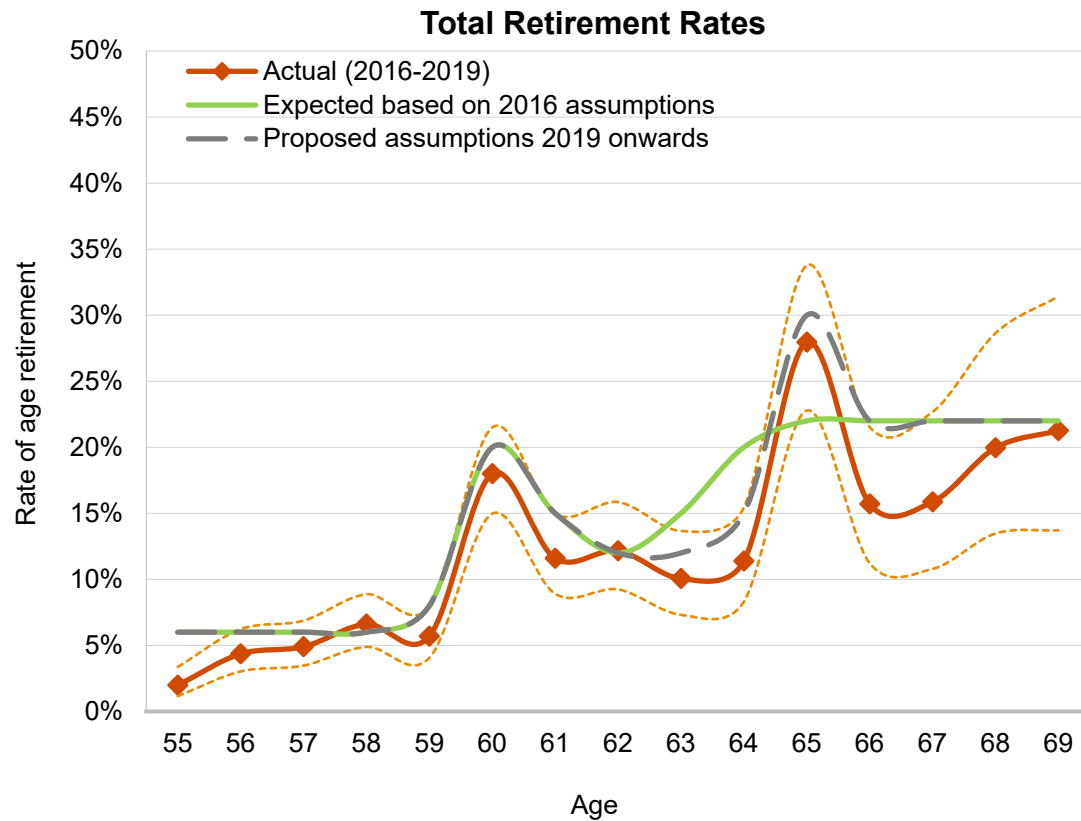
Exit Type	Actual (A)	Expected (E)	A / E
Age Retirements	593	739	80%
Deaths	17	15	113%
Invalidity Retirements	14	26	53%
Resignations	196	249	79%
Retrenchments	19	0	0%
Transfers	1	0	0%
Redundancies	57	0	0%
Total	897	1,030	87%

Please note that we made no allowance for retrenchments and transfers in 2013 or 2016 and intend to do the same for this review, because these are ad-hoc events and subject to the control of the employer

5. NTGPASS - Rates of retirement

Overall the rates of retirement have been lower than expected, which is a trend seen across the industry

Summary of actual v/s expected rates of retirement



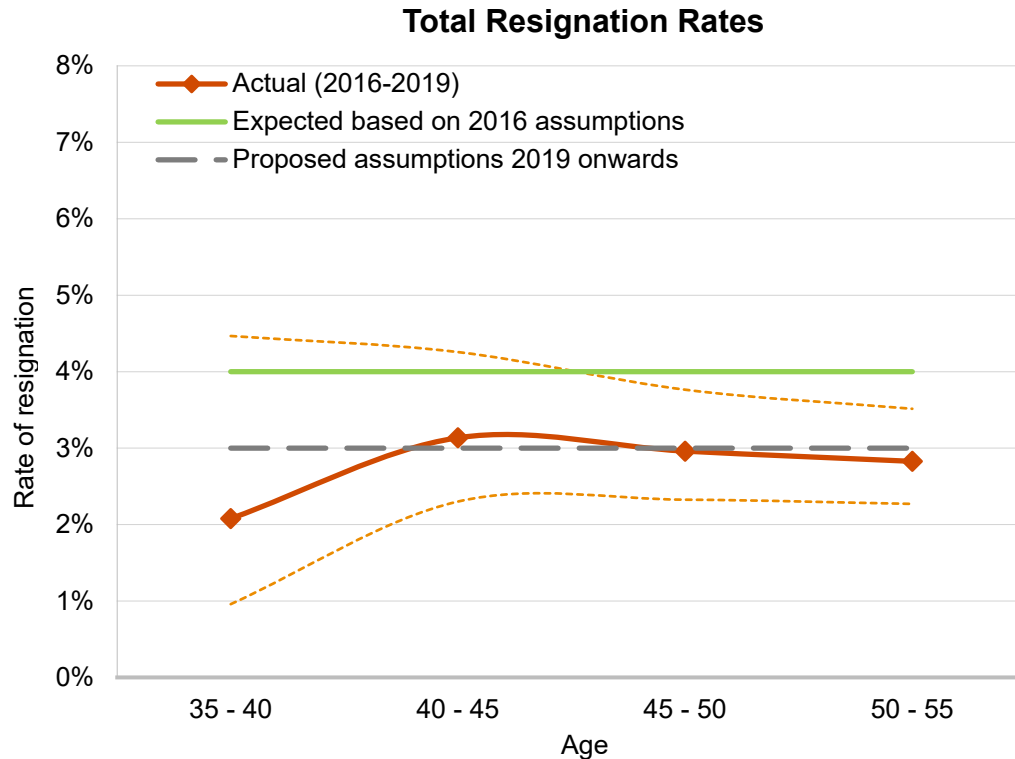
Findings

- Actual (A) = 593, Expected (E) = 739, A/E = 80%
- Experience has been lower than expected at most ages, with the exception of age 65, where actual retirement have been higher than expected
- We propose reducing the retirement rates for ages 63 and 64, where experience has been significantly lower than expected
- We also propose increasing the retirement rate for members age 65, as this is where we can see a spike in actual retirements
- The retirement rates at all other ages are proposed to remain unchanged
- The scheme's recent experience fits with the trend of later retirements we have seen previously, we would expect to see this continue, especially if investment markets remain volatile
- The impact of these changes on the DBO as at 30 June 2018 is an immaterial increase

6. NTGPASS - Rates of resignation

Actual rates of resignation have been lower than expected, and as membership ages, it becomes less material. We recommend rates be lowered from 4% per annum to 3% per annum

Summary of actual v/s expected rates of resignation



Findings

- Actual (A) = 196, Expected (E) = 249, A/E = 79%
- Overall the rates of resignation have been lower than expected
- The rate of resignations were below the current rate of 4% pa all ages from 35-55
- We recommend reducing the rate of resignation to 3% pa
- The impact of changing these rates to 3% per annum on the DBO as at 30 June 2018 would have been a 0.1% increase

7. NTGPASS - Rates of deaths and invalidities

We recommend retaining the death rate and invalidity rate at 40% and 70% of latest population tables respectively

Rates of Death

- Actual (A) = 17, Expected (E) = 15, $A/E = 113\%$
- Broadly consistent with the expected deaths
- Hence, we recommend retaining the assumption at 40% of the Australian Life Table (ALT) tables 10 – 12 with the 25 year improvement factors published by the Government Actuary
- These are the tables that have been in use since 2016 and are the most recent published tables.

Rates of Invalidity

- Actual (A) = 14, Expected (E) = 26, $A/E = 53\%$
- Expected invalidities were lower than expected over the period
- Given the size of scheme invalidity numbers are likely to be volatile year on year. In particular, given the age profile, members may just “retire” rather than claim an “invalidity” benefit
- Hence we recommend retaining the assumption at 70% of the Australian Life Table (ALT) tables 10 – 12 with the 25 year improvement factors published by the Government Actuary

8. NTGPASS – Summary of recommendations and their impact

The overall impact is to reduce the liabilities, mainly due to the lower short-term salary inflation assumption. The impact is approximately \$26 million or 3%

Financial Assumptions

Discount rate

- Scheme is unfunded, so no actual interest earned
- Approach has been to use discount rate set in line with AASB119, which remains appropriate
- This is based on yield on government bonds at valuation date.

Salary inflation

- Short term salary increase from 2018-19 to 2020-21 has been reduced by 1% to 2.5% pa (3.0% pa thereafter)
- Impact of this change to the short-term salary increase is a decrease in the liabilities at 30 June 2018 of \$29 million (3%)

Demographic Assumptions

Rates of retirement

- Minor changes to retirement rates by age compared to our last review (in 2016), reducing rates at 63-64 and increasing the rate at 65
- Immaterial increase of liabilities at 30 June 2018 (0.01%)

Rates of resignation

- Reduce rate to 3% per annum for all ages
- Increases liabilities at 30 June 2018 by \$2.5 million or 0.3%

Rates of death and invalidity

- Continuing to use the same mortality tables (these are the most recent) and improvement factors, applying improvement factors for 8 years
- Small reductions in rates lead to an immaterial decrease in liability

Total Impact

- **Reducing the short term salary increase assumption to 2.5% per annum would decrease the liabilities at 30 June 2018 by \$26 million or 3%**
- **Other changes have no material impact**
- **Note impacts are based on data at 30 June 2018, so the impact will differ at 30 June 2019**

9. NTGPASS – Summary of proposed assumptions

The assumptions used in 2016, along with those proposed for 2019 are detailed below

Rates of retirement (per 100,000 people)

Age	2016 Assumption	2019 Assumption	Change (%)
55	6,000	6,000	0%
56	6,000	6,000	0%
57	6,000	6,000	0%
58	6,000	6,000	0%
59	8,000	8,000	0%
60	20,000	20,000	0%
61	15,000	15,000	0%
62	12,000	12,000	0%
63	15,000	12,000	-20%
64	20,000	15,000	-25%
65	22,000	30,000	36%
66	22,000	22,000	0%
67	22,000	22,000	0%
68	22,000	22,000	0%
69	22,000	22,000	0%

Rates of resignation (per 100,000 people)

Age	2016 Assumption	2019 Assumption	Change (%)
30	4,000	3,000	-25%
35	4,000	3,000	-25%
40	4,000	3,000	-25%
45	4,000	3,000	-25%
50	4,000	3,000	-25%
55	4,000	3,000	-25%

MALES - Rates of death (per 100,000 people)

	2016 Assumption ⁽¹⁾	2019 Assumption ⁽²⁾	Change (%)
20	23	20	-13%
25	28	23	-19%
30	35	30	-14%
35	42	39	-7%
40	52	50	-3%
45	69	70	1%
50	99	102	3%
55	145	153	6%
60	227	226	-1%

(1) 40% of ALT 2010-12 with mortality improvements to 2016

(2) 40% of ALT 2010-12 with mortality improvements to 2019

MALES - Rates of disability (per 100,000 people)

	2016 Assumption ⁽¹⁾	2019 Assumption ⁽²⁾	Change (%)
20	41	36	-13%
25	50	40	-19%
30	61	53	-14%
35	74	68	-7%
40	91	88	-3%
45	121	122	1%
50	173	179	3%
55	253	267	6%
60	398	396	-1%

(1) 70% of ALT 2010-12 with mortality improvements to 2016

(2) 70% of ALT 2010-12 with mortality improvements to 2019

FEMALES - Rates of death (per 100,000 people)

	2016 Assumption ⁽¹⁾	2019 Assumption ⁽²⁾	Change (%)
20	10	9	-3%
25	11	10	-10%
30	14	13	-8%
35	19	19	0%
40	28	29	3%
45	43	44	2%
50	64	65	2%
55	91	94	3%
60	146	142	-3%

FEMALES - Rates of disability (per 100,000 people)

	2016 Assumption ⁽¹⁾	2019 Assumption ⁽²⁾	Change (%)
20	17	16	-3%
25	18	17	-10%
30	24	22	-8%
35	34	34	0%
40	50	51	3%
45	75	77	2%
50	111	114	2%
55	160	165	3%
60	255	248	-3%

Thank you

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