



Quarterly Mortality Monitoring Report for the U.S. Population

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June 2025

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Executive Summary

The Quarterly Mortality Monitoring Report (QMMR) examines mortality trends in the United States (U.S.) general population. An updated QMMR report is issued every three months, reflecting the latest data. The prior QMMR covered data through December 2024, while this updated report covers data through March 2025.

The death count data used in this report was downloaded from the CDC WONDER database (“Centers for Disease Control and Prevention”) on June 4, 2025. Given this download date, the death counts for November 2024 and earlier are effectively complete. The SOA estimates that death counts for December 2024 are 99.8% complete, and 99.7%, 99.5% and 98.2% complete for January, February and March 2025, respectively. For recent months, this analysis divides the death counts by the estimated completion rates, thereby producing estimates for final death counts. The estimates are subject to some uncertainty given that historical completion rates are not perfect predictors of future completion rates.

Due to seasonality, monthly death rates are volatile. Therefore, this report focuses primarily on death rates computed across 12-month periods. As explained in the appendix, age-standardization is used to remove noise imparted by shifts in the population’s age structure across time.

Key findings are as follows:

- For the U.S. population considered as a whole, the age-standardized death rate for the 12-month period from April 2024 to March 2025 was 849.7 (per 100,000 persons), compared to 845.5 for the 12-month period from January to December 2024. This is an increase of 0.49%. Despite this increase, the 12-month death rate remains slightly below the level observed in 2019.
- The 0.49% increase occurred because the death rate for the first quarter (Q1) of 2025 was 1.6% greater than the rate for Q1-2024 (which dropped out of the 12-month trailing period).
- Prior to Q1-2025, the 12-month trailing death rate had declined steadily since Q4-2021.
- Although mortality increased in Q1-2025 for the U.S. population considered as a whole, mortality improvement continued to occur across younger ages. For ages under 50, mortality experience in Q1-2025 contributed to a 1% to 2% decrease in the 12-month trailing death rate; for ages 50 to 59, the 12-month death rate remained essentially unchanged, and for ages 60 and above, the 12-month death rate increased by about 0.75%.

Along with this report, an updated version of the QMMR Excel/VBA workbook was released. The updated workbook contains data from 2000 through March 2025, disaggregated by sex, single age, and 14 broad categories of mortality causes. The workbook provides several tools to facilitate the analysis of mortality trends, including interactive, parameterized graphs that make it easy to visualize trends in the data.

Analysis of Recent Mortality Data by Sex and Age Group

Figures 1 and 2 present age-standardized (or “age-adjusted”) national-level death rates for 12-month trailing periods, expressed as a percent of the corresponding death rates calculated using 2019 data. By definition, a value of 100% indicates that a death rate is equal to the level observed in 2019. The results were calculated using CDC Wonder death counts (adjusted using completion factors) and Human Mortality Database (HMD) population data as exposure counts. Figure 1 captures the last five years of data, while Figure 2 focuses solely on the period from March 2024 to March 2025.

Figure 1
Death Rates by Age Group for Trailing 12-Month Periods, as % of the Corresponding 2019 Death Rate

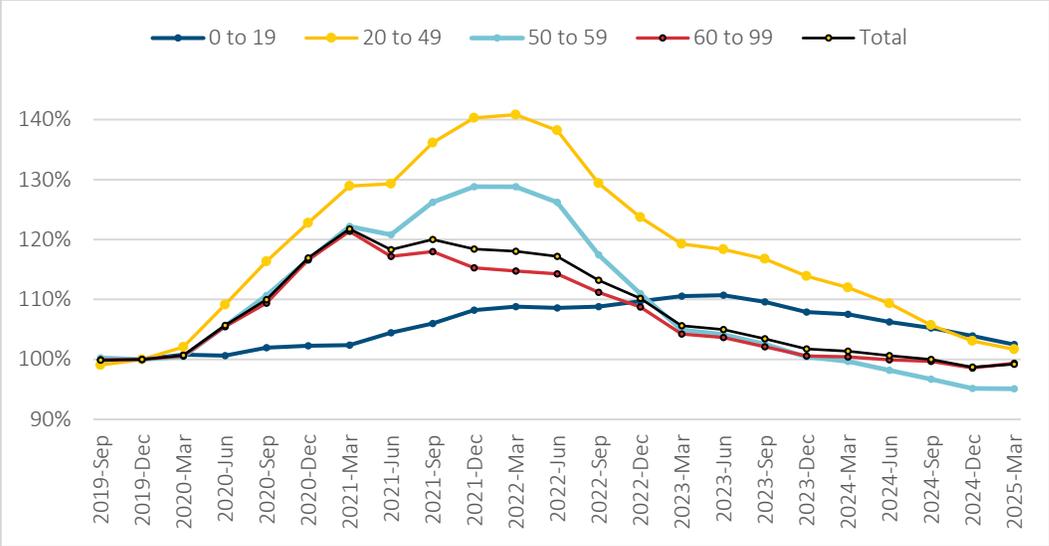
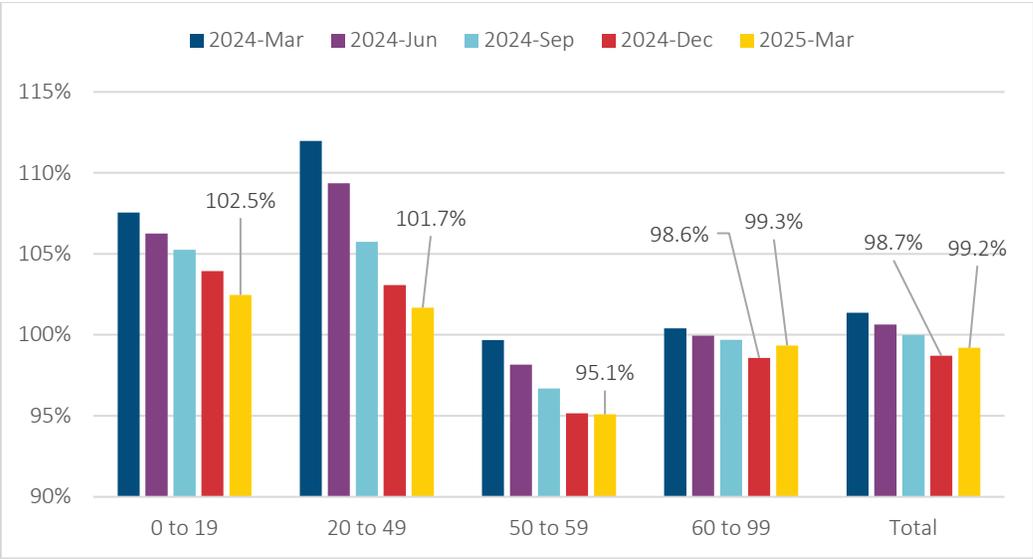


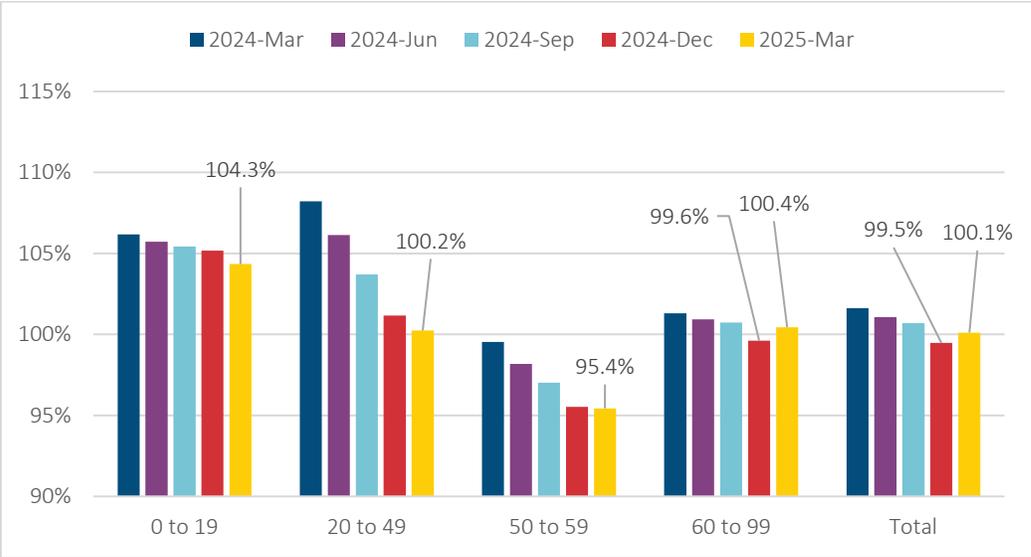
Figure 2
Death Rates by Age Group for Trailing 12-Month Periods, as % of Corresponding 2019 Death Rate



Each result presented in this figure reflects the trailing 12-month period. For example, the results for “2025-Mar” reflect the period from April 2024 to March 2025.

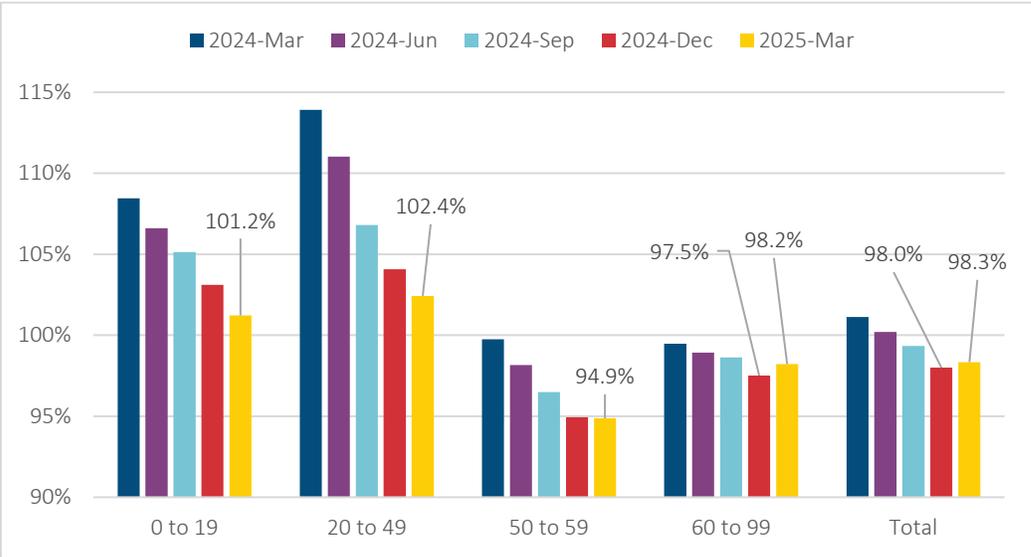
Figures 3 and 4 are similar to Figure 2, but they present sex-specific results rather than results for both sexes combined.

Figure 3
Female Death Rates for Trailing 12-Month Periods, as % of Corresponding 2019 Death Rate



Each result presented in this figure reflects the trailing 12-month period. For example, the results for “2025-Mar” reflect the period from April 2024 to March 2025.

Figure 4
Male Death Rates for Trailing 12-Month Periods, as % of Corresponding 2019 Death Rate



Each result presented in this figure reflects the trailing 12-month period. For example, the results for “2025-Mar” reflect the period from April 2024 to March 2025.

Table 1 presents key data points extracted from Figures 1 and 2, and Table 2 presents the same results but in deaths-per-100K persons (rather than as a percent of the 2019 death rate). For readers seeking data with greater granularity, the appendix provides tables by 10-year age groups.

Table 1. Death Rates by Age Group, as a % of the Corresponding 2019 Death Rate

Start of 12-Month Period	End of 12-Month Period	Ages 0 to 19	Ages 20 to 49	Ages 50 to 59	Ages 60+	Total Population
2019-Jan	2019-Dec	100.0%	100.0%	100.0%	100.0%	100.0%
2020-Jan	2020-Dec	102.3%	122.8%	116.6%	116.6%	116.9%
2021-Jan	2021-Dec	108.2%	140.3%	128.8%	115.3%	118.4%
2022-Jan	2022-Dec	109.7%	123.7%	111.0%	108.8%	110.2%
2023-Jan	2023-Dec	107.9%	113.9%	100.4%	100.6%	101.7%
2024-Apr	2024-Mar	107.5%	112.0%	99.7%	100.4%	101.4%
2024-Jul	2024-Jun	106.2%	109.3%	98.2%	99.9%	100.6%
2024-Oct	2024-Sep	105.3%	105.7%	96.7%	99.7%	100.0%
2024-Jan	2024-Dec	103.9%	103.1%	95.2%	98.6%	98.7%
2024-Apr	2025-Mar	102.5%	101.7%	95.1%	99.3%	99.2%

Table 2. Deaths per 100,000 Persons

Start of 12-Month Period	End of 12-Month Period	Ages 0 to 19	Ages 20 to 49	Ages 50 to 59	Ages 60+	Total Population
2019-Jan	2019-Dec	49.4	173.5	599.0	3,123.5	856.6
2020-Jan	2020-Dec	50.6	213.0	698.4	3,642.9	1,001.4
2021-Jan	2021-Dec	53.5	243.4	771.4	3,601.3	1,014.4
2022-Jan	2022-Dec	54.2	214.7	664.8	3,396.9	943.7
2023-Jan	2023-Dec	53.4	197.6	601.5	3,141.9	871.5
2024-Apr	2024-Mar	53.2	194.3	597.0	3,136.0	868.3
2024-Jul	2024-Jun	52.5	189.8	588.0	3,121.8	862.0
2024-Oct	2024-Sep	52.0	183.5	579.2	3,114.1	856.5
2024-Jan	2024-Dec	51.4	178.9	570.0	3,079.2	845.5
2024-Apr	2025-Mar	50.7	176.4	569.6	3,103.2	849.7

As explained in the Appendix, the death rates in Table 2 (and throughout this report) are age-standardized using the age/sex structure of the 2019 population. Without standardization, a death rate computed across the total population (or across an age group) will increase if a population's average age increases, even if age/sex specific death rates remain unchanged. Standardization neutralizes this issue by "freezing" the age-sex structure of the population in a specific "standard" year. This report uses 2019 as the standard year, but this choice is arbitrary. If a different year were used (say, 2010), the absolute level of the death rates in Table 2 would change, but their relative change across time would not be significantly affected.

Analysis of Recent Mortality Data by Cause of Death

The QMMR workbook can disaggregate death data into 14 mutually exclusive cause-of-death categories. Together, these categories sum to total deaths. Using the workbook, disaggregation by cause can be applied to total U.S. deaths or to deaths within user-defined sex and age groups. In Table 3, the total age-standardized U.S. death rate is disaggregated by cause of death. Because the reporting lag for some causes of death (such as suicides and accidents) is significantly greater than for other causes, Table 3 reflects data only through November of 2024. The final column of Table 3 captures the 12-month period from December 2023 to November 2024. Table 4 has the same structure as Table 3, but the death rates are expressed relative to their corresponding 2019 levels. Table 4 provides no results for COVID because the 2019 COVID death rate was zero.

Table 3
Age-Standardized Annual Death Rates per 100,000 Persons, by Cause of Death

Category	2019	2020	2021	2022	2023	Dec 2023 to Nov 2024
Alz/Dem	35.9	39.4	34.9	34.5	32.0	31.7
Cancer	181.3	179.0	177.0	174.5	172.0	170.0
COVID	-	103.8	122.3	53.6	14.1	9.8
Diabetes	26.5	30.4	30.2	29.1	26.8	26.1
Flu/Pneum	15.0	15.9	12.4	13.6	12.8	13.5
Heart	196.8	205.1	202.5	201.0	190.7	187.1
Hypertension	10.9	12.3	12.5	12.4	11.9	11.6
Liver	13.4	15.4	16.7	16.1	15.1	14.9
Pulmonary	47.6	45.6	41.8	42.4	40.7	39.9
Stroke	44.9	47.4	47.7	47.6	45.7	45.7
Accidents	51.7	59.7	66.4	66.3	65.2	57.4
Assault	5.9	7.5	7.9	7.5	6.9	6.2
Suicide	14.3	13.7	14.3	14.6	14.6	14.4
Other	212.2	226.2	227.7	230.6	222.8	221.1
Total	856.6	1,001.4	1,014.4	943.7	871.5	849.5
Exclude COVID	856.6	897.6	892.1	890.1	857.4	839.6

Table 4
Death Rates by Cause of Death, as a % of the Corresponding 2019 Death Rate

Category	2019	2020	2021	2022	2023	Dec 2023 to Nov 2024
Alz/Dem	100.0%	109.6%	97.3%	96.1%	89.1%	88.2%
Cancer	100.0%	98.7%	97.6%	96.3%	94.9%	93.8%
COVID	NA	NA	NA	NA	NA	NA
Diabetes	100.0%	114.8%	114.2%	110.0%	101.3%	98.7%
Flu/Pneum	100.0%	105.9%	82.4%	90.7%	85.5%	90.0%
Heart	100.0%	104.2%	102.9%	102.2%	96.9%	95.1%
Hypertension	100.0%	112.9%	114.2%	113.2%	108.5%	106.3%
Liver	100.0%	114.9%	124.8%	119.6%	112.8%	111.2%
Pulmonary	100.0%	95.6%	87.8%	89.0%	85.5%	83.8%
Stroke	100.0%	105.5%	106.2%	105.9%	101.8%	101.8%
Accidents	100.0%	115.4%	128.4%	128.2%	126.0%	110.9%
Assault	100.0%	127.2%	133.6%	126.3%	116.9%	104.3%
Suicide	100.0%	95.8%	99.6%	101.7%	102.0%	100.2%
Other	100.0%	106.6%	107.3%	108.7%	105.0%	104.2%
Total	100.0%	116.9%	118.4%	110.2%	101.7%	99.2%
Exclude COVID	100.0%	104.8%	104.1%	103.9%	100.1%	97.7%

Appendix

CALCULATION OF AGE-STANDARDIZED DEATH RATES

To neutralize the effects of changes in the population’s age structure, the death rates presented in this report are standardized by age. Age-standardized results are easy to interpret because the effects of changes in age structure are eliminated. If an age-standardized death rate increases (decreases) across time, this implies that age-specific death rates also increased (decreased).

This report used 2019 HMD population counts as weights for age standardization. In effect, this “freezes” the population’s age structure at 2019 levels. Aggregate death rates are computed as the weighted average of age-specific death rates, using weights derived from 2019 population counts. For example, to compute the age-standardized death rate in 2023 for ages 60 to 69, the following calculation is employed:

$$\left(\sum_{x=60}^{69} \frac{\text{Deaths}(x)_{2023}}{\text{Population}(x)_{2023}} * \text{Population}(x)_{2019} \right) \div \sum_{x=60}^{69} \text{Population}(x)_{2019}$$

For presentational simplicity, the prior equation shows death and population data in annual time units. However, the underlying death data is monthly rather than annual, and the calculation process is adjusted accordingly. The population data consists of mid-year (July 1) estimates; to calculate estimates for other calendar months, the population at each age is assumed to vary linearly across the period between each of the mid-year estimates. Monthly death and population data facilitate calculations for rolling 12-month periods that straddle adjacent calendar years—for example, the period from April 2024 to March 2025.

EXPOSURE DATA

The population count data used for this report was downloaded from the Human Mortality Database (HMD) webpage on May 7, 2025. The URL for downloading the data is as follows (note that access to this file requires setting up an HMD account):

<https://www.mortality.org/File/GetDocument/hmd.v6/USA/STATS/Population.txt>

The population counts in this dataset are for the U.S. resident population as of January 1 of each year. For the analysis presented in this report, population data for the intervening months was determined via linear interpolation. The HMD data ends in January of 2024, but this report requires data through March 2025. Therefore, for this analysis, the HMD dataset was extended through March 2025 using the Social Security Administration’s population projection as a guide. The cell formulas used to extrapolate the HMD counts appear in the QMMR workbook.

DEATH COUNT DATA

The death count data used for this report was downloaded from the CDC WONDER database on June 4, 2025. The interface for downloading CDC Wonder data is located here:

<https://wonder.cdc.gov/mcd.html>

While the downloaded data extends through March 2025, recent data is only partially complete. As explained earlier in this report, data for recent months was adjusted upward using completion factors. The completion factors were developed for this report by comparing CDC datasets downloaded at various dates throughout 2024 and 2025. The completion factors apply to deaths summed across all causes (note that

completion rates for various subcategories of death may differ from completion rates for all causes of death).

Completion Factors as a Function of Age Group and Month in Which Death Occurred

Age	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025
0 to 9	0.965	0.964	0.964	0.943	0.888
10 to 19	0.996	0.995	0.991	0.978	0.965
20 to 29	0.996	0.995	0.993	0.985	0.960
30 to 39	0.997	0.992	0.990	0.982	0.961
40 to 49	0.995	0.995	0.991	0.986	0.960
50 to 59	0.996	0.996	0.994	0.989	0.971
60 to 69	0.998	0.997	0.996	0.992	0.977
70 to 79	0.999	0.998	0.998	0.995	0.985
80 to 89	1.000	0.999	0.999	0.998	0.989
90 to 99	1.000	0.999	0.999	0.999	0.992

Note: these factors are applicable to data downloaded from CDC WONDER on June 4, 2025.

The factors increase from right to left across each row of the table, reflecting the maturation of data with the passage of time -- that is, the longer the time interval between the date the data was downloaded (June 4, 2025) and the month in which deaths were observed, the greater the completeness of the data. The factors also increase from top to bottom of each column, because data for older ages matures more quickly than data for younger ages.

MAPPING OF ICD CODES TO 14 CATEGORIES OF DEATH

Tables 3 and 4 in this report present death data disaggregated into 14 mutually exclusive cause-of-death categories. Note that 'Accidents' includes drug overdose deaths. The 14 categories correspond to the following ICD-10 codes:

Mapping of ICD Codes to the Broad Categories of Death Used in this Report

	Category	ICD Codes
1	Alzheimer's/Dementia	G30
2	Cancer	C00-C97
3	COVID	U071
4	Diabetes	E10-E14
5	Flu/Pneumonia	J09-J18
6	Heart Disease	I00-I09, I11, I13, I20-I51
7	Hypertension	I10, I12, I15
8	Chronic Liver Disease & Cirrhosis	K70, K73-K74
9	Pulmonary	J40-J47
10	Stroke	I60-I69
11	Accidents	V01-X59, Y85-Y86
12	Assault	U01-U02, X85-Y09, Y87.1
13	Suicide	U03, X60-X84, Y87.0
14	Other	All other ICD codes
	Total	All ICD Codes

Although some death certificates reflect multiple causes of death, one cause is identified as the primary or “underlying” cause. This report used the underlying cause to disaggregate deaths into the 14 categories shown in the preceding table.

DEATHS RATES BY 10-YEAR AGE GROUPS

Figures 1 through 4 and Tables 1 and 2 present death rates by broad age group. For readers data with greater granularity, Tables A1 and A2 present death rates by 10-year-age groups.

Table A1

Death Rates by 10-Year Age Group, as a % of 2019 Death Rates: Females

Age	2019	2020	2021	2022	2023	2024	Apr 2024 to Mar 2025
0 to 9	100.0%	95.6%	101.8%	105.2%	103.3%	104.4%	103.7%
10 to 19	100.0%	109.6%	121.9%	119.8%	115.2%	107.6%	106.3%
20 to 29	100.0%	121.2%	133.4%	120.6%	107.1%	92.7%	90.8%
30 to 39	100.0%	118.9%	138.4%	121.6%	110.8%	101.1%	99.3%
40 to 49	100.0%	119.2%	139.4%	119.7%	109.4%	103.9%	103.8%
50 to 59	100.0%	115.0%	127.4%	111.0%	99.9%	95.5%	95.4%
60 to 69	100.0%	116.3%	125.5%	113.4%	104.5%	102.5%	103.1%
70 to 79	100.0%	116.2%	118.1%	110.0%	100.7%	98.6%	99.5%
80 to 89	100.0%	116.6%	111.6%	108.7%	101.9%	100.7%	101.5%
90 to 99	100.0%	115.2%	105.8%	105.6%	99.3%	97.5%	98.3%
Total	100.0%	116.0%	116.2%	109.8%	101.8%	99.5%	100.1%

Table A2

Death Rates by 10-Year Age Group, as a % of 2019 Death Rates: Males

Age	2019	2020	2021	2022	2023	2024	Apr 2024 to Mar 2025
0 to 9	100.0%	95.8%	99.0%	104.3%	102.5%	100.5%	99.0%
10 to 19	100.0%	118.3%	125.5%	119.7%	119.7%	107.4%	104.8%
20 to 29	100.0%	123.4%	132.7%	119.0%	109.0%	93.9%	91.9%
30 to 39	100.0%	125.8%	144.3%	130.9%	121.2%	106.3%	103.6%
40 to 49	100.0%	124.1%	143.7%	124.9%	116.4%	107.6%	107.0%
50 to 59	100.0%	117.6%	129.6%	111.0%	100.7%	94.9%	94.9%
60 to 69	100.0%	117.3%	123.8%	110.4%	101.4%	98.3%	99.0%
70 to 79	100.0%	118.3%	118.8%	109.1%	99.4%	97.5%	98.2%
80 to 89	100.0%	117.1%	113.7%	108.8%	100.9%	99.1%	99.7%
90 to 99	100.0%	114.7%	106.4%	103.6%	95.3%	92.8%	93.6%
Total	100.0%	117.8%	120.5%	110.5%	101.7%	98.0%	98.3%

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