

## Mortality among Chinese New Yorkers

The Chinese population is one of the fastest growing in New York City (NYC), increasing 35% from 2000 to 2010.<sup>1</sup> For the 2010-2014 time period, it is estimated that on average each year, there were 552,550 Chinese New Yorkers,<sup>2</sup> about 7% of the city’s overall population. The Chinese population is the largest Asian group in NYC, accounting for 47% of all Asians in 2010, exceeding other Asian groups, with the next largest groups being Indian (19%), Korean (9%), and Filipino (7%).<sup>3</sup> This report presents the leading causes of death and premature mortality rates among Chinese New Yorkers compared with other racial/ethnic groups, other Asian groups, and the city overall to examine any potential differences.

### Cancer is the leading cause of death among Chinese New Yorkers

- Cancer was the top leading cause of death among Chinese New Yorkers, while heart disease was the leading cause of death in the U.S.<sup>4</sup> and NYC.
- In 2014, cancer accounted for 33% of total deaths among Chinese New Yorkers, compared with 25% of total deaths in NYC.
- Stroke was the third leading cause among Chinese New Yorkers, but the sixth leading cause in NYC overall
- Suicide and nephritis were among the top 10 leading causes of deaths among Chinese New Yorkers but were not among the top 10 leading causes in NYC.
- Drug-related deaths and Alzheimer’s disease were among the top 10 leading causes of death in NYC, but were not among the top 10 leading causes among Chinese New Yorkers.

### Top 10 leading causes of death among Chinese New Yorkers and in New York City overall, 2014

Rank	Chinese New Yorkers	NYC Overall
1	Cancer (33.0%)	Heart disease (31.1%)
2	Heart disease (23.9%)	Cancer (25.2%)
3	Stroke (5.3%)	Flu/pneumonia (4.2%)
4	Flu/pneumonia (4.9%)	Lower respiratory diseases (3.4%)
5	Lower respiratory diseases (3.9%)	Diabetes (3.4%)
6	Accidents <sup>1</sup> (2.9%)	Stroke (3.4%)
7	Diabetes (2.7%)	Accidents <sup>1</sup> (1.9%)
8	Hypertension (1.7%)	Hypertension (1.9%)
9	Suicide (1.5%)	Drug-related (1.7%)
10	Nephritis (1.4%)	Alzheimer’s disease (1.5%)

1. Excluding drug poisoning

Source: NYC DOHMH Bureau of Vital Statistics, 2014

#### Definitions:

**Chinese New Yorker** was defined by reported ancestry or race as Chinese, Taiwanese, Hong Kongese, or Cantonese living in NYC.

**Other racial/ethnic groups** were defined as Latino, White, Black, and Other Asian. For the purpose of this Epi Data Brief, Latino includes persons of Hispanic origin based on ancestry reported on the death certificate; Latino excludes reported ancestry from non-Spanish speaking Central/South American countries, and non-Spanish speaking Caribbean islands. Black, White, and Other Asian categories do not include persons of Latino origin.

**Causes of death** are coded by International Classification of Diseases, 10th revision (ICD-10).

**Premature death** is defined as age at death under 65 years.

#### Data Sources:

**Mortality data:** Bureau of Vital Statistics (BVS), 2005-2014: The NYC Health Department’s BVS maintains administrative data on all deaths in NYC and death information was obtained from death certificates.

**American Community Survey (ACS) Public Use Microdata Sample (PUMS), 2010-2014:** The Census Bureau produces the PUMS files, compiled by University of Minnesota and downloadable at: [usa.ipums.org/usa/](http://usa.ipums.org/usa/)

ACS PUMS population data were used in calculating mortality among the Chinese population.

#### NYC DOHMH population estimates:

Modified from US Census Bureau interpolated intercensal population estimates, 2000-2015. Updated August 2016. The population estimates were used in calculating mortality rates among overall NYC.

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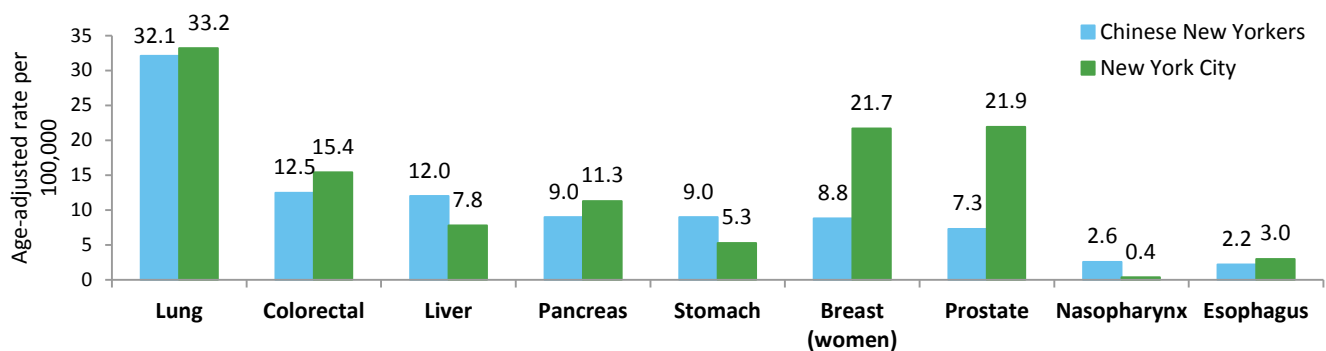
New York City Department of Health and Mental Hygiene



## Chinese New Yorkers are more likely to die of stomach, liver, and nasopharyngeal cancers than New Yorkers overall

- Cancer was the leading cause of death among Chinese New Yorkers, but the leading types of cancer death rates differed between Chinese New Yorkers and citywide.
- In 2010-2014, death rates among Chinese New Yorkers were higher for stomach (9.0 vs. 5.3 per 100,000 population), liver (12.0 vs. 7.8 per 100,000 population), and nasopharyngeal (2.6 vs. 0.4 per 100,000 population) cancers than those in NYC overall.
- Although lung cancer death rates among Chinese New Yorkers were similar to those in NYC overall (32.1 vs. 33.2 per 100,000 population in 2010-2014), lung cancer deaths increased 70% among Chinese New Yorkers from 2000 to 2014, while decreasing 16.4% in NYC during the same time period.
- For other types of cancer, such as breast (among women), colorectal, esophagus, pancreas, and prostate, death rates among Chinese New Yorkers were lower than those in NYC overall in 2010-2014.

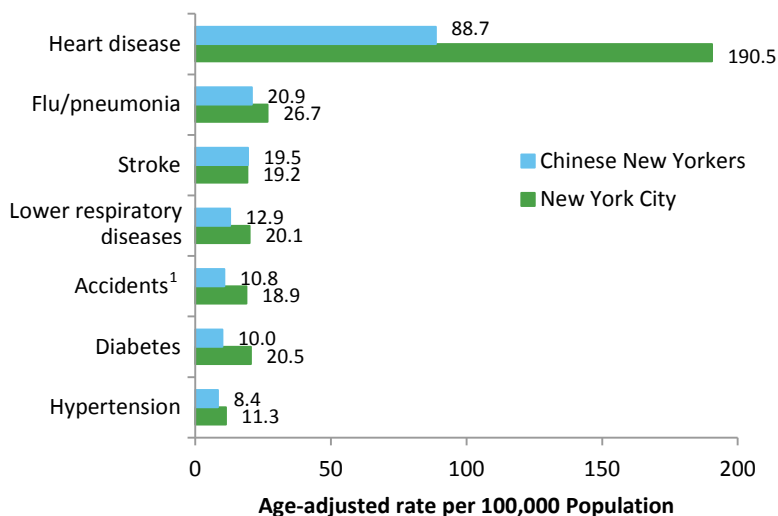
### Cancer death rates among Chinese New Yorkers and in New York City overall, 2010-2014



Sources: NYC DOHMH Bureau of Vital Statistics, 2010-2014, American Community Survey (ACS) Public Use Microdata Sample (PUMS), 2010-2014, and NYC DOHMH population estimates

## Among other leading causes of death, Chinese New Yorkers generally have lower rates than New Yorkers overall

### Rates of leading causes of death (other than cancer) among Chinese New Yorkers and citywide, 2010-2014



1. Excluding drug poisoning

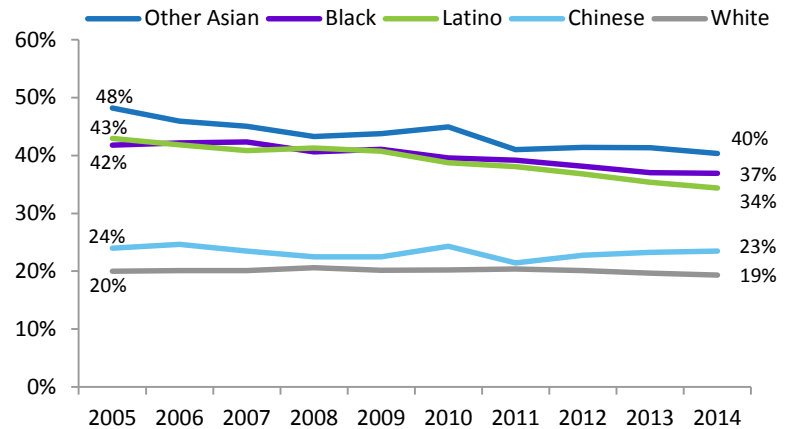
Sources: NYC DOHMH Bureau of Vital Statistics, 2010-2014, American Community Survey (ACS) Public Use Microdata Sample (PUMS), 2010-2014, NYC DOHMH population estimates

- Among the leading causes of death other than cancer, death rates among Chinese New Yorkers were lower than citywide rates in 2010-2014, except for the death rate due to stroke (19.5 vs. 19.2 per 100,000 population).
- Rates of death due to heart disease and diabetes among Chinese New Yorkers were less than half of those among NYC residents overall (88.7 vs. 190.5, and 10.0 vs. 20.5 per 100,000 population).
- Death rates for other leading causes that were lower among Chinese New Yorkers than those in NYC overall were accidents, lower respiratory diseases, hypertension, and flu/pneumonia.

## Chinese New Yorkers have the second lowest percentage of premature deaths (before the age of 65) in New York City

- In 2014, 23% of Chinese New Yorkers died prematurely, which was the second lowest percentage when compared with Whites (19%), Latinos (34%), Blacks (37%), and all Other Asians (40%).
- From 2005 to 2014, the percent of deaths that were premature decreased for all racial/ethnic groups although the magnitude varied among racial/ethnic groups. The decrease was highest among Latinos, dropping 18%, followed by 16% among Other Asians, and 14% among Blacks.
- The percent of deaths that were premature decreased the least among Chinese New Yorkers from 2005 to 2014, a drop of 2% compared with 4% among Whites.

**Percent of deaths that are premature among Chinese New Yorkers and other racial/ethnic groups, New York City, 2005-2014**



Notes: Premature deaths are defined by death before the age of 65. White, Black, Chinese and Other Asian race categories exclude those who identified as Latino.

Source: NYC DOHMH Bureau of Vital Statistics, 2005-2014

### Deaths among Asian groups with more than 100 deaths per year, New York City, 2014

Asian groups	Number of deaths	Percent premature deaths	Average age at death (years)
Chinese	2,247	23%	75.4
Indian	788	45%	64.0
Korean	317	29%	71.7
Filipino	272	34%	68.6
All Asians	3,979	31%	71.3

Notes: Premature deaths are defined by death before the age of 65.

Source: NYC DOHMH Bureau of Vital Statistics, 2014

- In 2014, Chinese New Yorkers accounted for 56% of all Asian deaths in NYC. Other Asian groups included Indian (20%), Korean (8%), and Filipino (7%).
- Chinese New Yorkers had the lowest percent of premature deaths (23%), compared with other Asian groups which include Koreans (29%), Filipinos (34%), and Indians (45%).
- These results highlight the importance of examining sub-group differences which can be masked in broader categories.

## The average age at death among Chinese New Yorkers is the second highest in New York City

- In 2014, the average age at death among Chinese New Yorkers was 75.4 years, which was the second highest in NYC, after Whites (77.4 years). The lowest average age at death was among Other Asians (65.9 years), followed by Blacks (68.7 years), and Latinos (69.6 years).
- From 2005 to 2014, the average age at death increased for all racial/ethnic groups with the greatest among Latinos (7%), followed by Other Asians (5%), Blacks (4%), Chinese (3%), and Whites (1%).

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**References:**

1. U.S. Census Bureau, 2000 and 2010 Censuses-Summary File 1, compiled by Population Division-New York City Department of City Planning.
2. American Community Survey Public Use Microdata Sample (PUMS), 2010-2014.
3. U.S. Census Bureau, 2010 Censuses-Summary File 1, compiled by Population Division-New York City Department of City Planning.
4. Deaths: Leading Causes for 2014, National Vital Statistics Reports, Volume 65, Number 5, June 30, 2016.



# Epi Data Tables

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## Mortality among Chinese New Yorkers

### Data Tables

- Table 1.** Age-adjusted rates for selected causes of death, Chinese New Yorkers and New York City, 2010-2014
- Table 2.** Age-adjusted rates for selected causes of death by sex, Chinese New Yorkers and New York City, 2010-2014
- Table 3.** Age-adjusted rates for selected cancer deaths, Chinese New Yorkers and New York City, 2010-2014
- Table 4.** Age-adjusted rates for selected cancer deaths by sex, Chinese New Yorkers and New York City, 2010-2014
- Figure 1.** Average age at death by race/ethnicity, New York City, 2005-2014

### Data Sources

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**American Community Survey (ACS) Public Use Microdata Sample (PUMS), 2010-2014:** The Census Bureau produces the PUMS files, compiled by University of Minnesota and downloadable at: <https://usa.ipums.org/usa/> ACS PUMS population data were used in calculating mortality among the Chinese.

**NYC DOHMH population estimates:** Modified from US Census Bureau interpolated intercensal population estimates, 2000-2015. Updated August 2016. The population estimates were used in calculating mortality rates among overall NYC.

**Table 1. Age-adjusted rates for selected causes of death, Chinese New Yorkers and New York City, 2010-2014**

Source: NYC mortality files, 2010-2014. American Community Survey Public Use Microdata Sample, 2010-2014. NYC DOHMH population estimates.

Rates are per 100,000 population and age-adjusted by US 2000 Standard population.

Cause of death	Chinese New Yorkers			New York City		
	Age-adjusted rate	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Age-adjusted rate	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Accidents (excluding drug poisoning)	10.8	9.6	12.1	18.9	18.5	19.3
Cancer	119.1	115.2	123.2	154.3	153.1	155.5
Lower respiratory diseases	12.9	11.6	14.3	20.1	19.7	20.6
Diabetes	10.0	8.9	11.3	20.5	20.1	20.9
Heart disease	88.7	85.2	92.2	190.5	189.2	191.7
Hypertension	8.4	7.3	9.5	11.3	11.0	11.7
Flu/pneumonia	20.9	19.2	22.7	26.7	26.2	27.2
Stroke	19.5	17.9	21.2	19.2	18.8	19.6
Suicide	5.5	4.7	6.5	6.2	5.9	6.4
Other causes	69.7	66.6	72.9	132.8	131.7	133.9

**Table 2. Age-adjusted rates for selected causes of death by sex, Chinese New Yorkers and New York City, 2010-2014**

Source: NYC mortality files, 2010-2014. American Community Survey Public Use Microdata Sample, 2010-2014. NYC DOHMH population estimates.

Rates are per 100,000 population and age-adjusted by US 2000 Standard population.

Cause of death	Chinese New Yorkers			New York City		
	Age-adjusted rate	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Age-adjusted rate	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Male</b>						
Accidents (excluding drug poisoning)	15.1	13.0	17.5	28.7	27.9	29.4
Cancer	157.5	150.6	164.6	184.6	182.6	186.6
Lower respiratory diseases	22.1	19.4	25.0	23.9	23.2	24.6
Diabetes	12.2	10.3	14.4	24.0	23.2	24.7
Heart disease	110.6	104.6	116.9	233.2	231.0	235.6
Hypertension	9.3	7.6	11.3	12.5	11.9	13.0
Flu/pneumonia	28.9	25.8	32.3	34.4	33.5	35.3
Stroke	18.5	16.2	21.2	19.8	19.2	20.5
Suicide	7.5	6.1	9.1	9.6	9.2	10.1
Other causes	82.2	77.1	87.7	158.1	156.2	112.6
<b>Female</b>						
Accidents (excluding drug poisoning)	7.7	6.4	9.3	10.5	10.1	11.0
Cancer	88.5	83.9	93.3	134.2	132.8	135.7
Lower respiratory diseases	6.4	5.3	7.8	17.7	17.1	18.2
Diabetes	8.5	7.1	10.1	17.8	17.3	18.3
Heart disease	71.7	67.6	75.9	158.4	156.9	159.9
Hypertension	7.9	6.6	9.4	10.4	10.0	10.8
Flu/pneumonia	15.5	13.6	17.6	21.7	21.1	22.2
Stroke	19.8	17.7	22.2	18.2	17.7	18.8
Suicide	3.8	2.9	4.9	3.2	3.0	3.4
Other causes	59.7	56.0	63.7	111.3	110.0	112.6

**Table 3. Age-adjusted rates for selected cancer deaths, Chinese New Yorkers and New York City, 2010-2014**

Source: NYC mortality files, 2010-2014. American Community Survey Public Use Microdata Sample, 2010-2014. NYC DOHMH population estimates.

Rates are per 100,000 population and age-adjusted by US 2000 Standard population.

Cancer types	Chinese New Yorkers			New York City		
	Age-adjusted rate	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Age-adjusted rate	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Breast (female)	8.8	7.4	10.4	21.7	21.1	22.2
Colorectal	12.5	11.3	13.9	15.4	15.1	15.8
Esophagus	2.2	1.7	2.8	3.0	2.9	3.2
Liver	12.0	10.7	13.3	7.8	7.6	8.1
Lung	32.1	30.1	34.3	33.2	32.6	33.7
Nasopharynx	2.6	2.0	3.2	0.4	0.3	0.5
Pancreas	9.0	7.9	10.2	11.3	11.0	11.7
Prostate (male)	7.3	5.8	9.1	21.9	21.2	22.6
Stomach	9.0	8.0	10.2	5.3	5.1	5.6
Other cancers	31.9	29.9	34.1	56.7	56.0	57.5

Note: Breast and prostate cancers are sex specific.

**Table 4. Age-adjusted rates for selected cancer deaths by sex, Chinese New Yorkers and New York City, 2010-2014**

Source: NYC mortality files, 2010-2014. American Community Survey Public Use Microdata Sample, 2010-2014. NYC DOHMH population estimates.

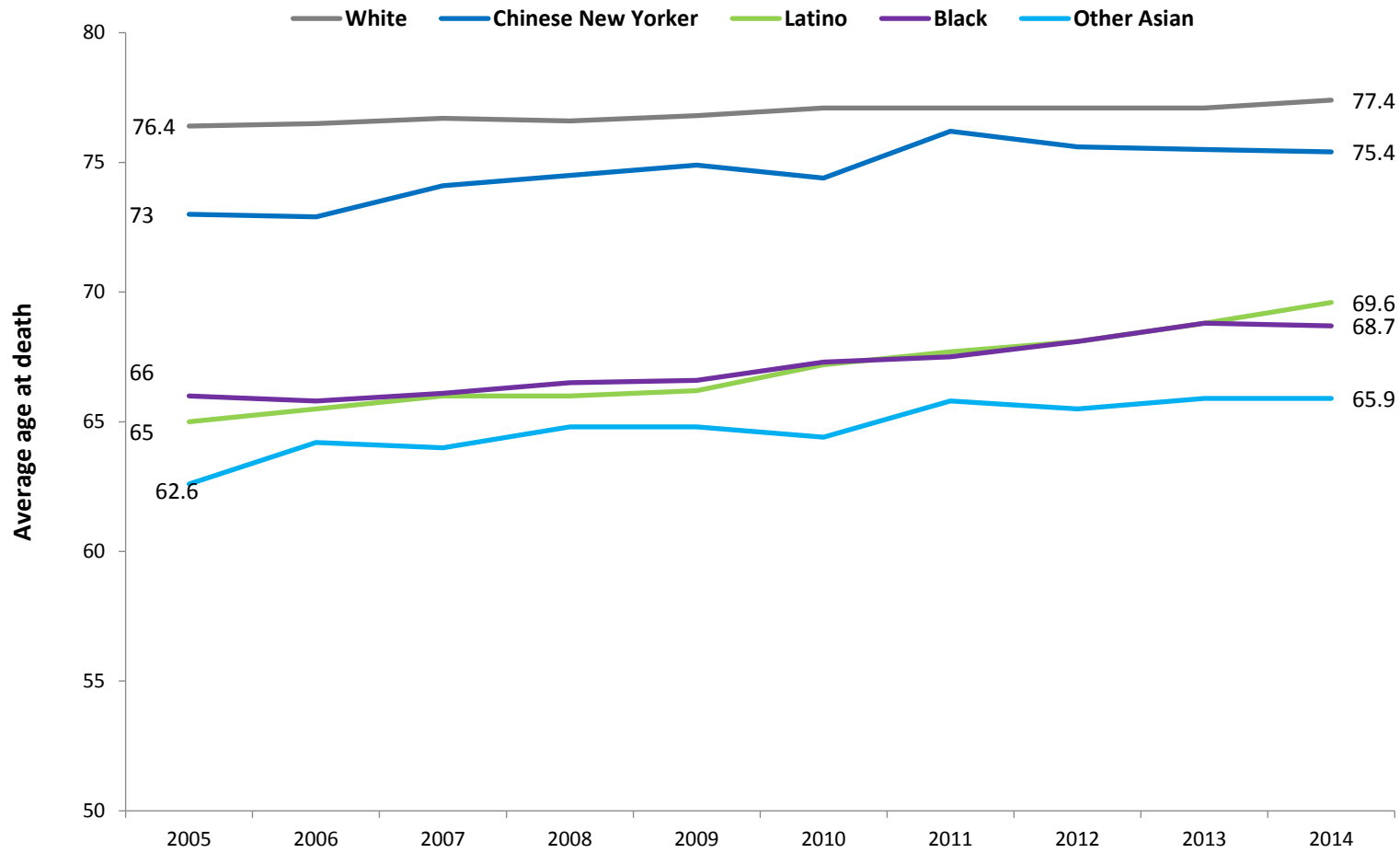
Rates are per 100,000 population and age-adjusted by US 2000 Standard population.

Cancer types	Chinese New Yorkers			New York City		
	Age-adjusted rate	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Age-adjusted rate	Lower 95% Confidence Interval	Upper 95% Confidence Interval
<b>Male</b>						
Colorectal	16.5	14.3	18.9	18.6	18.0	19.2
Esophagus	3.9	2.9	5.2	5.2	4.8	5.5
Liver	19.6	17.3	22.1	12.2	11.7	12.7
Lung	45.5	41.8	49.3	42.8	41.9	43.8
Nasopharynx	4.4	3.4	5.6	0.7	0.6	0.8
Pancreas	10.4	8.6	12.3	13.1	12.6	13.7
Stomach	13.9	11.9	16.1	7.2	6.9	7.7
Other cancers	36.0	32.8	39.5	62.6	61.4	63.7
<b>Female</b>						
Colorectal	9.6	8.1	11.2	13.1	12.7	13.6
Esophagus	0.9	0.5	1.5	1.4	1.3	1.6
Liver	5.6	4.5	6.9	4.4	4.2	4.7
Lung	21.0	18.8	23.4	26.4	25.8	27.0
Nasopharynx	0.9	0.5	1.5	0.2	0.1	0.3
Pancreas	8.0	6.7	9.5	10.0	9.6	10.4
Stomach	5.1	4.0	6.3	4.0	3.8	4.3
Other cancers	28.7	26.1	31.5	53.0	52.1	53.9



**Figure 1. Average age at death by race/ethnicity, New York City, 2005-2014**

Source: NYC mortality files, 2010-2014.



Note: White, Black, Chinese and Other Asian race categories exclude those who identified as Latino.