

Atherosclerotic Cardiovascular Disease Mortality Trends in the U.S.: 1999-2018

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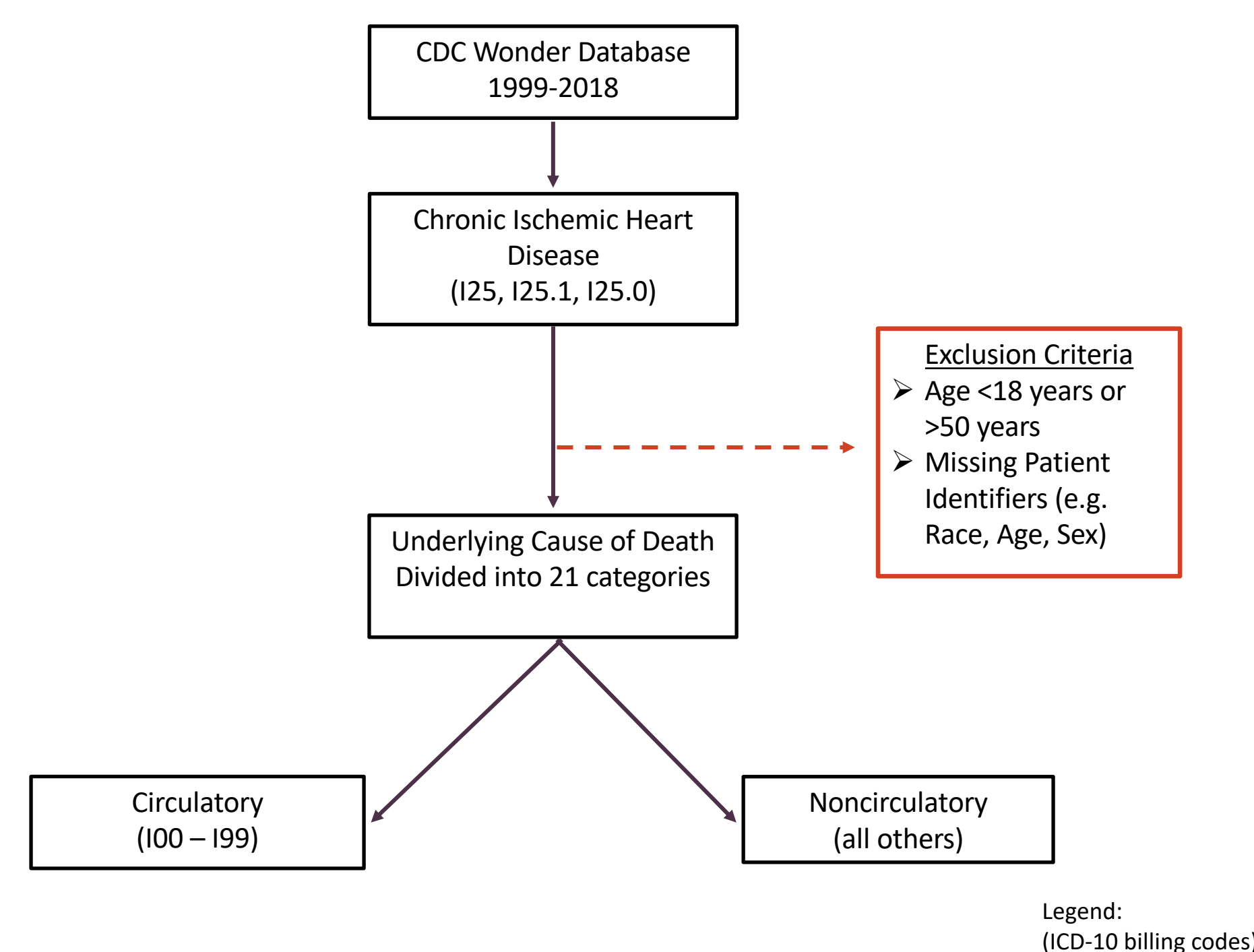
Introduction

- Atherosclerotic cardiovascular disease remains the leading cause of death in the United States despite reductions in mortality over the past few decades.
- The objective of this study was to assess temporal trends in the mortality of young patients with known atherosclerotic cardiovascular disease in the United States.

Methods

- We extracted the data from Centers for Disease Control and Prevention (CDC) Wonder database (<https://wonder.cdc.gov>) based on the International Statistical Classification of Diseases and Related Health Problems (ICD-10) codes.
- Data for the multiple causes of death for the ages 18-50 from 1999 to 2018 corresponding to the chronic ischemic heart disease (ICD code: I25) were extracted.
- The extracted patient data were categorized according to their underlying cause of death and their respective ICD codes broadly into 21 classes depending upon the organ system involved.

Figure 1. Flow Diagram for Search Strategy



Results

Figure 2. Median Mortality Rates for Cause of Death

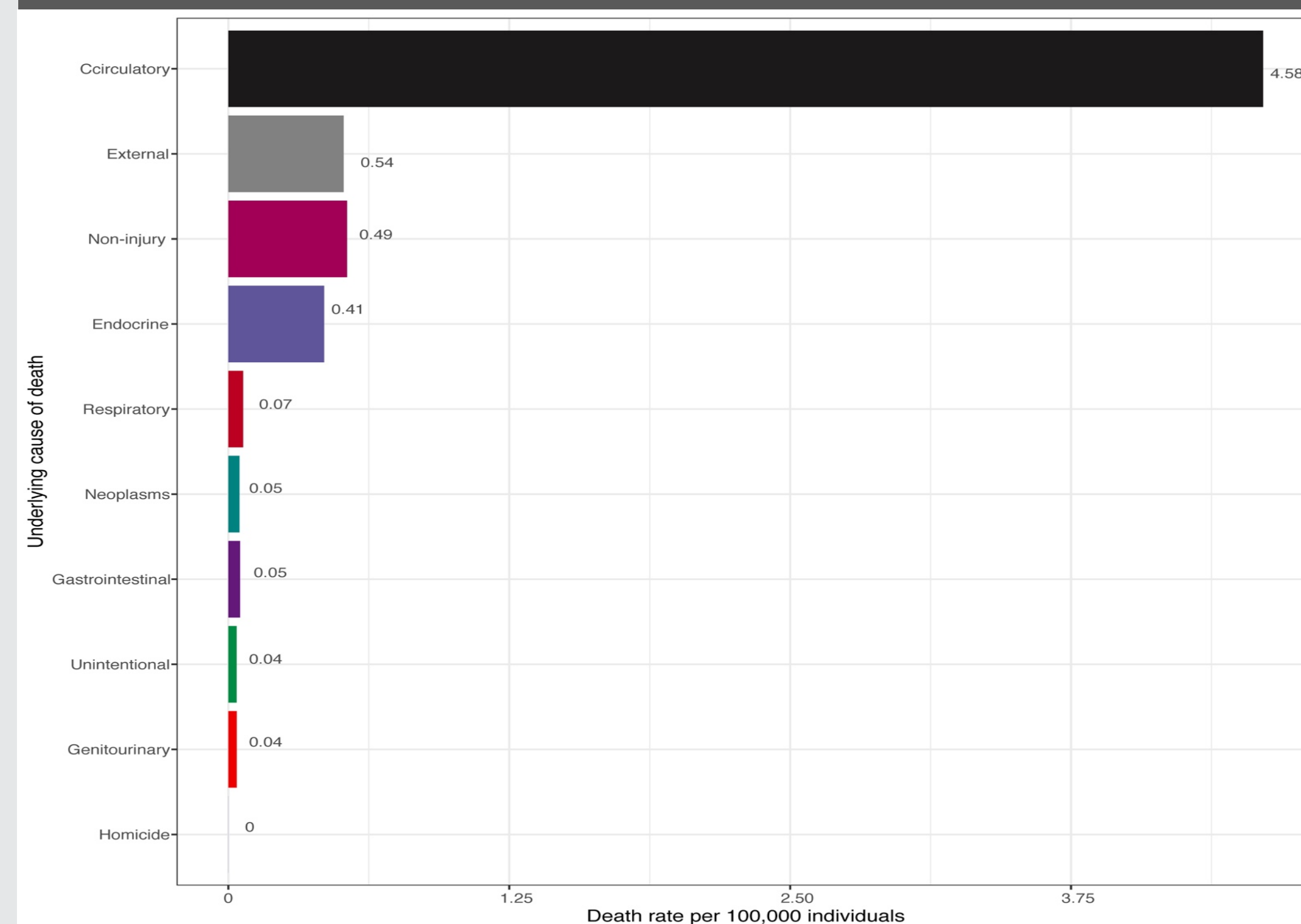


Figure 3. Trends of Mortality Rates for Cause of Death

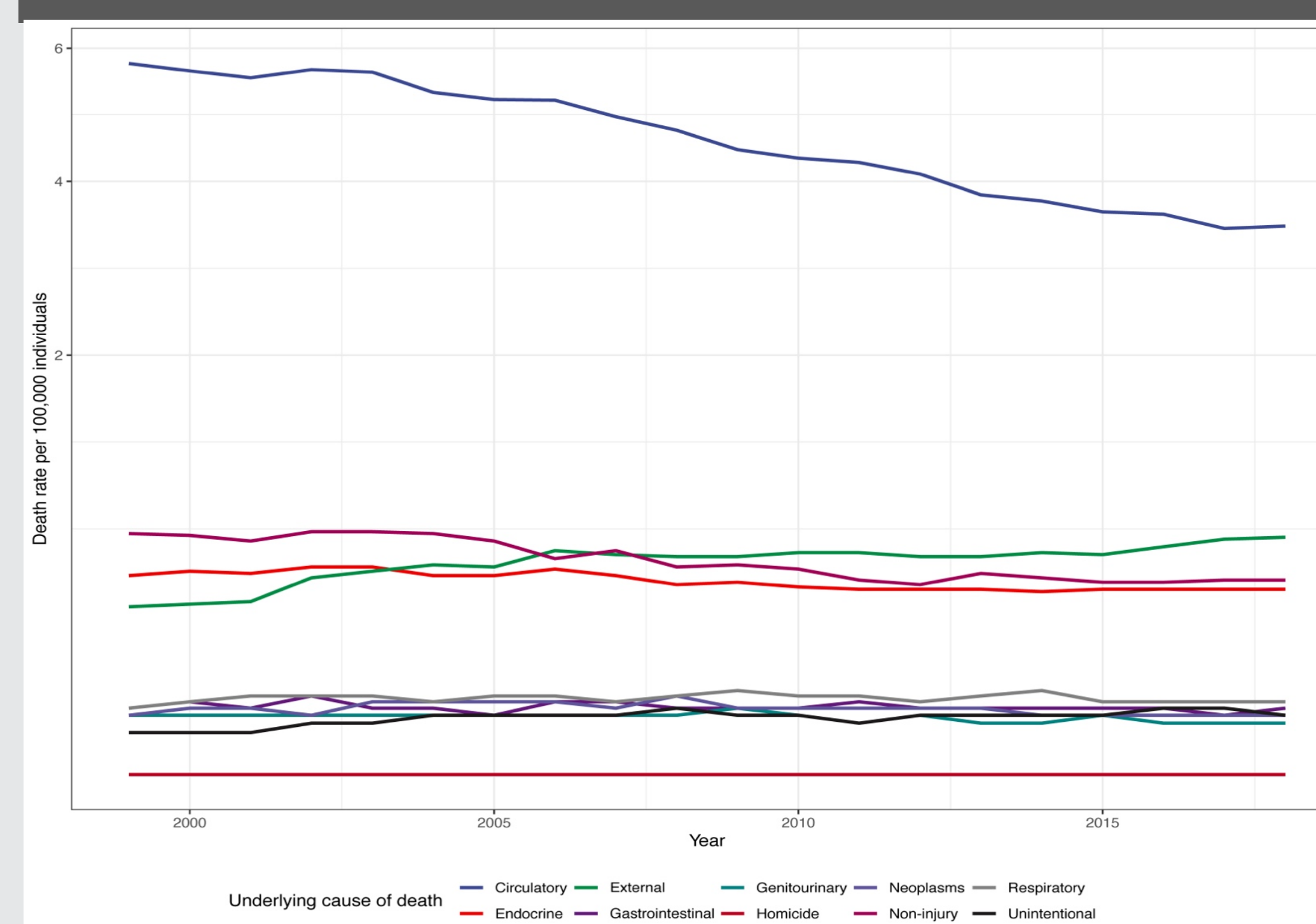


Table 1: Absolute cause-specific mortality rates in patients based on sex and race subgroups

Cause of death	Category	Mortality rate in 1999	Mortality rate in 2018	% Change in mortality	p-value
Circulatory	White	4.5	2.2	52.3%	< 0.001
	Non-white	1.2	0.8	31.4%	0.011
	Male	4.6	2.3	49.3%	< 0.001
	Female	1.2	0.7	42.1%	< 0.001
Non-circulatory	White	1.4	1.2	8.2%	< 0.001
	Non-white	0.4	0.4	1.0%	0.02
	Male	1.3	1.2	5.0%	0.001
	Female	0.5	0.4	8.9%	0.01

- The overall mortality rate has declined over the last two decades from 5.75 to 3.42 deaths per 100,000 individuals.
- The reduction in circulatory mortality rate was greater among white individuals compared to non-white individuals.
- There has been a similar reduction in circulatory mortality rates among males and females.
- Female and white individuals have had the greatest decrease in mortality rate for non-circulatory causes.
- Individuals between the ages of 41– 50 years of age have had the greatest reduction in overall mortality.

Conclusion

Circulatory causes of death for patients with known atherosclerotic cardiovascular disease have significantly reduced across all ages, genders, and sex with differential rates between 1999-2018