

Supplemental Online Content

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eFigure 1. Injury and Non-Injury Mortality Rates (per 100,000) of Youth 1-19 Years by Race-Ethnicity

eFigure 2. Mortality Rates (Per 100,000) of Youth 1-19 Years for Injury, by Intent

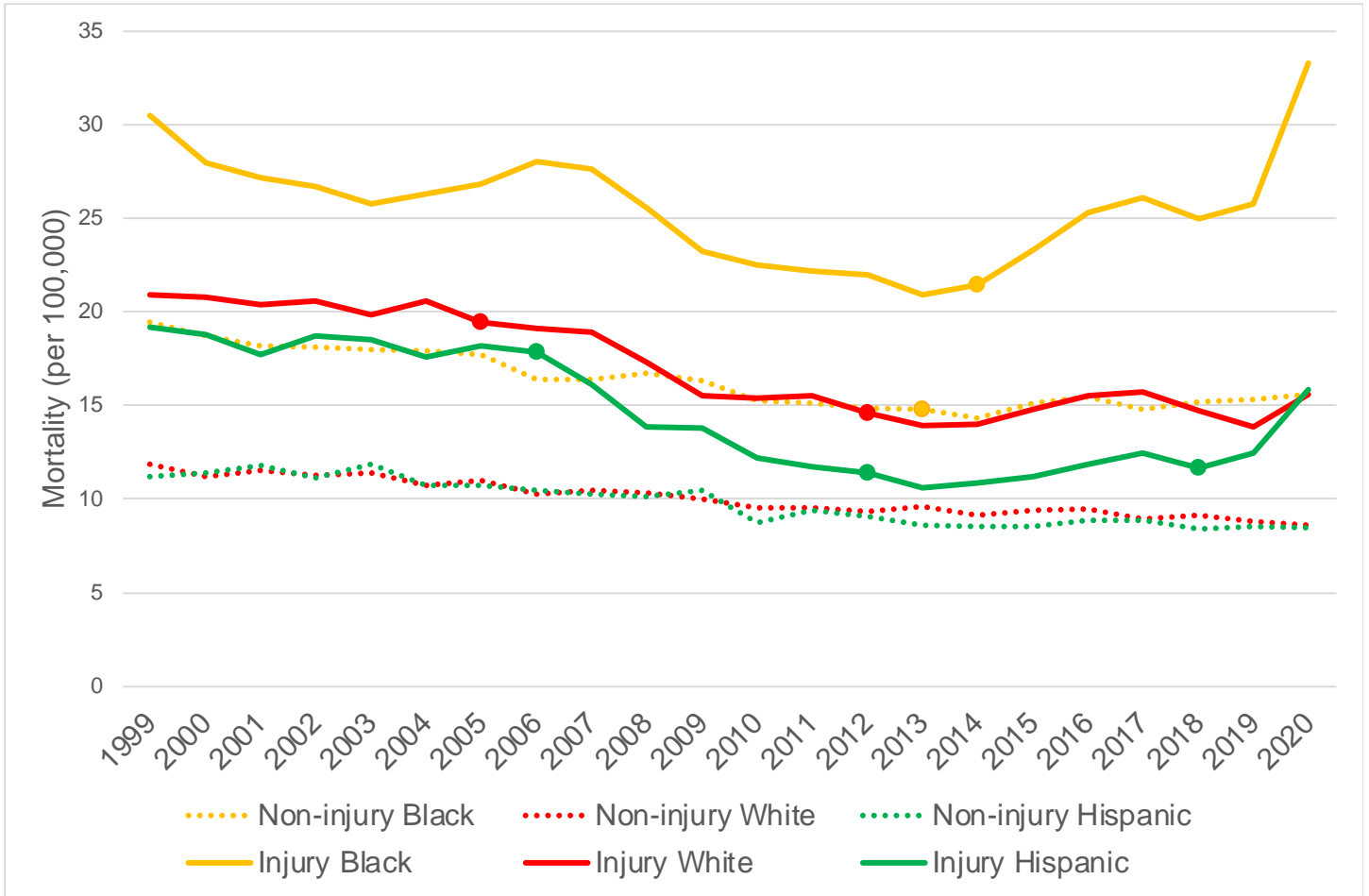
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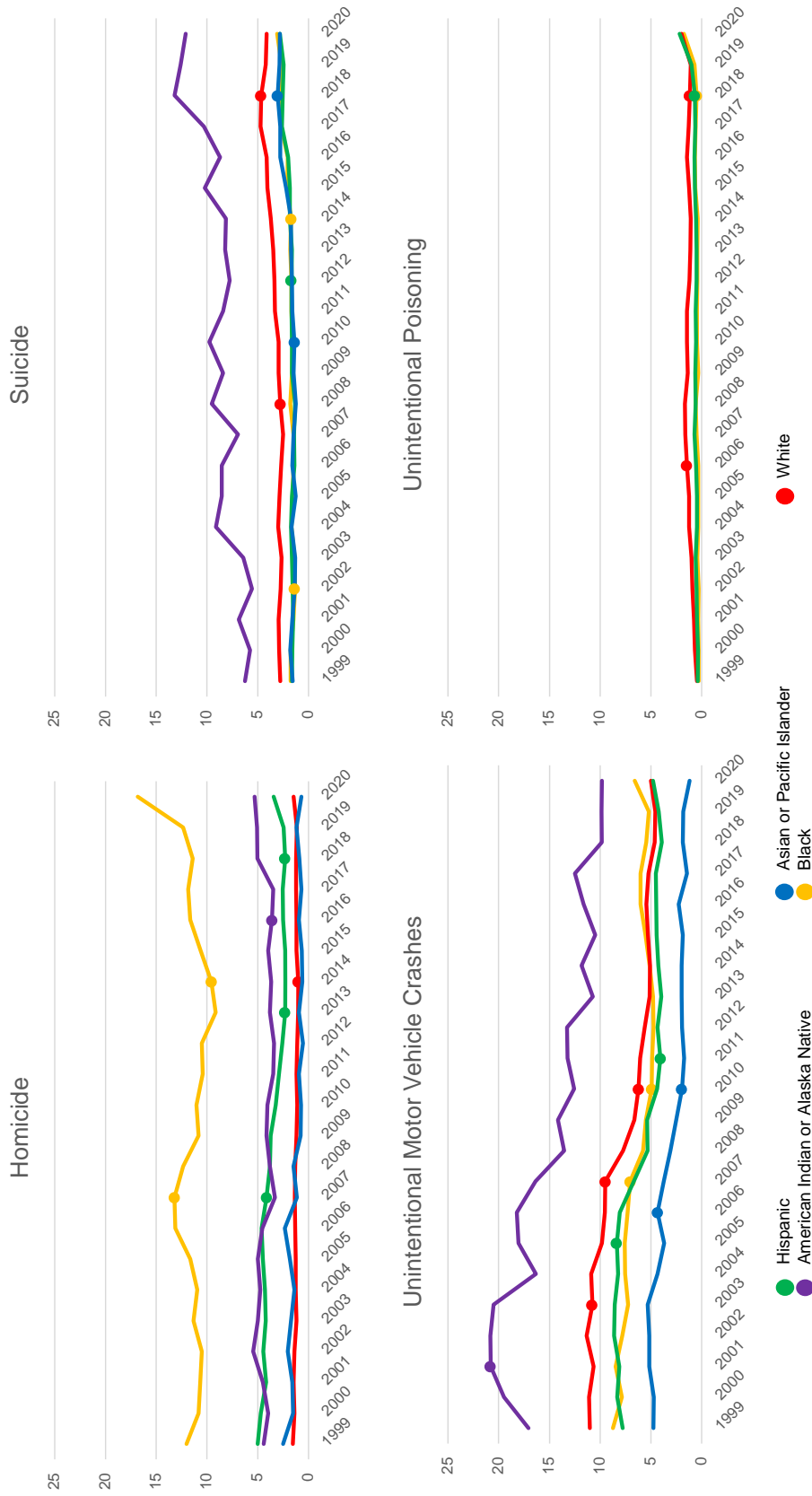
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eFigure 1. Injury and non-injury mortality rates (per 100,000) of youth 1-19 years by race-ethnicity



Footnote: Dots represent joinpoint years when the slope changed

eFigure 2. Mortality rates (per 100,000) of youth 1-19 years for injury, by intent



Footnote: Dots represent joinpoint years when the slope changed

Table 1. Comparison of ICD-10 codes from CDC WONDER top 10 leading causes of death for youth 1-19 and adapted categories of injury and disease used in this paper. Cells are left blank if no change was made.

CDC WONDER ranking and category			Categories used in this paper			
			Unintentional injury or disease		Injury by mechanism	
1	Accidents (Unintentional injuries)	V01-X59, Y85-Y86	Unintentional Motor Vehicle Crashes ^a	V02-V04; V09.0; V09.2; V12-V14; V19.0-V19.2; V19.4-V19.6; V20-V79; V80.3-V80.5; V81.0-V81.1; V82.0-V82.1; V83-V86; V87.0-V87.8; V88.0-V88.8; V89.0; V89.2	Motor Vehicle Crashes ^{a,b}	V02-V04; V09.0; V09.2; V12-V14; V19.0-V19.2; V19.4-V19.6; V20-V79; V80.3-V80.5; V81.0-V81.1; V82.0-V82.1; V83-V86; V87.0-V87.8; V88.0-V88.8; V89.0; V89.2; X82; Y03; Y32
			Unintentional Poisoning ^c	X40-49	Drug-related ^d	X40-44; X60-64; X85; Y10-14
			Unintentional Drowning	W65-74	Drowning ^e	W65-74, X71, X92, Y21
			Unintentional Suffocation	W75-84	Suffocation ^f	W75-84, X70, X91, Y20
			Unintentional Fire/Burn ^g	X00-19	Fire/Burn ^{g,h}	X00-19, X76-77, X97-98, Y26-27, Y36.3, U01.3
				Firearm ⁱ	W32-34, X72-74, X93-95, Y22-24, Y35.0, U01.4	
2	Assault (Homicide) ^j	U01-U02, X85-Y09, Y87.1				
3	Intentional self-harm (Suicide)	U03, X60-X84, Y87.0				
4	Malignant neoplasms (Cancer)	C00-C97				
5	Congenital malformations, deformations, and chromosomal abnormalities	Q00-Q99				
6	Diseases of heart	I00-I09, I11, I13, I20-I51	Circulatory Diseases	I00-99		
9	Cerebrovascular diseases	I60-I69				
7	Influenza and pneumonia	J09-J18				
8	Chronic lower respiratory diseases	J40-J47	Asthma	J45-J46		
10	Septicemia	A40-A41	Other infection	A00-B99		
			COVID-19	U07.1		

^a Includes any motor vehicle crash fatality involving drivers, occupants, pedestrians, or pedal cyclists.
^b Includes vehicular homicide, suicide, and crashes of undetermined intent.
^c Includes poisoning by drugs, alcohol, solvents, gases, and pesticides.
^d Includes illicit, prescribed, and over the counter drugs. Includes unintentional poisoning, intentional self-poisoning, assault by drugs, and events of undetermined intent.
^e Includes intentional self-harm and assault by drowning and submersion.
^f Includes self-harm and assault by hanging, strangulation, and suffocation.
^g Includes exposure to fire, smoke, and hot substances.
^h Includes intentional self-harm and assault by fire, smoke, and hot substances.
ⁱ Includes firearm injuries that were unintentional, intentional, and of undetermined intent.
^j Includes death by firearm, assault by bodily force, terrorism, maltreatment, and neglect.

eTable 2. Results of Joinpoint analyses for mortality trends in youth 1-19, 1999-2020.					
Cause of Death	Race or Ethnicity	Years	Slope (annual percent change)	Change in slope	
All Cause	All races and ethnicities	1999-2006	-1.30*	NA	
		2006-2012	-4.41*	-0.03**	
		2012-2020	1.19*	0.06**	
	American Indian or Alaska Native	1999-2002	4.43*	NA	
		2002-2010	-1.68*	-0.06**	
		2010-2013 2013-2020	-5.70 3.01*	-0.04 0.09	
Asian or Pacific Islander	1999-2011 2011-2020	-4.02* 0.64	NA 0.05**		
Black	1999-2014 2014-2020	-2.00* 4.12*	NA 0.06**		
Hispanic	1999-2005 2005-2013 2013-2020	-0.67 -5.26* 2.66*	NA -0.05** 0.08**		
White	1999-2007 2007-2010 2010-2020	-1.36* -6.07* -0.26	NA -0.05 0.06		
All injury	American Indian or Alaska Native	1999-2005 2005-2014 2014-2020	0.75 -3.22* 3.41*	NA -0.04** 0.07**	
		Asian or Pacific Islander	1999-2006 2006-2010 2010-2020	-2.03 -12.94* 2.63*	NA -0.12** 0.16**
			Black	1999-2014 2014-2020	-2.09* 5.95*
	Hispanic		1999-2006 2006-2012 2012-2018 2018-2020	-1.18 -7.78* 1.69 13.64*	NA -0.07** 0.10** 0.11**
		White	1999-2005 2005-2012 2012-2020	-0.77 -4.61* 0.75	NA -0.04** 0.05**
Firearm	American Indian or Alaska Native	1999-2013 2013-2020	-2.41* 9.74*	NA 0.12**	
		Asian or Pacific Islander	1999-2001 2001-2006 2006-2009 2009-2020	-23.05 5.94 -31.11 9.12	NA 0.32 -0.43 0.46
	Black		1999-2002 2002-2007 2007-2013 2013-2020	-5.92 5.96 -5.97 9.40*	NA 0.12 -0.12** 0.15**
			Hispanic	1999-2006 2006-2014 2014-2020	-1.60 -7.70* 9.96*
	White	1999-2007 2007-2020		-3.89* 4.17*	NA 0.08**
	Motor vehicle crashes	American Indian or Alaska Native	1999-2001 2001-2020	9.04 -4.19*	NA -0.13
Asian or Pacific Islander			1999-2006 2006-2010 2010-2020	-2.49 -16.73* -2.30	NA -0.16 0.16
		Black	1999-2007 2007-2010 2010-2020	-2.43 -12.17* 2.64*	NA -0.11 0.16
			Hispanic	1999-2005 2005-2011 2011-2020	0.97 -11.67* 1.23
White		1999-2007 2007-2010 2010-2020		-2.24 -14.94* -2.08	NA -0.14 0.14

Cause of Death	Race or Ethnicity	Years	Slope (annual percent change)	Change in slope
Drug-related	Black	1999-2018 2018-2020	2.94* 71.93*	NA 0.51**
	Hispanic	1999-2018 2018-2020	1.77* 79.19*	NA 0.57**
	White	1999-2006 2006-2018 2018-2020	16.17* -2.78* 27.14*	NA -0.18** 0.27
Homicide	American Indian or Alaska Native	1999-2016 2016-2020	-1.83* 11.97*	NA 0.13**
	Asian or Pacific Islander	1999-2020	-5.17*	NA
	Black	1999-2007 2007-2014 2014-2020	1.92* -4.07* 8.29*	NA -0.06** 0.12**
	Hispanic	1999-2007 2007-2013 2013-2018 2018-2020	-1.06 -9.45 -0.10 18.50*	NA -0.09** 0.10** 0.17**
	White	1999-2014 2014-2020	-2.10* 4.04*	NA 0.06**
Suicide	American Indian or Alaska Native	1999-2020	3.09*	NA
	Asian or Pacific Islander	1999-2010 2010-2018 2018-2020	-1.74 10.86 -4.10	NA 0.12** -0.15
	Black	1999-2002 2002-2014 2014-2020	-7.73 2.13 9.55*	NA 0.10 0.07**
	Hispanic	1999-2012 2012-2020	0.03 7.63*	NA 0.07**
	White	1999-2008 2008-2018 2018-2020	-0.74 5.78* -7.50	NA 0.06** -0.13**
Unintentional Motor Vehicle Crashes	American Indian or Alaska Native	1999-2001 2001-2020	9.55 -4.17*	NA -0.13
	Asian or Pacific Islander	1999-2006 2006-2010 2010-2020	-2.41 -16.81* -2.33	NA -0.16 0.16
	Black	1999-2007 2007-2010 2010-2020	-2.42 -12.25* 2.62*	NA -0.11 0.16
	Hispanic	1999-2005 2005-2011 2011-2020	1.03 -11.71* 1.21	NA -0.13** 0.14**
	White	1999-2003 2003-2007 2007-2010 2010-2020	0.03 -4.38 -13.78 -2.21	NA -0.05 -0.10 0.13
Unintentional Poisoning	Black	1999-2018 2018-2020	2.94* 71.93*	NA 0.51**
	Hispanic	1999-2018 2018-2020	1.77* 79.19*	NA 0.57**
	White	1999-2006 2006-2018 2018-2020	16.17* -2.78* 27.14*	NA -0.18** 0.27

* Indicates that slope (annual percent change) was significantly different from zero (p<.05)

** Indicates that the change in slope was significantly different from prior slope (p<.05)

eTable 3. Mortality ratios and 95% CIs for various races and ethnicities relative to the non-Hispanic White population for youth 1-19 years

			American Indian or Alaska Native: White	Asian or Pacific Islander: White	Black: White	Hispanic: White
All-cause			2.03 (1.93, 2.12)	0.63 (0.61, 0.66)	1.76 (1.73, 1.79)	0.89 (0.88, 0.91)
All Injury			2.30 (2.17, 2.43)	0.49 (0.47, 0.52)	1.79 (1.76, 1.83)	0.85 (0.93, 0.87)
Injury	Mechanism	Firearm	2.14 (1.88, 2.43)	0.45 (0.40, 0.50)	4.14 (4.00, 4.28)	0.99 (0.95, 1.03)
		Motor Vehicle Crashes	2.14 (1.93, 2.36)	0.34 (0.31, 0.38)	1.17 (1.13, 1.23)	0.88 (0.85, 0.91)
		Drug-related	1.50 (1.21, 1.84)	0.35 (0.29, 0.41)	0.67 (0.61, 0.73)	0.68 (0.64, 0.73)
		Drowning	1.52 (1.17, 1.95)	0.78 (0.68, 0.90)	1.74 (1.62, 1.87)	0.82 (0.75, 0.88)
		Suffocation	3.71 (3.28, 4.17)	0.81 (0.72, 0.89)	0.84 (0.78, 0.90)	0.75 (0.71, 0.80)
		Fire/Burn	1.68 (1.09, 2.47)		1.95 (1.74, 2.19)	0.57 (0.49, 0.66)
	Intentional	Homicide	3.57 (3.05, 4.17)	0.70 (0.61, 0.81)	10.20 (9.75, 10.66)	2.11 (1.99, 2.22)
		Suicide	2.60 (2.35, 2.86)	0.65 (0.60, 0.71)	0.60 (0.57, 0.64)	0.57 (0.54, 0.60)
	Unintentional	Motor Vehicle Crashes	2.15 (1.95, 2.34)	0.34 (0.31, 0.38)	1.17 (1.13, 1.22)	0.88 (0.85, 0.91)
		Poisoning	1.56 (1.24, 1.94)	0.29 (0.23, 0.36)	0.61 (0.55, 0.67)	0.76 (0.70, 0.81)
		Drowning	1.44 (1.09, 1.86)	0.73 (0.63, 0.85)	1.70 (1.58, 1.83)	0.81 (0.75, 0.88)
		Suffocation		0.57 (0.40, 0.78)	1.49 (1.29, 1.73)	0.74 (0.63, 0.87)
		Fire/Burn			1.81 (1.59, 2.05)	0.59 (0.50, 0.69)
	Disease	Cancer		1.15 (0.93, 1.40)	0.94 (0.86, 1.04)	1.07 (1.01, 1.14)
Congenital Anomalies		1.56 (1.21, 1.98)	0.77 (0.67, 0.89)	1.54 (1.43, 1.66)	0.94 (0.88, 1.01)	
Circulatory Diseases		1.50 (1.13, 1.96)	0.94 (0.81, 1.08)	2.18 (2.03, 2.35)	0.87 (0.80, 0.95)	
Asthma			0.61 (0.37, 0.96)	7.80 (6.78, 8.99)	1.04 (0.84, 1.27)	
Influenza and pneumonia		3.11 (2.20, 4.28)	1.05 (0.82, 1.32)	1.58 (1.37, 1.80)	0.89 (0.77, 1.02)	
COVID-19			0.78 (0.48, 1.21)	2.70 (2.23, 3.27)	1.69 (1.40, 2.03)	
Other Infection		2.55 (1.84, 3.44)	1.29 (1.07, 1.55)	1.53 (1.36, 1.72)	1.14 (1.02, 1.27)	

Bolded ratios are statistically significant (p<.05)
Data are from 2016-2020 except COVID-19 that includes data from 2020-2021