

Adolescent suicide in New Jersey

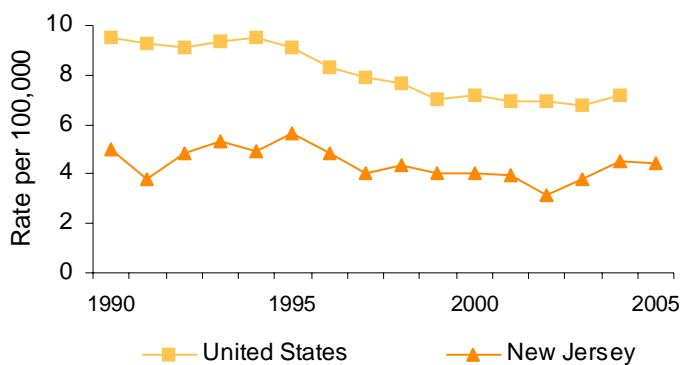


An Office of Injury Surveillance and Prevention Brief -- April 27, 2007

- New Jersey has lower than average suicide rates for all age groups.
- Nationally, adolescent suicide rates have declined about twenty percent since 1990.
- In 2004 there were 79 suicides in New Jersey among those aged 10-24 years, an increase of over twenty percent from 2003. Preliminary 2005 data show 77 suicides, a very small decline from 2004.
- The number of non-fatal suicide attempts requiring hospitalization also rose in 2004 to 926, an increase of nearly ten percent, but in 2005 declined by over 12 percent to 819.

Suicide among adolescents and young adults is rare when compared with other age groups, yet it is extremely costly in terms of both years of life lost and the impact on survivors. Over the last several decades, adolescent suicide rates have fallen, largely due to a decline in firearm suicides. New Jersey has a very low gun ownership rate (11% as compared with 35% nationally). This helps to prevent adolescent firearm suicides, where most of the time the gun used belongs to a family member. As an example, New Jersey, with a population of 2.3 million youth between the ages of 5-24 years in 2004 had 16 firearm suicides, while Arizona, with a higher gun ownership rate but only 1.7 million youths, had 79 firearm suicides in the same year.

Figure 1. Suicide rate, United States and New Jersey, ages 10-24 years, 1990-2005*



*Preliminary 2005 data. Rates are per 100,000 age-specific population. Data Source: Web-based Injury Statistics Query and Reporting System (WISQARS) (US 1990-2004; NJ 1990-2002); New Jersey Violent Death Reporting System, v.02/13/2007 (2003-2005).

During the past five years there have been approximately 65 suicides annually in New Jersey among those aged 10-24 years, although this number varies from year to year. Data from 2004 show an increase in the number of adolescent suicides, particularly among males aged 10-19 years. The rate of non-fatal suicides requiring hospitalization increased as well in 2004 but then dropped again in 2005. The adolescent suicide rate increased more than did the rate of non-fatal injury in 2004 and 2005. It is too soon to say whether this represents a temporary fluctuation or the reversal of a relatively long-time trend in suicide deaths.



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Table 1. Suicide and hospitalizations for self-injury among youth ages 10-24 years, New Jersey, 1999-2005*

Year	Fatal		Non-fatal	
	N	Rate	N	Rate
1999	63	4.0	763	48.5
2000	65	4.1	821	51.4
2001	65	4.0	883	53.9
2002	53	3.2	845	50.9
2003	64	3.8	853	50.1
2004	79	4.6	926	53.4
2005	77	4.4	819	46.7

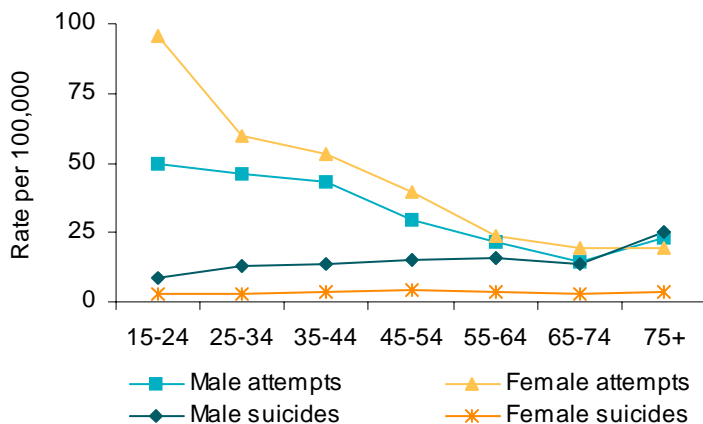
*Preliminary 2005 data. Rates are per 100,000 age-specific population. Data sources: WISQARS (1999-2002), New Jersey Violent Death Reporting System, v.02/13/2007 (2003-2005), New Jersey Uniform Billing (UB-92) Discharge Data; Bridged-race Estimates for population.

Table 2. Suicide and hospitalizations for self-injury among youth ages 10-24 years, New Jersey, 1999-2003

	Age 10-19		Age 20-24	
	N	Rate	N	Rate
Total suicides	113	2.0	198	8.2
Male	93	3.2	149	12.0
Female	21	0.8	47	4.0
Total hospitalizations	2,469	42.9	1,696	70.2
Male	663	22.5	725	58.6
Female	1,806	64.5	971	82.3

Rates are per 100,000 age-specific population. Data sources: WISQARS (1999-2002), New Jersey Violent Death Reporting System, v.07/14/2006 (2003-2004), New Jersey Uniform Billing (UB-92) Discharge Data; Bridged-race Estimates for population.

Figure 2. Age-specific rates of fatal and non-fatal self-injury, New Jersey, 1999-2003



Data Sources: WISQARS; New Jersey Uniform billing (UB-92) Discharge Data; Bridged Race Estimates for population.

Adolescents differ from others in their greater propensity to engage in non-fatal suicidal behavior. In New Jersey, there are more than ten non-fatal suicide attempts resulting in hospitalization for each completed suicide among those aged 10-24 years. Even more non-fatal attempts result in Emergency Department, outpatient, or home treatment.

The ratio of attempted to completed suicide is highest among young adults, and lowest among adults aged 65 years and over, for whom there are three attempts for each completion. For the population as a whole, the ratio is approximately seven to one.

Even within the ages 10-24 years, the ratio of attempted to completed suicide declines with age. Among those aged 10-19 years, there are over 20 hospitalizations for each completed suicide. Among those aged 20-24 years, the ratio declines to less than ten. Suicide rates quadruple in the older age group, while hospitalization rates less than double.

While most completed suicides are preceded by one or more non-fatal attempts, the vast majority of suicide attempters do not ultimately complete suicide. This is especially true in the case of adolescent females. The ratio of non-fatal to fatal attempts is highest for young females, who have both the highest rate of non-fatal attempts and the lowest rate of completed suicide when compared to the rest of the population. As females age, suicide rates remain relatively stable while attempt rates decline sharply. Yet even in the oldest age groups, the ratio of attempts to completions for females well exceeds that for males.

Table 3. Youth suicide, by gender and race/ethnicity, New Jersey residents, 1999-2005**

	1999		2000		2001		2002		2003		2004		2005	
	10-19	20-24	10-19	20-24	10-19	20-24	10-19	20-24	10-19	20-24	10-19	20-24	10-19	20-24
Males	17	31	29	25	13	29	17	29	17	35	30	34	22	46
Females	3	12	4	7	9	14	0	7	5	7	8	7	3	6
Total	20	43	33	32	22	43	17	36	22	42	38	41	25	52
White	11	32	25	21	14	29	11	27	14	25	26	28	20	34
Black	4	6	4	6	4	7	4	5	2	7	5	8	3	7
Hispanic	5	3	3	1	2	4	2	3	4	6	5	3	2	8
Native American	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Asian/Pacific Islander	0	2	1	4	2	3	0	1	1	3	1	2	0	1
Total*	20	43	33	32	22	43	17	36	22	42	38	41	25	52

*Total for 2003 (10-19, 20-24), 2004 (10-19), and 2005 (20-24) each include one death where race/ethnicity is unknown.

**Preliminary 2005 data.

White, Black, and Asian/Pacific islander do not include Hispanics; Hispanics can be of any race.

Data sources: WISQARS for 1999-2002; New Jersey Violent Death Reporting System, v.02/13/2007 for 2003-2005.

Table 4. Youth suicide, ages 10-24 years, by gender and mechanism, New Jersey 1999-2004

	Males		Females	
	N	%	N	%
All suicides	306	100.0	83	100.0
Suffocation	155	50.7	38	45.8
Firearm	85	27.8	11	13.3
Poisoning	26	8.5	20	24.1
Falls	15	4.9	2	2.4
Cut/pierce	5	1.6	1	1.2
All other mechanisms	20	6.5	11	13.3

Data sources: WISQARS (1999-2002), New Jersey Violent Death Reporting System, v.07/14/2006 (2003-2004).

Table 5. Hospitalizations for self-injury by youth ages 10-24 years, by gender and mechanism, New Jersey, 1999-2004

	Males		Females	
	N	%	N	%
All hospitalizations	1,712	100.0	3,379	100.0
Poisoning	1,499	87.6	3,294	97.5
Cut/pierce	111	6.5	46	1.4
Suffocation	25	1.5	8	0.2
Falls	18	1.1	13	0.4
Firearm	18	1.1	5	0.1
All other mechanisms	41	2.4	13	0.4

Data source: New Jersey Uniform Billing (UB-92) Discharge Data.

Data from the New Jersey Violent Death Reporting System on suicide circumstances suggest that compared to other age groups, suicides among adolescents are often preceded by some kind of recent crisis. This crisis could be an argument with family members, a break-up of a relationship, an arrest, or some other type of sudden problem. Especially in the case of males, the crisis may be very recent, often less than 24 hours before the suicide. Adolescents were five times as likely as others to have had some type of “relationship problem”, usually a conflict with family members. Approximately forty percent of adolescents in New Jersey who complete suicide have some history of mental illness; slightly over thirty percent are currently being treated for a mental health problem. This is similar to suicides overall.

The primary method of suicide for adolescents is suffocation, or hanging. Firearms are the second most frequently used mechanism among males, followed by poisoning. For females, poisoning is the second most frequently used mechanism. Almost all non-fatal suicide attempts involve poisoning, usually an overdose of a prescription or non-prescription medication.

Table 6. County-level self-inflicted injuries, ratio of attempts to completions, New Jersey, 1999-2003

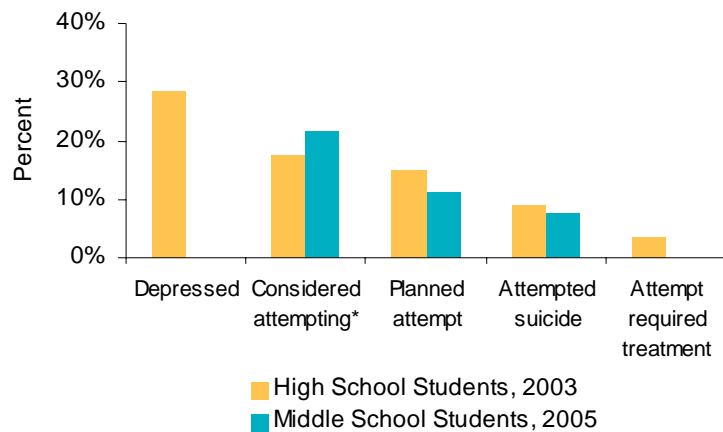
	Self-injury hospitalizations (H)	Completed suicides (S)	Ratio H:S
Atlantic	136	10	13.6
Bergen	330	26	12.7
Burlington	192	15	12.8
Camden	291	27	10.8
Cape May	47	6	7.8
Cumberland	102	9	11.3
Essex	387	22	17.6
Gloucester	127	12	10.6
Hudson	303	17	17.8
Hunterdon	59	2	29.5
Mercer	231	20	11.6
Middlesex	406	31	13.1
Monmouth	317	30	10.6
Morris	148	16	9.3
Ocean	235	21	11.2
Passaic	337	10	33.7
Salem	42	3	14.0
Somerset	129	13	9.9
Sussex	101	5	20.2
Union	180	13	13.8
Warren	63	3	21.0
NJ Youth Total	4,165	311	13.4

Total includes 2 hospitalizations where county of residence is unknown.
Data sources: WISQARS, New Jersey Uniform Billing (UB-92) Discharge Data.

The geographical pattern of adolescent suicides in New Jersey is different from that of older adults. While suicide rates among older adults are highest in rural counties in Southern and Northwestern New Jersey, adolescent suicides are relatively more common in densely populated areas. The geographical pattern of adolescent suicides is similar to that of non-fatal suicide attempts, which are in general more likely in urban areas.

The ratio of attempted to completed suicide is generally higher in Northern New Jersey, and lower in the southern part of the state. The Northern New Jersey counties with high ratios of attempts to completions include urban counties such as Essex and Hudson, as well as rural counties like Sussex and Warren. The regional pattern in the ratio of attempts to completions among adolescents may reflect geographical differences in hospital use overall.

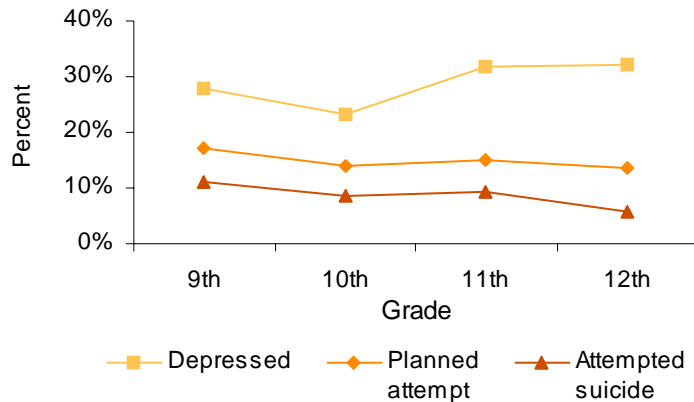
Figure 3. Self-reported depression and suicidal ideation among New Jersey middle and high school students



*Note: In the high school survey, the phrasing is "considered attempting", in the middle school survey the phrasing is "seriously thought about suicide".
Data sources: New Jersey Student Health Survey of High School Students, 2003; New Jersey Student Health Survey of Middle School Students, 2005.

Nearly ten percent of middle and high school students in New Jersey report that they attempted suicide. This is consistent with national estimates. However, rates of hospitalization for self-injury in this age group are far lower – closer to fifty per one hundred thousand. This enormous discrepancy may result in part from the fact that many suicide attempts do not require hospitalization or even medical treatment. Approximately three percent of high school students reported that their attempt required treatment, but this figure still exceeds hospitalization rates for self-injury by a factor of roughly 100.

Figure 4. Self-reported depression and suicidal ideation by grade, New Jersey high school students, 2003



Data Source: New Jersey Student Health Survey of High School Students, 2003.

There appears to be a complicated relationship between suicidal thought and behavior among adolescents. As students age from 9th through 12th grade, the proportion who report feelings of depression rises, while at the same time the proportion reporting both suicidal plans or attempts declines. Yet rates of attempted and completed suicides actually rise as adolescents age. This discrepancy suggests that there is a rather significant difference between stated and actual suicidal behaviors that narrows as adolescents age.

For further information on youth suicide and prevention efforts:

New Jersey Department of Health and Senior Services, New Jersey Violent Death Reporting System
<http://www.state.nj.us/health/chs/oisp/njvdrs.shtml>

New Jersey Department of Health and Senior Services, Traumatic Loss Coalition
<http://www.state.nj.us/health/fhs/children/suicidepre.shtml>

New Jersey Department of Children and Families, Commission on Youth Suicide Prevention
<http://www.state.nj.us/dcf/about/commissions/suicide/>

American Foundation for Suicide Prevention
<http://www.afsp.org>

Suicide Prevention Resource Center (summary of activities in all 50 states)
<http://www.sprc.org/index.asp>

Note: All tables and figures in this brief provide information on New Jersey resident deaths and New Jersey resident hospital admissions to in-state hospitals. E-codes: ICD-9-CM Self-inflicted injury, all (E950-E959), Poisoning (E950-E952), Cut/pierce (E954), Falls (E957), Suffocation (E953), Firearm (E955); ICD-10 Suicide, all (X60-X69, U03, Y87.0), Poisoning (X60-X69), Cut/pierce (X78), Falls (X80), Suffocation (X70), Firearm (X72-X74).

The New Jersey Violent Death Reporting System (NJVDRS) is a CDC-funded surveillance system, a collaborative effort of the Center for Health Statistics of the New Jersey Department of Health and Senior Services and the Violence Institute of New Jersey at the University of Medicine and Dentistry of New Jersey. The project seeks to help researchers determine the circumstances and risk factors associated with suicide and other violent deaths by linking timely data from multiple detailed sources. Hospitalization data is from the New Jersey Discharge Data Collection System, commonly known as UB-92 data- this brief includes only inpatient hospitalizations. E-codes have been assigned based on the *Consensus Recommendations for Using Hospital Discharge Data for Injury Surveillance* from STIPDA. Information on the New Jersey Student Health Survey can be found at the New Jersey Department of Education website: <http://www.state.nj.us/njded/students/yrbs/>.

National comparison figures and trend data: Centers for Disease Control and Prevention. Web-based Injury Statistics Query and Reporting System (WISQARS) [Online]. 2006. National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. Available from : www.cdc.gov/ncipc/wisqars. Accessed September 1, 2006.



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