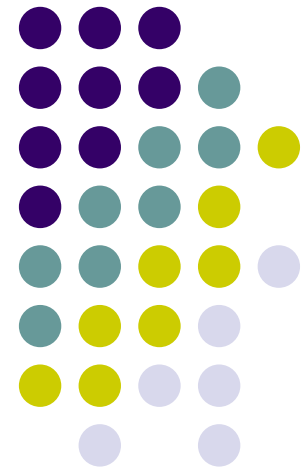
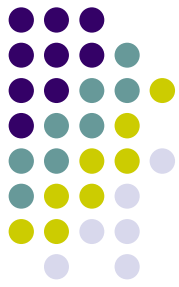


Youth Suicide: What can we learn from the New Jersey Violent Death Reporting System?

**Katherine Hempstead, Director
Center for Health Statistics
Office of Injury Surveillance and Prevention
May 16, 2006**





Outline

- **Background**
- **The New Jersey Violent Death Reporting System**
- **Implications for prevention**

Background



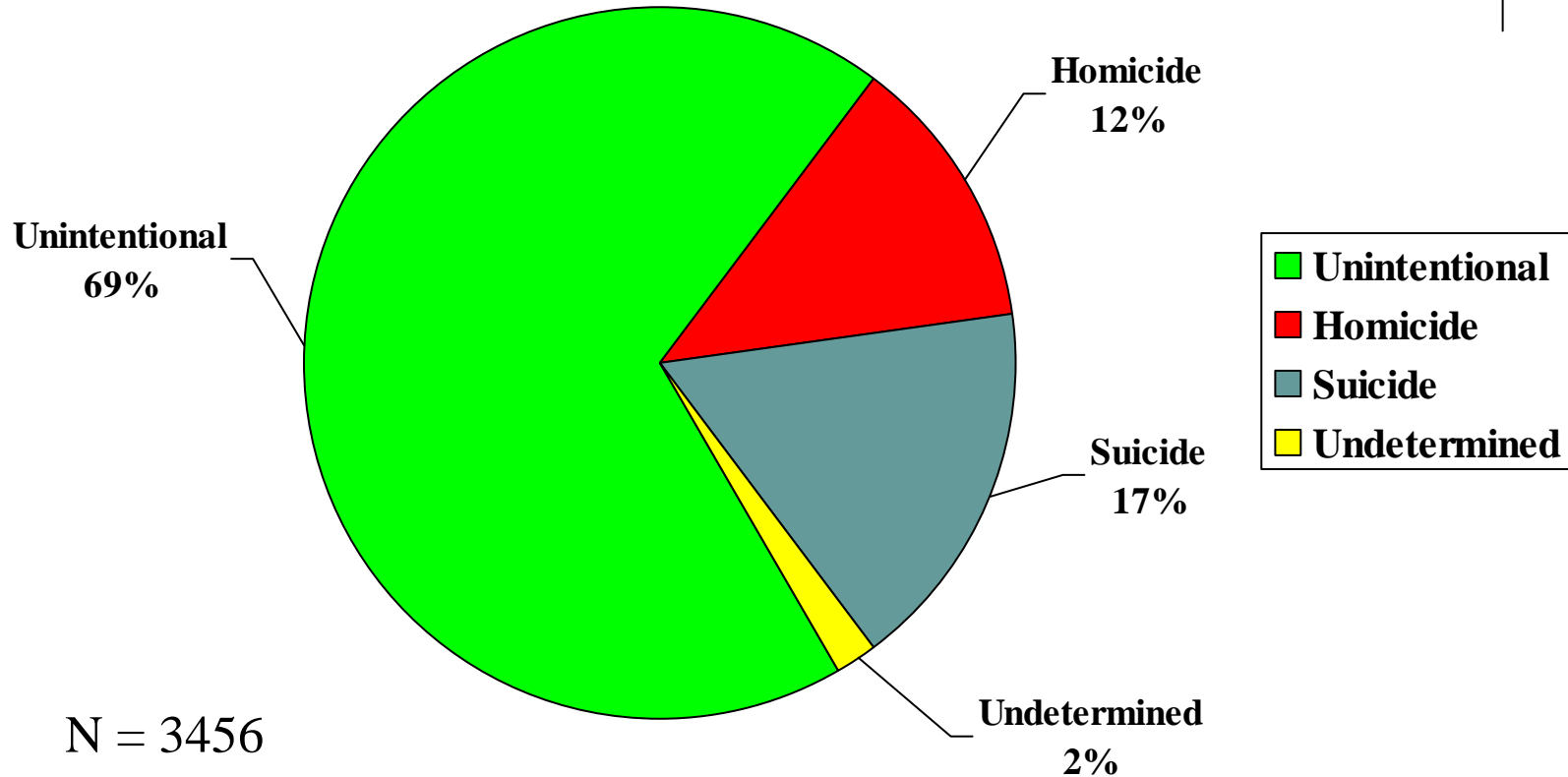
- Completed suicides
- Suicide attempts
- Suicidal thoughts



Completed Suicides

- Trends
- New Jersey versus the U.S.
- Mechanism

Distribution of deaths by intent, New Jersey, 2003



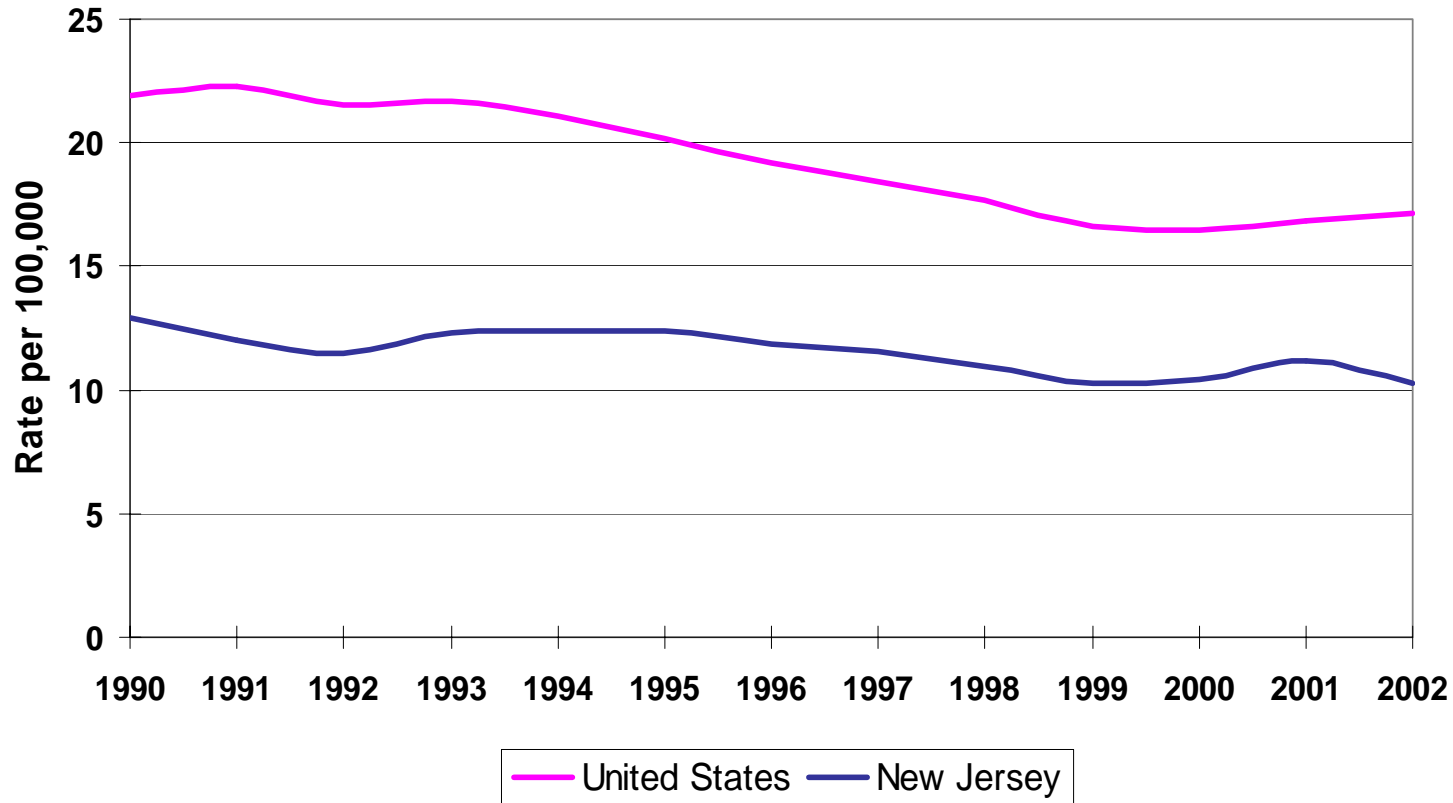
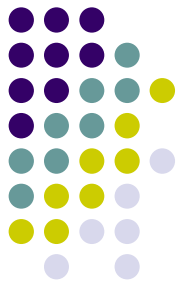
2003 data from National Center for Health Statistics Multiple Cause of Death file



New Jersey vs. the U.S.

- New Jersey has relatively low rates of intentional injury
- Rates of intentional injury have declined notably, both nationally and in New Jersey
- Most of this decline is attributable to decline in suicide

Age-adjusted intentional injury mortality rates, United States and New Jersey, 1990-2002*

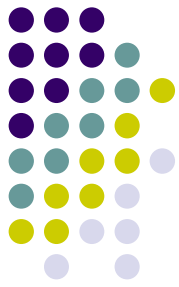


1990-2002 data from CDC WISQARS; *2001 data excludes September 11, 2001 deaths



New Jersey versus the U.S.

- New Jersey generally has one of the lowest suicide rates in the nation
- Suicide rates have declined since 1990
- Decline roughly 20-25% for both U.S. and New Jersey
- Decline sharpest at younger ages



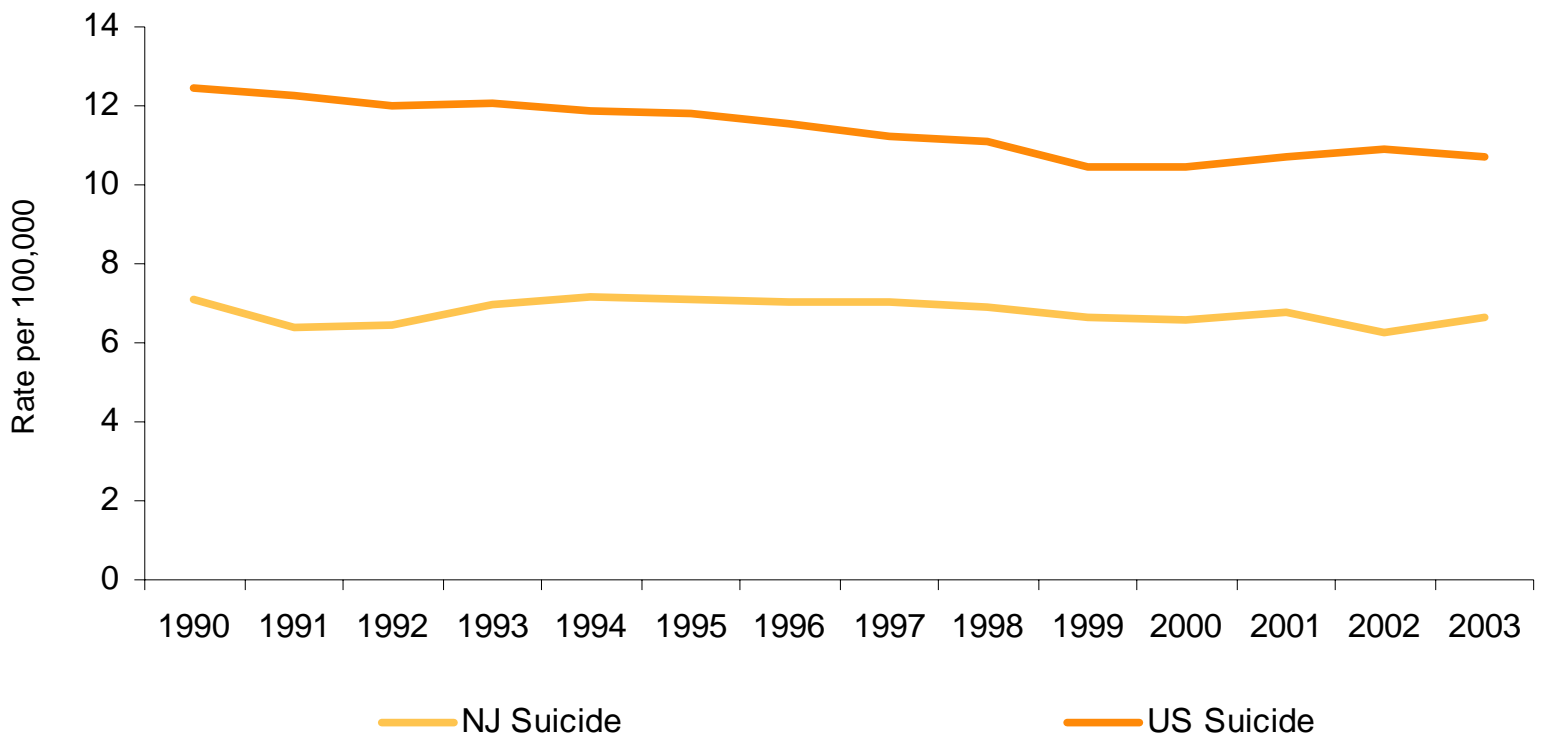
Suicide in New Jersey

- Rates are highest among white males
- Rates are highest at older middle ages (@ 45-64 years)
- Suffocation is leading mechanism, followed by firearms and poisoning
- There are at least 5-6 non-fatal attempts resulting in hospitalization for every completed suicide

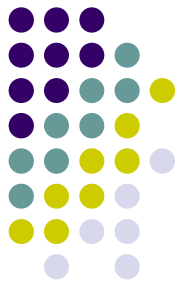




Figure 4. Suicide rates, New Jersey and the United States, 1990-2003



Mechanism



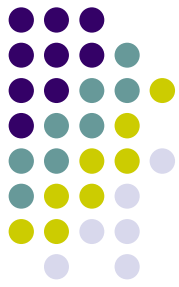
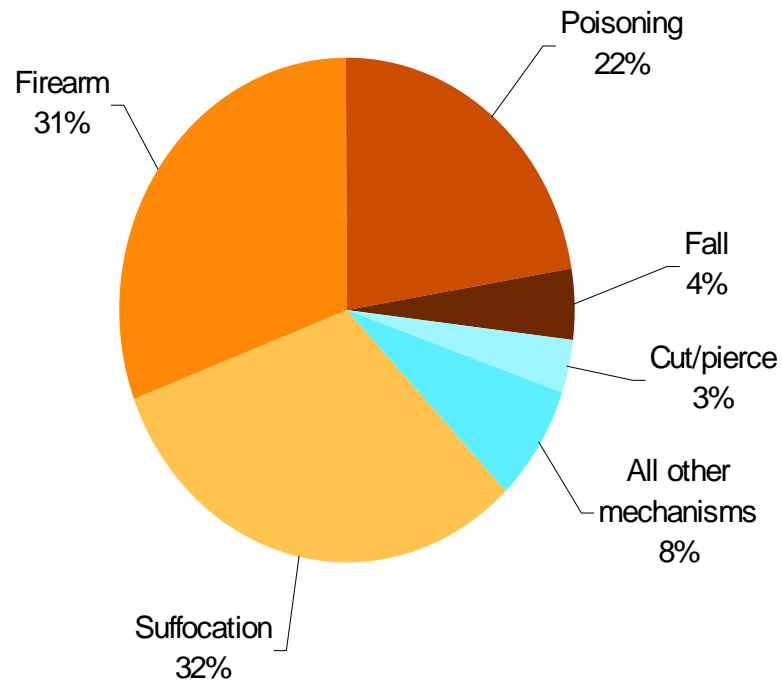


Figure 4. Distribution of mechanism of injury in suicide, New Jersey residents, 1999-2003



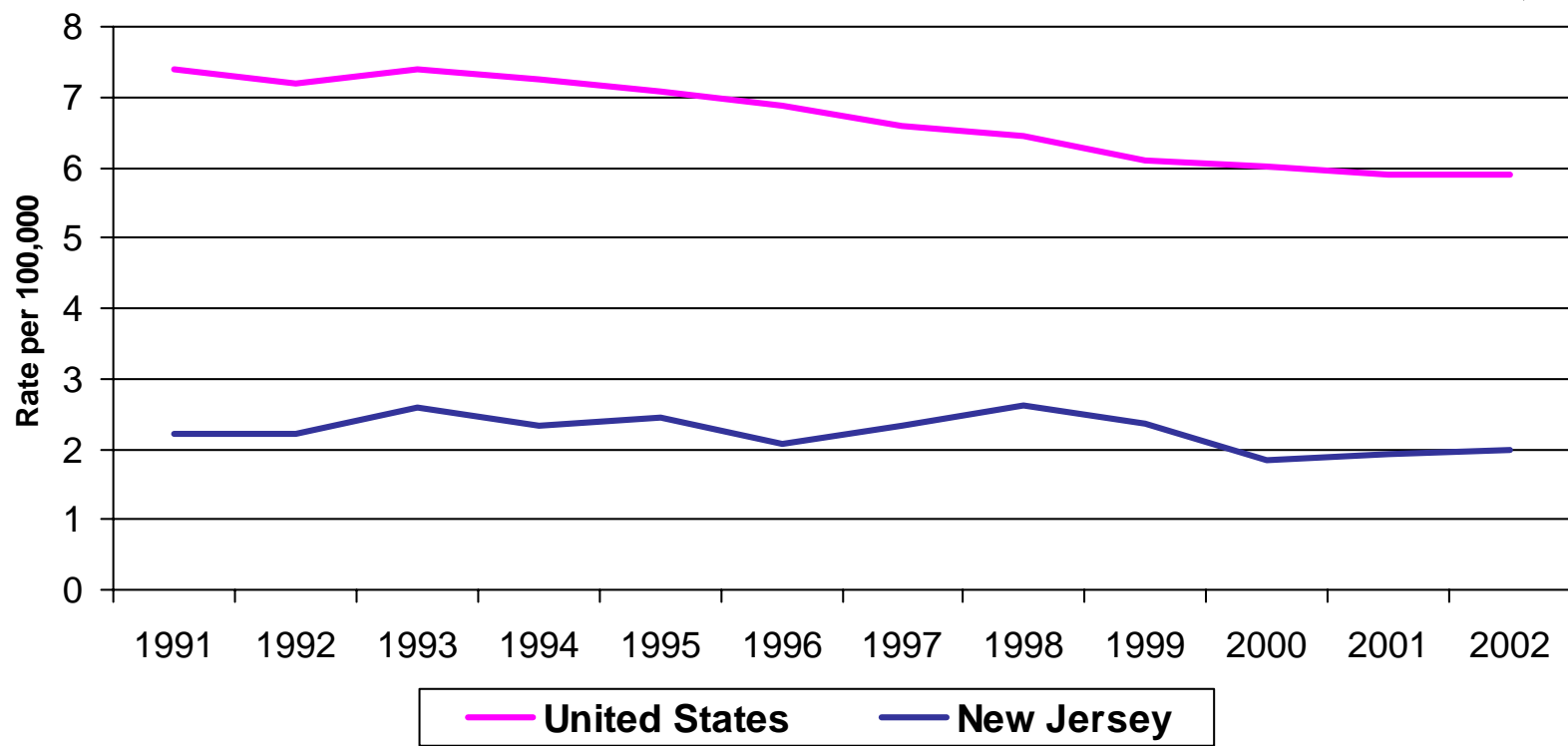


Firearms

- Lower firearm mortality rates in New Jersey than in nation
- Gun control laws strict in New Jersey – gun ownership relatively low
- Difference in N.J. and U.S. largely attributable to difference in rates of suicide by firearm



Age-adjusted firearm suicide rate, United States and New Jersey, 1991-2002



1990-2002 data from CDC WISQARS

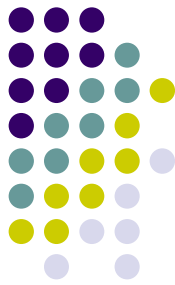
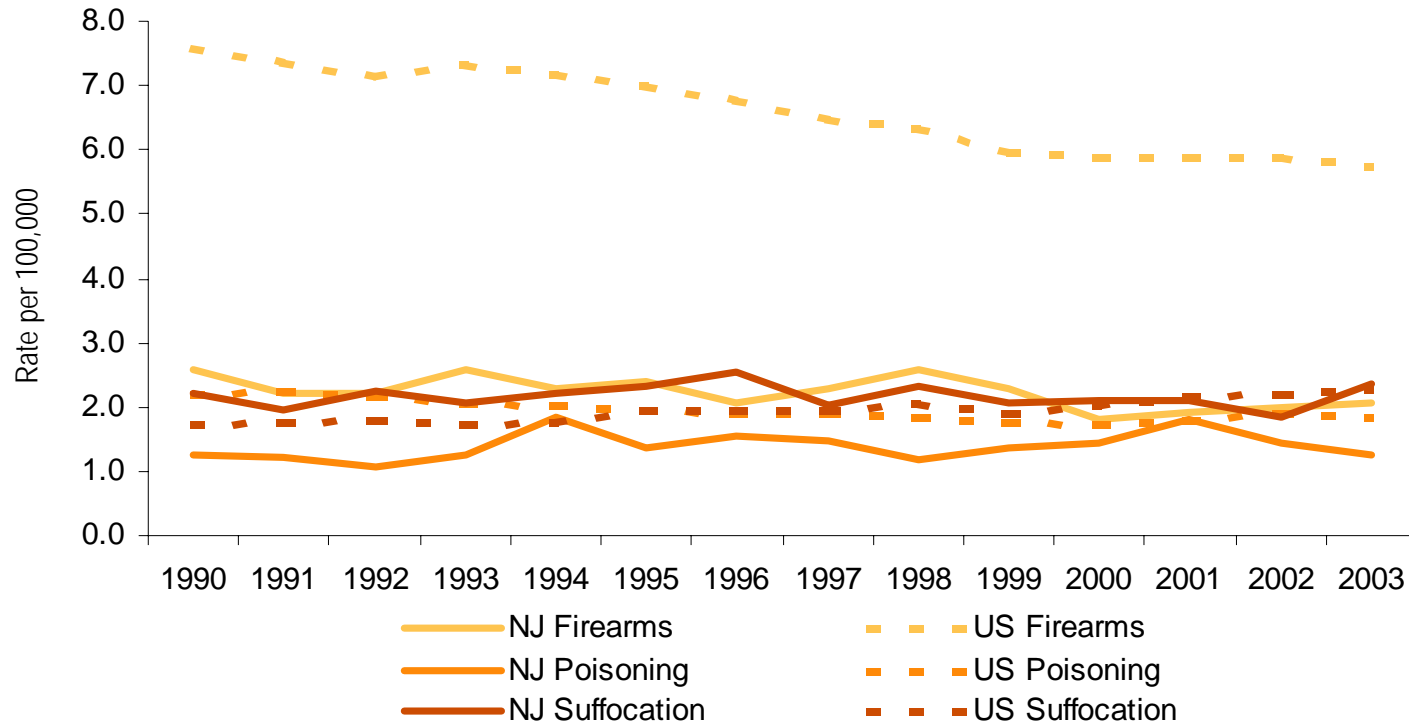


Figure . Leading mechanisms of suicide, New Jersey and the United States, 1990-2003





Geographical pattern

- Suicide rates in New Jersey are highest in more rural counties
- Mirrors national pattern
- Driven by male suicide rates
- Correlated with gun ownership rates



Table 4. County-level suicide rates by gender, New Jersey, 1999-2003

	Suicide, males		Suicide, females		All suicides	
	<i>N</i>	<i>Rate</i>	<i>N</i>	<i>Rate</i>	<i>N</i>	<i>Rate</i>
Atlantic	95	15.5	21	2.9	116	8.8
Bergen	198	9.1	74	3.0	272	5.8
Burlington	151	14.5	30	2.7	181	8.2
Camden	171	14.3	58	4.3	229	9.0
Cape May	33	13.3	4	**	37	7.2
Cumberland	46	13.0	10	**	56	7.5
Essex	166	9.4	45	2.1	211	5.3
Gloucester	97	15.8	25	3.7	122	9.4
Hudson	135	9.2	21	1.4	156	5.1
Hunterdon	40	13.2	6	**	46	7.1
Mercer	76	8.8	17	**	93	5.1
Middlesex	180	9.8	61	3.1	241	6.2
Monmouth	174	11.8	51	3.2	225	7.2
Morris	114	10.1	22	1.8	136	5.7
Ocean	192	14.7	44	2.9	236	8.4
Passaic	113	10.1	32	2.5	145	6.0
Salem	25	16.2	4	**	29	8.8
Somerset	65	9.1	14	**	79	5.2
Sussex	40	11.5	13	**	53	7.5
Union	112	9.0	32	2.2	144	5.4
Warren	35	13.9	10	**	45	8.3
NJ State Total	2,258	11.8	594	2.6	2,852	6.6

Rates are age-adjusted using the 2000 US Standard Population.

Data source: NCHS Vital Statistics System, Bridged Race Estimates for population.



Figure 11. Age adjusted county suicide rates and percent owning firearms, New Jersey, 1999-2000

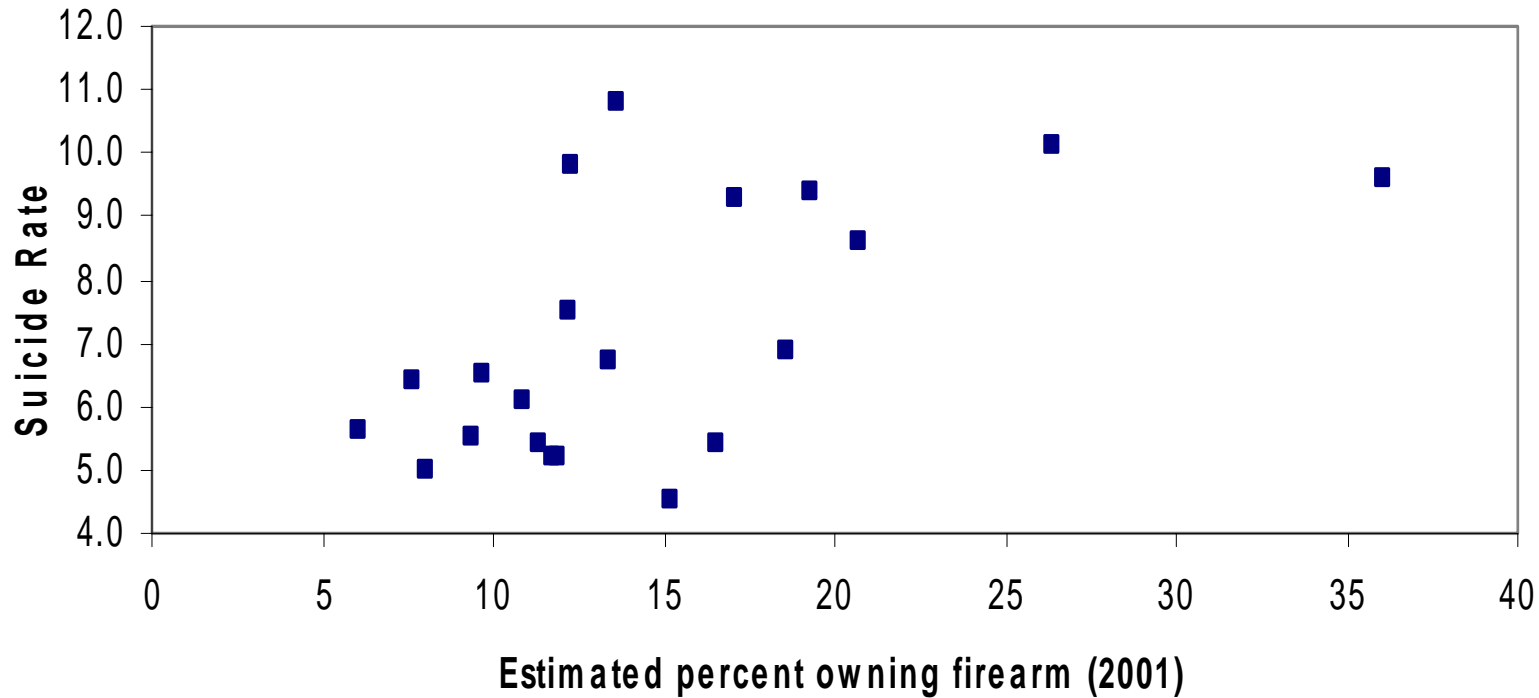
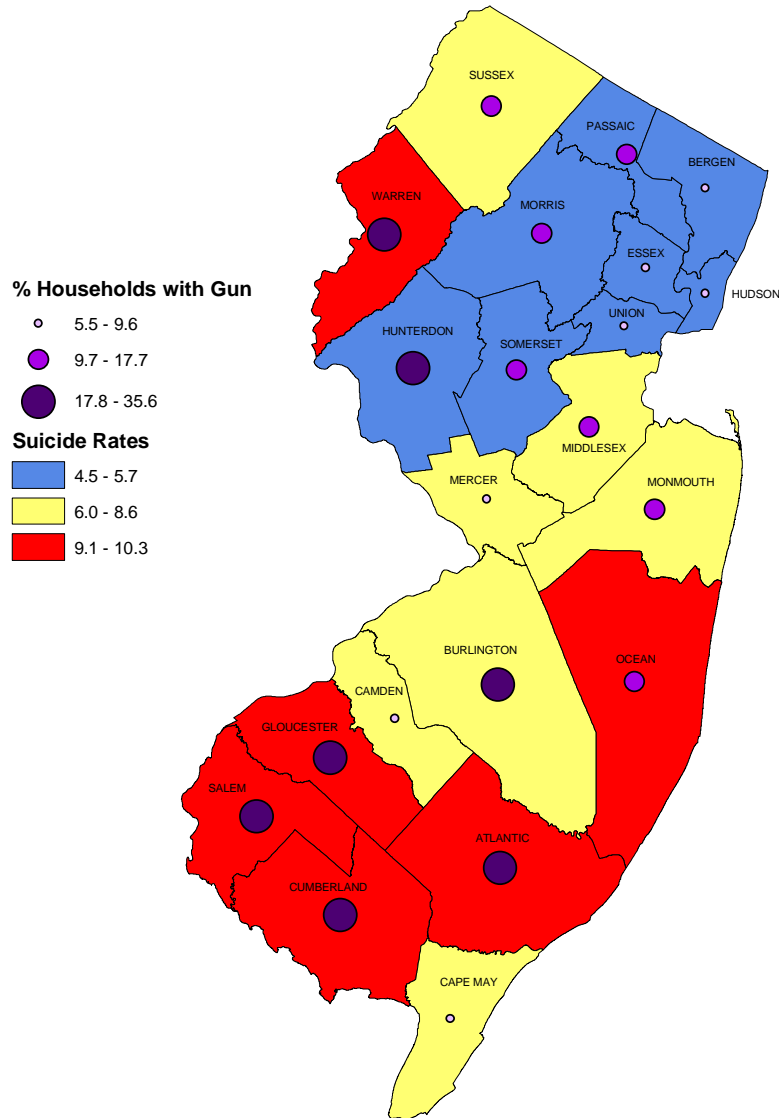
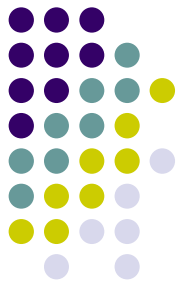


Figure 12. Age-adjusted Suicide Rates and Percentage of Households with a Gun by County, New Jersey, 1999-2000



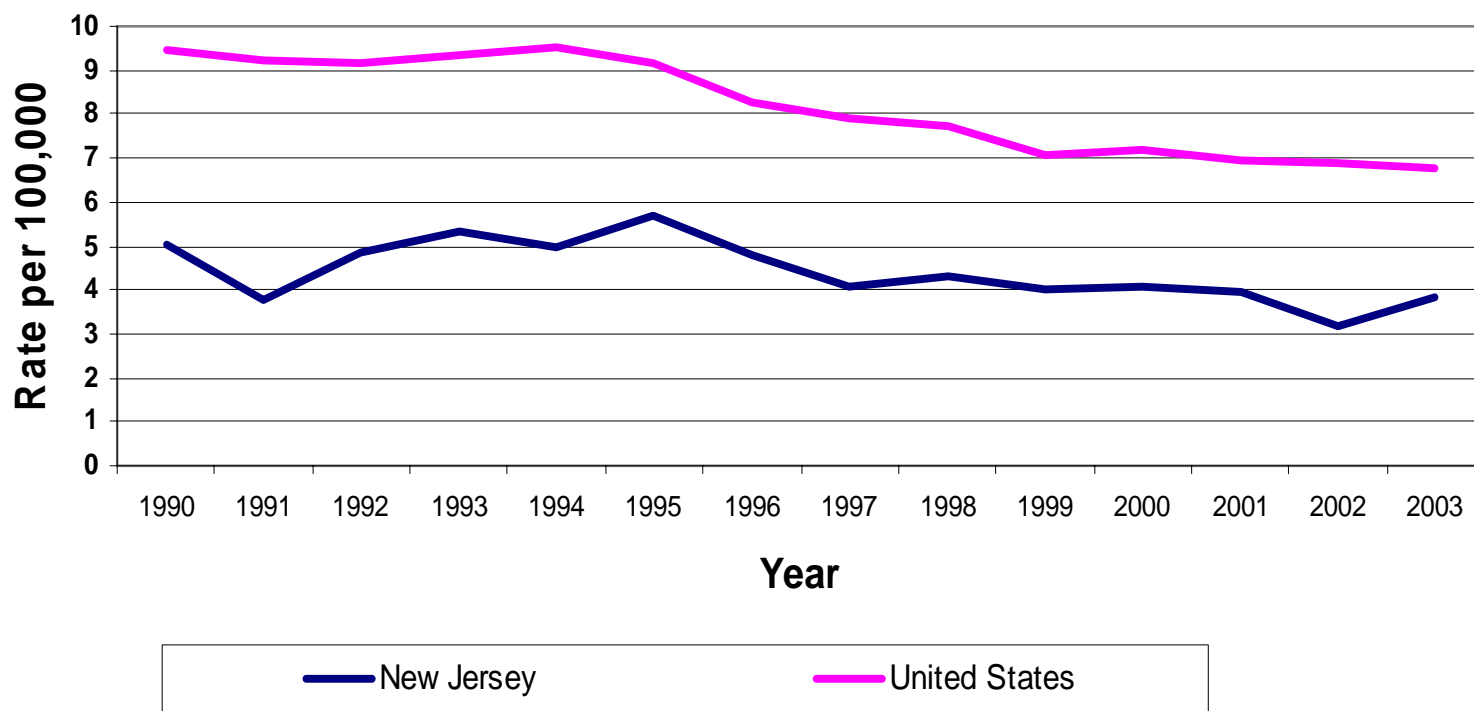


Adolescents

- Suicide rates among adolescents have declined, nationally and in New Jersey, since 1990
- Approximately 20-25%, depending on age group examined
- Decline in New Jersey in both firearm suicides and suffocations
- Other states have seen decline in firearm suicides and slight increase in suffocations



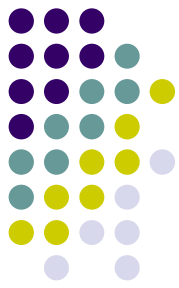
Suicide rate, United States and New Jersey, ages 10-24 years, 1990-2003



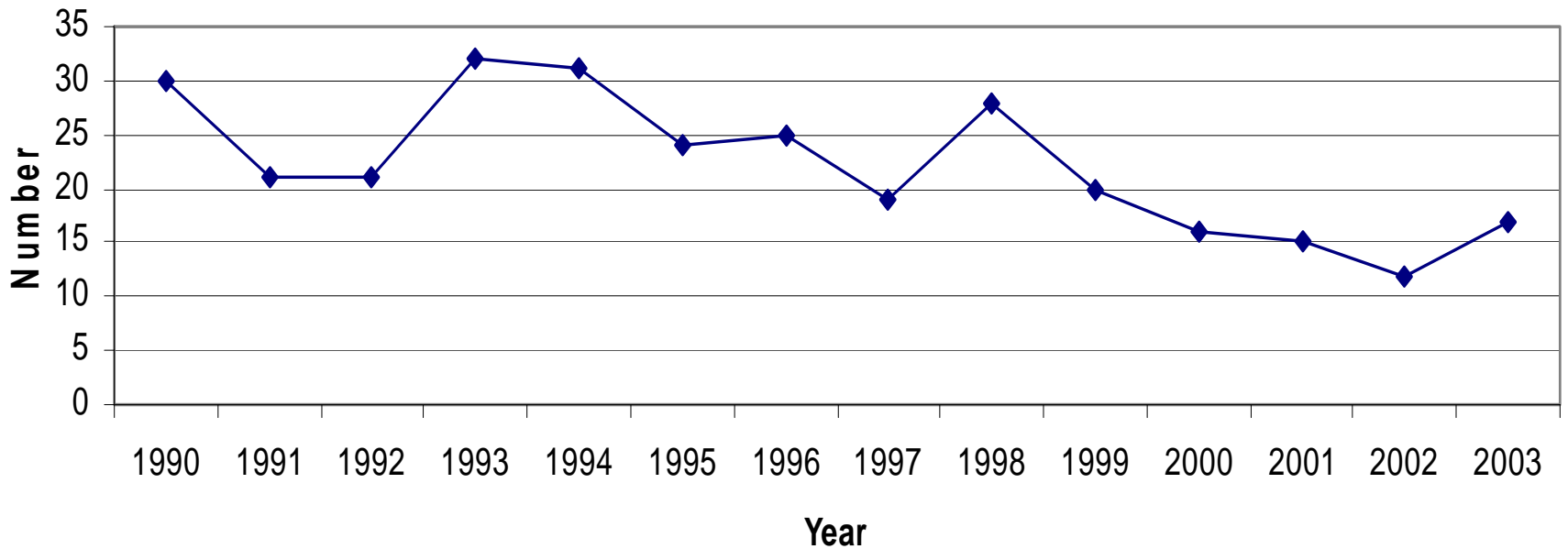


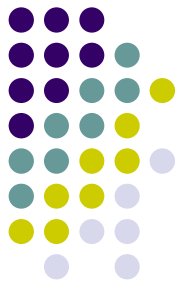
Adolescent firearm suicides

- New Jersey has low gun ownership rate (11%) – very important in adolescent firearm suicides – usually use family member's gun
- National gun ownership rate approximately 35%
- Example: New Jersey, 2.2 million aged 5-24 in 2002 – 12 firearm suicides
- Arizona – 1.6 million youths – 94 firearm suicides in same year

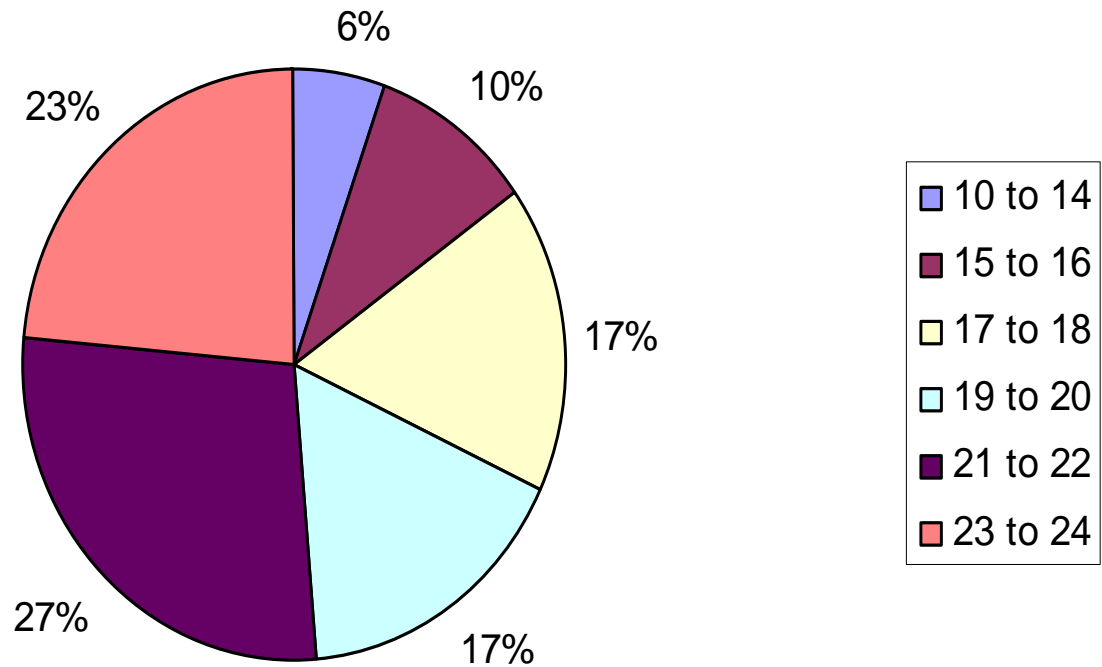


Suicides by firearm, New Jersey, Ages 10-24, 1990-2003



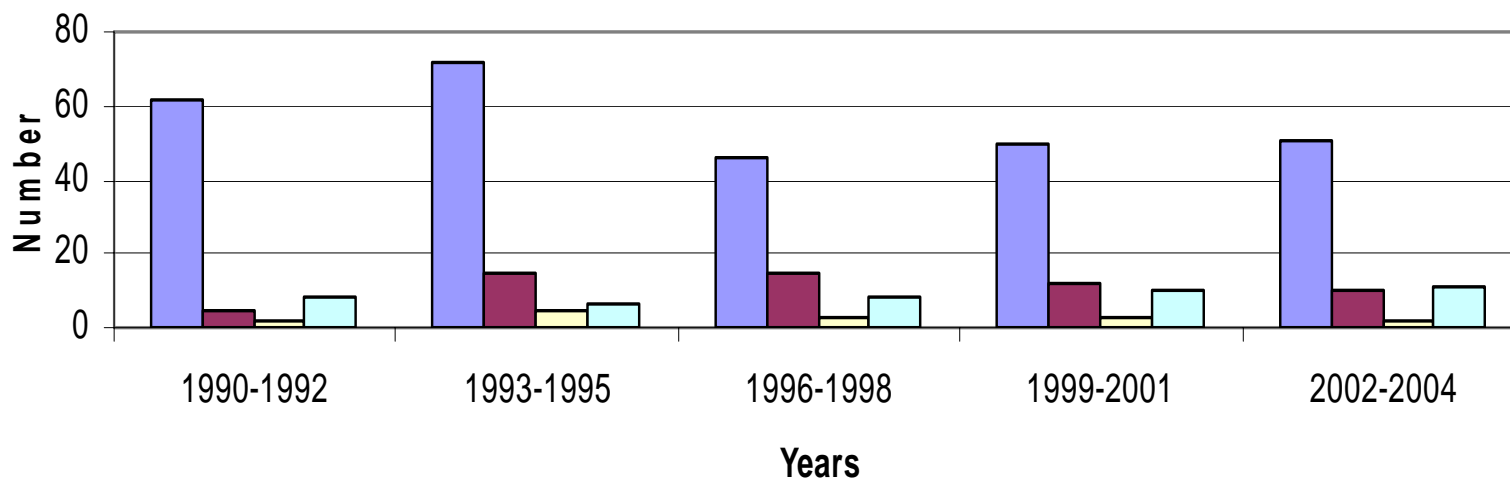


Youth Suicides, New Jersey Residents by Age Group, 2002-2004





Youth Suicides in New Jersey by Race/Ethnicity, Ages 10-19, 1990-2004



■ Non-Hispanic White

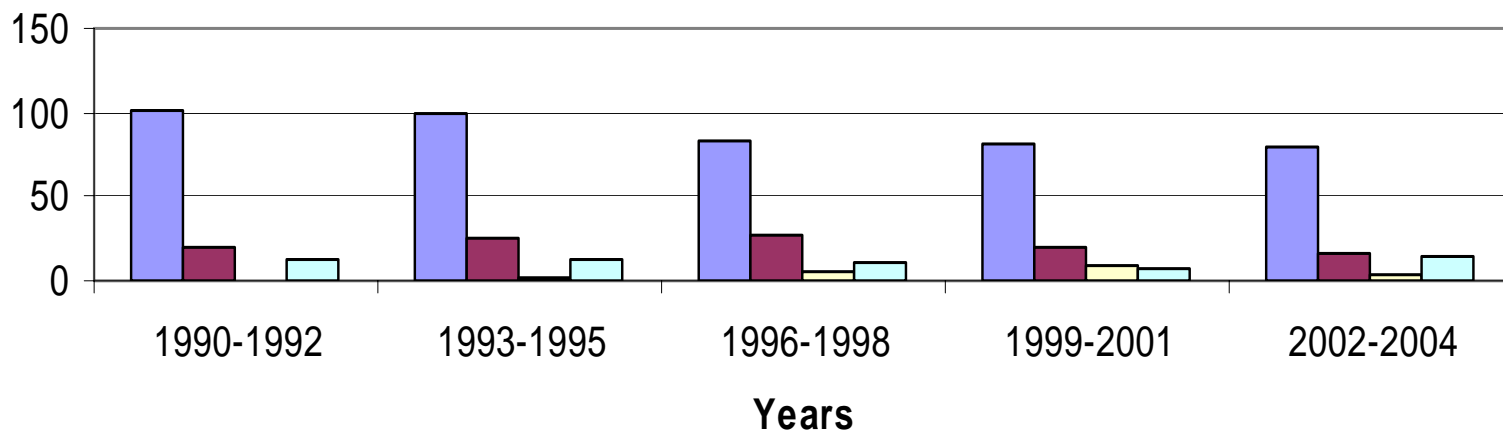
■ Non-Hispanic Black

■ Non-Hispanic All Other

■ All Hispanic



Youth Suicides in New Jersey by Race/Ethnicity, Ages 20-24, 1990-2004

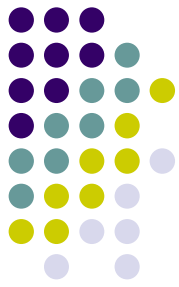


■ Non-Hispanic White

■ Non-Hispanic Black

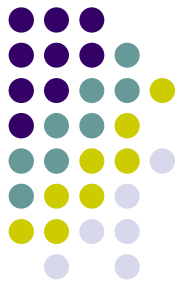
■ Non-Hispanic All Other

■ All Hispanic



Adolescent suicides

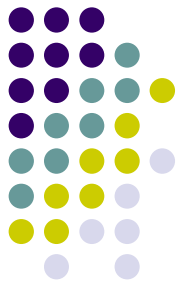
- 2003
- 8 foreign born:
 - Brazil
 - El Salvador
 - Guyana
 - Korea (2)
 - Peru
 - Poland
 - Taiwan



Some increase in 2003-2004

Youth Suicides, New Jersey Residents				
By Gender, Ages 10-19 and 20-24, 1999-2004				
Age Group		Males	Females	Total
10-19	1999	17	3	20
	2000	29	4	33
	2001	13	9	22
	2002	17	0	17
	2003	17	5	22
	2004	30	8	38
		Males	Females	Total
20-24	1999	31	12	43
	2000	25	7	32
	2001	29	14	43
	2002	29	7	36
	2003	35	7	42
	2004	36	7	43

Source: WISQARS, NCHS Vital Statistics System, CDC, 1999-2002 Data
 The New Jersey Violent Death Reporting System, 2003 & 2004 Data,
 Office of Injury Surveillance and Prevention, Center for Health Statistics,
 New Jersey Department of Health and Senior Services, May 2006

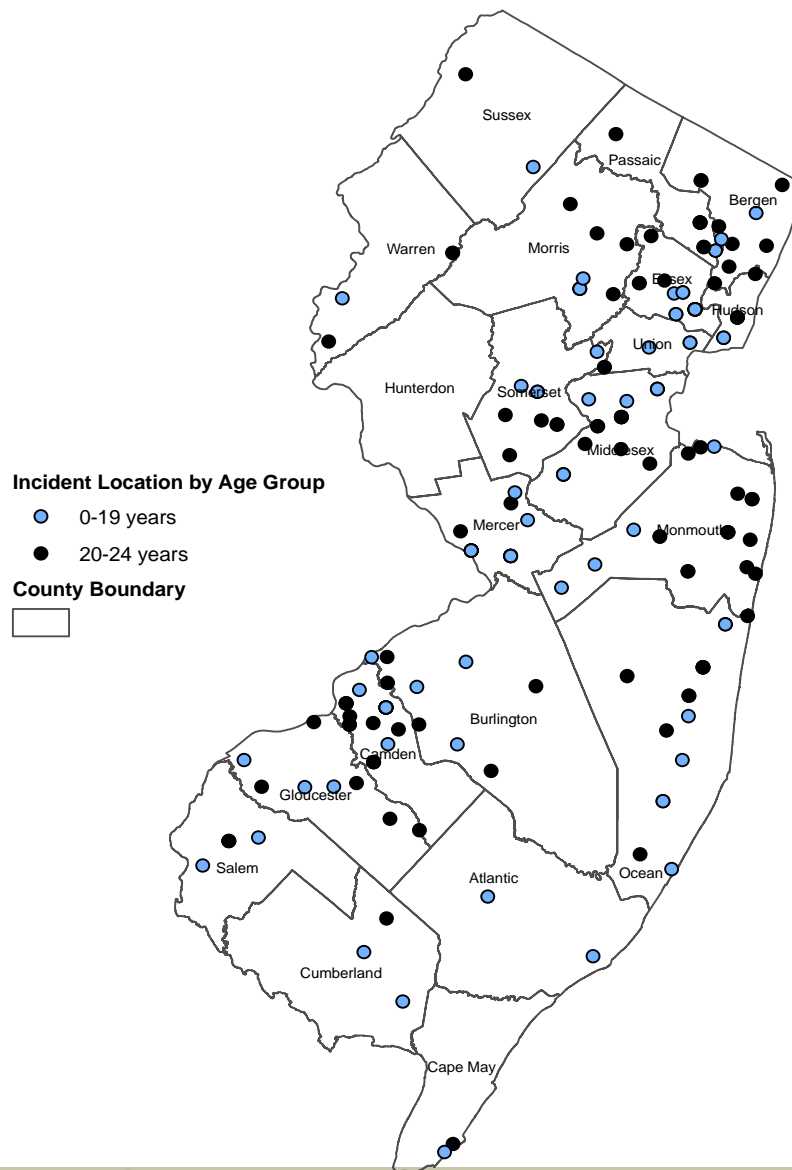


Geographical pattern

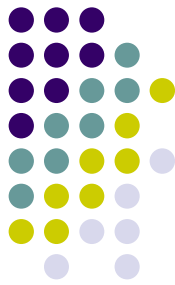
- Adolescent suicide distributed differently than overall suicide
- Distributed more like suicide attempts
- Numbers too low to calculate county rates



Incident locations by municipality of youth suicide by age group, New Jersey, 2003-2005

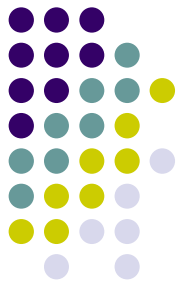


	2003	2004
	N	N
Atlantic	1	2
Bergen	4	4
Burlington	1	4
Camden	7	9
Cape May	1	1
Cumberland	0	2
Essex	2	10
Gloucester	2	0
Hudson	0	4
Hunterdon	0	0
Mercer	7	5
Middlesex	8	4
Monmouth	9	12
Morris	3	2
Ocean	3	8
Passaic	3	6
Salem	1	0
Somerset	2	4
Sussex	0	1
Union	2	2
Warren	2	1
Unknown	6	0
All	64	81



Suicide attempts





Attempts versus completions

- On average, approximately 5 attempts requiring hospitalization for every completion
- Many more resulting in ED admission only
- Ratio of attempts to completions varies with age
- Geographical pattern of attempts different from that of completed suicides
- Approximately 90% of attempts are poisonings

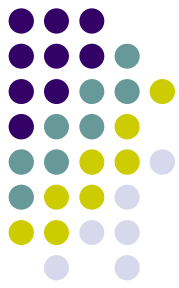


Table 1. Non-fatal intentional injury hospitalization rates among New Jersey residents, 1999-2003

	Self-inflicted 1999-2003		Self-inflicted 2003		Assault 1999-2003		Assault 2003	
	<i>N</i>	<i>Rate</i>	<i>N</i>	<i>Rate</i>	<i>N</i>	<i>Rate</i>	<i>N</i>	<i>Rate</i>
Male	5,832	28.2	1,204	28.6	11,521	56.2	2,464	59.2
Female	8,779	41.6	1,749	40.9	1,869	8.8	400	9.4
Under 5	61	2.2	-	-	230	8.1	39	6.9
5-14 years	481	8.0	95	7.8	355	5.9	65	5.4
15-24 years	3,690	71.7	756	70.1	4,559	88.6	975	90.5
25-44 years	6,465	49.7	1,288	50.6	6,320	48.6	1,360	53.4
45-64 years	2,922	29.4	637	30.2	1,592	16.0	362	17.2
65 and older	992	17.8	177	15.7	334	6.0	63	5.6
NJ residents total	14,611	34.9	2,953	34.7	13,390	32.6	2,864	34.4

Male and female rates are age-adjusted using the 2000 US Standard Population.

Data source: New Jersey Discharge Data Collection System, Bridged Race Estimates for population.



Figure 4. Distribution of mechanism of non-fatal self-inflicted injuries, New Jersey residents, 1999-2003

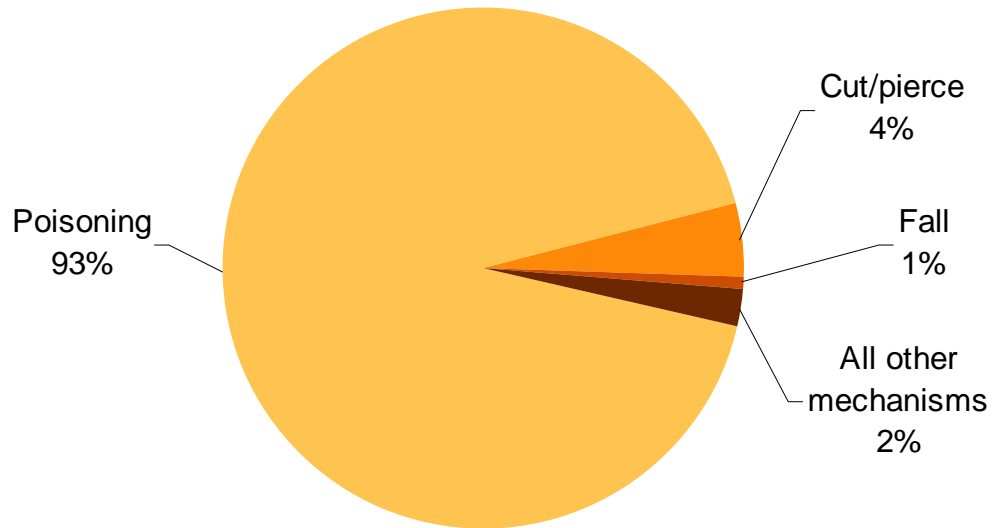


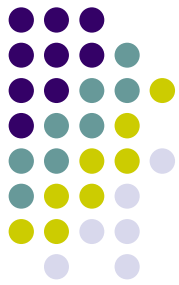
Table 4. County-level non-fatal self-inflicted injury hospitalization rates by gender, New Jersey, 1999-2003

	Self-inflicted males		Self-inflicted females		All self-inflicted injuries	
	<i>N</i>	<i>Rate</i>	<i>N</i>	<i>Rate</i>	<i>N</i>	<i>Rate</i>
Atlantic	212	34.1	303	47.3	515	40.7
Bergen	493	23.4	703	32.6	1,196	27.9
Burlington	251	23.5	419	40.0	670	31.4
Camden	453	36.9	665	51.7	1,118	44.3
Cape May	94	40.9	93	39.3	187	40.0
Cumberland	168	43.1	195	56.8	363	49.3
Essex	558	29.4	812	39.8	1,370	34.6
Gloucester	193	30.6	305	45.3	498	38.0
Hudson	462	29.3	612	39.2	1,074	34.1
Hunterdon	42	14.9	110	39.0	152	26.3
Mercer	354	39.7	469	51.7	823	45.6
Middlesex	468	24.3	777	40.3	1,245	32.2
Monmouth	417	28.3	753	49.8	1,170	39.1
Morris	193	17.3	289	25.7	482	21.4
Ocean	327	27.9	495	41.2	822	34.5
Passaic	512	42.6	706	56.2	1,218	49.5
Salem	56	37.0	79	50.9	135	44.0
Somerset	159	22.4	261	37.0	420	29.4
Sussex	99	28.6	202	56.9	301	42.5
Union	250	20.0	380	29.2	630	24.5
Warren	68	27.1	146	57.3	214	42.3
NJ State Total	5,832	28.2	8,779	41.6	14,611	34.9

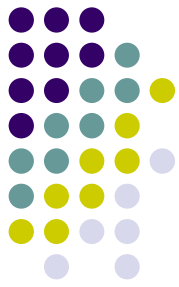
Total includes hospitalizations where county of residence is unknown.

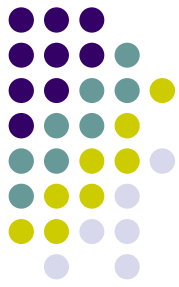
Rates are age-adjusted using the 2000 US Standard Population.

Data source: New Jersey Discharge Data Collection System, Bridged Race Estimates for population.



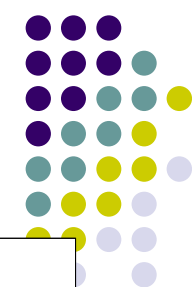
Suicidal Thoughts



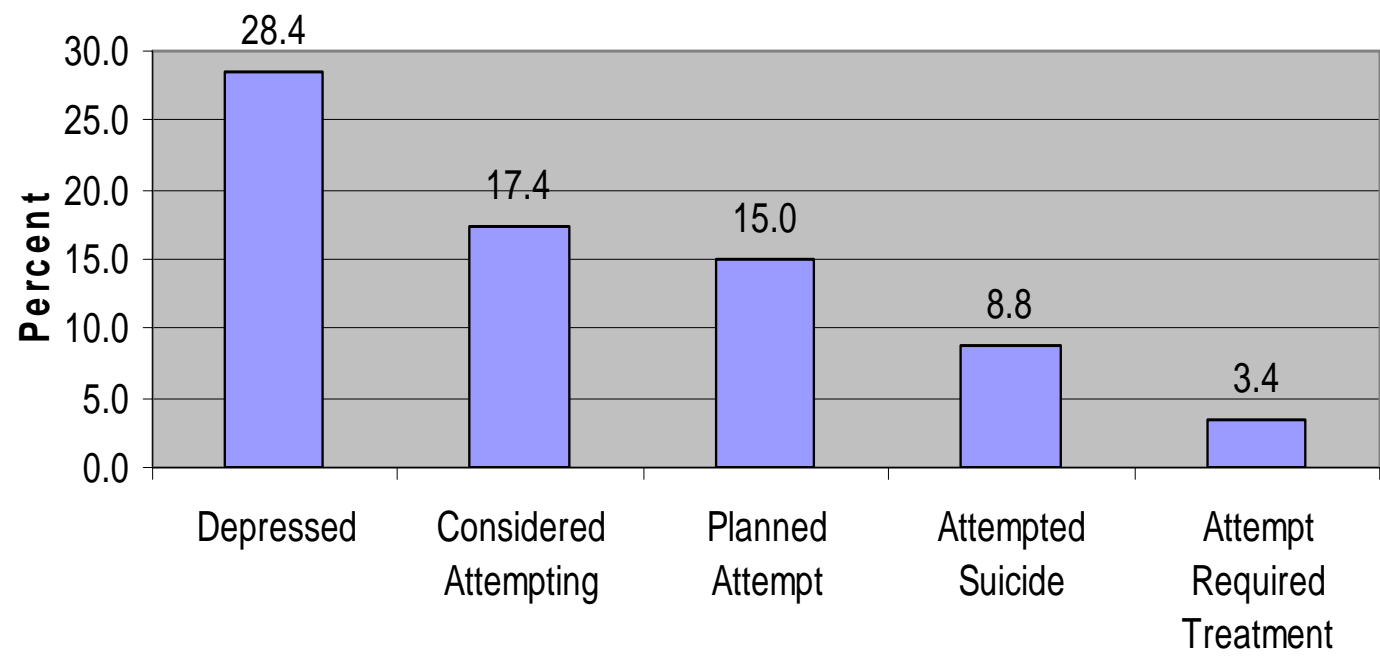


Survey of adolescents

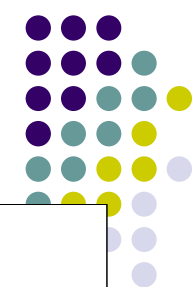
- 2001 – YRBS
- 2003 – Student health survey
- In both years, approx 17% of adolescents in NJ reported considering attempting suicide
- Approx 30% reported being depressed every day for two weeks or more
- Close to U.S. average



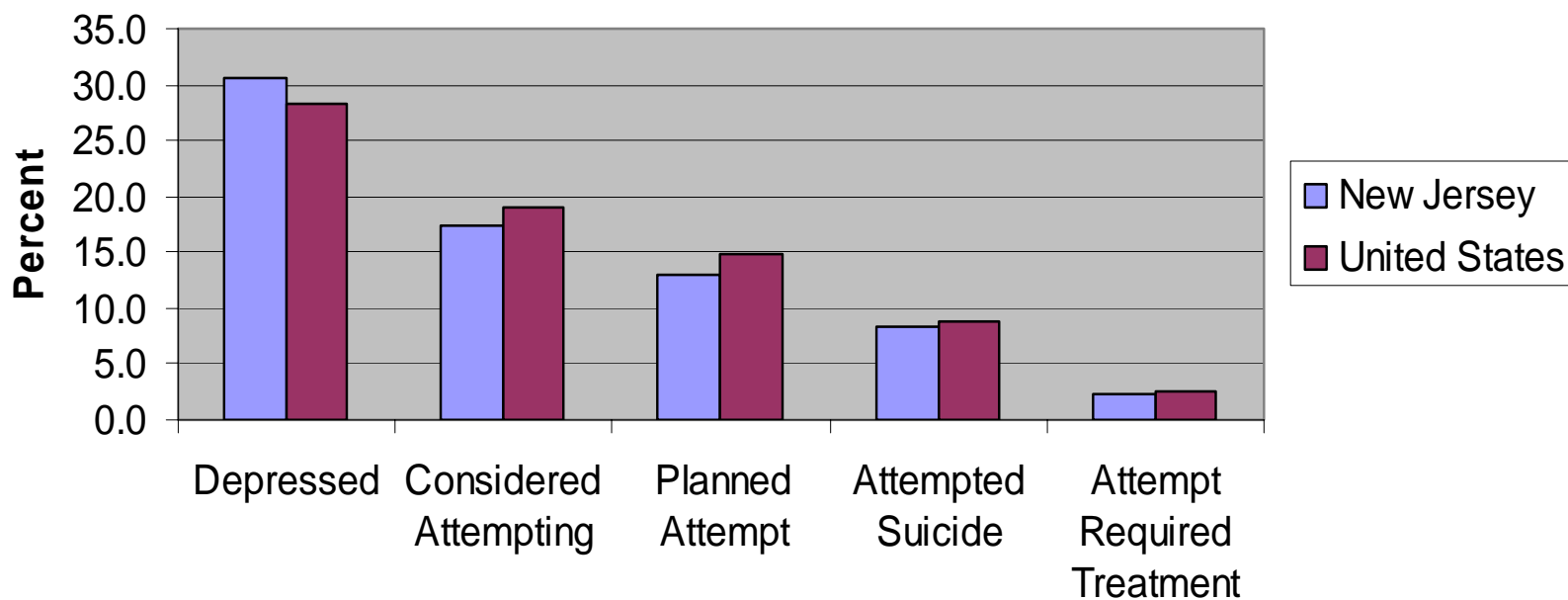
Self-Reported Depression and Suicidal Ideation New Jersey Adolescents, 2003



Student Health Survey, NJDEA

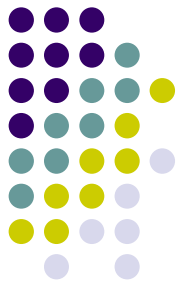


Self-Reported Depression and Suicidal Ideation, New Jersey vs. United States, 2001



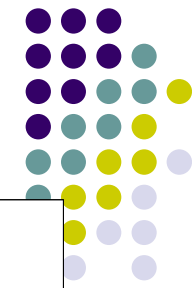
Youth Risk Behavior Survey, CDC

Complicated relationship between suicidal thought and behavior

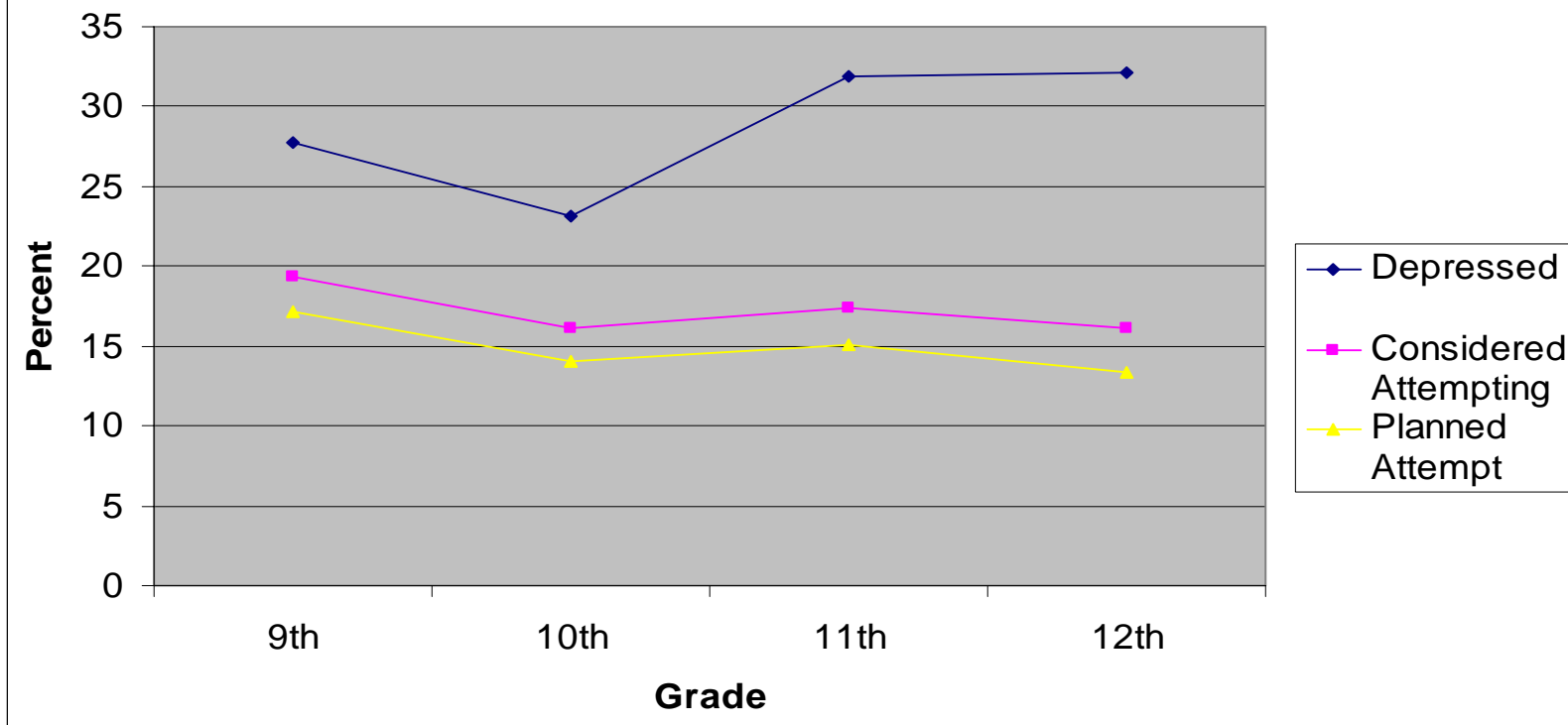


As students age (9th – 12th) :

- percent reporting **depression** rises...
- but percent expressing suicidal **thoughts** or **plans** declines...
- yet **completed suicides** increase



Self-Reported Depression and Suicidal Ideation by Grade, New Jersey Adolescents, 2003

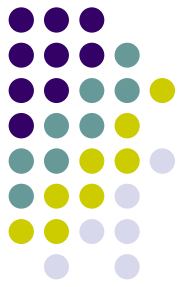


Source: New Jersey Student Health Survey

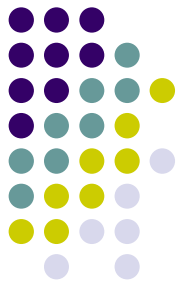
New Jersey Violent Death Reporting System



New Jersey Violent Death Reporting System



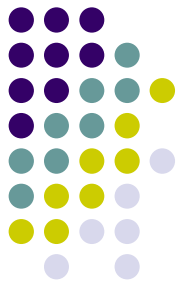
- New Jersey one of six original states to be funded by CDC to participate in NVDRS
- Includes all homicides, suicides, legal intervention, and accidental deaths of undetermined intent, and unintentional firearms



What is the NJVDRS?

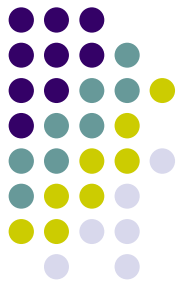
- **Part of a CDC-funded surveillance system (NVDRS)**
- **Combines data from multiple sources**
- **Standard coding practices**
- **Specialized software**
- **Seventeen states currently participate**
- **NVDRS is incident-based**
- **Modeled after a project initiated by Harvard (NVISS)**
- **Also modeled after FARS**





Scope:

- **Suicides**
- **Homicides**
- **Unintentional firearm deaths**
- **Injury deaths of undetermined intent**
- **Deaths by legal intervention**
- **Beginning with January 1, 2003 events**
- **All deaths that meet the criteria occurring in New Jersey or to New Jersey residents regardless of location**



Data Sources:

Death certificates

Report of Investigation by Medical Examiner (RIME)

Supplemental Homicide Reports (SHR)

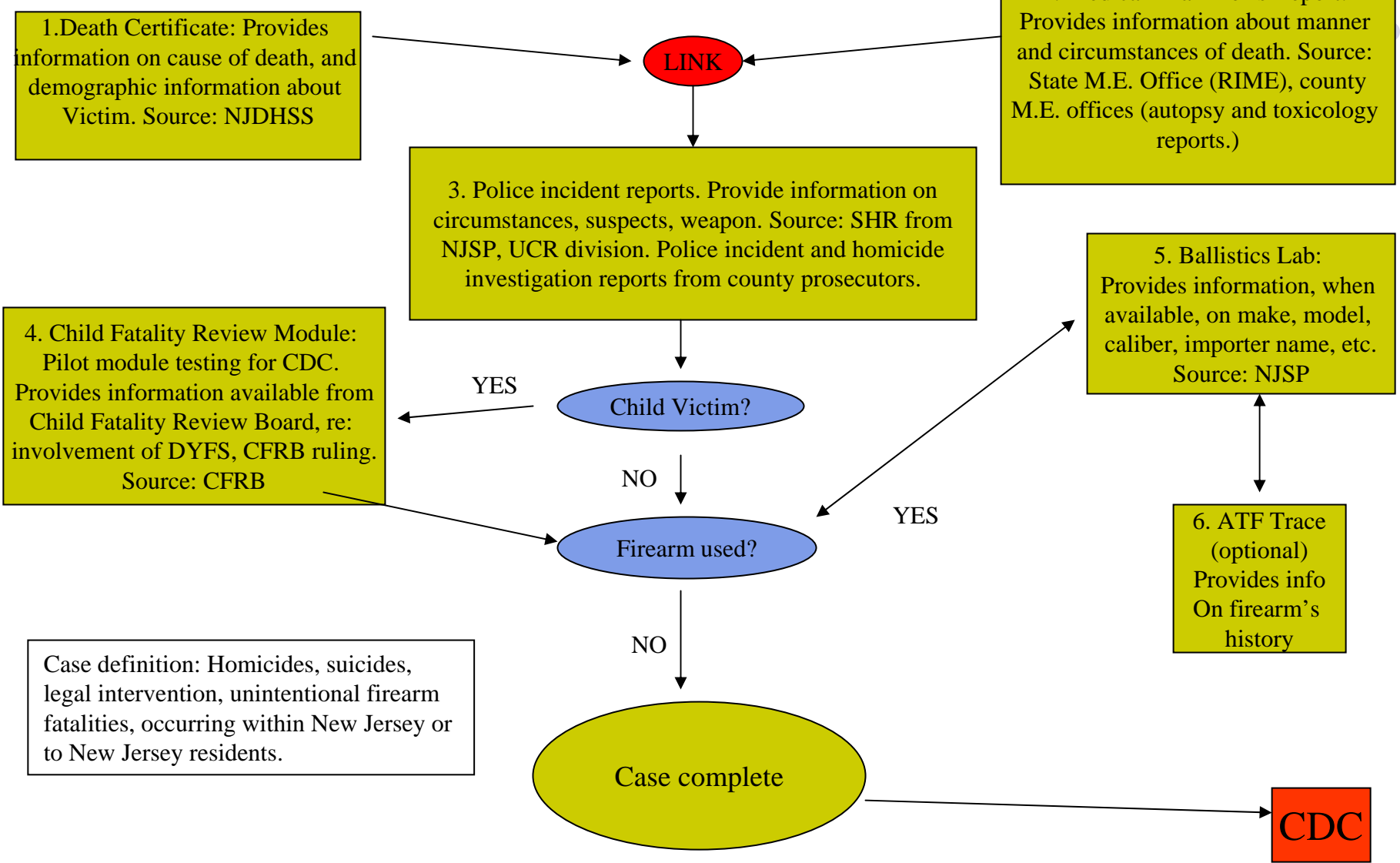
Domestic Violence Reports

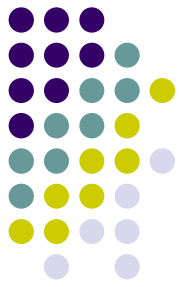
County Prosecutor files

Ballistics Reports

New Jersey Child Fatality and Near Fatality Review Board

Violent Death Surveillance in New Jersey

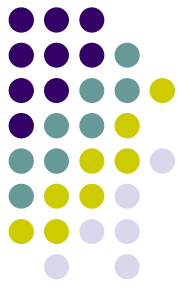




Goal:

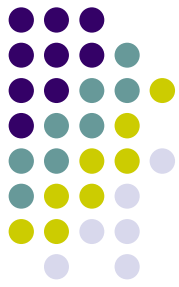
...to develop a detailed and comprehensive understanding of all homicides and suicides and use that understanding to aid prevention efforts.

NJVDRS



- **Located in the Office of Injury Surveillance and Prevention, Center for Health Statistics, NJDHSS**
- **Partner: The Violence Institute, UMDNJ**

Circumstances of violent deaths

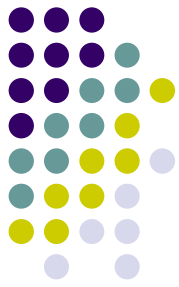


- Standard definitions for circumstances of suicides and homicides
- Trained abstractors code in similar manners in all funded states
- Goal is to aid prevention efforts by learning more about risk factors for violent death



Suicide circumstances

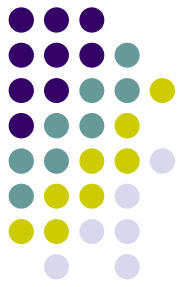
- Approx 20
- Was there a crisis in last two weeks?
- Past and current mental health issues
- Financial, job, school problems
- Physical health problems
- Criminal/legal problem
- Relationship problems



Suicide circumstances

- Prior attempts
- Had previously disclosed intent
- Victim or perpetrator of intimate partner violence
- Substance abuse problem
- Recent suicide of friend...
- They are not mutually exclusive

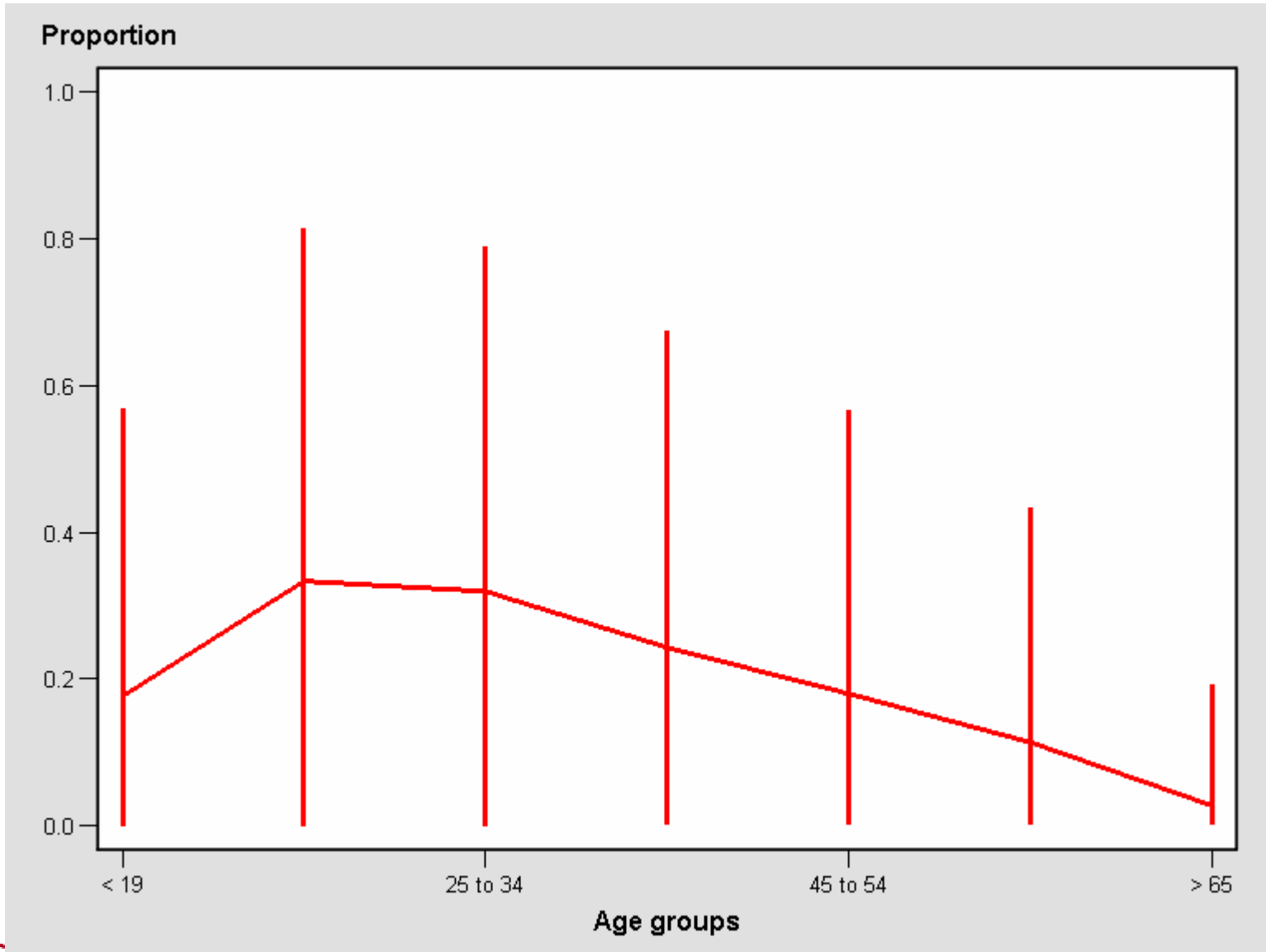
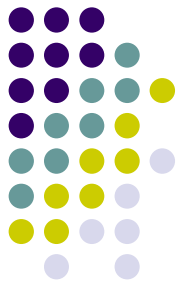


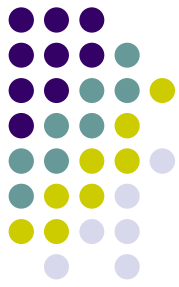


Recent crisis

- Those aged 20-24 most likely to have had a crisis within two weeks of suicide
- Could be fight with family members, break up of relationship, arrest, variety of other possibilities
- Many times crisis is very recent – i.e. within 24 hours of suicide – especially for males

Percent with recent crisis by age group

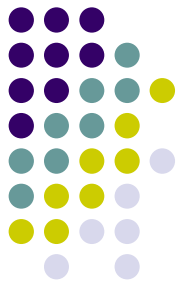




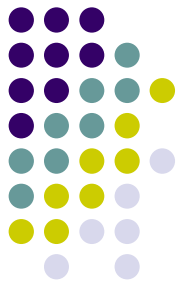
Mental health circumstances

- “Depressed mood”
 - Overall 41%
- History of treatment
 - Overall 33%
- Mental health problem
 - Overall 43%
- Current treatment
 - Overall 33%

Adolescents re: mental health circumstances



- Overall, 0-24 year old group is very similar to average levels for these variables
- 0-19 years tend to have higher than average values
- 20-24 years somewhat lower
- About 71% of those 0-19, and 62% of those aged 20-24 have at least one mental health circumstance – versus 64% for all suicides



Criminal/legal problem

- Approximately 12% of those 0-19 years and 15% of those 20-24 years have a reported criminal/legal problem
- About twice as high as overall percentage of 7%

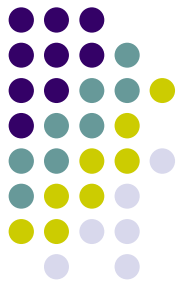
Recent suicide of friend or family member



- Approximately 7% of those 0-24 have this listed as a circumstance
- Far higher than 1% of overall population



Other Relationship problem



- About 15% of adolescents
- About 3% of overall population



Substance abuse problem



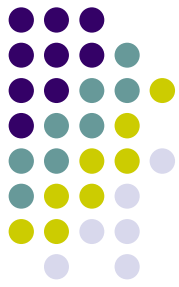
- Approximately 20% of adolescents
- As compared with 10% of overall population





Prior attempts

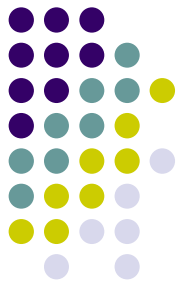
- 29% of those 0-19
- 22% of those 20-24
- 20% overall
- But adolescents approximately as likely as others to have previously disclosed intent
- @ 22%



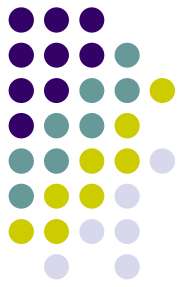
Antidepressants

- About 10% of adolescents had positive toxicology for antidepressants
- Approximately 14% overall
- But need to learn more about sensitivity of toxicology screening

Mental health risk factors and crisis



- Those with no mental health risk factors were more likely to have experienced a crisis (40%)
- As compared with 20% of those with mental health risk factors

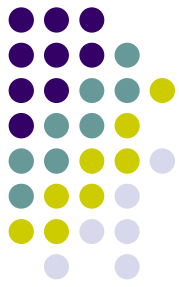


Mental health risk factors

- 40% of males had no mental health risk factors
- As compared with 11% of females

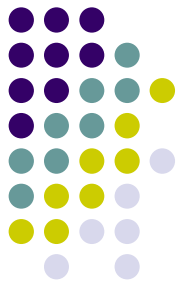


Summary – risk factors for adolescents



- Mental health risk factors are similar for adolescents and all suicides
- Adolescents are more likely to have experienced a recent crisis, and/or a criminal or legal problem
- Adolescents more likely to have relationship problems – often with parents
- Also more likely to be influenced by the suicide of a friend





Summary, continued

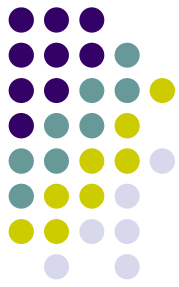
- Males are more likely to have a crisis
- Females more likely to have a mental health problem





Implications for Prevention

- Firearms – although New Jersey does well with this – access to gun in home
- Gun in the home is a risk factor for suicide
- Recent study of parents and teens:
 - Parents underestimated extent to which teens knew where guns were kept, where keys were....



Prevention

- Crises, especially family relationship problems, often precede suicide
- Adolescent suicide is extremely impulsive
- Often occurs shortly after fight with parents
- Especially true for males, even those aged 20-24 years
- Could be underlying psychiatric problems contributing to these relationship problems
- Reduce family conflict



Summary

- Adolescents commit suicide for many of same reasons that others do
- But particular risk factors for this age group
- Recognizing and treating mental health problems
- Reducing family conflict
- Restricting access to firearms