United States Senate Special Committee on Aging

Testimony of

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Senator Smith, Senator Kohl, and members of this Special Committee on Aging:

My name is David Steffens, and I am a geriatric psychiatrist at Duke University Medical Center in Durham, North Carolina. I want to thank the committee for inviting me to give testimony about suicide, an important public heath matter that affects Americans across the age spectrum, but has a disproportionate effect on older Americans particularly. I come here as someone who has devoted his career to date to the care and scientific understanding of older depressed adults. Because the focus today is on suicide prevention, I will confine my remarks to completed suicide rather than non-lethal suicide attempts.

An older man comes home to find his wife of 53 years in their bathtub, dead of an intentional overdose of her heart medication. A daughter, stopping by her parents' home to check on her widowed father, is horrified to discover him with a self-inflicted shotgun blast through his heart.

These two cases illustrate the tragedy that is suicide. It is hard to get oneself into the mindset that would make suicide the only viable option for someone. Suicide leaves a grieving family, full of questions and a mixture of emotions – anger, guilt, shock, sadness and even shame. Family members and friends are forever left with a sense that a life has been snuffed out prematurely yet are often too ashamed to discuss the loss and get the solace they need because of the stigma associated with suicide particularly and mental disorders more broadly.

Sadly, these are not rare events. Very briefly, I wanted to review for the Committee some of the statistics regarding suicide both in older adults and across the age spectrum. I include more comprehensive reports (tables and figures) from the CDC in the Appendix. In 2003, the most

recent year we have statistics on suicide, 31,484 Americans committed suicide, making it the 11th leading cause of death in the U.S. It is the 18th leading cause of death in the elderly. By way of comparison, suicide is the third leading cause of death in young people ages 15 to 24 and the second leading cause of death in people aged 25 to 34.

Rates of completed suicide are highest among older men. In 2003, 4,453 men aged 65 or older committed suicide. Death rates are reported per 100,000 people. For men in the older age brackets, we see a steady increase in suicide with increasing age. The suicide rate in the 65 to 69 age group is about 21 per 100,000. This increases to about 32 per 100,000 in the group of men aged 75 to 79. It is in the oldest group, men 85 and older, where we see the rate skyrocket to nearly 48 per 100,000, more than double the rate during the years 18 to 65.

At the other end of the age spectrum, for males, suicide is fairly uncommon below the age of 15. However, in 2003, 1,222 young men aged 15 to 19 and 2,159 men in the 20 to 24 year old group committed suicide, corresponding rates of about 12 and 20 per 100,000 respectively.

When we focus on race, suicide appears to be a common cause of death for young men in all racial groups. However, in older men we start to see a predominance of suicide among whites compared to other groups. Most striking, and perhaps the “take-home” message for the suicide statistics, is the suicide rate for white men 85 and over. In 2003, 672 men in this oldest group killed themselves, for a rate of 51 per 100,000 (see also figure 1, CDC 2001).

The pattern of rates for completed suicide rates for women is different from men. The peak period for women committing suicide is in the mid-to-late 40s, at nearly 8 per 100,000. Among women 65 and older, the rate varies from 3.3 to 4 per 100,000 across the five-year age groups. When thinking about race and suicide among women, rates tend to be somewhat higher for whites, Native Americans, and Asian women than for African-American women, though there is considerable fluctuation across age groups.

When we focus on causes of death for older Americans who commit suicide, it is clear that firearms play the largest role in completed suicide in this age group (see Figure 2, CDC 2003). Over 73% of older adults who killed themselves in 2003 used firearms. Use of firearms as a means of suicide overshadowed suffocation and poisoning (each at about 10%) and other causes.

Nationally, there are also some regional differences in rates of suicide. For example, suicide rates are generally higher than the national average in the western states and lower in the eastern and Midwestern states (see Figure 3, CDC 2001). There is no clear explanation for these regional differences.

Ninety percent of suicides that take place in the United States are associated with mental illness, including disorders involving the abuse of alcohol and other drugs (1). Fifty percent of those who die by suicide were afflicted with major depression, and the suicide rate of people with major depression is eight times that of the general population (2). Besides major depression, other risk factors for completed suicide in the elderly include presence of hopelessness, more rigid thinking, presence of serious medical illness, bereavement, family discord, and presence of

a handgun in the home (3, 4). Psychosis and alcoholism contribute to suicide in the elderly to a lesser degree than in the young and middle-aged populations.

I want to end my prepared testimony on a positive note and talk about solutions. Both at the Federal Government and Private Foundation levels, attempts have been made to develop an evidence base for prevention of suicide in older adults. In 1997, the National Institute of Mental Health issued the Request for Applications (RFA), "Prevention of Suicidal Behavior in Older Primary Care Patients." The RFA requested applicants to test of models of depression and suicidality recognition and treatment. The outcome of the RFA was the funding of a three-site study called "**P**revention **O**f **S**uicide in **P**rimary care **E**lderly: **C**ollaborative **T**rial," or PROSPECT. This trial, which was completed in 2003, tested how the "collaborative care" model improves depression treatment through physician and patient education and follow-up. In PROSPECT, the collaborative team involved a depression care manager, usually a specially trained nurse or social worker, working with physicians in primary care practices. The depression care manager provided education to patients and families about depression, identified comorbid physical or psychiatric conditions that might affect treatment, monitored adherence to treatment recommendations, managed treatment-related side effects, and evaluated mood state to determine if the current treatment was effective of if it needed to be modified. The patients who participated in the program showed significant reductions in suicidal ideation at 4- and 8-month retesting when compared with the treatment-as-usual group. This result was greater for those diagnosed with major depression than for those diagnosed with minor depression (5).

I will now focus on the IMPACT project, sponsored chiefly by the John A. Hartford Foundation. The Hartford Foundation has long been interested in issues related to aging, mental health and well-being. In 1998, the Hartford Foundation took the lead on supporting the study, "**I**mproving **M**ood – **P**romoting **A**ccess to **C**ollaborative **T**reatment" (IMPACT). Shortly thereafter, other foundations joined Hartford in supporting the study, including the California Healthcare Foundation, the Hogg Foundation, and the Robert Wood Johnson Foundation. The study's Principal Investigator is Dr. Jurgen Unützer, who is now at the University of Washington. The study was focused mainly on treatment of serious depressive disorders in the elderly, specifically Major Depression and Dysthymia. Subjects were drawn from 18 primary care clinics from 8 health care organizations in five states. Patients were randomized to working with a Depression Clinical Specialist in the Primary Care clinic versus receiving Usual Care for depression in the primary care setting. Depression Clinical Specialists were trained on the recommended medication algorithm and also received special training on delivering Problem Solving Therapy, a 6- to 8-session brief structured psychotherapy for depression. Thus Depression Clinical Specialists were especially well equipped to help depressed patients manage their depressive symptoms through education about the illness and about medications as well as providing psychotherapy. After 12 months, 45% of intervention patients had a 50% or greater reduction in depressive symptoms from baseline compared with 19% of usual care participants. These findings were reported in 2002 in the Journal of the American Medical Association (6).

I served as the Study Psychiatrist at the Duke General Internal Medicine site. In that capacity, I met each week with two of our Depression Clinical Specialists to review the new and returning cases they had seen that week. We focused on specific depression symptoms, factors that may

have lead to or exacerbated the depression and comorbid psychiatrist or physical illness that may influence our choice of depression treatment. When we had decided on a treatment plan to recommend, I would write out the plan on a primary care contact route sheet and sign it. This route sheet would be placed in the primary care physician's In-box. He or she would either sign off on the recommendation or contact the Depression Clinical Specialist or me with any questions or concerns about the plan. The main thrust of our collaborative work was two-fold: 1) keep the primary care physician in charge of the final treatment decision; and 2) strive to keep the care of the depressed patient in the primary care setting. Occasionally I would need to see patients, either to clarify the extent or severity of depression symptoms, to educate the patient further about depression and the need for treatment, or to evaluate suicide risk. I ended up seeing just under 10% of the patients in the intervention arm.

More recently, we have analyzed the IMPACT data to determine the effect of the intervention on reducing suicidal ideation. At baseline, 139 (15.3%) intervention subjects and 119 (13.3%) controls reported thoughts of suicide. Intervention subjects had significantly lower rates of suicidal ideation than controls at 6 months (7.5% vs. 12.1%) and 12 months (9.8% vs. 15.5%) and even after intervention resources were no longer available at 18 months (8.0% vs. 13.3%) and 24 months (10.1% vs. 13.9%). There were no completed suicides in either group. We concluded that primary care-based collaborative care programs for depression represent one strategy to reduce suicidal ideation and potentially the risk of suicide in older primary care patients. Our findings are due to be published soon in the Journal of American Geriatrics Society.

I am happy to report to you that at the Duke site, this collaborative care model for care of depressed patients did not end when the main study ended. As you can imagine, the primary care physicians in the Duke General Internal Medicine Clinics came to value highly their work with the Depression Clinical Specialist. As a result, over a couple of years we moved to implement the model as a clinical service in the Primary Care Clinics. There were several hurdles to overcome. Internally, the Depression Clinical Specialist needed to be credentialed at Duke for outpatient practice, placed on managed care panels, and hired full time by the Practice. Risk management had to review the process of my making treatment recommendations on patients that I had not physically seen. Ultimately we agreed that there was a conjoint risk among myself, Ms. Carol Saur, the Depression Clinical Specialist, and the primary care physician. After a couple of years of working on these logistics as the IMPACT study was winding down, we were successful in setting up the model. As a Clinical Nurse Specialist, Ms. Saur can obtain her own Medicare code for billing purposes. In general she bills using the following Medicare-acceptable Current Procedural Terminology (CPT) codes:

- Individual psychotherapy (CPT Code 90804 for 20-30 minutes, CPT Code 90806 for 45-50 minutes, or CPT Code 90808 for 75-80 minutes)
- Family psychotherapy (CPT Code 90846 without the patient present or CPT Code 90847 with the patient present)
- Group psychotherapy (CPT Code 90853)
- In collaboration with the patient's PCP, provide psychotherapy with medical evaluation and management services (CPT Code 90805 for 20-30 minutes, CPT Code 90807 for 45-50 minutes, and CPT Code 90809 for 75-80 minutes).

We have also expanded the patient population to include adults ages 18 and above. In the past four years, Ms. Saur has seen 478 patients in 3,325 visits, including 171 older adults and 129 older adults with depression.

Thus far, we have had no difficulty in billing Medicare and receiving reimbursement. There have been some difficulties with private insurance, often related to the fact that the entity managing the patient's visit to the primary care doctor is different from the entity managing the patient's mental health benefit. At this juncture, we are close to the break even point on covering her salary – although part of her salary is still supported by the Hartford Foundation. A trickier question in terms of expanding this model is covering the time of the psychiatrist. Thus far, we have not found an acceptable way to cover my services. There is a CPT code (99361) which is a Medical Conference by a physician with interdisciplinary team of health professionals or representatives of community agencies to coordinate activities of patient care (patient not present). It specifies a time frame of approximately 30 minutes. Neither the description of the activity nor the time specification captures sufficiently what we do as a team. Besides, the perception is that Medicare usually will not reimburse this code (i.e., patient not present).

We have found that patients report a high degree of satisfaction with this model of care. They like the fact that they can see someone in the same clinic where they see their primary care doctor. They like that Ms. Saur is a nurse who not only focuses on care for depression but also integrates depression treatment with care for their other medical problems. They like that there is a psychiatric expert involved in their care, and will often ask Ms. Saur to "please ask Dr. Steffens about…."

In sum, IMPACT provides a good model for tackling the problem of suicide in the elderly. It focuses on management of depression symptoms in primary care. Both the depression focus and the primary care focus are key elements when the goal is suicide prevention in the elderly. With most suicide being related to depression, a focus on depression is crucial in reducing suicide in the elderly. Having the care provided in the primary care setting is also very important for several reasons: 1) Older adults often perceive the stigma of mental illness more than other age groups and may thus be more reluctant to go to another clinic to see a mental health specialist; 2) Most older adults have a primary care physician who manages the bulk of their medical problems; 3) There is a shortage of psychiatrists, and especially geriatric psychiatrists to whom primary care clinicians can refer their patients; and 4) the IMPACT model has shown that most clinical depressions can be treated in the primary care setting.

There are a number of challenges to implementing a similar collaborative care model more widely. Primary care physicians and clinical business managers have to buy into the idea that such care is important and affordable for the practice. A force of Depression Clinical Specialists needs to be developed to deliver the care. There is a need for clinics to have access to psychiatrists who can support the process by providing treatment recommendations and being available to see difficult cases. Fortunately, the Hartford Foundation has emphasized their commitment not only to supporting research that treats depression and suicidality, but in following through with support for implementation of good practices. Dr. Jurgen Unützer at the University of Seattle, Principal Investigator of the main IMPACT study, is now leading "IMPACT-II," a project seeking to promote efforts at implementation. We at Duke are pleased

to be part of this effort as well. This new phase, IMPACT-II, involves publishing and disseminating results of the study, putting together regional training sessions for future Depression Clinical Specialists, and developing practical implementation packets for primary care providers and clinic managers.

There are some specific actions that you as legislators can consider taking as well.

1) Help ensure that Medicare will cover collaborative care in a manner consistent with overall medical care for older adults in the primary care setting. This may require some degree of innovation, but one recommendation would involve develop legislation focusing on reimbursing Clinical Nurse Specialists or other master's level clinicians working in primary care clinics at the 80% level for providing mental care health care. This would go a long way toward making this program acceptable to the primary care community. Similarly, if the Clinical Depression Specialist documents time spent discussing the case with a psychiatrist or other mental health professional and if that professional documents the recommendation, then some more straightforward way to pay for that consultative service could be developed.
2) Support programs that train medical students and nurses in the area of suicide assessment and prevention.
3) Support programs that train master's level clinicians in this collaborative care model who agree to see patients in the primary care setting.
4) Provide loan forgiveness for master's level clinicians and psychiatrists who agree to participate in collaborative care models.

5) Increase the number of geriatric psychiatrists who are available to consult with primary care practices, either in person or through telemedicine, by reauthorizing the Title VII funding that supports training of geriatric physicians through the Health Resources and Services Administration's Bureau of Health Professions.
6) Ensure that seniors have access to affordable antidepressant medications. Some seniors encounter the "doughnut hole" in Medicare Part D and find that they can no longer afford their medications. If it comes down to a choice about which medications to take and which to stop taking, sometimes they choose to stop their antidepressant medication.
7) Encourage the Centers for Medicare and Medicaid Services (CMS) to include suicide assessment for individuals with mental illness as a Quality Indicator for care.

It has been both personally and professionally satisfying to me to be able to implement in the clinical setting an intervention that we know works in the research setting. I look forward to hearing your thoughts and questions about suicide and suicide prevention, about the IMPACT study, and about ways we might be able to make changes in our health care system that will make a real difference in addressing the alarming suicide rates experienced by our greatest generation of older Americans.

Respectfully submitted,

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Appendix

Other supplementary material

1. Slide set: IMPACT study and suicide
2. Slide set: Overview of IMPACT study
3. Core components of Evidence-based Depression Care
4. Registry of Evidence-Based Suicide Prevention Programs: PROSPECT. Suicide Prevention Resource Center.
5. Article: "Reducing suicidal ideation and depressive symptoms in depressed older primary care patients: a randomized controlled trial." JAMA. 2004 Mar 3;291(9):1081-1091.
6. Article: "Collaborative care management of late-life depression in the primary care setting: a randomized controlled trial." JAMA. 2002 Dec 11;288(22):2836-2845.
7. Article: "Risk factors for suicide in later life." Biological Psychiatry 2002;52:193-204.
8. Article: "Preventing suicide in primary care patients: the primary care physician's role." General Hosp Psychiatry 2004; 26:337-345

Table 1. 2003, United States
Suicide Injury Deaths and Rates per 100,000
All races, Both Sexes, Ages 0 to 85+ (racial data not shown)
ICD-10 Codes: X60-X84, Y87.0,*U03

Sex	Age Group	Number of Deaths	Population	Crude Rate
Males	00-04	0*	10,105,415	0.00*
	05-09	6*	10,119,907	0.06*
	10-14	188	10,856,749	1.73
	15-19	1,222	10,518,680	11.62
	20-24	2,159	10,663,922	20.25
	25-29	1,901	9,772,711	19.45
	30-34	2,255	10,449,775	21.58
	35-39	2,347	10,726,548	21.88
	40-44	2,791	11,407,111	24.47
	45-49	2,616	10,730,879	24.38
	50-54	2,271	9,312,777	24.39
	55-59	1,771	7,660,724	23.12
	60-64	1,216	5,763,600	21.10
	65-69	958	4,525,541	21.17
	70-74	996	3,823,820	26.05
	75-79	985	3,098,962	31.78
	80-84	824	2,055,245	40.09
	85+	690	1,444,924	47.75

Females	00-04	0*	9,663,864	0.00*
	05-09	0*	9,655,369	0.00*
	10-14	56	10,336,612	0.54
	15-19	265	9,959,789	2.66
	20-24	342	10,063,772	3.40
	25-29	375	9,395,243	3.99
	30-34	534	10,254,869	5.21
	35-39	611	10,681,456	5.72
	40-44	853	11,555,479	7.38
	45-49	869	11,030,309	7.88
	50-54	725	9,730,634	7.45
	55-59	543	8,133,326	6.68
	60-64	313	6,342,086	4.94
	65-69	209	5,220,542	4.00
	70-74	172	4,767,141	3.61
	75-79	174	4,353,631	4.00
	80-84	132	3,360,834	3.93
	85+	108	3,268,543	3.30
		6,281	**147,773,499**	**4.25**
Total		**31,477**	**290,810,789**	**10.82**

*** Rates based on 20 or fewer deaths may be unstable. Use with caution. Produced by: Office of Statistics and Programming, National Center for Injury Prevention and Control, CDC**

Data Source: NCHS Vital Statistics System for numbers of deaths. Bureau of Census for population estimates.

Table 2. 2003, United States

Suicide Injury Deaths and Rates per 100,000

All Races, Both Sexes, Ages 0 to 85+ (with racial data)
ICD-10 Codes: X60-X84, Y87.0,*U03

Sex	Age Group	Race	Number of Deaths	Population	Crude Rate
Males	00-04	White	0*	7,889,666	0.00*
		Black	0*	1,637,210	0.00*
		Am Indian/AK Native	0*	117,395	0.00*
		Asian/Pac Islander	0*	461,144	0.00*
			0*	**10,105,415**	**0.00***
	05-09	White	5*	7,887,082	0.06*
		Black	1*	1,640,152	0.06*
		Am Indian/AK Native	0*	138,699	0.00*
		Asian/Pac Islander	0*	453,974	0.00*
			6*	**10,119,907**	**0.06***
	10-14	White	147	8,435,323	1.74
		Black	34	1,804,333	1.88
		Am Indian/AK Native	6*	154,547	3.88*
		Asian/Pac Islander	1*	462,546	0.22*
			188	**10,856,749**	**1.73**
	15-19	White	1,047	8,275,292	12.65
		Black	107	1,632,697	6.55
		Am Indian/AK	37	150,102	24.65

		Native			
		Asian/Pac Islander	31	460,589	6.73
			1,222	**10,518,680**	**11.62**
	20-24	White	1,781	8,450,770	21.08
		Black	278	1,547,308	17.97
		Am Indian/AK Native	43	143,788	29.91
		Asian/Pac Islander	57	522,056	10.92
			2,159	**10,663,922**	**20.25**
	25-29	White	1,580	7,784,835	20.30
		Black	224	1,289,611	17.37
		Am Indian/AK Native	38	122,223	31.09
		Asian/Pac Islander	59	576,042	10.24
			1,901	**9,772,711**	**19.45**
	30-34	White	1,950	8,374,007	23.29
		Black	208	1,323,274	15.72
		Am Indian/AK Native	38	117,422	32.36
		Asian/Pac Islander	59	635,072	9.29
			2,255	**10,449,775**	**21.58**
	35-39	White	2,080	8,714,212	23.87
		Black	173	1,339,996	12.91
		Am Indian/AK Native	36	115,453	31.18

		Asian/Pac Islander	58	556,887	10.42
			2,347	**10,726,548**	**21.88**
	40-44	White	2,571	9,414,670	27.31
		Black	156	1,365,312	11.43
		Am Indian/AK Native	30	116,429	25.77
		Asian/Pac Islander	34	510,700	6.66
			2,791	**11,407,111**	**24.47**
	45-49	White	2,447	8,949,574	27.34
		Black	109	1,226,834	8.88
		Am Indian/AK Native	11*	103,075	10.67*
		Asian/Pac Islander	49	451,396	10.86
			2,616	**10,730,879**	**24.38**
	50-54	White	2,141	7,857,280	27.25
		Black	93	990,815	9.39
		Am Indian/AK Native	8*	83,706	9.56*
		Asian/Pac Islander	29	380,976	7.61
			2,271	**9,312,777**	**24.39**
	55-59	White	1,673	6,598,781	25.35
		Black	57	712,977	7.99
		Am Indian/AK Native	4*	63,206	6.33*
		Asian/Pac Islander	37	285,760	12.95

			1,771	**7,660,724**	**23.12**
	60-64	White	1,143	4,990,925	22.90
		Black	50	518,640	9.64
		Am Indian/AK Native	5*	44,131	11.33*
		Asian/Pac Islander	18*	209,904	8.58*
			1,216	**5,763,600**	**21.10**
	65-69	White	901	3,928,400	22.94
		Black	32	406,144	7.88
		Am Indian/AK Native	3*	31,125	9.64*
		Asian/Pac Islander	22	159,872	13.76
			958	**4,525,541**	**21.17**
	70-74	White	944	3,379,699	27.93
		Black	27	304,446	8.87
		Am Indian/AK Native	2*	22,108	9.05*
		Asian/Pac Islander	23	117,567	19.56
			996	**3,823,820**	**26.05**
	75-79	White	944	2,779,916	33.96
		Black	24	219,081	10.95
		Am Indian/AK Native	3*	14,860	20.19*
		Asian/Pac Islander	14*	85,105	16.45*
			985	**3,098,962**	**31.78**

	80-84	White	797	1,857,912	42.90
		Black	16*	135,452	11.81*
		Am Indian/AK Native	0*	8,654	0.00*
		Asian/Pac Islander	11*	53,227	20.67*
			824	**2,055,245**	**40.09**
	85+	White	672	1,306,751	51.43
		Black	8*	95,911	8.34*
		Am Indian/AK Native	1*	6,031	16.58*
		Asian/Pac Islander	9*	36,231	24.84*
			690	**1,444,924**	**47.75**
Females	00-04	White	0*	7,523,300	0.00*
		Black	0*	1,583,938	0.00*
		Am Indian/AK Native	0*	113,637	0.00*
		Asian/Pac Islander	0*	442,989	0.00*
			0*	**9,663,864**	**0.00***
	05-09	White	0*	7,487,677	0.00*
		Black	0*	1,587,289	0.00*
		Am Indian/AK Native	0*	134,828	0.00*
		Asian/Pac Islander	0*	445,575	0.00*
			0*	**9,655,369**	**0.00***
	10-14	White	41	8,000,163	0.51

		Black	9*	1,749,239	0.51*
		Am Indian/AK Native	1*	150,708	0.66*
		Asian/Pac Islander	5*	436,502	1.15*
			56	**10,336,612**	**0.54**
	15-19	White	227	7,795,394	2.91
		Black	14*	1,583,322	0.88*
		Am Indian/AK Native	13*	144,926	8.97*
		Asian/Pac Islander	11*	436,147	2.52*
			265	**9,959,789**	**2.66**
	20-24	White	263	7,862,961	3.34
		Black	48	1,556,595	3.08
		Am Indian/AK Native	10*	133,130	7.51*
		Asian/Pac Islander	21	511,086	4.11
			342	**10,063,772**	**3.40**
	25-29	White	315	7,294,715	4.32
		Black	31	1,394,320	2.22
		Am Indian/AK Native	6*	112,534	5.33*
		Asian/Pac Islander	23	593,674	3.87
			375	**9,395,243**	**3.99**
	30-34	White	460	8,015,352	5.74
		Black	46	1,467,416	3.13

		Am Indian/AK Native	4*	111,871	3.58*
		Asian/Pac Islander	24	660,230	3.64
			534	**10,254,869**	**5.21**
	35-39	White	549	8,478,198	6.48
		Black	39	1,503,136	2.59
		Am Indian/AK Native	6*	114,337	5.25*
		Asian/Pac Islander	17*	585,785	2.90*
			611	**10,681,456**	**5.72**
	40-44	White	783	9,335,125	8.39
		Black	48	1,549,254	3.10
		Am Indian/AK Native	5*	120,340	4.15*
		Asian/Pac Islander	17*	550,760	3.09*
			853	**11,555,479**	**7.38**
	45-49	White	807	9,005,159	8.96
		Black	32	1,408,560	2.27
		Am Indian/AK Native	4*	108,883	3.67*
		Asian/Pac Islander	26	507,707	5.12
			869	**11,030,309**	**7.88**
	50-54	White	669	8,028,569	8.33
		Black	35	1,170,892	2.99
		Am Indian/AK Native	3*	89,277	3.36*

		Asian/Pac Islander	18*	441,896	4.07*
			725	**9,730,634**	**7.45**
	55-59	White	508	6,871,244	7.39
		Black	19*	866,646	2.19*
		Am Indian/AK Native	1*	67,401	1.48*
		Asian/Pac Islander	15*	328,035	4.57*
			543	**8,133,326**	**6.68**
	60-64	White	294	5,392,244	5.45
		Black	11*	664,773	1.65*
		Am Indian/AK Native	2*	48,008	4.17*
		Asian/Pac Islander	6*	237,061	2.53*
			313	**6,342,086**	**4.94**
	65-69	White	191	4,445,652	4.30
		Black	11*	547,197	2.01*
		Am Indian/AK Native	1*	35,400	2.82*
		Asian/Pac Islander	6*	192,293	3.12*
			209	**5,220,542**	**4.00**
	70-74	White	162	4,129,856	3.92
		Black	7*	451,388	1.55*
		Am Indian/AK Native	0*	26,857	0.00*
		Asian/Pac Islander	3*	159,040	1.89*

			172	**4,767,141**	**3.61**
	75-79	White	163	3,844,813	4.24
		Black	2*	368,591	0.54*
		Am Indian/AK Native	1*	19,940	5.02*
		Asian/Pac Islander	8*	120,287	6.65*
			174	**4,353,631**	**4.00**
	80-84	White	125	3,013,756	4.15
		Black	2*	258,504	0.77*
		Am Indian/AK Native	0*	13,208	0.00*
		Asian/Pac Islander	5*	75,366	6.63*
			132	**3,360,834**	**3.93**
	85+	White	98	2,950,147	3.32
		Black	4*	246,859	1.62*
		Am Indian/AK Native	0*	12,828	0.00*
		Asian/Pac Islander	6*	58,709	10.22*
			108	**3,268,543**	**3.30**
Total			**31,477**	**290,810,789**	**10.82**

*** Rates based on 20 or fewer deaths may be unstable. Use with caution.**

Produced by: Office of Statistics and Programming, National Center for Injury Prevention and Control, CDC
Data Source: NCHS Vital Statistics System for numbers of deaths. Bureau of Census for population estimates.

Table 3. 2003, United States
Suicide Injury Deaths and Rates per 100,000
All Races, Both Sexes, Ages 65 to 85+ (without racial data)
ICD-10 Codes: X60-X84, Y87.0,*U03

Sex	Age Group	Number of Deaths	Population	Crude Rate
Males	65-69	958	4,525,541	21.17
	70-74	996	3,823,820	26.05
	75-79	985	3,098,962	31.78
	80-84	824	2,055,245	40.09
	85+	690	1,444,924	47.75
		4,453	**14,948,492**	**29.79**
Females	65-69	209	5,220,542	4.00
	70-74	172	4,767,141	3.61
	75-79	174	4,353,631	4.00
	80-84	132	3,360,834	3.93
	85+	108	3,268,543	3.30
		795	**20,970,691**	**3.79**
Total		**5,248**	**35,919,183**	**14.61**

*** Rates based on 20 or fewer deaths may be unstable. Use with caution.**

Produced by: Office of Statistics and Programming, National Center for Injury Prevention and Control, CDC
Data Source: NCHS Vital Statistics System for numbers of deaths. Bureau of Census for population estimates. |

Table 4. 2003, United States
Suicide Injury Deaths and Rates per 100,000
All Races, Both Sexes, Ages 65 to 85+ (with racial data)
ICD-10 Codes: X60-X84, Y87.0,*U03

Sex	Age Group	Race	Number of Deaths	Population	Crude Rate
Males	65-69	White	901	3,928,400	22.94
		Black	32	406,144	7.88
		Am Indian/AK Native	3*	31,125	9.64*
		Asian/Pac Islander	22	159,872	13.76
			958	**4,525,541**	**21.17**
	70-74	White	944	3,379,699	27.93
		Black	27	304,446	8.87
		Am Indian/AK Native	2*	22,108	9.05*
		Asian/Pac Islander	23	117,567	19.56
			996	**3,823,820**	**26.05**
	75-79	White	944	2,779,916	33.96
		Black	24	219,081	10.95
		Am Indian/AK Native	3*	14,860	20.19*
		Asian/Pac Islander	14*	85,105	16.45*
			985	**3,098,962**	**31.78**
	80-84	White	797	1,857,912	42.90
		Black	16*	135,452	11.81*

		Am Indian/AK Native	0*	8,654	0.00*
		Asian/Pac Islander	11*	53,227	20.67*
			824	**2,055,245**	**40.09**
	85+	White	672	1,306,751	51.43
		Black	8*	95,911	8.34*
		Am Indian/AK Native	1*	6,031	16.58*
		Asian/Pac Islander	9*	36,231	24.84*
			690	**1,444,924**	**47.75**
Females	65-69	White	191	4,445,652	4.30
		Black	11*	547,197	2.01*
		Am Indian/AK Native	1*	35,400	2.82*
		Asian/Pac Islander	6*	192,293	3.12*
			209	**5,220,542**	**4.00**
	70-74	White	162	4,129,856	3.92
		Black	7*	451,388	1.55*
		Am Indian/AK Native	0*	26,857	0.00*
		Asian/Pac Islander	3*	159,040	1.89*
			172	**4,767,141**	**3.61**
	75-79	White	163	3,844,813	4.24
		Black	2*	368,591	0.54*
		Am Indian/AK Native	1*	19,940	5.02*

		Asian/Pac Islander	8*	120,287	6.65*
			174	**4,353,631**	**4.00**
	80-84	White	125	3,013,756	4.15
		Black	2*	258,504	0.77*
		Am Indian/AK Native	0*	13,208	0.00*
		Asian/Pac Islander	5*	75,366	6.63*
			132	**3,360,834**	**3.93**
	85+	White	98	2,950,147	3.32
		Black	4*	246,859	1.62*
		Am Indian/AK Native	0*	12,828	0.00*
		Asian/Pac Islander	6*	58,709	10.22*
			108	**3,268,543**	**3.30**
Total			**5,248**	**35,919,183**	**14.61**

*** Rates based on 20 or fewer deaths may be unstable. Use with caution.**

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Data Source: NCHS Vital Statistics System for numbers of deaths. Bureau of Census for population estimates.

Table 5. 20 Leading Causes of Death, United States
2003, All Races, Both Sexes

	Age Groups										
Rank	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	All Ages
1	Congenital Anomalies 5,621	Unintentional Injury 1,717	Unintentional Injury 1,096	Unintentional Injury 1,522	Unintentional Injury 15,272	Unintentional Injury 12,541	Unintentional Injury 16,766	Malignant Neoplasms 49,843	Malignant Neoplasms 95,692	Heart Disease 563,390	Heart Disease 685,089
2	Short Gestation 4,849	Congenital Anomalies 541	Malignant Neoplasms 516	Malignant Neoplasms 560	Homicide 5,368	Suicide 5,065	Malignant Neoplasms 15,509	Heart Disease 37,732	Heart Disease 65,060	Malignant Neoplasms 388,911	Malignant Neoplasms 556,902
3	SIDS 2,162	Malignant Neoplasms 392	Congenital Anomalies 180	Suicide 244	Suicide 3,988	Homicide 4,516	Heart Disease 13,600	Unintentional Injury 15,837	Chronic Low. Respiratory Disease 12,077	Cerebro-vascular 138,134	Cerebro-vascular 157,689
4	Maternal Pregnancy Comp. 1,710	Homicide 376	Homicide 122	Congenital Anomalies 206	Malignant Neoplasms 1,651	Malignant Neoplasms 3,741	Suicide 6,602	Liver Disease 7,466	Diabetes Mellitus 10,731	Chronic Low. Respiratory Disease 109,139	Chronic Low. Respiratory Disease 126,382
5	Placenta Cord Membranes 1,099	Heart Disease 186	Heart Disease 104	Homicide 202	Heart Disease 1,133	Heart Disease 3,250	HIV 5,340	Suicide 6,481	Cerebro-vascular 9,946	Alzheimer's Disease 62,814	Unintentional Injury 109,277
6	Unintentional Injury 945	Influenza & Pneumonia 163	Influenza & Pneumonia 75	Heart Disease 160	Congenital Anomalies 451	HIV 1,588	Homicide 3,110	Cerebro-vascular 6,127	Unintentional Injury 9,170	Influenza & Pneumonia 57,670	Diabetes Mellitus 74,219
7	Respiratory Distress 831	Septicemia 85	Septicemia 39	Chronic Low. Respiratory Disease 81	Influenza & Pneumonia 224	Diabetes Mellitus 657	Liver Disease 3,020	Diabetes Mellitus 5,658	Liver Disease 6,428	Diabetes Mellitus 54,919	Influenza & Pneumonia 65,163
8	Bacterial Sepsis 772	Perinatal Period 79	Benign Neoplasms 38	Influenza & Pneumonia 72	Cerebro-vascular 221	Cerebro-vascular 583	Cerebro-vascular 2,460	HIV 4,442	Suicide 3,843	Nephritis 35,254	Alzheimer's Disease 63,457
9	Neonatal Hemorrhage 649	Chronic Low. Respiratory Disease 55	Chronic Low. Respiratory Disease 37	Benign Neoplasms 41	Chronic Low. Respiratory Disease 191	Congenital Anomalies 426	Diabetes Mellitus 2,049	Chronic Low. Respiratory Disease 3,537	Nephritis 3,806	Unintentional Injury 34,335	Nephritis 42,453
10	Circulatory System Disease 591	Benign Neoplasms 51	Cerebro-vascular 29	Cerebro-vascular 40	HIV 178	Influenza & Pneumonia 373	Influenza & Pneumonia 992	Viral Hepatitis 2,259	Septicemia 3,651	Septicemia 26,445	Septicemia 34,069
11	Intrauterine Hypoxia 558	Cerebro-vascular 46	Anemias 16	Septicemia 38	Diabetes Mellitus 160	Liver Disease 358	Chronic Low. Respiratory Disease 950	Septicemia 2,157	Influenza & Pneumonia 3,130	Hypertension 18,657	Suicide 31,484

12	Atelectasis 441	Acute Bronchititis 27	HIV 15	Anemias 31	Septicemia 154	Septicemia 309	Septicemia 910	Influenza & Pneumonia 2,140	Hypertension 1,755	Parkinson's Disease 17,566	Liver Disease 27,503
13	Necrotizing Enterocolitis 405	Anemias 24	Diabetes Mellitus 10	Diabetes Mellitus 21	Complicated Pregnancy 116	Chronic Low. Respiratory Disease 282	Nephritis 796	Homicide 2,017	HIV 1,517	Pneumonitis 15,850	Hypertension 21,940
14	Homicide 341	Meningitis 24	Meningitis 10	HIV 21	Anemias 105	Nephritis 282	Viral Hepatitis 652	Nephritis 2,001	Aortic Aneurysm 1,477	Athero-sclerosis 12,336	Parkinson's Disease 17,997
15	Influenza & Pneumonia 322	Meningo-coccal Infection 18	Perinatal Period 10	Nephritis 15	Benign Neoplasms 96	Complicated Pregnancy 229	Congenital Anomalies 564	Hypertension 1,031	Benign Neoplasms 1,238	Aortic Aneurysm 12,040	Homicide 17,732
16	Gastritis 310	Nephritis 14	Nephritis 7	Pneumonitis 12	Nephritis 95	Benign Neoplasms 178	Hypertension 372	Aortic Aneurysm 820	Viral Hepatitis 1,085	Benign Neoplasms 10,838	Pneumonitis 17,335
17	Septicemia 278	Pneumonitis 10	Diseases Of Appendix 6	Meningo-coccal Infection 9	Pneumonitis 46	Anemias 157	Benign Neoplasms 339	Benign Neoplasms 682	Homicide 786	Liver Disease 10,210	Aortic Aneurysm 14,810
18	Chronic Respiratory Disease 262	Diabetes Mellitus 8	Suicide 6	Perinatal Period 9	Aortic Aneurysm 41	Aortic Aneurysm 112	Aortic Aneurysm 316	Congenital Anomalies 667	Pneumonitis 773	Suicide 5,248	Perinatal Period 14,378
19	Hydrops Fetalis 188	Hernia 6	Hernia 4	Meningitis 7	Meningo-coccal Infection 39	Hypertension 98	Anemias 183	Pneumonitis 392	Congenital Anomalies 666	Anemias 3,539	HIV 13,658
20	Renal Failure 170	Diseases Of Appendix 5	Pneumonitis 4	Diseases Of Appendix 5	Meningitis 37	Pneumonitis 69	Two Tied 166	Peptic Ulcer 281	Alzheimer's Disease 554	Peptic Ulcer 3,110	Benign Neoplasms 13,563

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Data Source: National Center for Health Statistics (NCHS), National Vital Statistics System

Figure 1. Graphical display of U.S. Suicide rate across the age spectrum

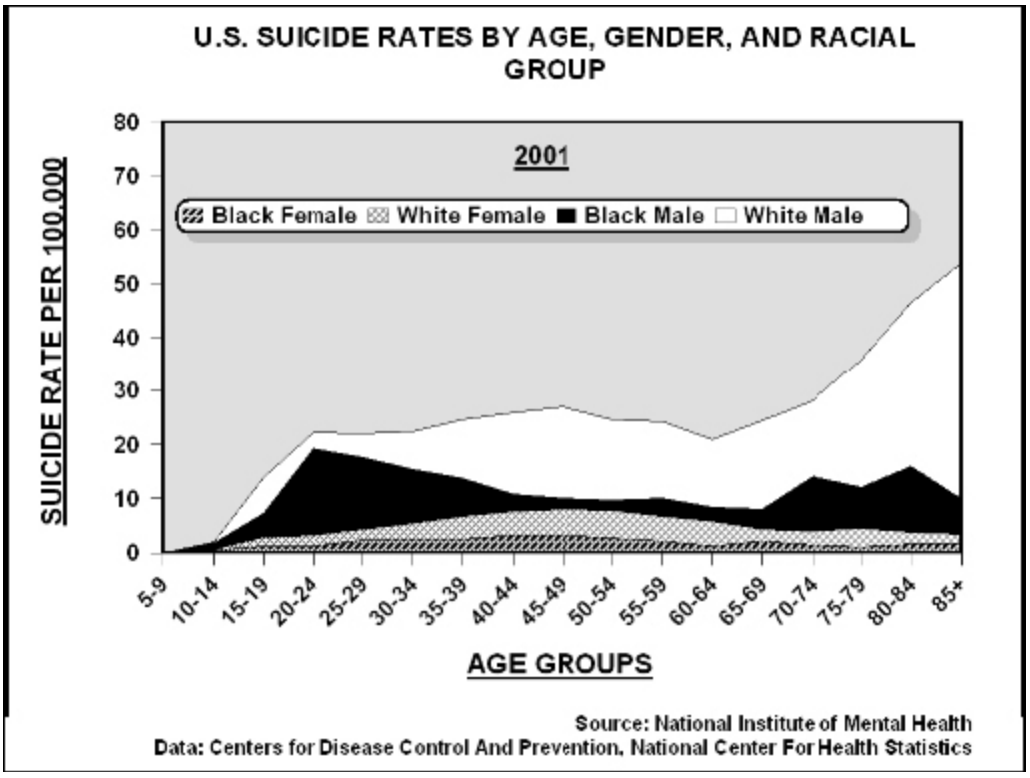
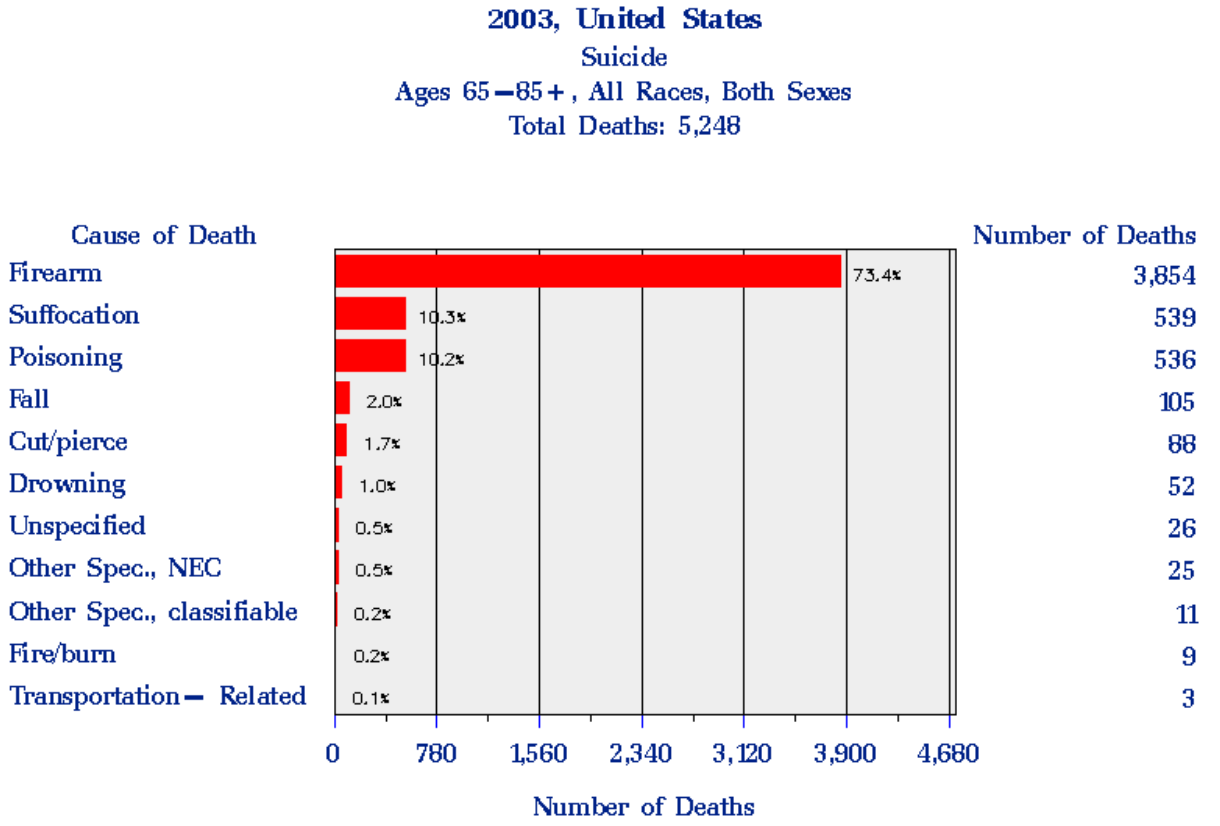


Figure 2. Suicide in the elderly: causes of death, 2003



NEC means Not Elsewhere Classifiable.

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Data Source: National Center for Health Statistics (NCHS), National Vital Statistics System

Figure 3. Regional variations in suicide death rates, United States, 2001