

### Introduction

Not only do firearm-related injuries rank highest among all conditions in the number of uninsured hospital stays, the average length of stay (LOS) is also much longer compared to other medical conditions<sup>1</sup>. As a result, the costs of treating firearm injuries are substantial. It has been estimated that the cost of providing medical care for firearm-related injuries in the United States is approximately \$4 billion a year<sup>2</sup>, and from 50%<sup>3</sup> to 96%<sup>4</sup> of that total is un- or under-reimbursed.

In Connecticut alone, charges associated with treating firearm-related injuries totaled \$7,661,586 in fiscal year 2004. Consistent with national statistics, nearly 70% of all Connecticut firearm-related injury victims were either uninsured or covered by Medicaid, meaning that the state's hospitals had to absorb a significant portion of the cost of treating firearm-related injuries.

This ChimeData *Fact Sheet* will provide an overview of Connecticut firearm-related injury trends, profile where the majority of these injuries are treated in the state, and outline implications of firearm-related injuries for Connecticut hospitals.

### Connecticut Trends

Connecticut has consistently had a lower firearm mortality rate per 100,000 population than the rest of the nation and the Northeast, and that rate has trended down since 1994 (Exhibit 1). This is not surprising since firearm mortality in its various forms is most commonly related to the prevalence of firearms, among other factors, and Connecticut is one of five states with the lowest prevalence of gun ownership<sup>5</sup>.

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- Percent of Firearm-Related Injuries Treated at Non-Profit, Acute Care Hospitals Connecticut, Fiscal 1996-2004
- Demographic Characteristics of Hospital Patients

<sup>1</sup> Coben JH, Steiner CA. Hospitalization for firearm-related injuries in the United States, 1997. *Am J Prev Med.* 2003 Jan;24(1):1-8.

<sup>2</sup> Kizer KW, Vassar MJ, Harry RL, Layton KD. Hospitalization charges, costs, and income for firearm-related injuries at a university trauma center. *JAMA.* 1995 Jun 14;273(22):1768-73.

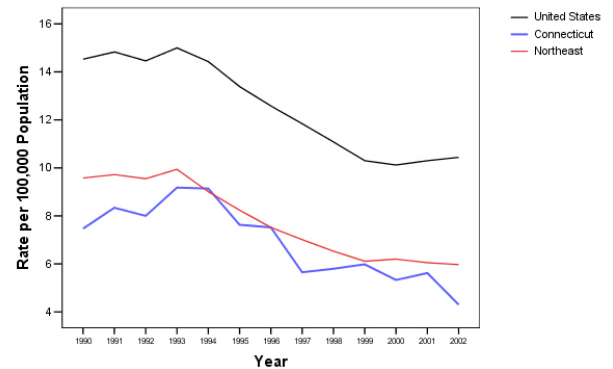
<sup>3</sup> Cook PJ, Lawrence BA, Ludwig J, Miller TR. The medical costs of gunshot injuries in the United States. *JAMA.* 1999 Aug 4;282(5):447-54.

<sup>4</sup> Ordog GJ, Wasserberger J, Ackroyd G. Hospital costs of firearm injuries. *J Trauma.* 1995 Feb;38(2):291-8.

<sup>5</sup> Miller M, Azrael D, Hemenway D. Rates of household firearm ownership and homicide across US regions and states, 1988-1997. *Am J Public Health.* 2002 Dec;92(12):1988-93.

### Exhibit 1

Rates of firearm-related fatalities in the United States, the Northeast Region and Connecticut, 1990-2002

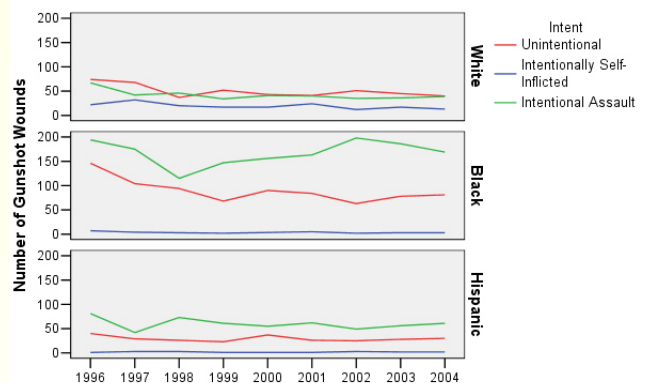


Data from the National Center for Health Statistics. Rates adjusted to the year 2000 standard population.

While Connecticut's firearm-related mortality rate as a whole is lower than the nation, the burden of morbidity and mortality fell disproportionately on Blacks or African Americans, who comprise approximately 9% of the state's population<sup>6</sup> but account for 37% of all firearm-related injuries treated in hospitals (see Appendix, Exhibit B). Firearm-related violence is a major cause of hospitalization for young Blacks or African Americans and represents a significant cost to publicly financed healthcare<sup>7,8,9</sup>. While Whites in Connecticut had higher numbers of intentionally self-inflicted firearm-related injuries, Blacks or African Americans had higher rates of both unintentional and intentional assault injuries than other races (Exhibit 2).

### Exhibit 2

Number of gunshot wounds treated by non-profit, acute care hospitals by race and intent, Connecticut, Fiscal 1996-2004



Connecticut Hospital Association, ChimeData, 2005.

<sup>6</sup> Profiles of General Demographic Characteristics: 2000 Census of Population and Housing, Connecticut. US Census Bureau. May 2001.

<sup>7</sup> Vassar MJ, Kizer KW. Hospitalizations for firearm-related injuries. A population-based study of 9562 patients. *JAMA.* 1996 Jun 12;275(22):1734-9.

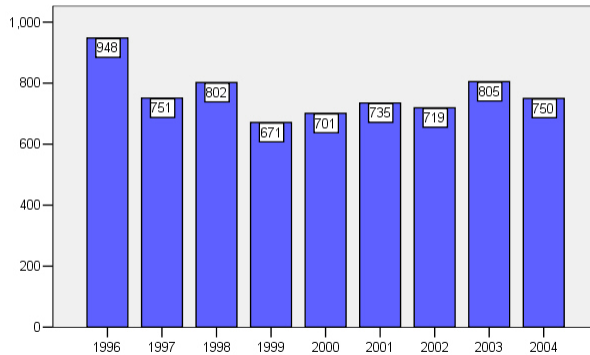
<sup>8</sup> Firearm mortality among persons aged 1 to 34. *Stat Bull Metrop Insur Co.* 1991 Oct-Dec;72(4):2-11.

<sup>9</sup> Frommelt RA. Non-combat gunshot injuries among the active duty service members, 1990-1999. *Medical Surveillance Monthly Report* 2000;6(9): 2-9.

Though there are fewer than 1,000 firearm-related injuries treated in Connecticut hospitals each year (Exhibit 3), the impact on individual hospitals is highly disproportionate. Four hospitals (Bridgeport Hospital, Hartford Hospital, Saint Francis Hospital and Medical Center, and Yale-New Haven Hospital) treated 52% of all firearm-related injuries (see Appendix, Exhibit A) and 67% of those due to intentional assault. 80% of the patients treated for these firearm-related injuries were either uninsured or covered by Medicaid (1996-2004).

### Exhibit 3

Number of firearm-related injuries treated in non-profit, acute care hospitals, Connecticut, Fiscal 1996-2004



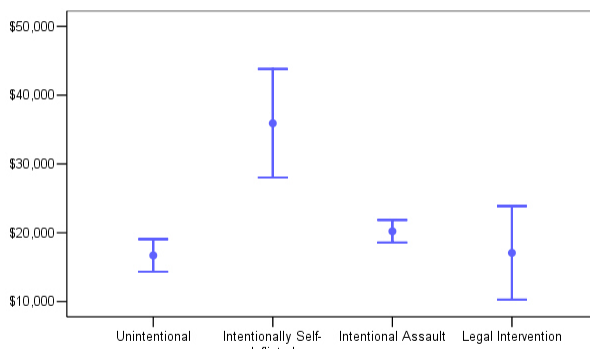
Connecticut Hospital Association, ChimeData, 2005.

Most firearm-related injuries in Connecticut, victims of which are about 90% male (see Appendix, Exhibit B), were intentional assault/ homicide (56.0%), followed by unintentional (38.1%), intentionally self-inflicted (4.8%) and legal intervention (1.1%). Among those treated in hospitals between fiscal years 1996 and 2004, the highest mortality rates were associated with intentionally self-inflicted injuries (43.5%), followed by legal intervention (15.8%), intentional assault (7.6%), and unintentional injuries (6.2%). Overall, mortality from firearm-related injuries was 8.9%.

Patients admitted with firearm-related injuries had an average charge of \$22,320, with average charges highest among those with intentionally self-inflicted injuries (Exhibit 5).

### Exhibit 5

Average charges associated with treating firearm-related injuries in non-profit, acute care hospitals, Connecticut, Fiscal 1996-2004



Connecticut Hospital Association, ChimeData, 2005.

The average length of stay for firearm-related injuries at Connecticut hospitals was 7 days. Both of these findings are consistent with published reports<sup>10,11</sup>.

There was also significant seasonal trend for firearm-related injuries to be most common during the warmer months between fiscal years 1996 and 2004. Rates dropped to lows in February and March, began rising in April, and peaked in August. This trend is consistent among all types of firearm-related injuries, with the exception of unintentional injuries, which peaked in October, November, and December, possibly due to hunting accidents.

Among those Connecticut cases where the type of weapon was documented, handguns were associated with 73.9% of unintentional firearm-related injuries, 85.2% of intentionally self-inflicted injuries and 92.6% of intentional assaults. These findings are slightly higher, but consistent with, national published reports that handguns are used in 89% of firearm homicides and 71% of firearm suicides<sup>12</sup>.

### Implications for Connecticut's Acute Care Hospitals

- Firearm-related injuries require costly advanced surgical and rehabilitative techniques to treat.
- Firearm-related injuries rank highest among all conditions in the number of uninsured hospital stays, and there is also a low reimbursement rate based on payor mix (primarily Medicaid) for firearm-related injuries, resulting in significant financial losses for hospitals.
- Hospitals based in urban areas are disproportionately affected by firearm-related injuries.
- Hospitals in urban areas should be prepared to treat more firearm-related injuries during the summer months.
- Hospitals in rural areas where hunting is popular may see an increase in firearm-related injuries in the fall.

### Useful Websites

- [The Johns Hopkins Center for Gun Policy and Research](#)
- [National Center for Injury Prevention and Control](#)
- [Connecticut Children's Medical Center - Injury Prevention Center](#)
- [Harvard Injury Control Research Center](#)
- [Firearm & Injury Center at Penn State University](#)

<sup>10</sup> Coben JH, Steiner CA. Hospitalization for firearm-related injuries in the United States, 1997. *Am J Prev Med.* 2003 Jan;24(1):1-8.

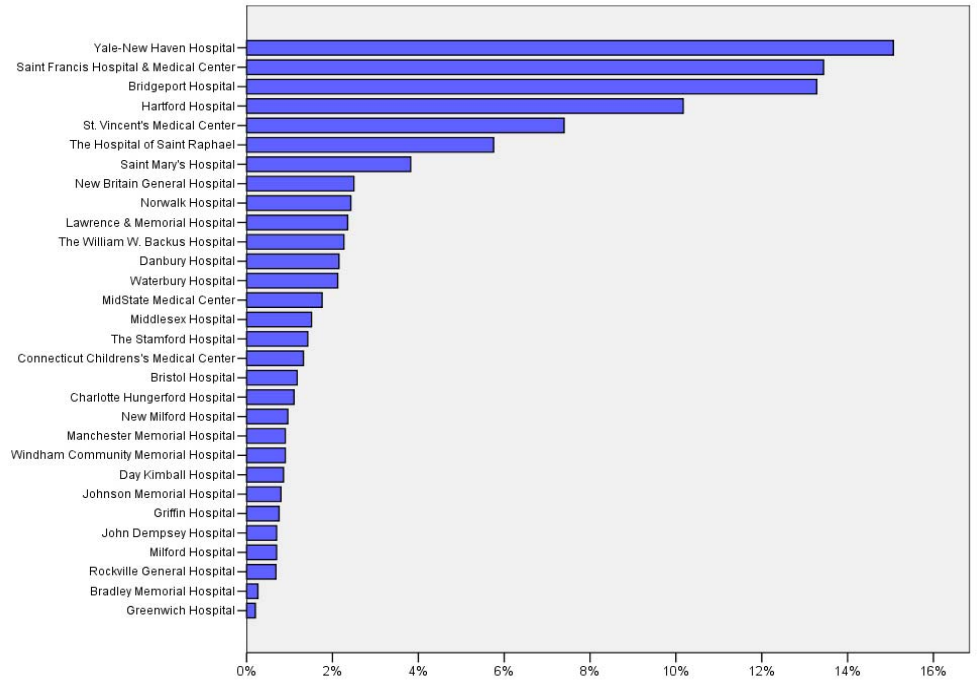
<sup>11</sup> Kizer KW, Vassar MJ, Harry RL, Layton KD. Hospitalization charges, costs, and income for firearm-related injuries at a university trauma center. *JAMA.* 1995 Jun 14;273(22):1768-73.

<sup>12</sup> Hargarten SW, Karlson TA, O'Brien M, Hancock J, Quebbeman E. Characteristics of firearms involved in fatalities. *JAMA.* 1996 Jan 3;275(1):42-5.

## Appendix

### Exhibit A

Percent of Firearm-Related Injuries Treated at Non-Profit, Acute Care Hospitals, Connecticut, Fiscal 1996-2004



Connecticut Hospital Association, ChimeData, 2005

### Exhibit B

Demographic Characteristics of Hospital Patients Treated for Firearm-Related Injuries in Connecticut (1996-2004)

	Visits	Percent
<b>Gender</b>		
Male	6,179	89.7%
Female	711	10.3%
<b>Age</b>		
17 and younger	1,617	23.5%
18-39	4,446	64.6%
40-64	701	10.2%
65 and older	118	1.7%
<b>Race</b>		
White	1,756	25.5%
Black	2,549	37.0%
Hispanic	1,040	15.1%
Other	1,537	22.3%
<b>Payor</b>		
Uninsured	2,203	32.0%
Medicare	168	2.4%
Medicaid	2,444	35.5%
Other Payor	2,067	30.0%

Connecticut Hospital Association, ChimeData 2005