

Judge David L. Bazelon Center for Mental Health Law

The Relationship between the Availability of Psychiatric Hospital Beds, Murders Involving Firearms, and Incarceration Rates

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This analysis finds no meaningful correlations between the availability of psychiatric hospital beds and either murders involving firearms or incarceration rates.

During the past several years, murders involving the use of firearms—notably, mass murders that generate significant media attention—have raised questions about the adequacy of mental health services in this country. Clearly, people who have serious mental illnesses are sometimes involved in some homicides involving firearms, but also clearly, in the great majority of the 8,583 homicides with firearms in 2011,¹ serious mental illness is not a factor. Further, it has been well documented that, notwithstanding an array of effective community-based services and supports, the nation's mental health system is in disarray and badly in need of reform.² Instead of early, effective and voluntary interventions that can avert mental health crises that have enormous human and fiscal costs, public mental health (largely as a consequence of limited resources) has increasingly focused on late-stage emergency responses, including the engagement of police and courts in the delivery of mental healthcare.

Some groups have argued that the disability rights movement, deinstitutionalization, and the closure of state hospital beds have significantly contributed to the tragic gun-related homicides across the country. Such arguments tend to overlook the impact of the nation's failure to fund the comprehensive community mental health systems that were intended to replace archaic state institutions. Nevertheless, arguments to expand the stock of psychiatric hospital beds have ready

¹United States Department of Justice, Federal Bureau of Investigation. (2007). *Crime in the United States, 2006*. Retrieved January 15, 2013 from http://www2.fbi.gov/ucr/cius2006/offenses/violent_crime/index.html.

²Bazelon Center for Mental Health Law(2001). *Disintegrating systems, The state of states' public mental health systems*. Retrieved January 15, 2013 from

<http://www.bazelon.org/LinkClick.aspx?fileticket=aKPzPYiA3rc%3d&tabid=104;>

The President's New Freedom Commission on Mental Health. (2003). *Achieving the promise: Transforming mental health care in America*. Final report (DHHS Publication No. SMA

03-3832). Washington, DC: U.S. Government Printing Office; U.S. Department of Health and Human Services (1999) *Mental health: A Report of the Surgeon General*. Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health.

appeal, particularly in the wake of tragic mass homicides; increasing the number of psychiatric hospital beds appears to be a straightforward, palpable response.

However, the findings of this study indicate that this would not be an effective response. If it is true that a shortage of psychiatric hospital beds significantly contributes to the nation's firearm-related homicides (and should significantly guide public policies intended to reduce the murder rate relating to the use of firearms), one would expect a clear relationship between the availability of psychiatric hospital beds within states and their murder rates. This analysis shows that this is not the case.

The Bazelon Center examined FBI data relating to rates of murder by firearms and compared these statistics with each state's per capita number of psychiatric hospital beds.³ Some of the latter data were obtained from advocates for expansions in psychiatric hospitals.⁴ The analysis included data from 2006, reflecting the availability of psychiatric beds in facilities traditionally associated with inpatient care of people with serious mental illnesses, public hospitals operated by states and localities. These facilities provide acute hospital care, and often long term inpatient services as well. Nationwide, the number of public psychiatric beds per capita has declined dramatically over the past decades, and likely has declined since 2006. However, the most significant reductions in state facilities had occurred long before that year, so it is reasonable to hypothesize that the potential impact of decreases in the availability of public psychiatric beds and the firearm homicide rate would by then be apparent if a significant relationship exists.

As the number of public psychiatric beds has decreased over the past years, there has been an increasing reliance on private psychiatric hospitals for treatment of people with serious mental illness, particularly for acute care. For this reason, this analysis also includes data from 2007 that reflect states' total numbers of non-federal psychiatric beds, both public and private. Private hospitals vary considerably in terms of their services to people with serious mental illnesses—the population typically presumed to be associated with the mass shootings that garner media attention and prompt public policy debates. Such facilities also vary in terms of whether or not they serve individuals who are civilly committed to treatment. While there are no readily available data sets that identify the specific numbers of private psychiatric beds available for treatment of the population of interest here, the 2007 per capita rates represent the total pool of psychiatric inpatient beds in states, including both public facilities that tend to concentrate on people with serious mental illness and additional beds that are available to this population in the private sector.

If, indeed, limited inpatient capacity contributes to the firearm-related homicides, one would expect a significant negative correlation between this murder rate both with the per capita number of non-

³ The study included 47 states for each year; complete data were not available for three states in each year which could not be included in this analysis.

⁴Torrey, E. F., Entsminger, K., Geller, J., Stanley, J., & Jaffe, D. J. (2008). The shortage of public hospital beds for mentally ill persons: A report of the treatment advocacy center. Retrieved January 15, 2013 from http://www.treatmentadvocacycenter.org/storage/documents/the_shortage_of_publichospital_beds.pdf.

federal public psychiatric beds and total non-federal public and private psychiatric beds (i.e., lower numbers of hospital beds should be associated with higher murder rates). As is detailed below, statistical analyses do not confirm such relationships. In fact, there is a strikingly low (and not statistically significant) correlation between the number of psychiatric beds and the firearms murder rates in both of the years examined. Low per capita numbers of public psychiatric hospital beds in states were not associated with higher rates of murder by firearms, and states with relatively greater numbers of beds were not associated with lower firearm murder rates. Furthermore, the 2007 data reflecting both public and private psychiatric beds show essentially zero correlation with firearm murders that year (Pearson's $r(47)=-0.004$, $p=.489$).

Proponents of expansions in psychiatric hospital beds have not only referenced violent crime as a consequence of perceived shortages in inpatient capacity, but have also cited the over-representation of people with serious mental illness in criminal justice settings. As an additional analysis, the Bazelon Center examined statistics reflecting states' incarceration rates and the availability of psychiatric beds in 2007. This possible relationship is important because of the shamefully large numbers of people with serious mental illness who are incarcerated in jails and prisons nationwide. It has become fairly common to cynically characterize this situation in terms of jails and prisons having become today's state hospitals. If this were true, one would expect a significant negative correlation between states' per capita number of psychiatric beds and their incarceration rates. In other words, limited availability of psychiatric hospital beds would be expected to be associated with higher rates of incarceration, with inmates having serious mental illnesses swelling the numbers of incarcerated individuals. Applying data from the U. S. Department of Justice, again, the correlation was not statistically significant, approaching zero (Pearson's $r(47)=0.011$, $p=.470$).

For each analysis, the correlations were as follows:

- 2006- Murder by Firearms⁵ and Public Psychiatric Beds⁶ are not significantly correlated (Pearson's $r(47)=-0.106$, $p=.239$)
- 2007- Murder by Firearms⁷ and Total Non-Federal Psychiatric Beds⁸ are not significantly correlated (Pearson's $r(47)=-0.004$, $p=.489$)
- 2007- Incarceration Rates⁹ and Total Psychiatric Beds are not significantly correlated (Pearson's $r(47)=0.011$, $p=.470$)

⁵ United States Department of Justice, Federal Bureau of Investigation. (2007). Crime in the United States, 2006. Retrieved January 15, 2013 from http://www2.fbi.gov/ucr/cius2006/offenses/violent_crime/index.html.

⁶ Torrey, E. F., Entsminger, K., Geller, J., Stanley, J., & Jaffe, D. J. (2008). The shortage of public hospital beds for mentally ill persons: A report of the treatment advocacy center. Retrieved January 15, 2013 from http://www.treatmentadvocacycenter.org/storage/documents/the_shortage_of_public_hospital_beds.pdf.

⁷ United States Department of Justice, Federal Bureau of Investigation. (2008). Crime in the United States, 2007. Retrieved January 15, 2013 from <http://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2007>.

⁸ Aron, L., Honberg, R., Duckworth, K., Kimball, A., Edgar, E., Carolla, B....Fitzpatrick, M. (2009) Grading the states 2009: A report on America's health care system for adults with serious mental illness, Arlington, VA: National Alliance on Mental Illness.

Conclusions

The Bazelon Center examined the relationships between states' murder rates by firearms and the availability of psychiatric hospital beds, and states' murder rates by firearms and incarceration rates. This analysis is not being presented as a comprehensive empirical study of these interrelationships, but rather, as a broad look at whether public policy arguments to increase the number of psychiatric beds have merit as a means of addressing these adverse outcomes. These arguments are often made in the wake of firearms tragedies, when there is a push to implement some quick and palpable reforms. If expanding the number of psychiatric beds is a meaningful remedy to firearm related murders in this country, one would expect a clear inverse relationship, showing that states with low per capita numbers of psychiatric hospital beds have higher rates of firearm-related homicides or higher rates of incarceration. Correlations among these factors were found to be strikingly low and not statistically significant. These data suggest that, to the extent that unaddressed needs of people with serious mental illness contribute to the nation's homicide rate, the public policy answer is not in increasing the number of psychiatric hospital beds, but is elsewhere. There is a substantial body of evidence suggesting that meaningful remedies may instead be found in appropriately resourcing the nation's community mental health systems enabling them to move from their current crisis focus and to provide early, effective services and supports to people with serious mental illness.

⁹ U.S. Department of Justice, Bureau of Justice Statistics. (2008) *Prisoners in 2007* by H. C. West and W. J. Sabol. Retrieved January 15, 2013 from <http://bjs.ojp.usdoj.gov/index.cfm?ty=pbdetail&iid=903>

Table 1
States' Rates of Murder by Firearms, Incarceration,
and the Availability of Psychiatric Hospital Beds for 2006 and 2007

	2006		2007		
	MURDER BY FIREARMS (RATES PER 100,000) ⁱ	PUBLIC PSYCHIATRIC BEDS/100,000 PEOPLE ⁱⁱ	MURDER BY FIREARMS (RATES PER 100,000) ⁱⁱⁱ	TOTAL PSYCHIATRIC BEDS/1000 PEOPLE WITH SERIOUS MENTAL ILLNESS ^{iv}	INCARCERATION (RATES PER 100,000) POPULATION ^v
Alaska	3.28	11.3	3.07	9.1	447
Arizona	5.56	5.9	5.10	4.5	554
Arkansas	4.77	6.7	4.59	9.1	502
California	5.00	17.5	4.39	8.7	471
Colorado	1.79	16.9	1.75	8.6	465
Connecticut	1.85	25.4	1.63	14.8	410
Delaware	3.16	33.8	2.54	16.1	482
Georgia	4.30	18.5	5.08	10.7	563
Hawaii	0.54	13.5	0.23	11.7	338
Idaho	1.50	11.3	1.67	10.8	483
Illinois	3.05	14.3			
Indiana		19.3	3.64	11.7	426
Iowa	0.77	8.1	0.40	9.3	291
Kansas	2.53	21.7	2.27	12.2	312
Kentucky	2.33	15.6	3.09	9.5	512
Louisiana	9.24	20.2	10.60	11.1	865
Maine	0.91	12.6	0.68	10	159
Maryland	7.18	21.6	7.37	13.8	404
Massachusetts	1.72	15.8	1.77	14.4	246
Michigan	4.93	9.9	4.41	7.6	499
Minnesota	1.45	26.8	1.17	11.1	181
Mississippi	4.16	49.7	4.08	19.9	734
Missouri	4.21	21.5	4.20	13.9	506
Montana	0.42	20.9	1.04	7	356
Nebraska	0.28	20.7	0.51	7.9	243
Nevada	5.33	5.1	4.79	7.6	509
New Hampshire	0.23	17.2	0.53	11.4	222
New Jersey	3.31	32.4	2.99	22.3	308
New Mexico	2.92	22.3	4.11	9.5	313

New York	2.07	27.4	2.59	17.3	322
North Carolina	3.82	17.1	4.07	9.5	361
North Dakota	0.16	25.9	0.47	13.4	221
Ohio	2.91	10.6	2.61	7.9	442
Oklahoma	3.72	11	3.65	10.7	665
Oregon	1.19	19.2	1.01	8.1	369
Pennsylvania	4.45	18.9	4.24	13.3	365
Rhode Island	0.66	12.5	0.85	7.5	235
South Carolina	5.85	10.6	5.33	7.8	524
South Dakota	0.26	40.3	0.50	13.9	413
Tennessee	4.49	18.1	4.09	10.4	424
Texas	4.04	12.1	3.96	8.5	669
Utah	0.82	13.8	1.44	9.5	239
Vermont	1.12	8.9	1.45	8.4	260
Virginia	3.45	22.2	3.72	11.8	490
Washington	1.67	18.9	1.53	8.1	273
West Virginia	2.20	14.2	2.04	10.1	333
Wisconsin	1.71	13	2.16	10.8	397
Wyoming	0.97	24.1	1.34	14.3	394

ⁱ United States Department of Justice, Federal Bureau of Investigation. (2007). Crime in the United States, 2006. Retrieved January 15, 2013 from http://www2.fbi.gov/ucr/cius2006/offenses/violent_crime/index.html.

ⁱⁱ Torrey, E. F., Entsminger, K., Geller, J., Stanley, J., & Jaffe, D. J. (2008). The shortage of public hospital beds for mentally ill persons: A report of the treatment advocacy center. Retrieved January 15, 2013 from http://www.treatmentadvocacycenter.org/storage/documents/the_shortage_of_public_hospital_beds.pdf.

ⁱⁱⁱ United States Department of Justice, Federal Bureau of Investigation. (2008). Crime in the United States, 2007. Retrieved January 15, 2013 from <http://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2007>.

^{iv} Aron, L., Honberg, R., Duckworth, K., Kimball, A., Edgar, E., Carolla, B....Fitzpatrick, M. (2009) Grading the states 2009: A report on America's health care system for adults with serious mental illness, Arlington, VA: National Alliance on Mental Illness.

^v U.S. Department of Justice, Bureau of Justice Statistics. (2008) *Prisoners in 2007* by H. C. West and W. J. Sabol. Retrieved January 15, 2013 from <http://bjs.ojp.usdoj.gov/index.cfm?ty=pbdetail&iid=903>