

**Chapter 8**  
**MEANS RESTRICTION**

## Chapter 8

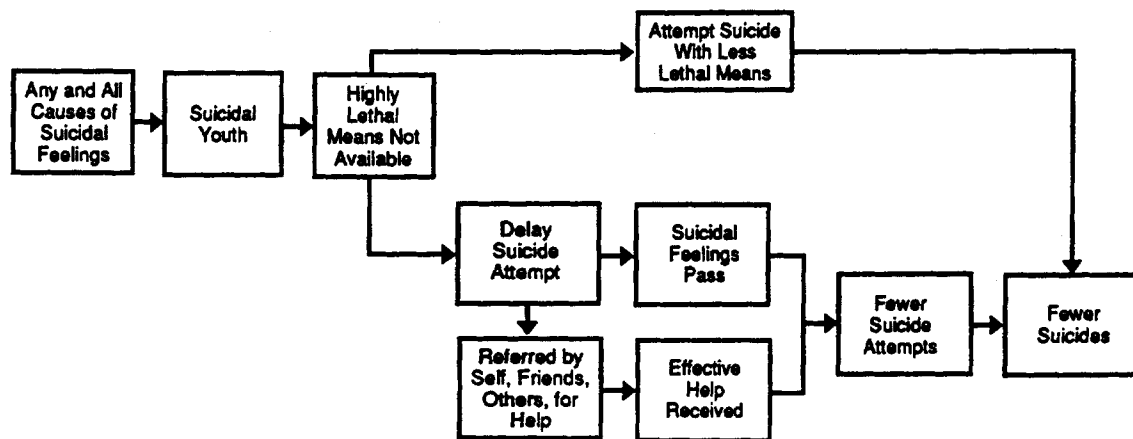
# Means Restriction

### Overview and Rationale

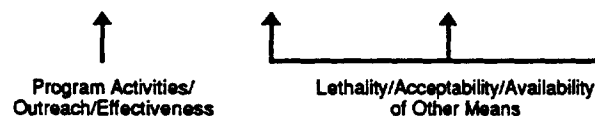
Means restriction refers to suicide prevention efforts that reduce access to firearms, drugs, high places, and other common means of committing suicide. The rationale behind this approach is based on several elements. First, impulsiveness appears to play an important role in suicide, especially youth suicide. Unlike adults, most youths who commit suicide do not suffer from concomitant clinical depression at the time of their suicide (Shaffer, et al., 1988). Furthermore, for practically all suicides, ambivalence is a prominent characteristic; i.e., the determination to commit suicide waxes and wanes. For these reasons, many suicide prevention specialists argue that, if lethal means are not readily available when a person decides to attempt suicide, he or she might either (1) delay the attempt, allowing for the possibility of later deciding against suicide, or (2) use a less lethal means, allowing for a greater possibility of medical rescue (see Figure 8). Note that, as illustrated in Figure 8, means restriction has the potential for preventing suicides *even if it does not decrease the incidence of suicide attempts*. This is the only strategy with such potential reviewed in this guide. In addition, at least some portion of impulsive decisions to attempt suicide might never be acted on if substantial efforts were needed to arrange for a method of suicide.

**FIGURE 8.**  
**Rationale for Means Restriction Programs to Prevent Youth Suicide**

#### Processes and Outcomes:



#### Key Issues/Activities:



Ready access to firearms may be a particularly important risk factor for suicide among young people. Among males, 15 to 24 years of age, nearly two-thirds of all suicides are committed with guns (Table 8). Unlike drug ingestions, carbon monoxide poisoning, and many other methods of suicide, a suicide attempt with a firearm is often immediately lethal, leaving little or no opportunity for rescue after the attempt. The accessibility of a firearm may both limit the preattempt opportunity for intervention by others and facilitate impulsive suicidal acts (Boyd, 1983; Kellerman, et al., 1991; Sloan, et al., 1990).

## Research Findings

Although more research is needed in this area, many public health practitioners and researchers nevertheless believe that the evidence is sufficiently compelling to strongly advocate that parents prevent their children from having unsupervised access to handguns and other firearms. A comprehensive review of the epidemiologic evidence suggesting the importance of ready access to lethal means in the etiology of suicide is beyond the scope of this discussion.\* A few key studies, however, might be mentioned in this context.

Sloan, et al. (1990), compared suicide rates in King County (Seattle), Washington, with that in the Vancouver, British Columbia, metropolitan area, where handgun regulations are considerably more restrictive. The rate of youth suicide from other means (e.g., poisoning and hanging) was similar in both areas, but the rate of suicide by handguns among 15- to 24-year-olds was about 10 times higher in the Seattle area (Table 9). Neither Vancouver nor Seattle, however, substantially restricts access to rifles or shotguns, and in both communities the rates of suicides involving these classes of weapons were similar.

Brent, et al. (1988), compared adolescents who committed suicide with suicidal inpatients who had either seriously considered or actually attempted suicide. Both groups had similarly high rates of affective disorder and family histories of affective disorder, antisocial disorder, and suicide. Availability of firearms in the home, however, was significantly more prevalent

\*For a full review of this issue, see: Centers for Disease Control. Prevention of violence and injuries due to violence. In: *Position Papers from the Third National Injury Control Conference: Setting the National Agenda for Injury Control in the 1990s*. Atlanta, Georgia: Centers for Disease Control, 1992:159-254.

**TABLE 8.**  
**Methods By Which 15- to 24-Year-Olds in the United States Commit Suicide**

Method	1970		1980		1988	
	Males	Females	Males	Females	Males	Females
Firearms and explosives	52.3%	34.2%	64.9%	55.7%	64.2%	45.4%
Hanging, strangulation, and suffocation	21.4%	8.5%	21.8%	11.1%	20.5%	12.3%
Poisoning by solid or liquid substances	10.0%	41.5%	3.9%	17.2%	3.9%	23.7%
Poisoning by gases	9.4%	7.4%	4.9%	7.3%	7.1%	11.5%
Other means	6.9%	8.5%	4.5%	8.6%	4.2%	7.1%

Source: 1970, 1980 percentages: Centers for Disease Control. *Youth Suicide in the United States, 1970-1980*. Atlanta: CDC, 1986.

1988 percentages: Calculated from NCHS Annual Mortality Files (compressed).

among those who committed suicide, suggesting access to these home firearms may have been an important determinant of completing suicide. More recent research by Brent (1991) provides even stronger evidence that access to guns is a critically important risk factor for adolescent suicide.

Evidence from Great Britain supports the supposition that means restriction can be effective. Before 1957, self-asphyxiation with domestic cooking gas accounted for 40 percent of British suicides (Kreitman, 1976). From 1957 to 1970, the mean carbon monoxide content of domestic gas in Great Britain was reduced from 12 percent to 2 percent. During this time, British suicide rates from carbon monoxide asphyxiation declined sharply until, by 1971, only 10 percent of suicides were committed by this method. Over the same period, all suicides declined 26 percent, suggesting that people did not turn to other, more lethal methods of suicide when the means for gas asphyxiation was restricted. Loftin, et al. (1991), recently published another study showing clear evidence of the effect of reduced access to guns on suicide. In Washington, D.C., a law was passed in 1976 requiring restrictive licensing of handguns in the District. Although many proponents of this law were most interested in its hypothesized effect on homicide, Loftin, et al., showed that rates of both suicide and homicide sharply declined after implementation of this law.

The results of these investigations are compelling. We should note, however, that there are other examples where means restriction was not successful in reducing the overall rate of suicide. In Surinam, for example, a government ban on the sale of undiluted acetic acid (the ingestion of which was a common means of suicide in that country) prevented virtually all suicides by undiluted acetic acid (WHO, 1986). However, the decline in such suicides was almost completely offset by a concomitant increase in suicides by ingestion of paraquat, a potent herbicide widely available in Surinam. Suicides by ingestion of agricultural poisons were already on the rise in Surinam, but the offsetting trends nevertheless raise the question of substitution of one method of suicide for another when the latter is made less accessible.

**TABLE 9.**  
**Suicide Rates Among 15- To 24-Year-Olds in King County,**  
**Washington, and the Vancouver, British Columbia, Area**

<b>Cause of Death</b>	<b>King County</b>	<b>Vancouver Area</b>	<b>Relative Risks</b>
Handgun	4.49	0.47	9.6*
Rifle	1.93	1.25	1.5
Shotgun	0.96	0.63	1.5
Poisoning†	3.85	2.35	1.6
Hanging	2.09	3.76	0.6
Jumping/Drowning	1.28	2.04	0.6
Other	1.12	0.94	1.2
<b>Total</b>	<b>15.72</b>	<b>11.43</b>	<b>1.4*</b>

Note: Rates are the number of deaths per 100,000 members of the population. The relative risks shown are for King County relative to the Vancouver metropolitan area. The table is based on 98 youth suicides in King County and 73 youth suicides in the Vancouver area.

\* $P < .05$ .

†Includes suicides by poisoning, overdose, or carbon monoxide.

Adapted from: Sloan, J.H., Rivara, F.P., Reay, D.T., Ferris, J.A.J, Path, M.R.C., and Kellerman, A.L. Firearms Regulations and Rates of Suicide. *The New England Journal of Medicine* 1990;322:369-373. Reprinted by permission of *The New England Journal of Medicine*.

## **Illustrative Programs**

Despite increasingly convincing research evidence and broad consensus among suicide prevention specialists that means restriction may be highly effective, none of the programs we encountered in this study had a major component dealing with restricting access to the means of suicide.

## **Evaluation Needs**

The evaluation of a means restriction initiative should be used to establish the chain of events between the initiation of a program and its effects on the availability of means of suicide and on the rate of suicide among young people. The following questions would be important to address:

- What actions were taken to reduce access to means of suicide? Possible actions include education to encourage families to lock up firearms, and passage of state legislation and local ordinances to reduce access to firearms.
- What was the effect of those actions on access to means of suicide? For instance, did changes occur in the levels of handgun purchases or ownership?
- What was the impact on rates of suicide attempts, suicides, and serious injuries?

Finally, because means restriction initiatives are new and barriers to community action exist, it will be important to document how groups successfully dealt with these barriers. This information can then be shared with other communities.

## **Summary**

Means restriction appears to be an important potential strategy in reducing the rate of suicide among young people. The issue of "gun control" is often a contentious one in our society, and including means restriction as part of a broader suicide prevention effort has at least the potential for embroiling the suicide prevention program in controversy. Because of the broad consensus that minors should not be allowed to have unsupervised access to drugs or to lethal weapons such as firearms, however, encouraging parents to secure such items from their teens should not be controversial. Unfortunately, despite the potential of means restriction for reducing the incidence of youth suicide, few of the programs we examined had a major emphasis on means restriction.

## **References About Means Restriction**

- Boyd, J.H. The increasing rate of suicide by firearms. *New England Journal of Medicine* 1983;308:872-874.
- Brent, D.A., Perper, J.A., Goldstein, C.E., Kolko, D.J., Allan, M.J., Allman, C.J., and Zelenak, J.P. Risk factors for adolescent suicide: a comparison of adolescent suicide victims with suicidal inpatients. *Archives of General Psychiatry* 1988;45:581-588.
- Brent, D.A., Perper, J.A., Allman, C.J., Moritz, G.M., Wartella, M.E., and Zelenak, J.P. The presence and accessibility of firearms in the homes of adolescent suicides: a case-control study. *Journal of the American Medical Association* 1991;266:2989-2995.
- Centers for Disease Control. *Youth Suicide in the United States, 1970-1980*. Atlanta: Centers for Disease Control, 1986.

Kellerman, A.L., Lee, R.K., Mercy, J.A., and Banton, J. The epidemiologic basis for the prevention of firearm injuries. *Annual Review of Public Health* 1991;12:17-40.

Kreitman, N. The coal gas story: United Kingdom suicide rates 1960-71. *British Journal of Social and Preventive Medicine* 1976;30:86-93.

Loftin, C., McDowall, D., Wiersema, B., and Cottey, T.J. Effects of restrictive licensing of handguns on homicide and suicide in the District of Columbia. *New England Journal of Medicine* 1991;325:1615-1649.

Shaffer, D., Garland, A., Gould, M., Fisher, P., and Trautman, P. Preventing teenage suicide: a critical review. *Journal of the American Academy of Child and Adolescent Psychiatry* 1988;27:675-687.

Sloan, J.H., Rivara, F.P., Reay, D.T., Ferris, J.A.J., Path, M.R.C., and Kellerman, A.L. Firearms regulations and rates of suicide. *New England Journal of Medicine* 1990;322:369-373.

World Health Organization. Suicide in Surinam. Geneva: *World Health Organization Weekly Epidemiologic Record*, 8 August 1986.

### **Suggested Additional Reading**

Boyd, J.H., and Moscicki, E.K. Firearms and youth suicide. *American Journal of Public Health* 1986;76:1240-1242.

Brent, D.A., Perper, J.A., and Allman, C.J. Alcohol, firearms, and suicide among youth: trends in Allegheny County, Pennsylvania, 1960 to 1983. *Journal of the American Medical Association* 1987;257:3369-3372.

Centers for Disease Control. Prevention of violence and injuries due to violence. In: *Position Papers from the Third National Injury Control Conference: Setting the National Agenda for Injury Control in the 1990s*. Atlanta, Georgia: Centers for Disease Control, 1992:159-254.

Markush, R.E., and Bartolucci, A.A. Firearms and suicide in the United States. *American Journal of Public Health* 1984;74:123-127.

Rosenberg, M.L., Smith, J.C., Davidson, L.E., and Conn, J.M. The emergence of youth suicide: an epidemiologic analysis and public health perspective. *Annual Review of Public Health* 1987;8:417-440.