

Means Restriction on Ithaca’s Bridges: A Key Element of a Comprehensive Approach to Preventing Suicide

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This document will be updated as new information is available.

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1. What is means restriction?

The term “means restriction” refers to suicide prevention efforts that reduce access to firearms, drugs, and other means of dying by suicide. Means restriction includes strategies such as requiring that potentially lethal laboratory chemicals be kept secured when not in use. It also includes reducing the ability for people to jump to their deaths from high places such as tall buildings and bridges.

“A number of suicidal behaviors result from a combination of psychological pain or despair coupled with the availability of the means by which to inflict self-injury (Shneidman, 1999). If intervention is not possible when an individual is in a state of psychological pain, a self-destructive act may be prevented by limiting the individual's access to the means or methods of self-harm” ([National Strategy for Suicide Prevention](#), p. 71).

2. Is means restriction on bridges a necessary part of suicide prevention?

Yes, means restriction is universally recognized in the field of suicide prevention as a core strategy.

- [Harvard School of Public Health Means Matter Campaign: Bridges and Suicide](#)
 - “Means reduction is an **important part of a comprehensive approach to suicide** prevention.”
- [National Strategy for Suicide Prevention](#) (U.S. Department of Health and Human Services):
 - Means restriction “is important and necessary to contribute to an overall effort to reduce the rates of suicide and suicidal behaviors in our population. Means restriction is a key activity in a broader public health approach to reducing intentional injuries” (p. 72).
 - “In the United States, the focus has been on protecting individuals from access to loaded firearms, lethal doses of prescription medications or illegal substances, illegal access to alcohol by underage youth, and **dangerous settings (such as bridges and rooftops of high buildings)** (p. 72).”
- [American Foundation for Suicide Prevention: Policy Position on Bridge Barriers and Suicide](#)
 - “According to AFSP-funded research and additional studies worldwide, **prevention barriers on bridges have been effective at reducing suicide**. Since suicide by jumping tends to be more impulsive than other methods, bridge barriers provide suicidal individuals the time needed to change their minds and receive treatment. Positive steps are being taken by state and local officials across the country to see that such barriers are installed. For example, San Francisco officials voted to install netting below the Golden Gate Bridge span, and New Mexico's state legislature approved a bill that mandates a feasibility study on installing a barrier on the Rio Grande Gorge Bridge. AFSP supports these and other efforts to place physical deterrents on bridges where suicides frequently occur.”
- [National Suicide Prevention Lifeline Position: Suicide Prevention on Bridges](#)
 - “The Lifeline Steering Committee position is that **the use of bridge barriers is the most effective means of bridge suicide prevention**. Subsequently, as bridge/transportation

authorities or other stakeholders approach the Lifeline with requests for implementing bridge phones, the Lifeline should emphasize the need for barriers as the most effective solution. In addition to ‘reducing access to lethal means’ (barriers), the Lifeline recognizes that ‘promoting access to lifesaving means’—such as signage or other public education media near bridges that promotes awareness of hotlines (such as 273-TALK) or other suicide prevention services—is a **supplement** to bridge barriers.

Bridge or transportation authorities may choose to install bridge phones linked to local suicide prevention call centers as cost saving mechanisms over installing bridge barriers. Lifeline is unable to recommend this approach as the first most effective, empirically-validated course of action in preventing suicides from bridges.”

3. What are the Cornell and Ithaca communities doing to prevent suicides in addition to means restriction?

Means restriction is one part of Cornell’s comprehensive approach to promoting mental health and preventing suicide. This approach includes:

- Fostering a healthy educational environment
- Promoting social connectedness and resilience
- Increasing help-seeking behavior
- Identifying people in need of care
- Providing integrated medical and mental health services (in partnership with community agencies and Cayuga Medical Center)
- Delivering coordinated crisis management services (in partnership with Suicide Prevention and Crisis Services of Tompkins County)
- Restricting access to means of suicide

The students, staff, and faculty of Cornell’s [Council on Mental Health and Welfare](#) shape the university’s overall approach to mental health and suicide prevention.

For more information, review:

- [Cornell’s mental health framework](#)
- [Cornell’s approach to alcohol and other drugs](#)

A wide range of mental health and substance abuse services and programs at Ithaca College, Tompkins Cortland Community College, and across Ithaca and Tompkins County form a network of support for suicidal individuals and others with mental health difficulties. [Suicide Prevention and Crisis Service](#) of Tompkins County has played a leading role in these efforts for over four decades.

4. Can the risk of bridge suicides be reduced while preserving the beauty of our gorges?

The mental health needs of the community include *both* providing opportunities to experience our remarkable natural environment *and* implementing suicide means restriction. Research demonstrates the restorative psychological benefits from experiencing nature (see articles by [Cornell Associate Professor Nancy Wells](#) and [Howard Frumkin](#)). We are fortunate in Ithaca to have a wide array of opportunities for such experiences, including the views from the East Hill bridges. Therefore, the architectural team working with the university and City of Ithaca is developing design proposals that

address both aesthetics and safety. Also, Cornell is enhancing access to other gorge views through the renovating of the Cascadilla Gorge Trail.

Preserving the beauty of our gorges includes reducing the number of people who die in them. For the individuals in our community who have witnessed someone jump or the many who have seen a body being recovered, the beauty of these landscapes is marred by images of death. While some have argued that means restriction is a depressing reminder of tragedy, this association is based on the suicides from the bridges. As time passes without a continued pattern of jumping deaths from these locations, the negative association will decrease.

5. How many people die by suicide from jumping into the gorges on East Hill?

In the 21 years between 1990–2010, 29 individuals attempted suicide by jumping into gorges on East Hill. Of these, 28 jumped from bridges or bridge abutments; one jumped from a cliff edge far away from a bridge. Only 3 of the 29 survived. Of the 26 people who died, more than half were students enrolled at Cornell University (13) or Ithaca College (1). Twelve were non-college students, including one Ithaca High School student and four individuals who resided in communities other than Ithaca.

6. Why did the university place temporary barriers on East Hill bridges?

Within four weeks during February and March of 2010, three Cornell students jumped to their deaths from Fall Creek gorge bridges or bridge abutments. The last two died on consecutive days. These three jumping deaths followed three other non-jumping suicides of Cornell students earlier in the academic year. International suicide prevention experts indicated that together these deaths constituted a statistical “cluster,” and that the risk of further suicides due to imitative effects or “contagion” was significantly high. They urged Cornell and city officials to quickly place temporary barriers on the East Hill bridges in order to reduce the immediate risk of further jumping suicides, followed by long-term means restriction. The university also placed fences along the gorge edges near the bridges.

7. How does means restriction on bridges work?

Bridge barriers, such as fences or nets, may exert their influence in several ways.

- **Barriers make it more difficult for suicidal individuals to act on their thoughts.** When counseling a suicidal person, a mental health provider assesses whether the person is thinking about a certain means to die (e.g., firearm, drug) and develops a plan to put distance between the person and those means (for example, by having someone remove a weapon from the home). Bridge barriers work in a similar way.
- **Barriers may avert impulsive suicide attempts.** Since suicidal individuals often are ambivalent about dying and act on their impulses at a moment of crisis, physical barriers can buy time and allow suicidal thoughts to pass.
- **Barriers can increase the opportunity for caring, human intervention.** Since the temporary barriers were installed in March 2010, concerned bystanders and emergency personnel have successfully intervened with suicidal individuals who were standing on the bridges. In two cases, bystanders observed suicidal individuals climbing the fences, which gave them time to approach them and effectively intervene.

- **Barriers can reduce the iconic status of bridges as suicide sites.** For individuals who are contemplating suicide, barriers can reduce the risk of attempts by removing access to locations that have symbolic significance for suicide. In a study of six survivors of suicidal jumps from the Golden Gate Bridge, all said they had only considered suicide from that iconic location, and one stated that, “It was the Golden Gate Bridge or nothing.” When barriers are employed at iconic locations, there is potential that less attractive sites for suicide will not be substituted.
- **Barriers may force suicidal individuals to use less lethal means to attempt suicide (if they do substitute means).** Jumping is a highly lethal form of suicide. By contrast, other means of attempting suicide, such as overdosing on medication, have much lower rates of fatality. If deterred from jumping, a person who is intent on attempting suicide may use a less lethal method. Indeed, most individuals who attempt suicide do not die, so reducing the access to highly lethal means is important. Two individuals who survived suicidal jumps from Ithaca bridges have urged the use of means restriction.
- **Barriers can reduce the risk of imitative suicides.** Suicide often involves an element of imitation, which is why suicide prevention organizations have created media reporting guidelines that advise reporters to not provide details about suicide or show photos of suicide locations. By preventing highly visible, public suicides, the risk of imitative suicides may be reduced.
- **Barriers may provide suicidal individuals with evidence that people care enough to try to prevent suicide.** Many members of the community, including some who are experiencing significant emotional pain, view bridge barriers as a sign of caring. Cornell students have told their mental health providers in Gannett’s Counseling and Psychological services that the temporary fences have made them feel “safer” and “cared for.”
- **Barriers can reduce the risk of trauma to others.** Suicidal jumps often occur in public locations and result in dramatic deaths that can be disturbing, even traumatic to witnesses and people who live near or pass by the jumping location. In the absence of means restriction, jumping deaths will continue and perpetuate the tragic association between our bridges and suicide. Over time, with means restriction, this association will decrease as jumping deaths decrease.
- **Barriers can reduce the risk of harm to rescue personnel.** In 2010, prior to the implementation of temporary barriers, Ithaca Police Department officer Scott Hoffman risked his own safety by pulling a suicidal woman off of the railing on the Fall Creek Stewart Avenue Bridge. Emergency personnel also often face hazards when recovering bodies from gorges.

8. What does the research literature say (and not say) about means restriction, particularly on bridges?

A. Does means restriction on bridges reduce jumping deaths from those locations?

Yes. Several studies have demonstrated that means restriction on bridges significantly reduces or eliminates jumping suicides in those locations. This finding is quite consistent and not controversial.

| SITE | INTERVENTION and OUTCOME | REFERENCE |
|--|--|--|
| Ellington Street Bridge, Washington DC | Barriers reduced number of suicides from 25 in the previous 7 years to one in the 5 years after the installation of barriers. | O'Carroll and Silvermann, 1994 |
| Clifton Suspension Bridge, Bristol, UK | Barriers halved the number of suicides from 8 to 4 per year. | Bennewith et al, 2007 |
| Bern Muenster Terrace, Switzerland | Safety net reduced suicides from 2.5 per year to zero. | Reisch & Michel, 2005 |
| Memorial Bridge, Augusta, Maine | Prior to installation of barriers, 14 suicides. After barriers in place, no suicides in 22 years. | Pelletier, 2007 |
| Grafton Bridge, New Zealand | With barriers in place, 3 suicides in 4 years. After barriers were removed, 15 suicides in 4 years. Since reinstallation of the barriers, there have been no suicides. | Beautrais et al, 2009 |
| Bloor Street Viaduct, Toronto, Canada | The numbers of suicides were reduced from 9.3 per year in the 9 years pre-barrier to zero per year in the 4 years post-barrier. | Sinyor & Levitt, 2010 |

B. Does means restriction on bridges lead suicidal individuals to jump elsewhere?

- Several studies have found that erecting a bridge barrier *did not* result in more jumps from nearby sites.

| SITE | INTERVENTION and OUTCOME | REFERENCE |
|--|--|--|
| Ellington Street Bridge, Washington DC | When barriers were deployed, suicides decreased at this location and did not increase at the nearby Taft Bridge. | O'Carroll and Silvermann, 1994 |
| Clifton Suspension Bridge, Bristol, UK | No evidence was found of an increase in suicide by jumping from other sites in the Bristol area once barriers had been erected. | Bennewith et al, 2007 |
| Bern Muenster Terrace, Switzerland | Compared with the pre-installation period, the number of people jumping from all high places in Bern was significantly lower, indicating that no immediate shift to other nearby jumping sites took place. | Reisch & Michel, 2005 |
| Memorial Bridge, Augusta, Maine | The number of suicides by jumping from other structures remained unchanged after installation of the fence. | Pelletier, 2007 |

- By contrast, a study of the Bloor Street Viaduct in Toronto found that while a barrier decreased suicides at that location, jumping deaths increased at other bridges and buildings. The authors concluded that the “Bloor Street Viaduct may not have been a uniquely attractive location for suicide and that barriers on bridges may not alter absolute rates of suicide by jumping when comparable bridges are nearby.”
- These findings reinforce the recommendations made by suicide researchers that it is important to employ means restriction on all East Hill bridges and adjacent gorge edges. Since no single bridge is uniquely attractive for suicide (eight bridges have had suicides), it is important to treat these bridges collectively, as a single “iconic site” for suicide. The process by which a bridge or bridges attain an iconic status that attracts suicidal individuals is complex. The pattern of suicidal jumps over the past two decades suggests that the bridges and abutments are the locations that are uniquely attractive. All but one of the 29 documented suicide jumps into East Hill gorges since 1990 have been from these locations.

C. Does means restriction lead individuals to substitute other methods of suicide?

- It is always possible that someone deterred from one method of suicide will seek another. Suicide is often an ambivalent act, and considerable evidence shows that when access to a highly lethal means is restricted, suicidal individuals do not always attempt suicide using other means. For example, when access to carbon monoxide produced by burning charcoal (which accounted for a large percentage of suicides) was restricted in Hong Kong, the rate of suicide declined because individuals did not substitute other means ([see article by Chung & Leung](#)).
- Some individuals who are deterred from jumping will attempt suicide by using other methods. While some will die, others will survive because they use a less lethal method than jumping. When individuals overdose on medications, for example, there is an opportunity for intervention.
- Impulsive individuals who are deterred from suicide often do not substitute methods (see “[Impulsivity and Crisis](#),” Harvard School of Public Health). By separating in time and space the intent to die and the access to highly lethal methods, means restriction can buy time for suicidal desires to pass and thus reduce the risk of death (see [letter to the Cornell Alumni Magazine](#), January 2010.) Impulsivity is developmentally more common among late adolescents and young adults than in older individuals, and can be exacerbated by alcohol consumption which is high in this population as well.
- A 34-year study (range of follow-up: 4 to 34 years) examined what happened to people rescued from overt suicide attempts on the Golden Gate Bridge. It found that at least 90% had not subsequently died by suicide ([see article by Seiden](#)).
- It is possible that an individual who is deterred from jumping from an East Hill bridge would jump from a gorge wall, or another high point in the region. Individuals have periodically jumped to their deaths at other locations in the county, and it is likely that there will be such suicides in the future. Therefore, future suicides would not necessarily reflect a substitution of jumps from East Hill bridges, though the number of jumping suicides throughout the county should be monitored over time to assess any changes.

D. Does means restriction on bridges lower a region's overall suicides rates?

- This question has been explored but not answered definitively in the research literature. Evaluations of the efficacy of means restriction on individual bridges are unlikely to identify changes in regional (e.g., county) rates because the number of suicides at bridges make up a relatively small percentage of all suicides in most communities.
- A recently published study by UC Santa Barbara researcher [Garrett Glasgow](#) found that regions in the U.S. with high bridges do not have elevated rates of suicide. Professor Glasgow interprets this finding to mean that there is no evidence that barriers would save lives. His conclusion is not that barriers are proven not to reduce regional suicide rates, only that there is no evidence that they do. He states that his methodology "may eventually allow researchers to determine if means restriction at suicide-jumping sites reduces total suicides."
- Means restriction in general results in a decline in suicides at the population level if the method that is restricted accounts for a significant percentage of overall suicides. For example, when the amount of carbon monoxide was reduced in cooking gas in the U.K. and in Denmark, the rates of suicide dropped dramatically (see articles by [Kreitman](#) and [Nordentoft, et al](#)). Similarly, initiatives to change drug packaging and substitute less lethal pesticides have reduced the population-level rates of suicide (see articles by [Hawton, et al](#) and [Gunnell, et al](#)).
- Since jumping deaths account for half of Cornell student suicides over the past 20 years, means restriction on bridges holds the potential for lowering the overall rate of suicide in this sub-population. No studies have been conducted evaluating the impact of means restriction on bridges within a population that has such a high percentage of suicides resulting from jumps.
- In his article, Glasgow speculates that "There are reasons to doubt that means restriction will be an effective suicide prevention method at public suicide-jumping sites. Means restriction is most likely to be effective with household suicide methods that are quickly accessible, such as firearms, dangerous medications, and toxic substances. The additional effort and time required to travel to a jumping site in comparison to household suicide methods may indicate that suicides in these locations are less impulsive, and thus less likely to be prevented through means restriction." This reasoning is not applicable to Ithaca's unique setting, for two reasons. First, members of the Cornell community walk across these bridges on a daily basis, so getting to these bridges requires no additional time and effort. Also, young adult decision making is more likely to be characterized by impulsivity, which can be compounded by levels of alcohol use that are higher than in the general population. Intoxication can exacerbate suicidal thoughts and contribute to impulsive suicidal actions (see [2009 report from the CDC](#)).

9. Why is means restriction necessary when the suicide rates at Cornell and in Ithaca are similar to or below national averages?

Like accidents, not all suicides may be prevented; but no "rate" or level of suicide is acceptable. Each suicide in our community is a tragedy. Many suicides *are* preventable, and it is a community responsibility to take measures to reduce these unnecessary deaths. Given the large proportion of suicides that occur by jumping from bridges and bridge abutments on East Hill—*half of all Cornell*

student suicides—means restriction on bridges is a key element of a comprehensive approach to prevention.

10. How does the cost of means restriction compare to the cost of mental health services and programs?

University and other local health administrators view the cost of means restriction as an important part of overall budgets for mental health and suicide prevention. Collectively, Cornell University, local government, and community agencies spend tens of millions of dollars each year providing mental health services and programs. The cost of means restriction would largely be a one-time expenditure for an intervention that will exert its effect over time. When spread over the useful life of means restriction measures, the annual cost of means restriction on bridges is a small fraction of the monies invested in mental health. Although it is too early to estimate the cost of potential individual solutions, the initial estimates total in the range of \$6-8 million.

11. What role might crisis phones at the bridges play?

Crisis phones on bridges are commonly linked to the National Suicide Prevention Lifeline. However, studies show that, in absence of means restriction, phones are not enough.

- “**The [Lifeline Steering Committee position](#) is that the use of bridge barriers is the most effective means of bridge suicide prevention.** Subsequently, as bridge/ transportation authorities or other stakeholders approach the Lifeline with requests for implementing bridge phones, the Lifeline should emphasize the need for barriers as the most effective solution.”
- Calls placed locally to the National Lifeline are routed to the CrisisLine of Suicide Prevention and Crisis Services of Tompkins County. SPCS strongly supports means restriction on Ithaca’s bridges and views promoting access to lifesaving means—such as signage or other public education media near bridges that promotes awareness of the Crisisline—as a **supplement** to bridge barriers.

Currently, several East Hill bridges have “Blue Light” emergency phones that provide a direct link to the Cornell University Police. The University and SPCS administrators are examining the potential for bridge phones that would directly link to the local CrisisLine.

Questions have been raised about the State of New York’s position on the use of phones, due to a NYS Bridge Authority report that recommended the use of phones on bridges rather than barriers. However, New York Commissioner of Mental Health Michael Hogan, MD, and Melanie Puerto, Director of Suicide Prevention Initiatives for the State of New York, have stated their clear support for means restriction on bridges as part of Ithaca’s overall approach to suicide prevention. For more information, see the New York State Office of Mental Health [web page on means restriction](#).

For information regarding research on the efficacy of crisis phones on bridges, please refer to this [study of hotlines on the mid-Hudson bridge](#): Glatt K, M. Suicide prevention at a suicide site. *Suicide and Life-Threatening Behavior*. 1987; 17(4):299-309.

12. Has the Ithaca community examined means restriction in the past?

Yes, the community has debated means restriction on our bridges before, and employed bridge barriers in limited ways in order to reduce the risk of jumping deaths. For example:

- In 1978, Suicide Prevention and Crisis Services (SPCS) of Tompkins County founder the Rev. Jack Lewis and then Executive Director Nina Miller wrote a guest editorial in the *Ithaca Journal*, "[Moral Concern: Safe Bridges](#)," calling for means restriction on Ithaca's bridges.
- In 1994, Ithaca Police officer Dan Slattery proposed to Ithaca's Common Council that safety structures be erected on five East Hill bridges (see article, "[Another fatal plunge has Cornell asking whether its gorges inspire student suicides](#)").

Cornell and the City of Ithaca have employed means restriction on bridges over time.

- In 1977, following a series of suicides from the university-owned Suspension Bridge, Cornell added the current bar system.
- When the university-owned Stone Arch Bridge was renovated in 1987, the height of the railing was increased approximately two feet.
- When the city-owned Thurston Avenue Bridge was renovated in 2007, the new railing was elevated and curved as a form of means restriction.

While these efforts were steps in the right direction, subsequent suicides from those locations have demonstrated that the existing designs need to be modified in order to more effectively deter suicide attempts.

13. Who supports means restriction on bridges in Ithaca?

The following have publicly stated their support for long-term means restriction on Ithaca's bridges:

| <u>Name</u> | <u>Organizational affiliation</u> |
|-------------------------|---|
| Robert DeLuca, M.S.W. | Commissioner of Mental Health, Tompkins County |
| Michael Hogan, M.D. | Commissioner of Mental Health, State of New York |
| Rob Mackenzie, M.D. | President and CEO, Cayuga Medical Center |
| Hank Gerson, M.D. | Medical Director, Department of Psychiatry, Cayuga Medical Center |
| Lee-Ellen Marvin, Ph.D. | Director, Suicide Prevention and Crisis Services of Tompkins County |
| Karen Schachere, Ph.D. | Director of Clinical Services, Family and Children's Services |
| Carol Booth, Chair | Tompkins County Mental Health Services Advisory Board |
| Lesli Myers, Ph.D. | Assistant Superintendent, Ithaca City School District |
| Editorial Board | Cornell Daily Sun (March, 2011) |

14. Which experts have advised Cornell on its approach to suicide prevention?

Following the jumping suicides of three students in the winter of 2010, Cornell sought professional guidance from several colleagues and international experts in suicide prevention, including:

| | |
|------------------------------|---|
| Henry Chung, M.D. | Assistant Vice President for Student Health, New York University |
| Annette Beautrais, Ph.D. | Senior Research Scientist, Yale University School of Medicine |
| Madelyn Gould, Ph.D., M.P.H. | Professor of Psychiatry and Public Health, Columbia University |
| Eric Caine, M.D. | Professor and Chair, Department of Psychiatry, University of Rochester Medical Center |

During a May 2010 visit to Ithaca, Drs. Gould, Caine and Beautrais toured the East Hill Bridges, met with university and local officials, and prepared two reports (“Basic” and “Extended”) which can be viewed at: <http://caringcommunity.cornell.edu/>

Comments and questions can be submitted through the Means Restriction Study website:
<http://meansrestrictionstudy.fs.cornell.edu>