



**SUICIDE PREVENTION ON BRIDGES:
THE NATIONAL SUICIDE PREVENTION LIFELINE POSITION**
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At the January 2008, National Suicide Prevention Lifeline Bi-Annual Steering Committee meeting, the Committee addressed the question:

What is the position of the Lifeline Steering Committee on the use of bridge phones as the primary intervention to prevent bridge suicides?

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.

Background

The National Suicide Prevention Lifeline is a national network of more than 130 independently operating crisis call centers linked to a series of toll-free lines, of which the most prominent is 800-273-TALK. Callers to this number are routed to the nearest networked center to them, and calls are answered by telephone helpers trained in suicide prevention who assess the caller’s risk, provide support, intervention and resource linkages, as needed. This service is administered by Link2Health Solutions, Inc., under a five-year grant provided by the Substance Abuse and Mental Health Services Administration (SAMHSA). Link2Health’s administration of the program’s operations is aided by their partnership with the National Association of State Mental Health Program Directors (NASMHPD) and consultation with national experts in suicide prevention who act as members of the Lifeline’s Steering Committee and two Subcommittees (Standards Training and Practices Subcommittee and Consumer-Survivor Subcommittee).

Recently, Lifeline’s administrators asked its Steering Committee to address the role of the Lifeline and its crisis centers in consulting with transportation and bridge authorities seeking to implement bridge phones to prevent bridge-related suicides. Community debates have arisen over the most effective intervention for preventing persons from suicidal acts associated with bridge jumping. These debates are entangled with issues related to evidence-based practices, cost-effective measures, and personal opinions and agendas. The Lifeline has been brought into this debate over the past year by several state bridge authorities. These bridge authorities have been advised by one consultant



who has supported the use of bridge telephones and not the use of bridge barriers as a first line of suicide prevention.

The Lifeline was first approached in the spring of 2007, when the New York State Bridge Authority (NYSBA) proposed to establish suicide prevention phones (using the Lifeline number) on five bridges in the Catskill region of the state. The NYSBA sought to effectively prevent suicides from occurring on these bridges and had reviewed a number of methods for addressing the problem. Erecting physical barriers had been ruled out by the NYSBA, due to claims that the structure and locations of the bridges prevented practical use of bridge barriers (e.g., weight and wind issues; snow trapping against the bridges, transportation hazards; safety inspection impediments). Based on a model proposed by a suicide prevention consultant, the NYSBA sought to combine the installation of Lifeline bridge phones in conjunction with a public education/awareness campaign promoting the Lifeline number.

Since completing installation in the summer of 2007, some media and the NYSBA have hailed the program as a success, and a “model for other bridge authorities around the nation”. This recognition has emerged in spite of a lack of current evidence clearly supporting the model’s effectiveness in significantly reducing overall suicides from the appointed bridge locations. However, as a consequence of a growing awareness of the NYSBA’s model, the Lifeline has been contacted by other bridge authorities in NYS, as well as other interested parties from Virginia to Santa Barbara, CA.

With the increasing interest in the NYSBA bridge phone model—and its concomitant promotion of Lifeline and/or local crisis centers as integral to this proposed solution to bridge suicides—Lifeline felt that it was critical to consult with its national Steering Committee for guidance on this issue. In light of convincing evidence supporting the efficacy of restricting access to lethal methods of suicide, the Lifeline Director expressed his concern that the propagation of bridge phone strategies could potentially undermine political will in support of bridge barriers. In the absence of a clear stance from the Lifeline that clearly considered the efficacy of barrier approaches, bridge phones and/or signage, a bridge or transportation authority might proceed with NYSBA-like approach without full knowledge of the evidence and experience known to Lifeline and other members of the suicide prevention community.

Evidence: Bridge barriers effectively prevent bridge-related suicides

- **Decades of research clearly demonstrate that bridge barriers effectively prevent suicides** (e.g., Beautrais, 2007; O’Carroll & Silverman, 1994). England’s National Institute of Mental Health examined “suicide hotspots” in a 2006 report analyzing appropriate interventions, including bridges in their analysis. In reviewing all suicide prevention approaches—barriers, signs and telephone hotlines, bridge patrols and staff trainings—they concluded that “The most effective form of prevention at jumping sites is a physical barrier, which literally restricts access to the drop”. Other illustrations include:



- **Bloor Street Viaduct Bridge, Toronto.** By 2003, the 480 deaths by suicide from Toronto's Bloor Street Viaduct were second in number only to the Golden Gate Bridge, the most prominent location for bridge-related suicides in the world. Amidst mixed public opinion and efforts by some community groups to undermine the project, suicide prevention advocates succeeded in persuading the city to install "The Luminous Veil" barrier in 2003. There have been no suicides from the Viaduct since the barrier's installation (Zinko, 2005).
- **Duke Ellington Bridge, Washington, D.C.** Washington D.C. installed a barrier on the Duke Ellington Bridge in 1986, prompted by findings that an average of four persons per year had killed themselves by jumping from this structure. This was more than double the number of suicides reported from a neighboring bridge in D.C., the Taft Bridge. During the barrier's installation, one person died by suicide by jumping from the Ellington Bridge, and no other suicides by jumping occurred over the next five years. Over the same period, suicide rates from the non-barrier-restricted Taft Bridge remained unchanged (O'Carroll & Silverman, 1994).
- **Grafton Bridge, Auckland, New Zealand.** When safety barriers were removed from the Grafton Bridge in Auckland, New Zealand, the site experienced a five-fold increase in suicides. Subsequently, when the barriers were re-installed, no further suicides occurred, and other bridge sites did not demonstrate a "substitution effect" (e.g., an increase of suicides from other bridges as a result of barriers at the Grafton Bridge) (Beautrais, 2007).
- **Memorial Bridge, Augusta, Maine.** 14 suicides occurred from the Memorial Bridge in Augusta, Maine from 1960-1983. Since a barrier was erected in 1983, no further suicides have occurred from the bridge. The CDC researcher that examined the suicide prevention impact of the barrier noted that no other sites in the area registered an increase in suicides, suggesting no "site substitution". The researcher further concluded that the larger decline in the city's suicide rate compared with the rest of the state "further suggests that the fence was probably effective in lowering the overall suicide rate in Augusta" (Pelleteir, 2007).
- **Clifton Suspension Bridge, Bristol, England.** When a partial barrier on the Clifton Suspension Bridge was erected in Bristol, England, the overall number of suicides from the bridge was cut in half over a five year period. The researchers examining the barrier's efficacy recommended that a complete barrier would reduce the number of suicides further. They noted that these findings, along with evidence that no significant increases of jumping from other nearby bridges subsequently occurred, concluded that barriers are effective "in preventing site-specific suicides and suicides by jumping overall in the surrounding area" (Bennewith, Nowers & Gunnell, 2007).

It has been argued by some that installing barriers on bridges will only lead suicidal individuals to seek other methods (Glasgow, 2007). Some of the research above indicates that there is no evidence to support this assertion, while some appears to suggest findings to the contrary, e.g., that bridge barriers may reduce overall suicides in the surrounding area. A recent investigation of this hypothesis was deliberately undertaken through a national survey in Switzerland, whereby suicide rates from regions with and without "suicide bridges" were examined to estimate the degree to which "method substitution" might occur (Reisch, Shuster & Michel, 2007). The researchers found that regions with bridges attracted more "suicide jumpers" than regions without bridges, including regions with other buildings or high places where jumps are occurring. After applying a formula to



analyze the comparison, the authors estimated that 62% of individuals would not choose another place to jump from, and concluded overall that “method substitution” would not be significant (Reisch et al.2007). This finding supported the authors’ earlier investigations concluding that bridge barriers effectively reduce suicides in the regions where they are installed (Reisch & Michel, 2005). Similarly, a study of 515 persons who were restrained from leaping off the Golden Gate Bridge over a period of 40 years found that nearly 94% were still alive at the time of the investigation or had died from natural causes (Seiden, 1978). In general, research has shown that persons thwarted in utilizing a preferred method of suicide do not typically seek other approaches to kill him/her self (Daigle, 2005).

Even if method substitution concerns were considered to be valid, the degree to which such concerns are relevant from the perspective of a bridge or transportation authority is highly questionable. In general, opponents of barriers that cite the “method substitution” criticism are implying that a bridge or transportation authority should factor overall community suicide prevention effectiveness into their decision-making process. However, the primary responsibility of such authorities is to better ensure that commuters using their highways, bridges, tunnels or overpasses are protected from safety hazards. To the degree that individuals are killing themselves on their property and research shows that specific structures such as barriers can effectively prevent them from doing so, their serious consideration of barrier installation should therefore be paramount. Certainly, the installation of traffic lights, stop signs, warning and street lights are designed for the very purpose of reducing fatalities in areas considered to be vulnerable to travelers. How might the public respond if a transportation authority rejected a proposal to install a traffic light at a dangerous intersection because “accident-prone drivers would simply get in an accident elsewhere”? Suggesting that bridge or transportation authorities should make exceptions for bridge barriers due to method substitution is contrary to their typically responsible approach of employing the most effective measures to maximizing the safe use of their bridges, roads or highways.

In addition to preventing suicides from bridges, transportation authorities have noted that barriers may have other safety benefits to bridge users. In reviewing a proposal to build a barrier on the Cold Spring Canyon Arch Bridge near Santa Barbara, the CalTrans authority determined that a barrier would protect riders and hikers from falling over the rail under windy conditions, and traffic safety would improve by reducing the risk of cars parked on the bridge deck by would-be jumpers (CalTrans Report, 2008). In a personal communication with the Tappan Zee Bridge Authority in New York, their plan to raise the railing was motivated by a need to support their structure’s safety for vehicles first, with the secondary benefit of adding a degree of difficulty for would-be jumpers (personal communication with Ramesh Mehta, 4/29/2008).

Are suicide prevention phones on bridges effective?

Aside from the structural or cost issues related to installing bridge barriers, there is another reason that bridge phone proponents have supported their implementation. A suicide prevention consultant to the NYSBA bridge phone initiative stated his view on the subject in a letter to the CalTrans Authority, in response to a challenge to this approach by the Glendon Association, a Santa Barbara area suicide prevention organization:



The Glendon Association has given the impression that NYSBA did not choose to install suicide prevention barriers on its bridges due to maintenance and traffic concerns, such as snowplowing and bridge inspections. While these factors did play a role in our decision, there was a fundamental reason that NYSBA did not opt to install barriers: suicide prevention barriers are an inferior solution to the problem of suicides on bridges. Suicide prevention measures that place the suicidal individual in touch with another human being are the preferred method for preventing suicide. Such a 'human barrier' will outperform any physical barrier and save more lives (Speilman, G. in letter submitted to CalTrans, January 9, 2008)

Recent research has shown that crisis hotlines can reduce suicidal thinking, with some users reporting that calls to hotlines prevented them from killing themselves (Gould, Kalafat, Munfakh & Kleinman, 2007). In the New Forest region of the United Kingdom, hotlines and signage promoting their use were placed in select car parks due to data showing significant numbers of car-exhaust-related suicides at those locations. A three-year evaluation of the initiative found both a significant drop in car-exhaust suicides at those car parks and a reduction of suicides in New Forest, in general (King & Frost, 2005).

However, is it true that bridge phones on “suicide bridges”, in particular, can “outperform barriers” in preventing suicides from these locations?

Some answers to this question are suggested by the experience of using bridge phones in New York. Glatt (1987) reported that 30 of 39 would-be jumpers called the Dutchess County suicide prevention bridge phone on the Mid-Hudson Bridge in New York over a two-year period. The 30 bridge-phone callers were typically ambivalent and receptive to help, with only one later dying by suicide. Of the non-callers from the bridge, five subsequently leapt to their death. The NYSBA’s installation of the National Suicide Prevention Lifeline bridge phones on five bridges in the Catskill region of New York in 2007 linked to the same Dutchess County crisis line, a member center of the Lifeline network. Since the lines have been installed, calls from the bridge have led to two rescues of suicidal individuals. However, at least two suicides have occurred from the bridges since the phones were installed. In addition, New York’s Tappan Zee Bridge partially adopted the NYSBA’s model and installed Lifeline bridge phones, though they did not include signage or handouts prominently promoting the Lifeline number to commuters. Since their installation in 2007, the phones have not been used, and four individuals have killed themselves by jumping off the bridge.

The experience of installing crisis/suicide phones on bridges in other regions has also shown inconsistent efficacy in preventing bridge-related suicides. Some of the examples are chronicled below.

- **Golden Gate Bridge, San Francisco.** Since crisis/suicide hotline phones were installed on the Golden Gate Bridge in 1993, there have been at least 380 suicides from that location through 2007 (Trumbull, 2005).
- **Sunshine Skyway Bridge, Saint Petersburg, Florida.** Since crisis phones were implemented on the Sunshine Skyway Bridge in Saint Petersburg, Florida to prevent suicides from that structure, 22 people jumped to their deaths from the bridge in the following three years (Jones, 2003).



- **Coronado Bay Bridge, San Diego.** Suicide prevention call boxes and signs promoting their use on the Coronado Bay Bridge in San Diego have not led to a reduction of suicides at that location (CalTrans Report, 2008).

While it may be true that suicide hotline call boxes on “suicide-prone bridges” have successfully prevented suicide for individuals who have chosen to use them, it is also clear that many suicides have occurred from bridges where they have been present. Placing a hotline phone on a bridge provides a “rescue option” for suicidal individuals who are knowingly ambivalent. However, for other persons who come to the bridge that are consumed with psychological pain and intent on dying, relying on them to pick up the phone in that climactic moment places too much confidence in their capacity to still make a rational choice. By analogy, imagine a roadway that dead-ends into a cliff, with a canyon below. Would it make more sense to put a clear, large “STOP” sign at the edge of a cliff, with the hope that a speeding driver might slow down in time, or would it be more reasonable to erect a solid barricade blocking access further up the road?

Are signs on or near bridges promoting suicide hotlines effective in preventing bridge suicides?

In extending the previous analogy, imagine a roadway sign placed a mile ahead of the cliff that read something like, “Road ends in 1 mile; Detour ½ mile ahead”, with signs following that led the traveler to an intersecting road for continuing safe passage. A similar bridge suicide prevention strategy has been used which employs signs near a “suicide-prone bridge” offering a number intended to “detour” persons in crisis to hotline services. The suicide prevention logic of providing such a “detour”—instead of implementing barriers—is further stated in Mr. Spielman’s letter to CalTrans:

Physical barriers...do nothing to address the suicidal condition of the person who might be tempted to jump from the bridge. Unlike the live voice at the receiving end [of a telephone], a physical barrier does not give a desperate person a reason to live or serve as a listening post for the real or imagined motives for being on the bridge....By relying solely on an inanimate object to ‘save a life’, an opportunity to identify and help a suicidal individual is lost.

Placing signs promoting a hotline number near bridges could encourage people in crisis to call for help from their home, their car, or some location removed from the perilous precipice of the bridge. It is likely that most suicidal persons who select a specific bridge from which to jump have traveled across that bridge repeatedly, or “cased the bridge” previously in planning their suicide. Exposing persons in crisis to hotline information well before an imminent jump is clearly preferable to providing a suicidal individual with a chance to get help exclusively from a phone on a bridge.

It may also be advisable for such signage near bridges to avoid explicitly mentioning suicide, to minimize reinforcing public associations between the structure and these tragic past events. Less explicit wording can also invite non-suicidal individuals in crisis to call and get help before they are suicidal.

The NYSBA supplemented their billboards with other information and materials promoting the Lifeline to nearby residents. The NYSBA advertised the Lifeline on local newspaper web sites for



up to a year, such as Mid-Hudson News.com. That banner ad linking to the Lifeline's web site received 62,859 views in August 2007 alone, according to a personal communication from the NYSBA's Communications Director, John Bellucci (9/25/2007). Additionally, the NYSBA provide Lifeline wallet cards (complete with suicide warning signs) at commuter toll booths near the bridges that are dispensed to inquiring travelers that have expressed curiosity about the billboard messages. Approximately a year after introducing the initiative, the NYSBA has reported handing out 750 wallet cards at their toll booths, and have ordered more cards to replenish their supply (Bellucci, personal communication, 5/1/2008).

Is there evidence, however, that such signage and promotional information reduces suicides on bridges? It is possible that such information campaigns require time to register a clear impact, as their focus is more "prevention" than "intervention". With the NYSBA initiative now only a year old, it may be too early to gauge its long-term effect on nearby community suicide rates. Overall, there are few evaluations that have explicitly examined this approach. The Coronado Bay Bridge in San Diego employed a similar model using bridge phones and public awareness signage, to little effect. Perhaps the closest evidence suggesting the potential efficacy of this method is the previously cited research showing a reduction in suicides in car parks and the surrounding New Forest community following the implementation of hotline awareness signs and phones in car parks.

Nevertheless, the compelling logic of "promoting access to lifesaving means" (e.g., hotlines) in no way undermines the argument for implementing approaches to "restricting access to lethal means" (e.g., bridge barriers). Rather than contrasting the effectiveness of these approaches, a strong case can be made for their complementary impact on suicide prevention if employed in tandem. As barriers can most effectively keep suicidal persons from jumping off bridges, nearby hotline information can, as Mr. Spielman might also say, point such desperate persons to an empathic voice that can help them find a reason to live.

Conclusion

Transportation and bridge authorities around the nation have been under enormous pressure to address "suicide-prone bridges" under their auspices. They face a wide variety of challenges in determining the appropriate method for preventing further suicides from occurring on their property. As noted by the NYSBA and other bridge authorities, among the considerations they face in considering barriers and alternative methods include: structural and weight issues; potential weather hazards (snow removal, wind factors); safety concerns related to bridge and barrier maintenance; high costs of barrier installation; and impassioned advocates from suicide prevention circles, as well as community residents seeking to preserve the historic, environmental and/or scenic vista of the bridges in their current state (Bellucci, personal communication, 4/29/2008). Increasingly, local crisis lines as well as the National Suicide Prevention Lifeline are consulted by bridge authorities and/or community advocates to discern both the feasibility and efficacy of linking bridge phones to their services for the purposes of preventing further suicides from such locations. This paper is intended to provide reasonable perspectives and research that might help guide Lifeline and its network of centers in their response to such inquiries.



Based on the current state of the research, physical barriers are an effective means of preventing suicides on bridges. Further, there is no evidence that barriers on bridges lead to “method substitution” for would-be jumpers. In contrast, bridge phones and other “human barrier” methods have not shown comparable success in significantly reducing bridge suicides in any known situation where they have been implemented. In consulting with bridge or transportation authorities, it is therefore suggested that the Lifeline and its network of crisis centers recommend bridge barrier installation as the most effective bridge suicide prevention approach. In order to promote awareness of resources for help, it is further suggested that Lifeline and its network centers recommend that bridge or transportation authorities support the dissemination of public education materials, signage or other information about hotlines or other local suicide prevention assistance, as appropriate. However, the latter recommendation is best seen as a supplement to a barrier, as it alone is unlikely to significantly reduce bridge suicides. Above all, it should be made clear to inquiring authorities: ***barriers are the most effective means of preventing suicides on bridges.***

References

Beautrais, A. L. (2007) “Suicide by jumping: A review of research and prevention strategies.” *Crisis*, 28, 58-63

Bennewith, O, Nowers, M. & Gunnell, D. (2007). “Effects of barriers on the Clifton Suspension Bridge, England, on local patterns of suicide: implications for prevention.” *British Journal of Psychiatry*, 190, 266-267.

Caltrans Report on the Cold Spring Canyon Bridge Suicide Barrier (May 2008). “Draft Environmental Impact Report/Environmental Assessment and Section 4(f) Evaluation”. Accessible at: http://www.dot.ca.gov/dist05/projects/sb_cold_springs/deir08may.pdf

Daigle, M.S. (2005). “Suicide prevention through means restriction: Assessing the risk of substitution. A critical review and synthesis.” *Accident Analysis and Prevention*, 37(4), 625-632.

Glasgow, G. (2007). “Would a suicide prevention barrier on the Cold Spring Bridge save lives? A review of the evidence”. Unpublished paper, accessible at: http://www.polsci.ucsb.edu/faculty/glasgow/barrier_report.pdf

Glatt, K.M. (1987). “Suicide prevention at a suicide site”. *Suicide and Life Threatening Behavior*, 17, 299-309.

Gould, M.S., Kalafat, J., Harris-Munfakh, J.L. & Kleinman, M. (2007). “An evaluation of crisis hotline outcomes, Part II: Suicidal callers”. *Suicide and Life Threatening Behavior*, 37(3), 338-352

Jones, J. “Skyway safeguards don't deter jumpers.” *Saint Petersburg Times*. October 6, 2003. Accessed at: http://www.sptimes.com/2003/10/06/Tampabay/Skyway_safeguards_don.shtml



King, E., & Frost, N. (2005). The New Forest Suicide Prevention Initiative (NFSPI). *Crisis*, 26, 25-33.

National Institute for Mental Health in England. "Guidance on action to be taken at suicide hotspots." October 2006. Accessed at: <http://www.csip-plus.org.uk/RowanDocs/SuicideHotspots.pdf>

Nowers, M. & Gunnell, D. (1996). "Suicide from the Clifton Suspension Bridge in England." *Journal of Epidemiology and Community Health*, 50, 30-32.

O'Carroll, P.W., Silverman, M.M. (1994). "Community suicide prevention: The effectiveness of bridge barriers." *Suicide and Life-Threatening Behavior*, 24, 89-99.

Pelletier, A.R. (2007). "Preventing suicide by jumping: The effect of a bridge safety fence." *Injury Prevention*, 13, 57-59.

Reisch, T. & Michel, K. (2005). "Securing a suicide hot spot: Effects of a safety net at the Bern Muenster Terrace." *Suicide and Life-Threatening Behavior*. 35(4), 460-467.

Reisch, T., Schuster, U. & Michel, K. (2007). "Suicide by jumping and accessibility of bridges: Results from a national survey in Switzerland". *Suicide and Life-Threatening Behavior*, 37(6), 681-687.

Seiden, R.H. (1978). "Where are they now? A follow-up study of suicide attempters from the Golden Gate Bridge." *Suicide and Life-Threatening Behavior*, 8(4), 203-216.

Trumbull, Todd. Graphic of suicides by year. "Lethal Beauty—The Allure: Beauty and an easy route to death have long made the Golden Gate Bridge a magnet for suicides." *San Francisco Chronicle*. October 30, 2005. Accessed at: <http://www.sfgate.com/cgi-bin/object/article?f=/c/a/2005/10/30/MNG2NFF7KI1.DTL&o=3>

Zinko, Carolyne. "Lethal Beauty—The Toronto example: How one city overcame bureaucracy. The fifth in a seven-part series on the Golden Gate Bridge barrier debate." *San Francisco Chronicle*, November 3, 2005. Accessed at: <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2005/11/03/MNG9UFHK811.DTL>