

SUICIDE PREVENTION ON BRIDGES: THE NATIONAL SUICIDE PREVENTION LIFELINE POSITION

John Draper, Ph.D., Director, National Suicide Prevention Lifeline

Revised January 2017 (original 2008)

On behalf of its Steering Committee in 2008, the National Suicide Prevention Lifeline released a white paper definitively stating that bridge barriers were the optimal means for preventing suicides from bridges. The Lifeline was prompted to draft a formal, evidence-informed statement on this subject after a report from the New York State Bridge Authority recommended — without research support — that the most effective means for preventing suicides from bridges was through a “human connection” best established through hotlines, installed on bridges. Since Lifeline released its response in 2008, the paper has been circulated and influential in reviews by transportation authorities and local suicide prevention advocates. Additional research, relevant experiential findings and major developments have emerged since 2008, including the landmark decision by the Golden Gate Bridge, Highway and Transportation District to erect a suicide deterrent net, beginning in 2017. Although the essential recommendation supporting bridge barriers has not changed, this paper is intended to update its original content to assist contemporary decision-makers, in light of these more recent developments.

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 and/or individual network member centers with requests for implementing bridge phones, the Lifeline and its centers 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.

As noted in this paper, a continuing review of the research and field experience since these recommendations were made in 2008 further supports this conclusion.

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 150 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 has been administered by the Mental Health Association of New York City (MHA-NYC) since 2004, under a grant provided by the Substance Abuse and Mental Health Services Administration (SAMHSA). MHA-NYC's administration of the program's operations is aided by their partnership with the National Association of State Mental Health Program Directors (NASMHPD), the National Council for Behavioral Health (NCBH) and consultation with national experts in suicide prevention who act as members of the Lifeline's three national advisory bodies, its Steering Committee, Standards Training and Practices Committee and the Consumer Survivor Committee.

In 2008, 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 had arisen over the most effective intervention for preventing persons from suicidal acts associated with bridge jumping. These debates were often entangled with issues related to evidence-based practices, cost-effective measures, aesthetic concerns, and related personal opinions and agendas. The Lifeline was brought into this debate in 2007 by several state bridge authorities. These bridge authorities had been advised by one consultant to support 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 had hailed the program as a success, and a "model for other bridge authorities around the nation" (NYSBA Report, 2008). This recognition had emerged in spite of a lack of 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 had been contacted by other bridge authorities in New York, as well as other interested parties from Virginia to Santa Barbara, CA. Further, the erroneous, unfounded recommendations that "bridge phones were most effective" from the NYSBA report have been used by various parties to counter measures to install bridge barriers at Cornell University and the Cold Spring Canyon Arch Bridge near Santa Barbara. In support of the use of phones on the

Arch Bridge, the NYSBA's suicide prevention consultant, Dr. Gary Spielman, wrote in a letter submitted to the California Transportation Authority (CalTrans) on January 9, 2008:

“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.”

In light of our concerns regarding the misrepresentation of facts regarding hotline effectiveness on suicide-prone bridges, Lifeline's Project Director drafted a white paper on behalf of the Lifeline Steering Committee to aid the Lifeline, its network of crisis centers, and Transportation Authorities seeking evidence-informed guidance towards preventing bridge-jump suicides.

After the paper was released by the Lifeline in 2008, it has been circulated and reviewed among decision-makers considering bridge suicide prevention barriers in a variety of jurisdictions, including Cornell University, the California Department of Transportation (related to Cold Spring Canyon Arch Bridge) and the Golden Gate Bridge, Highway and Transportation District, among others. In the cases noted, officials determined that bridge barriers should be established to prevent suicides at bridges under consideration.

Suicide prevention phones on bridges are ineffective in preventing suicides from bridges

Growing research continues to show 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; Gould, Cross, Pisani, Munfakh & Kleinman, 2013). 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. Shortly after the lines were installed, calls from the bridge led to two rescues of suicidal individuals. However, in the two years since the phones were installed, eleven persons leapt from the bridges and died. At one of the region's bridges (the Newburgh-Beacon Bridge), there had been no suicides between 1999-2007; six suicides occurred over the two years since the phones were installed on it (Bosch, 2009.)

The experience of installing crisis/suicide phones and related services (e.g., crisis text services) on bridges in other regions has also shown inconsistent efficacy in preventing bridge-related suicides. Some of the examples are chronicled through the helpline experiences related to the four U.S. bridges with the highest rates of suicide, below.

- Golden Gate Bridge, San Francisco. Crisis/suicide hotline phones were installed on the Golden Gate Bridge in 1993. Since that time, there have been over 650 suicide deaths, including one of the highest Golden Gate Bridge suicide death tolls the year after the phones were installed (data from Bridge Rail Foundation, 2016). In 2016, the Golden Gate Bridge Highway and Transportation District announced a partnership with the Crisis Text Line to prevent more suicides from the Bridge, posting signs prompting suicidal persons to contact the CTL if they were in crisis. In the two months following the signs posting (September and October 2016), there were nine confirmed suicides. For those same months in 2015, there were no suicides, and nine in 2014.
- Aurora Bridge, Seattle. With the second highest suicide death toll in the U.S. (behind the Golden Gate Bridge), emergency call boxes and signs with a suicide hotline number were installed on the bridge in 2006. Suicides continued to occur at an average of about five per year, until a fence was installed in 2011. In the 18 months afterwards, one suicide occurred (Donaldson, 2012).
- 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). Coronado Bridge, the third deadliest "suicide bridge" in the country, recorded 60 suicides from 2010-2014. As the Golden Gate Bridge is doing, San Diego CalTrans authorities are now considering the installation of nets (Wilkins, 2015).
- Sunshine Skyway Bridge, Saint Petersburg, Florida. Since crisis phones were implemented in 1999 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). The Skyway Bridge — the U.S. bridge with the fourth highest suicide death toll — has continued to average about eight suicides per year, and they are now considering installing nets through a federal grant-matching program (Moving Ahead for Progress in the 21st Century Act) that helps to fund bridge safety nets (Crosby, 2015).

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 or text service 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 and call or text in that climactic moment places too much confidence in their capacity to still make a rational

choice. Kevin Briggs, a now-retired officer for the California Highway Patrol who has been credited for coaxing over 200 would-be Golden Gate Bridge jumpers to safety, stated it this way: “When someone goes over on the other side of that rail, it’s like having a gun to their head, their finger on the trigger, and the hammer pulled back.” (Smith, 2014).

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.” More recently, researchers in Australia analyzed nine studies done on the effectiveness of suicide barriers at bridges and cliffs in New Zealand, the United Kingdom, Washington, D.C., Maine, Switzerland, and Canada. They concluded that there was an 86 percent reduction in suicides at the various sites (Pirkis, et al., 2013).

Some specific 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 (Sinyor & Levitt, 2010).
- 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).
- Bern, Switzerland. Before 1998, approximately 60% of suicides in this Swiss capital were the result of jumping from high bridges or structures with major drops. This prompted the installation of nets below Bern’s Munsterplattform — a famous cathedralside terrace with stunning river views — which eliminated suicides at that location. In 2009, the installation of wire fences at other bridges in the area drastically reduced the rate to around 10 jumpers per year. Noting the greater success of eliminating suicide at the Munsterplattform, the Bern City Parliament voted in 2014 to replace the fences with nets (Stephens, 2014).

The historic Golden Gate Bridge District’s decision to install suicide deterrent nets.

On June 27, 2014, the Golden Gate Bridge District’s Board unanimously approved \$76 million to fund the implementation of a 20-foot wide steel net 20 feet below the deck surface and across both sides of the entire 1.7 mile span. Their decision to install a net was based on the experience of Bern and the Munsterplattform, which was both 100% effective in preventing suicides as well as deterring jumpers (only bicycles and one dog have fallen into the nets

erected in Bern). Denis Mulligan, General Manager of the Bridge District noted that falling into the net would likely cause serious but non-fatal injury; “People who are tired of life want to kill themselves but not injure themselves” (Stephens, 2014).

Since debate about a suicide barrier on the Bridge began in the 1950’s, a variety of factors (e.g., “barriers to the barrier”) have been cited that prevented barriers from being erected. The primary reasons have related to aesthetics (landmark bridges and their picturesque views could be marred by barriers), structural problems (barriers could impact maintenance or interact with elements — e.g., wind — in ways that could affect traffic flow or structural integrity), and/or funding problems (barriers appeared cost prohibitive for many budgets) (Bateson, 2012). These concerns have not only been central to the discussions related to the Golden Gate Bridge over the years, but they have also permeated most every other conversation among stakeholders related to suicide barriers on bridges.

Thinking has evolved in all of these areas to enable the Bridge District to approve the installation of nets on the Golden Gate structure. Fueled by the powerful 2006 documentary film *The Bridge* (which depicted film clips of persons jumping from the Golden Gate Bridge and interviews with their family members and friends), growing voices from suicide prevention researchers and advocates — including Bridge loss and attempt survivors — have been vital in causing media, Bridge and Transportation authorities to deeply explore and work through “the barriers to the barrier.” Some examples that illustrate (or influenced) the changes in thinking around the barrier’s aesthetic, structural and financial concerns are noted below.

- Kevin Briggs, the CHP patrolman for over 23 years who was credited with preventing over 200 persons from jumping off the Golden Gate Bridge, was initially against the idea of a barrier, stating that “The Bridge is about beauty. They’re going to jump anyway, and you can’t stop them.” (Friend, T., 2003). Later, patrolman Briggs changed his mind after a father who lost his son from a Bridge suicide imploringly asked him: “A view...or a life?” (CNN, 2014)
- Similarly, in Bern, a number of politicians voted in 2014 against establishing “catch nets” (similar to the Munsterplaatform) to replace the less effective wire fences at two bridges that are historical monuments, due to both cost and aesthetics. A Parliament majority overruled them, in part due to Erich Hess, a parliament member who witnessed a bridge jump suicide, who stated: “Saving lives is more important than aesthetics.” (Stephens, 2014)
- Regarding cost, Paul Muller of the Bridge Rail Foundation noted that a lot more money is invested in highway and bridge safety improvements than has been proposed for a Golden Gate Bridge suicide prevention barrier. He noted that “On the Golden Gate Bridge they’re spending about \$25 million on a moveable safety median barrier to prevent head-on collisions. This is a perfectly reasonable safety investment, but the number of deaths involved in that since 1970 is under 20, I believe. So in terms of safety improvements and lives saved, this is a pretty good investment.” (Stephens, 2014)
- Federal funds for bridge suicide barriers were made specifically available when President Obama signed the Moving Ahead for Progress in the 21st Century Act in 2012 (see <https://www.fhwa.dot.gov/>). As noted in a press release on the Bridge District’s web site (<http://goldengate.org/news/>), over 65% of the Bridge’s barrier-related construction costs will be covered by federal funds made accessible through this legislation.

Overall, much information and evidence has emerged that supports the need for bridge barriers, which has influenced the Golden Gate decision-makers and other transportation authorities to install prevention structures accordingly. Bolstered by research cited in this paper and other journals, the U.S. Department of Health and Human Services' National Strategy for Suicide Prevention released in 2012 subsequently cites the need to reduce access to "lethal means" for suicide such as installing bridge barriers (Objective 6.3).

While evidence of the impact of barriers on suicide at the bridge sites remains strong, there has been continuing discussion around the overall impact of bridge barriers on community suicide rates. The so-called "method substitution effect" — that is, the assumption that "would-be bridge jumpers would find another bridge or method to kill themselves" — remains a reason cited by barrier opponents to deny their installation, usually in light of the other reasons related to aesthetics, structural challenges and/or cost. Is it true that if barriers are placed on "suicide-prone bridges" that suicidal persons will kill themselves elsewhere? What does research and suicide data indicate about this assumption in communities where suicide barriers on bridges have been implemented?

Method substitution: Will the person find another setting or method to kill him/herself?

As noted above, it has been argued by some that installing barriers on bridges will only lead suicidal individuals to seek other methods (Glasgow, 2007). This belief has also been consistent with public perception, as one telephone survey reported that 74% of respondents believed that most or all of the people prevented from jumping from the Golden Gate Bridge by a barrier would find another location to kill themselves (Miller, Azrael & Hemenway, 2006). An 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/herself (Daigle, 2005).

However, the most comprehensive analysis of suicide-prone bridges in five countries found that — even though there was some substitution effect at nearby bridges—the overall number of suicide deaths from bridge jumps declined (Pirkis et al., 2013).

What does the data indicate about the overall community suicide prevention impact of installing bridge barriers at suicide-prone bridges? Do these measures reduce area suicide rates, in general? Relevant findings are described in affected communities, below:

- Memorial Bridge, Augusta, Maine. Fourteen 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)
- Bloor Street Viaduct, Toronto, Ontario Canada. Prior to the 2003-2004 installation of the “luminous veil” safety net beneath it, the Viaduct in Toronto had the second highest rate of bridge-jumper suicides in the world, behind the Golden Gate Bridge. The barrier was completely effective in stopping suicides from the Bloor Street bridge, but suicides at all other jump sites in Toronto went up. In spite of what appears to be some “displacement effect,” the overall rate of suicides in Toronto and Ontario went down, and the rate of suicides by means other than jumping decreased as well (Sinyour & Levitt, 2010).

Should method substitution even be a consideration for transportation authorities? 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 being vulnerable to travelers. How might the public respond if transportation authority officials 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.

Other issues for transportation authorities. 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).

Bridge jumpers present a number of challenges and costs to bridge patrols, maintenance crews and related public safety officials. Many of these challenges were dramatically recounted in testimony by Captain Lisa Locati at a Golden Gate Bridge District hearing in August of 2016. Captain Locati, a Bridge District employee for more than 39 years, described a number of challenges to patrol officer negotiations with would-be jumpers. She noted that "every negotiation is different" in the challenges they present, from the language spoken by the person to the environmental conditions (wind and weather, how the person is positioned in relation to the officer, etc.). Other times, there are "people that simply park their car on the sidewalk, climb over the rail, and jump, and we don't have the opportunity to intervene."

Aside from the numerous bystanders witnessing persons jumping from the Bridge, Captain Locati added that there are often a number of personnel that are directly or indirectly affected by these incidents. She reported that iron workers on the structure may either become accidental observers or spontaneous negotiators, while coast guard officials must collect the bodies from the bay water. Captain Locati recalled that the Coast Guard reached out to her previously because the frequency of these incidents were causing employee retention problems. Primarily, she underscored the costs to her patrol officers, who engage in 90% of the bridge's suicide prevention encounters:

"Most of our [successful] suicide interventions last anywhere from 15 minutes to 30 minutes; that is a lifetime standing on the bridge talking to someone that you don't know. When life is in the balance, every move they make could be that move to jump off, and you feel like you're kicked in the stomach.... Then, if the person comes back over the rail, I get a sense of relief and you have to tell yourself to breathe, but it's not a happy sense of relief... That sense of relief is thanking God that I don't have to feel those other feelings that I feel when I'm not successful because those are far worse, harder to get over, and they can be devastating. The empty feeling is suffocating."

Beyond the impact on bridge safety and recovery workers, the suffering of family members who have lost a loved one to a bridge-related suicide may increasingly become a challenge for transportation authorities that have not installed barriers. In January 2017, the family of a Brooklyn man who killed himself by jumping off the George Washington Bridge (GWB) filed a \$10 million lawsuit against the Port Authority of New York and New Jersey. The GWB gained widespread notoriety as a suicide hot spot following the highly publicized suicide of Rutgers student Tyler Clementi in 2010. The suit described the bridge as a "suicide magnet," where "suicide attempts occur at a rate of one every 3 1/2 days" (Saul, 2017). The Port Authority in 2014 approved \$47 million to install a nine-foot fence, to be completed by 2014 (Pang, 2015). Currently — and for the past eight years — this bridge has had a bridge phone linked to a local Lifeline center, with accompanying signage prompting persons thinking about suicide to "call the Lifeline."

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

Imagine a roadway sign placed a mile ahead of the cliff that read something like, “Road ends in one mile; Detour 1/2 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 several “suicide-prone bridges” across the country, 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 were dispensed to inquiring travelers that expressed curiosity about the billboard messages. Approximately a year after introducing the initiative, the NYSBA reported handing out 750 wallet cards at their toll booths, and 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? 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

Since the original release of this paper, the Lifeline and other local crisis contact centers have continued to receive requests from transportation and bridge authorities around the nation to help them address “suicide-prone bridges” under their auspices. All of them have cited at least one of the concerns that have acted as obstacles to the barrier noted in this paper (aesthetic, structural and/or cost concerns). This paper has provided reasonable perspectives and research that have helped to guide Lifeline and its network of centers in their response to such inquiries, including playing a role in the hearings leading to the decision to cast a net under the Golden Gate Bridge. In light of this historic decision, this paper has been updated from its 2008 version to provide more recent evidence and experience, offering further support and context for our earlier recommendations.

Based on the current state of the research, physical barriers remain the most effective means of preventing suicides on bridges. Further, there is evidence that “method substitution” for barriers on bridges is less significant than its overall impact on suicide prevention at both the bridge site and in the surrounding communities. In consulting with bridge or transportation authorities, it is therefore suggested that the Lifeline and its network of crisis centers continue to 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

Bateson, J. (2012). *The Final Leap: Suicide on the Golden Gate Bridge*. Oakland, CA: University of California Press.

Beautrais, A.L. (2007). Suicide by jumping: A review of research on 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.

Bosch, A. (2009, August 30) 11 leap to deaths from region's bridges in two years. *Times Herald-Record*. Retrieved from <http://www.recordonline.com/>

CNN Wire Service (2014, June 27). *Funding approved for \$76 million Golden Gate Bridge suicide barrier*. Retrieved from <http://myfox8.com>

California Department of Transportation (Caltrans). (2011). *Cold Spring Canyon Bridge Suicide Barrier: Final supplemental environmental impact report*. Retrieved from http://www.dot.ca.gov/dist05/projects/sb_cold_springs/vol3.pdf

Crosby, R. (2015, January 23) New funding, technology could prompt suicide barrier for Sunshine Skyway. *Tampa Bay Times*. Retrieved from <http://www.tampabay.com/>

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

Donaldson James, S., 2012, September 10, 'Suicide Bridge' reduces impulse to jump. *ABC News*. Retrieved from <http://abcnews.go.com/>

Friend, T. (2003 October 13). Jumpers: The fatal grandeur of the Golden Gate Bridge. *New Yorker*. Retrieved from <http://www.newyorker.com/>

Glasgow, G. (2007). *Would a suicide prevention barrier on the Cold Spring Bridge save lives? A review of the evidence*. Retrieved from http://www.polsci.ucsb.edu/faculty/glasgow/research/barrier/barrier_report.pdf

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

Golden Gate Bridge, Highway and Transportation District, transcript of testimony by Captain Lisa Locati, August 26, 2016.

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, 338-352

Gould, M.S., Cross, W., Pisani, A.R., Munfakh J.L., & Kleinman, M. (2013). Impact of Applied Suicide Intervention Training on the National Suicide Prevention Lifeline. *Suicide and Life-Threatening Behavior*, 43, 676-669. DOI: 10.1111/sltb.12049

Guthmann, E. (2005, October 30). 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*. Retrieved from <http://www.sfgate.com/>

Jones, J. (2003, October 6). Skyway safeguards don't deter jumpers. *Saint Petersburg Times*. Retrieved from <http://www.sptimes.com/>

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

Miller, M., Azrael, D., & Hemenway, D. (2006). Belief in the inevitability of suicide: results from a national survey. *Suicide and Life-Threatening Behavior*, 36, 1-11.

National Institute for Mental Health in England. (2006). *Guidance on action to be taken at suicide hotspots*. Retrieved from <http://www.sprc.org/sites/default/files/migrate/library/SuicideHotspotsGuidance%20PDF.pdf>

New York State Bridge Authority (2008). *A Comprehensive Plan for Suicide Prevention: Briefing & Summary Report for Consideration by Transportation Agencies*. Retrieved from <http://www.nysba.state.ny.us/Documents/NYSBA%20Suicide%20Prevention%20Summary%20Report.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.

Pang, A. (2015, June 12). A fence may stop some bridge suicides but building it is controversial.

The Epoch Times. Retrieved from <http://www.theepochtimes.com>

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

Pirkis, J., Spittal, M.J., Cox, G., Robinson, J., Cheung, Y.T., & Studdert D. (2013). The effectiveness of structural interventions at suicide hotspots: a meta-analysis. *International Journal of Epidemiology*, 42, 541-8. doi: 10.1093/ije/dyt021.

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, 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, 681-687

Saul, E. (2017, January 26). Port Authority sued over 'suicide magnet' George Washington bridge. *New York Post*. Retrieved from <http://www.nypost.com>

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, 203-216.

Sinyor, M., & Levitt, A.J. (2010). Effect of a barrier at Bloor Street Viaduct on suicide rates in Toronto: natural experiment. *The BMJ*, 341, c2884. <http://doi.org/10.1136/bmj.c2884>. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2897976/#ref14>

Smith, S. (2014, June 30). Funding for Golden Gate Bridge suicide barrier approved. *CNN Health*. Retrieved from <http://www.cnn.com/>

Stephens, T. (2014, August 4). Golden Gate Follows Bern's lead with suicide nets. *Swissinfo*. Retrieved from <http://www.swissinfo.ch/>

Wilkins, J., 2015, August 1, Suicide barrier proposed for Coronado bridge, *San Diego Union Tribune*. Retrieved from <http://www.sandiegouniontribune.com>

Zinko, C. (2005, November 3). 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*. Retrieved from <http://www.sfgate.com/>