EX34.16

REPORT FOR ACTION

Suicide Prevention Through Bridge Modification

Date: April 30, 2018
To: Executive Committee
From: Medical Officer of Health
Wards: All

SUMMARY

As a leading cause of premature death, suicide is an important public health issue. Suicide accounted for an average of 252 deaths per year in Toronto from 2004-2015.[1] Suicide deaths have lasting health and other effects on family and friends of the deceased, as well as first responders.[2, 3] When these deaths occur as a result of a jump or fall from a bridge, they also pose a risk of injury to motorists, and pedestrians and cyclists using roadways and trails beneath the bridge.

Municipal authorities can play a key role in suicide prevention in public places. From 2004-2015, there were a total of 125 suicide deaths from bridges in Toronto, an average of 10 suicide deaths per year.[1] Many jurisdictions have erected barriers at bridge locations and found them to be effective in preventing or reducing suicide deaths with little displacement of suicide deaths to other bridges or substitution to other methods of suicide. Other options to prevent suicide on bridges include crisis phones, signage and monitoring and surveillance of the bridge. However, there is insufficient evidence to determine the effectiveness of these interventions. This report provides an overview of the burden of suicide deaths from bridges in Toronto, the evidence of the effectiveness of interventions to prevent suicide from bridges, as well as information on interventions used by other jurisdictions.

As a next step, Transportation Services is planning to review the feasibility of implementing barriers and/or other interventions on priority bridge locations. This is a complex process that will involve engineering design and, in some cases, environmental assessments. These studies will be undertaken in conjunction with the Transportation Services state-of-good repair capital bridge program.

HELP IS AVAILABLE

If you or someone you know may be experiencing signs of suicide risk, seek help as soon as possible. They are there to listen and are experienced in dealing with these real issues.

Crisis Line:
Toronto Distress Centre: 416–408–HELP (4357)

Gerstein Centre: 416-929-5200

If you require emergency assistance, please go to the nearest hospital or call 911

RECOMMENDATIONS

The Medical Officer of Health recommends that:

1. Executive Committee receive this report for information.

FINANCIAL IMPACT

The completion of feasibility assessments for suicide prevention on priority bridge locations is estimated to cost between one and two million dollars. The cost of these studies would need to be considered as part of future funding for the state-of-good repair capital bridge program and as part of a future Capital Budget and Ten Year Capital Plan for Transportation Services. The capital costs to design and retrofit priority bridge locations would be determined as part of the feasibility assessments. There is no impact to Toronto Public Health's budget.

DECISION HISTORY

On November 17, 2014, the Board of Health endorsed recommendations on suicide prevention, including requests to Council to support means restriction initiatives.
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2014.HL34.2

On May 3, 2016, City Council requested that the City Manager, in collaboration with the Medical Officer of Health, the General Manager, Transportation Services, the Toronto Police Services Board and mental health experts, explore the effectiveness and feasibility of options to prevent suicide deaths from bridges in Toronto and report back to the Executive Committee in 2017.
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.MM18.4

COMMENTS

This report responds to Council's request to explore the effectiveness of options to prevent suicide from bridges. The City Manager delegated this request to the Medical Officer of Health. This report was prepared in consultation with Transportation Services who will be reviewing the feasibility of implementing barriers and/or other interventions on priority bridge locations.

Burden of Suicide Deaths from Bridges

As a leading cause of premature death, suicide is a serious public health issue. Suicide not only results in a loss of life, but also has lasting health and other impacts on survivors, family, friends, witnesses and first responders. Of the total suicide deaths that occur each year in Toronto approximately four percent are the result of a fall or jump from a bridge. From 2004-2015, there were a total of 125 suicide deaths from bridges in Toronto, an average of 10 deaths per year. The majority of those who died by suicide from bridges were males and almost half were between the ages of 25-44 years.[1]

Suicide deaths represent the most severe part of the continuum of suicide behaviours, which also includes suicidal ideation and suicide attempts. For example, from 2005-2016 there were a total of 409 incidents related to bridge suicides or suicide behaviours that were responded to by Toronto Paramedic Services.[4] Of these, 119 (29 percent) were identified as a response to an incident where an individual had jumped or fallen from a bridge. The remaining 290 (71 percent) were in response to suicide-related behaviours on bridges, such as suicide contemplation. Suicide deaths and attempts from bridges also pose a safety risk to motorists, pedestrians and cyclists using roadways or trails beneath the bridge.

Bridge Barriers are an Effective Intervention to Prevent Suicide Deaths

Barriers (and all means restriction strategies) increase the chance that someone seriously contemplating suicide will have more time to allow the crisis to pass, rethink the situation and/or obtain help.[5] Research studies have shown a reduction in the number of suicide deaths from bridges following the implementation of barriers or nets. A recent study on this topic found that restricting access to means (barriers/nets) was associated with a 93% reduction in suicide deaths at the site where the intervention had been implemented.[6]

There are research studies which demonstrate that bridge barriers and nets do not shift suicide deaths to other locations. A decrease in the overall number of suicides by all methods, as well as a decrease in suicide deaths from all jumping sites has been noted following the implementation of barriers or nets.[7,8,9] This provides evidence that there is little displacement to another bridge location nor substitution to other methods of suicide.

In Toronto, a study of the effectiveness of the barrier on the Prince Edward Viaduct found that the barrier was effective in preventing suicide deaths.[8] Before the barrier was implemented, there were an average of 9 suicides per year from 1993-2003. Since the

barrier was implemented in 2004, there has been one suicide death from the bridge. This study also found that there was no increase in suicide deaths at other bridges, and that the overall number of suicide deaths by all methods in Toronto also declined during this time.

While evidence suggests that bridge barriers can save lives, it is important that barriers be considered as part of a multi-pronged approach to suicide prevention. The Public Health Agency of Canada has produced a framework outlining a continuum of suicide prevention including interventions aimed at primary prevention, intervention at the time of suicide crisis, and support for survivors. Means restriction is included as one intervention.[10]

Other Interventions - Telephones and Signage

Other commonly implemented interventions to prevent suicide from bridges are placing emergency telephones or crisis line signage near a bridge, and/or increasing the likelihood of a person being identified and stopped through patrolling or camera surveillance. [6]

Evidence from research studies suggests that interventions that encourage help-seeking behaviours may be effective in preventing suicide deaths. However, this intervention is not as well studied as means restriction interventions, and one study of a bridge in Florida noted an increase in suicide deaths on bridges following the installation of crisis phones.[6]

Interventions such as patrolling and camera surveillance have only been evaluated in combination with bridge barriers and/or crisis telephones or signage. It is difficult to identify the effectiveness of this intervention relative to others.[6]

Given that there is limited evidence of the effectiveness of these interventions, if implemented, a monitoring and evaluation strategy, which assesses the effectiveness and explores any unintended consequences of these interventions, should also be completed. Timely and accurate data on suicides that occur in Toronto will be necessary in order to assess the effectiveness of interventions. This will require a number of different sources of information from Toronto Paramedic Services and Toronto Police Services, as well as the Chief Coroner of Ontario.

Bridge Barriers and Nets Established in Other Jurisdictions

Other Canadian and international jurisdictions have introduced barriers and nets as suicide prevention measures on bridges. These interventions are typically in response to a specific high-risk location, and the advocacy efforts of stakeholders. In Canada, bridge barriers have been implemented in at least five major cities (Toronto, Montreal, Edmonton, Halifax and Vancouver).

In situations where it is not feasible to implement barriers or nets due to bridge design or other factors, alternatives such as crisis telephones have been introduced. This is often presented as an interim solution. It is expected that advancements in technology will reduce the challenges of erecting barriers or nets due to changes in the physical

structure of the bridge. As well, many jurisdictions have introduced multiple suicide prevention measures, and barriers or nets are frequently established in addition to crisis phones and signage.

Other Considerations

Other considerations involve balancing suicide prevention with the need to preserve the natural landscape or the history, design of a bridge and the cost of modifications. Many jurisdictions resolve these issues through an environmental assessment which is often required on bridges prior to the erection of barriers or nets. The environmental assessment is a useful process to address the impact of these interventions because of the consultation with key stakeholders that is required.[11] While there are significant capital investments and increased operational costs involved, it is responsible public policy to retrofit and design new bridges to prevent suicide deaths

Next Steps

As a next step, Transportation Services is planning to review the feasibility of implementing barriers and/or other interventions on priority bridge locations. These assessments will provide information about the design, costs, and structural suitability of barriers and other interventions at the bridge location. The results of the assessments will be used to determine whether it is possible and appropriate to install a barrier on the identified bridges, or if other interventions, such as nets, telephones/signage or surveillance, should be considered. Toronto Public Health, as directed by Council in 2016 will continue to provide consultation to this review process, the results of which will inform the state-of-good repair capital bridge program within the Ten Year Capital Plan for Transportation Services.

It is responsible public policy to design and construct bridges that decrease the likelihood of suicide deaths. Toronto is well-positioned to assess the need for bridge modification and therefore proactively strengthen its approach to preventing suicide deaths.

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