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## Gatekeeper training as a preventative intervention for suicide: A systematic review

### Abstract

Gatekeeper training is successful at imparting knowledge, building skills, and molding the attitudes of trainees; however, more work needs to be done on longevity of these traits and referral patterns of gatekeepers. There is a need for randomized controlled trials. In addition, the unique effect of gatekeeper training on suicide rates needs to be fully elucidated.

### Keywords

gatekeeper, intervention, suicide, review, preventative, training, systematic

### Disciplines

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# Gatekeeper Training as a Preventative Intervention for Suicide: A Systematic Review

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**Objective:** Suicide prevention remains a challenge across communities in North America and abroad. We examine a suicide prevention effort that is widely used, termed gatekeeper training. There are 2 aims: review the state of the evidence on gatekeeper training for suicide prevention, and propose directions for further research.

**Method:** Studies were identified by searching MEDLINE (PubMed) and PsycINFO from inception to the present for the key words suicide, suicide prevention, and gatekeeper. In addition, a manual scan of relevant articles' bibliographies was undertaken.

**Results:** Gatekeeper training has been implemented and studied in many populations, including military personnel, public school staff, peer helpers, clinicians, and Aboriginal people. This type of training has been shown to positively affect the knowledge, skills, and attitudes of trainees regarding suicide prevention. Large-scale cohort studies in military personnel and physicians have reported promising results with a significant reduction in suicidal ideation, suicide attempts, and deaths by suicide.

**Conclusions:** Gatekeeper training is successful at imparting knowledge, building skills, and molding the attitudes of trainees; however, more work needs to be done on longevity of these traits and referral patterns of gatekeepers. There is a need for randomized controlled trials. In addition, the unique effect of gatekeeper training on suicide rates needs to be fully elucidated.

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### Clinical Implications

- A multifaceted approach to suicide prevention is required.
- Suicide awareness training in military personnel and family doctors significantly decreases the suicide rate.
- Gatekeeper training may be an effective component of a broad suicide prevention strategy.

### Limitations

- There are no randomized controlled trials showing that gatekeeper training alone has an effect on the suicide rate.
- The best evidence for gatekeeper training exists within suicide prevention programs that implement many different initiatives to address suicide, which makes it difficult to separate out the effect of gatekeeper training alone.
- Only studies in English were used.

**Key Words:** gatekeeper training, suicide, suicide prevention

Suicide denies communities of the potential contribution of people who take their lives. Suicide rates vary throughout the world but are of significant concern, with an estimated worldwide loss of 877 000 lives in 2002, or more than 20 million disability-adjusted life-years.<sup>1</sup> It is clear that effective, evidence-based interventions for suicide need to be developed.

### Suicide Prevention Strategies and Challenges

Prevention methods have often been regarded as an approach to decreasing suicidal ideation, suicide attempts, and deaths by suicide. Most suicide prevention strategies fall into 1 of 2 general categories: reducing risk factors for suicide, or seeking out people at risk for suicide for referral and eventual treatment (that is, case finding).<sup>2</sup> In the first category, many strategies have been initiated with mixed results.<sup>1</sup> Recent reviews of literature in this area have found that the best evidence exists for reducing the availability of lethal means and general practitioner education on depression management.<sup>1,3</sup> The main case finding strategies include general education campaigns, school-based and primary care provider screening programs, and gatekeeper training.<sup>1-3</sup> Suicide education programs have generally been regarded as underevaluated and studies that have examined these programs have shown little effect.<sup>1</sup> Screening programs have shown reliability and validity in seeking out people at risk for suicide, but the effect on the suicide rate is unclear. Some studies evaluating screening for depression have reported an increase in treatment of depression with lower suicide rates (mainly in adults) while others have not seen this effect.<sup>1</sup>

Years of suicide prevention research and program implementation have not yet led to a definitive, highly effective, evidence-based approach to suicide prevention for the general population. This leads one to question why suicide prevention programs have not yielded better results. Some have speculated that the potential yield of suicide prevention strategies that focus on individual approaches (such as identifying high-risk people) is not as high as population-based approaches (such as reducing access to lethal means).<sup>4</sup> However, some population-based approaches, namely, general education for adolescents on the topic of suicide, have been reported to be potentially harmful owing to iatrogenic effects,<sup>5,6</sup> although this issue has been partially addressed by a recent RCT in schools.<sup>7</sup> In addition, suicide education may not be as effective because of its inability to reach people who are

either not enrolled in formal education programs or absent for some reason.<sup>4</sup>

Some suicide prevention programs that have initially been reported as successful have not seen their effects last over time. This has been described in a physician education program that saw the effects of the intervention diminish over time,<sup>8</sup> highlighting that in some cases, suicide prevention programs are not temporary commitments and regular training is likely needed. One training program initiative, termed gatekeeper training, has emerged as a promising suicide prevention initiative which has now received support worldwide.<sup>9,10</sup>

### Gatekeeper Training

The United Nations,<sup>9</sup> along with numerous review articles on general methods of suicide prevention, have recommended that gatekeeper training be considered in implementing an effective strategy to prevent suicide.<sup>1-3</sup> This type of training teaches specific groups of people to identify people at high risk for suicide and then to refer those people for treatment. Gatekeepers are people who have primary contact with those at risk for suicide and go about identifying them by recognizing suicidal risk factors.<sup>2,11</sup> Historically, they have been divided into 2 main groups, defined as either designated or emergent.<sup>12</sup> The designated group consists of people who are trained and designated as helping professionals (for example, those who work in the fields of medicine, social work, nursing, and psychology). The emergent group consists of community members who may not have been formally trained to intervene with someone who is at risk for suicide but emerge as potential gatekeepers as recognized by those with suicidal intent (for example, clergy, recreation staff, police, coaches, teachers, and counsellors). It has been suggested that family and friends may be best suited to act as gatekeepers based on their close relationship with those at risk for suicide.<sup>13</sup> In essence, gatekeepers open the gate to help for people at risk of suicide. Gould et al suggest that the purpose of the training is “to develop the knowledge, attitudes, and skills”<sup>2, p15</sup> to identify people at risk, to assess the levels of risk, and to manage the situation appropriately with referral when necessary.

Gatekeeper training as a way to seek out and manage people with suicidal ideation dates back to the late 1960s in Philadelphia. The first published report on gatekeeper training was written by Dr John Snyder for the *Bulletin of Suicidology* in 1971.<sup>14</sup> The first initiative to develop and implement a gatekeeper training program in Canada was formed by a volunteer task force at the Canadian Mental Health Association along with an Alberta provincial government advisory committee in the early 1980s.<sup>12</sup> Within 10 years, this gatekeeper training program had been refined and disseminated both nationally and internationally. Today,

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#### Abbreviations used in this article

RCT	randomized control trial
SIRI	Suicide Intervention Response Inventory

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**Table 1 Key components of a gatekeeper training program**

Preparing	<ul style="list-style-type: none"> <li>An introduction to the tone, norms, and expectations of the learning experience.</li> </ul>
Connecting	<ul style="list-style-type: none"> <li>Discusses one's own attitudes toward suicide and their impact on the intervention process.</li> </ul>
Understanding	<ul style="list-style-type: none"> <li>An overview of the intervention needs for someone at risk. This includes knowledge and skills in identifying risk factors and developing a plan to help.</li> </ul>
Assisting	<ul style="list-style-type: none"> <li>Presentation of a model for effective suicide prevention. Simulation and observation reinforce knowledge.</li> </ul>
Networking	<ul style="list-style-type: none"> <li>Information on local community resources and how to network these resources.</li> </ul>

Adapted from: LivingWorks Education Inc<sup>10</sup>

numerous gatekeeper training methodologies are commercially available as train-the-trainer models, such as LivingWorks,<sup>10</sup> Question Persuade and Respond,<sup>15</sup> and Yellow Ribbon International for Suicide Prevention.<sup>16</sup>

Gatekeeper training is modelled on the fact that people at the highest risk for suicide often do not seek help and recognizable risk factors exist that help in identifying these people.<sup>2</sup> Training programs last anywhere from a few hours to 5 days, with most programs dedicating 2 days to training.<sup>11</sup> The content of the training is variable from program to program. In one study examining the application of gatekeeper training in an Aboriginal community in Australia, the content of the training consisted of everything from myths and facts about suicide to warning signs and referral strategies.<sup>17</sup> One gatekeeper training program has come up with a general outline of what the training experience should entail (Table 1). The background of the people who do the training is also variable, with education coming from a range of professionals in the field to local volunteers.<sup>11</sup>

Though broad implementation and recommendations exist for gatekeeper training, there has not been a strong consensus as to its effectiveness. Questions about the efficacy of the training to educate people as well as the overall effect on suicidal behaviour are pertinent. In addition, the applicability of the training across populations should be discussed. Within the context of working with First Nations communities in north-western Manitoba to develop evidence-based suicide prevention strategies, we became aware that gatekeeper training is being implemented in the communities. The initiative most

widely used in these communities is the ASIST program which was developed by LivingWorks Education Inc in Alberta.<sup>10</sup> This initiative was spearheaded by an Aboriginal youth secretariat in Manitoba and has trained people in many different communities since its inception. In assessing the evidence for gatekeeper training programs, we discovered that, to date, there has not been a systematic review on the effectiveness of gatekeeper training as part of a suicide prevention strategy. As such, this paper will review the literature in this area and will comment on gatekeeper training as a method of suicide prevention.

## Method

A search for English-language articles was carried out using MEDLINE (articles from 1950 to the present) and PsycINFO (articles from 1806 to the present). Key words searched were suicide, suicide prevention, and gatekeeper. The search included the words suicide and gatekeeper, as well as suicide prevention and gatekeeper. The key words were present in the title, abstract, or both. The search for gatekeeper and suicide produced 29 results of which 4 were kept for inclusion in the review. The search for gatekeeper and suicide prevention yielded 25 results of which the same 4 articles were kept for inclusion in the review. Of the pertinent articles found, the bibliographies were scanned exhaustively for articles discussing gatekeeper training as well as similar suicide prevention interventions. This method produced the remainder of the articles included in the review (9 articles). When necessary, authors were contacted to discuss study results. To be included in the review, studies must have been peer-reviewed, involved training people in suicide and (or) depression management, and have assessed pre- and post-training outcomes. Outcomes that were included consisted of suicidal ideation, suicide attempts, and deaths by suicide in a target population, as well as effects on the knowledge, skills, and (or) attitudes of trainees. Papers outlining the effects of general suicide education on the suicide rate of a general population were excluded as they did not fit the definition of gatekeeper training studies. Two authors assessed the eligibility of studies and rated their level of evidence based on criteria set out by the Oxford Centre for Evidence-Based Medicine.<sup>18</sup>

## Results

Table 2 and 3 summarize the results of the reviewed papers. The highest level of evidence found for gatekeeper training was level 1B (RCT). Two main outcomes have been examined when reporting the use of gatekeeper training. The first is whether the training increases knowledge, changes attitudes, and imparts skills to the trainee. The second outcome is the effect on the suicide rate after gatekeeper training has been implemented in a given population.

**Table 2 Sources, study types, level of evidence, population, and effects seen on skills, attitudes, and knowledge**

Source	Study type	Level <sup>a</sup>	Population	Outcomes
Wyman et al <sup>19</sup>	RCT	1B	342 school staff	Increase in self-reported knowledge, appraisals of efficacy, and service access
Tierney <sup>25</sup>	Cohort	2B	36 intervention abilities study subjects, 176 knowledge and attitudes study subjects	Significant improvement in intervention skills in simulated situations
King and Smith <sup>20</sup>	Cohort	2B	186 school counsellors	Increased skills, attitudes, and knowledge
Capp et al <sup>17</sup>	Cohort	2B	44 Australian Aboriginal community members	Increase in knowledge, intention to help, and confidence in identification
Stuart et al <sup>23</sup>	Cohort	2B	65 Canadian adolescents	Increase in skills, attitudes, and knowledge
Chagnon et al <sup>22</sup>	Cohort	2B	71 youth workers	Increase in skill, attitudes, and knowledge
Matthieu et al <sup>26</sup>	Cohort	2B	602 US Veterans Affairs workers	Increase in knowledge and self-efficacy

<sup>a</sup> Based on the Oxford Centre for Evidence-Based Medicine levels of evidence: 1A: systematic review of RCTs; 1B: individual RCT; 2A: systematic review of cohort studies; 2B: individual cohort study, low-quality RCT; 2C: ecological studies; 3A: systematic review of case-control studies; 3B: individual case-control study; 4: case series, poor quality cohort, and case-control studies.

### Effect on Knowledge, Skills, and Attitudes

Research into the effect of gatekeeper training on the knowledge, skills, and attitudes of trainees has been examined in schools, Aboriginal people, youth workers, Veterans Affairs staff, and other sample populations.

Gatekeeper training programs in the public school system have been especially popular in North America.<sup>11</sup> This type of training has been studied in school counsellors, educators, and peer helpers with positive effects on knowledge, skills, and attitudes reported in the literature.<sup>2,11,19-21</sup> A recent RCT of 342 school staff in a US school district reported an increase in self-reported knowledge, appraisals of efficacy, and access to services (all  $P < 0.001$ ). This study randomized at the school level rather than at the individual level and assessed outcomes 1 year after the original training. Similar effects were reported in a recent study of gatekeeper training for adults who work with youth in Quebec.<sup>22</sup> This paper not only reported a significant effect on skills, attitudes, and knowledge ( $n = 71$ ,  $P < 0.001$ ) but also showed that these characteristics were maintained 6 months after training ( $n = 33$ ,  $P < 0.001$ ).<sup>22</sup> Importantly, the authors also reported that 63.6% of trainees had intervened with a suicidal youth within 6 months of training.

Gatekeeper training has also been examined in a peer gatekeeper program, with similar effects on skills, attitudes, and knowledge as in studies of educators.<sup>23</sup> Peer gatekeeper training is predicated on the fact that up to 40% of male peers and 60% of female peers know someone who has attempted

suicide, but only 25% have confided in an adult.<sup>24</sup> Despite numerous studies showing an increase in skills, attitudes, and knowledge generally, there is a dearth of studies around the effectiveness of school-based gatekeeper programs in decreasing rates of suicidal ideation, suicide attempts, or deaths by suicide.

Gatekeeper programs outside of school samples also exist.<sup>17,25,26</sup> Tierney<sup>25</sup> assessed study subjects' ability to intervene with suicidal people as well as their knowledge and attitude changes after a 2-day workshop for those in the general population. A significant change in intervention ability after the workshop was found in simulated situations ( $P < 0.001$ ); however, there was no significant change when examining responses to the SIRI-1. The SIRI tested the ability of workshop attendees to select appropriate responses to the statements of suicidal clients. It should be noted that there is often a ceiling effect with the SIRI-1 that makes detection of significant improvements post-training difficult. Regarding a change in knowledge or attitudes after the workshop, the results were positive. There was a significant change seen for developing positive attitudes toward suicide intervention, general knowledge of suicide and intervention knowledge ( $P < 0.001$ ). However, small, nonequivalent control groups were used ( $n = 22$  in the attitudes control group,  $n = 23$  in the knowledge control group) and thus the validity of these results are in question.

**Table 3 Sources, study types, level of evidence, population, and effects on suicidal ideation, suicide attempts, and (or) deaths by suicide**

Source	Study type	Level <sup>a</sup>	Population	Outcomes
Rutz et al <sup>8</sup>	Cohort (quasi-experimental)	2B	Training of primary care physicians with an effect on the residents of Gotland, Sweden	Significant decrease in the suicide rate from 19.7/100 000 to 7.1/100 000
Knox et al <sup>28</sup>	Cohort (quasi-experimental)	2B	5 260 292 US Air Force personnel	A 33% relative risk reduction in suicide rate
May et al <sup>31</sup>	Cohort	2B	Variable number (about 800) American Aboriginal adolescents aged 10 to 24 years	Decrease in mean number of self-destructive acts (attempts and gestures) by 73%
Hegerl et al <sup>39</sup>	Cohort	2B	Training of primary care physicians with an effect on residents of Nuremberg, Germany	Decrease in suicidal acts (attempts and completions) by 24%
Henriksson and Isacson <sup>38</sup>	Cohort	2B	Training of primary care physicians with an effect on residents of Jamtland, Sweden	Decrease in the suicide rate to the national average (non-significant)
Szanto et al <sup>40</sup>	Cohort	2B	Training of primary care physicians with an effect on residents of southwest Hungary	Decrease in the suicide rate from 59.7 to 49.9 per 100 000 (significant when compared to local county and Hungary as a whole, but not when compared with control region)

<sup>a</sup> Based on the Oxford Centre for Evidence-Based Medicine levels of evidence: 1A: systematic review of RCTs; 1B: individual RCT; 2A: systematic review of cohort studies; 2B: individual cohort study, low quality RCT; 2C: ecological studies; 3A: systematic review of case-control studies; 3B: individual case-control study; 4: case series, poor quality cohort and case-control studies

Evidence supporting the effectiveness of gatekeeper training programs in Aboriginal people has also been reported. Training in one study with a small community sample of Aboriginal people in Australia showed an increase in the participant's knowledge of suicide, intentions to provide help, and greater confidence in being able to identify those who are suicidal.<sup>17</sup> A follow-up study found that intentions to help and confidence in identifying people at risk for suicide remained high 2 years following gatekeeper training.<sup>27</sup> In addition, 37.5% (15/40) of people who attended the training reported that they went on to help someone at risk for suicide. An interesting finding in this study was that trainees' intention to refer to formal mental health services decreased from pre- to post-training, and then fell even further in the 2-year follow-up, although this result was not statistically significant. The authors contend that this may have happened because of increased confidence in the gatekeeper's ability to manage suicidal patients on their own.

#### ***Effect on Suicidal Ideation, Suicide Attempts, or Deaths by Suicide***

Research into the effect of gatekeeper training programs on suicidal behaviour exist within both multifaceted and individual suicide prevention initiatives. Studies of these programs have been undertaken among military populations, Aboriginal communities, and primary care physicians.

One of the most striking examples of a population-based multilevel suicide prevention program was initiated in the US Air Force in 1997.<sup>28</sup> This was a quasi-experimental cohort study of over 5 million personnel in the US Air Force between the years of 1990 and 2002. The initiative contained 11 different suicide prevention tactics, one of which was gatekeeper training. By 1999, 2 years after the program was initiated, 90% of all civilian and active duty personnel had received some form of suicide prevention training.<sup>29</sup> The training focused on the LINK program, described as, Look for possible concerns, Inquire about concerns, Note level of risk, and Know referral resources and strategies. It included training in basic suicide risk factors, intervention skills, and referral procedures. Unit gatekeepers (squadron supervisors), community gatekeepers (social support services workers), medical professionals, and individual personnel were trained in this method. There was no mention of the length of the training sessions in the study. The authors found a 33% relative risk reduction (with a relative risk of 0.67,  $P < 0.001$ , 95% CI 0.57 to 0.80) in suicide comparing the 1990 to 1996 cohort (before the intervention) with the 1997 to 2002 cohort (after the intervention). Along with suicide, there were significant reductions in homicide, moderate and severe family violence, and accidental deaths.

A study of Aboriginal youth in New Mexico over the years 1988 to 1997 implemented a program that involved gatekeeper-like natural helpers, among other programs. This study saw a drop in the mean number of self-destructive acts per year by 73% (suicide attempts and gestures,  $P = 0.001$ ), but no change in the mean number of suicide completions.<sup>30,31</sup>

It should be noted that the results could have been affected by a cyclical trend in suicide acts that had been previously documented in this community.<sup>30</sup>

Educating primary care physicians regarding depression and (or) suicide has been studied as a suicide prevention strategy. General practitioners fit the definition of gatekeepers well, as many of them receive education on suicide risk factors, depression, and referral resources as part of their training. Despite this, many of them have recognized a need for more training in suicide and depression,<sup>32</sup> which is consistent with previous reports where they have acknowledged a lack of skills in identifying people who are suicidal or depressed.<sup>33,34</sup> Primary care physicians are also potential candidates for such training given that many of those who die by suicide come into contact with primary caregivers in the weeks before their death.<sup>35</sup> While there is a need to extend training to primary care physicians, numerous studies assessing training programs in detection and treatment of depression for general practitioners have shown mixed results.<sup>1,36</sup>

Some studies reported improved detection and treatment of depression, while other studies did not report this effect.<sup>1,36</sup> A recent systematic review concluded that educational programs for primary care physicians are only successful if they exist within complex, multifaceted suicide prevention programs.<sup>36</sup> A separate review found that general practitioners' education was the most promising initiative addressing suicide prevention.<sup>1</sup> For instance, one study found an increase in inquiry regarding adolescent suicide and increased identification of youth at risk for suicide after a 1-day training session for primary care physicians. However, this study did not show a difference in patient management, referral practices, or an effect on the suicide rate.<sup>37</sup>

When examining the effects of general practitioners' education on suicidal ideation, suicide attempts, or deaths by suicide, some studies have reported an effect.<sup>1,8,38-40</sup> A landmark study in Gotland, Sweden, analyzed suicide rates in the general population before and after 2 days of training on depression and suicidality for general practitioners and found a significant decrease in the suicide rate for females only ( $P < 0.01$ ).<sup>8</sup> Of note, the suicide rate returned to pre-training levels 3 years after the intervention, indicating a timeline for its effects. A similar Swedish study showed more moderate effects, compared with the Gotland study, after a program of general practitioners' education.<sup>38</sup> The suicide rate decreased

to the national average despite being higher than the national average before the intervention, although this result was not statistically significant.

Another study in Germany of a multifaceted approach to suicide prevention found a decrease in suicidal acts (attempts and deaths) over a 2-year time period.<sup>39</sup> This study combined a set of interventions that included both primary care physician training as well as gatekeeper training for people in the general population. The authors reported a decrease in suicide attempts and deaths by 24% ( $P < 0.004$ ), compared with the control region.

## Discussion

Research into the effectiveness of gatekeeper training programs is limited by numerous factors. First, the suicide base rate is low, which makes it difficult to use reductions in the suicide rate (the ultimate goal) to demonstrate effectiveness of a particular program.<sup>3</sup> The percentage of the general population that would need to be trained to effect a significant change on the suicide rate is unknown. Second, in most studies, gatekeeper training exists within broader programs to prevent suicide. Thus the effect on suicidal ideation, suicide attempts, and death by suicide of a gatekeeper training program alone is not clear. Third, use of a control group is extremely difficult in this type of research. These limitations will need to be addressed when undertaking further research.

### *Potential Barriers to Effectiveness*

Potential barriers to the effectiveness of gatekeeper training exist. Community members need to be interested and invested in recognizing the need for suicide prevention. A lack of a perceived need for strategies to deal with suicide may undermine any prevention method. In addition, people at high risk for suicide may not opt for referral and treatment, even though they have been recognized as needing help by gatekeepers. Many people in smaller communities, both in urban and rural areas, may have significant concerns over confidentiality, privacy, and trust.<sup>17</sup> There is also the potential that people referred to treatment may not be willing to accept help if it is from professional mental health care staff, owing to the stigma that may exist in using these services.<sup>17</sup> This underscores the need for gatekeepers to be open to linking people at risk for suicide to support systems that, although they may not be formal or professional, open up a dialogue on suicidal ideation. However, this is provided that the risk of suicide is not considered to be imminent and the patient does not appear to need urgent psychiatric hospitalization. Lastly, gatekeeper training relies on effective and available treatment, which may not exist in some communities.

### ***Inherent Strengths of Gatekeeper Training***

Despite these barriers, gatekeeper training has some inherent strengths. The training can be molded to address specific issues that arise in different regions.<sup>11</sup> This may come in the form of special training in cluster suicides for trainees in communities that have experienced this, or using local statistics on substance use and its severity to highlight specific local risk factors. In addition, training recognizable and familiar faces within a population (rather than outsiders) uses existing relationships to provide help to those at risk, which avoids the onerous and tenuous task of creating new pathways to care. Importantly, gatekeepers seek education in an area that ultimately strengthens their respective environments, helping them to take control of situations in which they previously may have felt helpless.

Gatekeeper training has shown promise in specific populations, but the reproducibility across populations and applicability to the general population is unknown. Most studies have focused on gatekeeper training in an institutional setting, such as the military or in schools, and these environments may be better suited to the structure that is needed to implement gatekeeper programs. However, gatekeeper training may also hold promise in other environments, such as the workplace or in smaller communities, which could potentially reach a larger component of the general population if implementation is widespread.

### ***Future Research Considerations***

Further research into the effectiveness of gatekeeper training as a suicide prevention strategy needs to be undertaken. To this end, numerous suggestions have been put forth by the Centers for Disease Control and Prevention.<sup>11</sup> They recommend that research should include assessment of the referral patterns of gatekeepers and the long-term ability of gatekeepers to identify and refer appropriately. In addition, the quantity of training and how often to retrain needs to be addressed. People who access formal services for treatment of suicidal ideation may take many different paths in accessing care. These paths should be studied alongside investigation of how to reduce delays in accessing treatment. As well, a review of the training process, including who is best to lead the training and what content is appropriate, should be undertaken to ensure that it is effective in identifying people at risk for suicide.

Most successful gatekeeper training programs are incorporated into larger suicide prevention initiatives. Research into how gatekeeper training affects the different parts of a prevention program and how it works on its own is an important step in evaluating its effectiveness. Further research should also evaluate whether the implementation of a gatekeeper training program may have an iatrogenic effect of increasing suicides.

As well, there is a need to develop and test outcome and research measures on the effectiveness of gatekeeper training that are relevant to participants and communities. The research conducted to date does not yet clearly demonstrate whether gatekeeper training has a unique and independent effect on reducing suicidal ideation, suicide attempts, and deaths by suicide. In addition, an RCT assessing efficacy is needed in this area. Historically this has been difficult to undertake because very large sample sizes are needed to assess a change in the relatively low suicide base rate in a given population. However, a recent paper has outlined novel methods for studying gatekeeper training in an RCT.<sup>41</sup>

### **Conclusion**

Gatekeeper training holds promise as part of a multifaceted strategy to combat suicide. It has been proven to positively affect the skills, attitudes, and knowledge of people who undertake the training in many settings. Though research is limited in demonstrating an effect on suicide rates and ideation, it is seen in many circles as an extremely promising initiative to prevent suicide.<sup>1,3</sup> An RCT is needed to delineate its potential for reducing the suicide base rate in a given community.

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**Résumé : La formation de sentinelles comme intervention préventive du suicide : une revue systématique**

**Objectif :** La prévention du suicide demeure un problème dans toutes les collectivités de l'Amérique du Nord et de l'étranger. Nous examinons un programme de prévention du suicide qui est largement utilisé, et qui porte le nom de formation de sentinelles. Nous avons 2 objectifs : examiner l'état des données probantes sur la formation de sentinelles pour la prévention du suicide, et proposer des orientations à la future recherche.

**Méthode :** Les études ont été relevées en cherchant dans MEDLINE (PubMed) et PsycINFO, du début à aujourd'hui, à l'aide des mots clés suicide, prévention du suicide, et sentinelle. En outre, une recherche manuelle des bibliographies d'articles pertinents a été effectuée.

**Résultats :** La formation de sentinelles a été mise en œuvre et étudiée dans de nombreuses populations, y compris le personnel militaire, le personnel des écoles publiques, les pairs aidants, les cliniciens et les peuples autochtones. Ce type de formation a démontré une influence positive sur les connaissances, les compétences, et les attitudes des personnes qui suivent la formation en matière de prévention du suicide. Des études de cohortes à grande échelle menées auprès de personnel militaire et de médecins ont déclaré des résultats prometteurs avec une réduction significative de l'idéation suicidaire, des tentatives de suicide et des décès par suicides.

**Conclusions :** La formation de sentinelles réussit à transmettre des connaissances, à développer des compétences et à modifier les attitudes des personnes qui la suivent, mais il faut accomplir plus de travail sur la longévité de ces traits et sur les modes d'aiguillage des sentinelles. Des essais randomisés contrôlés sont nécessaires. En outre, l'effet spécifique de la formation de sentinelles sur les taux de suicide doit être pleinement clarifié.