Report to the Legislature

Suicide Education Study

December 2013

DOH 631-049 January 2014

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Overview and Recommendations

Background

The 2012 Washington State Legislature passed Engrossed Substitute House Bill 2366 (see Appendix A). The resulting law, RCW 43.70.442, requires certain health care professionals to complete training in suicide assessment, treatment, and management every six years. The bill requires the Department of Health to conduct a study to evaluate the effect of evidence-based suicide assessment, treatment, and management training on the ability of licensed health care professionals to identify, refer, treat, and manage patients with suicidal thoughts. The study has four main objectives:

- Review available research and literature regarding the relationship between training of health care professionals and suicide rates;
- Assess which licensed health care professionals are best situated to positively influence the mental health behavior of individuals with suicidal thoughts;
- Evaluate the impact of suicide assessment, treatment, and management training on veterans with suicidal thoughts; and
- Review the curriculum of health care profession programs offered at Washington's state educational institutions regarding suicide prevention.

The department contracted with the University of Washington's School of Nursing to conduct the study. The final report of the study is attached. Below is a summary of the study findings and the department's recommendations.

Overview of the University of Washington's Suicide Education Study Findings

There is limited research in the literature on health care professional suicide assessment, treatment, and management training and its relationship to suicide rates and patient behavior for the general population or the veteran population. Most of the reviewed literature is the result of research conducted in Europe and Asia. In general, the available evidence indicates that training health care professionals in suicide prevention can be beneficial to patients. Specific findings by study objective include:

Objective 1: Review available research and literature regarding the relationship between training of health care professionals and suicide rates.

Most available research evaluating whether suicide prevention training for health care professionals is effective in reducing patient suicide rates is not focused on training for specific professions. Rather, the studies reviewed often involve a multi-component, comprehensive approach to training all employees of a health care organization. Available evidence indicates that suicide prevention training geared toward health care professionals and employees can have a positive effect on suicide rates.

Objective 2: Assess which licensed health care professionals are best suited to positively influence the mental health behavior of individuals with suicidal thoughts.

Available research indicates that health care professional suicide prevention training can have positive effects on patients. However, there isn't available evidence to assess which licensed health care professionals are best able to positively influence the mental health behavior of their patients.

Objective 3: Evaluate the impact of suicide assessment, treatment, and management training on veterans with suicidal thoughts.

Research and published reports on the effects of health care professional training on veterans or active military personnel with suicidal thoughts are extremely limited. Most evidence reviewed focuses on the effects of multi-component, comprehensive training provided to a range of military personnel (including military leaders, peers, and mental health staff). The comprehensive training appears to have positive effects and is a promising approach.

Objective 4: Review the curriculum of health care profession programs offered at Washington's state educational institutions regarding suicide prevention.

Of the 37 educational programs evaluated, very little suicide prevention training is included in the pre-credential education of state health care professionals.

The health care profession boards and commissions were consulted and briefed throughout the study process. The University of Washington research team attended meetings of most boards and commissions to present a summary of the study findings and conclusions. In general, health care professionals in attendance were responsive and interested in the report. They acknowledge their responsibility in managing patients with suicidal thoughts. They also admitted that there is a lack of preparation to manage and refer challenging patients. However, they didn't support mandatory continuing education as a solution.

Department of Health Activities

The department has funding through June 2014 to continue working to implement Engrossed Substitute House Bill 2366:

- Convene a multi-disciplinary group of state agencies, health care professionals, veterans associations, and other stakeholders to explore suicide prevention training strategies for health professionals.
- Work with health professional boards, commissions, and advisory committees to include suicide prevention training among approved continuing education programs and in annual professional conferences and seminars.
- Work with state educational institutions to include suicide prevention training in pre-credential education curricula for health care professionals.

Department of Health Recommendations for Future Action

The department recommends a state agency or multiple agencies develop a comprehensive, statewide plan to reduce deaths from suicide. The plan should:

- Identify at-risk populations;
- Include tools and materials to assist health care professionals, educators, social service providers and others to manage individuals at risk for suicide;
- Include strategies to ensure adequate systems of care and referral networks are in place for individuals with suicidal thoughts;
- Identify best practice approaches to train organizations (health care, education, military, general workplace) and the general public on suicide prevention.

SCHOOL OF NURSING
UNIVERSITY of WASHINGTON

Washington State Department of Health

Suicide Education Study

Final Report

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October 4, 2013

Executive Summary of Report

ESHB 2366, enacted March 2012, and taking effect January 2014, mandates 6 hours of training every 6 years in suicide assessment, treatment and management for mental healthcare professionals. This report addresses having all healthcare professionals, in addition to mental healthcare professionals, trained in suicide prevention. The report responds to four general tasks posed by the Legislature, presented in this report as study Objectives.

Objective 1

Indicate if the current research points to a relationship between healthcare providers completing suicide assessment, treatment and management training and changes in patient suicide rates.

Objective 2

Address which of Washington's credentialed healthcare professions would benefit from training in order to have the most impact on potentially suicidal individuals.

Objective 3

Indicate if the current research points to a relationship between (a) healthcare providers completing suicide assessment, treatment and management training and (b) suicide rates and behaviors among active duty and veteran military populations.

Objective 4

Review of suicide training that is currently offered to healthcare professionals at educational institutions in Washington State.

Our approach and method for answering the questions consisted of the following steps:

- We conducted an extensive and systematic literature review of scientific studies that included both suicide prevention training and training of healthcare providers.
- We utilized expert consultation to confirm our research and conclusions.
- We surveyed over 2,000 healthcare professionals in Washington State, representing over 70 professions.
- We interviewed 37 curriculum coordinators for healthcare education programs in Washington State.

We examined the effect of provider training on suicide rates and suicide risk behaviors among patients, as well as upon behavior change in the providers themselves. In addition, we examined the relevance of provider training by examining research that reported the perceptions of professionals regarding their preparation for managing suicide risk and their exposure to suicide risk in their patients. The report is

presented by objective, and includes a summary of each objective. What follows is a brief summary of the report findings.

Objective 1

- There is little research on patient outcomes related to training healthcare providers in suicide prevention. However, while often not specific to particular providers, the evidence that exists indicates that, in general, training healthcare providers in suicide prevention is beneficial for patients. Such evidence is based upon the following findings:
    - What little research there is on the effectiveness of training for reducing patient suicide rates rarely focused on single healthcare professions. When research did focus on a single profession, it focused on physician training. None of those studies were in the U.S. Articles including more than one profession in a single study generally focused on 'frontline' providers such as physicians, nurses and emergency department staff. We found *eleven* research studies on healthcare provider training and its effect on suicide rates outcomes that met inclusion criteria. Four studies examined the effectiveness of physician training-specifically on suicide rates; , two showed significant reductions (both in Sweden) and two (Germany and Slovenia) did not show significant reductions in rates (although they showed reductions in patient risk).
    - *Eight* articles examining the effects of suicide prevention training on patient suicide behavior met inclusion criteria, and are included in the Objective 1 report. Patient behaviors examined included suicide attempts, ideation and depression. Four of the eight studies focused specifically on training physicians; however, those studies typically involved additional components that would also affect outcome results. Studies examined several different training types and formats.
    - Existing research evidence indicated that suicide prevention training geared to healthcare professionals generally had positive effects on (i.e. reductions in) patient suicide rates (six studies) and behaviors (eight studies) and did not have any reported negative effects on patients. When trainings ceased, rates of suicide increased again.
    - While not pinpointing specific professions, several multi-component prevention studies demonstrated reductions in patient suicide rates and behaviors when a comprehensive approach was implemented that trains many, if not all, types of healthcare employees in a single setting.

- Additional evidence pointed to the relevance and acceptability of suicide prevention training for healthcare providers.
    - More studies have examined provider behavior change and response to trainings than have examined effectiveness for patient suicide. Training has been shown to be effective on providers' perceptions of their increased competence, confidence and/or comfort with addressing suicide risk for their patients. The majority of trainee responses to prevention training have been positive.
    - Studies showed that most healthcare providers surveyed (most studies focused on physicians) felt that patient suicide risk fell within the scope of their profession, felt under-trained and under-prepared to respond to suicide risk in their patient, and felt that lack of training was a barrier to their responding to evidence of risk. Additional studies demonstrated that more patients saw their healthcare provider, versus a mental health care provider, prior to their attempt or death by suicide.

Objective 2

- Information found in a literature search indicated that suicide prevention training appeared to have positive effects for patients and health professionals, but there is insufficient evidence to support our recommending which of Washington State's credentialed professionals would benefit from training to have the greatest impact on reducing suicide and suicidal behaviors.
- Survey responses from 2018 Washington State professionals showed that almost half of professionals did not receive, or did not remember receiving, training in the identification of suicide risk among their patients. Eighty-five percent of responding healthcare providers believed that providers in their profession should be trained in suicide prevention. Half to just over half of professionals believed prevention training should be mandatory versus voluntary. This was consistent with findings in the literature, which indicated that healthcare providers found training in suicide prevention relevant and within the scope of their practice.

Objective 3

- Findings from this review were congruent with a number of reports issued from and for the Department of Veteran Affairs and Department of Defense, particularly regarding lack of accurate data and lack of studies examining evidence-based suicide prevention training for both active and veteran military personnel.

- Obtaining accurate data on military suicide that is comparable to general population rates has been a challenge to identifying and addressing military suicide for both veterans and active duty personnel.
- There were few published reports on the effects of prevention efforts on military suicide, and this was particularly true for veterans. Reports that existed, primarily for active duty military, generally covered multi-component prevention programs. We found no studies that specified healthcare providers as the target of prevention training.
- The Veterans Hotline, initiated in 2007, is a key feature of current VA prevention efforts. Numbers of calls have increased dramatically over five years, demonstrating the acceptability and usage of the crisis hotline, with increases attributed at least in part to adaptations made to make the hotline more accessible and socially acceptable for veterans.

Objective 4

- We conducted interviews with 37 healthcare profession training program representatives regarding suicide prevention training content in their curriculums.
- Very little suicide prevention training is included in the pre-credential education of healthcare professionals in Washington State. What little there is does not typically involve consistent, specified or articulated material on suicide prevention.
- Program directors or spokespersons expressed interest in learning more about ways to include or enhance suicide prevention training in their curriculums.

Board Responses

When we presented results of this report to professional boards, members were concerned about mandatory training regulations but at the same time concerned about suicide risk, and about determining the most appropriate kinds of training for their professions.

Conclusion

Little research examined the effect of suicide prevention training for healthcare providers on patient suicide rates. This was true for both civilian and military populations. While research indicated that training in suicide prevention appeared to have positive effects for patients and professionals, available evidence does not support our recommending which of Washington's credentialed professions would specifically benefit from training in order to have the most impact on potentially suicidal individuals. The lack of profession-specific evidence places Washington State in an ideal position to contribute to knowledge about training by conducting a prospective study about the impact of training mandated by ESHB 2366 on suicidal behavior.

Objective 1

Summary

Purpose

- *Indicate if the current research points to a relationship between healthcare providers completing suicide assessment, treatment and management training and changes in patient suicide rates.*
- *Additionally, effectiveness of suicide prevention training was examined for changes in patient suicide-related behaviors and changes in provider behaviors.*

Findings

There is little research on patient outcomes related to training healthcare providers in suicide prevention. However, while usually not specific to particular providers, the evidence that exists indicates that, in general, training healthcare providers in suicide prevention is beneficial for patients. Such evidence is based upon the following findings:

- What little research there is on the effectiveness of training for reducing patient suicide rates rarely focused on single healthcare professions. When research did focus on a single profession, it focused on physician training. None of the physician-focused studies were in the U.S. Articles including more than one profession in a single study generally focused on 'frontline' providers such as physicians, nurses and emergency department staff.
- We found *eleven* research studies on healthcare provider training and its effect on suicide rates outcomes that met inclusion criteria. Eight of the 11 demonstrated reductions in suicide rates. Four studies examined the effectiveness of physician training-specifically on suicide rates – of those, two showed significant reductions (both in Sweden) and two (Germany and Slovenia) did not show significant reductions in rates (although they showed reductions in patient risk).
- *Eight* articles examining the effects of suicide prevention training on patient suicide behavior met inclusion criteria for this report on Objective 1. Patient behaviors examined include suicide attempts, ideation and depression. Four of the eight studies focused specifically on training physicians; however those studies typically involved additional components to healthcare provider trainer, such as additional resources or interventions. Studies examined several training types and formats.
- Existing research evidence indicates that suicide prevention training geared to healthcare professionals has generally positive effects on (i.e. reductions in) patient suicide rates (six studies)

and behaviors (eight studies) and does not have any reported negative effects on patients. One study demonstrated that, when training ceased, rates of suicide increased again.

- The most substantial body of evidence for change in population-based suicide rates involved comprehensive trainings that occur at multiple levels in the community, and are not limited to training one type of professional.
- Studies showed that most healthcare providers surveyed (most studies focused on physicians) felt that patient suicide risk fell within the scope of their profession, felt under-trained and under-prepared to respond to suicide risk in their patient, and felt that lack of training is a barrier to their responding to evidence of risk. Additional studies demonstrated that more patients saw their healthcare provider, versus a mental health care provider, prior to their attempt or death by suicide.

Conclusions and Future Directions

- While research indicates that training in suicide prevention appears to have positive effects for patients and professionals, available evidence does not support our recommending which of Washington's credentialed professions would specifically benefit from training in order to have the most impact on potentially suicidal individuals. The lack of profession-specific evidence places Washington State in an ideal position to contribute to knowledge about training by conducting a prospective study about the impact of training mandated by ESHB 2366 on suicidal behavior.

Objective 1

Indicate if the current research points to a relationship between healthcare providers completing suicide assessment, treatment and management training and changes in patient suicide rates.

This report of suicide prevention training outcomes involved a review and summary of published research reports to examine the links between suicide prevention training implemented with designated healthcare providers, and the effectiveness of those trainings on decreasing suicide rates for targeted populations. In addition, given limited research tied to population suicide rates, the examination of research was broadened to include effectiveness of suicide prevention training for changing client/patient suicide-related behaviors and healthcare provider behaviors as well.

Overview

A systematic and exhaustive search of the research literature related to healthcare provider training and suicide-related outcomes was conducted. In particular, we sought empirical research evidence for the link between prevention training among licensed healthcare professionals and its effects on reports of (1) suicide rates, and (2) suicide behaviors (population or patient). We also conducted a systematic search of representative literature related to suicide prevention training and its impact on designated provider behaviors. Sixty-three healthcare professions were identified, and grouped into 13 professional areas (see Table 1), and were included in search strategies. The focus of this investigation is the healthcare professions that were not initially covered by ESHB 2366 that was enacted in March 2012.

Approach

The search for suicide prevention training studies was conducted using keyword searches in databases and websites: PubMed, CINAHL, PsychINFO, Web of Science, Google Scholar, Cochrane Library, University of Washington Library Toolkits, ProQuest, and American Association of Suicidology, National Institute of Mental Health, Suicide Prevention Resource Center, American Foundation for Suicide Prevention.

Keywords included:

- Suicide training, suicide prevention
- Gatekeeper training, suicide awareness training
- Suicide management, assessment, screening, programs, interventions
- Intervention programs, suicide intervention

- Suicide risk awareness
- Suicide behavior, suicide risk
- Suicide outcomes, suicide rates, suicide statistics
- Suicide evaluation; outcomes of___; review of ____; evaluation of____
- Community and suicide
- The above were searched with and without healthcare provider professions and professional groups (see Table 1)
- Searches were conducted utilizing the names of specific suicide prevention trainings (Table 2)

A snowball search technique was utilized whereby the relevant articles, websites and agency reports were examined for references to other studies or reviews; any study referenced from any of those sources that was not already part of the literature list was added to the review for examination. We looked for what were considered the 'key' articles in each area of suicide prevention training research, according to fellow researchers as they reported in the background sections of accessed articles. Websites were examined to determine if studies had been cited that we had not yet reviewed. We continued to search for articles until we could find no new articles from any source. At that point, we determined we had examined the realm of possible studies and that our review of literature encompassed the available and relevant studies.

We examined articles that report empirical evidence for three areas of program effectiveness: suicide rates, suicide behaviors and provider behaviors. The impact of training on suicide rates is most closely aligned with the central research question for this study objective. Given the challenges to conducting research as it impacts suicide rates (and we will speak to the problems of suicide rates as an outcome), we included suicide risk behavior outcomes, as well as provider behavior outcomes, and thus augment our examination of training effectiveness. Specifically, articles were identified that addressed the effectiveness of the training programs in the following ways: reducing suicide, reducing suicidal behaviors, and increasing trainee knowledge, competence, skill, and attitudes regarding suicidal patients and care management.

Within these areas, articles selected for inclusion in this review were judged to meet at least a moderate level of scientific rigor for research design, methods and interpretation of findings. We sought reports that provided empirical evidence related to experimental design; in particular we note randomized controlled trials (RCT), cluster randomized trials and quasi-experimental designs (e.g. sequential assignment to intervention by year or location). In lieu of full experimental design, we note studies that

utilized the following research components: specified assignment to study conditions; a control group or comparison group or rate; a description of intervention exposure; and pre and post measures. We did not include educational and opinion pieces. We note if some studies that appear in this review had limitations due to a lack of information about the research design, implementation or interpretation. For example, in one case we include an article that refers to, but does not describe, research methods utilized (Clarke, 2012-National Council Magazine).

Articles were examined carefully to ascertain whether and what training had taken place for the study. There were several reports of suicide prevention programs that appear to contain training of healthcare providers, but upon closer scrutiny it was apparent that healthcare providers were not trained – it was the patients or community being trained (e.g., Oyama et al., 2005). In some cases, the published literature reviews include studies where the components of the intervention and/or possible training were unspecified, but there was nonetheless a link to the involvement of health providers and the reliance on the healthcare setting. We clarified when such studies were included in summaries, and why they were utilized.

We included a small number of non-healthcare personnel suicide prevention trainings in order to further examine the question of whether prevention trainings can be effective for decreasing suicide rates. These studies took place in contained environments such as in schools or police forces where it was feasible to assess effectiveness by rates.

We extracted and organized study evidence using the following rubric, which was designed to capture elements of training studies and training outcomes salient to the research question.

a. The healthcare provider profession
b. Targeted population (whose behavior the training is expected to change)
c. The intervention (its name if it is common; description if it is not described elsewhere)
d. Research design, statistical analysis used
e. Results, including outcome measures, change in outcomes, statistical significance of change
f. Reviewer ratings of study integrity

Results

Results are reported in detail for the main effectiveness areas:

1) Changes in suicide rates
2) Changes in suicide-related behaviors
3) Changes in provider behaviors, including knowledge, attitudes and skills

Studies are reported for prevention training geared to specific healthcare professions, as well as studies of trainings that are a component of comprehensive programs designed to make changes in multiple levels of infrastructure.

A small number of non-healthcare related programs, school-based and police department prevention trainings are included, along with their impact on suicide rates and behaviors.

Examining Population Suicide Rates as Study Outcomes

Fifteen research articles met inclusion criteria of reporting changes in suicide rates among a prescribed population exposed to healthcare providers who had received suicide prevention training. Eleven articles are reports of research studies, and four (Isaac et al., 2008; Lapierre et al., 2011; Mann et al., 2005; Rihmer et al., 2012) were reviews of studies that include research relevant to the topic. The years of publication for included articles range from 2005 to present, although one older study (Rutz, 1992) was included as it had achieved status of a 'classic' study of prevention training on suicide rates, and was frequently referred to in other studies. The majority of studies for suicide rates were international, including Sweden, United Kingdom, Slovenia, Australia, Hungary, Japan, Hong Kong (i.e. China) and Taiwan.

There are a number of challenges encountered when examining the impact of provider training on population suicide rates. Many of these challenges are described in the studies summarized. Primarily, there must be a link between members of a boundaried population (i.e., it is determined who is in and who is out, and there is some stability in that membership) – a population large enough to show measurable differences in a low base rate behavior like suicide – and the likelihood of exposure to trained healthcare professionals and/or their policies. The kinds of boundaried populations examined include: inhabitants of an island, district, county or city; and patients at hospitals and/or managed healthcare systems. People within the boundaries are presumed to have an opportunity to be affected by trainings; and likewise, the reported rates of suicide are determined exclusively for this group. There must be long-term tracking of suicide rates in this defined population so that overall trends can be analyzed before and after training. Preferably, there are also non-intervention, or control populations, whose trends are measured across the same time period. Furthermore, there must be sufficient stability

among the professionals that serve the population, i.e. trained individuals remain in their jobs after training, and a sufficient proportion of the target professionals who undergo the training to change the climate and/or services presumed to affect overall population rates. Hence, a relatively small number of studies met this standard of evidence.

While studies specific to suicide rates are limited, evidence from the existing studies of provider training on population suicide rates was for the most part positive and promising. Of the 11 studies that involve both healthcare provider trainings and suicide rates, eight studies report reductions in suicide rates. Again, these are studies that demonstrate a link between healthcare provider trainings and reduction in suicide rates. The remaining three studies showed either no measureable reduction or reduction that did not meet statistical significance. There were no iatrogenic, or negative, effects reported for any study. Three of the studies showing significant reductions in rates— **Rutz** (1992) (Sweden), **Henriksson** & Isacsson (2006) (Sweden) and **Szanto** et al. (2007) (Hungary)—directly examined the effect that training focused on primary care physicians (and sometimes nurses) had on suicide rates in a defined geographical area**. Chan et al. (2011**) reported on gatekeeper training for a range of frontline caregivers in Hong Kong, a study that included a second tier of 'indicated' service that also impacted suicide rates. **Clarke (2012**) reported on the effects of ASIST training for all 'front line' health care providers (managed care physicians, nurses, social workers) in behavioral health settings for specific counties in Arizona. **Ho** et al. (2011) (Taiwan) also reporteds on a multi-level program that included training for primary care. **Matsubayashi & Ueda (2011**) provided a multi-nation analysis for the effect of the presence of a national suicide prevention program on national suicide rates (for the 11 nations with such programs by 2004) – and while the programs were multi-faceted, varied per county, and were sometimes unspecified, many included the training of primary care providers. **Coffey (2007)** reported reductions related to mental health care professional training in a large network.

Of the eight studies with demonstrated reductions in suicide rates, seven studies were evaluating programs that <u>included specified trainings</u>. The seven are listed below, although all do not show statistically significant reductions. Matsubayashi and Ueda (2011) showed significant reductions in suicide for countries implementing national prevention programs; however, given that the program components are undefined, we do not include it with the seven studies below.

The first five studies listed show statistically significant reductions. The first three (of the five) are studies that focused on the training of specified health care providers (as noted above), physicians and nurses in frontline or primary care roles: studies by Rutz (1992) and Szanto et al. (2007) and Henriksson

& Isacsson (2006). The sixth study showed dramatic decreases in rates, but were not analyzed for significance compared to previous years or other areas. The seventh study showed reductions but they were not significant compared to control or previous years.

1) Rutz et al., 1992: physician training led to rates that were lower for the island of Gotland, Sweden than the country of Sweden during intervention year and pre-intervention period. Rates began to rise one year later, so it is noted that effects are not expected to last more than two years.

2) Szanto et al., 2007: physician and nurse training led to decreased rates for intervention counties over Hungary's overall rate, and over the part of the county not treated; rates for the intervention county did not decrease more than the control county.

3) Henriksson & Isacsson, 2006: while suicide rates declined in Sweden in general, rates of decline for Jamtland were significantly greater ($p < .05$) after physician training – closer examination reveals differences driven by a drop in suicide rates among women.

4) Chan et al., 2011: in a two-tiered prevention program in Hong Kong that included 'primary care providers and frontline healthcare workers', there was significant decrease in rates only for women over 85. Gatekeeper training was provided for primary care physicians, social workers, frontline healthcare workers and volunteers working with older adults.

5) Coffey, 2007: there were significant reductions in rates from baseline and start up periods (one year each) to follow-up period of three years, in a patient population of approximately 200,000 network members. However the training was oriented to psychotherapists.

6) Clarke (2012) reported dramatic drops in suicide rates for members of a behavioral health services organization in Arizona after 2,400 provider members were trained in ASIST, it did not conduct a statistical analysis of the suicide decrease. It is nonetheless one of the more compelling suicide prevention projects, and salient to the primary question in this report. This report from the Central Arizona Programmatic Suicide Deterrent System Project, organized by the Magellan Healthcare system, reported that suicide rates for members with serious mental illness fell by 42% between 2007 and 2009 after staff training was implemented. Unfortunately, this report, published in the National Council Magazine, does not describe the research methods or study design utilized, and the results of ASIST trainings on member suicide rates are confounded by several other prevention activities that were implemented at the same time. A

draft from the Clinical Care and Intervention Task Force to the National Action Alliance for Suicide Prevention focused on this program as one of four 'inspiring models of suicide prevention that have garnered attention for their novel approaches and positive outcomes.'

7) In this seventh study, reported by Ho et al., 2011, rates did decrease but were not statistically significant compared to previous years or control sites; the provider training was only one part of a multi-tiered project, that included universal (education), selective levels of prevention (crisis line and provider training for primary care, welfare promoters, nursing home caregivers); indicated-level prevention involved referral to treatment.

Three studies that did not show significant reductions in population suicide rates were nonetheless promising on other training-related outcome measures. For instance, while the STORM project for primary care and emergency workers in the United Kingdom did not reduce suicide rates (Morriss et al., 2005), it did show improvements in provider skills, attitudes and confidence related to suicide risk. A study training primary care physicians in Slovenia (Roskar et al., 2010) showed a 12% decrease in suicide rates in the intervention counties, but the reductions were not significantly lower than the rest of the country (which had reduced by 4%). Hegerl et al. (2006; 2010) in Germany, reported on the training of primary care physicians in Nuremberg, and did not find significant reductions for suicide, but did find reductions when suicide rates and **suicide behaviors** were combined. These reductions were stable at follow-up several years later. No studies showed untoward effects, i.e. increased rates of suicide, based on provider training or prevention programming.

Several studies pointed to a connection between increased prescribing of antidepressants and reductions in suicide rates, even pointing to the increased prescription rate as a positive outcome of provider training. In addition, several studies acknowledged the support they received from the pharmaceutical companies. In the Rutz (1992) study, prescriptions of antidepressants increased. In their report the authors thanked the generous financial support from Ciba-Geigy AB, Pharmaceuticals Division. The Henriksson & Isacsson (2006) study also found that sales of antidepressants increased (using sales data). Outcome data regarding those sales were obtained from the Swedish corporation of pharmacies, and the authors note that accommodations, travel expenses and lecture fees were covered by a pharmaceutical company. The Szanto et al. (2007) study showed an increase in antidepressant use; there were pharmaceutical connections between 3 of the authors and at least one pharmaceutical company.

Additional relevant findings related to the effects of healthcare provider trainings on suicide rates

include: Women seem to benefit more from primary care trainings, as noted in the Henriksson & Isacsson (2006), Szanto et al. (2007) and Chan et al. (2011) studies (women over 85); this finding is underscored in the review by Lapierre et al. (2011). An exception is the Matsubayashi & Ueda (2011) report on 21 nations, which claimed the greater reduction in suicide was for men, presumably related to the preponderance of prevention approaches that relied upon gun control/harm reduction. Findings also showed national prevention to be most effective for the elderly and young rather than for those of working age.

The limited duration of effects for training programs was noted. In Rutz (1992), the impact of physician training on suicide rates faded within two years, but subsequently reappeared with new training administration; Torza (cited in Rihmer) 2005, saw the results of prevention training fade after one year, and Tiemens and colleagues (1999) noted the effects duration of one year. Rotheram-Borus (2000) noted effects on depression were sustained out to 18 months in their pilot study of Emergency Department enhancement.

***Review articles*.** Four review articles are included in this report. Three of them do not specifically focus on the training of healthcare providers or on the outcome of suicide rates; however, within each review there are articles that examine one or the other, and a few examine both. Furthermore, inclusion of the four reviews allowed us to cross-check the thoroughness of our literature search, as well as to ensure that our conclusions are in line with the conclusions of other researchers who have examined the body of existing research in suicide prevention training for healthcare providers.

- Lapierre et al., 2011: found that 19 of 490 publications on older adult suicide presented an empirical evaluation, showing a lack of empirical studies for suicide prevention for the elderly. In this review, 3 of 19 papers (covering 11 interventions) looked at suicide rates as the outcome. Of those three, none utilized provider training. However, (see next section) provider training was utilized in several studies that showed impact on risk behaviors.
- Issac et al., 2009: reviewed the effects of gatekeeper training, of which four studies included primary care training and suicide rates, all of which were reviewed separately, above.
- Mann et al., 2005: offers by far the most comprehensive review of suicide prevention, focusing on suicide prevention strategies for adults in general, with a number of the articles reviewed being focused on prevention trainings for the healthcare sector. The authors' synthesis of findings has been pointed out by other researchers as evidence for the important role of

primary care, and healthcare providers in general, in suicide prevention. Nonetheless, few of the studies reviewed in this paper were specifically about the impact of provider training on suicide rates. All studies reviewed in this article were checked against the list of articles we assembled for this report to ensure that this report has covered any evidence of impact on suicide rates: the Hergerl (2006 and 2010) and Rutz (1992) studies were examined in this report as well.

- The fourth paper, a recent review report rather than a systematic review, Rihmer et al. (2012) summarized findings on physician training and depression-related suicide, and included several articles that were not available to us. This paper focuses on the role of primary care in suicide prevention, including the results and trainings, and concludes that education of primary practitioners on recognition and pharmacotherapy of depression, particularly in combination with psychotherapy and public education, improves identification and treatment of depression and consequently reduces the rate of suicide deaths and attempts in areas served by trained doctors.

Non-healthcare personnel suicide prevention trainings: Two articles were reviewed for this report to provide additional evidence of the potential for suicide prevention training to impact suicide rates. Schools and police forces provide the 'closed' or 'boundaried' environments required to effectively analyze changes in suicide rates. Mishara & Martin (2012) demonstrated the effectiveness of suicide prevention training within the Montreal police force. A 79% decrease in suicide rates among police officers is attributed to the intervention program, which included multilevel training with a helpline and public awareness campaign. Zenere & Lazarus (1997) described the Suicide Prevention and School Crisis Management Program (SPSCMP) implemented in Dade County Public Schools in Miami, Florida, a comprehensive school-based suicide prevention program that included student and staff training to recognize risk and warning signs, and conduct referrals. After the implementation of this program, there was a reported 62.79% decrease in the average annual number of student suicides. Additionally, suicide attempts decreased, although the rate of suicidal ideation among students remained relatively stable. This significant decrease in suicides and suicide attempts was sustained from 1989 until 2006, the period of the latest report (Zenere & Lazarus, 2009).

***The Multi-tiered or Infrastructure Approach to Suicide Prevention*.**

In recent studies we see a trend toward a comprehensive approach to suicide prevention programming

that includes healthcare providers, but is not limited to trainings for a specific healthcare profession. Such approaches typically extend training or prevention activities to multiple contexts – often including healthcare providers - to maximize opportunities for communities to identify and respond to suicide risk. Morriss and colleagues (2005), in comments on their United Kingdom study, noted that a brief educational intervention may not be enough to reduce population suicide rates and something more comprehensive may be required. Along those lines, suicide prevention programs that are more comprehensive and that involve infrastructure typically address several 'tiers' of prevention, including community members as well as professionals. For instance, they may involve public education to sensitize the community to signs of suicide risk and how to find help. A second tier may involve 'front line' professionals who can further screen individuals at risk, while a third tier involves referral to mental health professionals for treatment. The Ho et al. (2011) and Chan et al. (2011) studies above examined 'infrastructure' change; the international analysis conducted by Matsubayashi & Ueda (2011) also referred to national programs that often involved multiple components; a series of studies in Japan involved the development of a suicide prevention program utilizing services of primary care and public health nurses, in combination with patient education were successful in showing reduced suicide rates in Japan among the elderly in several towns and districts in Japan (Oyama et al., 2004; Oyama et al., 2005, Oyama et al., 2006). While they do not specify provider training, they do demonstrate that provider involvement and the healthcare context can be important factors in reducing the rates of suicide.

Examining Suicide-Related Behaviors as Training Outcomes

Given the challenges of utilizing suicide rates as study outcomes, and the importance of suicide behaviors and depression as early indicators and predictors of risk, we broadened our search to include studies that examine suicide behavior outcomes as well. Ten studies included in this review addressed the reduction of direct suicide behaviors, depression or related healthcare behaviors (mental health crises; antidepressant use) as the outcomes of interest in their evaluation of provider-oriented suicide prevention training. Four review articles were also examined and provided additional insights. A number of articles focus on depression education, as among depressed patients, suicide attempts and/or deaths occur most often during major depressive episodes (Rihmer, 2007). Such studies focus on training providers about depression, and the identification and management of patient depression and link the depression response to reduced suicide risk (e.g. Rihmer et al., 2012; Rotheram-Borus et al., 2000; Tiemens et al, 1999). Overall, the studies in this section highlight that noticing and responding to

such suicide-associated behaviors is a preventive approach to suicide. Eight studies met criteria for inclusion (including Hegerl and Clarke, reported upon above in the suicide rates section). We present findings from studies below, and briefly discuss their effectiveness in addressing suicide risk.

Two articles reported on the PROSPECT (Prevention of Suicide in Primary Care Elderly Collaborative Trial) program (Alexopoulos et al., 2009; Bruce et al., 2004), and Unützer et al. (2006) presented results of the IMPACT (Improving Mood–Promoting Access to Collaborative Treatment) program. These programs focused on management of depression and resulted in significant decreases in suicidal ideation among patients in the programs compared to usual care conditions.

In an Australian study focusing on general practitioners and older adult patients (Almeida et al., 2012), all participating physicians received a practice audit of patient risk. Those in the intervention condition received personalized feedback about the practice audit and instructional materials about assessment and diagnosis of depression, identifying and managing suicide risk in older adults, using antidepressant medication, and crisis support contact information. Patients age 60 and over (n = 21,762) were asked to complete measures at baseline and 12 and 24 months after the intervention. Older adults treated by physicians in the intervention condition had lower odds of reporting self-harm behavior at follow-up than those who were treated by control condition physicians.

Two articles by an overlapping group of researchers (Asarnow et al., 2011; Rotheram-Borus et al., 2000) describe two different emergency department (ED)-based interventions focusing on youth who attempted suicide. Both involved an intervention condition that included parents and emphasized links to follow-up treatment. FISP (Family Intervention for Suicide Prevention-in Asarnow et al., 2011) included a family session, structured phone contacts to motivate follow-up attendance, and training for ED staff. SNAP (Successful Negotiation Acting Positively-in Rotheram-Borus et al., 2000) provided a 'soap opera' video for families, a family therapy session, and training for ED staff. In the Rotheram-Borus et al. study, the intervention was associated with significantly lower depression scores but was also associated with lower maternal ratings on family cohesion. In both studies, attending outpatient treatment was associated with the intervention.

In the studies that were reported above (under the suicide rate studies), there was also the examination of evidence for impact of training on suicide related behaviors. Reported evidence demonstrates that training impact can be demonstrated as: an increase in antidepressant prescriptions (Henriksson & Isacsson, 2006; Rihmer, 2001; Roskar, 2010; Rutz, 1992); reduced suicide attempts (Hegerl, 2006; 2010;

Zenere & Lazarus, 2009, in schools); and reduced inpatient admissions and behavioral healthcare (Clarke, 2012).

The preponderance of suicide prevention studies and findings for healthcare providers involves examining changes in the health care provider behavior. This is not unlike suicide prevention studies in contexts other than healthcare (i.e. school-based). Reports of changes in attitudes and self-reported competencies and knowledge gain are most prevalent. A frequent critique of prevention studies is that they focus on changes in provider behaviors but fail to show changes in client behavior (Gould et al., 2003; Guo & Harstall, 2002). The provider behaviors that were examined in these studies were those that have been implicated in the prevention of suicide, such as the identification of risk (Tiemens et al., 1999) and provider competence and comfort in responding appropriately (Walsh, Hooven, & Kronick, 2013).

Provider Behaviors

While studies about changes in suicide rates in response to prevention trainings are somewhat scarce, numerous studies provide information about changes in providers' behaviors in response to training about suicide risk. More than 30 studies/reports met our criteria for review, which included: an actual training was delivered, the training was delivered to health providers (vs. to patients or families), and outcomes were related to suicide risk assessment, treatment, and/or management. Studies reviewed were published between 1999 and 2012, with the majority published within the past five years.

Studies contained varied levels of detail about the training, with some providing a comprehensive overview of the content and training procedures while others provided few specifics. Others named trainings whose components can be retrieved by reviewing websites, such as ASIST (Applied Suicide Intervention Skills Training), QPR (Question, Persuade, Refer), and STORM (Skills Training on Risk Management). Most reports included the length of training, which ranged from 1 hour to 36 hours, with the longest training delivered in twelve 3-hour classes (Samuelsson & Asberg, 2002).

Training audiences were frequently determined by setting rather than by professional group targeted, though studies of specific groups also exist. For example, Simpson et al. (2007) included all staff members at a facility for individuals with traumatic brain injury (TBI), Johnson et al. (2011) included personnel at seven community mental health centers, and Shim & Compton's (2010) study included all personnel in an emergency department. On the other hand, specific groups of professionals were also targeted, including nurses and nursing personnel (Botega et al., 2007; Chan et al., 2008; Samuelsson &

Asberg, 2002; Tsai et al., 2011; Taur et al., 2011), primary care physicians (Pfaff et al., 2001; Wintersteen, 2010), and graduate students in psychology (Weatherbee, 2010) and social work (Jacobson et al., 2012). Still others reported on multiple trainings across settings and providers (e.g., da Silva Cais et al., 2011; Gask et al., 2006; Gask et al., 2008; Huh et al., 2012). In addition to the healthcare groups named above, the following groups were also included in setting-specific trainings: psychologists, family physicians, internists, allied rehabilitation staff, nurse practitioners, occupational therapists, social educators, welfare professionals, government officers, case managers, mental health professionals, art therapists, chaplains, recreation therapists, and volunteers.

Training results most often included increases in self-reported knowledge (Currier, 2012; da Silva Cais et al., 2011; Donald et al., 2012; Giordano & Stichler, 2009; Jacobson et al., 2012; Kaniwa et al., 2012; Levitt et al., 2011; McAuliffe & Perry, 2007; Nutting et al., 2005; Pisani et al., 2012; Shim & Compton, 2010; Simpson et al., 2007; Taur et al., 2011; Weatherbee, 2010; Ziervogel et al., 2005), confidence and/or willingness to intervene or refer (Chan et al., 2008; Currier, 2012; Huh et al., 2012; Pisani et al., 2012; Samuelsson & Asberg, 2002; Taur et al., 2011). A number of studies also reported increases in skills or competencies, with much of this data again from participant self-reports (Chan et al., 2008; Gask et al., 2006; Gask et al., 2008; McAuliffe & Perry, 2007; Morriss et al., 1999; Pisani et al., 2012; Simpson et al., 2007). Some studies however provided more objective assessment of skills and knowledge. For example, in McNiel et al. (2005), the risk assessment training group was significantly better able than the control group to identify risk and protective factors and to articulate reasoning about risk assessment and risk management strategies for case vignettes. Huh et al. (2012) found that participants wrote significantly better case notes in response to clinical vignettes after the training. Nutting and colleagues (2005) found that without training primary care physicians typically detected 20% of distressed patients, and with training they detected 40%. Similarly, in the Pisani et al. (2012) study, objective ratings of provider documentation of risk formulation demonstrated significant increases from pretest to posttest. Pfaff et al. (2001) included post-training chart audits of physician ratings and ratings by 423 patients and demonstrated that physicians increased their ability to identify psychological distress, inquired more frequently about suicide ideation, and identified suicidal patients more frequently. However, training did not lead to significant changes in patient management strategies.

Thus, there is evidence that providers who attend trainings increase knowledge, confidence, and willingness to intervene with suicidal behavior. Self-rated increases in skills were also frequently reported by providers after trainings. In addition, some studies included objective ratings of skills in

order to evaluate whether trainings result in observable increases in designated provider skills. Such skills studies may involve responses to case studies or increases in identification of risk or in describing risk. Actual changes in provider behaviors with patients were addressed less frequently. It is assumed that changes in knowledge, attitudes and skills will result in increased competence when working with patients who are at risk for suicide, but we did not find many studies that examined actual provider behaviors when they are working with patients. However, there are challenges in obtaining objective assessment of provider skills when actually interacting with patients (e.g., privacy, possibility of providers and patients behaving differently when they know behavior is being observed).

Summary and Interpretation of Findings

A frequent critique of suicide prevention program evaluation is that while we may see changes in provider behavior, these changes often do not translate into changes in patient suicide rates or to client suicide-related behavior (Gould et al., 2003; Guo & Harstall, 2002). In this report we examined the effects from a considerable range of training formats and curriculums that purport to target the reduction of suicide and/or suicide related behavior. In spite of this range of training type, we found substantial evidence that the training for even a single healthcare profession can have a significant impact on suicide rates as well as suicide-related behaviors.

In spite of the difficulties inherent in conducting research that includes population behavior rates, researchers in northern Europe and Asia have been responding to this challenge for some years. While research is not abundant, the evidence is consistent for the short-term benefits of healthcare provider training on suicide rates. For studies which continue to implement the prevention trainings, there are demonstrated longer-term effects. Furthermore, no iatrogenic, or negative, effects of provider training were noted. In order to further confirm the utility of prevention training on suicide rates, we expanded the examination of training impact on suicide rates. We included several studies in non-healthcare settings (see Table 3) and found confirmation for the effect of prevention training.

There are special challenges specific to conducting research specific to suicide rates, given the challenges of designing research that can link training of particular providers to a population-based outcome. These challenges also affect how we might interpret the findings from such studies, limited as they are to defined populations, and subject—as many such rates are due to uncontrolled influences. Examples of geographical or service areas that present populations both sufficiently large and sufficiently tied to trained professionals include large police forces, healthcare networks, school districts

and boundaried geographical areas, such as islands, cities, districts or counties.

Given the importance, from a prevention standpoint, of identifying early signs of risk, we augmented this study with an examination of suicide-related behaviors outcomes (Table 4). These behaviors, which include ideation, threats, attempts and depression, are highly associated with suicide deaths, and are also presumed to have causal relationships with suicide. Moreover, even on their own, these behaviors present a substantial risk to health and well-being and substantial burden to the healthcare system. Results from these studies indicate that suicide prevention training can have a significant effect on patient depression courses, suicide ideation longevity and resolution and suicide attempts, as well as secondary patient behaviors such as treatment adherence.

The most substantial body of evidence for change in population-based suicide rates involves comprehensive trainings that occur at multiple levels in the community, and are not limited to training one type of professional. These preventive trainings are embedded in a program of preventive activities that are operating on multiple levels. These types of infrastructure trainings may include a community-level gatekeeper training to increase community wide awareness and referral of suicidal individuals, along with the training of primary care providers and mental health providers to screen and treat identified individuals (Table 3). Several studies that appeared to be evaluating provider training included other components in their intervention or prevention, such as community or patient education or continued contact with case workers (e.g., Chan et al., 2011; Ho et al., 2011). The police department and school-based studies are good examples of this approach.

Overall, the effects of training healthcare providers were positive for patient behaviors. Many of the difficulties detecting outcomes were due to challenges associated with accounting for uncontrolled influences, including difficulties in randomizing to condition, that are inherent in ecologically-based studies. This appeared true in spite of noted differences in interventions and study design, context, sample and specific outcomes (e.g., Gaynes et al., 2004; Hepp et al., 2004; Repper, 2001; Stein et al., 2006). Findings demonstrated that training healthcare professionals can translate into changes in suicide and suicide-related behavior among the populations exposed to trained individuals. Most studies examined a number of client outcomes, including depression, suicide behavior, family dynamics, and follow up treatment attendance; however we did not discern a pattern to the likelihood of training outcomes. For instance, some studies found decreases in depression, some in suicide behaviors, but decreases were often not for both outcomes.

As a sample of over 30 studies demonstrate, suicide prevention training for healthcare providers can impact a range of provider behaviors, specifically in the areas of attitudes, knowledge, confidence and skills. Skills were generally self-rated, though some studies included objective ratings, most frequently involving documentation skills. Since documentation is considered to be a reflection of practice, these gains in skills are promising.

The logic behind training professionals in suicide prevention is that training will lead to changes in provider behaviors (particularly identification, screening and referral) that will lead to lower rates of suicide and suicide-related behavior. For instance, changes in attitude→skills→ provider behaviors→ patient behaviors→ ultimately decrease suicide rates. In the search conducted for this review, we found no studies that directly linked provider behavior change to change in client rates of suicide or suicide behavior. Even studies that reported both provider and client outcomes did not examine the two together to ascertain associations. In several reports, the authors speculate on what kinds of behavior change might have led to outcomes. For instance, Maxwell (2013) wonders whether improved physician communication, empathy and willingness to discuss emotional concerns will be more beneficial to patients than training in screening and depression management.

While not specifically reviewed in this report, there was substantial research evidence, primarily surveys of providers themselves, to indicate that a need for further suicide prevention training is recognized among healthcare providers. This issue is addressed in Objective 2. Nonetheless, evidence that providers themselves see training as relevant segues to our suggestions for further directions, and implications for practice. These include: (1) infrastructure studies that can examine components separately and together to ascertain which kinds of prevention activities are responsible for behavior change, and (2) studies capable of modeling the relationships between trainings, provider behavior, and risk outcomes.

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Table 1. Health Care Professions Groupings

Counselors	Agency Affiliated Counselors
	Counselors
	Certified Advisors
	Chemical Dependency Counselors
	Family Therapists
	Genetic Counselors
	Hypnotherapists
	Marriage and Family Therapists/Associates
	Mental health Counselors
	Psychologists
	Sex Offender Treatment Providers
	Social Workers
Dental Care	Dental Assistants
	Dental Auxiliaries
	Dental Hygienists
	Denturists
	Hygienists- Dental
Emergency Medical Services Personnel	Advanced Emergency Medical technicians (AEMT)
	Emergency Medical Responders (EMR)
	Emergency Medical Technicians (EMT)
	Paramedics
Home Care	Home Care Aids
Hearing & Speech Specialists	Audiologists
	Fitters/Dispensers- Hearing Aids
	Speech Language Pathologists
Nursing	Advanced Registered Nurse Practitioners
	Certified Nursing Assistants
	Licensed Practical Nurses
	Nursing Technicians
	Registered Nurses & Assistants
Pharmacy	Pharmacists
	Pharmacy Assistants
	Pharmacy Interns
	Pharmacy Technicians
Physicians	Physicians (MD)
	Physician Assistants
	Osteopathic Physicians(DO)
	Osteopathic Physician Assistants
	Podiatric Physicians
Vision	Dispensing Opticians/Apprentices
	Ocularists
	Opticians
	Optometrists

Naturopathic Providers	Chiropractors
	Dietitians
	East Asian Medicine
	Massage Practitioners
	Midwives
	Nutritionists
	Naturopathic Physicians
Physical Activity/Sports Therapy Providers	Athletic Trainers
	Physical Therapists & Assistants
Health and Human Service Providers	Occupational Therapists & Assistants
	Orthotists
	Prosthetists
	Recreational Therapists
Miscellaneous Health Care Providers	Nursing Home Administrators
	Respiratory Care Providers

Table 2. Suicide Prevention Trainings and Programs

Suicide Prevention Trainings:	
Clinical:	QPR: Question, Persuade, Refer*
	AMSR: Assessing and Managing Suicide Risk*
	RRSR: Recognizing and Responding to Suicide Risk: Essential Skills for Clinicians*
	CASE: Chronological Assessment of Suicide Events
	Unlocking Suicidal Secrets: New thoughts on old problems in suicide prevention*
	CAMS: Collaborative Assessment and Management of Suicidality
	Risk Assessment Workshop: Core Competencies for Mental Health Professionals*
	STORM: Skills Training on Risk Management*
	SRS Training: Suicide Risk Screening*
	MHFA: Mental Health First Aid*
	CTL: Commitment to Living*
Gatekeeper:	QPR Gatekeeper Training for Suicide Prevention*
	ASIST: Applied Suicide Intervention Skills Training*
	SafeTALK
	SuicideTALK
	SuicideCare
	Be A Link Suicide Prevention Gatekeeper Training
	SOS Signs of Suicide Training*
Means Restriction:	CALM: Counseling on Access to Lethal Means*
Emergency department:	Family Intervention for Suicide Prevention (FISP)*

*Trainings Reviewed

Suicide Prevention Programs Reviewed:
ESPP: Elderly Suicide Prevention Program
SIP: Suicide Intervention Project
MASPP: Model Adolescent Suicide Prevention Program
Adolescent Suicide Prevention Project
PROSPECT: Prevention of Suicide in Primary Care Elderly Collaborative Trial Study
Intervention IMPACT
Together for Life
SPSCMP: Suicide Prevention and School Crisis Management Program
QUEST: Quality Enhancement by Strategic Teaming
MHAP: Mental Health Awareness Project
Alive and Kicking Goals
Gatekeeper Suicide Awareness Program for Nursing Personnel
(SBPP) Suicide Behavior Prevention Program
SUPRESS
NAAD: Nuremburg Alliance Against Depression
MATES in Construction

Table 3. Studies Addressing Suicide Rates

Citation	Profession Trained	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comment
Chan, S. S., Leung, V. P., Tsoh, J., Li, S. W., Yu, C. S., Yu, G. K., ... & Chiu, H. F. (2011). Outcomes of a two-tiered multifaceted elderly suicide prevention program in a Hong Kong Chinese community. *American Journal of Geriatric Psych*, *19*(2), 185.	*primary care/ infrastructure	*Hong Kong Chinese suicide attempters (aged 65 years and older) presenting to old-age psychiatric service *Pre-intervention group (N=66) *Post-intervention group (N=351)	*Elderly Suicide Prevention Program (ESPP): a two-tiered multifaceted care management model (treatment of depression, gatekeeper training, aftercare for suicide attempters, and care mgmt.) *1st level predominantly primary care *2nd level is old-age psychiatric service at tertiary care level *specifics on training not provided	*observational cohort study with baseline, follow-up, and outcome data identified from clinical electronic registry *examines changes in suicide rates from mortality statistics *2 year completed suicide and reattempt rates in pre-intervention group who received standard care compared to post-intervention group	*2 year completed suicide rate was 7.58% in pre-intervention group (N = 66) and 1.99% in the ESPP group (N = 351) *Reattempt rates did not differ *population level suicide rates dropped significantly only in women aged 85 years and older, relative to the pre-intervention period.	.
Clarke, R. T. (2012). Something can be done: Eliminating suicide among people with serious mental illness. *National Council Magazine*, *2*, 106-107. Retrieved from http://www.thenationalcouncil.org/cs/about_us/national_council_magazine	*Magellan Health Services of Arizona in collaboration with Arizona Department of Health Services/Division of Behavioral Health Services--Programmatic Suicide Deterrent System Project *2,400+ provider staff members trained in ASIST	*persons with a serious mental illness at risk for suicide *patients in Arizona's behavioral health system *inpatient admissions	*1,700+ behavioral health workers in Arizona system took survey on comfort level dealing with suicide behavior *chose ASIST training for staff *support group (lead by clinician and attempter) development for survivors of suicide attempts or people with persistent suicidal thoughts *Family Engagement training for service providers (in collaboration with National Alliance on Mental Illness)--training is now part of new employee orientation for all behavioral health workers in system *Family Engagement packet *clinical care and intervention model in partnership with National Action Alliance for Suicide Prevention-- focuses on: screening, assessment, risk stratification, intervention best practices, accessibility and follow up, professional education *self-contained assertive community treatment	*statistical analysis of suicide rates from 2007 to 2011, specifics unknown	*pre project- results of comfortability survey indicated providers felt didn't have knowledge or support to identify and directly help suicidal people *42% reduction in suicide rate among those with serious mental illness *67% reduction for entire behavioral health system of care from 2007 to 2011 *notable 51% reduction in inpatient treatment admissions	

Citation	Profession Trained	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comment
			service delivery teams			
Coffey, C. E. (2007). Building a system of perfect depression care in behavioral health. *Joint Commission Journal on Quality and Patient Safety*, *33*(4), 193-199.	*Division of Behavioral Health Services of the Henry Ford Health System: 2 hospitals, 10 clinics, 500+ employees *serves southeastern Michigan and adjacent states *all psychotherapists were trained in Cognitive Behavior Therapy & suicide prevention protocol, N not specified	*approximately 200,000 network members, not otherwise specified.	*Perfect Depression Care Initiative- redesign depression care using the Six Aims and Ten Rules from the Institute of Medicine report Crossing the Quality Chasm *performance improvement activities in four domains: partnership with patients, clinical care (planned care model), access, and information flow.	*compared incidence of suicide between the baseline period (year 2000), the start-up period (year 2001), and the follow-up interval (years 2002–2005) *Poisson regression used for each quarter of data for the three time periods	*patient population suicide rates decreased by 75% (p = .007), (89/100,000 at baseline (2000) to 22/100,000 for the four-year follow-up (the average rate for 2002–2005) *overall Poisson regression model (2 df), Chi-square test for a period effect was statistically significant, 2 = 8.0, p = .018. No significant difference in rate between baseline and start-up years (p = .768), but rate for the follow-up period was significantly lower than for both baseline year (p= .007) and start-up year (p = .022).	
Fountoulakis, K. N., Gonda, X., & Rihmer, Z. (2011). Suicide prevention programs through community intervention. *Journal of Affective Disorders*, *130*(1), 10-16.	*unknown	*14 papers	*lit review broad general community campaigns	*results from community based interventions	*long term programs that utilize commitment of the society at multiple levels and succeed in establishing a community support network effectively reduce suicidal rates *success of most interventions in changing attitudes and improving knowledge of the public concerning suicide restricted at theoretical–intellectual level; no change in action *very short duration interventions don't seem to have even slight effect	
Hegerl, U., Althaus, D., Schmidtke, A., & Niklewski, G. (2006). The alliance against depression: 2-year evaluation of a community-based intervention to reduce suicidality. *Psychological Medicine*, *36*(9), 1225-1234.	*77 primary care physicians (20% of Nuremberg physicians) *34 attended two trainings	*Nuremberg (480 000) inhabitants, not otherwise specified	*Nuremberg Alliance Against Depression (NAAD): 2 year, 4 level intervention program *physicians training on diagnosis and therapy, strong focus on pharmacotherapy, role playing how to deal with suicidality *a public relations campaign informing about depression *cooperation with community	*changes in the frequency of suicidal acts (suicide attempts + completed suicides) with respect to a 1-year baseline and control region Wuerzburg (270 000 inhabitants) *chi square *Calculation of rates of suicide attempts would not have been accurate	*a reduction in suicidal acts was observed compared to control region *same effect found when considering attempts only *reduction most noticeable for high-risk methods (hanging, jumping, shooting) *no significant difference compared to control region for completed suicides	*Power analyses revealed that even a 30% reduction in completed suicides would not reach significance. Completed suicides and attempts

Citation	Profession Trained	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comment
			facilitators (teachers, priests, local media, etc.) *support for self-help activities as well as for high-risk groups *trainings were 4 hrs. with a max. of 15 participants each.			combined to enhance power & reduce risk of statistically negative results despite clinically relevant effects
Hegerl, U., Mergl, R., Havers, I., Schmidtke, A., Lehfeld, H., Niklewski, G., & Althaus, D. (2010). Sustainable effects on suicidality were found for the Nuremberg alliance against depression. *European Archives of Psychiatry and Clinical Neuroscience*, *260*, 401-406.	see above	see above	see above	*follow up to determine if effects were sustained one year post intervention *suicidal acts observed one yr post intervention compared to baseline, control region chi square	*preventive effects of suicidality of the Nuremburg Alliance Against Depression remained stable *Intervention is currently implemented in many European regions.	.
Henriksson, S., & Isacsson, G. (2006). Increased antidepressant use and fewer suicides in Jämtland county, Sweden, after a primary care educational programme on the treatment of depression. *Acta Psychiatrica Scandinavica*, *114*(3), 159-167.	*28 primary care health centers across county *in 1995 88 GPs employed (including residents) *two-thirds male *85 of the GP's attended at least one seminar	*135,854 residents of Jamtland, Sweden. Rural district. Not further specified	*two 2-day interactive seminars on depression mgmt *all GPs and residents invited *later in study seminars were 1 day *topics: video segments on depression, grief, suicidal ideation & assessments of risk of suicide *small group discussion with supervising psychiatrists	*suicide rates & annual sales of antidepressants compared to national averages *Questionnaires about attitudes and prescribing habits *annual suicide rate (suicides per 100 000 inhabitants) in Jamtland vs. Sweden *mean (SD) annual suicide rates compared	*36% decrease in mean suicide rates between periods *Jamtland suicide rate decreased, not statistically significant *Annual suicide rate in Jamtland county 27.7 vs. Sweden 25.0 (2.1) (t ¼ 2.1, P < 0.05) *from 1995 to 2002, the mean (SD) annual suicide rates were 17.3 (2.8) and 17.6 (1.5) *use of antidepressants increased from 25% below the Swedish average to the same level *Women seemed to benefit more than men, and the statistical differences in reduction rates between Jamtland and all of Sweden are driven by women's reductions *Participating GPs more frequently rated assessment of suicide risk important in the mgmt. of depression	*Held during working hrs. and received regular salary for attending. *Accommodations, travel expenses & lecture fees covered by pharmaceutical company

Citation	Profession Trained	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comment
Ho, W. W., Chen, W. J., Ho, C. K., Lee, M. B., Chen, C. C., & Chou, F. H. C. (2011). Evaluation of the Suicide Prevention Program in Kaohsiung City, Taiwan, Using the CIPP Evaluation Model. Community mental health journal, 47(5), 542-550.	*establishment of Kaohsiung Suicide Prevention Center in Taiwan *program involved: psychiatrists, psychologists, nurses, case managers, social workers. *gatekeeper training for primary care *geriatric gatekeeper training for elderly welfare promoters, nursing home caregivers, medical practitioners	*Kaohsiung community members.	*establishment of prevention center providing: counseling, crisis line, leaflets, website, gatekeeper info, psychoeducational articles	*CIPP evaluation model: context, input, process, product *rates analyzed to determine effectiveness of suicide prevention center	*suicide rate reported was 21.4 (2005), 20.1 (2006), 18.2 (2007) & 17.8/ 100,000 (2008) *death from suicide totaled 324 (2005), 304 (2006), 276 (2007), and 272 (2008) *trends indicate both the rate and number of suicides dropping *increase in crisis line & telephone counseling activity *increase in referrals from medical & non-medical providers	.No sig test Multi-tiered intervention
Isaac, M., Elias, B., Katz, L. Y., Belik, S. L., Deane, F. P., Enns, M. W., & Sareen, J. (2009). Gatekeeper training as a preventative intervention for suicide: A systematic review. *Canadian Journal of Psychiatry*, *54*, 260-268.	*Gatekeeper training *four studies relate to primary care	*13 studies	*lit review (that actually includes no new articles; we reviewed the only healthcare and rates articles)	*evidence on gatekeeper trainings for suicide prevention *make future recommendations	*trainings positively affect knowledge, skills & attitudes of trainees *large scale cohort studies in military personnel & physicians show promising results for reduction in SI, attempts & suicides *more work needed on longevity of effects, referral patterns of gatekeepers, more RCT's & clearer understanding of effects on rates.	.
Lapierre, S., Erlangsen, A., Waern, M., De Leo, D., Oyama, H., Scocco, P., ... & Quinnett, P. (2011). A systematic review of elderly suicide prevention programs. *Crisis* ,*32*(2), 88-98.	*19 studies *studies considered eligible if: published in peer-reviewed journals, included participants age 65 years or older, had intervention aimed at reducing suicidality, included an empirical evaluation *age limitation later relaxed to include participants age 60 or	*elderly population 60 yrs +	n/a	*systematic review *examined results of interventions aimed at suicidal elderly persons *aimed to identify successful strategies and areas needing further exploration *priority given to outcomes directly related to measures of suicidality; secondary priority was given to depression ratings	*most studies centered on reduction of risk factors (depression screening and treatment, and decreasing isolation) *programs mostly efficient for women *empirical evaluations seemed positive *most studies showed reduction in the level of suicidal ideation of patients or in the suicide rate of the participating communities	.

Citation	Profession Trained	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comment
	older due to the low number of studies				*not all studies used measures of suicidality to evaluate outcome of intervention	
Mann, J. J., Apter, A., Bertolote, J., Beautrais, A., Currier, D., Haas, A., ... & Hendin, H. (2005). Suicide prevention strategies. *Journal of the American Medical Association*, *294*(16), 2064-2074.	physicians	93 articles	*lit review	*examine effectiveness of prevention interventions *make recommendations for future practice.	*found physician recognition and treatment of depression and restriction to lethal means reduces suicide rates *public education, screening programs & media education need more testing	.
Matsubayashi, T., & Ueda, M. (2011). The effect of national suicide prevention programs on suicide rates in 21 OECD nations. *Social Science & Medicine*, *73*(9), 1395-1400.	*21 national suicide prevention programs	*21 nations	*lit review on effects of the presence of a national suicide prevention program	*effects of national suicide prevention programs on suicide rates *evaluated data from 1980-2004 using fixed-effect estimator to test for significant differences in rates of suicide before & after training	*overall suicide rates decreased after introduction of nationwide suicide prevention program *government led programs most effective in preventing suicides among the elderly & young populations *suicide rates of working age groups non responsive, regardless of gender	more effective for men than women
May, P. A., Serna, P., Hurt, L., & DeBruyn, L. M. (2005). Outcome evaluation of a public health approach to suicide prevention in an American Indian tribal nation. *American Journal of Public Health*, *95*(7), 1238.	*professional mental health staff *a psychiatrist 3 days per week, and 21 clinical positions (social workers, psychologists)	*youth 10-24 on an American Indian Reservation in New Mexico with high suicide rate	*Adolescent Suicide Prevention Project had the following integrated components: surveillance through constant data and information gathering; screening/clinical interventions with extensive outreach, social services, school-based program, peer training, referral of clients to MH services *50+ interactive community workgroup sessions	*evaluated efficacy of 15 years of public health–oriented suicidal-behavior prevention (multiple programs over time-span) *analysis of suicidal gestures *descriptive and linear regression analyses	*substantial drop occurred in suicidal gestures and attempts *no significant change in suicide deaths *total number of self-destructive acts declined by 73%	
Mishara, B. L., & Martin, N. (2012). Effects of a comprehensive police suicide prevention program. *Crisis*, *33*(3), 162-168.	*all 4,178 members of the Montreal police force participated	*Montreal police force	*Together for Life *training for all officers, supervisors, and union representatives *establishment of a volunteer helpline *public awareness campaign	*analysis of suicide rates *pre/post assessments of learning *focus groups *interviews *follow ups with supervisors	*79% decrease in suicide rates since program implemented *other police rates in Quebec had a non-significant increase *knowledge increased *supervisors engaged in effective interventions *comprehensive suicide prevention programs tailored to work environment may significantly reduce suicide rates	

Citation	Profession Trained	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comment
Morriss, R., Gask, L., Webb, R., Dixon, C., & Appleby, L. (2005). The effects on suicide rates of an educational intervention for front-line health professionals with suicidal patients (the STORM Project). *Psychological Medicine*, *35*, 957-960.	*primary care, accident and emergency, mental health workers *167 health professionals *103 attended all sessions (47% of eligible staff trained) in South Lancashire, England	*population of region in England, South Lancashire	*STORM Project *flexible 4-8 hour skills based training, risk assessment, immediate management delivered in workplace.	*district and region suicide rates (definite suicides + undetermined deaths) pre intervention vs. post intervention *pre/post assessments of learning *chi square *reference population	*no significant change in rates pre-intervention: 8.8/100000 vs. post intervention: 8.6/100000 *provider improvements in skills, attitudes and confidence were shown on videotaped role plays, authors conclude brief intervention may be insufficient to change population-level rates	.
Motohashi, Y., Kaneko, Y., Sasaki, H., & Yamaji, M. (2007). A decrease in suicide rates in Japanese rural towns after community-based intervention by the health promotion approach. *Suicide and Life-Threatening Behavior*, *37*(5), 593-599.	*lectures given by university instructors, medical practitioners and public health nurses *specialist training on suicide prevention provided for public health staff and welfare staff	*six towns (total population 43,964) in Akita Prefecture of Japan (small, remote towns)	*3 yr. intervention primarily targeting middle-aged & aged *public awareness activities emphasizing empowerment of residents and civic participation *promote sense of purpose among senior citizens *creation of a community network	*quasi-experimental design	*suicide rate per 100,000 in intervention towns decreased from 70.8 (1999) to 34.1 after intervention *rate per 100,000 in the control towns was 47.8 before intervention and 49.1 post intervention	
Oyama, H., Fujita, M., Goto, M., Shibuya, H., & Sakashita, T. (2006). Outcomes of community-based screening for depression and suicide prevention among Japanese elders. *The Gerontologist*, *46*(6), 821-826.	*general practitioners *psychiatrists *public health nurses *general population	*elderly individuals aged 65 and older Yasuzuka (population 4,940)	*7-year implementation of depression screening with follow-up by general practitioners and 10-year implementation of public education *SDS: Self-Rating Depression Scale-->psychiatrists assessment using RDC--> referral to general practitioner--> follow up with public health nurse. *implemented secondary prevention programs for individuals with dementia and tertiary prevention programs for individuals with schizophrenia	*quasi-experimental design with intervention and referent municipalities *analysis of incidence-rate ratio (IRR)	*risk for women in intervention area reduced by 64% (age-adjusted IRR=0.36; 95% confidence interval = 0.14–0.93) *no significant change in risk for men in intervention *no significant change in risk for men or women in referent municipalities *risk reduction for women greater than secular trend	
Oyama, H., Goto, M., Fujita, M., Shibuya, H., & Sakashita, T. (2006). Preventing elderly suicide through primary care by community-based screening for depression in rural Japan. *Crisis*, *27*(2), 58-65.	*primary care *public health nursing *general population	*elderly in Matsudai town, a rural area of Japan	*program included (1) health education and (2) screening for depression with follow-up, using the community resources of primary care and public health nursing *municipal public health nurses (PHN) conducted psychoeducational program	*quasi-experimental design with neighboring reference group *Statistical analyses based on IR of suicide *incident suicide cases and annual populations derived from dynamic cohort during each 10-year stage	*female risk of completing suicide in intervention area reduced by 70% (age-adjusted IRR: 0.30; 95% CI: 0.14–0.67) *no change in risk for males, nor for males or females in reference area *reduction of suicide risk in the intervention	

Citation	Profession Trained	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comment
			promoting awareness of depression and suicide risk *GP gave those participants SDS-positive a mental health assessment using RDC *post RDC clinical decision made whether to refer them to a GP or to conduct a follow-up interview by PHN *if needed, psychiatric consultation was provided by the psychiatrist from another community		area was greater than the historical trend	
Oyama, H., Koida, J., Sakashita, T., & Kudo, K. (2004). Community-based prevention for suicide in elderly by depression screening and follow-up. *Community Mental Health Journal*, *40*(3), 249-263.	*public health nurses *elderly population	*elderly, aged 65 and over, in the Japanese rural town of Joboji (population 7,010)	*10-year implementation of program based on strategies including screening for depression, follow up with mental health care or psychiatric treatment and health education on depression *all residents 65 and older screened for depression & offered education	*quasi-randomized w/ two neighboring control areas *Self-rating Depression Scale for screening *pre-intervention data & control regions compared with intervention region	*risk estimated by age-adjusted odds ratios for both males and females reduced to almost one quarter more than a regional historical trend *better response to education for females than for males	
Oyama, H., Ono, Y., Watanabe, N., Tanaka, E., Kudoh, S., Sakashita, T., ... & Yoshimura, K. (2006). Local community intervention through depression screening and group activity for elderly suicide prevention. *Psychiatry and Clinical Neurosciences*, *60*(1), 110-114.	*public health nurses *general population	*elderly (≥65 years old) Minami district (population 1685) of Nagawa town, rural Japan	*community-based program SUPPRESS *program components: screening for depression and mental health assessment by trained public health nurses once a year and follow-up by PHN; mental health workshop (psychoeducational program, providing the information regarding depression, 3–4 times a year); and group activity program (participating in social, voluntary and recreational activities and exercising, once a month)	*quasi-experimental design with two neighboring references *Pre-post changes in the risk of completing suicide estimated by incidence rate ratios (IRR) *data on suicide was derived from prospective registration of all suicide episodes at Hachinohe Public Health Center *IRR between two stages assessed using a Mantel–Haenszel (M-H) stratified $\chi 2$ test	*risk for Minami's elderly females reduced by 74% (age-adjusted IRR, 0.26; 90% CI, 0.07–0.98) more than the historical trend *no change in risk of Minami's males *no change in the male or female references	*study cannot clarify whether reduction of female suicide risk is attributable to depression screening or group activity program with psychoeducation
Oyama, H., Watanabe, N., Ono, Y., Sakashita, T., Takenoshita, Y., Taguchi, M., ... & Kumagai, K. (2005).	*general practitioners *public health nurses *psychiatrists *general population	*elderly residents in Yuri town, Japan	*program based on population strategy including group activity, psychoeducation and self-assessment of depression	*Changes in relative risk of suicide for individuals before/after 8-year implementation estimated by	*risk of elderly females in Yuri completing suicide reduced by 76% (age-adjusted IRR, 0.24; 95% CI,	

Citation	Profession Trained	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comment
Community-based suicide prevention through group activity for the elderly successfully reduced the high suicide rate for females. *Psychiatry and Clinical Neurosciences*, *59*(3), 337-344.			but no screening for depression *elderly residents 65+ called upon to attend the mental health workshops both in the whole town (whole workshop) and each district (local workshop) *during workshop, a psychiatrist or PHNs conducted the psychoeducational program in small groups, providing information regarding depression with suicide risks	the IRR *quasi-experimental design with neighboring reference *incident suicide cases and annual populations derived from dynamic cohort during each 8-year stage	0.10–0.58) *no change in risks for elderly males and both control males and females *reduction of risk for females in intervention was greater than a historical trend *psychoeducation and self-assessment appear to increase in knowledge	
Page, A., Taylor, R., Gunnell, D., Carter, G., Morrell, S., & Martin, G. (2011). Effectiveness of Australian youth suicide prevention initiatives. *The British Journal of Psychiatry*, *199*(5), 423-429.	*various, specific to each program	*average suicide rates in regions in Australia, not otherwise specified	*included regional or state level strategic initiatives, not otherwise specified	*localities with or without identified suicide prevention activity compared during NYSPS implementation period (1995–1998) and period subsequent to implementation (1999–2002)	*male suicide rates lower in areas with targeted suicide prevention activity (and higher levels of funding) compared to areas receiving no activity *differences no longer statistically significant following adjustment for sociodemographic variables *no difference in female suicide rates between areas with or without targeted suicide prevention activity	
Rihmer, Z., Dome, P., & Gonda, X. (2012). The role of general practitioners in prevention of depression-related suicides. *Neuropsychopharmacologia Hungarica: a Magyar Pszichofarmakológiai Egyesület lapja= official journal of the Hungarian Association of Psychopharmacology*, *14*(4), 245.			*lit review		*healthcare-based educational programs indicate the importance of GPs and healthcare workers in decreasing suicide rates *improved GP education in isolation does not have significant long- term effect *complex educational and organizational interventions with continuous clinician education, an enhanced role of nurses and social workers, and high level of integration between primary and secondary (psychiatric) care (consultation-liaison) are beneficial	

Citation	Profession Trained	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comment
Roškar, S., Podlesek, A., Zorko, M., Tavčar, R., Zvezdana Dernovšek, M., Groleger, U., & ... Marušić, A. (2010). Effects of training program on recognition and management of depression and suicide risk evaluation for Slovenian primary-care physicians: Follow-up study. *Croatian Medical Journal*, 51(3), 237-242. doi:10.3325/cmj.2010.51.237	*primary care physicians in 3 Slovenian regions with similar suicide rates (Podravska, Savinjska, and Koroška) *68/155 physicians from Savinjska, 14/35 physicians from Koroška completed program *Inclusion criteria: working in primary care and prescribing 5+ antidepressant prescriptions at baseline	*Residents of Slovenia, not specified	*4 hr. educational program *two lectures re: depression and suicide (etiology, prevalence, etc.), practical guidelines about treatment of depression *lectures followed by longer workshop including a role play	*physicians attending educational program (n = 82) compared with 2 groups: (1) physicians from same regions not attending program (n = 108), (2) physicians from Podravska region not attending program (n = 164) *prescription rates of antidepressants & anxiolytics before & after intervention compared between regions *suicide rates 3 yrs. pre/post intervention compared	*found a 2.33-fold increase in the rate of antidepressant prescriptions in educational group ($p < 0.05$) *1.28 fold ($p < 0.05$) increase in control 1 *1.34 fold ($p < 0.05$) increase in control 2 *12% decrease in suicide rate in the intervention regions not significantly greater than 4% decrease in the non-intervention region ($p > 0.05$).	.
Rutz, W. (1992). Long-term effects of an educational program for general practitioners given by the Swedish Committee for the Prevention and Treatment of Depression. *Acta Psychiatrica Scandinavica* (0001-690X), *85* (1), 83.	*Gotland's 18 GPs *10 completed educational programs in 1983-1984 *72% of the GP's who participated in at least 1 educational program still practicing in 1988	*residents of Gotland, Sweden, an island	*day program on depression *lecture/discussion format *topics covered: classification & symptoms, etiology, pathogenesis, depressive disorders in elderly, acute treatment, prophylactic treatment, depressive disorders in childhood & adolescence, suicidology, psychosocial background factors, psychotherapy & depressive disorders & the family	*cohort/quasi-experimental *frequency distributions between Gotland & Sweden, Gotland before/after program, and follow-up period *chi-squared *Evaluation period- 1982-1985 *Follow-up period- 1985-1988 *pattern of suicide analyzed	*1985 frequency of suicide was significantly below the control period and below Sweden *1986 suicides began to increase, stabilized just below control group *prescription drug rates, number of days in hospital for depression also analyzed believe that reductions strictly related to training, and that trainings only last for about 2 yrs	thank the generous financial support from Ciba-Geigy AB, Pharmaceuticals Division)
Solà, I. (2011). Outcomes of a suicide prevention program in the general population. Barcelona dreta eixample district. *Actas Esp Psiquiatr*, *39*(5), 280-7.	*healthcare professionals & social workers in Barcelona City, Spain (not otherwise specified) *Gatekeepers: social welfare services, geriatric care facilities, hospital emergency services, civil	*219 patients *148 completed 12-month follow-up *comparison group from neighboring district--180 patients, 167 completed	*Suicide Behavior Prevention Program (SBPP) *information, education and sensitization program aimed at health care professionals and social workers through informative sessions, series of audiovisual material & gatekeepers *3-6 mth. individualized	*follow up interviews	*SBPP group consulted more often for suicidal thoughts than those in the comparative group (36% vs 25%) *SBPP group fewer hospital admissions (6% vs36%) *SBPP fewer repeated suicide attempts over the 12-month follow-up (11% vs 32%) and longer time to repeat attempt	

Citation	Profession Trained	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comment
	associations of the district, businessmen, relatives of mental patients, diocesan pastoral commission, security forces and firemen, public transport agencies, and communication media	follow-up	treatment plan & CBT for participants *follow-up interviews at 6 &12 mths.			
Szanto K, Kalmar S, Hendin H, Rihmer Z, & Mann J. A. (2007). Suicide prevention program in a region with a very high suicide rate. *Archives of General Psychiatry*, *64*(8):914-920. doi:10.1001/archpsyc.64.8.914.	*28/30 GPs and their nurses in a Hungarian region *4 psychiatrists and only psychologist in region also participated	*73,000 inhabitants in rural region of Hungary (44,000 living in villages/on farms, 29,000 living in town)	*5 year depression-management educational program *development of Depression Treatment Clinic and psychiatrist telephone consultation service *Initial training involved didactic lecture format, later booster sessions included interactive Q&A, case discussions of patients who had recently died by suicide *3x/yr GPs and nurses invited to 1 hr lecture on topics related to suicide prevention	*Cohort suicide rates compared to control region, county and Hungary *Anti-depressant prescription rates, alcohol related death rates, and unemployment rates were also analyzed	*annual suicide rate in intervention region decreased from 5 yr pre-intervention average, 59.7/100,000 to 49.9/100,000 *decrease comparable with control region but greater than county (p=.001) and Hungary (p= .001) *In rural areas, female suicide rate in intervention region decreased by 34% and increased by 90% in the control region (p= .07) *increase in antidepressant treatment greater in intervention region *increase in antidepressant treatment for women compared with men (p= .002).	Pharmaceutical company connection with 3 of the authors
Vaiva, G., Vaiva, G., Ducrocq, F., Meyer, P., Mathieu, D., Philippe, A., Libersa, C., & Goudemand, M. (2006). Effect of telephone contact on further suicide attempts in patients discharged from an emergency department: randomised controlled study. *British Medical Journal*, *332* (7552), 1241.	*13 emergency departments in northern France *phone calls conducted by psychiatrists	*605 patients *18-65 yrs old *attempted suicide by drug overdose *examined by a psychiatrist who agreed to their discharge from the ER *criteria: could give the name of their GP, could be contacted by	*THIS IS NOT A PREVENTIION TRAINING, IT IS JUST A PROCEDURE OR PROGRAM Contacted patients by telephone 1 mth or 3 mths after discharge *calls used to evaluate success of recommended treatment or to adjust treatment *control patients received treatment as usual, in most cases referral back to GP	*multicenter, randomized controlled trial- compared control, 1 mth phone call & 3 mth call groups	*three groups did not differ significantly for further suicide attempts, deaths by suicide, or losses to follow-up *participants contacted at 1 mth less likely to report having reattempted suicide than control group *participants in interventions groups talked about their attempted suicide with their general practitioner more often than the controls	.

Citation	Profession Trained	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comment
		phone, gave written consent to be contacted *Homeless patients and those addicted to illegal drugs not included				
While, D., Bickley, H., Roscoe, A., Windfuhr, K., Rahman, S., Shaw, J., ... & Kapur, N. (2012). Implementation of mental health service recommendations in England and Wales and suicide rates, 1997–2006: A cross-sectional and before-and-after observational study. *The Lancet*, *379*, 1005-1012.	*various mental health providers	*individuals who died by suicide between 1997 and 2006 who were in contact with mental health services in the 12 mths before death in England & Whales	*the 91 mental health services provided by the National Health Service (NHS)	*compared suicide rates for services implementing most mental health recommendations by National Confidential Inquiry (NCI) with those implementing fewer recommendations *examined rates before and after implementation	*implementation of recommendations associated with lower suicide rates in both cross-sectional and before and-after analyses *provision of 24 h crisis care was associated with biggest fall in suicide rates *local policies on patients with dual diagnosis (10·55; 10·23–10·89 before vs 9·61; 9·18–10·05 after, p=0·0007) and multidisciplinary review after suicide (11·59; 11·31–11·88 before vs 10·48; 10·13–10·84 after, p<0·0001) were also associated with falling rates *services that did not implement recommendations had little reduction in suicide *greatest falls in suicide seemed to be in services with the most deprived catchment areas and the most patients	
Zenere III, F. J., & Lazarus, P. J. (1997). The decline of youth suicidal behavior in an urban, multicultural public school system following the introduction of a suicide prevention and intervention program. *Suicide and Life-Threatening Behavior*, *27*(4), 387-403.	*Counselors, psychologists, school social workers, teachers, and other staff members participated in training component and compose school-based crisis team	*Dade County Public School in Miami, Florida- the fourth largest school system in the country, with approximately 330,000 students	*Suicide Prevention and School Crisis Management Program (SPSCMP). *comprehensive district wide prevention program * Includes 1 & 2 hr. trainings to update participants on contemporary school crisis management skills, statistical data, and available resources and materials.	* 5 yr. longitudinal study *rates based upon incident reports made to the Youth in Crisis Hotline & suicide behavior data from Department of Crisis Management	*62.79% decrease in the average annual number of student suicides *Rate of suicide attempts decreased from 87 per 100,000 students to 31 per 100,000 *Rate of suicidal ideation remained stable	

Table 4. Studies Addressing Suicide Behaviors

Citation	Trained Profession	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comments
Alexopoulos, G. S., Reynolds III, C. F., Bruce, M. L., Katz, I. R., Raue, P. J., Mulsant, B. H., ... & Ten Have, T. (2009). Reducing suicidal ideation and depression in older primary care patients: 24-month outcomes of the PROSPECT study. *American Journal of Psychiatry*, *166*(8), 882.	*see Bruce et al. (2004) below	* see Bruce et al. (2004) below	*PROSPECT (prevention of suicide in primary care elderly collaborative trial) *treatment guided by an algorithm utilized by case managers *15 trained care managers helped patients with treatment adherence over 24 months & performed psychotherapy on participants who declined medication *physicians in the usual-care had no assistance from care managers, only received videotaped & printed material on geriatric depression & treatment *usual-care physicians informed by letter of the patients' depression diagnosis & SI	*semi-randomized	*intervention group had higher likelihood of receiving antidepressants and/or psychotherapy (84.9%–89% vs. 49%–62%) *intervention group had 2.2 times greater decline in SI over 24 months *treatment response occurred earlier in intervention group and increased from months 18 to 24 *no appreciable increase in treatment response in usual care group during same period *patients with major depression, a greater number achieved remission in the intervention group than in usual-care at 4 months (26.6% versus 15.2%), 8 months (36% versus 22.5%), and 24 months (45.4% versus 31.5%). *patients with minor depression had favorable outcomes regardless of treatment assignment	
Almeida, O. P., Pirkis, J., Kerse, N., Sim, M., Flicker, L., Snowdon, J., ... & Pfaff, J. J. (2012). A randomized trial to reduce the prevalence of depression and self-harm behavior in older primary care patients. *The Annals of Family Medicine*, *10*(4), 347-356.	*373 Australian GPs	*21,762 patients aged 60+ years	*two physician groups *intervention group had practice audit with personalized automated feedback, printed educational materials including 6 monthly educational newsletters over 2 years *control physicians completed a practice audit w/o individualized feedback, received 6 monthly newsletters describing the progress of the study, not offered access to the educational material about screening, diagnosis and management of depression, and	*composite measure of clinically significant depression (Patient Health Questionnaire score ≥10) or self-harm behavior (suicide thoughts or attempt during the previous 12 months) *Information collected at baseline assessment, 12 and 24 months *logistic regression models used to estimate effect in a complete case analysis and intention-to-treat analysis by imputed chain equations	*intervention experienced 10% (95% CI, 3%-17%) reduction in the odds of depression or self-harm behavior during follow-up compared with controls *post hoc analyses showed relative insignificant effect of intervention on depression *intervention impact on self-harm behavior over 24 mths. significant (OR = 0.80; 95% CI, 0.68-0.94) *effect primarily due to relative reduction of self-harm behavior among older adults who did not report symptoms at baseline.	

Citation	Trained Profession	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comments
			suicide behavior in later life		*no effect in reducing the 24-mth. prevalence of depression or self-harm behavior in participants who had symptoms at baseline *intervention prevented onset of new self-harm behavior during follow-up	
Asarnow, J. R., Baraff, L. J., Berk, M., Grob, C. S., Devich-Navarro, M., Suddath, R., ... & Tang, L. (2011). An emergency department intervention for linking pediatric suicidal patients to follow-up mental health treatment. *Psychiatric Services*, *62*(11), 1303-1309.	*two Emergency Departments *(A) largely middle-class area, connected to psychiatric hospital with youth inpatient services, serves roughly 42,000 patients annually *(B) operated by the Los Angeles County Department of Health and serves roughly 77,000	*suicidal youths at two emergency departments (N=181; ages 10 to 18) in LA *Intervention (N=89) *Usual care (N=82) *mean age 14.7±2.0 *69% were female *67% were from racial-ethnic minority groups	*Family Intervention for Suicide Prevention (FISP)- brief youth and family crisis therapy session in ER, structured telephone contacts to motivate outpatient treatment attendance, additional contacts as needed, performed by clinicians with graduate mental health training *Usual care: enhanced by training session for ER staff on importance of linking suicidal patients to outpatient mental health treatment, restricting access to dangerous or lethal means, and increased risk associated with substance use *conducted during staff mtgs *list of referral resources available	*randomized control trial; usual care vs. FISP *assessments conducted at baseline and 2 mths after discharge from ER or hospital	*FISP patients significantly more likely to attend outpatient treatment (92% vs. 76%; p=.004) *intervention group significantly higher rates of psychotherapy (76% vs 49%; p=.001), combined psychotherapy/medication (58% versus 37%; p=.003), and psychotherapy visits (mean 5.3 versus 3.1; p=.003) *no statistically significant intervention effects on suicidality or other clinical or functioning outcomes	
Asarnow, J. R., Jaycox, L. H., Duan, N., LaBorde, A. P., Rea, M. M., Murray, P., ... & Wells, K. B. (2005). Effectiveness of a quality improvement intervention for adolescent depression in primary care clinics. *Journal of the American Medical Association*, *293*(3), 311-319.	*5 health care organizations selected to include managed care, public sector, and academic medical center clinics in the United States *primary care physicians *care managers psychotherapists w/ master's or PhD degrees in MH field or nursing The study provided a 1-day training workshop on the study CBT and the	*418 primary care patients w/ current depressive symptoms, aged 13-21 yrs *207 usual care *211 experimental *youth with depressive disorders and youth with subsyndromal depressive symptoms	*randomized to usual care or 6-month quality improvement intervention *intervention includes: expert leader teams at each site, care managers who supported primary care clinicians in evaluating and managing patients' depression, training for care managers in manualized CBT for depression, and patient and clinician choice regarding treatment modality *participating clinicians received education regarding depression evaluation, management, and	*randomized controlled trial *depressive symptoms assessed by Center for Epidemiological Studies-Depression (CES-D) Scale score *secondary outcomes were mental health–related quality of life assessed by Mental Health Summary Score (MCS-12) and satisfaction with mental health care assessed using a 5-point scale evaluating a quality improvement intervention aimed at	*six months post, intervention patients reported: *significantly fewer depressive symptoms (mean [SD] CES-D scores, 19.0 [11.9] vs. 21.4 [13.1]; P=.02) *higher mental health–related quality of life (mean [SD] MCS-12 scores, 44.6 [11.3] vs 42.8 [12.9]; P=.03) *greater satisfaction with mental health care (mean [SD] scores, 3.8 [0.9] vs 3.5 [1.0]; P=.004) *significantly higher rates of mental health care (32.1% vs 17.2%, P .001) and psychotherapy or counseling	

Citation	Trained Profession	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comments
	study evaluation and treatment model, detailed manuals, and regular consultation to support fidelity to the treatment model and provide case-specific training in CBT and patient outreach/engagement strategies.		pharmacological and psychosocial treatment *usual care condition enhanced by providing primary care clinicians with training and educational materials (manuals, pocket cards) on depression evaluation and treatment *usual care patients- usual treatment at site, no mental health providers trained in the CBT and care management services used in the study *patient and clinician choice of treatment modalities (CBT, medication, combined CBT and medication, care manager follow-up, or referral)	improving access to evidence-based treatments for depression (particularly CBT and antidepressant medication) in primary care settings	(32.0% vs 21.2%, P=.007) *study= first demonstration that depression and quality-of-life outcomes can be improved through a quality improvement intervention for depressed adolescents in primary care settings	
Bruce, M. L., Ten Have, T. R., Reynolds III, C. F., Katz, I. I., Schulberg, H. C., Mulsant, B. H., ... & Alexopoulos, G. S. (2004). Reducing suicidal ideation and depressive symptoms in depressed older primary care patients. *Journal of the American Medical Association*, *291*(9), 1081-1091.	*primary care physicians, not otherwise specified *depression care managers-- social workers, nurses and psychologists *weekly supervision by psychiatrists	*two-stage random sampling design *598 randomly sampled, age-stratified (60-74, 75 years) patients recruited from 20 primary care practices in NYC, Philadelphia, and Pittsburgh regions *enrollment included patients who screened positive for a depression diagnosis and a random sample of patients screened negative	*PROSPECT (Prevention of Suicide in Primary Care Elderly Collaborative Trial): two-stage, age-stratified depression screening *physician training-clinical algorithm for treating depression with citalopram (SSRI) & treatment mgmt *collaboration with depression care managers *depression care managers interacted with patients in person or by telephone at scheduled intervals or when clinically necessary to monitor depressive symptoms, adverse medication effects, and treatment adherence *Usual Care- enhanced by initially educating physicians about treatment guidelines and notifying them when a patient met criteria for depression diagnosis *weekly supervision by psychiatrists investigators *monthly interpersonal therapy	*randomized control trial; prospect intervention vs. standard care *descriptive and intent-to-treat (ITT) modeling procedures	*faster decline (P=.01) in rates of SI in intervention patients compared with usual care patients *4 month time point indicated raw rates of SI declined 12.9% points (29.4% to 16.5%) in intervention group compared with 3.0% points for usual care (20.1% to 17.1% [P=.01]) *resolution of ideation was faster among intervention patients (P=.03) with differences peaking at 8 months (70.7% vs. 43.9% resolution; P=.005) *intervention patients had more favorable depression course in degree/speed of symptom reduction; difference peaked at 4 months *effects not significant among patients with minor depression unless SI present *rates of suicide highest among very old, white men	*limitation-higher baseline prevalence of SI in intervention practices compared with usual care

Citation	Trained Profession	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comments
			cross-site supervision *initial depression diagnoses determined by research associates trained in DSM diagnosis			
Gaynes, B. N., West, S. L., Ford, C. A., Frame, P., Klein, J., & Lohr, K. N. (2004). Screening for Suicide Risk in Adults: A Summary of the Evidence for the U.S. Preventive Services Task Force. Annals Of Internal Medicine, 140(10), 822-837.	*primary care	*30 randomized control trials *27 studies involved high-risk groups identified by deliberate self-harm episode, diagnosis of borderline personality disorder, or admission to a psychiatric unit	*lit review on screening for self-harm in primary care	Lit review	*identified 1 relevant article assessing an instrument's operating characteristics for identifying suicide risk in primary care *The Symptom-Driven Diagnostic System for Primary Care (SDDS-PC)	Hawton et al. systematically reviewed 21 of these trials. Many are mental health based or conducted in 1970's & 80's.
Hepp, U., Wittmann, L., Schnyder, U., & Michel, K. (2004). Psychological and psychosocial interventions after attempted suicide: an overview of treatment studies. *Crisis: The Journal of Crisis Intervention and Suicide Prevention*, *25*(3), 108.	*psychological & psychosocial interventions	*25 studies	*lit review	*collect randomized controlled studies evaluating outcomes of psychological and psychosocial interventions after attempted suicide and deliberate self-harm (DSH)	*none of the studies significantly reduced incidence of completed suicide *further studies should be large enough to carry sufficient power to avoid type 2 errors *five trials yielded significant reduction in repeated DSH	.
Kruesi, M. J., Grossman, J., Pennington, J. M., Woodward, P. J., Duda, D., & Hirsch, J. G. (1999). Suicide and violence prevention: parent education in the emergency department. Journal of the American Academy of Child & Adolescent Psychiatry, 38(3), 250-255.	*103 adults/parents in Midwestern rural hospital *49% male *51% female *mean adolescent age 13.7	*adult care takers/parents of adolescents (6-19) visiting ER for a mental health assessment or treatment	*injury prevention education on limiting access to lethal means including firearms, alcohol, prescriptions, and over the counter medications *means restriction education taught to staff providing mental health assessments in ED *education also involved informing parents child at risk for suicide, at higher risk for attempt and problem solving reducing access to means	*prospective follow-up design *examine which action taken for which means *record review to assess if hospital staff provided education *control group- records indicated not delivered education	*exposure to education increased action to limit means *locking up means most common action taken	
Repper, J. (2001). A review of the literature on the prevention of suicide	*Emergency Room nurses	*8 studies	*lit review	*inform the development of a specialist "suicide prevention nurse."	*action needs to be taken at all levels of the organization to reduce suicide	

Citation	Trained Profession	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comments
through interventions in accident and emergency departments. *Journal of Clinical Nursing*, *8*(1), 3-12.					*role of suicide prevention nurse needs to include support, training & development, as well as specific time limited therapy with highly targeted at-risk group	
Rotheram-Borus, M., Piacentini, J., Cantwell, C., Belin, T. R., & Juwon, S. (2000). The 18-month impact of an emergency room intervention for adolescent female suicide attempters. *Journal of Consulting & Clinical Psychology*, *68*(6), 1081.	*six groups of primary ER staff (child psychiatry fellows, adult psychiatry residents, pediatricians, nurses, security guards, and admitting clerks) *N not specified	*140 female adolescent suicide attempters (SA), 12-18 years, and their mothers (88% Hispanic) *specialized care (N=65) *standard care (N=75)	*participants assigned to one of two groups: *(1) specialized ER care: aimed at enhancing adherence to outpatient therapy by providing soap opera video regarding suicidality, a family therapy session (SNAP), and staff training *(2) standard ER care: 2 hr training to teach ER staff how to enhance positive patient interactions, reinforce the importance of outpatient treatment, and recognize the seriousness of suicide attempts *trainings repeated to ensure training for all new staff and medical trainees rotating to the ER	*evaluated using a quasi-experimental design *the adjustment of the attempter (SA) and their mothers evaluated over 18 months using linear mixed model regression analyses	*SA improved over time on mental health indices *rates of suicide reattempts (12.4%) and suicidal reideation (29.8%) lower than anticipated and similar across conditions *specialized ER care condition associated with significantly lower depression scores (reported by SA) and lower maternal ratings on family cohesion *intervention's impact greatest on maternal emotional distress and family cohesion among highly symptomatic SAs *SA's attendance at therapy sessions following ER visit significantly associated with family adaptability	ADDITIONAL INFO: SA more frequent in C condition vs. E condition but not sufficient power to detect differences
Stein, R. E., Zitner, L. E., & Jensen, P. S. (2006). Interventions for adolescent depression in primary care. *Pediatrics*, *118*(2), 669-682.		*37 studies	*lit review	*examining evidence for treatment of depression in primary care settings, focusing on evidence concerning psychosocial, educational, and/or supportive intervention strategies *Available data on brief psychosocial treatments for adolescent depression in primary settings + literature to summarize available evidence whether brief, psychosocial support from a member of the primary care team, with or without medication, might improve depression	*potential for successful treatment of adolescent depression in primary care *brief, psychosocial support, with or without medication, has been shown to improve a range of outcomes, including adolescent depression itself	

Citation	Trained Profession	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comments
				outcomes		
Unützer, J., Tang, L., Oishi, S., Katon, W., Williams, J., Hunkeler, E., & ... Langston, C. (2006). Reducing suicidal ideation in depressed older primary care patients. *Journal of the American Geriatrics Society*, *54*(10), 1550-1556.	*18 primary care clinics affiliated with eight diverse healthcare organizations in five states: Indiana, Texas, North Carolina, California, Washington *depression care managers: BA or MA RNs with and without prior mental health experience *MA or PhD psychologists	*10801 adults aged 60+ with major depression or dysthymia *mean age: 71.2 *65% women *approx. 23% ethnic minorities (12.3% African American, 7.7% Latino, 2.9% other minorities) *52.9% met diagnostic criteria for major depression and dysthymic disorder *70.7% reported 2+ prior depressive episodes *35.4% showed some evidence of cognitive impairment *29.0% screened positive for a comorbid anxiety disorder	*Intervention IMPACT: 1-year collaborative care with physician & depression care manager *care manager assessed depression, collaborated with primary care provider on antidepressant medication management, offered 12-month course of Problem Solving Treatment *care managers received 2-day training, analyzed 5 video cases with psychologist *no mention of training for physicians *control: care as usual by primary care physicians, physicians told their patients met research diagnostic criteria for major depression or dysthymia *control patients could receive all treatments available, including antidepressant medications or counseling by their physicians, as well as referral to specialty mental health care	*randomized control trial *independent assessments of patient depression and SI at baseline and 3, 6, 12, 18, and 24 months *depression assessed using the Structured Clinical Interview for the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (SCID) *SI determined using SCID and Hopkins Symptoms Checklist *at baseline, 139 (15.3%) intervention subjects and 119 (13.3%) controls reported thoughts of suicide.	*intervention showed significantly lower rates of suicidal/death ideation compared with usual care group at 6, 12, 18, and 24 months *intervention subjects had significantly lower rates of SI than controls at 6 months (7.5% vs. 12.1%) and 12 months (9.8% vs. 15.5%) and post intervention at 18 months (8.0% vs 13.3%) and 24 months (10.1% vs. 13.9%) *no completed suicides in either group *information on suicide attempts or hospitalization for SI unavailable	

Table 5. Studies Addressing Provider Behaviors

Citation	Trained Profession	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comments
Bond, S., Pryce, R., Roberts, H., & Plat, S. (2008). Prevention of suicide and suicidal behavior in adolescents (protocol). *Cochran Database of Systematic Reviews*, (3), doi: 10.1002/14651858.CD007322.	*physicians	*included Randomized controlled trials, cluster randomized trials, quasi-randomized controlled trials	*lit review	*goal to determine whether school, community, primary health-care or other institution-based interventions for suicide prevention in adolescents are effective in reducing suicide attempts, symptoms of known risk factors, or increasing the likelihood of identifying those at-risk *identify adverse intervention effects *determine which features most successful *highlight further research needs	*increased identification, restriction of means & patient management *results not reported, only describes search criteria	.
Botega, N. J., Silva, S. V., Reginato, D. G., Rapeli, C. B., Cais, C. F., Mauro, M. L., ... & Cecconi, J. P. (2007). Maintained attitudinal changes in nursing personnel after a brief training on suicide prevention. *Suicide and Life-Threatening Behavior*, *37*(2), 145-153.	*317 total general hospital nursing personnel at State University of Campinas, Brazil *165 nursing technicians *87 RNs *64 nursing attendants *284 female *33 male	*same as trained	*6 hr. training * focused on impact and stigma of suicide, common mental health disorders, concept of psychache, basic interview skills, how to access & manage suicidal patients *Participants were also given a WHO booklet on prevention	*anonymously answered pre/post-training questionnaire *3 month follow-up *6 month follow-up *Suicide Behavior Attitude Questionnaire (SBAQ) *ANOVA	*significant improvement maintained to 6 months in "Feelings & Professional Capacity" *no change in "Right to Suicide"	
Chan, S. W. C., Chien, W. T., & Tso, S. (2009). Evaluating nurses' knowledge, attitude and competency after an education programme on suicide prevention .*Nurse Education Today*, *29*(7), 763-769.	*54 registered nurses	*same as trained	*18 hr. educational program utilizing reflective learning principles	*pre/post test *focus group interviews *ANOVA	*statistically significant positive changes in participants' attitudes and competence levels *qualitative data showed participants had applied the new knowledge they acquired in clinical practice *perceived selves as being more aware of problem of suicide and more competent in managing suicide risk	

Citation	Trained Profession	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comments
Chan, S., Wai-tong, C., & Tso, S. (2008). The qualitative evaluation of a suicide prevention and management programme by general nurses. *Journal of Clinical Nursing*, *17*(21), 2884-2894. doi:10.1111/j.1365-2702.2008.02424.x	*RNs recruited from medical and surgical departments of two regional teaching hospitals in Hong Kong *54/220 recruited completed education intervention *majority female working in medical unit *experience caring for suicide patients varied from 0–184 hours in past 12 months	*same as trained *24 completed process evaluation *18 completed outcome evaluation	*18-hour education program on suicide prevention and management *developed based on needs analysis from interview with nurses in A&E department and literature *learning methods of program included reflective discussion, lectures, role-play, case studies and self-directed study	*evaluation of effectiveness of training *outcome and process evaluation *focus group discussion *evaluative design incorporated quantitative design (experimental design) with qualitative method--provides additional data on process and outcome *quantitative design measured participants' changes in knowledge, attitude and perceived competency *focus groups used to collect qualitative data	*intervention improved attitude, confidence and professional skills in responding to patients with SI *positive comments on program, program met expectations *case sharing helpful to change nurses' mindset and attitude towards patients *participants agreed with suicide theories *found 'Myths and facts' and assessment on suicide risk useful, no suicide contract interesting/useful, role play useful/interesting, handouts, notes and community resources information helpful *post education program regarded selves more competent in assessing, communicating and helping people with suicidal intent. *program facilitated useful changes in practice	.
Currier, G. W., Litts, D., Walsh, P., Schneider, S., Richardson, T., Grant, W., ... & Moscati, R. (2012). Evaluation of an emergency department educational campaign for recognition of suicidal patients. *Western Journal of Emergency Medicine*, *13*(1), 41.	*5 emergency department sites with ~650 physician, midlevel and nurse providers *362 subjects completed the baseline *250 subjects (69.1%) completed follow-up *comparator group n=22 follow-ups	*same as trained	*intervention ER departments had poster in in breakroom titled "Is Your Patient Suicidal?" & all members received a clinical guide	84 departments served as intervention *1 department served as control *chi-squared *pre-post test surveys and comparison to control group	*51.6% exposed to the intervention endorsed increased knowledge of suicide risk during the study period *41% indicated that intervention resulted in improved skills in managing suicidal patients *exposed subjects more readily endorsed that if they suspect emotional distress in their patient, ''always ask them about risk factors for suicide'' (58.1% vs 41.3%; and that they ''always ask them directly if they are having suicidal thoughts'' (73.1% vs 59.4%)	

Citation	Trained Profession	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comments
da Silva Cais, C. F., da Silveira, I. U., Stefanello, S., & Botega, N. J. (2011). Suicide prevention training for professionals in the public health network in a large Brazilian city. *Archives of Suicide Research*, *15*(4), 384-389.	*270/410 health providers, working with patients at high risk for suicide, attended training *municipal public health network of Campinas, Brazil *57 physicians *69 psychologists *43 occupational therapists *101 other: nurses, social workers, social educators, etc. *229 female *41 male	*same as trained *230 (85.2%) agreed to study *159 (58.9%) filled out knowledge pre-test questionnaire at the beginning *135 (50%) completed post-test	*18 hr. training *14 hours on theoretical exposition *4 hours of discussion on current clinical cases *aimed to improve knowledge & attitudes about suicide prevention & improving professionals' skills in diagnosing & treating mental disturbances correlated with suicide	*ANOVA *questionnaires to assess changes in attitudes and knowledge *Suicide Behavior Attitude Questionnaire (SBAQ) to measure attitudes *Suicide Prevention Knowledge Questionnaire (SPKQ) --21 multiple choice q's-- developed for project *18 questions involved clinical cases that represented most common situations experienced by healthcare professionals dealing with patients at risk of suicide, e.g. depression & alcohol dependence	*knowledge questionnaire score increased from 8.9 to 13 points (p<.001, significance level of 95%) *18/25 attitude questions showed significant change post training *training improved knowledge and attitudes in all occupations and age groups *younger professionals (age<30 years) arrived at training with more knowledge (9.49 vs. 7.88) than older individuals (age>40 years) *post training, younger individuals still had more knowledge (13.21 vs. 12.57) than older attendees, no statistical difference in knowledge increase *physicians arrived at training with more knowledge than psychologists (10.51 vs. 9.45) *post training, physicians still had more knowledge (14.21 vs. 13.08), no statistical difference in the knowledge increase	*only 58% and 50% answered the knowledge and attitude questionnaires *used questionnaires, indirect measures of reality *difficulty comparing results of present training in suicide prevention with other similar preventive strategies
Donald, M., Dower, J., & Bush, R. (2012). Evaluation of a suicide prevention training program for mental health services staff. *Community Mental Health Journal*, *49*, 86-94.	*297 mental health professionals throughout Queensland, Australia *242 in standard training *55 in enhanced standard training	*same as trained	*standard training: 1 day training focused on info. about evidence-based practices for prevention *enhanced training: standard training + 3 days focusing on creating & strengthening networks +10 wk. support designed to enhance sustainability of program	*standard training vs enhanced organizational development approach *knowledge measured pre-training, after one-day workshops & 3 months follow-up *questionnaire to measure extent and purpose of their health service networks *ANOVA	*knowledge significantly higher among participants of the enhanced group at follow up compared with standard training group *The training group by time interaction was significant (F = 20.39; df = 1; P\0.001) showing participants of the organizational development group reported significantly higher number of organizational links at follow up	.
Gask, L., Dixon, C., Morriss, R., Appleby, L., & Green, G. (2006). Evaluating STORM skills training for managing	*458 personnel (nursing staff (218), nursing assistants (95), doctors (26), medical consultants (5), psychiatrists (5) junior	*same as trained	*STORM package *4 two hour modules *training delivered by mental health nurses trained in CBT *aimed to train as many staff as	*pre/post test, 4-6 months follow up *questionnaire and face to face interview *participants as own	*positive changes in attitudes shown (Attitudes to Suicide Prevention Scale) *SIRI2- Suicide Intervention Response Inventory- self rated	.

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people at risk of suicide. *Journal of Advanced Nursing*, *54*(6), 739-750.	doc (3), OT (25), support workers (23) nursing students (21), social workers (13) administrative (2), clinical psych (1), art therapist (1))		possible in six mo period	controls *Wilcox on signed rank test *participants videotaped carrying out assessment in role play	competence *no changes in skill acquisition	
Gask, L., Lever-Green, G., & Hays, R. (2008). Dissemination and implementation of suicide prevention training in one Scottish region. *BMC Health Services Research*, *8*(1), 246.	*203 personnel in Highland region, Scotland *38% nurses, 3 psychiatrists, 20% social workers, 13 doctors (+psychologists), 4 occupational therapists, 19 support workers, 2 nursery nurses + housing officer, 1 police *facilitators were from MH services, primarily nurses	*same as trained	*STORM national "Choose Life" Initiative *derived from adult learning theory, Bandura's social learning theory, published literature on changing behaviors of health providers *role play and video feedback *interactive self-reflection, reflection of others	*pre/post test *6 month follow up via written questionnaire *t-test, Wilcoxon signed ranks *semi-structured telephone interviews with training facilitators and sample of participants	*significant improvement in attitudes and confidence *identification of best implementation factors e.g. support of local opinion leader, etc.	.
Giordano, R., & Stichler, J. F. (2009). Improving suicide risk assessment in the emergency department. *Journal of Emergency Nursing*, *35*(1), 22.	*ER department: non–mental health professionals in emergency department's triage area-not otherwise specified	*same as trained	*educational module to enhance nurses' knowledge and skills in suicide prevention	*t-test *pre-test identifying nurses' current knowledge about suicide risk factors, assessment methods to identify patients at risk for suicide, and appropriate follow-up interventions or referral sources	*significant difference in knowledge before and after (t = −13.62, P < .05) *relatively strong effect size (partial n2 = .611) *educational module enhanced the nurses' knowledge about suicide risk factors and appropriate care options to prevent subsequent suicide	.
Heady, A., Pirkis, J., Mercer, B., Vanned Heave, A., Mitchell, P., Robinson, J., ... & Burgess, P. (2006). A review of 156 local projects funded under Australia's National Suicide Prevention Strategy: Overview and lessons learned. *Advances in Mental Health*, *5*(3), 247-261.	*training/support for health/community professionals/careers, non specific	*projects targeted 11 groups (most common- young people, Aboriginal and Torres Strait Islander people and people in rural/remote areas)	*156 projects under national suicide prevention strategy *most community based	*lit. review	*successful processes: understanding contextual factors; investigating participants' needs; drawing on sound evidence; developing multi-faceted strategies; garnering stakeholder support; and employing capable staff. *improvements from projects: knowledge, risk, protective factors for suicide, social connectedness, mental health literacy, & reductions in depressive symptomatology	.

Citation	Trained Profession	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comments
Hurwitz, S. M., Sheinberg, L. J., Storfer-Isser, A., Barnes, D. H., Smith, M., Kapur, R., ... & Wilkens, K. (2011). Teaching physicians to assess suicidal youth presenting to the emergency department. *Pediatric Emergency Care*, *27*(7), 601-605.	*32 residents from 1 medical center in Cleveland, Ohio *48% female *65% white *residents reported completing residency in emergency medicine or pediatric emergency medicine, but few were trained in psychiatric assessment of children/ adolescents	*same as trained	*5 module self-paced computerized educational program ranging from epidemiologic material to a care pathway with suggested levels of intervention depending on the symptoms, level of dangerousness, and family supports of the presenting case	*quasi-experimental posttest-only design assessing knowledge of educational context of program and self-rated pretest knowledge of program content *physicians asked 9 randomly chosen multiple-choice questions on subject matter on posttest *physicians also asked if would have known correct answer to each question before completing training program (self-rated pretest)	*on average, residents had significantly higher scores on posttest compared with self-rated pretest (6.4 T 1.1 vs 3.8 T 2.3; P G 0.001), effect size of 1.32 *residents responded positively to modules *rated modules highly on educational content (4.2 T 0.5 on 5-pt scale) *satisfaction with clinical applicability (8.2 T 1.2 on 10-pt scale) *found program easy to navigate (8.5 T 1.9 on 10-pt scale).	
Huh, J., Weaver, C., Martin , J., Caskey, N., O'Riley, A., & Kramer, B. (2012). Effects of a late-life suicide risk–assessment training on multidisciplinary healthcare providers. *Journal of the American Geriatrics Society*, *60*(4), 775-780. doi: 10.1111/j.1532-5415.2011.03843.x	*health care workers from 2 VA Hospitals in CA *24 nurses *12 physicians *31 psychologists, 9 psychiatrists *58 social workers *1 occupational therapy, 1 recreational therapy *1 chaplaincy, 2 administrative	*same as trained	*6.5 hr. assessment & management workshop geared toward elderly suicide	*pre/post subjective changes in knowledge, attitudes, confidence in assessment/managing of suicide risk in older adults. *pre/post workshop case notes	*post workshop improvements in quality of case notes (P = .001) *greater ability to recognize important suicide risk categories (P = .003) *heightened awareness of importance of late life suicide	.
Jacobson, J., Osteen, P., Jones, A., & Berman, A. (2012). Evaluation of the Recognizing and Responding to Suicide Risk Training. *Suicide & Life-Threatening Behavior*, *42*(5), 471-485. doi:10.1111/j.1943-278X.2012.00105.x	*452 personnel working with clients at risk for suicide *118 (26%) professional counselors *100 (22%) social workers *79 (18%) psychologists *77 (17%) nurses *7 (2%) psychiatrists *4 (1%) medical doctors *345 (77%) working with adults *90 (20%) with children/adolescents *14 (3%) with older adults	*same as trained	*Recognizing and Responding to Suicide Risk: based on 24 core competencies considered best practice by the Suicide and Prevention Resource Center *2-day skill-based training focused on translating knowledge into practice by means of extensive guided case application exercises	*ANOVA *pre/post test, 4 month follow *attitudes toward suicide prevention, confidence to work with clients, ability to work with suicidal clients examined *list of measurement tools provided *Suicide Risk Assessment and Immediate Risk Management Skills also assessed	*Statistically significant clinical practice behaviors improved for assessing and formulating suicide risk, developing suicide prevention treatment plans & responding to vignettes	.

Citation	Trained Profession	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comments
Jacobson, J. M., Osteen, P. J., Sharpe, T. L., & Pastoor, J. B. (2012). Randomized trial of suicide gatekeeper training for social work students. *Research on Social Work Practice*, *22*(3), 270-281.	*70 advanced masters social work students, University of Maryland	*same as trained	*assigned to one of two groups *90 minute QPR gatekeeper training or control group *QPR topics: suicide rates/statistics, warning signs, risk/protective factors, question asking, help seeking, referral resources *control- no training	*randomized controlled trial *pre/post, 6 month follow up *RMANOVA *measurement tools listed	*intervention group significant improvement in knowledge of warning signs, intervention behaviors (e.g. question asking), self-efficacy to preform gatekeeper role *long term knowledge of institutional resources, not significant *intervention large effect of measures of preparedness *both groups improved with reluctance to engage with suicidal clients, appropriateness of referral, use of gatekeeper behaviors *no significant change either group on ASP- measurement of attitudes about suicide prevention	*no way to tell if effects due to intervention, experience with clients or classroom learning, combination of all
Johnson, R. M., Frank, E. M., Ciocca, M., & Barber, C. W. (2011). Training mental healthcare providers to reduce at-risk patients' access to lethal means of suicide: Evaluation of the CALM Project. *Archives of Suicide Research*, *15*(3), 259-264.	*community based mental health practitioners in 7 community-based mental health care centers in New Hampshire *196 workshop participants *168 (86%) completed the post-test questionnaire, *111 (57%) completed follow-up questionnaire. *81.4% female, 96.2% White *58% worked with children/youth *aged 42.8 years *working in MH counseling for 11.7 years	*same as trained	*Counseling on Access To Lethal Means (CALM) *2-hour educational workshop for community-based mental health care providers trained to work with at-risk clients and their families to assess and reduce access to lethal means of suicide, including firearms *Multiple Components: formal presentation by a public health specialist, introduction to firearms and their operation, screening of a video re-enactment of a lethal means assessment, instruction and discussion on conducting a lethal means assessment, role plays for participants	*post-test immediately after workshop *follow-up questionnaire approximately 6 weeks later	*at follow-up 65% reported they had counseled clients' parents about access to lethal means (n = 111) *workshop influenced participants' attitudes, beliefs, and skills regarding conducting lethal means counseling *decrease in self-efficacy and perceptions about effectiveness of means reduction from post-test to follow-up	
Kaniwa, I., Kawanishi, C., Suda, A., & Hirayasu, Y. (2012). Effects of educating local government officers and healthcare and	*646 total *183 government officers *432 healthcare/welfare professionals *31 undetermined participants working for 9	*same as trained	*1 time educational session held at workplace	*pre-post test questionnaire used to assess knowledge and attitudes *4 items consisted of statements about suicide,	*knowledge and attitudes improved for most questionnaire items *respondents with 1+ experiences of suicide prevention training showed	*sample size small *response rate post training low, might affect results *since previous

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welfare professionals in suicide prevention. *International Journal of Environmental Research and Public Health*, *9*(3), 712-721.	local governments and 1 hospital			suicide prevention, and people who attempt suicide to explore the respondents' knowledge about suicide prevention *6 items on attitude toward prevention *chi-square test used to explore differences in knowledge and attitudes in relation to sex, occupation, previous education *Kruskal-Wallis test used to determine age differences	significantly more knowledge and positive attitudes before the training than those with no experience *knowledge of depression and having a sympathetic attitude were found to be especially associated with the overall attitude "suicide can be prevented"	education on suicide prevention unknown, long-term educational effect could not be assessed *self-reported questionnaire might not reflect respondents' actual knowledge/ attitudes
Levitt, A. J., Lorenzo, J., Yu, V., Wean, C., & Miller-Solarino, S. (2011). Suicide awareness and prevention workshop for social workers and paraprofessionals. *Journal of Social Work Education*, *47*(3), 607-613.	*120 social workers and paraprofessionals working with homeless population		*1/2 day training vs two 2 hr trainings on recognizing risk factors, manage care, document risk, communicate concerns	*pre/post test *21 mo follow *t-test	*both professionals and paraprofessionals substantial increase in knowledge	.
McAuliffe, N., & Perry, L. (2007). Making it safer: A health centre's strategy for suicide prevention. *Psychiatric Quarterly*, *78*(4), 295-307.	*Trillium Health Centre is a two site facility -- serves one million + residents in Mississauga, Ontario *center offered trainings and system-wide suicide prevention initiative including ASIST *220 mental health staff *50 staff from other areas of hospital—including all hospital switchboard operators and some rehabilitation therapists whose clients are living with chronic, severe pain *150 staff and students	*same as trained	*ASIST: 20 two-day small group workshops over 2 years offered	*quantitative and qualitative indicators tracked over four years to gauge whether the ASIST training and other initiatives were changing clinical practice and staff perceptions. (Other initiatives were in place at health center before ASIST trainings were introduced.)	*staff feel more supported in probing for SI and *feel have skills required to effectively intervene *Prior to project, 56% of suicidal patients presenting in the Emergency Department were admitted. Over the four years of the project, this ratio decreased each year to a current rate of 42% *More staff assess a higher proportion of their clients for suicide risk *13% increase in number of clinicians who report assessing virtually all of their clients *percentage of staff who 'know	.

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	from local community mental health and social service agencies participated in workshops				what steps to take after assessing for suicide risk' increased from 87 to 97% *however, only 48% 'strongly agree' that they know *All office and community program clients have a safety plan developed early in their engagement with program *documentation of these safety plans is included in regular chart audits *movement from 'strongly agree' to merely 'agree' with the statement ''I feel comfortable talking to clients about suicide''	
McNiel, D., Fordwood, S., Weaver, C., Chamberlain, J., Hall, S., & Binder, R. (2008). Effects of training on suicide risk assessment. Psychiatric Services, 59(12), 1462-1465.	*45 psychiatry and psychology trainees *10 psychiatrist trainees in control post grad year	*same as trained	*workshop comparison *experimental workshop: 5 hr evidence based risk assessment and management on risk of suicide and violence lead by psychiatrists and psychologists, lecture+ small group activities *3 hr workshop comparison group on application of evidence based medicine to psychiatry, not focused on risk assessment	*t-test *pre post perceived ability to assess, manage and knowledge about topic *objective skills measures *pre post progress notes in response to case vignette	*experimental provider documentation quality improved f2=.26 *greater ability to identify risk and protective factors *better ability to articulate organized reasoning about risk assessment and management *increased ratings of ability *large effect size	.
Morriss, R., Gask, L., Battersby, L., Francheschini, A., & Robson, M. (1999). Teaching front-line health and voluntary workers to assess and manage suicidal patients. *Journal of Affective Disorders*, *52*(1), 77-83.	*33 health and voluntary workers w/o mental health training, in contact with suicidal patients *7 emergency room nurses *3 primary care nurses *13 support workers employed by social services to work with mentally ill patients or mental health voluntary agency workers	*same as trained	*8hr. training with role play & video feedback delivered in four 2-h sessions *topics: who to suspect, how to enquire, general interview skills, Suicide risk assessment, assessment of depression, how to assess and maintain safety during a crisis, how to elicit multidisciplinary health workers, how/when to use problem solving, factors which precipitate, prevent, increase or decrease the risk of self-harm/suicide, alternatives to self-harm	*interview skills assessed blindly by raters using predetermined criteria *self-rated questionnaires (SIRI-2 and visual analogue scales) used to assess clinical skills and confidence	*1 mo post training significant improvement in suicide risk assessment and management skills such as problem solving, future coping and provision of immediate support *training did not significantly improve general interview skills, combating hopelessness or removal of lethal weapons *performance on SIRI-2 and confidence significantly improved after training *assessment procedure itself did not improve clinical skills nor confidence	*performance among individual health disciplines not assessed *not a randomized controlled trial *short follow up, no patient outcome data

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Nutting, P. A., Dickinson, L., Rubenstein, L. V., Keeley, R. D., Smith, J. L., & Elliott, C. E. (2005). Improving detection of suicidal ideation among depressed patients in primary care. *Annals of Family Medicine*, *3*(6), 529-536. doi:10.1370/afm.371	*12 primary care practices, 9 not for profit HMOs *179 clinicians (family physicians, general internists, and nurse-practitioners) participated *24 primary care physicians (23 family physicians, 1 general internist)	*880 enrolled patients, 18+, met criteria for depression *232/880 met criteria for recent SI	*two interventions: Quality Enhancement by Strategic Teaming (QuEST) or Mental Health Awareness Project (MHAP) *mixed-payer practices received QuEST *HMO's received MHAP *QuEST: physicians and nurse care managers took part in 4 conference calls to familiarize with depression guidelines *nurse care managers (RNs) took 8-hour training session on educating patients on treatment options, elicit treatment preferences, help overcome barriers to care, and monitor patients' response to treatment *office nurse to deliver nursing intervention if the practice was randomized to the enhanced care condition (QuEST) *MHAP: 4 1/2 hours interactive training on evidence base for improving depression care *practice coordinators (administrative staff) to screen primary care patients for major depression as a part of routine care (MHAP)	*matched practices randomized within plan type to intervention or usual care *intervention effects on suicide detection and referral to mental health specialty care were evaluated *mixed-effects multilevel models in intent-to-treat analyses	*depressed patients with recent SI detected on 40.7% of index visits in intervention practices, compared with 20.5% in usual care practices (odds ratio = 2.64, 95% confidence interval, 1.45-5.07) *HMO plan type and male sex associated with detection *interventions had no effect on referral of patients, starting antidepressants, or SI reported at 6-month follow-up *power limited for all 3 analyses	
Pfaff, J. J., Acres, J. G., & McKelvey, R. S. (2001). Training general practitioners to recognise and respond to psychological distress and suicidal ideation in young people. *The Medical Journal of Australia*, *174*(5), 222.	*23 general practitioners in general practice surgeries in Tasmania, Victoria and Western Australia in 1996 and 1997	*same as trained + 423 patients aged 15-24 years who presented to the GPs' surgeries (203 pre-workshop and 220 post-workshop)	*1 day training designed to enhance ability to recognize, assess and manage young patients at risk of suicide	*pre-/posttest design to audit consecutive young patients presenting the six weeks before and the six weeks after the GPs' participation in the training program *three patient self-report inventories *GP-completed form for each patient summarizing presenting complaint(s), psychological assessment and proposed management plan	*GPs increased recognition rates of psychologically distressed patients *enquiry about SI increased 32.5% (OR, 1.483; 95% CI, 0.929-2.366) *identification of suicidal patients increased by 130% (OR, 3.949; 95% CI, 1.577-9.888) *no significant change in GPs' patient management strategies	

Citation	Trained Profession	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comments
Pisani, A. R., Cross, W. F., & Gould, M. S. (2011). The assessment and management of suicide risk: State of workshop education. *Suicide and Life-Threatening Behavior, 41*(3), 255-276.	*mental health professionals (psychiatrists, clinical psychologists, clinical social workers, psychiatric nurses, mental health counselors, and other professionals)	*12 programs met criteria	*all programs aim to promote general competence in assessment and management of suicide risk	*literature review *conducted surveys with 11 program developers (100% response rate) *list of included workshops	*workshops effective for transferring knowledge and shifting attitudes *role in improving clinical care and determining outcome of suicidal patients needs further review	
Pisani, A. R., Cross, W. F., Watts, A., & Conner, K. (2012). Evaluation of the Commitment to Living (CTL) curriculum. *Crisis, 33*(1), 30-38.	*Entire Psychiatry Department at the University of Rochester (mandatory) *338 participants total (266 women, 68 men, 4 unreported) *clinical service settings: adult and child ambulatory services (outpatient and continuing day treatment, n = 192, 56.8%), adult and child acute services (inpatient, partial hospital, and psychiatric emergency departments, n = 113, 33.4%), and other services (consultation liaison, psychological testing, mobile crisis and others, n = 33, 9.8%)	*same as trained	*Commitment to Living (CTL): 3 h workshop designed to improve clinical competence in suicide risk assessment by visual concept mapping, medical records documentation, and site-specific crisis response options	*pre- and post workshop questionnaires measuring knowledge and confidence *before and after workshop, completed documentation for clinical vignette *trained coders rated quality of risk assessment formulation before and after training	*knowledge, confidence, and objectively-rated documentation skills improved significantly ($p < .001$), large effect sizes *expectation of ability to transfer workshop content to clinical practice high (mean = 4.10 on 1–5 scale)	
Samuelsson, M., & Asberg, M. (2002). Training program in suicide prevention for psychiatric nursing personnel enhance attitudes to attempted suicide patients. International *Journal of Nursing Studies, 39*, 115-121.	*47 psychiatric nursing personnel who, by own interest, were participating in a training program for suicide prevention *enrolled at the Department of Psychiatry at the Karolinska Hospital, a large university hospital in Stockholm, Sweden *39 women *8 men *25 to 64 years *24 attendants in psychiatric care	*same as trained	*12 three hour class sessions on different aspect of attempted suicide, psychiatric nursing, psychiatric autopsy and ethical issues *2 hour lecture by specialist on topic *1 hour discussion in small groups (7–8 nurses) supervised by expert	*pre-post test assessment of attitudes of psychiatric nursing personnel towards patients who had attempted suicide *measured by The Understanding of Suicide Attempt Patients Scale (USP-scale) *responses to three brief clinical vignettes	*general understanding and willingness to nurse increased significantly *suicide risk of patients described in case vignettes more accurate after program	.

Citation	Trained Profession	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comments
	*23 registered nurses					
Shim, R. S., & Compton, M. T. (2010). Pilot testing and preliminary evaluation of a suicide prevention education program for emergency department personnel. *Community Mental Health Journal*, *46*(6), 585-590.	*emergency department personnel *piloted with convenience sample of 54 clinicians on voluntary basis	*same as trained	*2 hr. didactic lecture & 1 hr. participant discussion *included definitions and distinctions between suicide, para-suicidal behavior, and self-inflicted injury *brief focus on defining scope of problem (suicide rates in U.S., Georgia, and in specific populations, e.g. adolescents and elderly), modifiable risk factor identification, protective factor identification	*pre-post test *16-item, multiple-choice knowledge instrument *12-item self-efficacy instrument *additional qualitative items	*increase in knowledge scores (from 7.9 ± 1.9 to 13.6 ± 2.1, P\.001) and self-efficacy scores (from 24.0 ± 9.1 to 32.3 ± 9.2, P\.001) regarding management of suicidal patients or those at elevated risk for suicide *rated training session favorably, would recommend it to others	
Simpson, G., Franke, B., & Gillett, L. (2007). Suicide prevention training outside the mental health service system: Evaluation of a state-wide program in Australia for rehabilitation and disability staff in the field of traumatic brain injury. *Crisis*, *28*(1), 35.	*traumatic brain injury rehabilitation and disability staff *86 experimental *allied rehabilitation staff (16), *nursing/residential care/attendant (21), *psychosocial health (17) *case managers (32) *27 in control group	*same as trained	*1 day workshops (5.5 hrs) delivered across Victoria *curriculum adapted from generic suicide prevention training program developed by New South Wales state health department *adaptations included (1) greater attention to definitions of suicide and key clinical concepts (e.g., intent, lethality, ambivalence, possibility of rescue) than required by a literate mental health audience; (2) introducing findings from latest research into suicidality after TBI; (3) utilizing relevant case scenarios involving clients with TBI; and (4) highlighting TBI-specific considerations in applying routine suicide assessment and management practices (e.g., strategies for providing support to a suicidal client with cognitive impairments)	*t-test, PCA *pre/post, 6 mo follow *objective knowledge test *self-report	*significant gains in objective knowledge and reported skills *maintained gains over 6 mo follow up	.
Tadaka, M., & Shima, S. (2010). Characteristics and effects of suicide prevention programs: Comparison between	*medical facilities	*10 studies	*lit review	*prevention programs in the workplace, school, community, medical facilities, jail, and army *conducted electronic	*workplace suicide prevention programs aimed to improve personnel management and health care *screening and care for high-risk individuals, and	.

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workplace and other settings. *Industrial Health*, *48*, 416-426.				literature search of all articles published between 1967 and Nov. 2007	improvement of building structures not described *reduction in undesirable attitudes, increase in mental health knowledge and coping skills in the workplace in agreement with findings in other settings *suicide rate, suicide-associated behavior, and depression, assessed in other settings, not evaluated in three studies targeting workplace	
Taur, F. M., Chai, S., Chen, M. B., Hou, J. L., Lin, S., & Tsai, S. L. (2011). Evaluating the suicide risk-screening scale used by general nurses on patients with chronic obstructive pulmonary disease and lung cancer: a questionnaire survey. *Journal of Clinical Nursing*, *21*, 398-407.	*54 general nurses in hospital *205 patients *76 patients COPD *129 lung cancer	*same as trained	*2 hour screening skills training using SRS tool	*chi2 *trainees rated by trained nurses *patients did self rating repulsion of life *compared nurses ratings with trainer ratings and patient self-ratings	*evaluated accuracy and usefulness of Screening of Risk for Suicide (SRS) tool	.
The use and impact of Applied Suicide Intervention Skills Training (ASIST) in Scotland: An evaluation. *Annex: A Review of the International Literature*	*all encompassing	*15 studies on ASIST *most unpublished *5 considered good evaluations *3 Studies on STORM *1 on SMHFA	*lit review of ASIST, STORM, MHFA	*review of international literature *part of larger national evaluation of (ASIST) in Scotland *provides less comprehensive review of STORM & MHFA *compares and contrasts programs *participant behavior, reaction, skills, organizational & community change examined	*extent to which we can draw firm conclusions about effectiveness limited – small number of studies available, quality of the evidence *seems effective regarding participant satisfaction, positive change in participants' self-reported suicide intervention knowledge, skills and attitudes, use of the training within 6 mths *limited evidence ASIST can facilitate interaction and improved relationships between community agencies	.
Tsai, W., Lin, L., Chang, H., Yu, L., & Chou, M. (2011). The Effects of	*nurses from general hospital in Taiwan *195 nurses participated in	*same as trained *97 control *98	*all participants received the hospitals monthly educational session- 70 min of presentation	*randomized control trial *t-test *developed "Awareness of	*Gatekeeper Suicide-Awareness Program participants more aware of suicide warning signs	.

Citation	Trained Profession	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comments
the Gatekeeper Suicide-Awareness Program for Nursing Personnel. Perspectives In Psychiatric Care, 47(3), 117-125. doi:10.1111/j.1744-6163.2010.00278.x	study and randomized to experimental group or control group *experimental group: 4 males/94 females *control group: 97 females *half+ between 20 and 30 years old *63% working in nursing 5+ years *144 (74%) registered nurses *-1/3 psychiatric nursing personnel *3/4+ had experience with a patient with major depressive disorder *~1/4 had family member with major depressive disorder	experimental	& 20 min discussion *experimental group received monthly education session + 90-min Gatekeeper Suicide-Awareness Program *Gatekeeper training: depression vs major depressive disorder, causes of depression, relationship between depression and suicide, groups at high risk for suicide, warning signs displayed by individuals at risk for suicide	Suicide Warning Signs Questionnaire"-- to measure participants' awareness of suicide warning signs *pre-post questionnaire	and more willing to refer patients for professional counseling *statistically significant differences between groups on suicide awareness *experimental group had statistically significant difference on suicide awareness at pre- and posttest *no statistically significant difference on suicide awareness at pre- and posttest for control *statistically significant difference in willingness to refer in experimental pre- and post statistical significance in pre-post willingness of participants to refer in control group (c2 = 2.13, p =.144)	
van der Feltz-Cornelis, C. M., Sarchiapone, M., Postuvan, V., Volker, D., Roskar, S., Grum, A. T., ... & Hegerl, U. (2011). Best practice elements of multilevel suicide prevention strategies: a review of systematic reviews. *Crisis, 32*(6), 319.	*GPs	*6 articles	*lit review	*improvement in depression recognition, suicide risk evaluation, prescriptions	*identification of best practices	.
Weatherbee, M. J. (2010). *The impact of a brief training on suicide for graduate students in psychology, incorporating Thomas Joiner's Theory of Why People Die by Suicide*. Ann Arbor, MI: ProQuest.	*13 graduate psych students in training to become therapists	*same as trained	*1 hr long workshop on theory-Thomas Joiner's Why People Die by Suicide	*pre/post survey	*significant increase in knowledge	*small N
Wintersteen, M. B. (2010). Standardized screening for suicidal adolescents in primary care. *Pediatrics*, *125*(5),	*physicians in 3 primary care practices *intervention clinics- two primary care clinics associated with a large,	*adolescents aged 12.0- 17.9 years	*physicians received brief training in suicide risk *2 standardized questions inserted into existing electronic medical chart psychosocial	*Deidentified data extracted during both intervention trials and for the same dates the previous year	*inquiry about suicide risk increased 219% (clinic A odds ratio [OR]: 2.04 [95% confidence interval (CI): 1.56 – 2.51]; clinic B OR: 3.20 [95% CI:	

Citation	Trained Profession	Targeted Population	Intervention	Research Design/Analysis	Results	Rater Comments
938-944.	urban pediatric hospital *(clinic A) treats adolescents 11-24 yrs. (~58% of the patients female; 77% black, 16% white, 2% Hispanic, 5% other *(clinic B) pediatric patients infancy -adol (52% female; 77% black, 19% white, 1% Hispanic, 3% other *third clinic (clinic C) (~99% black, 48% female) * clinics similar patient SES status *clinic A--specialists in adolescent medicine, *other providers-pediatricians		interview *1 clinic offered physician education, followed by a 3-mo trial (intervention phase 1) of standardized screening for suicide risk in patients ages of 12.0 and 17.9 years. *post Intervention Phase 1, second clinic received same intervention of physician education and standardized screening (intervention phase 2) *all providers at intervention clinics invited to 90-minute training on youth suicide *training ended with introduction of a standardized screening for suicide risk in adolescents	*referral rates extracted from social work records *prereplication/ postreplication design	2.69 –3.71]; clinic C OR: 1.85 [95% CI: 1.38–2.31]) *increase in case detection was 392% across all 3 clinics *referral rates of suicidal youth to outpatient behavioral health care centers increased at a rate equal to that of detection rates *medical providers increased likelihood of inquiring about suicide risk 219% *detection of suicidal youth was significantly increased, maintained over time, and replicated in 2 additional clinics *392% increase in detection of youth who had expressed suicidal ideation across all 3 clinics	
Ziervogel, A., Pfeiffer, T., & Hegerl, U. (2005). How effective is advanced training concerning depression and suicidality among the elderly? Results of a pilot study. *Archives of Suicide Research, 9*(1), 11-17.	*374 geriatric caregivers in Nuremburg & Munich, Germany *average 9.2 years professional experience *83% women *17% men	*same as trained	*4hr. advanced in-house training on depression & suicidality in old age *conducted by psycho-gerontologist and psychiatrist	*pre-post test , *3 month follow-up *12-item questionnaire to measure outcome parameters: ‘‘knowledge and attitudes towards depression and suicidality in old age’’ *Wilcoxon test and McNemar test *baseline results compared with results of telephone survey of representative sample (1,334 persons of general public in Nuremberg and Wurzburg) conducted in another study	*increase in knowledge immediately post training *at follow-up effect still found for knowledge about characteristics of antidepressants, relationship between depression and suicidality and pharmacological treatment of depression *attitudes concerning suicide in old age changed	

Objective 2

Summary

Purpose

- *Address which of Washington's credentialed healthcare professions would benefit from training in order to have the most impact on potentially suicidal individuals.*

Findings

- Studies show that a range of 'frontline' healthcare providers such as physicians, nurses, athletic trainers and emergency medical staff, found training in suicide prevention relevant and within the scope of their professions.
- While research indicates that suicide prevention training appears to have positive effects for patients and professionals, available evidence does not support our recommending which of Washington's credentialed professions would specifically benefit from training in order to have the most impact on potentially suicidal individuals.
- Overall, Washington State professionals surveyed felt that suicide prevention was relevant to their professional role and felt prepared to intervene with suicidal clients.
- Results were mixed about whether they felt they require further training in suicide assessment, treatment and management.
- A large majority felt that those in their profession should be trained in suicide assessment, treatment, and management. A majority felt that training should be mandatory vs. voluntary, but this varied by profession.

Conclusions and Future Directions

- There is a lack of studies that can specify or compare the benefits of training particular healthcare professions in suicide prevention, or can compare the impact of training one profession over another. This represents a gap in current research knowledge.
- The lack of profession-specific evidence places Washington State in an ideal position to contribute to knowledge about training by conducting a prospective study about the impact of training mandated by ESHB 2366 on suicidal behavior.

Objective 2

Address which of Washington's credentialed healthcare professions would benefit from training in order to have the most impact on potentially suicidal individuals.

Overview

In this report we address the question of which of the Washington credentialed healthcare professions would benefit from training in order to have the most impact on suicidal individuals. In the Objective 1 report we examined over 30 research articles to determine the effectiveness of suicide prevention training and found substantial evidence that training provided for healthcare professionals can have a significant impact on suicide rates as well as on suicide-related behaviors. While the majority of studies we found did not focus on single healthcare professions, evidence demonstrating the effectiveness of prevention training was reported specifically for "primary care providers" in a number of studies; additional studies with positive outcomes subsequent to training healthcare providers usually included the involvement of multiple healthcare professionals in the study: physicians, nurses, ER nurses, ED staff, mental health professionals and general healthcare professionals (disciplines not specified).

While not abundant, nor specific, the evidence in support of the benefits of healthcare provider training on suicide rates is consistent. For studies which continue to implement the prevention trainings, there were demonstrated longer-term effects. Furthermore, no iatrogenic, or negative, effects of provider training were noted. We included several suicide prevention studies in the Objective 1 report that were implemented in non-healthcare settings (e.g., police department) and found confirmation for the positive effect of prevention training on rates. In addition, we found that suicide prevention training can have a significant effect on patient suicide risk behaviors, including depression, suicide ideation longevity and resolution and suicide attempts, as well as secondary patient behaviors such as treatment adherence. Furthermore, suicide prevention training for healthcare providers was shown to impact a range of provider behaviors, specifically in the areas of attitudes, knowledge, confidence and skills. Skills were generally self-rated, though some studies included objective ratings, most frequently involving documentation skills.

Rather than focusing on specific providers, most studies focused on multiple roles within systems, such as school systems, healthcare systems, hospitals or hospital units, and included many staff members being trained at once, as well as a range of prevention efforts that do not involve trainings (extra mental health staff, further screening, peer and patient education). These programs indicated that preventive changes

in the infrastructure of systems can have positive effects on patient suicide outcomes. Importantly, these studies represent a new wave of systems-oriented prevention effort that reaches across professions, is inclusive and comprehensive, and is supported by key agencies and policy-makers.

Relevance of Suicide Prevention

For this report, we examined a separate line of research focusing on the perceived or demonstrated relevance of prevention training to specific providers. By this we mean reports of perception of the benefits of receiving training by members of the profession. This could be either (1) agreeing or stating that suicide prevention training was or would be relevant to their profession; or (2) the perception that there is a need for training, or lack of sufficient training, by members of the profession. Furthermore, as a demonstration of relevance, we addressed exposure to suicidal individuals in the professional role. Exposure can be identified by either examining reports of where, when and with whom patients who died by suicide had their last health care visit, or by examining professionals' perceived contact with potentially or actively suicidal patients within their current provider role. Research evidence for training relevance largely relies upon self-report survey data. Occasionally we used studies that focused on training evaluation or training readiness but that also addressed the relevance or usefulness of training as part of the study. Overall, the articles we found addressing the question of relevance represent only a small portion of the professions targeted. Pediatricians, nurse practitioners, physicians, oncology nurses, emergency department nurses, physical therapists, obstetricians, gynecologists, emergency department personnel, athletic trainers, paramedics and mental health personnel are the professionals addressed in the reviewed articles.

In addition, we conducted an anonymous online survey of health professionals in Washington State to examine their experiences, perceptions, and attitudes about suicide prevention training.

Suicide Prevention Training Relevant to Profession

This section covers providers' perceptions of whether or not suicide prevention was relevant to their profession, and whether or not prevention was part of their responsibility.

Adolescents and Pediatric Settings

The majority of studies on healthcare providers' perceptions of the relevance of training their profession in suicide prevention involved primary care providers (i.e., family physicians, pediatricians and nurse practitioners) working with children or adolescents.

Diamond et al. (2011) assessed the attitudes, practices and barriers to screening for adolescents' risk of

suicide and mental health issues through an electronic survey of 671 medical professionals belonging to the Pennsylvania Chapter of the American Academy of Pediatrics, the Pennsylvania Coalition of Nurse Practitioners, the Pennsylvania Academy of Family Physicians, or the Pennsylvania Association of Community Health Centers (N = 7577). A response rate of 8.9% resulted in a final sample of medical doctors (49.3%), nurse practitioners (41.0%), and osteopathic physicians (6.1%). Eighty-five percent of respondents agreed with the statement that addressing adolescent behavioral health problems is consistent with their philosophical approach to their professional practices.

Frankenfield et al. (2000) provided a cross-sectional, mailed survey to all pediatricians (n=816) and family physicians (n=592) in the Maryland State chapter of the American Academy of Pediatrics and the American Academy of Family Physicians who were actively providing ambulatory care from May to July in 1995. The purpose of the survey was to determine the prevalence of adolescent suicidal behavior known to the primary care providers, and to assess their knowledge, attitudes and practices related to adolescent suicide. The survey resulted in a 66% response rate, which indicated that 72% of physicians reported an interest in more suicide prevention training. Sixty-nine percent of physicians indicated their main interest in training was screening and assessment, followed by clinical indicators (65%), referral options (58%), legal issues (53%), and treatment (48%).

Olson et al. (2002) described the attitudes and approaches of primary care pediatricians towards the identification and management of postpartum and maternal depression. A national survey of randomly selected primary care pediatricians reported on how they managed their last recalled case of postpartum or maternal depression, barriers to care, their attitudes about recognition and management, confidence in skills and their willingness to implement new strategies. Of 888 eligible primary care pediatricians, 508 (57%) completed the surveys. Results indicated that 57% of pediatricians felt responsible for recognizing maternal depression.

Heneghan et al. (2008) more broadly examined whether providers endorsed that addressing mental health issues (non-suicide specific) was in the scope of their profession. Surveys were mailed in 2005 to 338 primary care pediatricians (PCPs) and 75 child and adolescent psychiatrists (CAPs) in 7 counties surrounding Cleveland, Ohio. A response rate of about half was obtained for each profession; however, further exclusions were made. The final sample consisted of 132 PCPs, and 31 CAPs. Results indicated that the majority of PCPs and CAPs agreed that pediatricians should be responsible for identifying and referring, but not treating, mental health conditions in children.

Providers Treating Adults (non-pediatric setting)

There were fewer articles that addressed providers' opinions regarding the relevance of suicide prevention training for adult populations.

Valente & Saunders (2004) analyzed the barriers to suicide risk management by surveying a random sample of members of the Oncology Nursing Society (n=1200) who participated in a study exploring nurses' knowledge and attitudes about suicide. Respondents (n=454) were from the United States, Canada, and Puerto Rico. Survey results indicated that 64.8% of nurses agreed that evaluating suicide risk should be a priority.

Shim & Compton (2010) recruited volunteers to participate in the piloting of the emergency department training curriculum on suicide prevention through the Georgia Hospital Association. Fifty-four clinicians participated in one of the three training sessions. Post-test surveys revealed that 84.2% of participants rated the training as extremely relevant. Additionally, 86.9% reported being very or extremely likely to use the information presented.

Smith (2010) sent a survey to accredited doctorate of physical therapy (DPT) programs (N=201) to assess what education their students receive on depression and suicide. Forty-nine directors of DPT programs responded. All program chairs either agreed (n=28) or strongly agreed (n=21) that depression and suicide are important factors for treating patients receiving physical therapy.

Lastly, LaRocco-Cockburn et al. (2003) assessed the attitudes and practices related to depression screening among Washington State obstetrician-gynecologists. The survey was mailed to 505 obstetrician-gynecologists, 282 of whom responded. Ninety percent of respondents agreed that screening "will improve the detection rate," and 79% agreed that screening "will result in early diagnosis and treatment" of depression. Eighty-four percent agree that treatment for depression is effective; however, only 58% agreed that depression screening leads to improved treatment outcomes. Sixty-five percent of respondents agreed that obstetrician-gynecologists should screen for depression, and 73% agreed that depression in women is common enough to screen for it in a systematic way.

Need for Training or Lack of Sufficient Training

The literature from peer-reviewed journal articles for both professionals working with adolescents or in a pediatric setting, and for professionals working with adults, often addressed a need for more training and lack of sufficient training in suicide prevention. Consistent themes were evident. First, low percentages of professionals reported that they received adequate training in suicide prevention – likewise, they

frequently reported their skills related to suicide assessment as low. Additionally, high percentages of respondents reported that their lack of training was a barrier to providing mental health care and/or suicide prevention. On the other hand, high percentages of people agreed that mental health care/suicide prevention was relevant to their profession, that mental health issues were encountered frequently including suicide risk, and that they were interested in receiving more training.

Adolescents and Pediatric Setting

Henegan et al. (2008) found that 70.2% of child and adolescent psychiatrists and 47.4% of primary care pediatricians agreed that pediatricians' lack of training in identifying child mental health problems was a barrier to care. Similarly, Olson et al. (2002) found that 64% of the primary care pediatricians that were surveyed endorsed insufficient training/knowledge to diagnose/counsel, and 48% endorsed insufficient training as a barrier to treat.

Grossman et al. (2003) examined the experiences of emergency nurses (N=527) with suicidal adolescents regarding their training, knowledge, practice, and attitudes toward means restriction, and means restriction education for parents. A survey was mailed to all members of the Illinois Chapter of Emergency Nurses Association (N=943). Survey results yielded that only 24% had ever received means restriction training, discussed in the Objective 1 report as an evidence-based prevention strategy.

Horwitz et al. (2007), looking beyond suicide prevention exclusively, aimed to determine the perceived barriers to care for children's psychosocial issues and maternal depression at large. A random sample of 1600 non-retired members of the American Academy of Pediatrics was selected. Of the 832 surveys returned, 687 respondents were included in the final analysis. Sixty-five percent of pediatricians reported lack of training in the treatment of these problems.

Providers Treating Adults (non-pediatric setting)

Valente & Saunders (2004) found that, of the nurses surveyed from the Oncology Nursing Society, 28.1 % rated their suicide assessment skill as "little", and 57.3% rated their skill as "some." On the contrary, only 13.5% rated their assessment skill as "good," and only 1.1% rated their skill as "very good." Nurses also indicated deficits in professional experience, skill, knowledge, and abilities to care for suicidal patients through narrative responses. Importantly, nurses with little or some knowledge and skill about suicide prevention indicated a need for continuing education with evidence-based suicide prevention strategies.

Smith (2010) found that approximately, 39% of physical therapy program directors expressed interest in additional depression education and 47% expressed interest in additional education on suicide risk.

Results indicated that 75% of DPT programs provide some sort of mental health education, yet only 37% of DPT programs addressed suicide risk assessment.

Similarly, La Rocco-Cockburn et al. (2003) found that 45% of the obstetrician-gynecologists who were surveyed disagreed with the statement, "I feel I've had the appropriate training to treat depression."

Stiller-Ostrowski and Ostrowski (2009) conducted focus group interviews with eleven recently certified athletic trainers. Results indicated that the Athletic Trainers' Association Education Council is doing an adequate job of preparing athletic trainers for common communication and interpersonal issues, but athletic trainers reported being underprepared to deal with psychosocial issues. The group average ranking in preparedness was 3.7 out of 10. Those who felt most prepared to handle referral situations discussed how their Athletic Training Education Programs took time to simulate possible scenarios. The consensus of the athletic trainers was that they felt comfortable knowing when to refer but did not feel prepared to approach the athlete to suggest a referral. They felt unprepared to provide counseling support, mental skills training, and knowing when and how to refer for psychological issues.

Exposure to Suicidal Patients

Our third and final examination of relevance for this report involved exposure studies. The relevance of health care provider suicide prevention training can be assessed by evidence that a health care provider is likely to see or have seen patients who are suicidal. A review of the literature resulted in a handful of studies in which healthcare providers report having had contact with suicidal patients in the recent past. All of the articles found were geared toward providers working with adolescents.

Adolescent and Pediatric Setting

The results of Diamond et al.'s (2012) study with 671 responses from medical professionals regarding their practices with suicidal adolescents revealed that 40.6% of the respondents had a patient attempt suicide in the past year, and 7.7% had six or more patients attempt suicide within the last year. Similarly, Frankenfield et al. (2000) found that 47% of the medical providers surveyed reported that one or more adolescent patients attempted suicide in the past year. Grossman et al. (2003) reported that 80% of the 527 emergency nurses surveyed had recent experience with suicidal adolescents.

Additional support for the exposure of healthcare providers to suicidal patients can be found in studies utilizing health/contact/patient records to demonstrate that physicians have seen patients within months or a year of a suicide attempt or death by suicide. A great deal of early research on the relevance of suicide to primary care physicians was conducted in this manner. Luoma et al. (2002) found that

individuals who attempt or die by suicide are more likely to see their primary care physician than a mental health provider in the year preceding the suicidal event. Furthermore, between 75% and 85% of patients who died by suicide saw their primary care physician within a year of their death, and approximately 50% of those who died by suicide saw a healthcare provider within the last month. These findings are supported in studies for military populations as well. In the Objective 3 report on the Military, we note that of those who died by suicide, at least 45% saw a primary care physician within one month of their death, and of those who attempted suicide, 73% saw a primary care physician (Trofimovich et al., 2012).

Conclusion: Consistent themes were evident among the articles addressing provider's perceptions of relevance. First, low percentages of professionals reported that they received adequate training in suicide prevention – likewise, they frequently reported their skills related to suicide assessment as low. Additionally, high percentages of respondents reported that their lack of training was a barrier to providing mental health care and/or suicide prevention. On the other hand, high percentages of people across various professions agreed that mental health care/suicide prevention was relevant to their role, that mental health issues were encountered frequently including suicide risk, and that they were interested in receiving more training. As additional evidence for the relevance of training, studies such as the one by Nutting and colleagues (2005) demonstrated that, without training, the primary care provider's ability to detect suicide risk was around 20%, and improved to 41% post training.

National Data Regarding Those Groups Most at Risk for Suicide

In this section, we discuss two ways of identifying groups most vulnerable to suicide. We report on (1) demographic variables linked to higher rates of suicide risk at the national level, and (2) research evidence indicating higher suicide rates or suicide vulnerability for particular professions or social groups.

(1) We include a series of tables downloaded from the Centers for Disease Control WISQARS site (Web-based Injury Statistics Query and Report System) on Suicide Injury Deaths and Rates per 100,000, for the year 2010. Overall suicide deaths reported for 2010 were 38,364, presenting an overall deaths per 100,000 population rate of 12.4 (http://www.cdc.gov/nchs/fastats/suicide.htm, accessed May 20, 2013.) Higher rates of suicide are reported for white males, particularly as they age, and Native American/Alaska Natives of both sexes. Table 1 reports deaths per 100,000 across the lifespan for all races, ages and both sexes. Tables 2 and 3 report rates for all ages and races for males and females separately. Tables 4 and 5 report rates for two groups with noticeably higher rates-white males and male and female American Indians/Alaska Natives.

Table 1. 2010, United States Suicide Injury Deaths and Rates per 100,000 All Races, Both Sexes, All Ages

ICD-10 Codes: X60-X84, Y87.0,*U03

Age Group	Race	Sex	Number of Deaths	Population	Crude Rate
00-04	White	Males	0*	7,799,132	0.00*
		Females	0*	7,444,551	0.00*
			0*	**15,243,683**	**0.00***
	Black	Males	0*	1,729,444	0.00*
		Females	0*	1,673,850	0.00*
			0*	**3,403,294**	**0.00***
	Am Indian/AK Native	Males	0*	199,731	0.00*
		Females	0*	193,995	0.00*
			0*	**393,726**	**0.00***
	Asian/Pac Islander	Males	0*	591,120	0.00*
		Females	0*	569,539	0.00*
			0*	**1,160,659**	**0.00***
05-09	White	Males	7*	7,938,462	0.09*
		Females	0*	7,570,407	0.00*
			7*	**15,508,869**	**0.05***
	Black	Males	0*	1,676,649	0.00*
		Females	0*	1,620,764	0.00*
			0*	**3,297,413**	**0.00***
	Am Indian/AK Native	Males	0*	191,263	0.00*
		Females	0*	186,641	0.00*

Age Group	Race	Sex	Number of Deaths	Population	Crude Rate
			0*	**377,904**	**0.00***
	Asian/Pac Islander	Males	0*	583,264	0.00*
		Females	0*	581,207	0.00*
			0*	**1,164,471**	**0.00***
10-14	White	Males	144	8,104,922	1.78
		Females	58	7,699,666	0.75
			202	**15,804,588**	**1.28**
	Black	Males	23	1,731,444	1.33
		Females	21	1,670,740	1.26
			44	**3,402,184**	**1.29**
	Am Indian/AK Native	Males	8*	189,252	4.23*
		Females	6*	183,644	3.27*
			14*	**372,896**	**3.75***
	Asian/Pac Islander	Males	5*	554,244	0.90*
		Females	2*	543,282	0.37*
			7*	**1,097,526**	**0.64***
15-19	White	Males	1,105	8,582,975	12.87
		Females	277	8,115,655	3.41
			1,382	**16,698,630**	**8.28**
	Black	Males	131	1,917,774	6.83
		Females	21	1,857,418	1.13
			152	**3,775,192**	**4.03**
	Am Indian/AK Native	Males	49	202,036	24.25
		Females	21	191,284	10.98

Age Group	Race	Sex	Number of Deaths	Population	Crude Rate
			70	**393,320**	**17.80**
	Asian/Pac Islander	Males	38	600,881	6.32
		Females	17*	572,320	2.97*
			55	**1,173,201**	**4.69**
20-24	White	Males	2,011	8,485,714	23.70
		Females	399	8,037,373	4.96
			2,410	**16,523,087**	**14.59**
	Black	Males	266	1,673,391	15.90
		Females	51	1,711,018	2.98
			317	**3,384,409**	**9.37**
	Am Indian/AK Native	Males	71	189,810	37.41
		Females	17*	173,082	9.82*
			88	**362,892**	**24.25**
	Asian/Pac Islander	Males	100	665,261	15.03
		Females	26	650,350	4.00
			126	**1,315,611**	**9.58**
25-29	White	Males	2,089	8,317,627	25.12
		Females	462	7,982,776	5.79
			2,551	**16,300,403**	**15.65**
	Black	Males	243	1,455,016	16.70
		Females	43	1,571,980	2.74
			286	**3,026,996**	**9.45**
	Am Indian/AK Native	Males	39	176,238	22.13
		Females	12*	164,338	7.30*

Age Group	Race	Sex	Number of Deaths	Population	Crude Rate
			51	**340,576**	**14.97**
	Asian/Pac Islander	Males	88	686,710	12.81
		Females	24	747,164	3.21
			112	**1,433,874**	**7.81**
30-34	White	Males	1,887	7,821,208	24.13
		Females	479	7,569,160	6.33
			2,366	**15,390,368**	**15.37**
	Black	Males	190	1,346,001	14.12
		Females	28	1,494,106	1.87
			218	**2,840,107**	**7.68**
	Am Indian/AK Native	Males	41	159,913	25.64
		Females	8*	151,185	5.29*
			49	**311,098**	**15.75**
	Asian/Pac Islander	Males	66	669,378	9.86
		Females	36	751,148	4.79
			102	**1,420,526**	**7.18**
35-39	White	Males	2,089	7,898,133	26.45
		Females	624	7,751,513	8.05
			2,713	**15,649,646**	**17.34**
	Black	Males	191	1,307,906	14.60
		Females	49	1,476,350	3.32
			240	**2,784,256**	**8.62**
	Am Indian/AK Native	Males	28	148,548	18.85
		Females	9*	143,864	6.26*

Age Group	Race	Sex	Number of Deaths	Population	Crude Rate
			37	**292,412**	**12.65**
	Asian/Pac Islander	Males	64	687,435	9.31
		Females	30	765,893	3.92
			94	**1,453,328**	**6.47**
40-44	White	Males	2,411	8,310,099	29.01
		Females	731	8,189,271	8.93
			3,142	**16,499,370**	**19.04**
	Black	Males	164	1,331,148	12.32
		Females	48	1,485,235	3.23
			212	**2,816,383**	**7.53**
	Am Indian/AK Native	Males	23	141,570	16.25
		Females	15*	138,443	10.83*
			38	**280,013**	**13.57**
	Asian/Pac Islander	Males	63	611,160	10.31
		Females	32	684,038	4.68
			95	**1,295,198**	**7.33**
45-49	White	Males	3,133	9,106,178	34.41
		Females	922	9,152,204	10.07
			4,055	**18,258,382**	**22.21**
	Black	Males	142	1,394,147	10.19
		Females	36	1,565,712	2.30
			178	**2,959,859**	**6.01**
	Am Indian/AK Native	Males	32	140,773	22.73
		Females	13*	143,116	9.08*

Age Group	Race	Sex	Number of Deaths	Population	Crude Rate
			45	**283,889**	**15.85**
	Asian/Pac Islander	Males	68	567,987	11.97
		Females	26	638,474	4.07
			94	**1,206,461**	**7.79**
50-54	White	Males	3,153	8,989,622	35.07
		Females	990	9,158,834	10.81
			4,143	**18,148,456**	**22.83**
	Black	Males	122	1,313,373	9.29
		Females	37	1,490,699	2.48
			159	**2,804,072**	**5.67**
	Am Indian/AK Native	Males	22	123,510	17.81
		Females	10*	130,348	7.67*
			32	**253,858**	**12.61**
	Asian/Pac Islander	Males	61	506,769	12.04
		Females	32	584,970	5.47
			93	**1,091,739**	**8.52**
55-59	White	Males	2,691	7,958,850	33.81
		Females	850	8,294,565	10.25
			3,541	**16,253,415**	**21.79**
	Black	Males	98	1,047,860	9.35
		Females	28	1,237,310	2.26
			126	**2,285,170**	**5.51**
	Am Indian/AK Native	Males	16*	95,271	16.79*
		Females	4*	102,035	3.92*

Age Group	Race	Sex	Number of Deaths	Population	Crude Rate
			20*	**197,306**	**10.14***
	Asian/Pac Islander	Males	54	421,667	12.81
		Females	19*	507,247	3.75*
			73	**928,914**	**7.86**
60-64	White	Males	1,881	6,881,409	27.33
		Females	579	7,291,837	7.94
			2,460	**14,173,246**	**17.36**
	Black	Males	70	784,603	8.92
		Females	10*	959,495	1.04*
			80	**1,744,098**	**4.59**
	Am Indian/AK Native	Males	7*	71,887	9.74*
		Females	1*	76,547	1.31*
			8*	**148,434**	**5.39***
	Asian/Pac Islander	Males	52	339,601	15.31
		Females	24	412,545	5.82
			76	**752,146**	**10.10**
65-69	White	Males	1,272	5,050,726	25.18
		Females	339	5,570,930	6.09
			1,611	**10,621,656**	**15.17**
	Black	Males	40	520,533	7.68
		Females	0*	679,236	0.00*
			40	**1,199,769**	**3.33**
	Am Indian/AK Native	Males	2*	46,372	4.31*
		Females	4*	51,537	7.76*

Age Group	Race	Sex	Number of Deaths	Population	Crude Rate
			6*	**97,909**	**6.13***
	Asian/Pac Islander	Males	31	234,916	13.20
		Females	10*	281,013	3.56*
			41	**515,929**	**7.95**
70-74	White	Males	1,021	3,674,986	27.78
		Females	191	4,275,561	4.47
			1,212	**7,950,547**	**15.24**
	Black	Males	27	365,247	7.39
		Females	4*	512,912	0.78*
			31	**878,159**	**3.53**
	Am Indian/AK Native	Males	3*	30,087	9.97*
		Females	2*	35,932	5.57*
			5*	**66,019**	**7.57***
	Asian/Pac Islander	Males	22	173,652	12.67
		Females	6*	209,789	2.86*
			28	**383,441**	**7.30**
75-79	White	Males	912	2,804,683	32.52
		Females	153	3,564,420	4.29
			1,065	**6,369,103**	**16.72**
	Black	Males	25	244,800	10.21
		Females	4*	389,693	1.03*
			29	**634,493**	**4.57**
	Am Indian/AK Native	Males	2*	18,355	10.90*
		Females	0*	24,735	0.00*

Age Group	Race	Sex	Number of Deaths	Population	Crude Rate
			2*	**43,090**	**4.64***
	Asian/Pac Islander	Males	13*	114,550	11.35*
		Females	10*	156,559	6.39*
			23	**271,109**	**8.48**
80-84	White	Males	788	2,061,411	38.23
		Females	102	3,036,681	3.36
			890	**5,098,092**	**17.46**
	Black	Males	14*	150,974	9.27*
		Females	6*	285,739	2.10*
			20*	**436,713**	**4.58***
	Am Indian/AK Native	Males	1*	10,802	9.26*
		Females	2*	16,157	12.38*
			3*	**26,959**	**11.13***
	Asian/Pac Islander	Males	15*	71,187	21.07*
		Females	5*	110,376	4.53*
			20*	**181,563**	**11.02***
85+	White	Males	822	1,617,352	50.82
		Females	111	3,314,447	3.35
			933	**4,931,799**	**18.92**
	Black	Males	9*	110,382	8.15*
		Females	3*	282,385	1.06*
			12*	**392,767**	**3.06***
	Am Indian/AK Native	Males	0*	7,236	0.00*
		Females	1*	14,001	7.14*

Age Group	Race	Sex	Number of Deaths	Population	Crude Rate
			1*	**21,237**	**4.71***
	Asian/Pac Islander	Males	16*	54,709	29.25*
		Females	6*	92,921	6.46*
			22	**147,630**	**14.90**
Unknown	White	Males	6		
		Females	1		
			7		
Total			**38,364**	**308,745,538**	**12.43**

Table 2. 2010, United States Suicide Injury Deaths and Rates per 100,000 All Races, Males, All Ages

Age Group	Number of Deaths	Population	Crude Rate
00-04	0*	10,319,427	0.00*
05-09	7*	10,389,638	0.07*
10-14	180	10,579,862	1.70
15-19	1,323	11,303,666	11.70
20-24	2,448	11,014,176	22.23
25-29	2,459	10,635,591	23.12
30-34	2,184	9,996,500	21.85
35-39	2,372	10,042,022	23.62
40-44	2,661	10,393,977	25.60
45-49	3,375	11,209,085	30.11
50-54	3,358	10,933,274	30.71
55-59	2,859	9,523,648	30.02
60-64	2,010	8,077,500	24.88
65-69	1,345	5,852,547	22.98
70-74	1,073	4,243,972	25.28
75-79	952	3,182,388	29.91
80-84	818	2,294,374	35.65
85+	847	1,789,679	47.33
Unknown	6		
Total	**30,277**	**151,781,326**	**19.95**

Table 3. 2010, United States Suicide Injury Deaths and Rates per 100,000 All Races, Females, All Ages

Age Group	Number of Deaths	Population	Crude Rate
00-04	0*	9,881,935	0.00*
05-09	0*	9,959,019	0.00*
10-14	87	10,097,332	0.86
15-19	336	10,736,677	3.13
20-24	493	10,571,823	4.66
25-29	541	10,466,258	5.17
30-34	551	9,965,599	5.53
35-39	712	10,137,620	7.02
40-44	826	10,496,987	7.87
45-49	997	11,499,506	8.67
50-54	1,069	11,364,851	9.41
55-59	901	10,141,157	8.88
60-64	614	8,740,424	7.02
65-69	353	6,582,716	5.36
70-74	203	5,034,194	4.03
75-79	167	4,135,407	4.04
80-84	115	3,448,953	3.33
85+	121	3,703,754	3.27
Unknown	1		
Total	**8,087**	**156,964,212**	**5.15**

Table 4. 2010, United States Suicide Injury Deaths and Rates per 100,000 White, Males, All Ages

Age Group	Sex	Number of Deaths	Population	Crude Rate
00-04	Males	0*	7,799,132	0.00*
		0*	**7,799,132**	**0.00***
05-09	Males	7*	7,938,462	0.09*
		7*	**7,938,462**	**0.09***
10-14	Males	144	8,104,922	1.78
		144	**8,104,922**	**1.78**
15-19	Males	1,105	8,582,975	12.87
		1,105	**8,582,975**	**12.87**
20-24	Males	2,011	8,485,714	23.70
		2,011	**8,485,714**	**23.70**
25-29	Males	2,089	8,317,627	25.12
		2,089	**8,317,627**	**25.12**
30-34	Males	1,887	7,821,208	24.13
		1,887	**7,821,208**	**24.13**
35-39	Males	2,089	7,898,133	26.45
		2,089	**7,898,133**	**26.45**
40-44	Males	2,411	8,310,099	29.01
		2,411	**8,310,099**	**29.01**
45-49	Males	3,133	9,106,178	34.41
		3,133	**9,106,178**	**34.41**
50-54	Males	3,153	8,989,622	35.07
		3,153	**8,989,622**	**35.07**
55-59	Males	2,691	7,958,850	33.81

Age Group	Sex	Number of Deaths	Population	Crude Rate
		2,691	**7,958,850**	**33.81**
60-64	Males	1,881	6,881,409	27.33
		1,881	**6,881,409**	**27.33**
65-69	Males	1,272	5,050,726	25.18
		1,272	**5,050,726**	**25.18**
70-74	Males	1,021	3,674,986	27.78
		1,021	**3,674,986**	**27.78**
75-79	Males	912	2,804,683	32.52
		912	**2,804,683**	**32.52**
80-84	Males	788	2,061,411	38.23
		788	**2,061,411**	**38.23**
85+	Males	822	1,617,352	50.82
		822	**1,617,352**	**50.82**
Unknown	Males	6		
		6		
Total		**27,422**	**121,403,489**	**22.59**

Table 5. 2010, United States Suicide Injury Deaths and Rates per 100,000 Am Indian/Alaska Native, Both Sexes, All Ages

Age Group	Sex	Number of Deaths	Population	Crude Rate
00-04	Males	0*	199,731	0.00*
	Females	0*	193,995	0.00*
		0*	**393,726**	**0.00***
05-09	Males	0*	191,263	0.00*
	Females	0*	186,641	0.00*
		0*	**377,904**	**0.00***
10-14	Males	8*	189,252	4.23*
	Females	6*	183,644	3.27*
		14*	**372,896**	**3.75***
15-19	Males	49	202,036	24.25
	Females	21	191,284	10.98
		70	**393,320**	**17.80**
20-24	Males	71	189,810	37.41
	Females	17*	173,082	9.82*
		88	**362,892**	**24.25**
25-29	Males	39	176,238	22.13
	Females	12*	164,338	7.30*
		51	**340,576**	**14.97**
30-34	Males	41	159,913	25.64
	Females	8*	151,185	5.29*
		49	**311,098**	**15.75**
35-39	Males	28	148,548	18.85
	Females	9*	143,864	6.26*

Age Group	Sex	Number of Deaths	Population	Crude Rate
		37	**292,412**	**12.65**
40-44	Males	23	141,570	16.25
	Females	15*	138,443	10.83*
		38	**280,013**	**13.57**
45-49	Males	32	140,773	22.73
	Females	13*	143,116	9.08*
		45	**283,889**	**15.85**
50-54	Males	22	123,510	17.81
	Females	10*	130,348	7.67*
		32	**253,858**	**12.61**
55-59	Males	16*	95,271	16.79*
	Females	4*	102,035	3.92*
		20*	**197,306**	**10.14***
60-64	Males	7*	71,887	9.74*
	Females	1*	76,547	1.31*
		8*	**148,434**	**5.39***
65-69	Males	2*	46,372	4.31*
	Females	4*	51,537	7.76*
		6*	**97,909**	**6.13***
70-74	Males	3*	30,087	9.97*
	Females	2*	35,932	5.57*
		5*	**66,019**	**7.57***
75-79	Males	2*	18,355	10.90*
	Females	0*	24,735	0.00*
		2*	**43,090**	**4.64***

Age Group	Sex	Number of Deaths	Population	Crude Rate
80-84	Males	1*	10,802	9.26*
	Females	2*	16,157	12.38*
		3*	**26,959**	**11.13***
85+	Males	0*	7,236	0.00*
	Females	1*	14,001	7.14*
		1*	**21,237**	**4.71***
Total		**469**	**4,263,538**	**11.00**

(2) Groups at Risk and Supporting Evidence

Information about groups at greater risk for suicide is relevant to all healthcare providers. The previous tables deal with very general demographic features. While one could say that those providers who work more closely with vulnerable populations have greater need for training, most healthcare providers are exposed to people who share suicide risk via membership in an age group or cultural group, or via situational events and health events that increase risk. Furthermore, while there is plentiful research on groups that are statistically more vulnerable to suicide, one cannot assume at the individual level that this group level risk is shared. There are a variety of factors which influence risk and populations may exhibit fluctuating prevalence when taking into consideration suicidal behaviors or death by suicide. Themes that have gained credibility in the suicide prevention field may help us understand the relevance of shared group membership or shared experiences that may increase suicide risk.

- Importantly, there are those with exposure to suicide. This is to one's own suicidal behavior, or to that of others. Behaviors that normalize suicide as an option, and that desensitize individuals to pain or fear of death, are known to increase risk of suicide (Joiner et al., 2005; Van Orden, et al., 2005).
- Mental health factors are important to consider. Mood disorders are a known risk factor, not only because of distress involved, but because mood dysregulation is implicated in poor coping, impulsivity, hopelessness and lowered fear of pain or death. Substance abuse may amplify risk directly via impulsivity and mood dysregulation, or indirectly via loss of relationships, employment, status and meaningful activity.

- Dealing with debilitating physical illness, either chronic or acute, or significant injury or loss of function, may increase risk of suicidal thoughts or behaviors as a response to feelings of burden, uselessness, hopelessness or fear.
- Lack of belonging, loss or marginalization is a feature of several risk groups, such as those who recently lost employment, lost a sense of cultural or family belonging (via partial acculturation/assimilation into a 'majority' culture) or those who risk active rejection or disparagement.
- Those with access to lethal means are at increased risk of suicide, a risk that increases among white males as they age.

The US Department of Health & Human Services (2012) identified the following populations with demographic, lifestyle, behavioral, professional, medical or situational features to be at higher risk than the general population:

- Individuals bereaved by suicide or exposed to suicide in known or close others
- Individuals who engage in non-suicidal self-injury (NSSI)
- Individuals who have attempted suicide
- Individuals with mental and/or substance use disorders
- Individuals with medical conditions and long-lasting or permanent injuries, disfigurement or loss of function
- American Indians/Alaska Natives
- Individuals in justice and child welfare settings
- Lesbian, gay, bisexual, and transgender (LGBT) populations
- Men in midlife and older
- Members of the Armed Forces and veterans have recently shown an increase of risk, although it still remains somewhat lower than the general population

These individuals could and are seen in a variety of medical settings providing additional support that training any and all health care professionals could have a positive impact on decreasing suicide rates. It is

useful to be aware of added risk among such groups in order to focus an assessment and refine follow up questions, rather than presume any individuals without other risk factors would be at risk of suicide.

In the next section, we report results of the survey sent to credentialed and licensed health professionals in Washington State.

Washington State Health Professions Survey

A link to the anonymous survey was sent by DOH Project Manager Alyson Kohl to be distributed via the professions' listserves. A total of 2018 responses were received; the number of responses per profession ranged from 0 to 264. Though this is small fraction of possible respondents, and we acknowledge this limitation as well as the possibility that those with strong opinions on one side of the issue or the other might be more likely to respond, the survey still provided valuable information about provider views.

Professions represented are listed in Table 6. Note that individuals were asked to select all professions to which they belonged. Ninety percent of the participants (n = 1818) endorsed only one profession. The most professions endorsed was 6 (n = 1). Among all participants, 90% (n = 1813) were currently licensed in Washington State, 7% (n = 145) said they were not currently licensed, and 3% (n=60) did not respond to this question.

Table 6. Professions Represented

Profession	Number of Respondents
Advanced Registered Nurse Practitioner	32
Agency Affiliated Counselor	36
Athletic Trainer	61
Audiologist	3
Cardiovascular Invasive Specialist	1
Certified Advisor	1
Certified Counselor	47
Chemical Dependency Professional/Trainee	73
Chiropractor	7
Chiropractic X-Ray Technician	0
Dental Anesthesia Assistant	0
Dental Assistant	3
Dental Auxiliary (Expanded Function)	1
Dental Hygienist	55
Dentist	24
Denturist	2
Dietitian/Nutritionist	27
Dispensing Optician/Apprentice	1
East Asian Medicine Practitioner	26
Emergency Medical Services Personnel (Advanced EMT, EMT, EMR, Paramedic)	264
Genetic Counselor	8
Health Care Assistant	13
Hearing Instrument Fitter/Dispenser	2
Home Care Aid	2
Hypnotherapist	9
Licensed Practical Nurse	30
Marriage and Family Therapist/Associate	41
Massage Practitioner	82
Medical Assistant	28
Mental Health Counselor/Associate	43
Midwife/Certified Nurse Midwife	7
Naturopathic Physician	37
Nursing Assistants (CAN, NA, RNA)	28
Nursing Home Administrator	24
Nursing Technician, Registered	0
Occupational Therapist	26
Occupational Therapist Assistant	1
Ocularist	0
Optometrist	30
Orthotist/Prosthetist	1
Osteopathic Physician	32

Osteopathic Physician Assistant	0
Pharmacist	209
Pharmacy Assistant	2
Pharmacy Intern	8
Pharmacy Technician	15
Physical Therapist	36
Physical Therapy Assistant	10
Physician	64
Physician Assistant	11
Podiatric Physician	20
Psychologist	82
Radiologic Technologist	10
Radiologist Assistant	0
Recreational Therapist	19
Reflexologist	4
Registered Nurse	259
Respiratory Care Practitioner	7
Sex Offender Treatment Provider	9
Social Worker/Associate	138
Speech-Language Pathologist	9
Speech-Language Pathology Assistant	1
Surgical Technologist	3
X-Ray Technician	1
Other	41

Notes:

- **Individuals could select more than one profession**
- **Some titles were asked separately in the survey but responses were combined after consultation with DOH**

Next, we report the responses to survey items for the group of respondents as a whole. Appendix A contains responses for select items by profession. Individual profession results are not reported for those with fewer than 10 responses.

A large majority of participants (n = 1857, 92%) identified their racial background as White, followed by Asian (n = 87, 4.3%), American Indian (n = 51, 2.5%), African American (n = 21, 1%), and Native Hawaiian/Pacific Islander (n = 19, 0.9%). Note that participants were asked to identify all races that applied. In terms of ethnic background, 48 (2.4%) were Hispanic or Latino, while 1933 (97.6%) were not, and 37 (1.8%) did not respond.

The majority of respondents (n = 1274, 63%) identified their gender as female, with 667 (33%) identifying as male, and 3 individuals (< 1%) identifying as gender queer or gender fluid. Seventy-four individuals (4%) did not respond or said they did not identify by gender.

Age ranges of participants are listed in Table 7. The most frequently endorsed age range was 56-65 years, with the majority of participants between the ages of 36 and 65 years. As displayed in Table 8, length of time having a professional license varied from less than 1 year to more than 30 years. The largest number of responses was from those who had been licensed more than 30 years, but there was a range of experience represented.

Table 7. Age Ranges of Participants

Age	N	(%)
18-25 years	50	(2.5%)
26-35 years	334	(16.6%)
36-45 years	414	(20.5%)
46-55 years	517	(25.6%)
56-65 years	572	(28.3%)
66 years or older	115	(5.7%)
Did not respond	16	(0.8%)
Total	**2018**	**(100%)**

Table 8. Length of Time with Professional License

	N	(%)
Less than 1 year	90	(4.5%)
1-3 years	232	(11.5%)
4-5 years	167	(8.3%)
6-10 years	274	(13.6%)
11-15 years	261	(12.9%)
16-20 years	226	(11.2%)
21-25 years	209	(10.4%)
26-30 years	156	(7.7%)
More than 30 years	305	(15.1%)
Did not respond	98	(4.9%)
Total	**2018**	**(100%)**

Table 9 displays results related to the number of professional education courses participants took in the identification, treatment, and management of suicidal behavior. While nearly 20% of participants did not recall the number of courses or did not respond to the questions, among those who did recall and respond, the most frequent response was 0 courses. For this same group, the median response for each of the three areas was 1, and the mean response for identification was 1.66, for treatment was 1.42, and for management was 1.33.

Table 9. Number of Courses during Professional Education Program

	N	%
Identifying patients/clients at risk for suicide		
0	534	26.5
1	462	22.9
2	249	12.3
3	135	6.7
4	51	2.5
5	23	1.1
6 or more	168	8.3
Do not recall	390	19.3
Did not respond	6	0.3
Treating patients/clients at risk for suicide		
0	702	34.8
1	391	19.4
2	211	10.5
3	123	6.1
4	40	2.0
5	19	0.9
6 or more	146	7.2
Do not recall	376	18.6
Did not respond	10	0.5
Managing patients/clients at risk for suicide		
0	732	36.3
1	399	19.8
2	183	9.1
3	109	5.4
4	40	2.0
5	22	1.1
6 or more	131	6.5
Do not recall	381	18.9
Did not respond	21	1.0

Table 10 below summarizes participants' opinions about suicide prevention training. A scale of 1-5 was used, with response ranging from 1= strongly disagree to 5 = strongly agree. Measures of central tendency below demonstrate that the average participant agreed, but did not strongly agree, that they would benefit from training, would benefit from guidelines about referrals and resources, and that they would like further training in working with suicidal patients. They also agreed that suicide prevention is part of their professional role. Overall, the average participant was neutral about whether they have adequate training to take care of suicidal individuals.

Table 10. Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.77	(1.02)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.81	(1.04)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.81	(1.01)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	2.95	(1.24)	3.00	2
I would like further training to be able to work with patients/clients who are at risk for suicide	3.46	(1.10)	4.00	4
Suicide can be prevented	4.03	(0.81)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.23	(0.88)	4.00	5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.16	(0.93)	4.00	5
Noticing and discussing signs of suicide risk falls within the scope of my profession	3.99	(1.06)	4.00	5
I have opportunities to interact and/or intervene with those who are potentially suicidal	4.06	(0.97)	4.00	4

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

In Table 11 below, participants' responses to questions about intervening with suicidal behavior are detailed. Ratings involved a scale of 1 (not at all) to 3 (somewhat) to 5 (a great deal). Ratings were generally higher than "somewhat" but lower than "extremely" related to preparation to recognize and approach a patient/client who may be at risk for suicide, to motivate the person to seek help, and to refer an individual who is at risk. Participants also reported that they were likely, but not extremely likely, to approach a patient/client showing signs of psychological distress.

Table 11. Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.56	(1.03)	4.00	4
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.43	(1.22)	4.00	4
How likely to approaching patient/client showing signs of psychological distress	3.81	(1.12)	4.00	5
How prepared to motivate patient/client to seek help	3.67	(1.12)	4.00	4
How prepared to refer patient/client who is showing signs of psychological distress	3.72	(1.16)	4.00	5
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.60	(1.15)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

When presented with a hypothetical scenario involving working with a patient/client who appeared depressed (Table 12 below), they felt that it was appropriate to ask the person if they were thinking about suicide. They reported slightly lower, but still affirmative, numbers related to likeliness, comfort, and confidence in asking the individual about suicide.

Table 12. Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	4.11	(1.17)	5.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	3.98	(1.24)	4.00	5
Comfort asking if they are thinking of harming themselves or suicide	3.75	(1.31)	4.00	5
Confidence in ability to check in about how they are feeling and finding help	3.79	(1.18)	4.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

There was a wide range of responses when participants reported how many potentially suicidal patients/clients they had encountered since obtaining their license and in the past year. The most frequent response was 0 for both questions. Responses for the last year ranged from 0 to 100,000, with a median of 12 individuals encountered, and in the last year ranged from 1 to 10,000 with a median of 2 individuals encountered (Table 13).

Table 13. Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	100,000	255.18	(2479)	12	0
In the past year	0	10,000	25.70	(255)	2	0

The vast majority of participants (85%, n = 1717) felt that individuals in their profession should be trained in the assessment, treatment and management of suicidal behavior (Table 14). Responses about whether training should be voluntary or mandatory were less consistent, but 56% (n = 1121) felt that training should be mandatory (Table 15). Table 16 summarizes these responses by profession. Details are not provided for professions that had fewer than 10 respondents; this is in order to protect anonymity of respondents.

Table 14. Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	1717 (85%)	282 (14%)	19 (1%)

Table 15. Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	1121 (56%)	869 (43%)	28 (1%)

Presenting Study Results to Licensing Boards

We presented study results in person to 17 credentialing/licensing boards, 12 in person and 5 in writing (via Kathy Schmitt of the DOH). After presenting the results, we asked for feedback on our presentation and findings. Overall, board members were concerned about the issue of suicide and felt that it was relevant to members of their profession. None were opposed to training, but some expressed concern about the amount of training that is already required, and some felt that the training should not be mandatory. Members generally felt suicide prevention fell within the scope of their profession. One board talked about assessment, treatment and management meaning different things to different professions. Another said that they felt assessing for suicide risk was within the scope of their profession's practice but that treatment and management should be done by mental health professionals. Some discussed the important relationships they had with patients, and the theme of loss was discussed at several meetings in that professionals often worked with patients who had lost something—for example, functioning, or abilities, or relationships. Board members discussed their involvement with death by suicide among patients, and some also discussed losing colleagues to suicide.

Some boards planned to refer the issue of training to their educational workgroups; one discussed the possibility of including training in their annual meetings. There was discussion about the kinds of training that would be involved, and of the ways training would be best tailored to their professions. Some were curious about how long an appropriate training would be. Several boards said they would like recommendations about training, and asked if our literature searches had indicated which trainings were most effective or helpful. Others talked about specific questions that might be asked to screen for suicide risk and there was discussion of screening as an approach to prevention. Another issue raised was that training needed to be tailored to the specific role and needs of a profession. Two groups commented on the lack of resources for referring individuals who might be at risk for suicide. A member of one board expressed frustration that individuals can be involuntarily committed but that they were often released without receiving treatment. Feelings expressed about the study in general included the following: that the issue of suicide prevention is important, that the report raises more questions than answers, and one individual stated that the study was not a good use of financial resources.

Table 16. Opinions about Training—By Profession

Profession	N	Yes, should be trained	No, should not be trained	Mandatory	Voluntary
Advanced Registered Nurse Practitioner	32	84%	13%	69%	31%
Agency Affiliated Counselor	36	83%	17%	44%	56%
Athletic Trainer	61	87%	12%	69%	30%
Audiologist	3				
Cardiovascular Invasive Specialist	1				
Certified Advisor	1				
Certified Counselor	47	77%	23%	51%	49%
Chemical Dependency Professional/Trainee	73	85%	15%	47%	51%
Chiropractor	7				
Chiropractic X-Ray Technician	0				
Dental Anesthesia Assistant	0				
Dental Assistant	3				
Dental Auxiliary (Expanded Function)	1				
Dental Hygienist	55	84%	14%	54%	46%
Dentist	24	88%	12%	67%	33%
Denturist	2				
Dietitian/Nutritionist	26	89%	11%	67%	33%
Dispensing Optician/Apprentice	1				
East Asian Medicine Practitioner/ Acupuncturist	26	81%	19%	58%	38%
Emergency Medical Services Personnel	264	84%	16%	54%	45%
Genetic Counselor	8				
Health Care Assistant	13	77%	23%	62%	38%
Hearing Instrument Fitter/Dispenser	2				
Home Care Aid	2				
Hypnotherapist	9				
Licensed Practical Nurse	30	93%	7%	67%	30%
Marriage and Family Therapist/Associate	41	73%	24%	39%	61%
Massage Practitioner	82	83%	16%	50%	49%
Medical Assistant	28	75%	21%	43%	54%
Mental Health Counselor/Associate	196	80%	19%	45%	55%
Midwife/Certified Nurse Midwife	7				

Naturopathic Physician	37	89%	11%	57%	43%
Nursing Assistant (CNA, NA, RNA)	28	64%	32%	36%	57%
Nursing Home Administrator	24	88%	12%	54%	46%
Occupational Therapist	26	88%	12%	50%	50%
Occupational Therapist Assistant	1				
Ocularist	0				
Optometrist	30	93%	7%	67%	33%
Orthotist/Prosthetist	1				
Osteopathic Physician	32	78%	22%	50%	50%
Osteopathic Physician Assistant	0				
Pharmacist	209	83%	14%	52%	47%
Pharmacy Assistant	2				
Pharmacy Intern	8				
Pharmacy Technician	15	93%	7%	67%	33%
Physical Therapist	36	83%	14%	53%	44%
Physical Therapy Assistant	10	70%	30%	60%	40%
Physician/Medical Doctor	64	89%	9%	47%	50%
Physician Assistant	11	91%	9%	64%	27%
Podiatric Physician	20	90%	10%	55%	40%
Psychologist	82	85%	15%	52%	45%
Radiologic Technologist	10	90%	10%	50%	50%
Radiologist Assistant	0				
Recreational Therapist	19	95%	5%	63%	37%
Reflexologist	4				
Registered Nurse	259	83%	16%	58%	39%
Respiratory Care Practitioner	7				
Sex Offender Treatment Provider	9				
Social Worker/Associate	138	85%	14%	53%	46%
Speech-Language Pathologist	9				
Speech-Language Pathology Assistant	1				
Surgical Technologist	3				
X-Ray Technician	1				

Notes:

- If there were fewer than 10 respondents for a profession (shaded), results are only included in aggregated data.
- Individuals could select more than one profession.
- Percentages do not always add up to 100, non-response percentages not included in table.

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Appendix A:

Individual Profession Responses to Select Survey Questions

Advanced Registered Nurse Practitioner (N = 32)

Number of Courses during Professional Education Program

	N	%
Identifying patients/clients at risk for suicide		
0	9	28.1
1	6	18.8
2	5	15.6
3	1	3.1
4	0	
5	3	9.4
6 or more	0	
Do not recall	7	21.9
Did not respond	1	3.1
Treating patients/clients at risk for suicide		
0	12	37.5
1	6	18.8
2	3	9.4
3	0	
4	0	
5	3	9.4
6 or more	0	
Do not recall	7	21.9
Did not respond	1	3.1
Managing patients/clients at risk for suicide		
0	12	37.5
1	5	15.6
2	4	12.5
3	3	9.4
4	0	
5	2	6.3
6 or more	0	
Do not recall	5	15.6
Did not respond	1	3.1

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	4.10	(0.94)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	4.09	(0.86)	4.00	4,5
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	4.03	(0.90)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	2.53	(0.95)	3.00	3
I would like further training to be able to work with patients/clients who are at risk for suicide	3.71	(1.10)	4.00	4
Suicide can be prevented	4.06	(0.72)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.06	(1.16)	4.00	4
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.23	(1.09)	5.00	5
Noticing and discussing signs of suicide risk falls within the scope of my profession	3.75	(1.19)	4.00	4
I have opportunities to interact and/or intervene with those who are potentially suicidal	3.94	(0.96)	4.00	4

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.38	(0.98)	3.00	3
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	2.97	(1.25)	3.00	4
How likely to approaching patient/client showing signs of psychological distress	3.47	(1.16)	4.00	4
How prepared to motivate patient/client to seek help	3.22	(1.13)	3.00	4
How prepared to refer patient/client who is showing signs of psychological distress	3.28	(1.17)	3.00	4
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.38	(1.16)	3.00	3

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	3.81	(1.23)	4.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	3.84	(1.11)	4.00	5
Comfort asking if they are thinking of harming themselves or suicide	3.59	(1.27)	4.00	5
Confidence in ability to check in about how they are feeling and finding help	3.84	(0.99)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	1000	171	(344)	8.00	0
In the past year	0	200	25	(54)	2.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	27 (84%)	1 (12%)	1 (3%)

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	22 (69%)	10 (31%)	--

Agency Affiliated Counselor (N = 36)

Number of Courses during Professional Education Program

	N	%
Identifying patients/clients at risk for suicide		
0	10	27.8
1	6	16.7
2	3	8.3
3	2	5.6
4	1	2.8
5	1	2.8
6 or more	4	11.1
Do not recall	8	22.2
Did not respond	1	2.8
Treating patients/clients at risk for suicide		
0	15	41.7
1	5	13.9
2	3	8.3
3	0	
4	1	2.8
5	0	
6 or more	2	5.6
Do not recall	9	25.0
Did not respond	1	2.8
Managing patients/clients at risk for suicide		
0	14	38.9
1	7	19.4
2	0	
3	0	
4	0	
5	0	
6 or more	3	8.3
Do not recall	10	27.8
Did not respond	2	5.6

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.72	(0.82)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	4.00	(0.89)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	4.14	(0.73)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	2.39	(1.08)	2.00	3
I would like further training to be able to work with patients/clients who are at risk for suicide	3.44	(1.05)	4.00	4
Suicide can be prevented	4.03	(0.81)	4.00	4
Awareness of suicide risk is relevant to my professional role	3.94	(1.04)	4.00	4
I am in a position to observe signs of depression or hopelessness among my patients/clients	3.80	(1.11)	4.00	4
Noticing and discussing signs of suicide risk falls within the scope of my profession	3.78	(1.29)	4.00	4
I have opportunities to interact and/or intervene with those who are potentially suicidal	3.47	(1.30)	4.00	4

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.14	(1.07)	3.00	3
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	2.69	(1.26)	3.00	3
How likely to approaching patient/client showing signs of psychological distress	3.17	(1.34)	3.00	4
How prepared to motivate patient/client to seek help	3.40	(1.24)	3.00	3
How prepared to refer patient/client who is showing signs of psychological distress	3.23	(1.28)	3.00	3
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.14	(1.40)	3.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	3.64	(1.42)	4.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	3.33	(1.37)	4.00	4
Comfort asking if they are thinking of harming themselves or suicide	2.97	(1.52)	3.00	1,3,5
Confidence in ability to check in about how they are feeling and finding help	3.14	(1.40)	3.00	3,5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	1000	40	(170)	5.00	0
In the past year	0	100	5	(17)	1.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	30 (83%)	6 (17%)	--

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	16 (44%)	20 (56%)	--

Athletic Trainer (N = 61)

Number of Courses during Professional Education Program

	N	%
Identifying patients/clients at risk for suicide		
0	10	16.4
1	14	23.0
2	8	13.1
3	7	11.5
4	3	4.9
5	0	
6 or more	7	11.5
Do not recall	11	18.0
Did not respond	1	1.6
Treating patients/clients at risk for suicide		
0	20	32.8
1	8	13.1
2	6	9.8
3	7	11.5
4	2	3.3
5	0	
6 or more	7	11.5
Do not recall	10	16.4
Did not respond	1	1.6
Managing patients/clients at risk for suicide		
0	21	34.4
1	8	13.1
2	7	11.5
3	5	8.2
4	2	3.3
5	0	
6 or more	6	9.8
Do not recall	10	16.4
Did not respond	2	3.3

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.75	(0.91)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.62	(1.06)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.75	(1.02)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	3.40	(1.21)	4.00	4
I would like further training to be able to work with patients/clients who are at risk for suicide	3.40	(1.03)	4.00	4
Suicide can be prevented	4.05	(0.80)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.47	(0.68)	5.00	5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.42	(0.74)	5.00	5
Noticing and discussing signs of suicide risk falls within the scope of my profession	4.15	(1.00)	4.00	5
I have opportunities to interact and/or intervene with those who are potentially suicidal	4.20	(0.84)	4.00	4,5

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.97	(0.94)	4.00	5
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.81	(1.24)	4.00	5
How likely to approaching patient/client showing signs of psychological distress	4.14	(1.05)	4.00	5
How prepared to motivate patient/client to seek help	4.00	(0.99)	4.00	4,5
How prepared to refer patient/client who is showing signs of psychological distress	4.15	(1.07)	4.50	5
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	4.02	(1.05)	4.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	4.23	(1.18)	5.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	4.13	(1.19)	5.00	5
Comfort asking if they are thinking of harming themselves or suicide	4.07	(1.14)	4.00	5
Confidence in ability to check in about how they are feeling and finding help	4.20	(0.87)	4.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	500	57	(102)	15.00	100
In the past year	0	54	9	(14)	2.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	53 (87%)	7 (11%)	1 (2%)

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	42 (69%)	18 (29%)	1 (2%)

Certified Counselor (N = 47)

Number of Courses during Professional Education Program

	N	%
Identifying patients/clients at risk for suicide		
0	18	38.3
1	4	8.5
2	6	12.8
3	1	2.1
4	3	6.4
5	2	4.3
6 or more	2	4.3
Do not recall	11	23.4
Did not respond	0	
Treating patients/clients at risk for suicide		
0	19	40.4
1	6	12.8
2	7	14.9
3	5	10.6
4	1	2.1
5	1	2.1
6 or more	1	2.1
Do not recall	7	14.9
Did not respond	0	
Managing patients/clients at risk for suicide		
0	20	42.6
1	5	10.6
2	4	8.5
3	4	8.5
4	4	8.5
5	1	2.1
6 or more	0	
Do not recall	8	17.0
Did not respond	1	2.1

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.77	(1.03)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.91	(0.86)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.91	(0.81)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	2.85	(1.32)	3.00	2
I would like further training to be able to work with patients/clients who are at risk for suicide	3.43	(1.06)	4.00	4
Suicide can be prevented	4.09	(0.78)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.19	(0.85)	4.00	4
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.19	(0.92)	4.00	5
Noticing and discussing signs of suicide risk falls within the scope of my profession	3.79	(1.20)	4.00	5
I have opportunities to interact and/or intervene with those who are potentially suicidal	3.96	(1.00)	4.00	4

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.41	(1.13)	4.00	4
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.26	(1.40)	3.00	5
How likely to approaching patient/client showing signs of psychological distress	3.57	(1.30)	4.00	4,5
How prepared to motivate patient/client to seek help	3.50	(1.28)	4.00	4
How prepared to refer patient/client who is showing signs of psychological distress	3.52	(1.28)	4.00	4
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.49	(1.18)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	3.79	(1.32)	4.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	3.74	(1.31)	4.00	5
Comfort asking if they are thinking of harming themselves or suicide	3.35	(1.51)	4.00	5
Confidence in ability to check in about how they are feeling and finding help	3.53	(1.34)	4.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	1200	86	(255)	5.00	0
In the past year	0	100	6	(16)	1.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	36 (77%)	11 (23%)	--

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	24 (51%)	23 (49%)	--

Chemical Dependency Professional/Trainee (N = 73)

Number of Courses during Professional Education Program

	N	%
Identifying patients/clients at risk for suicide		
0	22	30.1
1	20	27.4
2	7	9.6
3	6	8.2
4	0	
5	1	1.4
6 or more	4	5.5
Do not recall	12	16.4
Did not respond	1	1.4
Treating patients/clients at risk for suicide		
0	29	39.7
1	13	17.8
2	5	6.8
3	6	8.2
4	2	2.7
5	0	
6 or more	5	6.8
Do not recall	9	12.3
Did not respond	4	5.5
Managing patients/clients at risk for suicide		
0	31	42.5
1	11	15.1
2	7	9.6
3	4	5.5
4	1	1.4
5	0	
6 or more	5	6.8
Do not recall	12	16.4
Did not respond	2	2.7

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.71	(1.08)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.71	(1.18)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.83	(1.16)	4.00	5
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	2.74	(1.40)	3.00	1
I would like further training to be able to work with patients/clients who are at risk for suicide	3.37	(1.24)	4.00	4
Suicide can be prevented	4.01	(0.68)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.10	(1.12)	4.00	5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.10	(1.02)	4.00	5
Noticing and discussing signs of suicide risk falls within the scope of my profession	3.96	(1.28)	4.00	5
I have opportunities to interact and/or intervene with those who are potentially suicidal	4.10	(1.03)	4.00	5

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.51	(0.99)	4.00	3
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.36	(1.38)	3.00	5
How likely to approaching patient/client showing signs of psychological distress	3.85	(1.15)	4.00	5
How prepared to motivate patient/client to seek help	3.43	(1.24)	4.00	3,4
How prepared to refer patient/client who is showing signs of psychological distress	3.73	(1.18)	4.00	5
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.47	(1.28)	4.00	3

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	4.16	(1.13)	5.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	3.99	(1.26)	5.00	5
Comfort asking if they are thinking of harming themselves or suicide	3.73	(1.32)	4.00	5
Confidence in ability to check in about how they are feeling and finding help	3.67	(1.27)	4.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	5000	223	(752)	15.00	0
In the past year	0	555	21	(77)	1.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	62 (85%)	11 (15%)	--

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	34 (47%)	37 (51%)	2 (3%)

Dental Hygienist (N = 55)

Number of Courses during Professional Education Program

	N	%
Identifying patients/clients at risk for suicide		
0	18	32.7
1	10	18.2
2	7	12.7
3	6	10.9
4	0	
5	0	
6 or more	5	9.1
Do not recall	9	16.4
Did not respond	0	
Treating patients/clients at risk for suicide		
0	26	47.3
1	5	9.1
2	5	9.1
3	6	10.9
4		
5		
6 or more	4	7.3
Do not recall	9	16.4
Did not respond	0	
Managing patients/clients at risk for suicide		
0	22	40.0
1	10	18.2
2	6	10.9
3	4	7.3
4	0	
5	0	
6 or more	4	7.3
Do not recall	9	16.4
Did not respond	0	

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.65	(1.00)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.94	(0.83)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.65	(1.00)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	2.85	(1.16)	3.00	3
I would like further training to be able to work with patients/clients who are at risk for suicide	3.22	(1.12)	3.00	4
Suicide can be prevented	4.05	(0.80)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.18	(0.86)	4.00	5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.07	(1.00)	4.00	5
Noticing and discussing signs of suicide risk falls within the scope of my profession	3.89	(1.03)	4.00	5
I have opportunities to interact and/or intervene with those who are potentially suicidal	4.16	(0.86)	4.00	4

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.50	(0.97)	4.00	4
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.43	(0.99)	3.00	3
How likely to approaching patient/client showing signs of psychological distress	3.83	(0.88)	4.00	4
How prepared to motivate patient/client to seek help	3.73	(1.01)	4.00	4
How prepared to refer patient/client who is showing signs of psychological distress	3.75	(1.09)	4.00	5
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.65	(1.00)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	4.35	(0.95)	5.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	4.25	(1.02)	5.00	5
Comfort asking if they are thinking of harming themselves or suicide	4.00	(1.14)	4.00	5
Confidence in ability to check in about how they are feeling and finding help	3.83	(1.08)	4.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	1000	108	(216)	15.00	0
In the past year	0	1000	28	(28)	1.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	46 (84%)	8 (14%)	1 (2%)

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	30 (54%)	25 (46%)	--

Dentist (N = 24)

Number of Courses during Professional Education Program

	N	%
Identifying patients/clients at risk for suicide		
0	7	29.2
1	7	29.2
2	5	20.8
3	2	8.3
4	0	
5	0	
6 or more	1	4.2
Do not recall	2	8.3
Did not respond	0	
Treating patients/clients at risk for suicide		
0	10	41.7
1	5	20.8
2	2	8.3
3	1	4.2
4	1	4.2
5	1	4.2
6 or more	0	
Do not recall	4	16.7
Did not respond	0	
Managing patients/clients at risk for suicide		
0	8	33.3
1	6	25.0
2	4	16.7
3	2	8.3
4	0	
5	1	4.2
6 or more	0	
Do not recall	3	12.5
Did not respond	0	

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.92	(0.83)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	4.00	(0.83)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	4.13	(0.80)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	3.00	(1.25)	3.00	2,3,4
I would like further training to be able to work with patients/clients who are at risk for suicide	3.52	(1.16)	4.00	4
Suicide can be prevented	4.04	(0.88)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.33	(0.76)	4.00	4,5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.17	(1.01)	4.00	5
Noticing and discussing signs of suicide risk falls within the scope of my profession	4.17	(1.01)	4.00	5
I have opportunities to interact and/or intervene with those who are potentially suicidal	4.09	(1.00)	4.00	5

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.67	(1.05)	4.00	3
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.46	(1.14)	3.00	3
How likely to approaching patient/client showing signs of psychological distress	3.71	(1.23)	4.00	5
How prepared to motivate patient/client to seek help	3.58	(1.10)	3.50	3
How prepared to refer patient/client who is showing signs of psychological distress	3.67	(1.09)	3.50	3
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.58	(1.02)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	4.00	(1.28)	5.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	3.67	(1.34)	4.00	5
Comfort asking if they are thinking of harming themselves or suicide	3.50	(1.28)	4.00	5
Confidence in ability to check in about how they are feeling and finding help	3.92	(1.21)	4.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	300	51	(83)	11.00	0
In the past year	0	150	10	(32)	1.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	21 (88%)	3 (12%)	--

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	16 (67%)	8 (33%)	--

Dietitian/Nutritionist (N = 27)

Number of Courses during Professional Education Program

	N	%
Identifying patients/clients at risk for suicide		
0	8	29.6
1	8	29.6
2	4	14.8
3	3	11.1
4	0	
5	0	
6 or more	0	
Do not recall	4	14.8
Did not respond	0	
Treating patients/clients at risk for suicide		
0	9	33.3
1	8	29.6
2	3	11.1
3	2	7.4
4	0	
5	0	
6 or more	1	3.7
Do not recall	4	14.8
Did not respond	0	
Managing patients/clients at risk for suicide		
0	10	37.0
1	6	22.2
2	5	18.5
3	1	3.7
4	1	3.7
5	0	
6 or more	0	
Do not recall	4	14.8
Did not respond	0	

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.70	(0.67)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.78	(0.64)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.85	(0.54)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	3.15	(1.03)	3.00	4
I would like further training to be able to work with patients/clients who are at risk for suicide	3.41	(0.84)	3.00	4
Suicide can be prevented	4.07	(0.83)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.00	(0.88)	4.00	4
I am in a position to observe signs of depression or hopelessness among my patients/clients	3.78	(1.01)	4.00	4
Noticing and discussing signs of suicide risk falls within the scope of my profession	3.63	(0.88)	4.00	4
I have opportunities to interact and/or intervene with those who are potentially suicidal	3.67	(0.96)	4.00	4

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.46	(0.95)	3.00	3
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.00	(1.67)	3.00	3
How likely to approaching patient/client showing signs of psychological distress	3.46	(1.24)	4.00	4
How prepared to motivate patient/client to seek help	3.33	(1.14)	4.00	4
How prepared to refer patient/client who is showing signs of psychological distress	3.44	(1.25)	4.00	4
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.26	(1.26)	3.00	3

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	3.85	(1.06)	4.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	3.81	(1.11)	4.00	5
Comfort asking if they are thinking of harming themselves or suicide	3.56	(1.25)	4.00	3,5
Confidence in ability to check in about how they are feeling and finding help	3.48	(1.01)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	750	68	(150)	14.0	0
In the past year	0	150	11	(1)	1.0	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	24(89%)	3 (11%)	--

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	18 (67%)	9 (33%)	--

East Asian Medicine Practitioner/Acupuncturist (N = 26)

Number of Courses during Professional Education Program

	N	%
Identifying patients/clients at risk for suicide		
0	8	30.8
1	6	23.1
2	3	11.5
3	2	7.7
4	2	7.7
5	1	3.8
6 or more	0	
Do not recall	4	15.4
Did not respond	0	
Treating patients/clients at risk for suicide		
0	9	34.6
1	3	11.5
2	5	19.2
3	3	11.5
4	2	7.7
5	0	
6 or more	0	
Do not recall	4	15.4
Did not respond	0	
Managing patients/clients at risk for suicide		
0	9	34.6
1	3	11.5
2	5	19.2
3	2	7.7
4	1	3.8
5	0	
6 or more	1	3.8
Do not recall	5	19.2
Did not respond		

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.69	(1.05)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	4.23	(0.65)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	4.42	(0.70)	5.00	5
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	2.38	(1.02)	2.00	2
I would like further training to be able to work with patients/clients who are at risk for suicide	3.42	(1.17)	4.00	4
Suicide can be prevented	4.19	(0.80)	4.00	5
Awareness of suicide risk is relevant to my professional role	4.08	(0.91)	4.00	4
I am in a position to observe signs of depression or hopelessness among my patients/clients	3.77	(1.07)	4.00	4, 5
Noticing and discussing signs of suicide risk falls within the scope of my profession	3.92	(1.09)	4.00	5
I have opportunities to interact and/or intervene with those who are potentially suicidal	3.96	(1.02)	4	4, 5

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.12	(0.99)	3.00	3
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.19	(1.39)	3.00	3
How likely to approaching patient/client showing signs of psychological distress	3.68	(1.31)	4.00	5
How prepared to motivate patient/client to seek help	3.32	(1.03)	3.00	4
How prepared to refer patient/client who is showing signs of psychological distress	3.35	(1.29)	3.50	4
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.46	(1.03)	3.50	3, 4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	3.88	(1.11)	4.00	4, 5
Likeliness of asking if they are thinking of harming themselves or suicide	3.58	(1.17)	4.00	3,4,5
Comfort asking if they are thinking of harming themselves or suicide	3.31	(1.26)	4.00	4
Confidence in ability to check in about how they are feeling and finding help	3.32	(1.22)	3.00	3, 4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	200	21.29	(43.80)	6.50	0
In the past year	0	15	2.20	(3.54)	1.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	21 (81%)	5 (19.2%)	0

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	10 (38%)	15 (58%)	1 (4%)

Emergency Medical Services Personnel – Advanced Emergency Medical Technician, Emergency Medical Technician, Emergency Medical Responder, Paramedic (N = 264)

Number of Courses during Professional Education Program

	N	%
Identifying patients/clients at risk for suicide		
0	70	26.5
1	56	21.2
2	36	13.6
3	14	5.3
4	6	2.3
5	4	1.5
6 or more	24	9.1
Do not recall	54	20.5
Did not respond	0	
Treating patients/clients at risk for suicide		
0	79	29.9
1	60	22.7
2	32	12.1
3	11	4.2
4	3	1.1
5	2	0.8
6 or more	19	7.2
Do not recall	57	21.6
Did not respond	1	0.4
Managing patients/clients at risk for suicide		
0	85	32.2
1	61	23.1
2	31	11.7
3	6	2.3
4	2	0.8
5	5	1.9
6 or more	15	5.7
Do not recall	59	22.3
Did not respond	0	

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.70	(1.03)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.80	(0.99)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.64	(0.96)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	2.90	(1.15)	3.00	3
I would like further training to be able to work with patients/clients who are at risk for suicide	3.41	(1.04)	4.00	4
Suicide can be prevented	3.90	(0.80)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.16	(0.86)	4.00	4
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.02	(0.92)	4.00	4
Noticing and discussing signs of suicide risk falls within the scope of my profession	3.88	(1.03)	4.00	4
I have opportunities to interact and/or intervene with those who are potentially suicidal	3.98	(0.96)	4.00	4

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.48	(0.96)	4.00	3
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.28	(1.12)	3.00	3
How likely to approaching patient/client showing signs of psychological distress	3.77	(1.08)	4.00	4
How prepared to motivate patient/client to seek help	3.63	(1.06)	4.00	4
How prepared to refer patient/client who is showing signs of psychological distress	3.70	(1.13)	4.00	4
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.51	(1.14)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	4.11	(1.21)	5.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	3.98	(1.27)	4.00	5
Comfort asking if they are thinking of harming themselves or suicide	3.77	(1.29)	4.00	5
Confidence in ability to check in about how they are feeling and finding help	3.78	(1.16)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	10,000	286	(1061)	20.0	100
In the past year	0	3000	33	(202)	2.0	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	222 (84%)	41 (16%)	1 (0.4%)

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	143 (54%)	118 (45%)	1 (0.4%)

Health Care Assistant (N = 13)

Number of Courses during Professional Education Program

	n	%
Identifying patients/clients at risk for suicide		
0	2	15.4
1	4	30.8
2	2	15.4
3	2	15.4
4	0	
5	2	15.4
6 or more	0	
Do not recall	1	7.7
Did not respond	0	
Treating patients/clients at risk for suicide		
0	3	23.1
1	3	23.1
2	2	15.4
3	4	30.8
4	0	
5	0	
6 or more	0	
Do not recall	1	7.7
Did not respond	0	
Managing patients/clients at risk for suicide		
0	4	30.8
1	3	23.1
2	1	7.7
3	1	7.7
4	0	
5	1	7.7
6 or more	1	7.7
Do not recall	2	15.4
Did not respond	0	

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.46	(1.19)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.31	(1.11)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.46	(0.88)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	3.46	(0.88)	4.00	4
I would like further training to be able to work with patients/clients who are at risk for suicide	3.31	(1.11)	4.00	4
Suicide can be prevented	4.08	(0.86)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.31	(0.95)	5.00	5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.15	(0.90)	4.00	4
Noticing and discussing signs of suicide risk falls within the scope of my profession	4.00	(1.13)	4.00	5
I have opportunities to interact and/or intervene with those who are potentially suicidal	4.08	(1.00)	4.00	5

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.69	(1.11)	4.00	3,5
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.42	(1.38)	4.00	4
How likely to approaching patient/client showing signs of psychological distress	4.08	(1.04)	4.00	5
How prepared to motivate patient/client to seek help	3.85	(1.14)	4.00	5
How prepared to refer patient/client who is showing signs of psychological distress	4.00	(1.00)	4.00	5
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.77	(1.01)	4.00	3

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	3.77	(1.54)	4.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	3.77	(1.54)	5.00	5
Comfort asking if they are thinking of harming themselves or suicide	3.54	(1.45)	4.00	4,5
Confidence in ability to check in about how they are feeling and finding help	3.62	(1.19)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	2500	381	(794)	17.5	0
In the past year	0	250	24	(68)	3.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	10 (77%)	3 (23%)	--

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	8 (62%)	5 (38%)	--

Licensed Practical Nurse (N = 30)

Number of Courses during Professional Education Program

	n	%
Identifying patients/clients at risk for suicide		
0	9	30.0
1	6	20.0
2	4	13.3
3	2	6.7
4	0	
5	0	
6 or more	3	10.0
Do not recall	6	20.0
Did not respond	0	
Treating patients/clients at risk for suicide		
0	12	40.0
1	7	23.3
2	3	10.0
3	2	6.7
4	0	
5	0	
6 or more	2	6.7
Do not recall	4	13.3
Did not respond	0	
Managing patients/clients at risk for suicide		
0	14	46.7
1	6	20.0
2	3	10.0
3	2	6.7
4	0	
5	0	
6 or more	2	6.7
Do not recall	3	10.0
Did not respond	0	

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.77	(0.97)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.93	(1.11)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.87	(1.04)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	3.10	(1.29)	3.00	4
I would like further training to be able to work with patients/clients who are at risk for suicide	3.60	(1.04)	4.00	4
Suicide can be prevented	3.77	(0.97)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.23	(0.90)	4.00	4,5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.03	(1.00)	4.00	4
Noticing and discussing signs of suicide risk falls within the scope of my profession	3.93	(1.08)	4.00	5
I have opportunities to interact and/or intervene with those who are potentially suicidal	4.00	(1.02)	4.00	4

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.80	(1.03)	4.00	4
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.83	(1.05)	4.00	3,5
How likely to approaching patient/client showing signs of psychological distress	4.00	(0.95)	4.00	5
How prepared to motivate patient/client to seek help	3.87	(0.90)	4.00	4
How prepared to refer patient/client who is showing signs of psychological distress	4.13	(0.94)	4.00	5
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.97	(1.02)	4.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	4.33	(0.96)	5.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	4.33	(0.96)	5.00	5
Comfort asking if they are thinking of harming themselves or suicide	4.07	(1.02)	4.00	5
Confidence in ability to check in about how they are feeling and finding help	4.03	(0.89)	4.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	3380	231	(676)	35.00	0
In the past year	0	260	22	(54)	3.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	28 (93%)	3 (7%)	--

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	20 (67%)	9 (30%)	1 (3%)

Marriage and Family Therapist/Associate (N = 41)

Number of Courses during Professional Education Program

	n	%
Identifying patients/clients at risk for suicide		
0	16	39.0
1	7	17.1
2	8	19.5
3	3	7.3
4	1	2.4
5	0	
6 or more	2	4.9
Do not recall	3	7.3
Did not respond	1	2.4
Treating patients/clients at risk for suicide		
0	23	56.1
1	5	12.2
2	4	9.8
3	1	2.4
4	0	
5	0	
6 or more	4	9.8
Do not recall	3	7.3
Did not respond	1	2.4
Managing patients/clients at risk for suicide		
0	20	48.8
1	8	19.5
2	1	2.4
3	2	4.9
4	1	2.4
5	0	
6 or more	5	12.2
Do not recall	3	7.3
Did not respond	1	2.4

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.58	(1.04)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.75	(0.98)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.56	(1.03)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	2.73	(1.26)	3.00	3
I would like further training to be able to work with patients/clients who are at risk for suicide	3.15	(0.96)	3.00	3
Suicide can be prevented	4.07	(0.90)	4.00	4
Awareness of suicide risk is relevant to my professional role	3.98	(1.02)	4.00	4
I am in a position to observe signs of depression or hopelessness among my patients/clients	3.78	(1.08)	4.00	4
Noticing and discussing signs of suicide risk falls within the scope of my profession	3.68	(1.29)	4.00	4
I have opportunities to interact and/or intervene with those who are potentially suicidal	3.80	(1.23)	4.00	4

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.24	(1.20)	4.00	4
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.10	(1.38)	3.00	4
How likely to approaching patient/client showing signs of psychological distress	3.40	(1.34)	4.00	4
How prepared to motivate patient/client to seek help	3.34	(1.33)	4.00	4
How prepared to refer patient/client who is showing signs of psychological distress	3.29	(1.31)	4.00	4
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.28	(1.36)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	3.44	(1.55)	4.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	3.35	(1.61)	4.00	5
Comfort asking if they are thinking of harming themselves or suicide	3.32	(1.56)	4.00	5
Confidence in ability to check in about how they are feeling and finding help	3.49	(1.48)	4.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	500	50	(121)	5.0	0
In the past year	0	40	4	(9)	1.0	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	30 (73%)	10 (24%)	1 (2%)

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	16 (39%)	25 (61%)	--

Massage Practitioner (N = 82)

Number of Courses during Professional Education Program

	n	%
Identifying patients/clients at risk for suicide		
0	25	30.5
1	23	28.0
2	6	7.3
3	5	6.1
4	3	3.7
5	0	
6 or more	8	9.8
Do not recall	12	14.6
Did not respond	0	
Treating patients/clients at risk for suicide		
0	36	43.9
1	13	15.9
2	7	8.5
3	5	6.1
4	2	2.4
5	0	
6 or more	9	11.0
Do not recall	10	12.2
Did not respond	0	
Managing patients/clients at risk for suicide		
0	34	41.5
1	15	18.3
2	7	8.5
3	5	6.1
4	1	1.2
5	0	
6 or more	8	9.8
Do not recall	11	13.4
Did not respond	1	1.2

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.73	(1.00)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.80	(1.12)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.83	(0.89)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	2.89	(1.35)	3.00	2
I would like further training to be able to work with patients/clients who are at risk for suicide	3.45	(1.09)	4.00	4
Suicide can be prevented	4.14	(0.79)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.20	(0.91)	4.00	5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.20	(0.96)	4.00	5
Noticing and discussing signs of suicide risk falls within the scope of my profession	3.91	(1.21)	4.00	5
I have opportunities to interact and/or intervene with those who are potentially suicidal	4.04	(1.03)	4.00	5

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.51	(1.18)	4.00	4
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.41	(1.33)	3.50	5
How likely to approaching patient/client showing signs of psychological distress	3.72	(1.20)	4.00	5
How prepared to motivate patient/client to seek help	3.63	(1.30)	4.00	5
How prepared to refer patient/client who is showing signs of psychological distress	3.69	(1.29)	4.00	5
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.55	(1.24)	4.00	3,5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	4.01	(1.13)	4.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	3.74	(1.31)	4.00	5
Comfort asking if they are thinking of harming themselves or suicide	3.52	(1.30)	4.00	5
Confidence in ability to check in about how they are feeling and finding help	3.62	(1.27)	4.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	2000	77	(256)	5.00	0
In the past year	0	200	8	(24)	1.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	68 (83%)	13 (16%)	1 (1%)

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	41 (50%)	40 (49%)	1 (1%)

Medical Assistant (N = 28)

Number of Courses during Professional Education Program

	n	%
Identifying patients/clients at risk for suicide		
0	6	21.4
1	7	25.0
2	4	14.3
3	3	10.7
4	0	
5	0	
6 or more	3	10.7
Do not recall	4	14.3
Did not respond	1	3.6
Treating patients/clients at risk for suicide		
0	9	32.1
1	5	17.9
2	3	10.7
3	5	17.9
4	1	3.6
5	0	
6 or more	1	3.6
Do not recall	4	14.3
Did not respond	0	
Managing patients/clients at risk for suicide		
0	12	42.9
1	2	7.1
2	1	3.6
3	4	14.3
4	0	
5	1	3.6
6 or more	2	7.1
Do not recall	4	14.3
Did not respond	2	7.1

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.64	(1.06)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.79	(1.03)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.96	(0.88)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	2.96	(1.26)	3.00	2
I would like further training to be able to work with patients/clients who are at risk for suicide	3.37	(1.12)	4.00	4
Suicide can be prevented	4.14	(0.76)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.25	(0.75)	4.00	4
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.11	(1.03)	4.00	5
Noticing and discussing signs of suicide risk falls within the scope of my profession	4.04	(1.02)	4.00	5
I have opportunities to interact and/or intervene with those who are potentially suicidal	3.96	(1.13)	4.00	4

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.43	(1.14)	3.00	3
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.29	(1.36)	3.00	5
How likely to approaching patient/client showing signs of psychological distress	3.79	(1.17)	4.00	5
How prepared to motivate patient/client to seek help	3.68	(1.16)	4.00	3,5
How prepared to refer patient/client who is showing signs of psychological distress	3.79	(1.10)	4.00	5
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.57	(1.20)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	3.79	(1.32)	4.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	3.54	(1.29)	4.00	5
Comfort asking if they are thinking of harming themselves or suicide	3.57	(1.32)	4.00	4
Confidence in ability to check in about how they are feeling and finding help	3.64	(1.28)	4.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	1760	114	(369)	5.00	0
In the past year	0	1730	70	(338)	2.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	21 (75%)	6 (21%)	1 (4%)

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	12 (43%)	15 (54%)	1 (4%)

Mental Health Counselor/Associate (N = 196)

Number of Courses during Professional Education Program

	n	%
Identifying patients/clients at risk for suicide		
0	64	32.7
1	47	24.0
2	20	10.2
3	12	6.1
4	4	2.0
5	1	0.5
6 or more	12	6.1
Do not recall	35	17.9
Did not respond	1	0.5
Treating patients/clients at risk for suicide		
0	79	40.3
1	32	16.3
2	23	11.7
3	10	5.1
4	3	1.5
5	1	0.5
6 or more	14	7.1
Do not recall	32	16.3
Did not respond	2	1.0
Managing patients/clients at risk for suicide		
0	85	43.4
1	37	18.9
2	12	6.1
3	13	6.6
4	5	2.6
5	1	0.5
6 or more	10	5.1
Do not recall	31	15.8
Did not respond	2	1.0

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.71	(1.05)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.82	(0.98)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.85	(0.95)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	2.82	(1.30)	3.00	4
I would like further training to be able to work with patients/clients who are at risk for suicide	3.37	(1.11)	3.00	4
Suicide can be prevented	4.15	(0.73)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.13	(0.99)	4.00	5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.13	(0.91)	4.00	4
Noticing and discussing signs of suicide risk falls within the scope of my profession	3.86	(1.11)	4.00	4
I have opportunities to interact and/or intervene with those who are potentially suicidal	3.97	(0.97)	4.00	4

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.41	(1.08)	4.00	4
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.30	(1.27)	3.00	3
How likely to approaching patient/client showing signs of psychological distress	3.71	(1.16)	4.00	5
How prepared to motivate patient/client to seek help	3.63	(1.18)	4.00	5
How prepared to refer patient/client who is showing signs of psychological distress	3.66	(1.19)	4.00	5
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.47	(1.21)	4.00	3

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	3.89	(1.28)	4.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	3.71	(1.35)	4.00	5
Comfort asking if they are thinking of harming themselves or suicide	3.58	(1.36)	4.00	5
Confidence in ability to check in about how they are feeling and finding help	3.63	(1.25)	4.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	10,000	248	(1232)	6.0	0
In the past year	0	1111	23	(106)	23.2	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	156 (80%)	38 (19%)	2 (1%)

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	88 (45%)	108 (55%)	--

Naturopathic Physician (N = 37)

Number of Courses during Professional Education Program

	n	%
Identifying patients/clients at risk for suicide		
0	10	27.0
1	14	37.8
2	6	16.2
3	2	5.4
4	0	
5	1	2.7
6 or more	2	5.4
Do not recall	2	5.4
Did not respond	0	
Treating patients/clients at risk for suicide		
0	11	29.7
1	14	37.8
2	5	13.5
3	1	2.7
4	0	
5	1	2.7
6 or more	3	8.1
Do not recall	2	5.4
Did not respond	0	
Managing patients/clients at risk for suicide		
0	14	37.8
1	10	27.0
2	5	13.5
3	0	
4	1	2.7
5	0	
6 or more	3	8.1
Do not recall	3	8.1
Did not respond	1	2.7

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.73	(1.10)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	4.05	(1.10)	4.00	4,5
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.86	(1.11)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	2.97	(1.17)	3.00	4
I would like further training to be able to work with patients/clients who are at risk for suicide	3.51	(1.22)	4.00	4
Suicide can be prevented	4.05	(0.70)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.27	(0.93)	4.00	5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.14	(0.95)	4.00	4,5
Noticing and discussing signs of suicide risk falls within the scope of my profession	4.08	(0.98)	4.00	5
I have opportunities to interact and/or intervene with those who are potentially suicidal	4.11	(0.99)	4.00	4,5

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.57	(1.17)	4.00	3
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.35	(1.27)	3.00	3
How likely to approaching patient/client showing signs of psychological distress	3.78	(1.23)	4.00	5
How prepared to motivate patient/client to seek help	3.65	(1.09)	4.00	3,4
How prepared to refer patient/client who is showing signs of psychological distress	3.59	(1.19)	4.00	4
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.49	(1.15)	4.00	3,4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	3.97	(1.27)	4.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	3.83	(1.32)	4.00	5
Comfort asking if they are thinking of harming themselves or suicide	3.60	(1.46)	4.00	5
Confidence in ability to check in about how they are feeling and finding help	3.80	(1.23)	4.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	2200	144	(417)	10.00	0
In the past year	0	116	11	(26)	2.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	33 (89%)	4 (11%)	--

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	21 (57%)	16 (43%)	--

Nursing Assistant (Certified Nursing Assistant, Nursing Assistant, Registered Nursing Assistant) (N = 28)

Number of Courses during Professional Education Program

	N	%
Identifying patients/clients at risk for suicide		
0	15	53.6
1	6	21.4
2	1	3.6
3	1	3.6
4	0	
5	0	
6 or more	2	7.1
Do not recall	3	10.7
Did not respond	0	
Treating patients/clients at risk for suicide		
0	15	53.6
1	5	17.9
2	0	
3	1	3.6
4	0	
5	0	
6 or more	2	7.1
Do not recall	5	17.9
Did not respond	0	
Managing patients/clients at risk for suicide		
0	17	60.7
1	2	7.1
2	0	
3	0	
4	0	
5	0	
6 or more	1	3.6
Do not recall	7	25.0
Did not respond	1	3.6

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.46	(1.10)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.82	(1.09)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.54	(1.04)	3.50	3
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	2.36	(1.06)	2.00	2
I would like further training to be able to work with patients/clients who are at risk for suicide	3.36	(1.03)	3.50	4
Suicide can be prevented	3.96	(0.81)	4.00	4
Awareness of suicide risk is relevant to my professional role	3.79	(1.00)	4.00	4
I am in a position to observe signs of depression or hopelessness among my patients/clients	3.93	(0.90)	4.00	4
Noticing and discussing signs of suicide risk falls within the scope of my profession	3.50	(1.04)	4.00	4
I have opportunities to interact and/or intervene with those who are potentially suicidal	3.74	(0.94)	4.00	4

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	2.79	(1.10)	3.00	3
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	2.54	(1.14)	2.00	2
How likely to approaching patient/client showing signs of psychological distress	3.18	(1.36)	3.00	3
How prepared to motivate patient/client to seek help	2.96	(1.17)	3.00	3
How prepared to refer patient/client who is showing signs of psychological distress	3.07	(1.24)	3.00	2,3,4
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.07	(1.27)	3.00	2,4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	3.36	(1.59)	3.50	5
Likeliness of asking if they are thinking of harming themselves or suicide	3.07	(1.62)	3.00	5
Comfort asking if they are thinking of harming themselves or suicide	2.74	(1.46)	2.00	1,2
Confidence in ability to check in about how they are feeling and finding help	3.22	(1.31)	3.00	2

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	200	21	(45)	5.0	5
In the past year	0	12	2.5	(3)	1.0	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	18 (64%)	9 (32%)	1 (3.6%)

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	10 (36%)	16 (57%)	2 (7.1%)

Nursing Home Administrator (N = 24)

Number of Courses during Professional Education Program

	n	%
Identifying patients/clients at risk for suicide		
0	5	20.8
1	7	29.2
2	1	4.2
3	1	4.2
4	1	4.2
5	0	
6 or more	4	16.7
Do not recall	5	20.8
Did not respond	0	
Treating patients/clients at risk for suicide		
0	7	29.2
1	6	25.0
2	2	8.3
3	0	
4	1	4.2
5	0	
6 or more	4	16.7
Do not recall	4	16.7
Did not respond	0	
Managing patients/clients at risk for suicide		
0	7	29.2
1	6	25.0
2	2	8.3
3	0	
4	0	
5	0	
6 or more	3	12.5
Do not recall	6	25.0
Did not respond	0	

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	4.08	(0.83)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.96	(1.00)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.92	(0.97)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	2.67	(1.24)	2.00	2
I would like further training to be able to work with patients/clients who are at risk for suicide	3.88	(0.99)	4.00	5
Suicide can be prevented	4.08	(0.88)	4.00	4,5
Awareness of suicide risk is relevant to my professional role	4.30	(0.82)	4.00	5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.13	(0.80)	4.00	4
Noticing and discussing signs of suicide risk falls within the scope of my profession	4.00	(1.14)	4.00	5
I have opportunities to interact and/or intervene with those who are potentially suicidal	4.21	(0.88)	4.00	4

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.58	(1.32)	4.00	5
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.29	(1.27)	3.00	3
How likely to approaching patient/client showing signs of psychological distress	3.75	(1.22)	4.00	5
How prepared to motivate patient/client to seek help	3.75	(1.07)	4.00	3
How prepared to refer patient/client who is showing signs of psychological distress	3.54	(1.22)	4.00	3,4
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.63	(1.06)	4.00	3,4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	4.00	(1.10)	4.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	3.96	(1.16)	4.00	5
Comfort asking if they are thinking of harming themselves or suicide	3.71	(1.43)	4.00	5
Confidence in ability to check in about how they are feeling and finding help	3.67	(1.31)	3.50	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	2500	347	(753)	20.0	0
In the past year	0	200	25	(54)	2.00	1

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	21 (88%)	3 (12%)	--

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	13 (54%)	11 (46%)	--

Occupational Therapist (N = 26)

Number of Courses during Professional Education Program

	n	%
Identifying patients/clients at risk for suicide		
0	4	15.4
1	6	23.1
2	6	23.1
3	2	7.7
4	2	7.7
5	1	3.8
6 or more	1	3.8
Do not recall	4	15.4
Did not respond	0	
Treating patients/clients at risk for suicide		
0	6	23.1
1	8	30.8
2	3	11.5
3	2	7.7
4	3	11.5
5	0	
6 or more	0	
Do not recall	7	15.4
Did not respond	0	
Managing patients/clients at risk for suicide		
0	6	23.1
1	7	26.9
2	3	11.5
3	2	7.7
4	2	7.7
5	0	
6 or more	1	3.8
Do not recall	5	19.2
Did not respond	0	

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.88	(0.91)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.73	(1.00)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.73	(1.00)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	3.27	(1.22)	3.50	4
I would like further training to be able to work with patients/clients who are at risk for suicide	3.65	(1.13)	4.00	4
Suicide can be prevented	4.00	(1.13)	4.00	4,5
Awareness of suicide risk is relevant to my professional role	4.27	(1.00)	4.50	5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.08	(1.09)	4.00	4
Noticing and discussing signs of suicide risk falls within the scope of my profession	4.04	(1.21)	4.00	5
I have opportunities to interact and/or intervene with those who are potentially suicidal	3.88	(1.14)	4.00	4

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.73	(0.96)	4.00	4
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.69	(1.19)	4.00	4,5
How likely to approaching patient/client showing signs of psychological distress	3.88	(1.01)	4.00	4
How prepared to motivate patient/client to seek help	3.81	(1.13)	4.00	5
How prepared to refer patient/client who is showing signs of psychological distress	3.85	(1.01)	4.00	4
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.92	(1.02)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	4.31	(0.97)	5.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	4.27	(0.96)	4.50	5
Comfort asking if they are thinking of harming themselves or suicide	3.96	(1.04)	4.00	4
Confidence in ability to check in about how they are feeling and finding help	4.12	(0.95)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	1000	95	(222)	5.00	0
In the past year	0	75	9	(16)	2.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	23 (88%)	3 (12%)	--

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	13 (50%)	13 (50%)	--

Optometrist (N = 30)

Number of Courses during Professional Education Program

	n	%
Identifying patients/clients at risk for suicide		
0	4	13.3
1	10	33.3
2	3	10.0
3	2	6.7
4	1	3.3
5	1	3.3
6 or more	4	13.3
Do not recall	5	16.7
Did not respond	0	
Treating patients/clients at risk for suicide		
0	7	23.3
1	7	23.3
2	4	13.3
3	2	6.7
4	0	
5	1	3.3
6 or more	3	10.0
Do not recall	6	20.0
Did not respond	0	
Managing patients/clients at risk for suicide		
0	5	16.7
1	10	33.3
2	3	10.0
3	1	3.3
4	0	
5	1	3.3
6 or more	2	6.7
Do not recall	8	26.7
Did not respond	0	

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.77	(1.14)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.80	(1.00)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.67	(1.16)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	3.07	(1.11)	3.00	4
I would like further training to be able to work with patients/clients who are at risk for suicide	3.50	(1.22)	4.00	3,4
Suicide can be prevented	4.07	(0.78)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.23	(1.01)	4.50	5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.00	(0.95)	4.00	4
Noticing and discussing signs of suicide risk falls within the scope of my profession	4.13	(0.97)	4.00	4
I have opportunities to interact and/or intervene with those who are potentially suicidal	4.07	(0.87)	4.00	4

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.57	(0.82)	3.50	3
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.50	(0.97)	4.00	4
How likely to approaching patient/client showing signs of psychological distress	4.03	(0.93)	4.00	4,5
How prepared to motivate patient/client to seek help	3.63	(1.10)	4.00	4
How prepared to refer patient/client who is showing signs of psychological distress	3.63	(1.03)	4.00	4
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.53	(1.04)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	4.47	(0.86)	5.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	4.37	(0.93)	5.00	5
Comfort asking if they are thinking of harming themselves or suicide	4.03	(1.03)	4.00	5
Confidence in ability to check in about how they are feeling and finding help	3.83	(1.02)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	1	1100	189	(323)	50.00	10, 100
In the past year	0	200	24	(43)	5.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	28 (93%)	2 (7%)	--

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	20 (67%)	10 (33%)	--

Osteopathic Physician (N = 32)

Number of Courses during Professional Education Program

	n	%
Identifying patients/clients at risk for suicide		
0	6	18.8
1	6	18.8
2	4	12.5
3	1	3.1
4	1	3.1
5	1	3.1
6 or more	4	12.5
Do not recall	9	28.1
Did not respond	0	
Treating patients/clients at risk for suicide		
0	10	31.3
1	6	18.8
2	3	9.4
3	0	
4	1	3.1
5	1	3.1
6 or more	4	12.5
Do not recall	7	21.9
Did not respond	0	
Managing patients/clients at risk for suicide		
0	9	28.1
1	6	18.8
2	3	9.4
3	2	6.3
4	2	6.3
5	0	
6 or more	2	6.3
Do not recall	7	21.9
Did not respond	1	3.1

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	4.06	(0.95)	4.00	5
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	4.28	(0.81)	4.00	5
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	4.13	(0.98)	4.00	5
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	2.84	(1.25)	3.00	2
I would like further training to be able to work with patients/clients who are at risk for suicide	3.88	(1.01)	4.00	4
Suicide can be prevented	3.94	(0.91)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.59	(0.62)	5.00	5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.47	(0.76)	5.00	5
Noticing and discussing signs of suicide risk falls within the scope of my profession	4.44	(0.76)	5.00	5
I have opportunities to interact and/or intervene with those who are potentially suicidal	4.29	(1.01)	5.00	5

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.69	(1.00)	4.00	4
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.61	(1.23)	4.00	4
How likely to approaching patient/client showing signs of psychological distress	3.75	(1.14)	4.00	4,5
How prepared to motivate patient/client to seek help	3.66	(1.34)	4.00	5
How prepared to refer patient/client who is showing signs of psychological distress	3.63	(1.16)	4.00	4
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.39	(1.15)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	4.38	(0.94)	5.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	4.22	(1.07)	5.00	5
Comfort asking if they are thinking of harming themselves or suicide	3.91	(1.25)	4.00	4
Confidence in ability to check in about how they are feeling and finding help	3.84	(1.17)	4.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	5200	335	(1064)	20.00	0
In the past year	0	100	11	(21)	2.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	25 (78%)	7 (22%)	--

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	16 (50%)	16 (50%)	--

Pharmacist (N = 209)

Number of Courses during Professional Education Program

	n	%
Identifying patients/clients at risk for suicide		
0	70	33.5
1	39	18.7
2	20	9.6
3	18	8.6
4	4	1.9
5	3	1.4
6 or more	19	9.1
Do not recall	36	17.2
Did not respond	0	
Treating patients/clients at risk for suicide		
0	76	36.4
1	42	20.0
2	18	8.6
3	14	6.7
4	0	
5	3	1.4
6 or more	17	8.1
Do not recall	39	18.7
Did not respond	0	
Managing patients/clients at risk for suicide		
0	86	41.1
1	35	16.7
2	18	8.6
3	11	5.3
4	4	1.9
5	2	1.0
6 or more	13	6.2
Do not recall	36	17.2
Did not respond	4	1.9

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.77	(1.01)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.72	(1.11)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.79	(1.10)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	3.06	(1.30)	3.00	4
I would like further training to be able to work with patients/clients who are at risk for suicide	3.42	(1.12)	4.00	4
Suicide can be prevented	4.02	(0.84)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.17	(1.02)	4.00	5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.12	(1.04)	4.00	5
Noticing and discussing signs of suicide risk falls within the scope of my profession	3.88	(1.21)	4.00	5
I have opportunities to interact and/or intervene with those who are potentially suicidal	4.04	(1.01)	4.00	5

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.58	(1.10)	4.00	4
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.51	(1.30)	4.00	5
How likely to approaching patient/client showing signs of psychological distress	3.78	(1.23)	4.00	5
How prepared to motivate patient/client to seek help	3.71	(1.21)	4.00	5
How prepared to refer patient/client who is showing signs of psychological distress	3.80	(1.24)	4.00	5
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.62	(1.24)	4.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	4.08	(1.24)	5.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	4.00	(1.28)	5.00	5
Comfort asking if they are thinking of harming themselves or suicide	3.74	(1.39)	4.00	5
Confidence in ability to check in about how they are feeling and finding help	3.80	(1.31)	4.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	4500	148	(455)	10.00	0
In the past year	0	1000	18	(78)	2.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	174 (83%)	30 (14%)	5 (2%)

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	109 (52%)	98 (47%)	2 (1%)

Pharmacy Technician (N = 15)

Number of Courses during Professional Education Program

	n	%
Identifying patients/clients at risk for suicide		
0	4	26.7
1	2	13.3
2	2	13.3
3	2	13.3
4	1	6.7
5	0	
6 or more	3	20.0
Do not recall	1	6.7
Did not respond	0	
Treating patients/clients at risk for suicide		
0	5	33.3
1	3	20.0
2	1	6.7
3	2	13.3
4	1	6.7
5	0	
6 or more	2	13.3
Do not recall	1	6.7
Did not respond	0	
Managing patients/clients at risk for suicide		
0	7	46.7
1	2	13.3
2	0	
3	1	6.7
4	0	
5	0	
6 or more	3	20.0
Do not recall	2	13.3
Did not respond	0	

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.80	(1.08)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.71	(1.14)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	4.07	(1.14)	4.00	5
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	3.00	(1.41)	3.00	4
I would like further training to be able to work with patients/clients who are at risk for suicide	3.60	(1.06)	4.00	3
Suicide can be prevented	4.14	(0.86)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.53	(0.74)	5.00	5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.60	(0.83)	5.00	5
Noticing and discussing signs of suicide risk falls within the scope of my profession	4.29	(0.82)	5.00	5
I have opportunities to interact and/or intervene with those who are potentially suicidal	4.27	(0.88)	4.00	5

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.73	(1.22)	4.00	5
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.73	(1.39)	4.00	5
How likely to approaching patient/client showing signs of psychological distress	4.07	(1.28)	5.00	5
How prepared to motivate patient/client to seek help	4.07	(1.16)	5.00	5
How prepared to refer patient/client who is showing signs of psychological distress	4.20	(1.01)	5.00	5
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.87	(1.19)	4.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	4.36	(1.15)	5.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	4.07	(1.33)	5.00	5
Comfort asking if they are thinking of harming themselves or suicide	4.25	(1.36)	5.00	5
Confidence in ability to check in about how they are feeling and finding help	4.00	(1.41)	5.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	2000	354	(594)	26	3, 1000
In the past year	0	100	27	(41)	2.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	14 (93%)	1 (7%)	--

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	10 (67%)	5 (33%)	--

Physical Therapist (N = 36)

Number of Courses during Professional Education Program

	n	%
Identifying patients/clients at risk for suicide		
0	8	22.2
1	7	20.0
2	6	17.1
3	2	5.7
4	0	
5	0	
6 or more	2	5.7
Do not recall	10	27.8
Did not respond	1	2.8
Treating patients/clients at risk for suicide		
0	10	27.8
1	7	19.4
2	5	13.9
3	2	5.6
4	2	5.6
5	0	
6 or more	1	2.8
Do not recall	8	22.2
Did not respond	1	2.8
Managing patients/clients at risk for suicide		
0	14	38.9
1	6	16.7
2	2	5.6
3	3	8.3
4	1	2.8
5	0	
6 or more	2	5.6
Do not recall	7	17.4
Did not respond	1	2.8

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.97	(1.10)	4.00	4,5
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	4.09	(1.13)	4.00	5
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	4.23	(0.91)	4.00	5
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	2.80	(1.37)	3.00	2,3
I would like further training to be able to work with patients/clients who are at risk for suicide	3.82	(0.97)	4.00	4
Suicide can be prevented	4.23	(0.65)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.32	(0.77)	4.00	5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.37	(0.73)	4.00	5
Noticing and discussing signs of suicide risk falls within the scope of my profession	3.97	(1.01)	4.00	4
I have opportunities to interact and/or intervene with those who are potentially suicidal	4.17	(0.95)	4.00	5

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.51	(1.01)	4.00	4
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.63	(1.14)	4.00	4
How likely to approaching patient/client showing signs of psychological distress	3.86	(0.97)	4.00	4
How prepared to motivate patient/client to seek help	3.80	(0.96)	4.00	4
How prepared to refer patient/client who is showing signs of psychological distress	3.74	(1.20)	4.00	4
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.49	(1.20)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	4.14	(1.29)	5.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	4.00	(1.24)	4.00	5
Comfort asking if they are thinking of harming themselves or suicide	3.91	(1.20)	4.00	5
Confidence in ability to check in about how they are feeling and finding help	3.86	(1.12)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	700	68	(166)	4.00	0
In the past year	0	50	7	(14)	1.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	30 (83%)	4 (14%)	1 (3%)

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	19 (53%)	16 (44%)	1 (3%)

Physical Therapy Assistant (N = 10)

Number of Courses during Professional Education Program

	n	%
Identifying patients/clients at risk for suicide		
0	2	20.0
1	4	40.0
2	1	10.0
3	0	
4	0	
5	0	
6 or more	2	20.0
Do not recall	1	10.0
Did not respond	0	
Treating patients/clients at risk for suicide		
0	3	30.0
1	3	30.0
2	1	10.0
3	0	
4	0	
5	0	
6 or more	2	20.0
Do not recall	1	10.0
Did not respond	0	
Managing patients/clients at risk for suicide		
0	2	20.0
1	4	40.0
2	1	10.0
3	0	
4	0	
5	0	
6 or more	2	20.0
Do not recall	1	10.0
Did not respond	0	

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.20	(1.03)	3.00	3
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.60	(1.17)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.70	(1.16)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	3.00	(1.33)	3.00	2,3
I would like further training to be able to work with patients/clients who are at risk for suicide	2.80	(1.14)	3.00	3
Suicide can be prevented	4.20	(0.92)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.00	(1.05)	4.00	5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.00	(0.94)	4.00	3,5
Noticing and discussing signs of suicide risk falls within the scope of my profession	3.50	(1.35)	4.00	2
I have opportunities to interact and/or intervene with those who are potentially suicidal	3.60	(1.35)	4.00	4,5

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.50	(0.85)	3.00	3
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.00	(1.56)	3.00	2,4
How likely to approaching patient/client showing signs of psychological distress	3.40	(1.26)	3.50	3,4
How prepared to motivate patient/client to seek help	3.50	(1.08)	3.50	3,4
How prepared to refer patient/client who is showing signs of psychological distress	3.70	(1.06)	4.00	4
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.60	(1.08)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	3.70	(1.25)	3.50	5
Likeliness of asking if they are thinking of harming themselves or suicide	3.40	(1.43)	3.50	5
Comfort asking if they are thinking of harming themselves or suicide	3.20	(1.40)	3.50	2,4
Confidence in ability to check in about how they are feeling and finding help	3.60	(0.97)	3.50	3

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	1000	171	(351)	6.00	3
In the past year	0	100	16	(33)	1.00	0,1

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	7 (70%)	3 (30%)	--

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	6 (60%)	4 (40%)	--

Physician/Medical Doctor (N = 64)

Number of Courses during Professional Education Program

	n	%
Identifying patients/clients at risk for suicide		
0	16	25.0
1	15	23.4
2	4	6.3
3	6	9.4
4	3	4.7
5	1	1.6
6 or more	4	6.3
Do not recall	14	21.9
Did not respond	1	1.6
Treating patients/clients at risk for suicide		
0	25	39.1
1	10	15.6
2	7	10.9
3	3	4.7
4	1	1.6
5	2	3.1
6 or more	4	6.3
Do not recall	12	18.8
Did not respond	0	
Managing patients/clients at risk for suicide		
0	24	37.5
1	12	18.8
2	4	6.3
3	4	6.3
4	2	3.1
5	0	
6 or more	4	6.3
Do not recall	14	21.9
Did not respond	0	

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.89	(0.99)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.95	(0.99)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.97	(0.98)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	2.76	(1.18)	3.00	2
I would like further training to be able to work with patients/clients who are at risk for suicide	3.44	(1.19)	4.00	4
Suicide can be prevented	4.21	(0.68)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.23	(0.73)	4.00	4
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.23	(0.82)	4.00	4
Noticing and discussing signs of suicide risk falls within the scope of my profession	4.00	(1.05)	4.00	5
I have opportunities to interact and/or intervene with those who are potentially suicidal	4.11	(0.94)	4.00	4

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.35	(1.12)	3.00	4
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.37	(1.13)	3.00	4
How likely to approaching patient/client showing signs of psychological distress	3.71	(1.09)	4.00	4
How prepared to motivate patient/client to seek help	3.67	(1.08)	4.00	3
How prepared to refer patient/client who is showing signs of psychological distress	3.58	(1.18)	4.00	4
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.63	(1.13)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	4.00	(1.22)	4.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	3.89	(1.23)	4.00	5
Comfort asking if they are thinking of harming themselves or suicide	3.56	(1.33)	4.00	4,5
Confidence in ability to check in about how they are feeling and finding help	3.60	(1.12)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	1000	111	(235)	20.0	0
In the past year	0	152	10	(25)	2.0	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	57 (89%)	6 (9%)	1 (2%)

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	30 (47%)	32 (50%)	2 (3%)

Physician Assistant (N = 11)

Number of Courses during Professional Education Program

	n	%
Identifying patients/clients at risk for suicide		
0	3	27.3
1	3	27.3
2	2	18.2
3	0	
4	1	9.1
5	0	
6 or more	0	
Do not recall	2	18.2
Did not respond	0	
Treating patients/clients at risk for suicide		
0	3	27.3
1	2	18.2
2	3	27.3
3	0	
4	1	9.1
5	0	
6 or more	0	
Do not recall	2	18.2
Did not respond	0	
Managing patients/clients at risk for suicide		
0	3	27.3
1	3	27.3
2	2	18.2
3	0	
4	1	9.1
5	0	
6 or more	0	
Do not recall	2	18.2
Did not respond	0	

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	4.36	(0.81)	5.00	5
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	4.27	(1.01)	5.00	5
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	4.18	(1.08)	5.00	5
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	2.91	(1.45)	3.00	4
I would like further training to be able to work with patients/clients who are at risk for suicide	4.00	(0.89)	4.00	4
Suicide can be prevented	3.91	(0.83)	4.00	3,4
Awareness of suicide risk is relevant to my professional role	4.82	(0.40)	5.00	5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.82	(0.40)	5.00	5
Noticing and discussing signs of suicide risk falls within the scope of my profession	4.27	(0.90)	5.00	5
I have opportunities to interact and/or intervene with those who are potentially suicidal	4.73	(0.47)	5.00	5

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.36	(0.92)	4.00	4
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.09	(1.04)	3.00	4
How likely to approaching patient/client showing signs of psychological distress	3.73	(1.27)	4.00	3,5
How prepared to motivate patient/client to seek help	3.80	(1.23)	4.00	4
How prepared to refer patient/client who is showing signs of psychological distress	4.00	(1.18)	4.00	4
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.73	(1.10)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	4.09	(1.30)	5.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	3.64	(1.63)	4.00	5
Comfort asking if they are thinking of harming themselves or suicide	3.55	(1.52)	4.00	5
Confidence in ability to check in about how they are feeling and finding help	3.70	(1.57)	4.50	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	5	200	42	(57)	25.00	20,30
In the past year	0	30	12	(11)	10.50	0,15,30

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	10 (91%)	1 (9%)	--

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	7 (64%)	3 (27%)	1 (9%)

Podiatric Physician (N = 20)

Number of Courses during Professional Education Program

	n	%
Identifying patients/clients at risk for suicide		
0	5	25.0
1	12	50.0
2	1	5.0
3	0	
4	0	
5	0	
6 or more	0	
Do not recall	4	20.0
Did not respond	0	
Treating patients/clients at risk for suicide		
0	10	50.0
1	5	25.0
2	1	5.0
3	1	5.0
4	0	
5	0	
6 or more	0	
Do not recall	3	15.0
Did not respond	0	
Managing patients/clients at risk for suicide		
0	9	45.0
1	8	40.0
2	1	5.0
3	0	
4	0	
5	0	
6 or more	0	
Do not recall	2	10.0
Did not respond	0	

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.90	(0.97)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	4.00	(0.58)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.89	(0.57)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	3.00	(1.30)	3.00	4
I would like further training to be able to work with patients/clients who are at risk for suicide	3.35	(1.04)	3.00	3
Suicide can be prevented	4.20	(0.52)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.00	(0.92)	4.00	4,5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.10	(1.07)	4.00	4
Noticing and discussing signs of suicide risk falls within the scope of my profession	3.90	(0.85)	4.00	4
I have opportunities to interact and/or intervene with those who are potentially suicidal	4.20	(0.70)	4.00	4

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.45	(1.00)	4.00	4
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.26	(1.20)	3.00	3
How likely to approaching patient/client showing signs of psychological distress	3.55	(1.05)	4.00	4
How prepared to motivate patient/client to seek help	3.50	(1.05)	3.50	3,4
How prepared to refer patient/client who is showing signs of psychological distress	3.55	(1.00)	3.00	3
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.55	(1.10)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	4.20	(0.95)	4.50	5
Likeliness of asking if they are thinking of harming themselves or suicide	3.90	(1.12)	4.00	5
Comfort asking if they are thinking of harming themselves or suicide	3.45	(1.40)	3.50	5
Confidence in ability to check in about how they are feeling and finding help	3.55	(1.10)	3.50	3

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	200	29	(52)	5.00	0
In the past year	0	100	7	(23)	1.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	18 (90%)	2 (10%)	--

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	11 (55%)	8 (40%)	1 (5%)

Psychologist (N = 82)

Number of Courses during Professional Education Program

	n	%
Identifying patients/clients at risk for suicide		
0	16	19.5
1	21	25.6
2	14	17.1
3	5	6.1
4	2	2.4
5	1	1.2
6 or more	8	9.8
Do not recall	15	18.3
Did not respond	0	
Treating patients/clients at risk for suicide		
0	19	23.2
1	23	28.0
2	11	13.4
3	8	9.8
4	1	1.2
5	1	1.2
6 or more	4	4.9
Do not recall	15	18.3
Did not respond	0	
Managing patients/clients at risk for suicide		
0	28	34.1
1	17	20.7
2	11	13.4
3	5	6.1
4	2	2.4
5	2	2.4
6 or more	2	2.4
Do not recall	15	18.3
Did not respond	0	

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.70	(1.02)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.69	(1.07)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.74	(1.05)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	3.15	(1.21)	3.00	4
I would like further training to be able to work with patients/clients who are at risk for suicide	3.55	(1.04)	4.00	4
Suicide can be prevented	3.93	(0.72)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.24	(0.88)	4.00	5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.32	(0.82)	4.50	5
Noticing and discussing signs of suicide risk falls within the scope of my profession	4.16	(1.01)	4.00	5
I have opportunities to interact and/or intervene with those who are potentially suicidal	4.06	(0.95)	4.00	4

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.72	(0.93)	4.00	4
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.57	(1.16)	4.00	3,5
How likely to approaching patient/client showing signs of psychological distress	3.93	(1.09)	4.00	5
How prepared to motivate patient/client to seek help	3.71	(1.13)	4.00	4
How prepared to refer patient/client who is showing signs of psychological distress	3.83	(1.18)	4.00	5
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.68	(1.20)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	4.15	(1.12)	5.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	4.07	(1.16)	5.00	5
Comfort asking if they are thinking of harming themselves or suicide	3.80	(1.26)	4.00	5
Confidence in ability to check in about how they are feeling and finding help	3.88	(1.14)	4.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	10,000	376	(1592)	10.0	0
In the past year	0	200	15	(35)	2.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	70 (85%)	12 (15%)	--

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	43 (52%)	37 (45%)	2 (2%)

Radiologic Technologist (N = 10)

Number of Courses during Professional Education Program

	n	%
Identifying patients/clients at risk for suicide		
0	2	20.0
1	3	30.0
2	1	10.0
3	1	10.0
4	1	10.0
5	0	
6 or more	1	10.0
Do not recall	1	10.0
Did not respond	0	
Treating patients/clients at risk for suicide		
0	3	30.0
1	3	30.0
2	1	10.0
3	1	10.0
4	1	10.
5	0	
6 or more	1	10.
Do not recall	0	
Did not respond	0	
Managing patients/clients at risk for suicide		
0	3	30.0
1	3	30.
2	0	
3	1	10.0
4	1	10.0
5	0	
6 or more	1	10.0
Do not recall	1	10.0
Did not respond	0	

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.60	(0.97)	3.50	3
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.70	(1.06)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	4.00	(0.94)	4.00	3,5
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	2.90	(1.10)	3.00	3
I would like further training to be able to work with patients/clients who are at risk for suicide	3.40	(1.17)	3.50	2,4
Suicide can be prevented	3.89	(0.60)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.22	(0.97)	4.00	4,5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.22	(0.83)	4.00	5
Noticing and discussing signs of suicide risk falls within the scope of my profession	4.10	(0.99)	4.00	4,5
I have opportunities to interact and/or intervene with those who are potentially suicidal	3.60	(1.26)	4.00	4

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.90	(0.88)	4.00	3
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	4.40	(0.97)	5.00	5
How likely to approaching patient/client showing signs of psychological distress	4.60	(0.70)	5.00	5
How prepared to motivate patient/client to seek help	4.00	(1.05)	4.00	5
How prepared to refer patient/client who is showing signs of psychological distress	4.33	(0.87)	5.00	5
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	4.33	(0.87)	5.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	4.50	(1.08)	5.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	4.30	(1.34)	5.00	5
Comfort asking if they are thinking of harming themselves or suicide	4.00	(1.33)	4.50	5
Confidence in ability to check in about how they are feeling and finding help	4.10	(1.20)	5.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	1	1000	121	(330)	15.00	15
In the past year	0	10	2.60	(3)	2.00	0,1,2,3

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	9 (90%)	1 (10%)	--

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	5 (50%)	5 (50%)	--

Recreational Therapist (N = 19)

Number of Courses during Professional Education Program

	n	%
Identifying patients/clients at risk for suicide		
0	6	31.6
1	2	10.5
2	4	21.1
3	2	10.5
4	0	
5	0	
6 or more	2	10.5
Do not recall	3	15.8
Did not respond	0	
Treating patients/clients at risk for suicide		
0	8	42.1
1	2	10.5
2	1	5.3
3	1	5.3
4	0	
5	0	
6 or more	2	10.5
Do not recall	5	26.3
Did not respond	0	
Managing patients/clients at risk for suicide		
0	8	42.1
1	4	21.1
2	1	5.3
3	1	5.3
4	0	
5	0	
6 or more	2	10.5
Do not recall	3	15.8
Did not respond	0	

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	4.16	(0.68)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	4.11	(0.66)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	4.26	(0.65)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	2.68	(1.42)	2.00	1,2,4
I would like further training to be able to work with patients/clients who are at risk for suicide	3.89	(0.74)	4.00	4
Suicide can be prevented	4.05	(0.62)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.42	(0.69)	5.00	5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.44	(0.51)	4.00	4
Noticing and discussing signs of suicide risk falls within the scope of my profession	4.26	(0.73)	4.00	4
I have opportunities to interact and/or intervene with those who are potentially suicidal	4.42	(0.61)	4.00	4,5

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.47	(0.70)	3.00	3
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.26	(0.93)	3.00	4
How likely to approaching patient/client showing signs of psychological distress	3.89	(0.96)	4.00	3,5
How prepared to motivate patient/client to seek help	3.42	(1.07)	4.00	4
How prepared to refer patient/client who is showing signs of psychological distress	3.37	(1.06)	3.00	4
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.63	(0.76)	3.00	3

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	4.05	(1.18)	5.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	4.16	(1.07)	5.00	5
Comfort asking if they are thinking of harming themselves or suicide	4.00	(1.05)	4.00	5
Confidence in ability to check in about how they are feeling and finding help	3.89	(1.24)	4.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	2	1000	133	(255)	30.00	10
In the past year	0	75	16	(20)	10.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	18 (95%)	1 (5)	--

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	12 (63%)	7 (37%)	--

Registered Nurse (N = 259)

Number of Courses during Professional Education Program

	n	%
Identifying patients/clients at risk for suicide		
0	69	26.6
1	59	22.8
2	28	10.8
3	12	4.6
4	7	2.7
5	1	0.4
6 or more	25	9.7
Do not recall	57	22.0
Did not respond	1	0.4
Treating patients/clients at risk for suicide		
0	95	36.7
1	46	17.8
2	20	7.7
3	14	5.4
4	3	1.2
5	1	0.4
6 or more	26	10.0
Do not recall	52	20.1
Did not respond	2	0.8
Managing patients/clients at risk for suicide		
0	89	34.4
1	52	20.1
2	19	7.3
3	12	4.6
4	2	0.8
5	4	1.5
6 or more	23	8.9
Do not recall	54	20.8
Did not respond	4	1.5

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.74	(1.13)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.71	(1.17)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.73	(1.09)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	2.97	(1.28)	3.00	2
I would like further training to be able to work with patients/clients who are at risk for suicide	3.35	(1.21)	4.00	4
Suicide can be prevented	4.01	(0.88)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.21	(0.91)	4.00	5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.11	(0.97)	4.00	4
Noticing and discussing signs of suicide risk falls within the scope of my profession	3.97	(1.08)	4.00	4
I have opportunities to interact and/or intervene with those who are potentially suicidal	3.99	(0.98)	4.00	4

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.57	(1.04)	4.00	3
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.36	(1.20)	3.00	4
How likely to approaching patient/client showing signs of psychological distress	3.79	(1.08)	4.00	5
How prepared to motivate patient/client to seek help	3.62	(1.05)	4.00	3
How prepared to refer patient/client who is showing signs of psychological distress	3.67	(1.13)	4.00	4
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.54	(1.08)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	4.15	(1.10)	5.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	4.02	(1.18)	4.00	5
Comfort asking if they are thinking of harming themselves or suicide	3.79	(1.29)	4.00	5
Confidence in ability to check in about how they are feeling and finding help	3.79	(1.14)	4.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	100,000	700	(6569)	15.00	0
In the past year	0	10,000	71	(665)	3.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	214 (83%)	42 (16%)	3 (1%)

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	150 (58%)	102 (39%)	7 (3%)

Social Worker/Associate (N = 138)

Number of Courses during Professional Education Program

	n	%
Identifying patients/clients at risk for suicide		
0	43	31.2
1	31	22.5
2	17	12.3
3	9	6.5
4	4	2.9
5	1	0.7
6 or more	6	4.3
Do not recall	26	18.8
Did not respond	1	0.7
Treating patients/clients at risk for suicide		
0	57	41.3
1	25	18.1
2	16	11.6
3	5	3.6
4	4	2.9
5	0	
6 or more	5	3.6
Do not recall	24	17.4
Did not respond	2	1.4
Managing patients/clients at risk for suicide		
0	56	40.6
1	21	15.2
2	15	10.9
3	7	5.1
4	3	2.2
5	0	
6 or more	8	5.8
Do not recall	26	18.8
Did not respond	2	1.4

Opinions about Suicide Prevention Training

	Mean	(SD)	Median	Mode(s)
I would benefit from training in the assessment, treatment, and management of suicide risk	3.76	(1.06)	4.00	4
I would benefit from guidelines for referring clients at risk for suicide to a mental health professional	3.88	(1.03)	4.00	4
I would benefit from a Department of Health publication on suicide risk signs and symptoms, intervention, and referral sources	3.87	(1.03)	4.00	4
I think my present training has provided me with adequate skill to take care of people who are at risk for suicide	2.74	(1.30)	2.00	2
I would like further training to be able to work with patients/clients who are at risk for suicide	3.43	(1.13)	4.00	4
Suicide can be prevented	4.02	(0.85)	4.00	4
Awareness of suicide risk is relevant to my professional role	4.22	(0.87)	4.00	5
I am in a position to observe signs of depression or hopelessness among my patients/clients	4.31	(0.85)	4.00	5
Noticing and discussing signs of suicide risk falls within the scope of my profession	3.91	(1.12)	4.00	5
I have opportunities to interact and/or intervene with those who are potentially suicidal	4.07	(0.93)	4.00	4

Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Preparation, Likelihood, and Comfort Intervening with Suicidal Individuals

	Mean	(SD)	Median	Mode(s)
How prepared to recognize when a patient's/client's behavior or appearance is an indicator of psychological distress such as depression, anxiety, or thoughts of suicide	3.50	(1.12)	4.00	3
How prepared to approach patients/clients exhibiting signs of psychological distress to discuss concerns	3.40	(1.26)	4.00	4
How likely to approaching patient/client showing signs of psychological distress	3.77	(1.15)	4.00	4
How prepared to motivate patient/client to seek help	3.54	(1.20)	4.00	4
How prepared to refer patient/client who is showing signs of psychological distress	3.70	(1.23)	4.00	5
How comfortable helping patient/client showing signs of psychological distress or signs of suicide	3.48	(1.26)	4.00	4

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Response to Hypothetical Scenario-working with a patient/client who appears depressed

	Mean	(SD)	Median	Mode(s)
Appropriateness of asking if they are thinking of harming themselves or suicide	3.96	(1.30)	5.00	5
Likeliness of asking if they are thinking of harming themselves or suicide	3.82	(1.36)	4.00	5
Comfort asking if they are thinking of harming themselves or suicide	3.62	(1.45)	4.00	5
Confidence in ability to check in about how they are feeling and finding help	3.70	(1.29)	4.00	5

Scale: 1 = not at all, 3 = somewhat, 5 = extremely

Number of patients/clients at risk for suicide encountered

	Minimum	Maximum	Mean	(SD)	Median	Mode(s)
Since receiving license	0	2000	149	(377)	12.00	0
In the past year	0	300	13	(35)	3.00	0

Opinions about Training

	Yes	No	No response
Should individuals in your profession be trained in the assessment, treatment and management of suicidal behavior?	117 (84%)	20 (15%)	1 (1%)

Opinions about Mandatory vs. Voluntary Training

	Mandatory	Voluntary	No response
Should training be mandatory or voluntary?	73 (53%)	64 (46%)	1 (1%)

Objective 3

Summary

Purpose

- *Indicate if the current research points to a relationship between (a) healthcare providers completing suicide assessment, treatment and management training and (b) suicide rates and behaviors among active duty and veteran military populations*. The initial goal of this report was to indicate the impact of suicide education training on veterans with suicidal ideation by reviewing current research reports but was expanded due to the paucity of information addressing the original question.

Findings

- Obtaining accurate data on military suicide that is comparable to general population rates has been a challenge to identifying and addressing military suicide for both veterans and active duty personnel. Incomplete data on suicide is particularly the case for veterans. Recent efforts to improve surveillance are an important step in prevention. Current reports indicate that suicide rates among veterans increased over the past decade and appear to have stabilized recently; these rates are reportedly higher than most comparable groups in the general population. Suicide rates among active duty personnel increased over the past decade and now appear to have approached the general population rates for ages 18-44 years.

- There are few published reports for the effects of prevention efforts on military suicide, and this is particularly true for veterans. Reports that exist, primarily for active duty military, generally cover multi-component prevention programs. We found no studies that specified healthcare providers as the target of prevention training, although they were sometimes mentioned or alluded to as embedded in the larger prevention programs. Importantly, the studies consistently reported positive effects, i.e., reductions in suicide, although there is little statistical analysis in support of linking reductions to the programs.

- We reviewed five studies that examined the effects of suicide prevention training on suicide-related outcomes and on willingness to access help for active duty or veteran military. Similar to studies examining suicide rates, these studies did not detail or necessarily include training for healthcare providers; rather three trainings focused on those in leadership or peer positions, and the other two on mental health staff. However, evidence from these studies is promising in terms of reported decreases in suicide-related behaviors and on willingness to seek help.

- Changes in behaviors of the suicide prevention trainees were also examined in six studies. Again, we did not find trainings focused on specific healthcare professionals. In some cases health professionals and/or mental health professionals were the target of trainings, or they were part of a larger general education audience. Results indicate that trainees generally found training acceptable and that they increased skills, knowledge and confidence about working with those at risk for suicide.
- The Veterans Hotline, initiated in 2007, is a key feature of current VA prevention efforts. Numbers of calls have increased dramatically over five years, demonstrating the acceptability and usage of the crisis hotline, with increases attributed at least in part to adaptations made to make the hotline more accessible and socially acceptable for veterans. So far, however, there have been no studies of the effectiveness of reducing veteran suicide or suicide behavior based upon accessing the hotline.

Conclusions and Future Directions

- There is little to no evidence regarding the effects of providing suicide prevention training to specific healthcare providers -- for veterans with or without ideation, or for active duty military personnel.
- While programs are vague about provider training, nonetheless the study outcomes reported for suicide rates, suicide-related behaviors, and responses of trainees indicate that multi-component approaches that include a range of personnel (including healthcare providers) are a promising approach.
- In order to address the lack of evidence about the effectiveness of specific program components, and the effect of training particular professions or roles, implementers need to build evaluation activities into the suicide prevention programs as they are implemented.

Objective 3

Indicate if the current research points to a relationship between (a) healthcare providers completing suicide assessment, treatment and management training and (b) suicide rates and behaviors among active duty and veteran military populations.

The initial goal of this report was to ***indicate the impact of suicide education training on veterans with suicidal ideation*** by reviewing current research reports. Given the paucity of studies that report upon prevention training effectiveness specifically for veterans with suicide ideation, we responded to a broader mandate and reported on the effectiveness of suicide prevention training on suicide-related outcomes in general, among both veteran and active duty military personnel.

Overview

We conducted a systematic and exhaustive search of research literature about the effectiveness of suicide prevention trainings directed toward reducing suicide among veterans and active duty military personnel. Our particular interest was trainings for healthcare providers. We also addressed current efforts to reduce military suicides by increasing veteran usage of crisis hotlines. While relying upon peer-reviewed research reports as the foundation for this report, we included additional reports on current policy and intervention efforts as reported by, or reported about, the Veteran Health Administration (e.g. Bagalman, 2013; Kemp & Bossarte, 2012) and the Department of Defense (e.g., Harrell & Berglass, 2011; Ramchand, 2011). Furthermore, we confirmed and extended the findings by examining media reports and congressional hearings (*Military Suicide Prevention*, 2013) as well interviews with several key people (Peggy West, Jerry Reed, David Litts, David Covington) in the suicide prevention field.

The Context of the Problem

To provide a context within which to understand the reviewed studies and report conclusions, we summarized current information about suicide rates, risk factors and access to primary care among military personnel.

Suicide Rates

Determining the impact of prevention training on the population suicide rates is the "gold standard" for prevention study outcomes. It is definitive evidence that programming is effectively addressing the rates of deaths by suicide. However, there are a number of challenges encountered when examining the impact of prevention training on suicide rates. Some of these challenges are described in the studies summarized later in the report. Primarily, there must be a link between members of a large, boundaried population (i.e., it is determined who is in and who is out, and there is some stability in that

membership) – a population large enough to show measurable differences in a low base rate behavior like suicide – and the likelihood of exposure to trained healthcare professionals and/or their policies. Although the military would appear to be ideal for such studies (and is for access to intervention subjects as well as for tracking suicide in a large population, and hence for suicide rates outcomes), it is only in the last decade that we have seen the heightened urgency and public attention to increasing prevention efforts among military veterans and active duty personnel (Jerry Reed, personal communication, April 5, 2013).

Collecting Data

Surveillance is a key component of suicide prevention (Kemp & Bossarte, 2012), and improvements in recordkeeping over the last five years are evident among the active duty armed forces. Initial implementation of Department of Defense Suicide Event Reports (DoDSER) based upon standardized surveillance of suicide rates began in 2008. As of January 2010 all branches of the Service (Air Force, Army, Marine Corps and Navy) have been collecting data on suicides and attempts. The Confirmed Suicide Count reported by DoDSER covers 2008 to the most recent 2012 numbers. The active duty military suicide rates for years prior to the consolidation and standardization in 2008, are based upon reports from separate branches, sometimes released to research investigators or journalists who publish the rates, sometimes variously, in their reports. Collecting, organizing and interpreting veteran data has been even more challenging, and numbers for veterans are less "firm" (Harrell & Berglass, 2011). Since 2007, as part of the Department of Veterans Affairs (VA) intensive effort to reduce suicide among veterans, data systems to increase understanding and inform VA and other suicide prevention programs have been developed (Kemp & Bossarte, 2012).

Veterans

The suicide rates among veterans appear to have increased somewhat over the last decade; however, they seem to have stabilized recently. While rates of mortality among veterans are lower than for the general population, rates of suicide are not – they are higher than non-veteran rates for all age groups except older adults (Kaplan, McFarland, Huguet, & Valenstein, 2012). In particular, the increasing rates for OIF (Operation Iraqi Freedom) and OEF (Operation Enduring Freedom) veterans have been noted (Bruce, 2010; IOM, 2013), however evidence for that particular population of mostly younger veterans is accessed differently than for veterans who have been out of the military for more than five years (Katz, McCarthy, Ignacio & Kemp, 2012).

Importantly, there are challenges in obtaining accurate rates of suicide among military veterans. The veteran population is heterogeneous, representing a wide range of experiences and ages. The VA reports data only for veterans enrolled in its healthcare system, these veterans are often older and sicker than the general U.S. population. The VA system healthcare data reflects 25% or less of the veteran population; there is a paucity of data for the entire veteran population (IOM, 2013; Kemp & Bossarte, 2012). A further challenge is that most states do not participate in reporting veteran status on death certificates. Until recently only 16 states contributed data to the National Violent Death Reporting System (NVDRS). Additional agreements are in place to obtain data from other states, although these may not yet be represented in data reports (Kemp & Bossarte, 2012). A number of sources (e.g. Briggs, 2013, Jan 14) ostensibly report suicide rates but what is reported is the proportion of overall suicide deaths that are veteran suicides – a difficult to interpret way of reporting deaths (dependent on rates in general population, which cannot be accurately pinpointed). Others have reported rates for unspecified age ranges or health statuses, making comparisons to general population difficult.

Active Duty

Active duty suicide rates, the overall total rate and the rates for the individual branches, have indeed increased over the last decade, in particular for the Army – for which rates in the last few years are double those reported for 2001-2004. Historically, military suicide rates have been lower than those for the general population (IOM, 2013). However, the active duty rates for the last three years for which reports are available (Defense Centers of Excellence, 2009, 2010, 2011) approach the general population rates for males ages 18-44, which are 21.87, 22.93, 22.72 respectively, per 100,000 (CDC WISQARS, 2011). According to the DoDSER, overall active duty rates for those years are 18.5, 17.52 and 18.03 per 100,000 respectively, with Army rates at 22, 21.72 and 22.9 per 100,000 respectively. Rates are highest for Army and Marine Corps. The DoDSER report for 2012, which has reported numbers only so far (not rates), indicates an overall increase, as well as an increase for Air Force, Army and Marine Corps. The Navy numbers, which increased in 2011 (both rates and number) appear stable according to currently available reports.

Increases in suicide rates are always concerning, but in the case of the current increase, particular provisos apply. The current rise has occurred in spite of that fact that over 900 suicide prevention efforts and over 400 programs have been initiated, mostly in the last decade (Department of Defense Task Force, 2010). Furthermore, while the reported number of active duty suicides may be somewhat

reliable, the number of current active duty military overall may have been overstated – this means the rate, i.e. number of suicides per 100,000, may actually be higher than reported.

Risk Factors

Veterans. Veterans who died by suicide were disproportionately white, over 65 years of age, and died by firearms (Bruce, 2010). Mental health, substance abuse, and financial and relationship problems were more common in younger than in older veteran suicide decedents, whereas health problems were more prevalent in the older veterans (Kaplan et al., 2012). Respondents who endorsed suicidal ideation were more likely to screen positive for PTSD, depression, and alcohol problems; scored higher on measures of combat exposure, psychosocial difficulties, stigma, and barriers to care; and scored lower on measures of resilience, unit support, and post-deployment social support (Pietrzak, Goldstein, Mallely et al., 2010).

Active Duty. (IOM, 2013) Higher risk for suicide among active duty personnel includes being male, white, under the age of 25, junior enlisted (vs. senior enlisted or officer), high school educated (vs. college), and divorced (rate for divorced 55% higher than married). Risk factors include chronic pain, PTSD, traumatic brain injury, depression and substance abuse. Firearms were the most frequent means of suicide, with drug overdose the most frequent means of attempts. Fifty-seven percent of those who died by suicide had no known history of ideation or attempt, but 17% were known to have a mood, anxiety, or substance use disorder (IOM, 2013). According Black and colleagues (in IOM 2013 report), those deployed to OEF or OIF were at greater risk than those never deployed, however other factors besides deployment appear to influence risk. The Mental Health Advisory Team noted in Warner and colleagues (2011) that suicides in the Iraq Theater of Operations during 2007 were most commonly incited by a failed relationship or ongoing disciplinary action. Seventy-five percent of suicides occurred in the U.S. (Martin, Ghahramanlou-Holloway, Lou & Tucciarone 2009), and 20% in combat theater (IOM, 2013).

Link to Primary Care

The Armed Forces Health Surveillance Center examined healthcare visits preceding suicide in US service members from 2001 -2010 (Trofimovich, Skopp, Luxton, & Reger, 2012). Death and medical records for Defense Medical Surveillance System and DOD Medical Mortality Registry (MMR) were used to identify three groups: those who died by suicide, those who attempted suicide, and those who were considered likely to self harm. Of those who died by suicide, 45% saw a primary care provider in the 30 days before suicide; of those who attempted suicide, 73% saw a primary care provider.

Results of Suicide Prevention Programs

Results for military suicide prevention programs are reported in detail for four areas:

1) Changes in suicide rates
2) Changes in suicide-related behaviors such as ideation, attempts and depression
3) Changes in trainee behaviors, whether peer or professional, and which can include a range of attitudes and behaviors thought to relate to suicide prevention (knowledge, attitudes and skills)
4) In addition, we report on the hotline program for suicide prevention that targets military personnel

We reported on all published evaluations of military suicide prevention efforts that involve training, whether or not the target was explicitly healthcare providers. We indicated the extent to which healthcare providers are included in the training programs, and the extent to which training programs are included in the prevention strategy. A number of articles presented such vague descriptions of the trainings that, while we could presume providers were included in education efforts, we were not certain. The trainings we reported on are typically one component of comprehensive programs designed to make changes in multiple levels of infrastructure.

Studies Using Rates of Suicide as Outcome

Veterans

Only one study was found that involves veterans and suicide rates (Katz et al., 2012). This study reports changes in suicide rates primarily, only making weak links to VA services, much less to provider training. The authors examined and compared changes in suicide rates from 2005 to 2008 for the 16 states that used the National Violent Death Reporting System (NVDRS), using NVDRS and Veterans Health Administration (VHA) records. Rates for the overall veteran population, VA non-utilizing veterans and VA utilizers, were compared for those states. Interestingly, the rates were higher for VA users ages 30 and over. However, for VA users under 30 years of age, the proportion of veterans who utilized services increased, and importantly, the suicide rates for these utilizers decreased overall, and decreased compared to VA non-utilizers. For non-utilizers, rates increased over this period of time, somewhat in line with active duty military. The authors suggested that the lower rates for utilizers might be linked to suicide prevention enhancement at the VA subsequent to the Veterans Millennium Health Care Act of 1999. Finally, a note about differences between the younger and older veterans in the VA system: all veterans are eligible for VA services for five years after deployment; after that, only veterans with

specified physical or mental health problems are eligible. The difference in criteria suggests that a real difference in health status for the two groups is likely.

While it would appear that the VA system should have opportunities to examine program outcomes on rates as is the case with other healthcare systems—for instance the Central Arizona Programmatic Suicide Deterrent System Project, housed in the Magellan Healthcare system that we reported upon in Objective 1—there are no published studies of program outcomes that do so. This was confirmed in conversations with David Litts, OD (personal communication, March 28, 2013) and Jerry Reed, PhD, MSW (personal communication, April 5, 2013), as well as by the Bagley review (2010) cited later in this report.

Active Duty

We included one review article and eight studies that report on suicide prevention programs for active duty service members with outcomes reported as suicide rates. There are no evaluation studies that exclusively report on military provider training and subsequent changes in suicide rates. Some of the studies are more descriptive than evaluative. Frequently the studies fall short in their descriptions of program components. All of the studies reporting suicide rates included in this report have multiple components involved in their prevention program, and as such one cannot ascertain which aspects of the program were instrumental in rate change. While no studies reported specifics about the provider training that is a component of the multi-component program, many studies included at least allude to healthcare professionals or healthcare settings as a component of the prevention effort. Many of the trainings involve training of non-healthcare professional members of the military for use with those they supervise, or direct training of members of the military about skills or resources.

Knox and colleagues wrote two noteworthy papers examining outcomes for the Air Force Suicide Prevention Program (AFSPP). The 2003 paper by Knox, Litts, Talcott, Feig, and Cain describes the 11-component suicide prevention program targeting all active duty Air Force personnel (a population at the time of over 5,000,000), which was launched in 1996 (and fully implemented by 1997). This comprehensive community approach to suicide prevention includes leader awareness training for commanders, buddy care for all personnel, unit gatekeepers, reducing stigma for help-seeking behaviors, and incorporating suicide prevention into professional military education. The successful outcome for the program was determined by comparing the Air Force suicide rates for the seven years before the intervention program to the seven years afterwards. Rates decreased from 13.5 per 100,000 pre intervention (1990 to 1996), to 9.2 post intervention (1997 to 2002), a substantial 33% decrease.

Gunnell (2003) offers this caveat: the observed post-intervention reductions may, in part at least, reflect the reduction in suicide rates occurring at that time (1994 to 2001) among the general population in the relevant age range (15- to 34-year-olds).

In a follow up report, Knox, Pflanz, Talcott, Campise and colleagues (2010) examined long-term effects of the AFSPP. The program is described as an important shift in thinking about suicide prevention: from viewing suicide and mental illness as solely a medical problem and instead seeing it as a larger service-wide community problem. Hence the program aims to reduce stigma and encourage early help-seeking by changing social norms through education and policy. Key components include leadership involvement; continuous professional military training, development of guidelines for commanders, ongoing community education, development of an integrated delivery system, enhancement of community mental health services, and instituting policies. It is implied that the healthcare community is involved in overall training and the coordination of the integrated delivery system, however training and roles specifically for the medical community are not described. Study outcomes rely upon an impressive quantity of suicide rates data – reporting on Air Force suicide rates from 1981 to 2008. The number of active duty Air Force personnel varies each year, and exact numbers are not provided - however, authors state that population sizes remained above 500,000 between 1981 and 1990; there was a large downsizing for the Air Force in the 1990s. The rates spike in 2004 is attributed to a diminished application of the program at that time, and as a consequence the Air Force subsequently upped actions to ensure compliance with all components. No results were reported for re-instituting former prevention efforts.

Gordana and Milivoje (2007) addressed military suicide in Serbia and Montenegro. Program components were difficult to ascertain and the authors imply that they could not access all necessary information from the military. Their paper reported on the Suicide Prevention Program, implemented in December 2003. The program utilized a comprehensive strategy modeled after the AFSPP program in the U.S. They implied but did not state that physicians and psychologists could be trained or educated for their involvement in prevention activities (i.e. “we suggested preventive activities based on education of the responsible professional staff and soldiers”). The evaluation was descriptive with outcome data limited to the number of actual suicides per year, from 1999-2005. The authors stated that after implementation of the program in 2003, rates “showed significant decrease” from 15 per 100,000 in 2003 to 9 in 2004, to 7 in 2005.

Rozanov and colleagues (2002) reported on a program implemented in the Ukraine. The program provided gatekeeper training for everyone, including social workers, medical officers, and psychiatrists. Health professionals were key delivery agents in a step-by-step approach to embedding suicide prevention training in military units. Program implementation involved: (1) five day training for professionals, (2) gatekeeper training for soldiers and health professionals, (3) professionals trained to implement gatekeeper training, and (4) professionals trained at their unit. Follow-up to training involved booklets to guide continued training and lectures in units. Study outcomes were limited to comparison of the number of suicides before and after training. Simple comparison of rates before and after the intervention showed dramatic reduction: from an average of 32.6 suicides per 100,000 from 1988 to 1999, the first year of the program there were zero suicides, with some bounce back the second year but nonetheless a lower rate than before intervention, of 16.7.

Hough and Lewis (2000) reported on the implementation of a systems approach to suicide prevention at Tripler Hospital and Army Medical Center in Hawaii. Their report combined psychological autopsy with the development and brief outcome evaluation for a series of advisory group recommendations. Among other recommendations, the board included education of mental health providers and classes for ER residents, and increased social work resources for psychiatric patients. According to the authors, all recommendations were implemented although no further detailed is offered. As a study it offers limited evidence for a link between programming and positive outcomes. During a 15-month period prior to the program, seven suicides had occurred among psychiatry patients; during 22 months after the implementation of the Suicide Prevention Advisory Group recommendations, there were no suicides.

Warner and colleagues (2011) discussed a tailored plan that is responsive to the cycle of deployment and includes medical professionals as “mental health assets” (chaplains, medical care providers, and mental health personnel) for whom training focused on recognition and early management of combat stress, post-traumatic stress disorder, sleep problems, depression, and traumatic events is pertinent. During field training exercises, these personnel conducted rehearsals of traumatic events to prepare themselves, their soldiers, and the leaders in how to respond to anxiety-provoking situations. (Other elements of the program include: clear guidelines related to mental health and deployment, general training on suicide awareness/risk, and combat zone treatment plan with oversight by the primary care physician and unit mental health officer). In this paper, data was gathered for one US Army Infantry Division – it is not clear how many soldiers were involved, although at one point it is stated that division

level involved 20,000 to 25,000. Of interest, the five reported suicides were junior enlisted personnel on their first deployment; all used a firearm; four were men; three involved failing relationships and the other two were pending disciplinary action. Results for risk identification are promising, in particular the identification of vulnerable points in the deployment cycle for experiencing suicide ideation. However, the reported rates reduction appear inconclusive (i.e., the outcome constitutes one actual suicide less than the Army average, two or three lower than combat theater average).

We included in our review an undated slide show from Captain Dustin Cleverley in Australia, although it is not a research report. It is a descriptive presentation of a multi-component prevention program implemented by the Australian Defense Force in 2002. The program included clinical "upskilling" for mental health professionals as well as depression management for primary care providers. Program elements also included a support line, annual training for all personnel, Battle Smart resilience training, and stated policy guidelines for the management of risk. The authors claimed the prevention efforts reduced rates per 100,000, from 9 pre-2002 to 5.5 post-2002.

Finally, James and Kowalski (1996) provided an overview of the Suicide Prevention Program for the Army's 25th Infantry Division (Light). The authors described a multi-disciplinary and multi-component approach with little description of training. The focus was on utilizing chaplains as key links to active duty soldiers, since they, according to the authors, have closer access to service members in the field and in garrison than do medical staff. The division psychologist (or social worker or psychiatrist) coordinated training (not described) for the chaplains on risk factors and prevention strategies. Suicide prevention training was included via handouts as part of officer leadership and general education.

A Review. Bagley, Munjas and Shekeile (2010) reviewed military suicide prevention programs in their *Suicide and Life Threatening Behavior* article, which summarizes a larger review conducted for the Department of Veterans Affairs in 2008. We include this review as a confirmation of our current search results and interpretation of findings. From 261 articles that they found on the general topic, they identified seven articles on suicide prevention in active duty military and three on veteran interventions. Four articles reviewed were relevant to this examination of prevention efforts and rates outcomes and are therefore described below reports by: Knox and colleagues (2003), Gordana and Milivoje (2007), Rozanov, Mokhovikov and Stiliha (2002), and James and Kowalski (1996). Bagley and colleagues' conclusion was to "grade" these multicomponent programs for active duty military as "probably reduce suicide rates", but rate that their evidence was "low". They concluded that the Knox (2003) study was the best given a higher level of evidence, and noted that the Gordana and Milivoje (2007) report, a study

of a suicide prevention program in former Yugoslavia that is modeled after the U.S. Air Force Suicide Prevention Program, supports the Knox (2003) findings. In addition, Bagley reviewed three reports about veterans that address specific treatments (dialectical behavior therapy, unspecified substance abuse treatment and antidepressant treatment) –reports which they graded as having "no conclusions" and evidence that is "very low". These reports did not involve trainings and therefore we did not include them here.

Summary of Suicide Rates Papers

Although the reviewed studies reported positive outcomes, i.e. a reduction in suicide rates as a result of the prevention efforts, multiple limitations hinder our ability to conclusively ascertain whether training medical providers in suicide prevention leads to fewer suicides. Foremost, the bulk of the studies that resulted from our search on the effects of prevention programs within military and veteran populations did not address suicide prevention training directed towards health professionals. Rather, prevention training was geared toward military personnel in general. Gordana and Milivoje (2007), Rozanov et al. (2002), Warner et al. (2011), and Cleverley mentioned medical providers but did not specify their training. Hough and Lewis (2000) described policy change in a hospital, but it is difficult to tell if it is Emergency Department physicians or psychiatrists who are trained. Importantly, it is not possible to parse out the individual contribution of training medical providers from these multi-component prevention efforts, nor is it possible to ascertain the degree to which policies were implemented as planned (in particular Hough & Lewis, 2000; Katz et al., 2012; Knox et al., 2003; Knox et al., 2010).

Some of the studies that reported a reduction in suicide rates as a result of the prevention programs were not conducted with the US armed forces. This highlights the lack of peer-reviewed journal articles on US suicide prevention programs for the military. International articles, such as Gordana and Milivoje (2007), Rozanov and colleagues (2002), and Cleverley reports, were included to expand the studies upon which we may draw as we address suicide rates within armed forces; however, this may limit the ability to generalize findings to the U.S. armed forces and veterans.

Many studies cited limitations that affect the degree to which suicide rate reductions can be attributed to the prevention program. For instance, Katz (2010) proposed two alternative hypotheses for the reduction in suicide among veterans, and noted that this downward trend in rates actually began before the prevention efforts were made. Furthermore, no data pertaining to the effect of prevention efforts on suicide rates was found for veterans outside of this article.

There is a lack of statistical analysis of the suicide rate changes reported in these studies. Many of the studies were descriptive in nature and lacked data analysis. Despite these studies being consistent in reporting rates reductions, a further analysis indicated that some of these reported reductions in rates coincided with rate reductions among the general population (Bagley et al., 2010; Gunnar, 2002)

Suicide Related Behaviors

As we did with Objective 1, we reviewed reports on the impact of prevention training on suicide related outcomes, including suicide behaviors (ideation, attempts) and mood disorders, as well on the willingness to access help. Risk factors have been identified by VHA as key to identifying populations at particular risk, and for designing intervention (Bagalman, 2013). Five studies are included in this section, two addressing veterans and three addressing active duty service members. Provider training programs were scarce, and were similar to those reviewed in the suicide rates section in that specific training of providers was not often detailed. Trainings were often focused on individuals in leadership positions rather than on healthcare providers.

Veterans

Britton, Conner and Maisto (2012) tested the acceptability of using motivational interviewing to address suicide ideation (MI-SI) among 13 psychiatrically hospitalized veterans. Study participants found MI-SI to be acceptable and experienced reductions in the severity of suicide ideation (based on Scale for Suicide Ideation scores) after treatment and at follow-up. In addition, in the two months after discharge from the hospital, 73% of participants completed two or more mental health or substance abuse treatment sessions each month.

Greden and colleagues (2010) described implementation of the Buddy to Buddy program for veterans from the Michigan Army National Guard. In this program, peers were trained to contact and check in with assigned soldiers returning home after deployment (Buddy Ones), and veterans from outside the Guard (Buddy Twos) received more intensive training to provide backup and support for Buddy Ones. Evaluation activities revealed that approximately two-thirds of the returning veterans were receiving regular calls from their Buddy and felt comfortable talking with that person. About 20% of veterans were referred to formal treatment by their Buddy. More than 50% reported using resources suggested by their Buddy, and many of the referrals were for resources such as assistance with benefits, job placement, finances, or legal matters.

Active Duty

McDaniel, Rock and Grigg (1990) conducted a retrospective study of suicide attempts and suicide ideation to evaluate effects of Navy training instructor participation in suicide prevention training. Training included identification of at-risk individuals and how to get help for them, reflection on stressors that enlisted personnel encounter, and case studies. Records were reviewed at the training command and compared with records at a nearby operational command of approximately the same size. Results indicated that there was a declining trend in suicide attempts and ideation at the training command during the training period, while there were no changes in the trend at the comparison base. In addition, the rate of suicide attempts was significantly inversely correlated with the number of instructors trained.

A more recent study by Jobes, Wong, Conrad, Drozd and Neal-Walden (2005) involved training of seven therapists (psychologists, psychiatrists, clinical social worker) who provided care for patients at two Air Force outpatient centers. Training was in Collaborative Assessment and Management of Suicidality (CAMS), a clinical approach to identifying, assessing and managing suicidal outpatients. When outcomes for patients whose providers employed CAMS (n = 25) were compared to those who received treatment as usual (n = 30), the treatment group resolved suicidality more quickly. In addition, CAMS was significantly associated with decreased medical care utilization in the six months after the start of CAMS treatment. The effectiveness of CAMS continues to be evaluated, but results of these evaluations are not yet published.

Bryan, L. Dhillion-Davis and K. Dhillion-Davis (2009) described emotional responses to video-based community briefing as part of the US Air Force Suicide Prevention Program (AFSPP). Brief videos focus on identification of suicide warning signs, responding to those at risk, the impact of suicide on survivors, and barriers to help-seeking behavior. As part of an introductory training, 286 active duty enlisted personnel completed ratings of positive and negative affective states before and after the briefing. Eleven percent of participants were classified as suicidal based on responses to questionnaires, and 40% reported knowing someone who had died by suicide. There were no differential effects for those who knew someone who died by suicide, but suicidal females reported “particularly large” decreases in negative emotional states (no change for suicidal males). The authors concluded that participation in the program resulted in minor reductions in positive emotional states and larger decreases in negative emotional states and, importantly, that there was no evidence of iatrogenic effects of the program.

They went on to state that these findings suggest that suicide prevention efforts are not only safe but might reduce risk among high-risk groups.

In summary, information about the effects of suicide prevention training on suicide-related behaviors for veteran and active duty service members is scarce. The evidence that does exist shows some promise in terms of decreases in behaviors and in help-seeking or acceptance of help. Overall, these studies involve small numbers of participants, and many do not report in detail about the study design or measurement of specific behaviors.

Provider Behaviors

In addition to examining suicide-related behaviors, we reviewed studies that examined changes in trainee behaviors subsequent to their suicide prevention training experience. Below, we review six studies, three related to veterans and three to active duty. These studies generally had larger sample sizes, though some also reported a large drop in participation in follow-up questionnaires. Studies included here addressed suicide prevention training for peers and professionals. We did not find trainings that focused on professionals from a single discipline; rather, health professionals or mental health professionals in general were the target audiences, or were part of a larger audience.

Veterans

Conner, Wood, Pisani and Kemp (2012) reported on the use of a 2-hour suicide prevention training for substance abuse treatment providers developed by the VA and delivered to 273 participants, most of whom (94%) identified their primary work site as the VA. Trainees reported significant improvement in self-efficacy and knowledge about suicidal behaviors, as well as significantly more frequent prevention practice behaviors following the training.

Matthieu, Cross, Batres, Flora and Knox (2008) conducted an evaluation of a gatekeeper training program (QPR) and behavioral rehearsal practice session for a national cohort (N = 602) of VA clinical and non-clinical personnel. They found a significant increase in knowledge and self-efficacy from pretest to posttest, with non-clinicians showing a larger effect size on both measures. High levels of value and satisfaction with the training we also reported by participants (96% and 93% respectively). The researchers concluded that results supported the premise that gatekeeper training can both enhance the capacity of current clinical providers while also providing a foundation for non-clinicians.

A later study by Matthieu, Chen, Schohn, Lantinga and Knox (2009) involved training of 71 VA professionals (disciplines included counseling, social work, psychology, nursing, rehabilitation

counseling, pharmacy), with 21 participating in a one-year follow-up evaluation. Pretest-posttest surveys indicated significant gains in (1) knowledge and (2) self-efficacy to identify, intervene and refer suicidal individuals after the training, with only self-efficacy remaining significantly increased at one-year follow-up.

Active Duty

The following three reports apply to peer-oriented suicide prevention trainings.

Applied Suicide Intervention Skills Training (ASIST) is part of the Army Suicide Prevention Plan, and two reports discussed responses of a wide range of personnel trained. The Health Promotion and Prevention Initiatives (2006) technical report describes training of 298 individuals, including commanders, drill instructors, mental health professionals, military police and chaplains. Of those trained, only 75 completed online post-training surveys. A large majority (n = 66, 66, and 67 respectively) responded that they strongly agreed or agreed that, because of ASIST training, they were better prepared to recognize signs of a soldier at risk for suicidal behavior, were more confident in their ability to help those at risk of suicide, and that all personnel who closely interact with soldiers should receive ASIST training. While geared to general Navy and Marine Corps personnel, Jones et al. (2001) reported that trainees from this general population also indicated a positive response to training and increased confidence in assisting a suicidal individual.

A report from *Living Works Education* (2009) also describes results of 18 ASIST trainings delivered to 502 participants between February and April of 2009. Trainees included mostly Army personnel, with civilians and family members comprising 8% and 2% of the trainees respectively. Results included the finding that, while 83% of participants reported some prior suicide prevention training, only 48% reported more than average confidence in helping an at-risk individual prior to ASIST training. After ASIST training, this increased to 90%; the odds of reporting "above average" confidence in helping someone at risk were 10 times higher than before participating in ASIST training.

Suicide Prevention: Taking Action-Saving Lives was released in 2000 for the Navy and Marine Corps as part of required annual training. Jones et al. (2001) reported on a random follow-up survey of 850 service members who took the training. Results indicated an "overwhelming general and positive response" to the training. They also reported that approximately 90% of trainees reported that they agreed or strongly agreed that getting help early avoids escalation of personal problems, that knowledge about suicide warning signs increased as a result of the trainings, and that they were confident they could assist someone displaying suicide risk warning signs to get help.

Studies included in this section described changes in trainee behaviors rather than outcomes for the population of active duty personnel and veterans, who the training was ultimately designed to benefit. However, results indicate that trainees generally found training acceptable and that they increased skills, knowledge and confidence about working with those at risk for suicide.

Non-training Prevention Efforts

In a field report, Knox, Kemp, McKeon and Katz (2012) reviewed evidence related to crisis hotlines and their use by the general population, confirming their effectiveness for reaching those who are younger, female, and at lower risk. This was contrasted to the VA crisis hotline, whose clientele is predominantly male and military veterans. In 2007 the VA partnered with SAMHSA to become part of SAMHSA's National Suicide Prevention Lifeline Network, which allows the VA to directly provide services to veterans anywhere in the country. The line is staffed by professionals who could access a veteran's medical records and incorporate the crisis line call into the medical record. As of 2010, three years after implementation of the hotline, the percentage of callers self-identifying as veterans increased from 30% to 60% of those who called the national line. Referrals increased fourfold from 2008 to 2010; 70% of callers were male and those who provided age were between 40 and 69 years old. Additional information is available on the success of the VA Veteran's Hotline: since 2007, when it was initiated, calls have increased from 9,379 in 2007 and 67,350 in 2008 with approximately 30% of calls from veterans, to 193,507 calls logged in 2012, 60% from veterans (Tobin, 2013). Some of the success is attributed to changing the name from a suicide hot line to the Veteran's Crisis line (David Litts, personal communication, March 28, 2013); being linked to National Suicide lifeline; an energetic media campaign; and to having text messaging as well as telephone options. The field report by Knox and colleagues (Knox, Kemp, McKeon, & Katz, 2012), along with supplementary material, demonstrates the acceptability and usage of the hotline. So far however there have been no studies of the effectiveness of reducing veteran suicide or suicide behavior based upon accessing the hotline.

Conclusions

There is little to no evidence for the specific effectiveness (or lack of effectiveness) of healthcare provider training on suicide rates or suicide behaviors, for veterans with or without ideation, or for active duty military personnel. We found no studies that specifically examine the impact of a provider training on suicide rates. One of the reviewed studies on impact to suicide behaviors involved a training (CAMS) for mental health professionals. The sample was quite small, but outcomes were positive

(quicker resolution of patient suicidal event). With one exception, studies of provider behavior outcomes were limited to mental health professionals and peer populations.

Rates studies in particular evaluated programs with multiple prevention components, without measures of program fidelity to determine if all components were enacted, or examination of the effectiveness of the separate program components (i.e., the healthcare provider training or involvement). The studies of multi-component programs reviewed for this report indicated positive outcomes for prevention programs among active duty military personnel. There are still numerous questions about the relative merit of inclusion of each individual component or the possible increase in effectiveness of adding other components, and optimizing the effectiveness of each additional component. While programs either did not include provider training, or were vague about provider training, nonetheless outcomes on rates, behaviors and trainees were generally favorable.

There is a lack of evaluation studies overall, and certainly a lack of quality studies that include such methodological basics as random assignment, pre and post assessments and controls for confounding influences such as the presence of multiple interventions at one time. The lack of studies with statistical analysis of suicide rate changes before and after intervention implementation is also a notable limitation. Study outcomes, even when utilizing long-term suicide rates, are primarily descriptive and do not control for other contributory factors. Conclusions drawn from the studies reviewed here, as well as from large scale reports for and about the DVA and DoD (Bagalman, 2013; Bagley et al., 2010; Department of Defense Task Force, 2010; IOM,2013; Kemp & Bossarte, 2012; Ramchand , 2011) support the contention that research is needed for suicide prevention interventions in DoD and VHA.

Many prevention recommendations appear to have been acted upon by the DoD and VHA, but notable gaps in practice remain. For both veterans and active duty personnel there remain barriers to accessing competent care, uncertainty as well as inconsistency about the quality of care, and a lack of evidence based treatments. For the DoD, quality of mental health care is reportedly unknown (Department of Defense Task Force, 2010); another report concludes that while VHA is possibly no worse than other medical care systems, the care offered may not meet VHA's own expectations and policies (Bagalman, 2013).

Ostensibly some 900 prevention programs have been fully or partially implemented with military suicide as the central focus -- many of these are "stand-alone" or "silo" efforts that are not coordinated with similar programs on or across the installations (Department of Defense Task Force, 2010). It used to be that military enlistment was considered protective for suicide (the "Healthy Soldier Effect"); while there

is much speculation that something unique to the current military experience (trauma, multiple deployments) is responsible for rising rates, evidence is contradictory (Jerry Reed, personal communication, April 5, 2013; IOM, 2013). Many of those who die by suicide were never deployed, challenging the notion that the current combat situation is uniquely responsible for rising rates.

Certain subgroups of both active duty and veteran populations appear to be at higher risk than others: those who suffer injury or trauma, have a pre-existing mental health condition including a substance or gambling disorder, and recent marital or legal difficulties. It may be beneficial to target such populations with more intensive and tailored intervention.

The sustainability of prevention programs must be monitored. Several studies showed evidence that rates bounced back when prevention efforts ended, or were lessened. For instance, Rosanov and colleagues (2002) reported zero suicides the year following implementation of the prevention program in the Ukrainian Army in 2000, yet rates began to spike one year later. They further stated that their study supports the Gotland study findings (see report for Objective 1), which stressed the need for continuous training. Data extending past two years was not available, as was the case for many of the studies; Knox and colleagues (2010) agree, saying that programmatic efforts must be continuously supported and monitored to ensure sustained effects.

While not a direct goal of this report, we find inconsistencies regarding reports of suicide among military worth noting. This is important to address, as accurate surveillance is an important step in suicide prevention. Media reports can be misleading, often reporting partial years and using unstated or even inappropriate comparison groups and imprecise sources of suicide data. Overall, we found general agreement for the following: rates of suicide increased over the last decade, and active duty rates appear to still be increasing. Data indicate lower overall mortality for veterans than in the general population, although it seems that OEF and OIF veterans and the general population are now at equal risk for suicide – and that finding varies little with branch of service. Active duty rates are approaching the rates for general population as well, however for both groups (veterans and active duty) we must compare rates with rates for appropriate gender and age ranges.

Future Directions

While numerous programs have been implemented in all branches of the service as well as among veterans for over a decade, the calls to coordinate prevention activities across service branches and evaluate those activities vis a vis changes in rates and behavior remain more recent – hence the lag in

peer reviewed reports and in evidence-based programs. In order to address the lack of evidence, program implementers will need to build evaluation activities and an evaluation "consciousness" into the implementation phase of suicide prevention efforts. This means measuring pre and post training effects and examining components of prevention programs separately as well as compared to each other.

At the same time, we note that no one program or approach will prevent suicide- a concerted effort to prevent suicide among military will involve numerous approaches and multiple people (Jerry Reed, personal communication, April 5, 2013) at the same time that programs are coordinated across sites and military branches. Furthermore, there is a lack of system-wide coordination between, and likely within, the VA, DOD and Health and Human Services. Prevention benefits from the involvement of multiple if not all roles that comprise systems – a perspective that must replace outmoded approaches that focus on designated individuals or professions (David Covington, personal communication, April 4, 2013). What this means for military is continued efforts to implement and sustain programs that reach all members of the service and that designate each member's role in systematic prevention efforts, and that also coordinate with other programs that are being concurrently implemented.

We need to address the gap that remains between policy and practice, particularly for timely assessment and intervention, and to consider making changes in military practices in order to better monitor individual mental health across transfers and deployments, assess the availability of lethal means for vulnerable individuals, decrease hazing and abuse, and reduce stigma of seeking help (Bagalman, 2013; Harrell & Berglass, 2011).

Bryan, Jennings, Jobes, and Bradley's 2012 analysis of ways in which current mental health treatment misaligns with military culture suggested that prevention efforts might be more accessible to service members if they are provided with skills that promote mental health while mitigating factors that contribute to suicidality. Along those lines, among approaches for active duty personnel, there is an emerging "strengths-based" focus surrounding suicide prevention directed towards the armed forces and veterans. This strengths-based focus stems from the need to align suicide prevention efforts with military culture in order for prevention to be effective. It is a shift in focus towards embracing personal strengths in place of traditional prevention efforts that are based on trainings that emphasize signs and symptoms of suicidality and encourage referral to tertiary care. Examples of these strengths-based approaches are evident in the US Army's Comprehensive Soldier Fitness (CSF) program which is designed to increase psychological strength and reduce maladaptive responses throughout the entire US

Army (Cornum, Matthews & Seligman, 2011). Although it is beyond the scope of this report to address in detail, it is worth considering how reorienting the health providers' training in a way that aligns with a strengths-based focus would impact suicide rates, and perhaps be more successful in connecting with service personnel.

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Table 1: Suicides/Suicide Rates

CITATION	TRAINED POPULATION	INTERVENTION	RESEARCH DESIGN/ANALYSIS	RESULTS
Bagley, S. C., Munjas, B., & Shekeile, P. (2010). A systematic review of suicide prevention programs for military or veterans. *Suicide and Life-Threatening Behavior, 40*(3), 257-265.	*U.S. Army, 25th Infantry Division *U.S. Navy training command *U.S. Air Force *U.S. Navy and Marine Corps *U.S. naval base, Okinawa; personnel referred into gambling treatment program *Army of Serbia and Montenegro *Ukrainian army unit *U.S. veterans	*Interventions varied for 10 studies incorporated in review *All multifaceted *7 studies for Active Duty *3 studies for U.S. veterans	*Systemic review examined 3,406 titles *Reviewed 261 articles *Used 10 articles	*All reported declines in suicides or suicide attempts *Rates of evidence low for Active Duty *Evidence for Veteran rates very low/findings inconclusive
Cleverley, D. ADF suicide prevention program [pdf document]. Retrieved from: http://www.mhct.org	*Training for Australian Defense Force personnel and "upskilling" for mental health workers indicated	*Australian Defense Force Suicide Prevention Program *Clinical “upskilling” for Defense mental health professionals *100 ASIST trainers within Defense *Development of policy regarding the clinical and administrative management of at-risk personnel *Resilience training aimed at the development of stress coping ability or “stress inoculation” *The All Hours Support Line (ASL) *Mandatory Annual Training for all personnel (30 minutes) *Keep Your Mates Safe Suicide Prevention *KYMS-SPT also available but underutilized - 2hr. F2F training * BattleSmart resilience training available. *Health Directives including management of depressive disorders for primary care providers	*Powerpoint, no statistical analysis	*Pre 2002 average before the ADF SPP: 9 suicides/year *Post 2002 average: 5.5 suicides/year

CITATION	TRAINED POPULATION	INTERVENTION	RESEARCH DESIGN/ANALYSIS	RESULTS
Gordana, D. J., & Milivoje, P. (2007). Suicide prevention program in the Army of Serbia and Montenegro. *Military Medicine, 172*(5), 551-555.	*Training not clarified--mentions that friends and family of at risk person are taught suicide warning signs *Soldiers & professional staff in Army of Serbia and Montenegro (former Yugoslavian Army)	*Based on the U.S. Air Force (USAF) Suicide Prevention Program *Fundamental goal to reduce range of risk factors for military population *Incorporates 5 level prevention model *Preventive activities based on education of responsible professional staff and soldiers *Follow-up procedure included lectures and materials distributed to all military units	*Comparison of pre/post intervention rates *Comparison to civilian suicide rates *Size of population not mentioned	*Suicides constantly reduced over the period 2004 to 2005 after program implementation in 2003 *For soldiers, suicide rate was four times less than in civilian male population, particularly in period of adaptation to military environment *Over the period 1999 to 2003, the suicide rate in the Yugoslav Army approximately 13/100.000 *After the Suicide Prevention Program's implementation, the suicide rate for soldiers significantly decreased to 5/100.000 in 2004, the lowest suicide rate among soldiers in the postwar period
Hough, D., & Lewis, P. (2000). A suicide prevention advisory group at an academic medical center. *Military Medicine*, *165*(2), 97-100.	*Department of Psychiatry, Tripler Medical Center, Honolulu, Hawaii. *Army medical center *Number of people trained not specified	*Target population: U.S. military personnel *Creation of suicide prevention advisory group & implementation of their 11 recommendations including: education for MH providers, community education, improve communication between hospital and clinics, changes to treatment of suicidal inpatient clients, classes for ER on suicidal assessment, improving social work resources.	*Mixed design: case studies of 7 suicides & analysis of suicide rates pre/post creation of the suicide prevention advisory group	*Improvements to the Tripler mental health system were identified and implemented *In 22 months after implementation there were 0 suicides compared to 7 in previous 15 months
James, L. C., & Kowalski, T. J. (1996). Suicide prevention in an army infantry division: a multi-disciplinary program. *Military Medicine*, *161*(2), 97-101.	*Includes training in commander courses & officer professional development courses	*25th Infantry (Light) Suicide Prevention *Multi-disciplinary approach including: -Lectures by chaplains -Training programs & handouts -Crisis intervention consultation -Creating a book of high-risk people to monitor -Mental health & substance abuse programs *No description of training utilized	*Pre/post intervention rates	*Suicide rate decreased to 3 in the last 2 yrs. *Comparison or previous rate unknown

CITATION	TRAINED POPULATION	INTERVENTION	RESEARCH DESIGN/ANALYSIS	RESULTS
Katz, I. (2010). Lessons learned from mental health enhancement and suicide prevention activities in the Veterans Health Administration. *American Journal of Public Health*, *102*(S1), S14-S16.	*VA workers *Infrastructure; training not specified	*Designed to assist veterans who received services in VA or VHA *Creating national office for suicide prevention *Adding veterans' call center to national crisis line *Funding suicide prevention coordinators and support staff in VA medical centers and largest outpatient clinics *Policy requirements for screening VA patients for mental health conditions *Suicide risk follow- up evaluations for those screening positive *Safety planning as intervention for those at high risk *Two centers for research, education, and clinical innovation & evaluation activities within suicide prevention & mental health programs *Parts of system still evolving: collaborations with DoD; extensions of crisis line to include Internet chat and texting, self-assessment component on the Internet, and systems for surveillance for suicide attempts	*Editorial with examination of rates *Comparison of rates pre/post	*Rates of suicide began to decline in 2001 and 2002 before the improvements in prevention were made in 2003 *Two hypothesis for this reduction: 1. Increased community support provided veterans with a greater sense of belonging (Yellow Ribbon Effect). 2. The Veterans (Millennium Health Care Act Public Law 106---117), enacted in 1999 and implemented over subsequent years, provided for increases in VHA services *Rates were higher for VA users in the 30+ age range *Proportion of VA users under 30 who utilize services increased, suicide rates for these utilizers decreased over all, and decreased compared to VA non utilizers
Knox, K. L., Litts, D. A., Talcott, G. W., Feig, J. C., & Caine, E. D. (2003). Risk of suicide and related adverse outcomes after exposure to a suicide prevention programme in the US Air Force: Cohort study. *BMJ*, *327*(7428), 1376.	*Active duty US Air Force personnel (5,260,292) between 1990-2002 *84% male	*Multi-layered intervention * 11 components including: *Leader awareness education & training (every 3-6 months for all installation commanders) *Incorporating prevention into professional military education curriculums *Community education- "buddy-care" training for all personnel & leadership/supervisory training for unit gatekeepers *Focus on reducing stigma of seeking help for mental health, enhancing understanding of mental health, & changing policies & social norms	*Cohort study, quasi-experimental *$\chi 2$ test for trend with Mantel-Haenszel statistic to test whether rates for main outcomes in each n level (year) were changing in a linear fashion	*Sustained decline in the rate of suicide & other adverse outcomes *Pre-intervention rate: 13.5/100,000 *Post-intervention rate: 9.2/100,000 (33% relative risk reduction observed for suicide) *Reductions for other outcomes ranged from 18-54%

CITATION	TRAINED POPULATION	INTERVENTION	RESEARCH DESIGN/ANALYSIS	RESULTS
Knox, K. L., Pflanz, S., Talcott, G. W., Campise, R. L., Lavigne, J. E., Bajorska, A., ... & Caine, E. D. (2010). The US Air Force suicide prevention program: implications for public health policy. *American Journal of Public Health, 100* (12), 2457-2463.	*US Air Force personnel (leaders and lower ranking officers) *Total force population over 500,000 from 1981-1990's	*Same as above (Knox et al., 2003) *Program launched in 1996, fully implemented in 1997 *Leadership involvement and community approach *Shift from seeing suicide as a medical problem to a service wide priority *Changes in social norms through education and policy	*Intervention regression model to data from 1981 through 2008, providing 16 years of data before the program's 1997 launch & 11 years of data after launch	* Suicide rates were significantly lower after the Air Force Suicide Prevention Program was launched than before, except during 2004 (possibly because program was implemented less rigorously in 2004) *Reactivated actions to ensure compliance
Rozanov, V. A., Mokhovikov, A. N., & Stiliha, R. (2002). Successful model of suicide prevention in the Ukraine military environment. *Crisis: The Journal of Crisis Intervention and Suicide Prevention*, *23*(4), 171-177.	* Gatekeeper training for all soldiers, officers, warrants, sergeants, chaplains, education officers, psychologists, social workers, medical officers, psychiatrists in Ukrainian army	* Prevention model based on education of officers, training representatives of most vulnerable risk groups & follow-up procedures based on distribution of books for soldiers *Gatekeeper training ranged from 3hrs.-7hrs. *Steps to implementation: *5 day training for professionals *4 mo targeted weekly training for soldiers *3 day large training for professionals, educational officers, medical doctors, unit commanders	*Time series design comparing rates of suicide before & after implementation of training program	*Pre-intervention average rate: 32.6/100,000 (1988-1999) *Post-intervention rate: 0 (2000), and 16.7 (2001) *Raw number comparison *Bounce back in rates after 2 yrs
Warner, C. H., Appenzeller, G. N., Parker, J. R., Warner, C., Diebold, C. J., & Grieger, T. (2011). Suicide prevention in a deployed military unit. *Psychiatry: Interpersonal & Biological Processes, 74*(2), 127-141.	*Soldiers & community members in one U.S. Army division (proportion of people trained not specified)	*Deployment cycle-specific suicide prevention plan for one U.S. Army division during 15-mth. deployment to Iraq *Interventions integrated into each phase of deployment cycle * Strengths-based focus (Solider Battlemind, Spouse Battlemind) *Education, early detection, intervention, communication, unit health needs assessment, command/leader emphasis, & treatment within the various phases of deployment cycle for all unit members & significant others *Training soldiers & community members (chaplains, medical & mental health providers)	*Compared suicide and suicidal ideation of group receiving prevention program to a theater rate	*During deployment, an annual suicide rate of 16/100,000 within the trial cohort, compared to a theater rate of 24/100,000 *Peaks in SI and behaviors occurred during months 2, 6 & 12 of deployment *Reduced rates may also have been associated with increased willingness of soldiers to seek help for suicidal thoughts

Table 2: Suicide Behaviors

CITATION	TRAINED POPULATION	TARGETED POPULATION	INTERVENTION	RESEARCH DESIGN/ANALYSIS	RESULTS
Britton, P. C., Conner, K. R., & Maisto, S. A. (2012). An open trial of motivational interviewing to address suicidal ideation with hospitalized veterans. *Journal of Clinical Psychology, 68*(9), 961-971.	*Master's & doctoral level researchers conducted interviews *Training for this not specified	*13 psychiatrically hospitalized veterans with SI *9 (70%) completed both MI-SI sessions and post treatment assessment *11 (85%) completed follow-up	*Test acceptability of motivational interviewing to address SI: Motivational Interviewing for Suicide Ideation (MI-SI) *Estimate pre/post effect size on the severity of SI *Examine rate of treatment engagement after discharge	*Participants received screening assessment, baseline assessment, 1 or 2 MI-SI sessions, post treatment assessment & 60-day follow-up assessment	*Participants found MI-SI acceptable *Experienced large reductions in severity of SI at post treatment & follow-up assessments *In 2 months following discharge, 73% of participants completed two or more mental health or substance abuse treatment sessions each month
Bryan, C. J., Dhillon-Davis, L. E., & Dhillon-Davis, K. K. (2009). Emotional impact of a video-based suicide prevention program on suicidal viewers and suicide survivors. *Suicide and Life-Threatening Behavior, 39*(6), 623-632.	*286 active duty USAF airmen *32 (11.2%) were classified as suicidal *113 (39.5%) reported knowing someone who died by suicide	Same as trained	*U.S. Air Force Suicide Prevention Program's video-based community briefing *Consists of 4 brief videos that highlight identification of suicide warning signs, responding to those at risk, impact of suicide on survivors & barriers to help- seeking behavior	*Pre-posttest questionnaires *t-tests & ANOVA	*Small decreases in positive emotional states and larger decreases in negative emotional states, especially among suicidal females *No evidence of iatrogenic effects were observed among suicidal or survivor subgroups compared to controls

CITATION	TRAINED POPULATION	TARGETED POPULATION	INTERVENTION	RESEARCH DESIGN/ANALYSIS	RESULTS
Greden, J. F., Valenstein, M., Spinner, J., Blow, A., Gorman, L. A., Dalack, G. W., ... & Kees, M. (2010). Buddy-to-Buddy, a citizen soldier peer support program to counteract stigma, PTSD, depression, and suicide. *Annals of the New York Academy of Sciences, 1208*(1), 90-97.	*To date approximately 350 Buddy Ones and 32 Buddy Twos trained	*Veterans in the Michigan Army National Guard (MIARNG) (9,000 citizen soldiers deployed since 2001)	*Buddy to Buddy: private–public partnership under Welcome Back Veterans Initiative *Ensures contact with every returning MIARNG soldier by using soldier peers *Consists of 2 tiers: Buddy Ones & Buddy Twos *Training for Buddy Ones approx. 3 hrs. with handouts *Trained peers contact assigned soldiers to check in & help identify those with clinical needs, encourage registration & entry into VAH or military programs *Buddy Twos: vets from outside Guard, receive more intensive training to identify & train community clinicians	*Surveys (no details provided)—preliminary data reported	*Approx. 2/3 are receiving regular calls from their Buddy and feel comfortable talking with their Buddy *More than half reported using resources or services suggested by Buddy *In many cases, referrals for concrete resources, such as assistance with benefits, job placement, financial assistance, or legal help *More than 20% have been referred to formal treatment by Buddy
Jobes, D. A., Wong, S. A., Conrad, A. K., Drozd, J. F., & Neal-Walden, T. (2005). The collaborative assessment and management of suicidality versus treatment as usual: A retrospective study with suicidal outpatients. *Suicide and Life-Threatening Behavior, 35*(5), 483-497.	*7 Therapists: psychologists, clinical social worker, psychiatrists	*Patients who received care at two outpatient Life Skills Centers in the U.S. Air Force 10th Medical Group *Treatment group (n = 25) *TAU patients (n = 30) *20% officers *80% enlisted personnel	*Collaborative Assessment and Management of Suicidality (CAMS) *Clinical approach to identify, assess, and manage suicidal outpatients *Initiated when patient acknowledges SI on self-report or interview *Therapists introduced to CAMS protocol during staff presentation *Therapists who expressed interest received additional training *6 of 7 therapists attained at least a basic working understanding of CAMS; their patients were used in the treatment group	*Retrospective study evaluating the impact of CAMS versus treatment as usual on suicidal outpatients	*Treatment group resolved their suicidality significantly more quickly than TAU patients *CAMS significantly associated with decreased medical health care utilization in the 6 months after start of suicide-related mental health treatment

CITATION	TRAINED POPULATION	TARGETED POPULATION	INTERVENTION	RESEARCH DESIGN/ANALYSIS	RESULTS
McDaniel, W. W., Rock, M., & Grigg, J. R. (1990). Suicide prevention at a United States Navy training command. *Military Medicine, 155*(14), 173-175.	*U.S. Navy training command center instructors; number not specified	*Navy personnel at a training command center; number not specified	*Suicide prevention & stress mgmt. taught to instructors *Training generally discussed problem of suicide prevention, incorporated leadership skills and personal reflection *Consulting psychiatrists taught initial training, when program resumed, taught by personnel from medical clinic, family services center, and chaplains *Instructors were taught how to identify & help people at risk & how to get help for them *Discussion based, but not otherwise specified- used actual cases for illustration *Offered three 1 hr. trainings	*2 yr. retrospective study *Collected statistics from clinical visits where service members presented with complaints of SI or attempts *Compared to same stats. from nearby operational command center *Compared number of instructors trained with number of attempts each month *Suicide attempts considered target behavior	*Rates of parasuicide (attempts & ideation) declined at the training command during time of prevention efforts, but not at the nearby command center *Number of instructors trained was significantly negatively correlated with suicide attempts (-0.65). *Prevention may be more important in training command centers than operational command centers

Table 3: Trainee Behaviors & Attitudes

CITATION	TRAINED POPULATION	INTERVENTION	RESEARCH DESIGN/ANALYSIS	RESULTS
Conner, K. R., Wood, J., Pisani, A. R., & Kemp, J. (2013). Evaluation of a suicide prevention training curriculum for substance abuse treatment providers based on Treatment Improvement Protocol Number 50. *Journal of Substance Abuse Treatment, 44*(1), 13-16.	*273 Substance use disorder treatment providers across 18 states *94.1% worked primarily for VHA *Primary professional responsibilities: 48.7% treatment provider 19.8% case manager 3.7% supervisor 3.7% student/trainee 2.9% administrator 18.7% other	*2-hour training featuring a suicide prevention training video developed by VA for substance use disorder treatment providers *Small group format	*Pre/post test *2 month follow-up *All self-report assessments	*Statistically significant changes ($p < .001$) within subjects in self-efficacy, knowledge, and frequency of suicide prevention practice behaviors
Health Promotion and Prevention Initiatives (HPPI) Program Suicide prevention initiatives. (2006). Retrieved from: http://www.livingworks.net	*298 people trained: Cadre, commanders, drill instructors, mental health professionals, military police, other first responders, chaplains *3 psychiatric nurses trained as ASIST "master trainers" *Master trainers able to train others for 2 yrs. beyond original project	*ASIST	*Internet-based survey post training *Only 75 completed post survey	*Majority agreed, with the following: "Because of ASIST, I feel better prepared to recognize the signs of a Soldier at-risk for suicidal behavior." "Because of ASIST, I feel more confident in my ability to help those at-risk of suicide." "ASIST should be given to all personnel that interact closely with Soldiers."

CITATION	TRAINED POPULATION	INTERVENTION	RESEARCH DESIGN/ANALYSIS	RESULTS
Jones, D. E., Kennedy, K. R., Hawkes, C., Hourani, L. A., Long, M. A., & Robbins, N. L. (2001). Suicide prevention in the Navy and Marine Corps: Applying the public health model. *Navy Medicine*, *92*(6), 31-36.	*850 service members of U.S. Navy & Marine Corps	*New training package: Suicide Prevention: Taking Action-Saving Lives *Released in 2000 and developed for both Navy and Marine Corps as part of required annual training *Highlights positive role models for suicide prevention video format increasing awareness, encouraging all levels to act, addressing fears	*Random post surveys	*Positive response to training *90% felt increase in knowledge and confidence
LivingWorks Education. (2009). HQDA Taskar No. 09013001 ASIST evaluation. Retrieved from http://www.livingworks.net	*502 survey respondents *64% Army *26% ARNG/USAR *8% civilian *2% family	*ASIST led by Army trainers in 18 workshops (16 in US, 2 in Iraq)	*Results of LivingWorks Education part of the Army G-1 collaboration with the Center for Health Promotion and Preventive Medicine to assess ASIST workshops conducted by Army trainers	*Although 83% reported prior suicide prevention training, only 48% reported more than average confidence to help person at risk for suicide before taking ASIST *Increased to 90% after ASIST *Odds of reporting “above average” confidence to help someone at risk of suicide was 10 times higher than the odds of reporting this before taking ASIST
Matthieu, M. M., Cross, W., Batres, A. R., Flora, C. M., & Knox, K. L. (2008). Evaluation of gatekeeper training for suicide prevention in veterans. *Archives of Suicide Research, 12*(2), 148-154.	*National cohort (n= 602) of community based counseling center staff: Psychologists, social workers, and nonclinical staff: administrative staff and community outreach workers from the U.S. VA	*Brief standardized gatekeeper training (QPR) & scripted behavioral rehearsal practice session *Training conducted by a certified QPR Institute, Inc. instructor & doctoral level social worker *Delivered to groups of approx. 70 attendees *1-hour multimedia training *Behavioral rehearsal-practiced gatekeeper skills’ in 3 person peer group format; 5-7 minute standardized role play	*Pre/posttest.	*Significant difference in knowledge & self-efficacy from pre to post ($p < .0001$) *Non-clinicians showed larger effect sizes for knowledge (0.96 vs. 0.42) and self-efficacy (0.89 vs. 0.41)

CITATION	TRAINED POPULATION	INTERVENTION	RESEARCH DESIGN/ANALYSIS	RESULTS
Matthieu, M. M., Chen, Y., Schohn, M., Lantinga, L. J., & Knox, K. L. (2009). Educational preferences and outcomes from suicide prevention training in the Veterans Health Administration: one-year follow-up with healthcare employees in upstate New York. *Military Medicine, 174*(11), 1123-1131.	*Pre-training N=71 *1 yr. follow up N=21 *VA health setting *1 counselor *7 social workers *3 psychologists *5 nurses *1 certified rehabilitation counselor *1 doctor of pharmacy	*3 sessions of brief standardized gatekeeper program & needs assessment on training preferences for suicide and suicide prevention *Doctoral level social worker presented 1 hr. multimedia training to groups of 25-30 attendees *Small group format to practice gatekeeper skills	*Pre/ post survey design & 1 yr. follow-up *Two independent raters established coding scheme to categorize responses related to each fill-in-the-blank option	*Significant increases in knowledge & self-efficacy {$p < 0.001$) *Only self-efficacy remained significant at 1 year follow-up, as compared to pre training ($p < 0.001$) *Declarative knowledge decreased over follow-up period nearly to pre scores *At post-training 90% willing to learn more about suicide *88% willing to spend more than 1 hour in future training activities on more advanced topics *Making a referral was significantly related to higher levels of education, clinical interviewing experience, asking others whether they were thinking of killing themselves, making an attempt to intervene, having more factual knowledge about suicide before & immediately after training & higher posttest self-efficacy

Objective 4

Summary

Purpose

- *Review of suicide training that is currently offered to healthcare professionals at educational institutions in Washington State.*

Findings

- Representatives of 37 healthcare profession training programs participated in an interview about suicide prevention training in their curriculums.
- Very little suicide prevention training is included in the pre-credential education of healthcare professionals in Washington State.
- What little training there is does not typically involve consistent, specified or required material on suicide prevention.
- Programs contacted were interested in learning more about ways to include/enhance suicide prevention content in their curriculums.

Conclusions and Future Directions

- There appears to be interest and opportunity to enhance and systematize suicide prevention training within pre-credential healthcare training programs.

Objective 4

Review of suicide training that is currently offered to healthcare professionals at educational institutions in Washington State.

Overview

In the Objective 4 Report we reviewed the suicide prevention training that is currently offered to healthcare professionals during their professional training at educational institutions in Washington State. This report is based upon a convenience sample of programs for which we received a response to our email or telephone invitation to participate in a brief interview about suicide prevention training. There were many programs from which we did not receive a response.

For the report we contacted healthcare programs across Washington State in order to learn more about the suicide prevention training currently offered to students as part of their initial professional training. We did not investigate trainings provided for those who were already trained and licensed in their profession. We began our investigation by researching online which educational institutions in Washington provide health care degrees. We gathered information about the largest schools in the state and sought to find at least one program for each of the credentialed health professions. For some professions, there was only one school offering the program; therefore, if no response was received from that program we were unable to report on that profession. On the contrary, there are other professions, nursing for example, where credentialing training is offered in forty-three separate programs. With the scope of the project in mind, we compiled a sampling of educational institutions covering as many of the professions as possible. We are sensitive to the autonomy programs have in designing their curriculums, therefore, our conclusions may not be generalizable to all schools providing credentialing for that specific profession. Other institutions and programs may have different requirements and may offer more or less training than indicated in our findings. Furthermore, there was a variation in who from the responding programs participated in the interviews we conducted, from designated program directors to office staff, both adjunct and tenure track faculty members. Consequently, we acknowledge that the answers may be somewhat different depending upon who was willing to participate in our project.

Individuals were contacted via telephone or email and asked the following questions:

1. *Is suicide prevention training or coursework (specifically) required to complete any or all of the programs that you oversee or direct? This is training in any aspect of awareness, identification or treatment for suicide risk among patients/clients.*
   a. *Which programs or school are you reporting upon?*
   b. *If not required for all programs, for which programs is prevention training required?*
2. *If yes, is suicide prevention a formal part of the curriculum (specified in course description)?*
3. *Is it required for: (the degree; to progress to residency/clinical practicum)?*
4. *(If not required) Is suicide prevention training offered informally at some point in program?*
5. *About the training:*
   a. *How is it offered, i.e. in a particular course, a practicum, a rotation?*
   b. *At what point in the program is the topic covered?*
   c. *How much time is spent on the topic (hours)?*
   d. *What specifically is taught about suicide prevention? (e.g. risk factors; signs of distress; how to ask/discuss/respond; referrals to resources; management of crisis; treatment)*
   e. *Is it didactic (offered as course content) or practice (or both)?*
   f. *Are there any other subsequent courses where suicide prevention is also reviewed?*

Results

In all, we contacted 21 educational institutions offering roughly 56 different programs representing over 35 of the professions included in this report. A total of **37** responses were received providing information about the suicide prevention training offered to **28** different professions as listed in Table 1. All programs on our self-selected list were contacted a minimum of 2 times.

Among our 37 responses, training for 22 programs for 16 different professions included some offering of suicide prevention training. Table 1 indicates the programs that we contacted and those that offered suicide prevention training; those that offered more limited suicide prevention material, and those which did not require or offer any suicide prevention training.

In order to organize the responses to our query, we coded responses to our questions in the following three ways, below, accompanied by the number of responses that fit into each category.

- Programs coded as "Yes" = 9. These programs required and offered suicide prevention training. Five programs required QPR and prevention training; the training that was offered in the other

programs was in depth, offered every year in the same class and clearly stated in program materials.

- Minimal = 13. This category was designated for programs that folded suicide prevention material into a counseling, behavioral or patient care class; it was usually brief (one class, mostly less), part of depression/mental health awareness rather than 'stand alone', and was unspecified in terms of content and learning strategy. Also, for some programs in this category prevention training was considered required because the course in which it was embedded was required, not because the specific prevention material was required
- No = 15 programs stated that suicide prevention training was not required and not offered.

The amount of time spent on the topic of suicide prevention ranged from approximately 10 minutes or 1 1/2 pages to 8 total hours of training, with the average time spent hovering around a few hours. Most programs embed suicide prevention curriculum within their more comprehensive mental health or behavioral health discussions. Many bring in guest lecturers to speak on the topic of suicide prevention. We spoke to several lecturers who deliver the prevention material. By and large, the majority of the prevention training is focused on risk factors, the identification of potentially suicidal individuals, and how to ask, assess and refer patients exhibiting signs of distress. Programs include little about the management or treatment of suicidal patients.

Of the 22 programs that offer some training, 15 stated that it is considered required to obtain the degree, meaning that it is either included in a mandatory class or that specific aspects of skills, i.e. learning to properly assess someone at risk, are required to be mastered before being able to continue on with degree course work. Some programs, even while stating that suicide prevention is both required and offered, nonetheless offered prevention 'trainings' that were quite minimal (i.e. 1.5 pages of text or less than one hour) or vague.

Summary

Overall, there was interest in suicide prevention training among respondents to our questions, but less than half of the programs we contacted offered a consistent, articulated suicide prevention training that was required for graduation. The majority of suicide prevention training offered was brief, didactic and embedded in a single course lecture. Of the nine programs that were considered clearly articulated, required and consistent from year to year, about half were an on-line program (three to six hours in length). In sum, it is difficult to ascertain, much less document, the kind of suicide prevention training

received by most of the healthcare professions who attended programs covered in this report. In general, most professional programs we contacted offered no or limited prevention training.

Table 1. Healthcare Professions Training Summary

Profession		Training Offered
Dental Care	Dentist	Minimal
	Dental Assistant	No
	Dental Hygienist (2)	1 Yes; 1 No
First Responders/ Emergency Personnel	Emergency Medical Technician (EMT) NCTI	Minimal
	Paramedic (2)	Minimal
Hearing & Speech Specialists	Audiologist	No
	Speech & Hearing	No
Nursing	Doctor of Nurse Practitioner (DNP) in Psychiatric Mental Health (2)	2 Yes
	DNP Community Health	Minimal
	Psychiatric Nurse Practitioner (ARNP)	Yes
	Registered Nurse (RN) (3)	3 Yes
	Nursing Assistant	Minimal
Pharmacy	Pharmacist	Minimal
Physicians	Medical Physician (MD)	Minimal
	Osteopathic Physician (DO)	Yes
Naturopathic Providers	Naturopathic Physician	Minimal
	Nutritionist/Dietitian (2)	No
	Midwifery (2)	No
Physical Activity/Sports Therapy Providers	Athletic Trainer	Minimal
	Physical Therapist (DPT) (3)	1 Yes; 1 Minimal; 1 No
	Physical Therapy Assistant	No
	Rehabilitative Medicine (PhD)	No
Health and Human Services Providers	Occupational Therapy	Minimal
Miscellaneous Health Care Providers	Radiologic Technician	Minimal
	Nursing Home Administrator	No
	Hypnotherapy (BTC)	No
	Respiratory Care Provider	No

Total Professions Represented: 28

Total Programs Represented: 37