

**Evaluation of a gatekeeper training program as suicide intervention training  
for medical students: A randomized controlled trial**

by

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# Abstract

Most individuals who die by suicide have contact with a physician in the year before their death. There are no randomized trials that have evaluated suicide intervention training for medical students or physicians. The objective of this study was to determine the effectiveness of a gatekeeper training program on suicide intervention behavior using Objective Structured Clinical Examinations (OSCEs) in medical students. A randomized controlled trial design was used. Participants were 112 undergraduate medical students at the University of Manitoba. The 2-day Applied Suicide Intervention Skills Training (ASIST) program was completed by half of the participants, according to a stratified block randomization design. Scores on OSCEs and scores on the Suicide Intervention Response Inventory (SIRI-2) were used as objective measures of intervention behaviors. There was a significant Group-by-Time interaction on OSCE data, demonstrating that medical students who received ASIST performed significantly better than medical students who received training as usual ( $p < .001$ ). The two groups did not differ significantly from each other on the SIRI-2 ( $p = .78$ ). ASIST training improved the ability of medical students to detect and intervene with a standardized suicidal patient as assessed by OSCEs, compared to medical school training as usual. This study provides support for ASIST training for medical students to develop skills in recognition and management of suicidal patients.

Trial Registration: Clinical Trial Registration # NCT01252927 ([clinicaltrials.gov](https://clinicaltrials.gov))

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# Dedication

I would like to dedicate my thesis to my son, Atticus, who was quite successful in distracting me from this project for a few good years. You are my life and I wouldn't change a minute of that time together. To my husband, thanks for the moral and tangible support you've provided throughout this process. You were always in my corner on this one. Couldn't have done it without you - really. To Jack and Luke, you keep me on my toes but its always a fun ride. And to my family, the Therriens and the Boltens, thank you for always asking and showing interest in what I was doing even though it never seemed to end. And finally, to my little baby daughter who I have yet to meet, thank you for inspiring me and giving me a reason to get this done.

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# Chapter 1: Introduction & Literature Review

## Suicide

The word 'suicide' was originally introduced by the English physician and philosopher Sir Thomas Browne in his *Religio Medici* in 1642.<sup>1</sup> Derived from the Latin words 'sui', meaning 'of oneself', and 'caedere', meaning 'to kill', the word was used to distinguish between the homicide of oneself and the killing of another.<sup>2</sup> Suicide at this time was not a new phenomenon; accounts of suicide date as far back as 295 BC.<sup>3</sup>

The conceptualization of suicide has changed throughout history and has influenced our definition of the word today. In Early Roman culture, suicide was acceptable, and even at times recommended.<sup>1</sup> However, in 348 AD an important shift happened. Prohibition of suicide was declared as a result of the Christian community, who felt that suicide rates were unacceptably high due to increasing acts of martyrs called "Donatists" who followed the example of Christ.<sup>2</sup> The Catholic Church and the Roman Empire condemned suicide in an effort to sustain their populations amidst wars, famines and plagues.<sup>4</sup> By the Middle Ages, suicide was viewed as a criminal act and harsh penalties were put in place for people who died by suicide and their families. Thanks to influential thinkers like Emile Durkheim, who introduced suicide as a measure of societal well-being,<sup>4</sup> the concept of suicide has shifted away from criminality over time.<sup>1</sup>

Although a number of attempts have been made to come to a consensus over the years, there is still little agreement on what aspects should be included in the definition of suicide.<sup>1,5-7</sup> This lack of universally accepted definitions for suicide and suicidal behaviour has been thought

to hamper progress in this field.<sup>4-7</sup> To address this issue, De Leo and colleagues<sup>1</sup> examined definitions of suicide over time and noted that a number of common themes emerged. Based on their analysis, they constructed the following definition of suicide:

“Suicide is an act with fatal outcome, which the deceased, knowing or expecting a potentially fatal outcome, has initiated and carried out with the purpose of bringing about wanted changes.” (De Leo et al., pg. 12)<sup>1</sup>

In addition, they proposed a definition of suicidal behaviour:

“A nonhabitual act with nonfatal outcome that the individual, expecting to, or taking the risk to die or to inflict bodily harm, initiated and carried out with the purpose of bringing about wanted changes.” (De Leo et al., pg. 14)<sup>1</sup>

The term 'suicidal behaviour' has been said to describe a collection of acts focused on ending one's own life.<sup>4</sup> These behaviours range from suicidal thoughts (often termed 'suicidal ideation'), to attempted suicide and completed suicide. 'Suicidal ideation' refers to thoughts about suicide, which may range from vague or unformed urges to more detailed plans.<sup>4</sup> 'Suicide attempt' meanwhile describes a “non-fatal, self-inflicted destructive act with explicit or inferred intent to die” (Goldsmith et al., pg.27).<sup>4</sup> Suicidal ideation and suicide attempts can be seen as preliminary steps to suicide completion. In fact, much of the research to date provides evidence of development from thoughts about suicide to suicide plans, to attempted suicide, and from attempted suicide to completed suicide.<sup>8-12</sup> Although this suicidal continuum has been noted in the majority of studies, it is important to note that only a small fraction of suicide attempters eventually complete suicide.<sup>13</sup> One study also noted more impulsive suicide attempts that were not preceded by clear suicidal thoughts in an American Indian population.<sup>14</sup> While there are some situations where the suicide continuum may not hold, it still remains that the best

predictor of suicide death is previous suicidal behaviour. Because of this somewhat predictable sequence of events, researchers, clinicians and politicians alike have focused on the possible preventability of death by suicide through identification of those at risk (i.e., those with suicidal behaviours). Prevention of suicide on a global scale has thus become a public health imperative.

### **Suicide: a global public health tragedy**

Each year, approximately 800,000 people die by suicide, representing an annual global age-standardized mortality rate of 11 suicide deaths per 100,000 population.<sup>15</sup> Thus, suicide is among the top ten causes of death worldwide.<sup>16</sup> Suicide rates are highest in Eastern Europe (e.g., in Russia: 43 per 100,000 persons), while the lowest rates are reported in Latin America and Muslim countries (e.g., in Kuwait: 2.0 per 100,000 persons).<sup>17,18</sup> In Canada in 2006, suicide accounted for 3512 deaths (2695 males and 817 females); an age-standardized mortality rate of 10.0 per 100,000 persons.<sup>19</sup>

A recent World Health Organization (WHO) study conducted across 10 countries noted great variation in rates of lifetime suicidal ideation, ranging from 3% in India to 26% in South Africa.<sup>20</sup> Estimates of lifetime suicide attempts also varied with the lowest rates reported in Vietnam at 0.4% to 4.2% in Australia and Iran.<sup>20</sup> Another study surveyed 17 countries, noting average cross-national rates of lifetime suicidal ideation and suicide attempts to be 9.2% and 2.7%, respectively.<sup>10</sup> In Canada, based on data from Statistics Canada by way of the 2002 Canadian Community Health Survey, rates of suicidal ideation have been shown at 14.7%, while 3.5% have attempted suicide in their lifetime, demonstrating higher rates than what was noted as an average cross-nationally.

Although suicide rates have traditionally been highest among elderly males,<sup>15,21</sup> the current impact of suicide on society has been exacerbated by its increasing frequency among



the young. Globally, suicide is now the second leading cause of death among young people aged 15-29 years.<sup>15,20,22</sup> In Canada in 2006, suicide was the second leading cause of death among individuals aged 15-34 years, second only to accidents/unintentional injuries.<sup>19</sup> The loss of young, potentially productive people from society has been estimated by the WHO in terms of disability-adjusted life years - the number of healthy years of life lost to an illness or event. According to their calculations, the burden of suicide is about 20 million disability-adjusted life-years and is equal to the burden of all wars and homicides throughout the world.<sup>23,24</sup> The economic burden associated with suicide-related mortality was an estimated \$11.8 billion in the US alone in 1998.<sup>4</sup> Suicide and suicidal behaviour also has a devastating effect on families and the community. It is estimated that a single death by suicide affects at least six other people,<sup>25,26</sup> and may affect many more if the suicide is completed in a public place.

## Suicide prevention

Due to its devastating impact on the population, there has been a call, worldwide, to reduce the substantial morbidity and mortality associated with suicide through a range of national strategies.<sup>27-32</sup> In 1996, the United Nations, in collaboration with a Calgary-based group (Richard Ramsey and Brian Tanney), released “Prevention of Suicide - Guidelines for the Formulation and Implementation of National Strategies”, highlighting the importance of having a guiding national strategy on suicide prevention.<sup>27</sup> This document was followed-up by the WHO, which launched a global initiative for suicide prevention in 1999, 2002, and again in 2014, aimed at encouraging all nations to develop and evaluate national policies for suicide prevention.<sup>15,18</sup> Twenty-eight countries currently have national suicide prevention strategies (e.g., Finland, Norway, Sweden, Greenland, Denmark, Australia, USA, England, Scotland,

Germany, Malaysia, New Zealand, Ireland, etc).<sup>28-32</sup> Canada, however, remains as one of the few developed nations without a national suicide prevention strategy.

The 2014 WHO report on suicide prevention was borne out of the first-ever *Mental Health Action Plan of the WHO*, which sets forth to reduce suicide rates by 10% by 2020 in all countries.<sup>33</sup> The report had two main objectives. First, it aimed to increase the priority put on suicide prevention from the perspective of global public health and public policy. Second, the goal was to increase overall awareness of suicide as a legitimate public health issue. The complete report presents an overview of suicide and suicide prevention efforts worldwide, and identifies evidence-based approaches to suicide prevention through policy and program development in different settings. To achieve these goals, the report was guided by a well-known overarching conceptual framework: the public health model which will be discussed in more detail below.

## Conceptual Framework

### Overarching framework: The public health approach

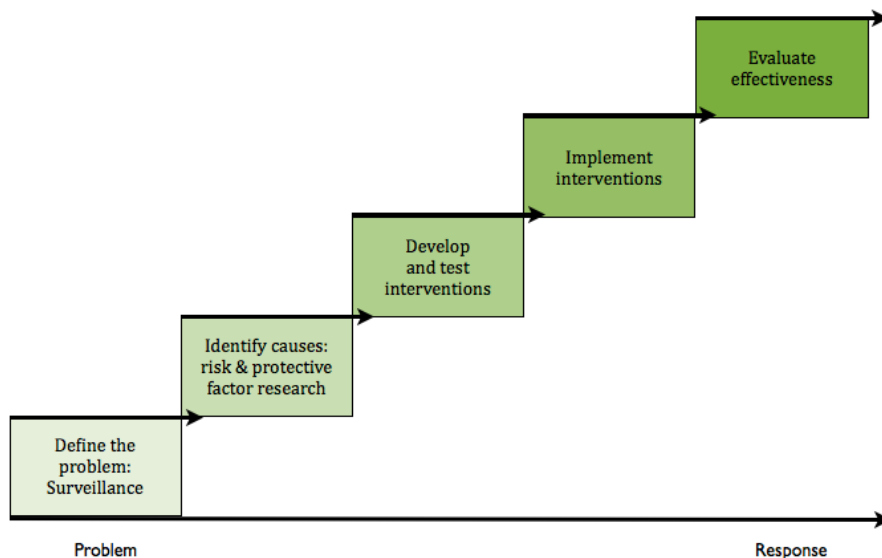
The public health approach to prevention applies to any health problem that threatens a substantial portion of a population.<sup>34</sup> The public health approach has been used as a guide to address a number of public health concerns, including obesity, arthritis, violence, alcohol use, tobacco use, crime, HIV/AIDS, and many others. Suicide is also considered to be a serious public health problem. Suicide rates continue to increase globally, having risen by approximately 60% in the last 45 years, representing 1.8% of the total global burden of disease.<sup>22</sup> Given that suicide

has an enormous impact on the population, the public health approach is suitable to guide efforts to reduce its public health impact.

Suicide prevention strategies to date have narrowly focused on identifying proximate, individual-level risk factors according to a clinical medical approach,<sup>35</sup> even though the limitations of this approach have been discussed for some time.<sup>36</sup> Purely biomedical approaches to health/disease states or those that focus on downstream risk factors alone are not in line with the WHO's determinants of health, which include a person's social and economic environment, their physical environment, individual characteristics, and access to services, among others.<sup>37</sup> The WHO argues that it is inappropriate to refer solely to an individual's poor health or good health; contextual factors need to be accounted for. Additionally, the somewhat artificial distinction between proximal (downstream) and distal (upstream) exposures has been brought into question.<sup>38</sup> Recent work suggests that effective interventions for suicide prevention should ideally focus on understanding suicide from a public health standpoint.<sup>39,40</sup>

The public health approach to suicide prevention has been widely advocated by governments, international organizations, and professional bodies worldwide.<sup>29,41-43</sup> The aim is to allow identification of patterns of suicide and suicidal behaviour throughout the population.<sup>4</sup> Suicide is thus seen as a preventable problem, rather than as the flaw of a certain type of person. It also works to broaden the conceptualization of suicide as being solely linked to mental illness and depression, a perspective that overlooks other potential individual or societal level risk factors.<sup>40</sup> Importantly, the public health approach to suicide prevention provides an optimal framework for examination of the WHO's determinants of health - whether the risk is based at an individual- or a population-level, as well as distal and proximal factors that influence suicidality. The public health perspective on prevention is also in accordance with Rose's

Theorem, which suggests that improvements in the health of a large population at small risk for disease (i.e., suicide) can reduce rates more effectively than extensive efforts to identify the few at highest risk (imminently suicidal people). Developing a more comprehensive understanding of all potential risk and protective factors for suicide should allow for increased opportunities to prevent suicide and save lives.<sup>40</sup>



*Figure 1. The Public Health Approach to Prevention (National Strategy for Suicide Prevention).<sup>29</sup>*

The public health approach has five basic evidence-based steps (Figure 1): (1) Define the problem, (2) Identify causes, (3) Develop and test interventions, (4) Implement interventions, and (5) Evaluate effectiveness.<sup>29</sup> The US National Strategy for Suicide Prevention delineates how the five-step public health approach applies to suicide prevention.<sup>29</sup> Step 1 involves collecting information about rates of suicidal behaviour, otherwise known as surveillance. The information

can include characteristics of the individuals and the circumstances surrounding these incidents (e.g., precipitating events, health service use, etc), and provides an idea of the burden of suicide on a community. Step 2 aims to identify risk and protective factors for suicide. Understanding the interaction between risk and protective factors and how this interaction can be modified are huge challenges, yet this information is of critical importance to suicide prevention.<sup>44</sup> The goal of Step 3 is to develop and test interventions, which may reduce risk factors, enhance protective factors, or may address both. Testing of these interventions is necessary prior to large scale implementation to ensure that they are safe, ethical, and feasible. Step 4 sets forth to implement those interventions which show promise in reducing the suicide rate.

Comprehensive suicide prevention programs that address multiple facets of risk and resiliency factors are believed to possess a greater capacity for change.<sup>29</sup> Step 5 involves evaluation of the effectiveness of the interventions, with the goal of demonstrating that the intervention is “evidence-based”. The purpose of evaluation is to establish whether the intervention is safe, ethical, feasible, cost-effective, and, most importantly, effective at reducing suicide. Evaluation can also provide information on the optimal target group for the strategy. These five steps may occur sequentially or they may overlap.

The public health approach to suicide prevention appears to have strong uptake worldwide. As mentioned, the most recent WHO report on suicide prevention,<sup>15</sup> the foremost guiding document for suicide prevention globally, has suggested this framework as a guide for countries around the world in their effort to delineate and evaluate effective suicide prevention strategies. However, other suicide prevention frameworks also exist. These alternate approaches are discussed in detail below.

## Additional suicide prevention frameworks

### ***Primary, secondary and tertiary prevention***

Models of disease prevention are often split into primary, secondary and tertiary preventive measures. Primary prevention focuses on individuals who have not yet shown any signs of illness. The aim is to avoid development of disease by improving the physical, mental, emotional and spiritual health or well-being of a population.<sup>45</sup> This has been called "before the fact" intervention.<sup>46</sup> Examples of primary suicide prevention programs would include mental health promotion and recreation programs for youth. Secondary prevention (early intervention) targets individuals who have had early signs of the disease, aiming to start treatment to prevent progression of the disease. Examples of secondary suicide prevention programs are screening and gatekeeper training. Tertiary prevention (postvention) targets individuals who have already received a diagnosis of a disease and now require treatment to prevent disease-related complications (i.e., death) and to restore function. Tertiary prevention focuses on people who have been affected by suicidal behaviour: suicide attempters, who are at high risk for a recurrence, and bereaved friends and family members, who are also at risk for increased distress, psychiatric morbidity and the development of suicidal thoughts and behaviours. Examples of tertiary suicide prevention programs include dialectical behaviour therapy, cognitive behaviour therapy, and pharmacological treatments.

This model is based on the assumption that suicide develops through stages that can be modified, stopped or reversed. It is quite applicable to chronic diseases, such as cancer and diabetes, but pathways to suicidal behaviour can be very different from person to person.<sup>16</sup> Another problem with this model is that tertiary prevention is of little use if the target is the suicidal individual. Some programs have delineated tertiary prevention to have a focus on

survivors, however, they are independent persons and it has been suggested that they should be considered as their own risk group.<sup>16</sup>

### ***USI prevention model***

The “prevailing prevention model” in the field of prevention science is the universal, selective, and indicated (USI) prevention model.<sup>4,16</sup> This classification was originally proposed by Gordon<sup>47</sup> and later taken up by the American Institute of Medicine.<sup>48</sup> This model focuses attention on defined populations, from inclusion of everyone in the population to specific high-risk individuals. Universal strategies are those that address the entire population.<sup>4</sup> These programs are designed to reduce suicide by removing barriers to care, enhancing awareness of suicide, increasing access to help, and strengthening social support and coping skills for everyone. Examples of suicide prevention programs that would be included as universal strategies would be public education campaigns, means restriction, and media guidelines. Selective strategies target subsets of the total population, focusing on at-risk groups that have a greater likelihood of developing suicidal behaviour.<sup>4</sup> These strategies aim to prevent the onset of suicidal behaviour in specific subpopulations. Examples of selective strategies include screening programs, skills training, and gatekeeper training. Indicated strategies are those that address specific high-risk individuals with evidence of early signs of suicide potential.<sup>4</sup> These interventions are designed to reduce risk factors and increase protective factors. Examples of indicated strategies are case management, crisis intervention, and treatment programs.

The USI framework fits well within the public health approach to suicide prevention, highlighting the multiple levels of intervention required to tackle this enormous problem. The public health approach and the USI framework were used in combination to guide this thesis. The focus of this thesis is to evaluate one type of selective suicide prevention strategy named

gatekeeper training. Our discussion will now turn to gatekeeper training as a suicide prevention strategy, its fit within these frameworks, and current evidence for its effectiveness.

## Gatekeeper Training

Gatekeeper training is an example of a selective suicide prevention strategy. Gatekeeper training is modelled on the fact that people at risk for suicide often do not seek help and recognizable risk factors exist that help in identifying these people.<sup>49</sup> This type of training teaches specific groups of people how to identify individuals at risk for suicide through development of knowledge, attitudes and/or skills, and then to manage the situation appropriately with referral to treatment as necessary.<sup>4,49</sup> Gatekeepers are persons who have primary contact with those at risk for suicide and go about identifying them by recognizing suicidal risk factors.<sup>49,50</sup> Gatekeeper training is intended for people in a position of trust, from professionals and volunteers to members of the community. Participants range from those in helping professions (called designated helpers) to community members without formal training as a helper (called emergent helpers). It is suitable for mental health professionals, nurses, physicians, pharmacists, teachers, counsellors, youth workers, police and correctional staff, school support staff, clergy, community volunteers, and families. The theory is that suicide can be prevented with the help of prepared caregivers.

The United Nations,<sup>27</sup> along with a number of review articles on general methods of suicide prevention, have recommended that gatekeeper training be considered in implementing an effective strategy to prevent suicide.<sup>17,49,51</sup> Indeed gatekeeper training has been proclaimed as one of the most promising interventions, with the potential to decrease national suicide rates by 33% to 40%.<sup>17</sup>



## Gatekeeper training as a public health approach

Gatekeeper training fits well within the public health approach to suicide in two ways. First, gatekeeper training programs represent a good public health strategy to prevent suicide. As noted, a main goal of a public health approach is to create a sense that suicide is preventable and that it is an important problem that needs to be addressed by everyone. Gatekeeper training emulates a public health approach, in that suicidal individuals can be detected by anyone in the community, without seeking help from specific mental health care providers. In turn, this results in a reduction in the stigma attached to suicide. As well, community-based gatekeepers are given awareness of the broad range of risk factors for suicidal behaviour, over and above the risk associated with mental disorders. By increasing awareness of the many signs and symptoms of distress in the community context, gatekeepers will learn to recognize that suicide is not an individual weakness, but also a societal issue; again, reducing the stigma attached to suicide. By training a range of persons from the community to recognize suicidal individuals, it is theorized that improved attitudes towards suicide would result in both a reduction in stigma and changes in helping behaviour in the population. Most importantly, it is thought that educating community gatekeepers would substantially increase the opportunity to prevent suicides simply because more people are trained to detect when a suicidal person needs help.

Second, gatekeeper training has been developed in accordance with the five-step public health approach to suicide prevention. The problem (as defined in Step 1) is that the majority of suicidal individuals do not explicitly indicate their suicidal intentions.<sup>52-55</sup> However, many would acknowledge such thoughts if asked directly.<sup>56,57</sup> Therefore, gatekeepers act in a surveillance capacity by asking a person about suicide directly. Step 2 relates to risk and protective factors.

Gatekeeper training involves education about key risk factors to be aware of in their community. As such, gatekeeper training was developed (Step 3) based on the foundations of Steps 1 and 2. The underlying theory was that suicide could be prevented with the help of prepared caregivers. Preliminary findings, which I will discuss in more detail in the next section, revealed that gatekeeper training programs improved knowledge, attitudes, intervention skills, preparation for coping with a crisis, and referral practices in a range of helping populations.<sup>58-71</sup> Based on these findings, implementation of gatekeeper training has ensued in some groups (Step 4). In particular, Knox and colleagues implemented widespread suicide intervention training for over five million active duty military personnel in the US Air Force. Their study evaluated the effectiveness of this strategy (Step 5), determining a 33% relative risk reduction in suicide comparing the cohort prior to training to the cohort after the training.

In sum, gatekeeper training fits well within the public health approach to suicide prevention. It follows the steps of the outlined framework and conceptualizes suicide as a population-based problem. Based on the evaluation in the military sample, gatekeeper training programs should be implemented and evaluated in other helping populations.

### **ASIST: a worldwide gatekeeper training program**

There are several gatekeeper training models, ranging from 1 hour to 5 days of training, with a variety of components in each program.<sup>72</sup> Most programs include some form of teaching around risk factors for suicide.<sup>72</sup> Content ranges from training about myths and facts about suicide to referral strategies.<sup>72</sup> The most well-known gatekeeper training program is the Applied Suicide Intervention Skills Training (ASIST) program.<sup>72</sup> ASIST was the first gatekeeper training program in Canada and was originally referred to as the “Foundation Workshop” or the “Suicide Intervention Workshop”.<sup>73</sup> It was developed in 1983 by a partnership of four mental health

professionals (Richard Ramsay, Bryan Tanney, Roger Tierney and William Lang) in conjunction with the Canadian Mental Health Association and the governments of Alberta and California.<sup>73</sup> The partnership evolved to create LivingWorks Education Inc. in 1991, a community services organization aimed at providing suicide prevention education and consultation.<sup>74</sup> Within ten years, this program had been refined and disseminated both nationally and internationally. To date, over one million people across 30 countries have been trained in ASIST making it the most widely used suicide intervention training workshop in the world.<sup>74</sup>

ASIST is a two-day (fourteen hour), intensive, interactive and practice-dominated course aimed at enabling people to recognize risk and learn how to intervene immediately to prevent suicide.<sup>75</sup> The courses are facilitated by two trained facilitators with up to 30 participants. It is intended to be for anyone (especially those in a position of trust), from professionals and volunteers to members of the community.

ASIST is based on principles from adult education and is designed to help all caregivers become more willing, ready and able to help persons at risk. Just as “CPR” skills make physical first aid possible, training in suicide intervention develops the skills used in suicide first aid. ASIST differs from other gatekeeper training programs in that it does not teach the linear process of identify, intervene and refer. Rather, ASIST’s Suicide Intervention Model (SIM) focuses more on the interaction between the gatekeeper and the person at risk, recognizing that referrals may not be the optimal solution for the suicidal individual. The aim is to create a strong alliance which results in reduced risk through the creation of a safe plan that connects the at-risk individual with a variety of community resources, one of which may be mental health services. This model closely follows Snyder’s seminal work on gatekeeper training, which stated that “the key to a full understanding of the gatekeeper philosophy is that it is against formal

referral as a standard operating procedure".<sup>76</sup> ASIST's SIM teaches potential gatekeepers to: Connect (by exploring invitations and asking about suicide), Understand (by listening to reasons for dying and living and reviewing risk), and Assist (by developing a safe plan and following-up on commitments). The workshop provides the basis for skill-development in these areas using a variety of formats, including mini-lectures, group discussions, simulations, role plays, and audio-visuals. It provides participants with an understanding of the impact of their own attitudes about suicide, how to recognize and review the risk of suicide, effective suicide intervention techniques, as well as community resources for caregivers. The ASIST program has five learning modules:<sup>77</sup>

1. Preparing - sets the tone, norms, and expectations of the workshop (1h 15min lecture and film).
2. Connecting - allows participants to explore their own attitudes towards suicide and creates an understanding of the impact that attitudes have on the intervention process (2h 30min discussion).
3. Understanding - overviews the intervention needs of a person at risk. Focuses on providing participants with the knowledge and skills needed to recognize risk and develop safe plans to reduce the risk of suicide (3h interactive presentation).
4. Assisting - presents a model for suicide intervention. Participants develop their skills through observation and supervised simulation experiences in large and small groups (6h 15min presentation, discussion, film and role-play).
5. Networking - generates information about resources in the local community. Encourages participants to explore local resources to create wider networks of support in the community (35min discussion).

Only 10-15% of the workshop is spent on traditional lectures. A workbook is used throughout the training and participants receive a handbook detailing what has been learned at the workshop. After training, ASIST participants should be able to:

- Recognize that caregivers and persons at risk are affected by personal and societal attitudes about suicide.
- Discuss suicide in a direct manner with someone at risk.
- Identify risk alerts and develop related safe plans.
- Demonstrate the skills required to intervene with a person at risk of suicide.
- List the types of resources available to a person at risk, including themselves.
- Make a commitment to improving community resources.
- Recognize that suicide prevention is broader than suicide first-aid and includes life promotion and self-care for caregivers.

ASIST was developed based on guiding principles from Rothman's research and development framework for intervention development and dissemination.<sup>78,79</sup> Rothman's model posits a continuing process of program improvement, which has resulted in major reviews and revisions to the ASIST program since its inception.<sup>73</sup> The model also allows for adaptations to be made to the program to meet specific training needs.

ASIST stands out from other gatekeeper training programs in a number of ways, which may have resulted in its wide dissemination and worldwide uptake. First, ASIST is longer than most gatekeeper training programs. ASIST provides fourteen hours of training, while most other gatekeeper training programs are one to six hours in length.<sup>80</sup> This greater time spent in training is thought to more fully develop skills, allowing simulation and role-play techniques to be utilized.<sup>73,81</sup> Second, and related, is ASIST's unique use of role-play, simulations and other active

learning techniques. Incorporation of interactive methods, in conjunction with didactic presentations, has been shown to be more likely to result in improved learning and changes in behaviour,<sup>81</sup> resulting in increased training effectiveness.<sup>69,82</sup>

Third, ASIST incorporates a focus on improving trainee attitudes and provides discussion around how attitudes can influence intervention behaviour. Attitudes toward suicide prevention are related to suicide risk assessment practices, in that judgmental attitudes can hinder appropriate intervention practices.<sup>83</sup> In contrast, positive attitudes towards suicide prevention is described as one of the precursors for developing and maintaining acquired knowledge and skill in suicide prevention education.<sup>84</sup> Fourth, ASIST aims to not only improve knowledge and attitudes towards suicide, but it hopes to foster skills in suicide intervention. It has been suggested that skills training can facilitate the transfer of knowledge into direct suicide prevention action.<sup>61</sup>

Fifth, the ASIST program can be tailored for anyone. Although ASIST is a highly standardized training program, it has been used in a range of settings with trainees from a variety of backgrounds,<sup>73</sup> which will be discussed in more detail below. In line with Rothman's model from which it was developed,<sup>78,79</sup> it is possible to adapt ASIST to specifically apply to any cohort of individual gatekeepers and the situations that they may face.<sup>73</sup> Allowing the training to be adapted to real-life situations gives the training program increased applicability to trainees in a variety of settings.

Finally, ASIST appears widely-applicable to a range of cultures. ASIST has been implemented in over twenty countries, including Canada, Australia, New Zealand, the US, Scotland, the UK, Ireland, Israel, China (PRC), Russia, Singapore and Norway,<sup>73,74</sup> and is available in five languages.<sup>73</sup> As well, ASIST and other gatekeeper training programs educate a range of

cultural groups, including First Nations, Inuit and other Aboriginal populations.<sup>66,67</sup> As a result of its broad implementation in regions and cultures around the world, ASIST demonstrates its efficacy in providing a range of populations with the attitudes, knowledge and skills for suicide prevention.

### ***Evidence for ASIST***

To date, 26 evaluations of the ASIST program have been conducted. The majority of these evaluations were based in the grey literature;<sup>73</sup> less than 10 studies have been published in peer-reviewed journals.<sup>71,85-93</sup>

The first peer-reviewed evaluation of ASIST was published by one of the creators of ASIST, Roger Tierney, in 1994.<sup>71</sup> Tierney used an equivalent control group, post-test only design (n=36) to examine the effect of ASIST on suicide intervention abilities according to the Suicide Intervention Response Inventory (SIRI)<sup>94</sup> and to simulations where the participant was asked to respond to a person playing the role of someone who might be at risk of suicide.<sup>71</sup> According to this early evaluation, participants' mean scores in the simulated situation increased significantly from pre- to post-training ( $p < .001$ ), particularly among suicide-specific behaviors; while no differences were noted on the SIRI.<sup>71</sup> In this same study, Tierney also examined participant attitudes (n=176) and knowledge (n=154) among ASIST participants using a nonequivalent control group, pre-post test design.<sup>71</sup> Attitudes toward suicide intervention, general knowledge of suicide, and suicide intervention knowledge all improved significantly following ASIST, while attitudes toward suicide itself showed no change.<sup>71</sup>

Following this study, in 2003, two studies were published which evaluated ASIST. One study was conducted by Guttormsen and colleagues in medical students in Norway, and will be discussed in more detail below. The other, a study by Pearce et al.,<sup>86</sup> evaluated a suicide

intervention project among students at the University of Canberra wherein ASIST was one of four components of their peer-based program. Forty-two participants were evaluated using pre-training, post-training, and two week follow-up self-report questionnaires on attitudes, social distance, subjective norms, perceived behavioural control, intentions, mental health literacy, social connectedness, and suicide intervention behaviours in the two-week follow-up. Measures of attitudes, subjective norms, perceived behavioural control, mental health literacy and intentions improved significantly post-training for participants. Importantly, students also reported an increased level of talking to other students about mental health feelings two-weeks post-training.

Similarly, McAuliffe & Perry, in 2007, examined ASIST as part of multi-faceted suicide assessment project at the Trillium Health Centre in Mississauga, Ontario for their mental health program.<sup>88</sup> Over a two-year period, 220 mental health staff (98%) including clinical and administrative staff and psychiatrists were trained in ASIST. Quantitative (descriptive statistics) and qualitative indicators were assessed over four years. Results revealed that 1) the rate of admittance to hospital following suicide presentation in the emergency department reduced; 2) there was a reduction in average length of stay for patients admitted with suicidal behaviour; 3) staff assessed a higher proportion of their clients for suicide risk; 4) safety plans are developed early on in the engagement of a client with the mental health program; and 5) the proportion of staff who indicated that they felt that they had received adequate training in suicide risk increased.

In 2013, the first randomized controlled trials were published on ASIST. Gould et al.<sup>89</sup> examined the impact of ASIST across the National Suicide Prevention Lifeline's national network of crisis hotlines. With data from over 1500 monitored calls, they concluded that callers' who



spoke with ASIST-trained counsellors were 31% less likely to be depressed and 74% less likely to be suicidal during the course of the call. In addition, callers were more likely to reveal signs of suicide risk and feel hopeful during the call, and call lengths were significantly longer - likely indicating a better connection with callers. However, counsellor intervention behaviours were not rated as more effective after the training. This group also examined trainer fidelity in delivering the ASIST program in this context, noting low trainer fidelity particularly among the interactive training activities.<sup>91</sup> In this same year, Sareen et al.<sup>90</sup> examined ASIST in comparison with a locally developed resilience retreat in a sample of 55 First Nations on-reserve community members. Their study examined suicide intervention behaviours using the SIRI, noting no difference between the groups before and after training. Surprisingly, evidence was noted of a trend towards increased suicidal ideation among participants who took ASIST compared to those who participated in the resilience retreat.

Most recently, Smith and colleagues<sup>92</sup> published an evaluation of ASIST using an uncontrolled group comparison design among 3800 health care workers (e.g., case managers, clinicians, nurses, etc). Participants completed an online survey which included questions on knowledge about suicide and self-perceived suicide skills, and also asked whether they had participated in an ASIST workshop in the past year. Their findings showed that those with ASIST training had more suicide-related knowledge and self-perceived skill confidence than those without ASIST training. Also in 2014, Coleman and Del Quest,<sup>93</sup> using a quasi-experimental repeated measures design (pre-, post- and 6-month follow-up), examined ASIST in relation to two other gatekeeper training programs (Question-Persuade-Refer [QPR] and RESPONSE) on attitudes and behaviours among 126 adults who have regular contact with youth (i.e., teachers, clinicians, coaches, church leaders, etc). All three gatekeeper training programs demonstrated

large changes in attitudes post-training, as measured by self-perceived preparedness and efficacy to intervene, and these effects endured over time. Referral behaviours also improved a moderate amount across trainings from pretest to follow-up, but did not differ between the trainings. ASIST, however, significantly exceeded the other two trainings in the level of asking youth about suicide from pretest to 6 month follow-up.

A thorough review of evaluations of ASIST was completed in April 2010, and included reports published in the grey literature.<sup>73</sup> According to the review, a variety of outcomes related to the training program have been assessed, including satisfaction with training, knowledge, attitudes, intervention-related skills, intervention-related behaviours, and suicidal behaviour. Across studies, trainees were generally satisfied with the ASIST training program, noting it to be a good use of their time, of high quality, and that they felt better prepared to deal with suicide following the training.<sup>73</sup> It appeared that ASIST led to positive changes in both knowledge and attitudes across evaluations, and that these changes endured for up to four months post-training.<sup>73</sup> Following ASIST, most trainees demonstrated increased intervention skills when compared with both their level of training prior to the ASIST course and to those who had not been trained in ASIST.<sup>73</sup> In terms of intervention-related behavioural changes, the findings were mixed. Most evaluations indicated increased intervention behaviour, although several reported no significant change.<sup>73</sup> Importantly, one evaluation from the grey literature reported a reduction in suicide attempts of 1.5 per year per school over a three-month span following training.<sup>95</sup>

Taken together, ASIST shows promise as an effective gatekeeper training program but has not been evaluated in a rigorous way in many settings. Many of the studies noted above demonstrate positive impacts of ASIST, and one study<sup>93</sup> demonstrated significant improvements

over other well-known gatekeeper training programs. However, there now exists some concern over whether ASIST may impart unintentional negative impacts in certain populations.<sup>90</sup> As a result, policymakers in Manitoba have cautioned the continued widespread dissemination of this program across Canada. In addition, there is some question as to whether the train-the-trainer model that ASIST ascribes to is effective in delivering the standardized training as intended.<sup>91</sup> Clearly further evaluation of this program is needed.

### **Evidence for other gatekeeper training programs**

A recent systematic review of gatekeeper training noted that this type of training has been implemented in a wide range of populations, including military personnel, school personnel, peers, Aboriginal people, health care personnel, social services and other perceived helpers in the population and has shown promise in its affect on skills, attitudes, and knowledge of people who undertake the training.<sup>72</sup> However, evidence for gatekeeper training in these populations varies; the reproducibility across populations and applicability to the general population is unknown. Findings for a range of gatekeeper programs are discussed below.

#### ***School-based programs***

Schools are increasingly seen as an important venue in which to deliver suicide prevention services.<sup>96</sup> School-based gatekeeper training programs aim to increase the knowledge, attitudes and skills of school personnel or peers in identifying students at risk for suicidal behaviour. These programs are based on the premise that suicidal youth are under-identified and that training would increase one's ability to refer these at-risk youth.

Research examining the effectiveness of school-based gatekeeper training programs is limited. In the last 20 years, only eight studies have been published on the topic.<sup>58-61,64,65,97,98</sup>

Several training models have been described in this population, ranging from 1 hour to 8 hours of training. The models evaluated include the Question Persuade and Respond program (QPR),<sup>60,61,64</sup> Preparing for Crisis (PFC),<sup>98</sup> Peer Gatekeeper Training (PGT),<sup>59</sup> and Suicide, Options, Awareness, and Relief (SOAR).<sup>58</sup> The majority of these programs have shown significant improvements in knowledge,<sup>58-61</sup> attitudes,<sup>59,60,65</sup> intervention skills,<sup>58-61,64,65</sup> preparation for coping with a crisis,<sup>58,60,61,64</sup> and referral practices,<sup>58,60,61,97</sup> in addition to general satisfaction with the training.

### ***Programs for military personnel***

The most comprehensive and promising evaluation of a multilayered suicide prevention program was a quasi-experimental cohort study undertaken by the US Air Force in 2003.<sup>99</sup> The initiative contained 11 different suicide prevention strategies, one of which was gatekeeper training. Over five million active duty personnel took part in the LINK gatekeeper program. The acronym LINK represented: Look for possible concerns, Inquire about concerns, Note level of risk, and Know referral resources and strategies. LINK was described as training for basic risk factors, intervention skills, and referral procedures. The authors found a 33% relative risk reduction in suicide comparing the cohort prior to training to the cohort after the training.

Two additional studies on gatekeeper training in military personnel have been published. In 2008, Matthieu and colleagues evaluated gatekeeper training for suicide prevention in veterans.<sup>62,63</sup> Following QPR training, Veterans Affairs clinic staff had increased their knowledge and abilities in working with veterans at risk for suicide.<sup>62,63</sup> Although knowledge declined to baseline levels one year later, self-efficacy in identifying, intervening, and referring those at risk remained significantly improved.<sup>62</sup>

### ***Programs for Aboriginal populations***

May and colleagues<sup>66</sup> and Capp and colleagues<sup>67</sup> evaluated gatekeeper training in Aboriginal populations in the US and Australia, respectively. In 2001, Capp and colleagues<sup>67</sup> implemented a series of culturally appropriate gatekeeper training workshops. Participants demonstrated increased knowledge around suicide, greater confidence in identifying individuals at risk, and greater intent to provide help. May and colleagues<sup>66</sup> implemented gatekeeper training as part of a 15-year broad public health-oriented suicide prevention program. Their evaluation noted a 73% decline in suicidal behaviour, however, the suicide death rate did not change. It is difficult to ascertain how gatekeeper training independently affected these outcomes.

### ***Programs for perceived helpers***

Seven studies<sup>68-71,100-102</sup> focused on gatekeeper training in other helping populations, including nonclinical employees at a university hospital, nurses, a variety of other health care staff, and other perceived helpers. Two of the studies utilized qualitative methods,<sup>70,101</sup> four studies employed quantitative pre-post cohort designs,<sup>68,69,71,100</sup> and one study employed a mixed methodology.<sup>102</sup> Across studies, evidence was provided for increases in knowledge,<sup>69,71,100</sup> skills,<sup>69,71,101,102</sup> confidence<sup>70,100,101</sup> and attitudes<sup>71,101,102</sup> related to gatekeeper training.

One of the most rigorous studies in this field was done by Chagnon and colleagues in 2007.<sup>68</sup> This study implemented a randomized controlled trial design to evaluate a specialized youth suicide intervention training program among helpers from educational, community or institutional organizations serving youth clientele. This gatekeeper program was designed to assist these helpers, through lectures, video simulation of vignettes, and role play, to recognize warning signs so that they could intervene rapidly with youth and provide referral resources.

Participants in the intervention group (n=43) significantly increased their knowledge, skills and attitudes, their ability to identify at-risk youth by 14% and their ability to intervene by 13% immediately following training. All measures were significant when compared with the change over time in controls. At six months following training, attitude scores remained the same and the ability to identify an at-risk youth significantly increased over immediately post-training scores. All other measures declined at follow-up, although remained somewhat higher than scores prior to training. Taking the small sample size into consideration, this study demonstrates some of the strongest evidence for gatekeeper training as an effective intervention strategy for at-risk populations.

### ***Programs for physicians***

One group of perceived helpers not discussed above warrants particular attention. In his classic studies, Murphy<sup>103,104</sup> concluded that no “person has contact with [so many] potentially suicidal individuals as does the physician.” The role of the physician, especially the primary care physician, has gotten a great deal of attention within public health approaches to suicide prevention.<sup>30,105</sup> The focus of our discussion now turns to the rationale and evidence for physicians as gatekeepers.

## **Physicians as Gatekeepers**

Physicians are noted as ‘key gatekeepers’ in suicide prevention strategies worldwide.<sup>28,30,32,106,107</sup> Evidence indicates that a high percentage of suicidal individuals have contact with a health care professional in the month (approximately 45%) and year (approximately 77%) before their death.<sup>53,106-111</sup> A number of studies have also delineated higher rates of physician visits in suicide cases compared with living controls.<sup>112-114</sup> A common assumption is that the

majority of these visits would be to a psychiatrist, considering evidence that over 90% of people who complete suicide have a diagnosable mental disorder.<sup>115,116</sup> Recent work has demonstrated, however, that 80% of patients with psychiatric disorders present first to non-psychiatric physicians.<sup>117</sup>

According to some studies, internists were the most commonly consulted specialists by individuals who later went on to suicide.<sup>103,104</sup> Contact rates with internists and other specialists prior to suicide has been consistently noted as higher than rates of psychiatric contact.<sup>108</sup> Other work has emphasized the role of the primary care physician.<sup>53,57,108,111,118</sup> At least 45% of suicide victims had contact with their primary care doctor within one month, up to 75% within three months, and over 90% within one year prior to death.<sup>53,57,118</sup>

For every person who dies of suicide, 22 others make a visit to the emergency room for suicidal behaviour.<sup>105</sup> Emergency room physicians are increasingly given the responsibility of triaging these suicidal individuals to appropriate crisis interventions and mental health treatment.<sup>119,120</sup> In fact, hospital-based physicians (including emergency room physicians), as opposed to general practitioners, were the most common non-psychiatric contact in a sample of over 12,000 suicide cases in Taiwan; 80% of the sample had contact with these physicians within the year before suicide.<sup>111</sup> Psychiatric morbidity and suicidality is also a concern among trauma victims in the emergency department,<sup>121,122</sup> regardless of whether their visit is related to suicidal behaviour. Many emergency room presentations may be highly impulsive men; a population that is less likely to be seen by any other health professional<sup>113,118,123</sup> and a group at high risk for suicide completion.<sup>54,111,124</sup> In fact, men are more likely to be seen by non-psychiatric physicians prior to suicide attempt, while women see psychiatrists more often.<sup>52</sup> In addition, emergency room physicians may be the sole care provider among individuals who self-

harm. One study indicated that only half of individuals who repeatedly self-harmed within a four month period consulted their primary care doctor.<sup>125</sup>

### Physicians as gatekeepers for older adults

Later life has been documented as a time when men and women are at highest risk for suicide, with rates in the 80-84 year old age bracket often doubling the rate in the general population.<sup>126</sup> Specifically, the highest rates are often found among elderly men.<sup>127</sup> Among adults 55 years and older, 43% to 76% consult a physician within 30 days of death, and 35% to 55% of consult within a week.<sup>107,126</sup> High rates of physician visits by older adults in the year prior to suicide has been consistently noted.<sup>128</sup> Juurlink and colleagues further reported that only 6% of individuals over 66 years of age who died by suicide saw a psychiatrist in the week before their death.<sup>129</sup> In line with this finding, another study noted that older persons tend to contact non-psychiatric physicians more than psychiatrists.<sup>130</sup>

Despite the fact that suicide rates in the elderly are higher than in any other age group, physicians tend to not inquire about suicidality.<sup>52</sup> Some authors have noted that the elderly are more likely to describe their psychological symptoms or suicidal thoughts in more somatic terms, and are less likely to voluntarily report affective symptoms.<sup>126,131,132</sup> Suicide victims frequently complained of gastrointestinal discomfort, headache/dizziness, and back problems during their physician visit in the month preceding death.<sup>130</sup> Even when suicide is stated explicitly, which appears to be the case in 38% of adult suicides 65 years and older,<sup>133</sup> physicians may not take the warning seriously. Some work has noted that physicians tend to make the assumption that depression and suicidal thoughts are 'natural' consequences of aging.<sup>126,134</sup>



## Physicians as gatekeepers for youth

Several studies have shown that the majority of youth who died by suicide had at least one psychiatric disorder at the time of their death.<sup>124,135</sup> Youth who die by suicide also appear to have higher rates of psychiatric medical visits and lifetime hospitalizations for psychiatric reasons than living matched controls.<sup>114</sup> However, the majority of psychiatric issues in young people remain undetected and untreated.<sup>113</sup>

Attention to psychiatric care for suicidal youth does not sufficiently address the problem. Similar to elderly populations, adolescents and young adults are more likely than other age groups to describe their emotional distress in terms of physical ailments.<sup>119,136</sup> Rates of medical visits for physical reasons are higher among youth suicides in the week before death compared with living matched controls.<sup>114</sup>

Emergency room contacts may be one of the only health care contacts for many youth, especially among high-risk populations.<sup>119</sup> Recent work has demonstrated that young emergency room patients are not only vulnerable to development of psychiatric sequelae, but that emergency room visits for mental health reasons are increasing at a faster rate than visits for medical illness.<sup>119</sup> It is clear that better recognition of suicidal youth is needed in a variety of health care contexts.

## A need for physician education

Based on the evidence provided above, all physicians, regardless of specialty, are important gatekeepers and have an opportunity to impact suicide rates. Consistent evidence has pointed to the importance of non-psychiatric physicians, including primary care and emergency physicians, and their role in suicide assessment and treatment. Because non-psychiatric physicians are often the first point of contact for psychiatric problems,<sup>137</sup> it is

essential that they possess the relevant intervention knowledge and skills necessary to identify and manage patients who may be at risk.

A major finding of this review is that most physicians tend not to inquire about suicidal behaviour or assess suicide risk in their patients.<sup>52,138</sup> One study suggested that 65-70% of non-psychiatric physicians do not ask about suicidal ideation, even if the visit is for mental health reasons.<sup>52</sup> Physicians often rely on patients to initiate the discussion of suicidal thoughts.<sup>139,140</sup> This may reflect clinicians' concern of stimulating suicide in patients by asking about it,<sup>127,139</sup> which is a common misconception. The low rate of direct inquiry about suicidality by physicians is unfortunate, since the single question "Are you feeling suicidal?" was shown to be 83.3% sensitive and 97.7% specific in an adult primary care population relative to a more structured clinical interview.<sup>141</sup> Contributing to the problem is that the majority of suicidal individuals do not explicitly indicate their suicidal intentions; only 13% to 54% of suicidal individuals who consulted a caregiver before the event disclosed suicidal thoughts.<sup>52-55</sup> This does not mean that suicidal individuals want their suicidal thoughts to go unnoticed. In fact, a large majority state that they would acknowledge such thoughts if asked directly.<sup>56,57</sup>

Physician characteristics have also been shown to influence their propensity to assess suicide risk.<sup>142,143</sup> It has been suggested that length of time in practice is negatively associated with likelihood of suicide risk assessment,<sup>138</sup> while attitudes toward suicide prevention have also played a role.<sup>83</sup> Negative attitudes and concerns about suicidal inquiry may explain the low rate (3%) of identification of suicide risk in suicide cases.<sup>118</sup> Importantly, training in suicide risk assessment is associated with more positive attitudes toward suicide prevention.<sup>144</sup>

Most suicidal patients who have attempted suicide were unsatisfied with the help they received from various care providers in the month preceding the event and felt that such help,

had it been provided, could have prevented their attempt.<sup>53</sup> It is thought that physician alertness to a patient's distress and a more thorough assessment during these visits could prevent fatalities.<sup>127</sup> A recent psychological autopsy study by Lesage and colleagues<sup>110</sup> systematically audited the need for care and services to identify unmet needs among individuals who had died by suicide. Their recommendation was that further training was needed for physicians to increase their awareness regarding treatment for suicidal behaviour, increase their ability to better identify patients at risk, and to teach them how to properly refer patients for evaluation with specialized levels of care. The potential impact of this training strategy could have influenced the management of up to one-half of the suicide cases in their study.<sup>110</sup>

Physicians' lack of knowledge or failure to screen patients adequately is thought to be the major contributor to the lack of assessment and treatment seen in most suicides.<sup>17,145</sup> One study reported that although nearly 70% of GPs had reported experiences with patient suicide, only 4% of them had had training in suicide assessment and intervention.<sup>146</sup> Interestingly, only 30% of psychiatrists in this study reported training specific to this area.<sup>146</sup> Although some physicians may be moderately informed about suicide, there appear to be domains in which their knowledge is greatly lacking.<sup>147</sup> Specifically, primary care physicians have been noted as lacking knowledge around demographics and statistics, risk factors, and implications for treatment and prevention.<sup>147</sup> Furthermore, 30% of general practitioners in one study indicated that it was unnecessary to consider all suicide threats as serious, and only 21% were aware that psychiatric disorders were risk factors for suicide.<sup>147</sup> Primary care and emergency physicians themselves feel less than adequate in their competency to manage suicidal patients;<sup>83</sup> 90%-97% indicate a desire for additional training.<sup>146</sup> Clearly, education is needed for physicians around these topics, highlighting the potential role of gatekeeper training in this population.

## Rationale for Physician Education

In a recent review, Mann and colleagues<sup>17</sup> suggest the relative impact of primary care physician training in suicide prevention on national suicide rates to be between 22 and 73%; one of the most promising interventions to date. As such, the National Strategy for Suicide Prevention review on preventing suicide in the United States recommended programs aimed at improving the ability of physicians to identify and treat those at risk for suicide.<sup>29</sup> Similarly, the National Task Force on Suicide in Canada<sup>148</sup> created a framework for their report on suicide prevention strategies. Their report recommended education and training for health care professionals and other gatekeepers as a key action aimed at the immediate management of the suicidal crisis in Canada. Goldney,<sup>149</sup> in his recent article, began with the statement “all GPs [General Practitioners] should possess the clinical skills to make a general assessment and management plan for a person who is suicidal” (pg.24). He suggested that the drop in suicide rates in Australia (20% between 1997 and 2003) was likely due to recognition and treatment of mental disorders by GPs.

Probing for suicidality and making proper referrals are two ways in which physicians can prevent suicide, according to the literature.<sup>107,109</sup> However, the discussion above has emphasized how physicians feel distinctly unprepared for these tasks. Gatekeeper training could fill that gap by educating non-psychiatric physicians around the skills and knowledge required to ask the question and refer those at risk. Our discussion now turns to the feasibility and usefulness of physician education.

## Evidence supporting physician education

A large number of studies have been published examining the impact of physician education on a broad set of outcomes. The review of the physician education literature below focused on those studies that included examination of the impact on suicide or suicide intervention in some capacity.

### ***Gotland studies***

One of the earliest studies examining the impact of an educational program for primary care physicians on suicide was conducted on the Swedish island of Gotland. Rutz and colleagues<sup>150</sup> implemented a 20-hour physician education program on symptoms, etiology, diagnosis, prevention and treatment of depression. Additional lectures were given on suicidology. The program was offered twice in 1982 and twice in 1984, and included lectures, discussions and videotaped presentations. Data collection occurred prior to the educational program, immediately following the first program, 6 months after the first program, 6 months after the second program, and 18 months after the end of the program. About 90% of primary care physicians on Gotland participated in the first program. Several outcomes were examined, including number of psychiatric referrals, sick leave for depression, prescriptions for antidepressant medications, suicides, and inpatient hospitalizations. Over the course of the study, the suicide rate decreased significantly from 25 per 100,000 inhabitants to 7 per 100,000 inhabitants.<sup>150</sup> In an additional report,<sup>151</sup> this suicide rate was compared with the rate in Sweden at this time. Prior to and during the study (1982-1984) the suicide rate in Gotland did not differ significantly from the rate in Sweden. However, in 1985, Gotland's suicide rate was significantly lower than that in Sweden for the first time in 17 years. It was also noted that the rate over the course of the study deviated from the established trend for suicide rates in

Gotland since 1973. After some debate about the validity of the drop in suicide rate on the island, Rutz and colleagues published a 3-year follow-up of the long-term effects of the program on suicide in Gotland.<sup>152</sup> Three years after the project had ended (1988), the suicide rate returned almost to baseline values, suggesting the need for training every 2 years. Further analysis of their findings revealed that the decreased suicide rates were mainly due to decreased suicide in females, while male suicides were not significantly affected.<sup>153,154</sup> The authors concluded that one of the reasons that male suicide rates were not affected was due to the fact that few suicidal males are known to physicians, leading to difficulties in reaching, diagnosing and treating these patients. In fact, females have been noted as more likely to use services prior to suicide.<sup>111</sup>

Subsequent work<sup>155-157</sup> attempted to replicate findings from Gotland, one in another part of Sweden and the other two in Hungary. One study found a non-significant trend towards fewer suicides after the educational program;<sup>155</sup> another showed no effect of the program on suicide rates.<sup>156</sup> The final study, conducted by Szanto and colleagues in Hungary, illustrated a significantly greater decrease in the suicide rate in the intervention region compared with both the county and the national rate.<sup>157</sup> Importantly, this study also included intervention to improve detection of depression through encouragement of use of the Beck Depression Inventory (with an added question on suicidality), a newly established depression clinic for referrals, and access to telephone consultation with local psychiatrists, all of which may have had an impact on the suicide rates.

Taken together, these physician education studies provide conflicting evidence of its effect on suicide rates. Although the Gotland studies did not provide clear long-term evidence

for the program, their work sparked interest worldwide in physician education for suicide prevention.

### ***Skills Training on Risk Management (STORM)***

The Skills Training on Risk Management (STORM) program consists of three to four two-hour training sessions for health care providers focused on assessment of suicide risk, clinical management of emotional crises including suicide risk, and crisis prevention.<sup>84</sup> Training materials include handouts, oral presentations, discussion, videotaped presentations, and role plays.<sup>84</sup> Four articles have evaluated the STORM project as an educational intervention for non-psychiatrically trained health care providers, including physicians. The first project<sup>158</sup> determined that STORM was able to improve confidence, skills and attitudes among non-mental health care workers assessed one month after training. The second project<sup>84</sup> evaluated STORM in training a mix of health care professionals, including general practitioners, nurses, and junior psychiatrists. It was shown that non-mental health workers, whose baseline scores were lowest, improved significantly in terms of skills, while mental health professionals did not obtain the same benefit. Confidence and attitudes were positively affected in both groups. The third study trained 458 mental health professionals, demonstrating significant improvements in confidence and attitudes, even 4 months after training.<sup>159</sup> The fourth study investigated the impact of STORM on suicide rates in a district of England, concluding no effect of STORM in the 3 years following intervention.<sup>160</sup> Based on the evaluations conducted to date, STORM appears effective at increasing confidence and skills in a variety of health professionals, with the largest impact on those who have little to no mental health training. Positive shifts in attitudes toward suicide intervention appears consistently influenced by this program. However, the ability of this training program to impact on suicide rates appears unlikely.

### ***Nuremberg Alliance against Depression***

The Nuremberg Alliance against Depression (NAD) is a 2-year intervention program with training at four levels: training of family doctors, a public relations campaign, cooperation with community facilitators, and support for self-help activities and high-risk groups.<sup>161</sup> Hegerl and colleagues examined rates of suicidal acts over the 2 year period in comparison with a 1-year baseline and a control region in Germany. The NAD appeared to be effective in reducing suicide attempts up to one year after the intervention when compared with rates in the control region, but had no effect on completed suicide.<sup>161,162</sup> Due to the success of this program, the European Alliance Against Depression (EAAD) was established in 2004, representing 16 different European countries.<sup>163</sup> Again, the effect of physician education cannot be delineated due to the multilevel approach of the strategy.

### ***PROSPECT***

In 2004, Bruce et al. implemented a randomized controlled trial to compare the PROSPECT intervention with treatment as usual for elderly patients.<sup>164</sup> The Prevention of Suicide in Primary Care Elderly: Collaborative Trial (PROSPECT) intervention focused on two major components of elderly primary care: physician knowledge of depression and suicidal ideation and treatment management. Primary care physicians were provided with education in the form of a clinical algorithm for treating depression. The algorithm suggested treatment options for the acute, continuation and maintenance phases of depression in elderly patients. First-line recommended treatment was pharmacotherapy. Treatment management was performed by practice-based depression managers, including social workers, psychologists, and nurses. These individuals collaborated with primary care physicians by helping them recognize depression, offered guidelines for treatment, monitored clinical status, and provided appropriate follow-up.



Rates of suicidal ideation decreased 12.9% among patients receiving PROSPECT, compared with only a 3% decrease among patients receiving treatment as usual. Resolution of suicidal thoughts was significantly quicker among PROSPECT patients compared with usual care patients.

Although this study provides evidence that education around depression management reduces suicidal thoughts in patients, the role of the collaborative care model in this intervention impedes our ability to delineate the role of education alone.

### ***Matsunoyama Study***

The Matsunoyama Study took place in a small town in Japan where the annual average suicide rate among the elderly was much higher than the average national rate.<sup>165</sup> Only one general practitioner treated the area, leading to the conclusion that the high suicide rate was due to an under-recognition and lack of treatment of depression. The general practitioner was trained in depression management and psychiatrists from other areas provided advice to the physician as needed. Elderly patients were also screened by psychiatrists as much as possible, although many patients feared stigma related to seeing the psychiatrist. Nurses in the area provided public education emphasizing that mental health issues in the elderly could be solved. Following the intervention, the suicide rate of the elderly in Matsunoyama dropped significantly (from 434.6 [1970-1985] to 123.1 [1996] per 100,000 persons), highlighting the importance of education for physicians, as well as public education and collaboration between health professionals. This program is ongoing in Matsunoyama. Similar to other work noted above, the role of physician education alone is not clear.

### ***Other gatekeeper training programs for physicians***

Evaluations of other physician-based gatekeeper training programs have also indicated increases in knowledge, attitudes and skills.<sup>56,166,167</sup> For example, Michel and Valach<sup>166</sup> trained

GPs in the recognition and treatment of suicide risk using a written handout alone or a written handout combined with a 3-hour discussion seminars. The written handout included information about basic epidemiology of suicide, characteristics of at-risk patients, and advice for management of suicidal patients. Participants completed questionnaires before and after the training. A no training group (n=32) was compared with those who received the written handout (n=50) and those who received the handout and the seminar (n=29). GPs who received the seminar and the written handout had significantly higher scores on knowledge and positive attitudes following the training than did the other two groups, which both showed little to no improvement at the follow-up, highlighting the importance of the seminar format in physician education.

Although most of the studies presented above employed self-report questionnaires to determine helper abilities, Pfaff and colleagues<sup>167</sup> used actual patient interviews to assess GP skills in recognizing and responding to psychological distress and suicidal ideation. Each GP completed a form on each patient summarizing the patient's presenting complaint (whether medical or psychological), psychological details (i.e., presence of psychological distress or suicidal thoughts and an estimate of suicide risk), and their proposed management plan (i.e., referral, medications, counselling, etc.). GPs were not informed which patients were chosen to participate in the study. Prior to seeing the GP, patients were asked to complete highly reliable and valid self-report scales designed as screening instruments of psychological distress and suicidal behaviour, namely the General Health Questionnaire (GHQ), the Centre for Epidemiological Studies Depressive Symptom Inventory (CES-D), and the Depressive Symptom Inventory - Suicidality Subscale (DSI-SS). GPs were assessed on their ability to recognize at-risk individuals, their frequency of enquiring about suicidal thoughts, their accuracy in assessing the

degree of suicidal risk, and the appropriateness of management of the patient. This process was carried out before and after a gatekeeper training program for the GPs to evaluate whether their abilities improved after training. Findings revealed a significant effect of the training program, such that GPs were able to better identify psychologically distressed and suicidal patients better following training, although patients were not more likely to be questioned directly about suicide and management of patients (i.e., referrals) did not appear to be influenced. The authors conclude that GPs detection skills are not enough; they must also be trained to intervene effectively with high risk patients. A similar study by Nutting and colleagues<sup>56</sup> echoed these findings, demonstrating that physicians educated around depression care were 2.6 times better at detecting patients with suicidal ideation than physicians who were not educated. However, the intervention had no effect on referral patterns, treatment practices, or patient suicidal thoughts six months later.

Based on the above evidence, it appears that physician education programs can have a positive impact on physician attitudes, confidence, skills and knowledge of suicide. Some evidence suggests that such programs may also influence suicide rates, although results are conflicting. It seems that training programs that target a wide range of physicians, including non-psychiatric and psychiatric physicians, and include a group discussion format may provide the best results. As well, repetition of training is suggested to ensure that positive changes do not wane with time. Additional studies are required to delineate whether physician education programs alone can influence suicide mortality.

## Medical Students as Future Physician Gatekeepers

Despite increased awareness of suicide as a major public health problem, and efforts to identify those at risk, gaps remain in mental health and suicide literacy training programs for physicians-in-training. The studies noted above have demonstrated the value of suicide prevention training for physicians, given their perceived lack of knowledge and skills in several suicide-related areas. Weissberg<sup>168</sup> further suggested that physicians are not adequately prepared to intervene in emergency psychiatric situations, including a presentation of suicidality in one of their patients. This suggests that poor clinical performance is more likely caused by what he calls a “critical educational omission” rather than by lack of physician interest. Weissberg indicates that although 55% of directors of internal medicine programs felt that emergency psychiatric intervention skills were helpful in internal medicine practice, only 23% of programs offered lectures and seminars on the topic. He later proposed the idea that emergency psychiatric intervention should be included in medical school and residency training programs.<sup>169</sup>

In Canada, as elsewhere, medical students are positioned to act as front-line defense in suicide prevention as future physicians, yet they receive little training in suicide risk assessment and intervention skills. This lack of training is worrisome given that the death of a patient by suicide can be an extremely stressful experience for experienced practitioners; likened to the death of a family member.<sup>170</sup> The combination of clinical inexperience and lack of perspective in dealing with these events appears to result in even greater emotional risk for trainees and junior practitioners.<sup>171</sup> These findings emphasize the need to prepare new physicians appropriately to prevent suicide deaths where possible.

## Gaps in psychiatric education and perceived training needs

In a recent survey of non-psychiatric doctors, 90% rated depression and 70% identified suicide as the topics most relevant to their clinical practice.<sup>172</sup> Depression was the top ranking topic of 101 possible psychiatric topics among both primary care and hospital-based physicians.<sup>172</sup> Training directors in family practice, emergency medicine, internal medicine, and pediatric residency programs also report deficiencies in psychiatric training around suicide and depression.<sup>173,174</sup> Given these deficiencies, it was surprising to find that physicians tend to recognize, diagnose, and treat disorders most familiar to them; the majority of which are somatic complaints.<sup>117</sup>

Similarly, work examining the learning priorities of medical students found that there was agreement that basic psychiatric skills needed by most doctors were more important than specialized psychiatric knowledge.<sup>175</sup> Sixty-five percent of fifth year medical students felt that assessment of self-harm and suicide would be of critical importance in their future practice, rating this as the most highly needed psychiatric skill.<sup>175</sup> Other work has indicated that 97% of medical students themselves, when asked, believed that suicide prevention capabilities are important for their future medical role. Importantly, 80% of medical students report an interest in enrolling in suicide prevention education.<sup>176</sup> This positive attitude towards suicide prevention in medical students is described as one of the precursors for developing and maintaining acquired knowledge and skill in suicide prevention education.<sup>84</sup>

## Knowledge and attitudes towards suicide in medical students

As discussed, if attitudes towards suicide can influence suicide prevention behaviours among physicians,<sup>83</sup> the same is true for medical students in terms of uptake of suicide prevention training and their ability to intervene in the future. The dearth of literature in this

area suggests that attitudes towards suicide were more critical and judgmental early in their medical school training, while more sympathetic comments increased along with years of education.<sup>177</sup> Another interesting finding was that less than half of students answered knowledge questions about suicide correctly.<sup>177</sup> From this one study, it appears that increased knowledge and improved attitudes towards suicide in medical students is critical, as poor attitudes and knowledge could create barriers to prevention of suicide in their future clinical practice.

### **Suicide prevention skills required by medical students**

In a comprehensive survey of Australian medical schools, suicide prevention education was found mostly to incorporate courses on knowledge and attitudes related to suicide prevention (70% of schools), while skills-focused training was less common.<sup>178</sup> According to a study by Hawgood and colleagues, students tended to rate their capabilities as moderate or high in knowledge-based items (e.g., problem-solving, interpersonal skills, etc.) without any specific suicide prevention training, whereas on skills-based items (e.g., working with suicidal persons, intervention skills, referral abilities, etc.) most students rate themselves as moderate or low.<sup>176</sup> Their study also indicated that not only is skill-based suicide prevention education critical and lacking in current programs, but that skills-based topics were the areas which GPs saw themselves as least capable, yet rated as most important in their practice.<sup>176</sup>

Neimeyer and Diamond<sup>179</sup> explored suicide management skills in medical students using the Suicide Intervention Response Inventory (SIRI), a self-report instrument assessing skills in responding to the suicidal patients. Third-year students who had completed a course in medical interviewing scored higher on the SIRI than first-year students who had not. Among those who had completed a six-week inpatient psychiatry rotation additional improvement in scores was

noted, providing support to the idea that medical school training may influence suicide assessment skills. Similarly, Norrish showed increased skill in ranking suicide risk in vignettes following a one-hour lecture and a one-hour discussion on suicide.<sup>180</sup> In fact, suicide prevention education in general has been linked with higher self-perceived skills compared with no education.<sup>176</sup>

Overall, these findings demonstrate the importance of skills-based suicide prevention education. Simulation modes of delivery for skills-based suicide prevention competencies, involving time for rehearsal of skills, have been demonstrated as the most effective teaching method.<sup>82</sup> However, most current medical school teaching strategies are seminar and lecture formats.<sup>181</sup>

### Curriculum adjustments

In a series of literature reviews, Lake<sup>117,181,182</sup> discussed the benefits of refocusing academic psychiatry's curriculum to address gaps in preparing non-psychiatrists with the skills necessary to adequately recognize and treat depression and suicidal behaviours. His work suggested a redesigned training program for medical students that involves brief psychiatric screens for the most critical psychiatric disorders. He concluded that academic psychiatry's emphasis on teaching the traditional, comprehensive psychiatric interview continues to be a barrier to recognition of suicide in non-psychiatric settings because it takes too long to enact in practice. He recommended emphasis be placed upon teaching these specialized skills in psychiatric residency programs, and encouraged a focus on the most critical disorders across medical specialities -- depression and more specifically, suicide.<sup>182</sup>

During their clerkship rotations, medical students receive a good portion of their exposure to psychiatry. Although brief, the psychiatric clerkship rotation has the potential to

influence future clinical behavior of both psychiatrists and non-psychiatrists. For example, Hoifodt and colleagues found that psychiatric clerkship training significantly increased medical students' subjective psychiatric competence and self-confidence.<sup>183</sup> Depression and suicide are addressed in every psychiatry clerkship, yet these topics may become lost in the diverse range of mental disorders that are covered during this period. These findings illustrate why physicians may fail to recognize depression and suicidal intentions in their patients despite their psychiatric training as students. Based on the discussion above, there is a clear need for change to the current curriculum to address this problem.

### **Evidence for educating medical students**

A recent study conducted by Guttormsen and colleagues in 2003<sup>85</sup> trained medical students in their clerkship year in Tromso, Norway using ASIST. Their findings, based on focus-group interviews following the training, demonstrated that students reported more professional confidence and better skills in suicide intervention. A follow-up study in this same population qualitatively examined learning processes in newly educated physicians who had taken part in the ASIST training program while in medical school.<sup>87</sup> The informants revealed that they recalled very little information from their medical school training and from textbooks on psychiatric theory and practice, finding it more difficult to grasp than theory in other medical fields, especially without seeing actual patients. Students reported that they found only a few elements of their medical school training to be useful in dealing with suicidal patients. All of these elements were part of the ASIST training workshop that they had been a part of. They emphasized the value of learning concrete procedures around how to assess suicidal behaviour and how to ask patients direct questions about suicidal thoughts and plans. They also described role-play as extremely valuable in learning how to relate to a patient, how to phrase the



questions, and how to deal with different types of feelings that emerge. They also felt that their attitudes were challenged in the workshop; for some this involved changes from considering suicide as a private matter of little concern to physicians to becoming aware of their responsibility towards their patients. Their recall of these elements was maintained two years into practice and the skills were often used by the physicians. The former medical students also felt that these tools were useful in their own clinical practice.

To date, Guttormsen et al.'s<sup>85</sup> study was the only study to introduce an evidence-based suicide intervention program into the medical school curricula. A major weakness of this study was that it was not a randomized clinical trial. They also did not use objective measures of student skill improvement in detecting and responding to suicidal patients. As well, this study did not compare students who had taken the training to those who had not taken the training (i.e., lack of a control group) to determine if in fact it was the ASIST training that improved their skills and confidence. Given these limitations, there is a need for a more rigorous evaluation of suicide intervention training programs in medical students.

## **Towards a Randomized Controlled Trial of ASIST in Medical Students**

Over 800,000 people die by suicide each year worldwide. As such, suicide prevention strategies have been developed to address this major public health problem. Many of those strategies have been guided by the public health approach, emphasizing suicide as everyone's problem and with a key focus on evaluation of prevention strategies. One particular suicide prevention program that has received a great deal of attention in this regard is gatekeeper training, and more specifically, the ASIST program. Evidence indicates that ASIST may improve knowledge about suicide, intervention knowledge, attitudes towards suicide, self-perceived

intervention skills, and in some cases, suicide intervention behaviours among those trained. With high rates of health service use among suicide cases, physicians are well-positioned as key gatekeepers to suicide prevention within this framework. Physicians, however, noted that they feel under-prepared for this task. To address this gap, physician education has been targeted in national documents on suicide prevention. From our review, we found that physician education appears effective in improving attitudes, confidence and intervention skills among trained physicians. While the research to date has provided mixed results, most studies argue that physician education in suicide intervention leads to a reduction in population suicide rates as well. Work by Lake<sup>117,181,182</sup> suggests that physician education around suicide prevention may best be suited to the academic undergraduate medical program. Qualitative research has suggested that this concept has merit.<sup>87</sup> However, no randomized control trials have been conducted which could provide the gold standard evidence for adding this training to the students medical curricula. From our review, we found few studies have examined the effectiveness of psychiatric training curricula focusing on suicide risk assessment and referral skills, despite the wide body of literature supporting the need for such work.

## Study Aims

To address this gap, the main objective of the current study was to evaluate the effectiveness of a gatekeeper training program (ASIST) in improving medical students' intervention skills with suicidal patients compared to medical school training as usual (TAU).

## Hypotheses

Based on the studies reviewed above, we hypothesized that: 1) medical students trained in ASIST would differ significantly in their ability to correctly recognize and intervene with suicidal individuals based on objective assessment using standardized patients (SPs); 2) the ASIST training program would significantly improve medical students' ability to respond to suicide risk on a standardized objective measure; 3) medical students would report increased self-perceived knowledge, skill, competence, and preparedness to recognize and treat a suicidal individual after the training; 4) medical students trained in ASIST would score higher on measures of interpersonal skills as assessed by SPs; and 5) medical students trained in ASIST would show a change in attitudes towards a more permissive/sympathetic stance towards suicidal behaviour, all when compared with TAU.

# Chapter 2: Methods

## Study Population

### Source and number of participants

Each year, 110 students are enrolled in the Faculty of Medicine at the University of Manitoba in Winnipeg, Manitoba, Canada. Manitoba is a prairie province in central Canada with Winnipeg as its capital city. The medical school is affiliated with the only two tertiary care centres in Manitoba, both of which are located in Winnipeg. These are the Health Sciences Centre and St. Boniface General Hospital, which serve a catchment area of approximately one million people.

### Selection criteria

All 440 medical students (Years 1 through 4) at the University of Manitoba were eligible for participation in the study if they were willing to provide consent. Students who had previously taken the intervention training program (ASIST) or a shorter version of suicide intervention training provided by LivingWorks Inc (SAFETalk) were ineligible to participate.

## Study Methodology

### Enrolment and informed consent

The majority of students were recruited to the study through presentations to their classes. Third-year students received a brief presentation about the project during their “Introduction to Clerkship” lecture series. The project was presented to the class president of

the clerkship class who authorized recruitment prior to presentation. The lecture spot was arranged with the Clerkship Director for the Department of Psychiatry, who allowed time for the presentation within their lecture slot. The Principal Investigator briefly described the study and the consent process in detail at this time. Interested participants were able to consent to the project immediately following the presentation, if they wished. Alternatively, they could take a copy of the consent form with them and could send to the Principal Investigator at any time following the presentation. Students were also provided with the option to arrange a time to meet with the Principal Investigator in order to go through the consent process or to ask further questions about the study. A reminder email was sent out through the Faculty of Medicine student e-mail system to all students following the initial contact asking them to submit consent forms if they wished to participate (Appendix A).

First- and second-year students were recruited through a lunch hour presentation at which a free meal was provided (Appendix B illustrates the email advertisement). The Principal Investigator made a brief presentation about the project during this lunch, with prior authorization from the two class presidents. These students were also able to consent to the project at that time, or could respond at a later date if they wished. The fourth-year medical students received an email from the Principal Investigator (Appendix C), following approval from their class president. The email outlined the project in detail and had the consent form attached.

The consent form was made available at presentations, through email, and at the Faculty of Medicine main office (Appendix D). The consent form clearly advised students that the study's outcome measures and the training program itself would not influence their grades in any way.

Recruitment was terminated once all classes had been invited to participate and each group had received a reminder email.

### **Design and randomization**

This research project was undertaken using a two-group parallel randomized-controlled trial design with an allocation ratio of 1:1. Once all participants had consented to the study, individuals were randomized to: 1) the control group, where they received training as usual (described in detail below) or 2) the training intervention group. Assignment to the groups was done using stratified blocked randomization, stratified by class cohort. All participants were first divided into their class cohort grouping and then were given a number based on receipt of their consent form to the Principal Investigator. Selection into groups was blocked in terms of half of the total number of individuals per class cohort. A random number table was used to assign students in each group. The random allocation sequence was generated by the Principal Investigator.

For example, there were 29 students from the first-year medical class who had consented to participate. Each participant was assigned a number from 1 to 29 based on the order in which their consent forms were received. A block of 15 was decided upon in advance, as that would divide the group into two groups as evenly as possible. The first group selected was always those who would receive the intervention. The first 15 numbers to appear between 1 and 29 in 2 digit sequences in the random number table, based on a randomly chosen start point (eyes closed, pointing at the paper), were assigned to the intervention. The other 14 participants were assigned to the control group. The same process was followed for all four cohorts.

## **Intervention description**

The gatekeeper training intervention group received the Applied Suicide Intervention Skills Training (ASIST) in addition to training as usual. ASIST was described in detail above. The intervention was offered to students on the weekend of April 2-3, 2011. The training was conducted by three senior ASIST trainers and one junior trainer, with two trainers assigned to each training group. Participants were split equally among the two groups and remained in the same group for both days of training. The two groups were trained in concurrent workshops in adjacent classrooms. ASIST was delivered in these workshops in its entirety as required and instructed by LivingWorks Inc.

## **Control group - Training as usual (TAU)**

The control group received education as usual based on current medical school teachings. Education as usual consists of didactic teaching and a tutorial with case-based examples around suicide risk factors in their first year of medical school. In their third year, students also receive an additional 2 hours of didactic teaching. Third-year students may also have the opportunity to practice their skills with real patients. These students complete a 7-week rotation in psychiatry that involves working with attending psychiatrists. As well, each student is required to be on-call in the emergency department throughout their third and fourth year of medical school, allowing exposure to real patients with guidance from a resident and an attending physician in all medical specialty areas. The level of training received for each student will vary depending on their year in medical school and based on their progress through their third year of medical school (whether or not they have already completed their clerkship in psychiatry). Adjustment for these differences in educational experiences were accounted for in the analyses.

## Compensation

Students were given an honorarium for their participation in the study. Each full assessment required one and a half hours to complete. Those who completed both the pre-training and post-training assessments were given an honorarium of \$50 CAD for their time and expenses (gas, parking fees, etc). Students who completed the pre-training assessment only were not given any honorarium. Students who completed the pre- and post-training questionnaire section only (a half hour time commitment at each time point) were given an honorarium of \$25 CAD.

## Data Collection

### Primary Outcomes

The definition of the outcomes for any trial has been said to influence many other design components, as well as the cost and even the feasibility of a trial. RCTs should include several outcome measures to increase the depth of the results and possibilities for secondary analyses.<sup>184</sup> However, a single outcome must be chosen (single primary endpoint) that reflects the main question, allows calculation of the sample size, and sets the priority for efforts to implement the study.<sup>184</sup>

Clinical outcomes are believed to be the best evidence about whether a treatment should be used. However, for outcomes that are rare, like suicide, trials would need to be long and would need to include a large sample size, resulting in great expense. Intermediate markers are measurements that are related to the clinical outcome, but can further our understanding without providing information on the outcome itself.<sup>184</sup> Suicidal ideation, suicide attempts, and



depression are examples of intermediate markers for suicide. These markers can often be considered as surrogate markers for the clinical outcome if it is thought to exist in the main pathway that determines the outcome. Use of intermediate markers is important in that treatment-induced changes in the marker could predict how treatment could affect the clinical outcome. The clinical outcome of interest in the proposed study is suicide, in that we hope that medical students can prevent future suicides in their patients. However it is not possible to track the rate of suicide among patients seen by these medical students over time, since it would require such a long follow-up period to capture a sufficient number of suicides to allow power for analyses. Therefore we are unable to measure this outcome directly. As such, objective intermediate markers will be used as the main outcome for this study. Scores on the Objective Structured Clinical Examination with suicidal simulated patients and scores on the Suicide Intervention Response Inventory (SIRI-2) will be used as objective measures of intervention behaviours with suicidal patients. Clinical competency with suicidal patients is seen as a precursor to effective intervention, which in turn should reduce suicide rates in the patients of these future doctors. These measures are discussed in detail below.

### ***Objective Structured Clinical Examination (OSCE)***

The reliable and valid assessment of clinical competence has become an important area of focus within medical education.<sup>185</sup> Educators and other stakeholders are striving for evidence that assessments are discriminating between trainees who are sufficiently trained and those who are not competent. Clinical competence is thought to include a range of skills, such as medical knowledge, history taking, clinical examination, practical procedures, doctor-patient communication and patient management, among others.<sup>186-189</sup> As such, these skills cannot be effectively assessed using written tests alone. Therefore direct observation of trainees in

simulated work-based settings by professional colleagues has been historically used.<sup>185</sup> One method of assessing clinical competence by direct observation is the Objective Structured Clinical Examination (OSCE).<sup>185</sup>

First described by Harden in 1979,<sup>190</sup> the OSCE involves a rotation through a series of structured stations in which there is an encounter with a standardized patient.<sup>185</sup> The basic structure requires that every trainee complete the same assignments in the same amount of time and is marked according to a structured marking scheme.<sup>185</sup> The marking scheme for each station is determined in advance.<sup>185</sup> The tasks at each station usually involve a clinical skill, examination of a patient or a practical skill.<sup>185</sup> There is a time limit for each station, after which the candidates have to move on to the next 'patient'.<sup>185</sup> OSCE stations may vary in the timing for each station, the use of a checklist or rating scale for scoring, the use of a clinician or standardized patient as examiner, and the use of real patients or manikins.<sup>185</sup>

### *Validity and reliability*

In the traditional long examination, prior to the development of OSCEs, trainees would spend one hour with a patient, unobserved, where they were expected to take a full history and perform a complete examination. Upon completion of the examination, trainees would be questioned by a pair of examiners for 20 to 30 minutes about the case. Long case examinations were thought to be highly valid, since they were based on the trainee's true clinical skills.<sup>185</sup> However, more recent literature has questioned this strength, noting that a one-hour case encounter is highly unlikely in clinical practice.<sup>185</sup> As well, given evidence of the importance of the patient interaction,<sup>191,192</sup> the omission of direct observation<sup>185</sup> in this process is surprising. In recent years there has also been much criticism of the reliability of this approach, related to the lack of measurement consistency caused by examiner biases, variations in examiner stringency,

disagreement between examiner pairs on what constitutes competency, unstructured questioning, and marking without anchor statements.<sup>185,193</sup> As well, patient factors have also been noted to influence the process, to the degree that they disclose information, their demeanour, and the complexity of their illness. Trainee skills may also vary significantly across cases, so that assessment of one case may not provide a generalizable estimate of a trainee's overall ability.<sup>193,194</sup>

The OSCE was originally developed to address the inherent lack of reliability of the classic long case examinations,<sup>185</sup> and have been noted to show improvement in four main ways. First, the structured and pre-determined marking scheme allows for more consistent scoring by examiners across trainees, hence increasing reliability. Two scoring methods have been proposed; global ratings and checklist scores. Although one might assume that checklists are more reliable, this has not been shown to be the case.<sup>195,196</sup> Rating scales, when used by expert examiners, are reliable,<sup>197</sup> and examiner training can further enhance their reliability.<sup>198</sup> Global ratings also appear to confer increased validity of the examination, as discussed in more detail below. Second, candidates perform a number of different tasks across many skill domains, resulting in a more reliable assessment of the trainee's overall competence. Third, as candidates move through the stations they are examined by a range of different examiners, thus individual examiner bias is decreased. Finally, test score reliability increases with an increasing number and variety of stations. The best way to increase reliability is to have one examiner per station with more stations, rather than to have two examiners and fewer stations.<sup>185,199</sup>

In estimating the validity of OSCEs, it is important to be reminded that it is inferences made from the exam that are valid or not valid; face validity of the test itself is not representative of its validity.<sup>200</sup> Inferences about the trainee's ability to apply knowledge to

clinical practice are most relevant to the OSCE's validity. There are two types of validity that apply to OSCEs. Content validity is assessed by how well the examination matches the learning objectives of the course for which that OSCE was designed,<sup>201</sup> while construct validity is based on how well the OSCE situation can represent a trainee's clinical skills once in actual practice.

Taking these two types of validity into account, Hodges provides a thorough discussion around the issues inherent in determining the validity of OSCEs.<sup>202</sup> He believes that OSCEs do not simply have or lack validity; he argues that the question of validity is "For whom, and in what circumstance, might a particular OSCE produce results that reflect a valid assessment of competence?" (p. 250)<sup>202</sup> Hodges argues that a discussion of the validity of OSCEs would ideally include examination of: 1) the characteristics of the individual and the environment in which they work, 2) the sociopolitical contextual issues (including culture, religion, economics), 3) the operationalization of physician competence (as it changes over time and across groups), and 4) the effect of the OSCE itself on the outcomes used to establish its validity. This final point, often referred to as consequential validity, delineates the impact of a testing process on students' learning.<sup>185</sup> Examinations can either reinforce or undermine learning processes; in fact most students tend to focus on their assessments rather than on the learning objectives of the course.<sup>203</sup> It has been suggested that rating scales should be used, as they tend to encourage learning and practicing more holistically, while checklists may encourage memorization.<sup>185</sup> It is not necessarily problematic that OSCEs can both measure skills and influence skills, but it is important to recognize these influences and respond accordingly.

It is clear that the validity of an OSCE is difficult to ascertain. However, what the OSCE may lack in its validity in assessing true clinical skills may be offset by its highly reliable

assessment of trainee skills. Due to its perceived fairness by trainees, use of the OSCE format has become widespread in undergraduate level testing in clinical competence.<sup>204-207</sup>

### *Strengths and limitations of OSCEs*

OSCEs are believed to be a highly reliable and objective way to assess clinical competency in undergraduate medical education as discussed previously. They can also be seen as important opportunities for learning. OSCEs have been noted to improve students' intervention skills through the use of role-play,<sup>208</sup> in addition to the fact that these examinations are used to determine the ability of students to intervene. Some authors suggest that time should be built into the schedule at the end of each station to allow the examiner to give feedback to the trainee on their performance.<sup>185</sup> Limitations of OSCEs include the fact that they can be very complicated to organize and are expensive to run. These examinations require a great deal of preparation around training of examiners and simulated patients. It is critical that considerable resources be devoted to both these endeavours. The validity and reliability of the examination can be greatly affected by a simulated patient who changes their performance, even in a subtle way, from one trainee to the next.<sup>185</sup> Similarly, inconsistency between examiners could reduce reliability of the OSCE. Proper resources devoted to training both examiners and simulated patients could minimize these impacts.

### *OSCE scoring*

As mentioned earlier, there are two methods of scoring OSCEs; global ratings and checklist scores. When OSCEs were first introduced, detailed checklists were produced for each station. The examiner would tick whether or not an action was performed, and if it was, whether it was performed adequately. Many examiners felt that this process overlooked more subtle but critical factors in clinical performance, while focusing on the easily measured aspects

of a clinical interaction. In contrast, global ratings are based on the raters overall judgement of how well they think each trainee performed at that station. Global ratings are most often based on a three-point scale (pass - borderline - fail) or a six-point scale (outstanding - clear pass - borderline pass - borderline fail - poor - inadequate). Typically the aim of the OSCE is to distinguish between individuals who have sufficient clinical competence and those who do not, therefore establishment of the pass mark, or standard, is critical for determining who passes and who fails. However, this aspect of the OSCE does not apply in our study since comparisons are made on the individual over time. However, the aim was to evaluate the students using the most well-established OSCE rating criteria. One method, the Borderline Group method, was developed specifically for performance-based examinations, like the OSCE. In this method, the examiner at each station observes and scores the trainee on the checklist, but also provides a global rating score based on their overall judgement of how well they think each trainee performed at that station. The use of these two scoring methods in unison has been shown to be highly reliable<sup>198</sup> and has become the 'gold-standard' method of standard setting for OSCEs.

185,209

### *Use of OSCEs in psychiatric training*

Psychiatric educators were initially slow to adopt this method of evaluation, however, since the 1990s psychiatric OSCEs have gained popularity and are widely adopted.<sup>204,205,207,210,211</sup> Previous studies have found that OSCEs are practical in assessment of psychiatric undergraduate medical training, and conclude that the reliability and validity of such measures are satisfactory.

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### *Development of OSCE stations for use in this study*

Four (4) OSCE stations were developed for each time point in the study. Previous pilot work has utilized four stations for evaluation of undergraduate psychiatric clerkship skills.<sup>212</sup> The initial step in the development process was consultation with the Standardized Patient (SP) Program at the University of Manitoba. The SP Program has a wealth of expertise in coordinating and conducting OSCE-type examinations in a range of medical professional fields. The SP Program provided a template with which to create the OSCE scenarios (see Appendix E). The next step was a preliminary meeting with a collaborator on the project (Dr. Frank Deane) who had experience in developing OSCE stations for use in research studies. Following this meeting, the clinical scenarios were designed and written in full by the Principal Investigator. Initial review was by two staff psychiatrists at the University of Manitoba, one of which is the Director of the Anxiety Disorders Program and the Director of Research in the Department of Psychiatry and a committee member. A meeting with a senior ASIST trainer provided further elaboration of the clinical presentations to include suicide warning signs and information relevant to the ASIST program goals. At this time a marking checklist was developed based on the aims of ASIST (will be described in more detail below). The scenarios and the marking scheme were then taken to an expert review committee selected by the Head of the Department of Psychiatry at the University of Manitoba. The committee included the Director of Undergraduate Medical Education, the Clerkship Coordinator, the Director of Postgraduate Medical Education, the Medical Director of the Emergency Consultation Service and Crisis Response, Director of Faculty Development and Educational Scholarship, and one staff psychiatrist - all from the Department of Psychiatry, as well as the primary PhD supervisor. The expert review committee members independently reviewed each station and the marking criteria in detail prior to meeting. Two 2-hour in-person meetings were held, one for each time

point in the study (i.e., to review 4 stations each time). At that time, members were able to provide feedback on the measures, allowing commentary on the clinical presentation of the SP scenario, its validity as a clinical presentation, features of the disorders that were missing from the presentation, and the appropriateness of the marking scheme for the stations. The Head of the Department of Psychiatry also met independently with the PhD Candidate to discuss similar issues. An additional review of the scenarios and the marking criteria was undertaken by two senior psychiatry residents who provided feedback from the perspective of individuals who had been through OSCE examinations in the past. Final feedback was provided from the developer of the ASIST program and another member of this team, mainly with respect to the marking criteria for the stations.

At each time point, three of the four stations presented with suicidal patients, although each of the three stations varied in terms of diagnosis, presentation (either physical or psychiatric presentation), and elements of suicide risk. Roles were designed for differing levels of difficulty in detecting the suicidality of the standardized patient. The remaining station presented a patient with a general mental health condition. The general mental health condition cases contained sufficient indicators that would suggest the possibility of suicide risk in the patient. At the two time points, OSCE scenarios were different from those presented previously (i.e., baseline stations differed from follow-up stations). The level of difficulty in detecting suicidality and the layout of the stations (3 suicide stations, 1 general mental health), however, were designed to be as comparable as possible between the time points. Appendix F delineates the blueprint of the OSCE stations, including level of difficulty and presenting characteristics of the standardized patients. Appendices G through N illustrate the eight scenarios as they were used in the study.



### *Training of standardized patients for this study*

Because of the large number of participants in the sample at baseline, and the cost associated with use of SPs, the SP Program recommended using 3 actors to play each of the 4 SP roles, for a total requirement of 12 SPs at each time point. This is common practice in use of SPs. Therefore, three separate tracks were created wherein 3 SPs would act out the same role, with each track (Track A through Track C) consisting of the four different scenarios.

The SP Program at the University of Manitoba has a great deal of experience in training SPs to maintain high levels of consistency across performances and across actors. Therefore, the SP Program was responsible for hiring and training of the SPs as per their standard operating procedures for these types of exams. The SP Program coordinator recruited SPs on a first-come, first-served basis based on the demographic match of characteristics between the role and the actor. Once hired, actors were sent complete case notes for the scenario to review and memorize prior to training. Training was held in the day or two before the OSCEs to ensure that the role was salient at the time of the examination. All three actors who were assigned to the same role were involved in a single training session. The actors began the training sessions by asking questions of clarification about the role. Once their questions were addressed, the SP coordinator would have all three actors get into character and would start asking questions of them, one at a time, around the details of the role (e.g., age, date of birth, marital status, etc.). The questions would go around the room in this fashion until the coordinator felt that the actors were adequately performing the role, that they were acting more similarly to each other (a process that he termed “syncing up”), and that they had all memorized the required information about the scenario. The next step was to have each actor perform the role in its entirety for the specified station length of time (15 min) while the other two actors would

watch. The coordinator played the role of student and the actor would simulate how they would respond in the actual examination process. After each actor had performed the role, the coordinator provided feedback. If any of the actors had not sufficiently performed the role, further practice would be undertaken until all actors had memorized the role and were performing the role similarly to each other.

#### *Application of OSCEs in this study*

OSCEs were undertaken by students both 1 week prior to training and 1 week following training. Prior to the examination, students were able to sign up, by email, for the time slot that they preferred on one of the two available examination days. The baseline OSCEs were offered on March 27-28, 2011, while the follow-up OSCEs were held on April 10-11, 2011. As email requests were received, students were assigned to a particular track and starting station number in order (starting with Track A Station 1 and so forth). After all students were signed up, some of the students were shifted to alternate tracks and starting stations in an effort to balance the number of participants per track, while maintaining the same order of participants.

The Clinical Learning Simulation Facility (CLSF) is specifically designed to conduct OSCE-based examinations at the University of Manitoba. This state-of-the-art facility boasts 14 mock clinical examination rooms and is designed with one-way mirrors and video recording capabilities to capture the interaction between the examinee and the standardized patient. At baseline, up to 12 students could participate in the three OSCE tracks at one time. At follow-up, up to 8 students could participate at once since only 2 tracks were needed due to a reduced number of participants.

On the day of the exam, students initially met in a classroom outside of the CLSF. At the start of the examination, students were led into the CLSF and were advised of their track and

starting station assignment. All students cycled through the stations in order (1 to 4) regardless of which station they began with. A two-minute interval was given prior to the start of each station to allow students to read over a small summary of the case presentation (see Appendix O for an example of a case stem). Students were given 15 minutes with the standardized patient in each station to perform the required tasks. The total examination time was 68 minutes. Students were not allowed to discuss the stations during the examination process and were closely monitored throughout the process.

#### *Scoring of OSCEs in this study*

As mentioned previously, the CLSF allowed video recording of all OSCE-based student-patient interactions. Two independent raters who were blind to whether the student was in the ASIST trained or non-ASIST trained group rated the videotapes. Both raters were experienced ASIST trainers and were not those involved in training the students. One had received the ASIST 5-day Training for Trainers (T4T) 1 year ago and had since trained six groups of individuals, including social workers, students in applied counselling fields, and individuals working in group homes. The other rater was a Master ASIST Trainer (meaning this individual has delivered a minimum of 10 workshops) with 5-6 years of experience in conducting ASIST workshops with a range of participants, including correctional officers, police officers, applied counselling students, group home workers, and social workers. The raters were each assigned to rate a random half of the videotaped interactions, with an equal number of pre- and post-training videos, some of which would include a student trained in ASIST and some not. A random sample of the same 48 videos were given to both raters to allow development of a measure of inter-rater reliability. Each rater was responsible for rating 256 videos in total. Raters received their individual 256 videos on DVDs to be watched at their leisure in their own homes. Raters were

provided with the case scenarios for each of the 8 stations and the station blueprint to enable familiarity with the station details and required behaviours prior to watching the videos.

The marking scheme was developed with guidance from a Senior ASIST trainer and the expert review committee from the Department of Psychiatry. The marking scheme included both a checklist of required behaviours as well as global ratings of overall performance and was based directly on the key components of the ASIST program. See Appendix P for the OSCE examiner score sheet.

The checklist criteria was grouped into 3 main sections, which reflect the three main sections of ASIST: 1) Connecting, 2) Understanding, and 3) Assisting. The Connecting section reflected whether the student asked about suicide and whether they asked about it in a non-judgmental, direct, and open way. It also determined how long it took the student to ask the patient about suicide. In theory, Level 3 stations should have a shorter time to asking while the more difficult Level 1 stations should have a longer time to ask because of the complexity of the patient profile. One point was given for each of the key ASIST behaviours involved in Connecting, and up to 5 points were given depending on the speed at which the student asked about suicide (5 points for asking within 5 minutes, 0 points for not asking the question) for a total possible score of 10 points. The Understanding section of the checklist covered the detailed examination of risk and protective factors of the patient, including whether the person was feeling desperate, whether resources are available to them, or if they have been suicidal in the past. The Understanding section was also scored out of a possible 10 points. The final section, Assisting, involved assessment of whether the student made a 'safe plan' for suicide with the patient. A number of behaviours were required in this section, including getting the

patient to agree not to act on thoughts of suicide, disabling the plan for suicide, and linking with resources. The maximum score on the Assisting section was 8 points.

The global rating scale was comprised of four distinct sections which again reflect the three main sections of ASIST, as well as an overall global rating of the student. A global rating was assigned for each of the four sections on a six-point scale (outstanding - clear pass - borderline pass - borderline fail - poor - inadequate). The first section asked about the global rating of how well the student connected with the patient. This global rating was not just based on how well the student did on the checklist for the Connecting section, but also based on the interpersonal skills of the student in connecting to the patient whether or not suicide was asked about. The second global rating was an assessment of how well the student understood the patient. This rating included how well the student listened to the patient, and whether they seemed to understand the underlying issues and stressors of the patient. The third global rating was based on judgement of how well the student assisted the patient with their issues. And finally, the fourth global rating assessed overall judgement of how well the rater felt the student performed on the station. A total global score was created based on the sum of all four global ratings for each student across patient interactions. Total global scores were then summed to give a global summary score for each student by station type, and an overall global summary score, both of which were compared pre- and post-intervention.

### ***Suicide Intervention Response Inventory***

The Suicide Intervention Response Inventory (SIRI) was used as a second main outcome measure. The SIRI is a self-administered questionnaire that was designed to measure competence in choosing appropriate responses to a series of clinical scenarios with suicidal individuals.<sup>94</sup> It contains 25 items, each of which consists of a “client” remark and two “helper”

responses, one of which is considered facilitative based on crisis theory, while the other is considered more of an ineffective intervention.<sup>94</sup> Respondents are instructed to record the reply they feel is more appropriate. Item content for the client and helper remarks were derived from personal experience in crisis counselling and anecdotal accounts of paraprofessional and professional counsellors. Remarks were selected to address common difficulties encountered in responding to suicidal clients. Themes included problems in attending to implicit or explicit suicide threat, avoiding simple reassurance and professionalism, securing a verbal contract from the client not to consider self-injury before recontacting the helper, and so on. Scoring of the SIRI represents the number of correct answers endorsed by the respondent.<sup>94</sup> The SIRI can be thought to measure the extent to which respondents can discriminate between more and less effective responses to suicide counselling situations.<sup>213</sup>

#### *Validity and reliability*

Construct validity, the degree to which a measurement accurately assesses the theoretical construct it is designed to measure, has been evaluated in two ways. First, construct validity was shown in the SIRI's ability to distinguish between groups known to differ in suicide counselling skills. A study by Neimeyer and MacInnes<sup>94</sup> demonstrated that experienced crisis counsellors obtained the highest SIRI scores, followed by less experienced counsellors and by untrained psychology students. Two other studies confirmed these findings.<sup>179,214</sup> Second, construct validity has been established by three studies demonstrating sensitivity of the instrument to detect changes in scores before and after training in suicide intervention.<sup>94,214,215</sup> The SIRI is able to distinguish between groups who differ in their suicide intervention skills, and can detect improvements in such skills after training.

Convergent validity describes the degree to which a test correlates with other tests that are designed to measure the same concept, in this case, to measure suicide intervention skills. The convergent validity of the SIRI has been assessed in relation to the Counselling Skills Evaluation (CSE),<sup>216</sup> a validated measure of counselling ability. The assumption was that suicide intervention skills should represent a subset of general counselling skills. Two studies (three testings) indicated that the SIRI was significantly correlated with the CSE ( $r = .58, .60$  and  $.66$ ), demonstrating convergent validity of the measure.

In contrast, discriminant validity assesses whether the measure can discriminate from theoretically distinct measures with which it can be confounded. For the SIRI, relevant confounds are thought to be knowledge about suicide, attitudes about suicide, opinions of suicide, and death anxiety. The skills assessed by the SIRI have been shown to be independent of all of these concepts,<sup>179,217-219</sup> demonstrating good discriminant validity.

The SIRI has demonstrated adequate internal consistency with alphas of  $.83$ <sup>214</sup> and  $.84$ .<sup>94</sup> Test-retest reliability was assessed using control subjects tested twice over a 3-month period, and was noted to be  $.86$ .<sup>94</sup> The factorial structure of the SIRI has also been investigated, although findings have been mixed.<sup>214,220</sup> Results did not provide evidence that subscales could be identified.

Evaluations have also examined whether respondents' characteristics were related to scores on the SIRI.<sup>179</sup> They found that female gender, compared with male gender, was associated with higher scores on the SIRI.<sup>179,219</sup> Additionally, errors on the SIRI seemed related to professional education. Specifically, errors by those with medical training suggest a tendency to react in a defensive, distancing, advice-giving, or essentially authoritarian fashion, while

nonmedical counsellors tend to err in the direction of passivity or failing to structure the interview.<sup>221</sup> No other relationships were noted.

### *SIRI-2*

The main criticism of the SIRI concerns its ceiling effect with more skilled trainees, as demonstrated in three studies.<sup>94,214,215</sup> This ceiling effect limits the value of the SIRI in evaluating the impact of advanced training in suicide intervention among professional experienced helpers, despite the need for such improvement. To preserve the positive features of the original SIRI and eliminate the ceiling effect, Neimeyer and Bonnelle introduced a second form of the SIRI; the SIRI-2.<sup>213</sup> The main revision was to make the scoring system more sensitive to the skills of experienced counsellors. The dichotomous scale used in the original version (number of items correct) was replaced with a 7-point Likert scale for the appropriateness of each response, ranging from +3 (highly appropriate response) through 0 (neither appropriate nor inappropriate response) to -3 (highly inappropriate response). This scoring method requires each respondent to make more subtle judgments about the usefulness of each helper response. To determine the level of usefulness of the responses, a group of expert suicidologists and crisis interventionists were solicited for their opinions. The mean response from experts on each item serves as a criterion against which individual respondents are compared.

The psychometric properties of the SIRI-2 were examined by Neimeyer and Bonnelle, in comparison with the original SIRI among a sample of master's-level crisis counsellors (more experienced counsellors) and introductory psychology students (less experienced counsellors).<sup>213</sup> As expected, scores on the original SIRI and the SIRI-2 were significantly correlated ( $r = -.88$  and  $-.84$  at Time 1 and Time 2, respectively). A negative correlation is appropriate since lower scores on the SIRI-2 represent greater skills in suicide intervention (i.e., less discrepancy from



the expert scores), whereas higher scores on the original SIRI represent greater skills (more answers correct). Construct validity of the SIRI-2 was evaluated using the known groups method and investigation of sensitivity to a training effect. Differences between master's-level counsellors and psychology students were noted using both the dichotomous scoring method and the new criterion-based scoring method, indicating that the known groups method confirmed construct validity in measuring suicide intervention skills. When pre- and post-training scores on the SIRI were examined among master's-level counselling students, the dichotomous scoring method did not detect an effect of training. Importantly, the new criterion-based scoring method did show significant improvement with education among this group, suggesting a greater sensitivity of the new scoring system to higher levels of intervention skills. Both versions of the SIRI demonstrated discriminant validity based on a lack of association with the Marlowe-Crowne Social Desirability Scale ( $r = -.04$  for the original SIRI,  $r = -.01$  for the SIRI-2). The SIRI-2 showed improved internal consistency over the original SIRI, with alphas of .90 (Time 1 - pre-testing) and .93 (Time 2 - post-testing), and .78 (Time 1) and .85 (Time 2), respectively. Test-retest reliability for both the original SIRI and the SIRI-2 was illustrated by calculating Pearson correlations for controls who were administered the SIRI twice over a 2-week period. The new criterion-based scoring again resulted in a significant improvement over the dichotomous scoring method, with a correlation of .92 versus .79 for the original SIRI. The relationship of the SIRI with respondent characteristics was also investigated in this study. Findings revealed that both the original SIRI and the SIRI-2 were unrelated to any respondent characteristics, including sex, contrary to previous studies.<sup>179,219</sup> In sum, research on the SIRI-2 has shown its good psychometric properties, freedom from social desirability effects, and responsiveness to training in suicide prevention even at advanced levels.<sup>213</sup> It demonstrates a

significant improvement over the original SIRI in terms of its reliability, as measured by its internal consistency and its test-retest stability, and its lack of ceiling effects even among more highly trained counsellors. For these reasons, this revised version of the SIRI is more appropriate for use in our study, especially considering our study population of respondents with more advanced training in the helping professions.<sup>222</sup>

### *Strengths and limitations of the SIRI-2*

The SIRI-2 has demonstrated good psychometric properties in a number of populations, as noted above. As a reliable and valid measure, the SIRI-2 seems an appropriate choice for assessment of suicide intervention skills. The key feature of the SIRI-2 is its objective assessment of skills and competency in responding to suicidal individuals. However, the SIRI-2 is limited since it is a self-response index and does not provide direct observation of intervention behaviours. Often with self-response indices a concern is that the respondent will provide answers that are socially desirable. As noted above, this is not a concern with the SIRI-2.<sup>213</sup> An additional limitation inherent to the SIRI-2 is the fact that it aims to assess counselling skills. In our case, we are working with physicians-in-training and we hope to increase their clinical management of suicidal patients, not just their therapeutic alliance. The SIRI-2 has been used to measure clinical management among healthcare staff in previous work with good results.

179,223,224

### *Use of the SIRI*

To date, twenty peer-reviewed studies have utilized the SIRI or the SIRI-2 as an outcome measure.<sup>59,71,84,94,146,158,159,179,213-215,217,218,220,222-227</sup> Two additional studies have discussed inclusion of the SIRI-2 as an outcome in their proposed research evaluations,<sup>163,228</sup> and one additional study reviewed the scale's design and properties.<sup>221</sup> The SIRI has been incorporated

into educational program evaluation efforts in over 100 suicide and crisis intervention centers worldwide<sup>221</sup> and has been studied in a range of populations, including suicide intervention volunteers,<sup>94,158,214,218,220,221</sup> paid crisis line personnel,<sup>225,227</sup> teachers,<sup>214</sup> peer helpers,<sup>59</sup> high school students,<sup>219</sup> college undergraduates,<sup>215,227</sup> nursing students,<sup>217</sup> and other health professionals.<sup>84,158,159,224,227</sup> Its widespread use and generalizability to a broad range of settings and populations suggests that it is a valuable tool to evaluate competency in suicide intervention.

#### *SIRI in medical education*

Work by Neimeyer and Diamond<sup>179</sup> explored suicide management skills in medical students using the SIRI. Third-year students, who had completed a course in medical interviewing, scored higher on the SIRI than first-year students who had not. Among those who had completed a six-week inpatient psychiatry rotation additional improvement in scores was noted, providing support to the idea that medical school training may influence suicide assessment skills. The validity of the SIRI for use with medical students was confirmed in this study.

#### *Application of SIRI-2 in this study*

The SIRI-2 was used to detect changes in intervention skills in medical students over the course of the trial (see Appendix Q for the measure). The SIRI-2 was used in its original format, as a self-administered, pencil-and-paper questionnaire. The questionnaire was completed by students immediately following completion of the OSCE stations. Students were led from the CLSF to a separate classroom at the University of Manitoba by the Principal Investigator or a research assistant where they completed the SIRI-2 in addition to some questionnaires

described in more detail below. The SIRI-2 took students about 10 minutes to complete on average.

### *Scoring of the SIRI-2 in this study*

The SIRI-2 has a standardized scoring procedure which is used to evaluate the candidate's skill in suicide intervention. As mentioned earlier, the student was required to assign a value of -3 to +3 indicating the usefulness of the response for each of the two helper responses to each of the 25 scenarios, for a total of 50 responses. The absolute value of the difference between the students' rating and the mean response from experts for the usefulness of each helper is then determined (see Appendix R for mean expert ratings). The sum of the absolute differences is then calculated to obtain an overall score of how well the student performed with respect to expert responses. Lower scores indicate better performance on the measure while higher scores indicate poorer performance. It is important to note that scenario #14, although still a part of the SIRI-2 questionnaire, is discarded from calculations of the total deviance scores since experts were unable to clearly distinguish between more and less facilitative responses on this item. Previous samples of medical students obtained mean SIRI-2 scores around 101,<sup>146</sup> while samples of medical professionals and mental health frontline workers tend to have mean scores closer to 50-60 (higher scores reflect lower suicide intervention skills).<sup>146,158,227</sup>

## **Secondary outcomes**

### ***Demographics***

Sex, age and marital status were asked of each respondent. Further questions investigated the level of medical school training that the respondent had, including what year of

training they were in, whether they had completed a clerkship, whether they had completed an elective in psychiatry, and what residency speciality program they intended to go into. In addition, whether the individual had received previous suicide prevention training (other than ASIST), whether they had talked with someone at risk of suicide, and personal experience with a suicide attempt or death was assessed. See Appendix S for exact questions assessed at baseline.

### ***Subjective measures of confidence, skill, knowledge and preparedness***

All respondents were asked to subjectively respond to four questions which assessed: 1) self-perceived level of confidence to intervene with someone at risk of suicide, 2) self-perceived skill at detecting suicide risk in another person, 3) self-perceived knowledge of suicide risk, and 4) self-perceived preparedness to intervene with a suicidal individual (Appendix T). Response options were on a 4-point Likert scale from very to not at all. These four questions were evaluated both pre- and post-training to examine changes in subjective suicide intervention abilities.

### ***Attitudes Toward Suicide (ATTS) Questionnaire***

Attitudes toward suicide in the student is important to assess since previous work has indicated that attitudes in gatekeepers may unintentionally contribute to cause of death.<sup>229</sup> In fact, one of the first topics discussed within the ASIST workshop is an exploration of individual attitudes toward suicide. In the training, recognition of one's own attitudes is thought to improve a person's ability to intervene. There has been much debate in the literature about the etiological role of more liberal/permissive attitudes toward suicide. Some believe that permissive attitudes promote suicidal behaviour, particularly among the young.<sup>230</sup> Whereas others have argued that permissiveness may allow suicidal individuals to feel less stigmatized, permitting more open discussion of suicidal thoughts and an opportunity to intervene.<sup>231</sup>

Although ASIST does not attempt to change attitudes, it is possible that the workshop does have an impact.

A variety of measures have been developed to measure attitudes toward suicide,<sup>232</sup> ranging from simple one-dimensional scales to large-scale multi-dimensional surveys. The Attitudes Toward Suicide (ATTS) Questionnaire, developed by Renberg and colleagues,<sup>232,233</sup> was designed to address limitations of previous scales by combining many of the measures previously used. Repeated factor analysis of the questionnaire in samples collected a decade apart led to refinement of the items on the ATTS. The final version comprised of 37 items was established based on factor analysis in these two cohorts.<sup>232,233</sup> This measure has been found to have high validity but somewhat poor reliability, possibly due to the number of domains covered by the measure (i.e., high number of domains, few items in each domain).<sup>233</sup> Regardless of its poor reliability, this measure seemed more appropriate for use in our study than other attitudinal measures with less rigorous testing.<sup>234,235</sup> The full ATTS (Appendix U) was collected on both the pre- and post-intervention questionnaire.

### ***Knowledge about suicide***

All respondents were asked to complete a 10-item suicide intervention knowledge questionnaire. This questionnaire was developed specifically for use in this study. Some items were drawn from the ASIST handbook (See Appendix V for full questionnaire, questions 2, 3, 8 and 9 were from the ASIST handbook). The remaining items were taken from a knowledge questionnaire developed for a gatekeeper training study in a different population.<sup>61,69,236</sup> Items were chosen based on face validity and coherence with ASIST teachings.

### ***Interpersonal Skills (IPS) Rating Scale***

Each standardized patient in the OSCE interactions was asked to rate each student using the Interpersonal Skills (IPS) Rating Scale (Appendix W). This measure was developed by the University of Manitoba for use in comprehensive clinical examinations with undergraduate medical students and residents.<sup>237</sup> The IPS Rating Scale used 13 items to evaluate communication skills in the OSCE setting between patient and student from the patient's perspective, and included concepts such as empathy, respect, sensitivity, and listening skills. Each item was scored on a 7-point Likert scale from strongly agree to strongly disagree. Since this measure is used currently in the formal evaluation of medical students at the University of Manitoba, the standardized patients were quite familiar with the measure making it easy to complete. The reliability of this measure has been shown to be  $\alpha=.73$ .<sup>237</sup>

### ***Review of ASIST workshop***

Participants were asked 14 questions pertaining to their opinions about the ASIST workshop (Appendix X). Items included how much they enjoyed the training, whether it was a good use of their time, whether they felt more willing to intervene after the training, whether they felt they would be able to make use of the training, and what they found to be the least/most useful parts of ASIST.

### ***Diffusion effects***

Diffusion of training-related information was assessed by two items developed for this study based on the diffusion of innovations theory.<sup>238</sup> A similar measure has been used previously.<sup>69</sup> Items assessed whether the participants discussed the training with another person and whether they had showed the material to another person (Appendix Y). Inclusion of

this measure allowed examination of diffusion of the training within a relatively small community.

### Data collection process

Students completed baseline measures on March 27-28, 2011. Each student was able to select the exact date and time that was most convenient. Students participated in the OSCE encounters prior to completion of the self-report questionnaires. Twelve students were able to take part in each OSCE run. Students were asked to meet 15 minutes prior to the start of their OSCE. Once all students were present, the Principal Investigator escorted them to the CSLF to prepare for the OSCE encounters. CSLF staff oriented the students to the OSCE process. All interactions were video recorded for later review.

Following completion of OSCEs, all participants were escorted to a separate classroom to complete the self-report questionnaires. The questionnaire required 15 to 20 minutes for completion. At baseline, the self-report questionnaire included the SIRI-2, the 10-item knowledge questionnaire, the ATTS, questions on subjective knowledge, skills, competence, and preparedness, and demographics (Appendix Z). The baseline questionnaire had been piloted in a group of research assistants and used with First Nations community members (n=60) in another study prior to use in this study.

The ASIST workshop was held April 2-3, 2011 for those students who were randomized to participate. The post-training questionnaire and OSCEs were completed one week following the ASIST training, again over a two-day period (April 10-11, 2011) with identical procedures. The exact time slot was similarly selected by the student for their convenience. For control group participants, the post-training questionnaire included the SIRI-2, the 10-item knowledge questionnaire, the ATTS, questions on subjective knowledge, skills, competence, and



preparedness, and updated demographics (e.g., change in marital status) (Appendix AA). The post-training questionnaire for those in the intervention group included all of these same components, with additional questions which assessed the student's review of ASIST and diffusion effects (Appendix BB).

Raters completed a paper copy of the OSCE score sheet while watching each video. They were able to replay portions or the video in its entirety if there was anything they needed to see again. If any questions arose during the rating process, the raters would discuss the specific example with the Principal Investigator and the other rater to maintain consistency. The raters were initially given the same 8 videos to rate as a starting point. After each rater had rated the same 8 videos, one from each station at both time points, the two raters and the Principal Investigator met to discuss consistency of ratings. Both raters were then able to compare their ratings of the interactions such that future ratings could be more consistently conducted. The Principal Investigator did not provide direct guidance to the raters in their ratings, but allowed the raters to discuss what they felt was best suited for the project. After the initial 8 videos, the raters went on to rate their remaining videos, 40 of which were matched between the two raters, and 208 which were only rated by the single rater. Upon completion of the rating process, the raters returned all DVD videos and the OSCE score sheets to the Principal Investigator.

### **Data processing, management, and protection**

All questionnaire data was entered into an electronic database by a data entry research assistant. The database contained only anonymized information, which was linkable across questionnaires through a code assigned to each student. Upon completion of the consent form, each participant created their own participant code, which consisted of the participant's day of

birth, the first two letters of the mother's maiden name, and the last two digits of the participant's social insurance number. The student wrote this code on a sheet that was separate from the consent form with their name. Having this code created by the participant with information that was easy for the participant to identify ensured that the participant would remember the code for each time point. This code was then used on all subsequent questionnaires, allowing all documentation to be tracked throughout the study while maintaining anonymity. The master list of codes and names was held in strict confidence only by the Principal Investigator. This process ensured confidentiality of the individual responses to the questionnaires and the OSCE evaluations.

## Data Analysis and Statistical Considerations

### Sample size calculations

Each medical school class cohort (Year 1-Year 4) consisted of a maximum of 110 students per year. Attempts were made to recruit all 440 students to the study. Students were then randomized to the control (education as usual) or the training intervention group, which allowed a maximum of 220 students per group.

The statistical power to detect differences in the medical students ability to better recognize and respond to a suicidal individual following the training intervention was based on both the OSCE simulations and the SIRI-2. The power of our study was set at 80%, therefore  $\beta=0.20$ . The acceptable  $p$ -value for our study, or the possibility of Type I error, employed the standard of  $\alpha=0.05$ .

Previous research with the OSCE as the measure of outcome has demonstrated the difference in mean scores between control and intervention groups to be around 10%, with a

maximum standard deviation of 8.5.<sup>239</sup> Therefore, the minimum acceptable difference in means between the control and intervention groups for indication of a significant difference in our study was set at 10%. The population standard deviation was estimated as 8.5%. A sample size calculation based on these parameters:

$$n = 2 [2.80*(8.5/10)]^2$$

gave a sample size of 11.33 or 12 participants for each of the two groups to detect significant differences between the two groups using the OSCE assessment. It was unclear whether a 10% difference in scores would give clinically meaningful differences in recognition of and intervention with suicidal individuals, since this has not been evaluated to date.

Previous work using the SIRI-2 as the measure of outcome has shown a 10-point difference in mean scores between pre-training and post-training in suicide prevention.<sup>213</sup> The largest value for standard deviation that has been shown with this scale for a pre-training population (or non-trained population) is 17.86.<sup>213</sup> Therefore we will estimate the population standard deviation to be 18 points. A sample size calculation based on these parameters with the assumptions above:

$$n = 2 [2.80*(18/10)]^2$$

estimated a sample size of 50.8 or 51 students for each of the two groups to detect a significant difference between the two groups using the SIRI-2. Since the sample size calculation based on the SIRI-2 measure required a much larger sample size, we aimed to satisfy this requirement.

## Statistical analysis

All analyses were performed in SPSS 21.0. Demographic characteristics were examined for baseline equivalence between the groups according to a chi-squared distribution.

Exploratory factor analysis using baseline data was conducted to examine the factor structure of

the ATTS. Item-level inter-rater reliability on OSCE checklist and global scores were evaluated according to Cohen's Kappa. Paired t-tests were used to examine change in each group across the two time points. General linear models (ANOVA) were used to examine the overall impact of the ASIST intervention on both primary and most secondary outcomes. Descriptive statistics were used to examine reviews of the ASIST workshop and diffusion effects.

## **Ethical and Legal Considerations**

### **Risks to participants**

Participants randomized to training as usual experienced no additional risk over their normal medical school experience. Participants who were assigned to receive the ASIST intervention arm may have experienced some changes in their levels of distress, depressive symptoms, or level of suicidal thoughts. In the workshop, participants were asked to talk about suicide openly and honestly. There was not a requirement for individuals to share personal stories or experiences, but often these types of conversations are roused by the group dynamic. It is possible that individuals who confided in group members about personal experiences with suicide (involving themselves or other people that they know) may have experienced upset around these topics. However, ASIST trainers are prepared to provide participants with the support needed in these times and have resources available through which they can link participants to professional help as required.

### **Benefits to participants**

Participants in both groups may have become more aware of suicidal risk factors through completion of the OSCE stations and the SIRI-2 questionnaires. Participants in the intervention

arm benefited specifically from the ASIST workshop, in that they may be better able to recognize suicidal individuals following the training.

### **Ethical approval**

Ethical approval was received from the University of Manitoba Health Research Ethics Board. Consultations were also held with the president of each medical student cohort, each of whom endorsed the importance of the project and agreed to support it. A formal meeting was held (September 20, 2010) with all of the clerkship directors, the Associate Dean of Medicine, the Dean of Medicine, and other key faculty at which time their support was given for the project. All participants were involved in the study at will and written informed consent was obtained from all participants at the outset. Identifying information such as name and email address for knowledge translation purposes was kept separate from the electronic database.

# Chapter 3: Study Results

## Participant Flow

The participant flow diagram is presented in Figure 2 (see pg. 82). One hundred and twelve students were randomly assigned either to the intervention ( $n=56$ ) or control arm ( $n=56$ ). Thirty-five students dropped out of the study immediately following randomization due to scheduling conflicts at the time of the baseline measures. Of the original 112, 77 participants completed the baseline measures (11 of them only completed the questionnaire and did not complete the OSCE, 1 completed only the OSCE and not the questionnaire). Following completion of baseline measures, 9 students dropped out of the study (3 from the control group and 6 from the intervention group,  $\chi^2=1.223$ ,  $ns$ ). The majority dropped out due to scheduling conflicts with the ASIST training or the follow-up time point dates. Of the 56 students assigned to take the ASIST training, 32 received the training. Data from 68 participants were used in the pre- and post-training analysis of the questionnaire-based data (SIRI-2 and subjective measures) and data from 58 were available for analysis of OSCE-based data.

## Demographic Characteristics

Baseline demographic characteristics are shown in Table 1. The two groups were equally distributed on all baseline characteristics, including sex, age, marital status, previous suicide prevention training, and personal experience with suicide. The majority of participants were never married, in their 3rd year of medical school training, had not completed a psychiatry clerkship or elective, were thinking of internal medicine for their residency specialty program,

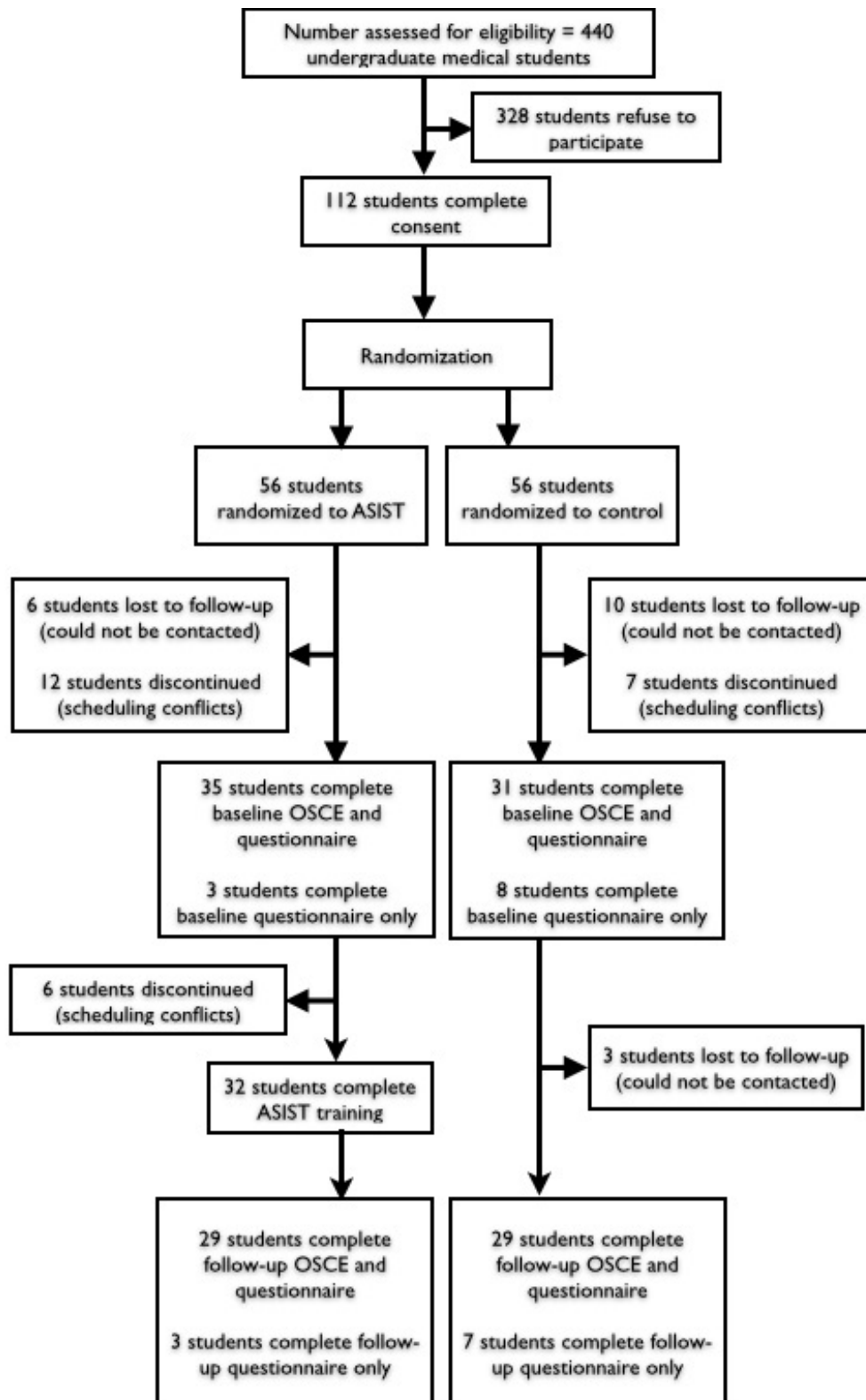


Figure 2. Participant flow diagram.

and had no previous suicide prevention training. Over 50% of participants had previously talked openly with someone at risk for suicide and knew someone who attempted or died by suicide.

## Primary Outcomes

Tables 2 and 3 present results from the OSCE. Total OSCE checklist scores (Table 2) did not change over time for control group participants ( $p=.61$ ). However, participants who were given the intervention did significantly better on the OSCE checklist at Time 2 ( $p<.001$ ). Comparing the two groups over time using ANOVA indicated a significant impact of the intervention on OSCE checklist scores ( $p<.001$ ). When examining differences by station type, the two groups differed across time on all stations except for the station with the non-suicidal standardized patient. Partial eta-squared calculations revealed that the Group-by-Time interaction explained up to 40% of the variance in OSCE scores. Post-hoc achieved power ranged from .95 to 1.00 for those stations that showed differences between the groups. Based on partial eta-squared values, the checklist score was not effective at examining differences in behaviour with non-suicidal SPs. Global ratings on the OSCEs showed very few differences across time for either group (Table 3). Both groups had somewhat higher global scores at Time 2 compared with Time 1 on nearly all stations. However, on the station with the suicide attempt presentation, the intervention group scored significantly higher than the control group at Time 2 (Group-by-Time interaction  $p$ -value =  $<.001$ ). Partial eta-squared scores revealed that 24% of the variance in global scores were explained by this interaction between group and time but only for the station with the suicide attempt presentation. Post-hoc power for this finding was 0.96.

Tables 4 and 5 show inter-rater reliability of the OSCE checklist by item. The majority of items (21/28) showed moderate to almost perfect agreement (Cohen's kappa ranging from



0.46-1.00). Table 6 shows inter-rater reliability of the OSCE global ratings. According to Cohen's kappa values, agreement could be rated as fair to no agreement (ranging from -0.009 to 0.208).

Table 7 displays pre-post scores on the SIRI-2 primary outcome. Mean scores on the SIRI-2 for both groups were 52 at Time 1 and 47 at Time 2. Participants in both groups did significantly better (i.e., lower scores) on the SIRI-2 at Time 2 ( $p=.015$  for control and  $p=.007$  for intervention) based on paired t-test analyses. However, an ANOVA model of the SIRI-2 revealed that the two groups did not differ significantly from each other ( $p=.784$ ) across time.

## Secondary Outcomes

Table 7 also illustrates pre-post scores on four secondary outcome measures. Mean scores on subjective levels of confidence, skills, knowledge, and preparedness did improve with the intervention ( $p<.001$  on all measures) while the control group did not experience improvement on these measures. ANOVA models revealed significant differences between the two groups over time ( $p<.001$  on all measures).

Table 8 shows interpersonal skills ratings for each participant as rated by the standardized patients. In general, interpersonal skills were rated lower at Time 2 compared with Time 1, with the exception of the clear suicide attempt presentation among those who received the intervention (Time 1 mean=61.76, Time 2 mean=70.10,  $p<.001$ ). When compared with the control group, the intervention group had significantly higher rated interpersonal skills following the intervention ( $p=.03$ ) on this type of station. When looking at interpersonal skills across all stations, there was no difference between the groups over time.

An exploratory factor analysis of the ATTS Scale revealed 13 factors with eigenvalues over 1 (results available on request). Cronbach's alpha for the entire scale (37 items) was 0.52.

Table 9 presents the six factors that explained the highest percentage of model variance. The factors were permissiveness towards suicide, preventability of suicide, knowledge about suicide, relationship caused, non-communication, and suicide as normal/common. These factors also made the most conceptual sense and had strong factor loadings. These 6 factors in a confirmatory factor analysis provided an improved Cronbach's alpha of 0.61. Pre-post comparison using ANOVA of the two strongest factors (i.e., permissiveness and preventability) from the ATTS revealed no significant differences between the groups over time (Table 10).

Table 11 shows participant reviews of the ASIST workshop among individuals in the intervention group. The majority of ASIST-trained students enjoyed the training, found the training useful and relevant, and felt it was a good use of their time. Over 90% of students said they felt 'some' or 'a lot' more willing to intervene after the training. A high percentage also said that they felt they were better able to identify a suicidal person after the training and felt that they were at least somewhat likely to make use of the training. The most useful parts of ASIST as rated by participants were the ASIST suicide intervention model (87.5%), the role play scenarios (78.1%) and the wallet-sized card for quick reference (65.6%). The least useful parts were thought to be the videos (37.5%), the workbook (34.4%) and the handbook/leaflet (28.1%). Interestingly, over half the participants felt that some type of follow-up training would be beneficial after ASIST.

Diffusion effects are denoted in Table 12. Ninety-seven percent of students discussed the ASIST workshop with someone else either during or within 1 week following training. Of these, nearly 78% discussed ASIST with a fellow student who was also in the ASIST workshop and roughly 50% discussed ASIST with their spouse, a family member or a fellow student that was

not in the ASIST workshop. Twenty-five percent of those trained in ASIST also showed their training materials to a fellow student, family member and/or their spouse.

## Chapter 4: Discussion

Suicide has emerged as a public health problem worldwide. Due to its devastating impact on the population, recent research has suggested a need for universal, selective and indicated suicide prevention strategies. A wide range of evidence exists indicating that one selective suicide prevention strategy, namely gatekeeper training, can positively affect knowledge, attitudes, and intervention skills in those who undertake the training. Though research is limited in demonstrating an effect on suicide rates and behaviours, it has been viewed as an extremely promising initiative to prevent suicide.

Medical students, in particular, are thought to be well-poised to become gatekeepers in their future role as physicians. Yet research exists indicating that a lack of appropriate training has left medical students feeling underprepared for this role. The present study aimed to examine the effectiveness of gatekeeper training in medical students.

The main hypothesis of the study was that medical students trained in ASIST would differ significantly in their ability to correctly recognize and intervene with suicidal individuals based on objective assessment using SPs. This hypothesis was confirmed. Those who received ASIST training improved in their ability to detect and intervene appropriately with a suicidal SP in a range of clinical scenarios, compared to those who received TAU. The improvement of ASIST-trained students on OSCEs was substantial with an almost 20-point increase in ASIST-trained suicide intervention checklist behaviours performed over students receiving only TAU. This objective assessment clearly indicated that students trained in ASIST were able to recall and enact those behaviours in a clinical situation one-week following the training. As one would expect, ASIST-trained students did not display an increase in ASIST behaviours in their interaction with the non-suicidal standardized patient, giving increased validity to our findings

on the other 3 stations. Training in ASIST seemed to account for 40% of the variance in scores between the two groups, which further validates the benefit conferred from the training. The post-hoc achieved power of this finding was also quite substantial, emphasizing the significance of the difference between the groups. Also important to note is that there was relatively strong inter-rater reliability on checklist scores. This finding highlights to some degree the appropriateness and clarity of the behaviours listed on the checklist in relation to the ASIST training program.

Global rating scores did not highlight differences between trained and untrained participants to the same degree. Global scores were only significantly higher than controls among ASIST-trained students when interacting with SPs presenting with a suicide attempt, with training accounting for 24% of the variance in scores. This does make some intuitive sense; one would expect to see the greatest benefit of the ASIST training when dealing with an actual suicidal individual as this would most strongly employ the use of trained skills. In general, global ratings did not appear to be as sensitive in evaluating station performance related to ASIST training. One alternate possibility is that the raters were not sufficiently trained at the outset to differentiate between the six global rating levels to be sensitive to more incremental differences in ability. The lack of inter-rater agreement (fair agreement at best) on the global ratings also highlights a need for improved training for raters in this regard.

The second hypothesis was that ASIST would significantly improve medical students' knowledge about suicide intervention on a standardized objective measure. Although students trained in ASIST demonstrated objective behavioural improvements over their untrained peers, the SIRI-2 did not reflect the same gains in suicide intervention skills. The SIRI has been used previously to detect skill enhancement in a range of trained<sup>84,158,214,217,224,225,227</sup> and untrained

helping populations,<sup>59,94,158,214,218-221,227</sup> including medical students.<sup>179</sup> In our population, however, the SIRI measure did not detect differences between those who received the suicide intervention training and those who did not. Power calculations at the outset of the study indicated that a sample size of 51 persons per group was required to find an effect similar to those found in previous studies with a power of .80 using this measure. Hence, it is likely that this study was underpowered to detect differences on the SIRI-2 due to the high rate of drop-out of students in our sample. It is also important to note that both pre- and post-training scores on the SIRI-2 in our sample were somewhat better than would be expected. Previous examinations of the SIRI-2 measure in medical students indicated mean scores around 101.<sup>146</sup> Medical students who consented to participate in this study scored more in the range of medical professionals and mental health frontline workers,<sup>146,158,227</sup> which suggests that these students are already at a high level in terms of suicide intervention skills.

As hypothesized and consistent with prior research,<sup>73</sup> medical students receiving ASIST reported higher self-perceived knowledge, skill, competence, and preparedness to recognize and treat a suicidal individual after the training compared with TAU. It is important to keep in mind that these measures are based on a subjective sense of improvement in these areas, not objective, however they are in line with objective results from the OSCEs. This subjective sense of improvement among those who were trained in ASIST also fits with the reviews of the training. Students who were trained in ASIST were highly positive about the training, with the majority of students saying that they enjoyed the training, found it useful, felt it was a good use of their time, and that it not only made them feel more willing to intervene, but also improved their ability to identify a suicidal person. Importantly, medical students noted the most helpful parts of ASIST to be the time spent in role-play and the ASIST SIM. These findings bring to mind

previous work suggesting that role-play and other active learning techniques are most effective at connecting with the learner, leading to changes in behaviour.<sup>81</sup> As well, positive endorsement of the ASIST SIM indicates the students' appreciation of a step-by-step plan for dealing with suicidal individuals. Taken together, the increase in subjective ratings and the positive reviews of ASIST highlight the appropriateness of the format of ASIST for this group.

Our hypothesis that medical students trained in ASIST would score higher on measures of interpersonal skills as assessed by SPs when compared with TAU was partially confirmed. Students who were trained in ASIST were given better ratings on interpersonal skills only by SPs who presented with a recent suicide attempt, compared with students who received TAU. The reason for this differential rating across OSCE stations is unclear. However, one might assume that students trained in ASIST felt most at ease in clinical scenarios where suicide was clearer from the outset, since they reported self-perceived enhancements in knowledge, skill, competence, and preparedness following training in this specific context. Evidence exists demonstrating that physicians' self-efficacy or confidence is associated with an increased ability to recognize patients' needs for information, which then leads to higher patient satisfaction.<sup>240</sup> When suicidality was unclear from the beginning, students may have felt less sure of their abilities, and therefore less able to connect well with the patient leading to lower ratings. One additional consideration is the fact that Time 2 interpersonal skills ratings were lower than Time 1 scores on the other 3 station types. It appears that the SPs at Time 2 were more critical of student interactions in general, which further emphasizes the significance of the improvement in interpersonal skills noted in the suicide attempt presentations.

The ATTS measure did not highlight any changes in attitudes among trained students. ASIST aims to increase awareness in those trained of how their attitudes may impact their

intervention ability, but the aim is not to change attitudes. Hence this finding is not surprising. Having said that, the scale did not perform as expected in our sample under factor analysis. Previous work noted 10 factors with an internal consistency of .60,<sup>232</sup> while our study showed 13 factors with an internal consistency of .52. Only half of the 13 factors that were found made conceptual sense and had relatively strong and clear factor loadings. Some of the factors noted were in line with previous work (permissiveness, preventability, relation-caused, non-communication, normal-common), although item loadings were somewhat dissimilar.<sup>232</sup> Unfortunately the ATTS scale did not demonstrate strong reliability in our sample, so it is also possible that the scale was not effective at assessing attitudinal shifts. Additional work is needed towards development of a reliable and valid scale that can effectively measure the role of attitudes in suicide prevention, with consideration of shifts in awareness of attitudes rather than focusing solely on attitudinal changes.

It was interesting to note that nearly all of the ASIST-trained students reported discussing the ASIST workshop with another person (97%), and a large portion of those discussions were with individuals who were not in the ASIST workshop. This diffusion of knowledge is quite compelling and highlights two important points. First, it is suggestive of the ease at which the gatekeeper training strategies employed in ASIST could be passed on to a wider population. It is difficult to know how influential these discussions would be on the recipient, but one might guess that at least some basic information about how to talk to and intervene with a suicidal individual may be imparted. Simple passing conversations about suicide awareness could be impactful in the broader community, even if it simply creates interest in better understanding suicide prevention. Second, it emphasizes the importance of measuring diffusion of information in studies where the intervention arm and the control arm



can actively interact with each other. Nearly 50% of ASIST-trained students spoke with their fellow, non-ASIST-trained cohort about the training. It is possible that some of the knowledge gained in ASIST was then transferred in this way to participants in the control arm of our study. Similar measures, wherein adjustment for these effects would be possible, would be useful in future studies of this kind.

Half of the ASIST-trained students felt that some type of follow-up would be beneficial. Previous work examining the long-term impact of gatekeeper training in physicians also implies some follow-up is necessary, since effects appear to lessen over time.<sup>152</sup> Further work will aim to examine the long-term impacts of ASIST in this cohort of students using the identical methodology four years post-training.

## Limitations of the study

Although our findings illustrate a promising impact of ASIST on medical students' ability to detect and intervene with suicidal SPs, several limitations of the study and its methodology need to be kept in mind.

### Sample

Only a limited sample of University of Manitoba medical students volunteered to participate in the study. Of the 440 students available, only 112 (25%) volunteered to be part of the study. In total, only 15% of the medical student body completed the study (68/440). The small sample of recruited students may have had a negative impact on the ability of the SIRI-2 to detect differences between groups. Our sample size calculation at the outset of the study stated that 51 students were required per arm to allow sufficient power for the SIRI-2. We did

not achieve this and therefore we are unsure whether the SIRI-2 was not an appropriate measure in this cohort, or whether it was simply insufficiently powered to detect a difference. As well, this subgroup of participating students may have been a particular cohort of individuals with a specific interest in mental health or suicide. Therefore results may not be generalizable to all medical students from a broader range of interests. Students with less interest in mental health and suicide may have performed more poorly on the OSCE or SIRI measures. Alternatively, the students assigned to receive ASIST may have had much less interest in the training and as such may have been less likely to retain and perform the ASIST-trained behaviours. As stated previously, having a positive attitude towards suicide prevention in medical students is described as one of the precursors for developing and maintaining acquired knowledge and skill.<sup>84</sup>

### OSCE raters

The use of ASIST trainers to rate the OSCE interactions may have unintentionally led to biased ratings. ASIST trainers would be familiar with the language and characteristics that students would learn in the ASIST workshop; therefore they may have guessed at group membership and provided higher ratings to those they believed received ASIST training. Unfortunately, we did not ask the ASIST raters to guess the trial arm of the videotaped student, which might have provided further insight into this potential bias. If this had been the case, however, one would expect global ratings to be similarly skewed in their results. This did not appear to be the case since the findings on the global rating scale were not as strongly in favour of differences between the groups.

## Differences between standardized patients and roles

There are many aspects of the standardized patients that may have had an impact on the results of the study. First, although every effort was made to ensure similarity in performance between the multiple standardized patients that were performing each role, it is possible that each standardized patient enacted the role somewhat differently. In this study, up to 3 standardized patients were performing a single role at one time. Training was done with these individuals at the outset to ensure that they were in line with each other in acting the role, however over the course of the 2 days they may have subtly changed their performances and would not have known how the other actors had changed in similar or different ways. Additionally, there was no formal evaluation of whether standardized patients performed their role coherently across students. An important aspect that I noted while I attended and watched the interactions during the two-day OSCE sessions was that the actors would check in with their counterparts at break times. During this time they would discuss whether certain challenging questions had come up in an interview and how they addressed those challenges. Therefore, some discussion of role modifications or elaborations was present.

Second, the scenarios that were created for Time 1 and Time 2 were not formally evaluated as to whether they were or were not similar in terms of difficulty. In turn, we could not be certain whether the impact of the lack of equivalency would have influenced results on one or many of the stations. With this, the most influential example would be if the stations at Time 2 were designed to make detection of suicidal behaviour easier. If this was the case, one might expect that not only the ASIST-trained students would be more likely to detect suicidality, but that control students may also be more likely to detect suicidal behaviour in their interactions. This would have resulted in finding no differences between the groups. Therefore,

we can assume that this worst case scenario is probably not at play. Future work would ideally evaluate comparability of stations over time.

Third, the impact of standardized patient personality may have influenced the results of the interpersonal ratings given to students. As part of this, particular students may have been rated higher or lower depending on the preferences of the standardized patient. As well, ratings on a particular station may have been higher or lower due to standardized patient factors. If this station was randomly seen by a greater number of ASIST- or non-ASIST-trained students this could have impacted the results. Students were however randomly assigned to the stations at the time slot of their choosing, so one could estimate that the likelihood of this occurrence would be low. Lastly, a particular group of standardized patients may have been biased toward more or less favourable ratings of the students. This did appear to be the case in this study, as the majority of student ratings on interpersonal skills was much lower at Time 2 than at Time 1, indicating some overarching characteristic of raters at Time 2. However, we still did find improvement in interpersonal skills among ASIST-trained students at Time 2 compared with Time 1, illustrating the robustness of this finding. Future studies would ideally use the same objective raters across the two time points to evaluate interpersonal skills in students.

### **Diffusion measures**

This study captured diffusion of training information between students. However, this information was not applied in any way to the findings of differences between groups. The way in which the questions were asked did not allow adjustment in our analyses as we could not tell who exactly was spoken to about the training, how many times, in what context, or whether the other individual was registered in the control arm of the trial. Future studies would ideally capture more detailed information about these discussions to elaborate further on how

diffusion of information may impact study outcomes or may apply to diffusion of ASIST in the community.

### **Lack of measurement of potential negative impacts on students**

Recent research has highlighted that ASIST may impart a negative impact on trainees, in that First Nations people who were trained in ASIST demonstrated a trend-level increase in suicidal ideation six months following the workshop.<sup>90</sup> One idea behind this finding is that the participants in this study were especially vulnerable due to high rates of exposure to suicide death in their communities. Other research has indicated that the suicide rate in physicians is higher than in the general population,<sup>241-244</sup> while studies of mental health among medical students demonstrate high levels of depression, anxiety, and burnout.<sup>245,246</sup> It is possible that medical students may also be seen as a vulnerable population for these reasons, and thus, may have been negatively affected by the time spent in the ASIST workshop. Unfortunately, this study did not attempt to measure potential negative effects of gatekeeper training on medical students.

### **Strengths of the study**

Despite the above noted limitations, this study also had a number of strengths that warrant mentioning.

#### **Methodology**

One of the key strengths of this study is that it was undertaken using a randomized controlled trial design (RCT). The concept of RCTs has been around since the early 1700s, although today this methodology receives a great deal more attention. Since the 1990s the

research literature has made a shift towards requiring scientific evidence to be used to determine clinical practice; this practice is called evidence-based medicine.<sup>247</sup> This is a shift from more authority-based medicine of the past, where physicians made decisions based on basic science, personal experience, and information from colleagues.<sup>247,248</sup> Within this new focus on a hierarchy of evidence which has come about in the last 20 years,<sup>249</sup> the randomized controlled trial has become of key importance, being held as the “gold-standard” for any research question.<sup>250</sup> The RCT is considered by most to be the highest level of scientific evidence in the hierarchy of evidence because it eliminates many sources of possible bias and can account for confounding factors.<sup>184,251</sup>

### Primary outcome measures

The OSCE and the SIRI-2 were selected as the main outcomes for use in this study. Both of these measures are intermediate outcomes, with the target outcome being an impact on the rate of suicide in the patients of these future physicians. In the meantime, assessment of whether suicide intervention skills have increased as a result of ASIST is of value. The key aspect of both of these measures that makes them the optimal outcome measures for this trial is the fact that they were both objective measures of intervention behaviours. These measures did not simply ask about what the respondent thought about suicide or what they knew about suicide. The SIRI-2 measured which response the trainee felt was most appropriate in responding to a suicidal person provided an actual patient interaction, which represented their behavioural intentions; a good predictor of actual behaviour based on Fishbein and Ajzen’s Theory of Reasoned Action.<sup>252</sup> Although the measure is self-administered, it provides information about the competencies of the individual. Similarly, the OSCE directly observed how the trainee responded to a suicidal individual and provided another dimension to the evaluation

of trainee competency. The SIRI-2 was more representative of internal thought processes around suicide intervention skills, whereas the OSCE captured direct behaviour. Although we did not have positive findings with the SIRI-2, it was developed to assess suicide intervention skills and has been shown to be both psychometrically sound and appropriate in measuring skill improvements as a result of training. Work by Neimeyer and Pfeiffer have suggested that the SIRI-2 should be combined with other measures to more thoroughly evaluate suicide intervention as an outcome.<sup>221</sup> One of their recommendations is a complementary focus on the process of intervention based on rating scales of actual or role-played contacts, which permits measurement of behaviour.<sup>221</sup> The inclusion of OSCEs provided such an evaluation, with the main goal being to evaluate physician-in-training behaviours with SPs in an effort to predict future doctor-patient interactions. In sum, the combination of these outcome measures addresses both behavioural intent and actual behaviour related to suicide intervention skills. These measures were not only appropriate for use in evaluating suicide intervention skills following a training program, but appeared to be, both individually and in unison, the optimal measures available.

## Intervention

Based on our findings and those of previous studies, ASIST appears to hold promise as an effective gatekeeper training program. ASIST incorporates interactive learning techniques in its longer program hours and a focus on practical intervention skills. It also can be tailored to the needs of different trainee populations, and has been shown to be culturally appropriate in a range of populations. Not only that, it appears that ASIST is thought to be of value to medical school students even two years into their professional practice.<sup>87</sup> As mentioned earlier, students who were trained in ASIST were highly positive about the training, noting one of the most

helpful parts to be the role-play scenarios. ASIST, with its longer program hours, is one of the few suicide prevention programs that allows sufficient time in class for role-play and other interactive learning opportunities. Again we are reminded that research has shown that role-play and other active learning techniques are best at effectively connecting with the learner, resulting in behavioural change.<sup>81</sup> For these reasons, ASIST was a highly suitable gatekeeper training program for use in this context.

### **Extension of previous ASIST research**

Based on a recent review of all evaluation data on ASIST,<sup>73</sup> the author recommends four key items for inclusion in future evaluations of ASIST: 1) standardized measures of training satisfaction, knowledge and attitudes, 2) skill acquisition as a focus, 3) data collection prior to training and immediately after training, and 4) a comparison group should be used. The current study satisfied all these features and showed a positive impact of ASIST.

## **Chapter 5: Conclusion & Implications**

### **Significance of the study**

The current research will serve as an indication that gatekeeper training has the potential to increase medical students' ability to recognize and intervene with a suicidal individual, over training as usual. In addition, these findings suggest that this type of training may better prepare medical students to appropriately intervene with their future patients. Such training could allow for more efficient detection and management of suicide risk in vulnerable patients, particularly in non-psychiatric specialties where little training in suicide prevention is



present. As stated previously, existing data suggest that many deaths by suicide could have been foreseen and perhaps avoided. Since many suicidal individuals have contact with a physician shortly before their death, this training may contribute to an increased recognition of suicidal patients by primary care and other physicians. This type of program has the ability to reduce suicide rates according to some studies, which could make a significant impact on this huge public health problem.

In Manitoba alone, 110 medical students are enrolled each year, the majority of which remain in Manitoba after graduation. Over time, these students have the potential to impact a large percentage of the population of Manitoba, encountering these physicians through clinics, hospitals, and as friends and neighbours. And when thinking about suicide specifically, it is possible that with ASIST training these future physicians could save a number of lives in Manitoba as well. If we think about the potential impact of physician education as stated by Mann and colleagues, 22-73% of suicides could be prevented.<sup>17</sup> With 166 deaths by suicide in Manitoba in 2005,<sup>19</sup> we could estimate that 36 to 121 Manitobans' lives could have been saved. Previous research has also indicated that a single death by suicide affects at least six other people;<sup>25,26</sup> it is apparent that this training program could make a difference in the lives of many Manitobans.

## **Future directions**

This study, developed as a pilot study, has indicated ASIST's potential to increase suicide intervention skills in medical students. As such, there are a number of potential outcomes that can result, including impacts on physician licensing, accreditation processes for medical schools, Continuing Medical Education standards, and national suicide prevention strategies and policies.

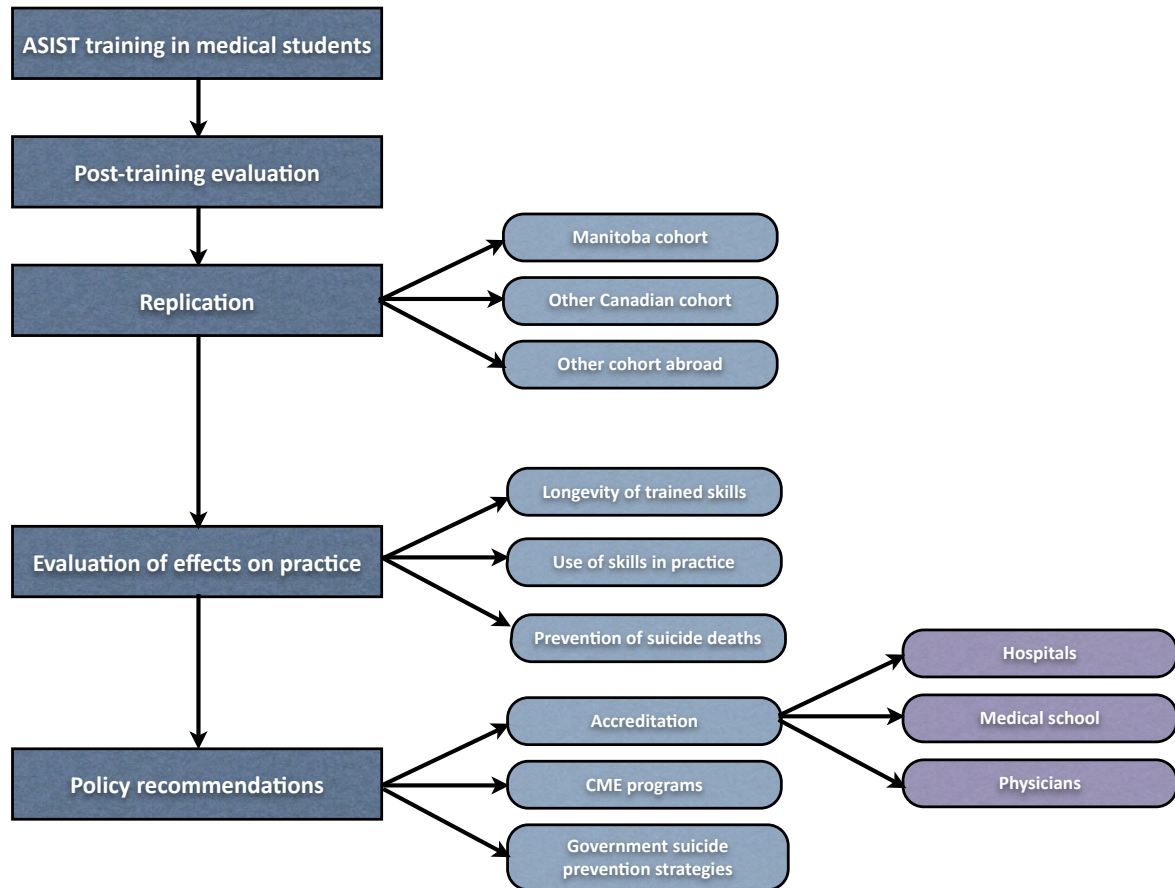


Figure 3. Illustration of steps required and levels for policy change.

Before moving forward with implementation of system-wide changes, there are some preliminary steps that will need to be addressed.

Figure 3 delineates the step-by-step process involved in moving towards policy-level changes for suicide intervention skills training for physicians. It begins with this pilot study which evaluates ASIST in a cohort of medical students. The first level is to implement the training which we have done. Next is the need to evaluate whether skills were improved post-training. With the positive findings of this trial, we move to the second step which entails

replication of results. If replication demonstrates that ASIST can generalize to a number of different medical schools, the fourth step would be to evaluate whether the training exerted an influence in the students' future clinical practice through long-term follow-up. If effects are noted, then it is quite feasible to recommend that policy changes need to be put in place to broadly implement ASIST in medical education, which is the fifth and final step of the process. These steps will be discussed in detail below.

## Replication

Additional studies will be required to confirm that the current findings can apply across cohorts. A first step could be to include the ASIST training program in an additional cohort of medical students in Manitoba. Replication of the results in another cohort of students would provide evidence that the program has the potential to positively impact a wide range of students in Manitoba. Successful outcomes at this stage would suggest that the program could continue to be implemented in Manitoba, with ongoing evaluation of the program in medical students, with possible extensions to residency programs. In tandem, the program would also be evaluated in a different medical school, either in Canada or abroad, or both. This aspect of evaluation is important, as successful outcomes from this study would demonstrate that ASIST is able to be adapted across contexts; that it is not just specific to Manitoba. Our hope is to enrol students in another major centre in Canada (i.e., Toronto, Ontario) and in a medical school in Australia. We have been in contact with suicide prevention researchers from the University of Toronto (Dr. Paul Links) and the University of Wollongong, Australia (Dr. Frank Deane) who have expressed interest in participating in the multi-site intervention study. Findings from these studies would provide evidence of ASIST's ability to be generalized across settings with efficacy in training suicide intervention skills.

## Evaluation of effects on practice

Once it is established that ASIST can provide medical students with skills in suicide intervention across a range of schools, the next step would be to evaluate whether the program has enough of a long-standing impact to influence their clinical practice. It is important that medical students are able to intervene with suicidal patients during training and residency, but also once they are out on their own. One would hope that the skills learned in medical school would be applied outside of the training environment, but this would need to be formally tested with the ASIST program specifically.

This outcome would ideally be evaluated in three different domains over time. First, the longevity of the ASIST training could be assessed by increasing the length of follow-up of medical students who underwent ASIST while in medical school. If possible, it would be reasonable to follow-up with the original trained cohort both a few years after training, while in residency, and once they have begun clinical practice to see if their skills in suicide intervention were maintained over time. The SIRI-2 and OSCEs could be used as outcomes in this case as well in an identical manner to the original study. Having a longer follow-up would allow assessment of any future need for retraining. If retraining appeared to be necessary, Continuing Medical Education (CME) courses could be established. CME courses are discussed in more detail below.

Second would be examination of whether the physicians utilized the skills in practice. One study by Pfaff and colleagues<sup>167</sup> used patient interviews to assess GP skills in recognizing and responding to psychological distress and suicidal ideation. Each GP completed a form on each patient summarizing the patient's presenting complaint (whether medical or psychological), psychological details (i.e., presence of psychological distress or suicidal thoughts and an estimate of suicide risk), and their proposed management plan (i.e., referral,

medications, counselling, etc.). GPs were not informed which patients were chosen to participate in the study. Prior to seeing the GP, patients were asked to complete highly reliable and valid self-report scales designed as screening instruments of psychological distress and suicidal behaviour. GPs were assessed on their ability to recognize at-risk individuals, their frequency of enquiring about suicidal thoughts, their accuracy in assessing the degree of suicidal risk, and the appropriateness of management of the patient. This process was carried out before and after a gatekeeper training program for the GPs to evaluate whether their abilities improved after training. A similar methodology could be implemented among this cohort of medical students once they have established their own practice. This process would allow examination of the rate of suicidal behaviours in their patients, and whether ASIST had a moderating effect on suicidal patients.

The final evaluation strategy would be to estimate whether ASIST impacted the number of suicides in patients in their practice. This aim could be completed by using physician billing records with linkage to the Manitoba Health databases through the Manitoba Centre for Health Policy (MCHP). MCHP data allows tracking of physicians through their billing ID numbers. We could get consent from the physicians who underwent ASIST training in medical school and track the patients that they treat over time. We could look at rates of suicide among patients using the mortality databases at MCHP, which codes death by suicide. The rate of suicide among patients of the ASIST-trained physicians could be compared to suicide rates among patients who did not receive the ASIST training in medical school. A comparison would be made across specialities (i.e., all physician types together) and within specialities (i.e., comparing family doctors to family doctors, and internal doctors to internal doctors). This would give some idea of whether the patients of ASIST-trained physicians were at lower risk of suicide.

## Policy change

If it appears that ASIST has even a moderate long-term impact on the future practice of trained medical students, the final step would be recommendation of policy changes at a number of levels, including in the medical schools, at accreditation boards, in medical education in general, and within government. The impact of the knowledge that ASIST can effectively train medical students to better intervene with suicidal patients, possibly reducing rates of suicide and suicidal behaviour in the population that they serve, is widespread. Implementation of policies to reflect these important findings is of utmost importance to Manitoba, Canada and internationally.

### ***Accreditation***

#### *Medical schools*

Thousands of medical students graduate each year from a medical school in Canada. The opportunity to influence their knowledge and skills is brief, but can greatly impact the health of the entire population. The goal of today's medical education programs is to offer what the student and the community require, based in the theories and social conditions of the current time.<sup>253</sup> There are many different views about what medical students should learn, how they should learn, and what skills should be acquired. But there is no question that suicide is one of the major public health concerns currently. As such, medical education in Canada should be motivated to implement a program that could impact on the rate of this leading cause of mortality.<sup>254</sup>

The Liaison Committee on Medical Education (LCME) in the US and the Committee on Accreditation of Canadian Medical Schools (CACMS) in Canada are jointly responsible for accreditation of undergraduate medical schools in Canada. Only medical schools that are

compliant with accreditation standards can produce graduates who are able to be licensed as physicians. Each faculty undergoes a full on-site assessment at least once every 8 years to determine compliance with accreditation standards. The CACMS Committee is organized and chaired by the President and CEO of the Association of Faculties of Medicine of Canada (AFMC).

The AFMC self-identifies as “the national voice of Canada’s 17 faculties of medicine” as advocates for medical education to remain high on the federal government’s agenda.<sup>255</sup> Their mandate is to engage in activities related to medical education, including projects and initiatives to examine and improve medical education in Canada.<sup>255</sup> Results from this study could be extremely valuable to this organization in providing a framework for medical education around suicide prevention. The aim would be to engage AFMC in advocating for implementation of ASIST in all medical schools across Canada. Specifically, I would hope to be able to acquire funding from this organization to train all medical students in Canada in ASIST. The AFMC would not be involved in overseeing medical schools in its implementation; rather, they would be responsible for promoting whether the program could be funded by the federal government as an add-on to the current curriculum.

The Future of Medical Education in Canada was a ground-breaking Health Canada-funded project, led by the Association of the Faculties of Medicine of Canada (AFMC), meant to lead to a medical education system that could better meet the needs of Canadians. Their final report entitled “A Collective Vision for MD Education” reviews the findings of this important project.<sup>256</sup> One of their ten recommendations was the promotion of prevention and public health within undergraduate medical education, in that medical education curricula should include “competencies, skills, and expected outcomes in relation to population health, prevention, promotion, and the social determinants of health” (p.22).<sup>256</sup> Importantly, suicide is

seen as residing under that broad public health umbrella, and has been noted as an important public health problem in Canada, according to the AFMC.<sup>257</sup>

### *Hospitals*

Accreditation Canada is a not-for-profit, independent organization that provides health organizations, including hospitals, with an external peer review to assess the quality of their services based on set standards.<sup>258</sup> All regional health authorities in Manitoba, and their associated provincially-funded health care centres, are accredited by this organization. Accreditation Canada introduced a new accreditation program in 2008 called Qmentum, which emphasizes risk prevention planning as one part of the redesign stemming from the latest research and evidence.<sup>259</sup> In Qmentum, there are six main patient safety areas, with risk assessment being one of them. Within the six areas, there are 35 required organizational practices (ROPs) that organizations must be compliant with in order to achieve accreditation. Within risk assessment, an ROP exists that states “The organization assesses and monitors clients for risk of suicide.” Testing of compliance is based on the following criteria:

- The organization assesses each client for risk of suicide at regular intervals, or as needs change.
- The organization identifies clients at risk of suicide.
- The organization addresses the clients immediate safety needs.
- The organization identifies treatment and monitoring strategies to ensure client safety.
- The organization documents the treatment and monitoring strategies in the client’s health record.

ASIST training would help practitioners to meet these requirements in practice, meeting accreditation standards for the institution. However, this ROP applies for mental health services



only. This does not delete the need for ASIST training across specialities, rather it emphasizes the need for well trained mental health practitioners within institutions where mental health services are offered. Upon further inspection and considering that rural physicians may be more likely to treat a wide range of cases, skills in suicide intervention may be required for accreditation of their practice as well. More recently, Accreditation Canada stated that as of January 2009, all Canadian nursing homes and hospitals seeking accreditation were required to develop a suicide prevention program within their institutions in order to be accredited.<sup>260,261</sup> It is apparent that the need for skills in suicide prevention is increasing at the institutional level to keep patients safe and meet national accreditation standards.

I have attempted to contact Accreditation Canada to see what role they would see for ASIST in Canada in terms of their accreditation standards. In reality, their standards are only in place to assess whether the institution has in place some level of regular inquiry into suicidality among patients; they do not require training at the practitioner level at this time. However, since institutions are faced with increased concerns about patient safety in terms of acquiring accreditation, they may be more likely to be motivated to either require suicide intervention training prior to staff hiring or may offer it to staff to maintain a level of certainty that suicidality is being assessed. In either regard, the success of ASIST training for physicians-in-training would be of interest, since the program would teach the skills necessary for institutional accreditation requirements.

### *Physicians*

Physicians themselves also have to meet accreditation standards to practice medicine in Canada. First, they must successfully demonstrate acquisition of the skills necessary to become a licensed and practicing physician following completion of their medical degree. The Medical

Council of Canada (MCC) is responsible for providing the qualification for physicians to enter into practice through the Medical Council of Canada Qualifying Examination Part 1 (MCCQE Part 1). The MCCQE Part 1 consists of multiple-choice, short-menu, and short-answer write-in questions aimed at assessment of knowledge, clinical skills, and attitudes. The MCCQE Part 2 is completed 2 years later, during residency training, and aims to assess similar competencies using OSCEs.

These two formal assessments of clinical competencies could provide an opportunity to evaluate suicide intervention skills in physicians-in-training. The MCC provides a list of its strategic goals on its website, outlining their commitment to research on assessment and evaluation.<sup>262</sup> Results from this program of research will be forwarded on to the MCC as one part of the dissemination process. As a first step, it is important to inform the MCC of the importance of suicide as a major public health problem, emphasizing the need for physicians to assess patients for suicidality. At present, the examination is quite broad and it is not anticipated to contain questions specific to suicidality. With MCC's commitment to research, it is possible that these findings could motivate change in the MCC examinations such that assessment of suicidal behaviour would be a tested clinical skill. This addition to the examinations would in turn motivate medical schools to implement a suicide intervention training program like ASIST as they would want to prepare their students accordingly. I have sent an email to the MCC to determine how they could be involved in dissemination of these findings should they be positive, and what role they could play in influencing curriculum. It appears that their role could be influential in the medical school curricula as well.

Second, newly graduated physicians must complete their postgraduate education (residency) in an accredited specialty program in their chosen field. If the speciality is family

medicine, then residents are eligible to obtain certification from the College of Family Physicians of Canada (CFPC); for all other specialties, residents would complete certification through the Royal College of Physicians and Surgeons of Canada (RCPSC). The RCPSC is the national professional association that oversees the medical education of specialists in Canada.<sup>263</sup> The RCPSC's strategic priorities indicate their role in improving the health of the population, according to society's needs, through their dedication to setting the highest standards in postgraduate medical education.<sup>263</sup> They also indicate their role in advancing health and public policy on key issues facing medical education and health care.<sup>263</sup> Clearly, the topic of suicide is an important public health issue and is desperately lacking attention in medical education curricula at this time. The RCPSC (and similarly, the CFPC) could play an important role in moving an agenda forward for teaching suicide intervention skills in residency programs in Canada. Since their examination process is the determining factor in whether or not a physician is able to practice medicine in their specialty field, the inclusion of suicidality within their exams would require medical schools to educate residents around the topic. Inclusion of the ASIST training program in residents would be a simple extension from the original project. The training could be included at any point in their training and would be dependent on the length of the residency program (anywhere from 2 to 5 years). The optimal placement would be to include the ASIST workshop at the outset of residency, so that residents could use ASIST throughout their training, allowing time to practice the skills.

It is apparent that physician accreditation organizations (MCC, RCPSC and CFPC) provide a good opportunity to influence both physician practices and the medical school curriculum. Their strong dedication to research and high standards for medical education should motivate these organizations to pay attention to the findings of this study should they demonstrate a

positive effect of the training. Additionally, it seems clear that the work in undergraduate medical students can easily apply to postgraduate medical education as well. Providing training in residency, in addition to medical school, would ensure that all physicians practicing in Canada, including International Medical Graduates (IMGs), are trained in suicide intervention. Otherwise, medical school implementation of ASIST training alone would overlook IMGs that come to Canada for residency. Residency programs not only provide an opportunity to educate all physicians trained in Canada, but also provide an opportunity for those trained in ASIST in undergraduate medical programs to get a refresher course on suicide intervention skills. Replication of training may further increase skill development and may prevent waning of skills over time.

Importantly, garnering support from these professional accreditation bodies would mean a change in the examinations for licensure. By including skills in suicide intervention amongst the required knowledge tested by these examinations, medical students would be interested in learning these principles and remembering them. The skills would be learned and relearned in preparation for the exams, and hopefully maintained over a longer period of time from the rehearsal and practice of the skills. It has been noted previously that students pay the most attention to the topics that they are being tested on.<sup>203</sup> Therefore, increased attention would be paid to suicide and suicide intervention training simply because they will be tested on the knowledge in the future.

### ***Continuing Medical Education***

A Maintenance of Certification program has been initiated through the RCPSC, which requires physicians to meet requirements for renewal of their Fellowship (being a Fellow of the Royal College of Physicians of Canada - FRCPC or a Fellow of the Royal College of Surgeons of

Canada - FRCSC) through continuing professional development. At the stage of professional development among practicing physicians, every doctor has their own unique interests, experiences, and learning needs. For most, there is little protected time and minimal finance for this learning.<sup>253</sup> However, all physicians are required to meet a minimum of 40 Continuing Medical Education (CME) credits in any year of a cycle, and 400 credits by the end of a cycle, with a cycle consisting of 5 years.<sup>264</sup> CME credits are acquired through attendance at conferences, rounds presentations, and other scholarly activities.

The CME program for physicians can play an important role in encouraging physicians to acquire suicide intervention skills. Having ASIST offered as a CME accredited program could be beneficial in two main ways. First, as mentioned previously, the CME program could provide a venue for offering booster sessions on ASIST, especially if the results demonstrate a reduction in skills over time. Second, CME training in ASIST would provide the opportunity for physicians trained outside Canada to acquire the necessary skills in suicide intervention. Many physicians express a desire for additional training around suicide.<sup>146</sup> CME credits would provide this opportunity in a way that does not require extra time or money spent since the credits are required to maintain Fellowship anyways.

### ***Government suicide prevention strategies***

A number of national suicide prevention strategies include 'physicians as key gatekeepers'. These include the US, England, Scotland, Australia and Europe.<sup>28-32</sup> Unfortunately, Canada does not currently have a national suicide prevention framework. The Canadian Association for Suicide Prevention (CASP) has, however, highlighted the importance of suicide prevention in Canada through their creation of a "Blueprint for a Canadian National Suicide Prevention Strategy", which details the items that need attention should Canada wish to

develop such a document.<sup>260</sup> In collaboration with CASP, the Mental Health Commission of Canada (MHCC) developed “Changing Directions, Changing Lives” in 2012 which is a strategy to improve mental health outcomes for Canadians.<sup>265</sup> Within this document, Strategic Direction 1 specifically mentions the importance of addressing suicide: “Promote mental health across the lifespan in homes, schools, and workplaces, and prevent mental illness and suicide wherever possible.” Within this, the report more specifically notes that their recommendation is to increase training for front-line service providers in suicide prevention. As well, this document highlights a need to improve screening for suicide risk in primary health care, with development of clear guidelines for providers on care, treatment and supports for suicide risk.

CASP’s recommendations and those listed within the MHCC Mental Health Strategy are in line with the discussions above, such that national professional organizations including AFMC, RCPSC, and MCC should be engaged in suicide prevention efforts, and that training should be widespread for physicians across the country as front-line care providers and potential gatekeepers. Many of the Canadian provinces and territories themselves have suicide prevention strategies in place. In fact, Saskatchewan's suicide prevention strategy focuses on LivingWorks’ suicide prevention programs and the Suicide Intervention Model that they teach. All emergency room physicians and psychiatrists in the province, along with other front-line workers, are being trained in ASIST and SafeTALK. Nunavut is also implementing ASIST across their communities. Other provinces and territories are also involved in ASIST training to varying degrees, but few are targeted towards physician education. Within Manitoba, the Government of Manitoba Departments of Health and Healthy Living, has established suicide prevention as a priority area, especially through Reclaiming Hope: Manitoba’s Youth Suicide Prevention Strategy. This committee has established research into ASIST training as a priority area, however

their primary focus is on community-led trainings rather than trainings within medical professionals or students. Working with this committee with information we have learned from this program of research could have an impact on informing policy around suicide prevention needs in this province.

## **Limitations of and barriers to forwarding the ASIST agenda**

One must be cautious about extrapolating the impact of ASIST or any other gatekeeper training program. To date, the majority of the evidence for gatekeeper training has been in the context of multi-pronged suicide intervention strategies wherein gatekeeper training was only one of many components of a larger program.<sup>99,162</sup> Its estimated effectiveness and potential to reduce suicide rates has been measured from these varied programs and may have resulted in overstating its potential impact. It is important to be aware that gatekeeper training strategies alone may not be sufficient to impact suicide rates. Other factors may need to be addressed prior to widespread implementation to optimize the role of gatekeeper training in suicide prevention in Manitoba and elsewhere.

## **Implementation issues**

Increasing suicide intervention skills for physicians and medical students appears to be a reasonable and feasible goal based on the preceding discussion. However, implementation issues can hinder the application of the newly acquired skills in the real world. One issue is the barriers to referral of suicidal patients to appropriate treatment resources. The current medical system has been criticized for operating in silos with isolation of services and poor collaboration between specialities, which has been cited as a prominent factor in suicide deaths.<sup>110</sup> This

directly affects the implementation of gatekeeper approaches to suicide prevention, since referral to specialized care services is a critical aspect of the training. In the case of non-actively suicidal patients, once identified their name would be referred to a psychiatrist and placed in a queue. Although their risk of suicide may not be imminent, it may intensify during the wait-time for appropriate care. In Canada, for example, the wait list for specialized mental health care is long. A recent report revealed that the median wait time in Canada for patients referred to a psychiatric specialist by their general practitioner was 7.9 weeks.<sup>266</sup> This estimate indicates the number of weeks that patients wait for an initial appointment with a psychiatrist, as measured from the date of referral, and this appointment is generally scheduled as a consultation. If we consider the time it takes from referral to initiation of psychiatric treatment (i.e., a follow-up appointment with the psychiatrist after consultation), the median wait time more than doubles to 18.6 weeks.<sup>266</sup> It is clear that referral to specialized mental health practitioners has its limitations. Obviously a general practitioner with a suicidal patient in their office cannot refer the individual to a psychiatrist simply with the hope that the patient will not take action on their suicidal thoughts in the next two to five months. Additional mental health resources are necessary to provide the support that is needed to enact the gatekeeper training model effectively. For actively suicidal patients, general practitioners and other primary care physicians can refer to the emergency room for more immediate treatment. However, follow-up from that point on is uncertain.

Substantial barriers exist to adequate health care for suicidal individuals, including recognition of at-risk individuals, appropriate referral to treatment, and obstructive wait times to care. Even after overcoming these significant barriers, it appears that non-compliance in certain individuals may increase their suicide risk. One study noted that suicide cases, in



comparison with controls, were more likely to have received a psychiatric diagnosis, been prescribed psychotropic medications, and received referral to a mental health specialist.<sup>112</sup> However, nearly 55% of suicide completers that receive treatment have been noted to be poorly compliant or non-compliant with treatment according to medical records.<sup>113</sup> Non-compliance is particularly common among suicidal adolescents.<sup>267</sup>

Resource availability is essential for the successful implementation of gatekeeper training for physicians. Additionally, uncontrollable factors such as patient adherence to treatment further challenge implementation efforts. Needless to say, gatekeeper training can only be effective when all parts of the system work together. It is important to keep in mind that gatekeeper training for physicians addresses only one piece of the suicide prevention puzzle.

### Likely impact on suicide

Research has indicated that patient suicides in primary care practice are rare events,<sup>268</sup> occurring at a rate of about one every 6.8 years.<sup>269</sup> Although recognition of risk factors can help to identify suicidal individuals, in clinical situations many false positives and false negatives present as well. As well, considering that primary care physicians spend an average of 18 to 22 minutes with each patient,<sup>270</sup> it was calculated that the physician would perform over 51,000 assessments over an 8 year period with patients who are not at any risk of suicide.<sup>271</sup> In fact, this practice has been discouraged by national agencies, including the US Preventive Services Task Force and the Canadian Task Force on Periodic Health Examination.<sup>272</sup>

Compounding the issue, communication of suicidal intent is an interactive process, dependent on the patient's willingness to communicate these thoughts and the physician's ability to recognize and question them.<sup>4</sup> As mentioned previously, the unfortunate problem is that physicians are often reluctant to ask for fear of inducing suicidality in their distressed

patient.<sup>127</sup> Perhaps if they were more comfortable in their assessment of suicide risk, more patients would be detected prior to suicide. However, this may not be the case if the patient chooses not to disclose their wish to die.

Additionally, the impact of gatekeeper training for physicians may be limited based on the at-risk population examined. Specifically, adolescents are one key segment of the population that may or may not be influenced by physician education programs, since service use is low in suicidal youth.<sup>4,123</sup> As well, men are not only half as likely as women to report suicidal thoughts to their primary care physician before suicide,<sup>54</sup> they also consult with physicians less frequently than women.<sup>111,113,118</sup> According to the Gotland studies, physician education decreased suicide rates in females, while male suicides were not significantly affected.<sup>153,154</sup> This differential impact was attributed to difficulties in reaching, diagnosing and treating male suicide.<sup>153,154</sup> Furthermore, although studies show that many suicidal individuals seek help prior to suicide, a significant proportion remain who do not seek care. One study indicated that nearly 50% of people with suicidal ideation and 24% with suicide attempts did not seek help or perceive a need for treatment in the past year.<sup>273</sup> Therefore it is conceivable that gatekeeper training among physicians may not have a substantial impact on overall suicide rates.

## **Cultural factors**

Attitudes towards suicide have been shown to differ between cultures.<sup>274-278</sup> These cultural perspectives influence both physicians and patients. One study by Domino and Takahashi illustrated that Japanese medical students differ from American medical students in their beliefs about an individuals' right to die, the normality of suicide, and the idea that suicide reflects aggression and anger.<sup>277</sup> Since physician attitudes towards suicide have been shown to have an impact on suicide risk assessment behaviours,<sup>83,144</sup> the cultural context should also be

taken into account when implementing and evaluating physician education.<sup>4</sup> If the culture within which the physician resides hinders positive attitudes on suicide, this could preclude benefits from training around assessment and intervention practices.

Additionally, many physicians work with culturally-diverse patient populations. This is particularly relevant in Canada, and more specifically in Manitoba, with large Aboriginal populations who are at particularly high risk for suicidal behaviour.<sup>279,280</sup> The attitudes of the patient towards suicide, based on their cultural beliefs and values, may also prevent disclosure of suicidal thoughts, increasing the need for accurate risk assessment. In fact, suicidal ideation is less frequently reported among people from more religious cultures.<sup>281</sup> To date, some work has examined the importance of cultural competency training in mental health broadly,<sup>282,283</sup> and in depression specifically,<sup>284,285</sup> however no studies have examined the role of cultural competency training in suicide risk assessment.

### **Educational needs of physicians**

A potential limitation of gatekeeper training focused solely on suicide intervention skills is that it may not be meeting the educational needs of physicians and medical students. Restricting the focus to suicide may be too specific. Broadening the scope of intervention education to encompass more prevalent mental health issues may be of greater benefit. In a series of reviews, Lake<sup>117,181,182</sup> discussed the benefits of refocusing academic psychiatry's curriculum to address gaps in preparing non-psychiatrists with the skills necessary to adequately recognize and treat mental health issues. His work suggests a redesigned training program for medical students that involves brief psychiatric screens for the most critical psychiatric disorders. He concludes that academic psychiatry's emphasis on teaching the traditional, comprehensive psychiatric interview continues to be a barrier to recognition of suicide in non-

psychiatric settings because it takes too long to enact in practice (for example, an average primary care appointment is only 10-15 minutes in length).<sup>286</sup> Lake recommended that emphasis be placed upon teaching these specialized skills in psychiatric residency programs, and encouraged a focus on the most critical disorders across medical specialties -- specifically depression.<sup>182</sup>

The importance of education and training focused on recognizing depression is commonly noted. In a recent survey of non-psychiatric doctors, 90% rated depression as the topic most relevant to their clinical practice.<sup>172</sup> Depression was also the top ranking topic of 101 possible psychiatric topics among both primary care and hospital-based physicians.<sup>172</sup> Training directors in family practice, emergency medicine, internal medicine, and pediatrics residency programs also report deficiencies in psychiatric training around depression.<sup>173,174</sup> Depression is a major risk factor for suicidal behaviour; nearly 70% of suicide victims have depression at the time of their death.<sup>287</sup> Hence, many believe that depression screening could prevent early onset suicidal behaviour and future suicide deaths. A number of studies have confirmed this belief.<sup>150,164</sup> Another disorder of note in the pathway to suicidal behaviour is substance use disorders. One study indicated that more than two-thirds of people who die by suicide suffered from depression; a similar proportion suffered from substance abuse or dependence.<sup>110</sup> Importantly, they noted a critical lack of treatment for substance-related problems among people who died by suicide (less than 5% had contact with addiction services before their death).<sup>110</sup> Their findings suggested a multi-pronged approach to physician training, including education and training on common mental disorders (e.g., depression) and suicidal behaviour, as well as substance abuse problems. Educational programs focused on depression and addictions may be

more relevant to the needs of general practice and still provide the necessary skills to recognize suicidal individuals.

However, others have suggested that the historically narrow focus of suicide research on mental disorders and depression may disregard the potential role of other contributing factors, including medical conditions, childhood abuse, and impulsivity.<sup>40</sup> An educational program focused solely on suicide enables physicians to direct their attention to prevention of suicide deaths resulting from many etiological pathways, without attention to specific psychiatric diagnoses. In contrast, an educational program on depression may prevent suicidal behaviour from developing among depressed people, but would result in examination of many depressed individuals who are not suicidal and not at imminent risk of death, as well as lack of examination of individuals who are not depressed who are at-risk of suicide. The same principle would apply to training programs focused solely on other specific mental disorders. Therefore, a training program designed to specifically recognize suicidal intent may be the best and most efficient way to prevent suicide. Evidence for this approach is noted by studies demonstrating suicidal behaviour to be one of the strongest risk factors for death by suicide.<sup>8</sup>

## **Knowledge translation**

It has become increasingly evident that there is a need for involvement of community partners throughout the research process, from design of studies to dissemination of key findings. This type of meaningful knowledge exchange allows for the development of excellent, highly-relevant research questions, the results of which are of great interest to the public and health care providers.

Throughout this project, I have worked closely with the Faculty of Health Sciences - College of Medicine, specifically with those involved in Medical Education and the Department of Psychiatry, to ensure that the knowledge gained about training medical students in suicide intervention skills will be able to inform current priorities in terms of policy and program development. This knowledge translation model is based on the principle that research users must not only participate in the research process from the beginning, but must exercise a degree of control or ownership over the research process if the results are to be seen as meaningful and useful. A main benefit of implementing ASIST with guidance from these groups is the opportunity for the transfer of such knowledge upon completion of the project.

At the outset of the study, I engaged faculty from the Department of Medical Education in a series of meetings to both guide the research process and to ensure that the program implementation could be effective in future years. I will be responsible for actively disseminating research findings and framing reports to program coordinators in ways that are understandable to faculty members and decision makers. Medical school students will also be informed of the findings of the research through a newsletter format, which will be distributed through email. In addition, I have written up a manuscript with key findings from this portion of the study which has been submitted to a peer-reviewed journal. Findings from this thesis are also being presented as an oral presentation at the Canadian Conference on Medical Education in April 2015 to inform health educators, health education researchers, administrators, licensing and credentialing bodies, and governments from Canada and abroad about the implications of my work.

As well, I have been in contact with Dr. Nick Busing, the President and CEO of The Association of Faculties of Medicine of Canada (AFMC) and the Secretary of the Committee on

Accreditation of Canadian Medical Schools (CACMS), since the outset of the study to discuss implementation of the ASIST training program in medical students. In his email he stated,

“The project - very relevant and important...We could look at supporting a request for funding to take the project nationally should the results show a real effect.”

(personal communication, Nick Busing, May 17, 2010)

Based on his message, it seems quite likely that the AFMC and CACMS may be interested in supporting this project based on our positive findings. His recommendation was to engage the AFMC through a presentation on the project at the annual meeting of the Canadian Conference on Medical Education (CCME), which will happen this year. Support from Dr. Busing in implementing the project across Canada could be the first step in having ASIST training recognized nationally as a standard practice for training around psychiatric emergencies. As well, Dr. Busing suggested that Dr. Bruce Martin (recently replaced by Dr. Ira Ripstein), the Associate Dean of Undergraduate Medical Education at the University of Manitoba, could bring the project to the table at the national level with his fellow undergraduate Dean colleagues. I had email communication with Dr. Ripstein at the outset of the project and he was supportive of its undertaking at University of Manitoba. Findings from the study will be communicated with both Dr. Ripstein and Dr. Busing once the follow-up is complete, to see what the next steps can be in Winnipeg and across medical schools in Canada.

Further, I have developed professional links with individuals on the Government of Manitoba's Youth Suicide Prevention Strategy who have particular interest in the outcomes of this study in terms of its highly methodologically rigorous evaluation of ASIST. The President of ASIST, co-founder Richard Ramsay, also has an active interest in disseminating findings from my trial to the worldwide ASIST network of trainers and professionals. Findings are being shared

with these groups informally at this point, but once a peer-reviewed manuscript has been published with a journal, this and a lay summary will be provided to these organizations.

Findings will also be disseminated to CASP, as they are the closest connection that I can make to a potential national suicide prevention strategy at this time. They have been successful in attracting attention from the federal government through a collaboration with the Mental Health Commission of Canada. A link has already been made between myself and members of CASP. Therefore, the information garnered from this study should be able to inform development of a national strategy through involvement from CASP. The main goal would be for Canada to recognize the role of physicians as key gatekeepers, and to provide appropriate training to allow them to optimally perform this role.

## Conclusion

The present study demonstrates a significant impact of ASIST training on suicide intervention behaviours in medical students. Suicide is a major public health problem worldwide with a devastating impact on the population.<sup>22</sup> Much work has suggested that physicians are well-positioned to act as key gatekeepers to suicide prevention,<sup>30,107,108,110</sup> however many feel under-prepared for this task.<sup>173,174</sup> These findings underscore the feasibility and potential positive impact of ASIST training for physicians in suicide prevention, especially within their formal undergraduate training period. Future studies would ideally focus on longer term follow-up and training in practicing physicians to delineate whether similar improvements would be found. Policymakers and medical schools should explore ways to actively enhance training of current and future physicians to address this crucial gap in medical education.



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Table 1. Descriptives of the sample at baseline.

	<b>Control (n=39)</b>	<b>Intervention (n=37)</b>	<b>Chi-squared</b>
Sex			0
Male	19 (48.7)	18 (48.6)	
Female	20 (51.3)	19 (51.4)	
Age			0.459
21-24 years	22 (56.4)	18 (48.6)	
25 years and older	17 (43.6)	19 (51.4)	
Marital status			0.013
Married/common-law	11 (28.2)	10 (27.0)	
Never married	28 (71.8)	27 (73.0)	
Medical school cohort			1.933
Med 1	9 (23.1)	12 (32.4)	
Med 2	13 (33.3)	8 (21.6)	
Med 3	15 (38.5)	16 (43.2)	
Med 4	2 (5.1)	1 (2.7)	
Clerkship in psychiatry completed			0.358
No	30 (76.9)	30 (81.1)	
Currently in progress	7 (17.9)	6 (16.2)	
Yes	2 (5.1)	1 (2.7)	
Have completed elective in psychiatry			0.001
No	38 (97.4)	36 (97.3)	
Currently in progress	1 (2.6)	1 (2.7)	
Yes	0	0	

	<b>Control (n=39)</b>	<b>Intervention (n=37)</b>	<b>Chi-squared</b>
Residency specialty program of interest (can be in more than one)			
Psychiatry	6 (15.4)	5 (13.5)	0.054
Pediatrics	9 (23.1)	11 (29.7)	0.433
Internal medicine	14 (35.9)	17 (45.9)	0.794
Surgical specialty	7 (17.9)	6 (16.2)	0.04
Obstetrics/gynecology	3 (7.7)	5 (13.5)	0.683
Emergency medicine	9 (23.1)	4 (10.8)	2.015
Anesthesia	1 (2.6)	4 (10.8)	2.101
Pathology	0	1 (2.7)	1.068
Neurology	2 (5.1)	2 (5.4)	0.003
Public health	1 (2.6)	1 (2.7)	0.001
Radiology	1 (2.6)	0	0.961
Undecided	5 (12.8)	7 (18.9)	0.531
Any suicide prevention training			0.781
No	32 (82.1)	33 (89.2)	
Yes	7 (17.9)	4 (10.8)	
Previously talked openly with someone at risk for suicide			0.047
No	18 (46.2)	18 (48.6)	
Yes	21 (53.8)	19 (51.4)	
Know someone who attempted or died by suicide			0.038
No	16 (41.0)	16 (43.2)	
Yes	23 (59.0)	21 (56.8)	

	<b>Control (n=39)</b>	<b>Intervention (n=37)</b>	<b>Chi-squared</b>
Person who attempted or died (if knew someone)			
Parent	0	1 (4.8)	1.121
Sibling	2 (8.7)	2 (9.5)	0.009
Grandparent	1 (4.3)	1 (4.8)	0.004
Other family member	5 (21.7)	2 (9.5)	1.224
Friend	11 (47.8)	9 (42.9)	0.109
Co-worker	1 (4.3)	2 (9.5)	0.463
Acquaintance	11 (47.8)	11 (52.4)	0.091

\* $p < .05$ .

Table 2. Objective Standardized Clinical Examination (OSCE) checklist scores by station type.

Station type	Control (n = 29)			Intervention (n = 29)			p-value (ANOVA)	partial eta- squared	Post-hoc achieved power
	Time 1 Mean (SE)	Time 2 Mean (SE)	p- value*	Time 1 Mean (SE)	Time 2 Mean (SE)	p- value*			
Most challenging, suicidal	10.21 (0.98)	11.31 (0.65)	0.37	11.48 (0.60)	18.07 (0.65)	<b>&lt;0.00 1</b>	<b>0.001</b>	0.19	0.95
Somewhat challenging, suicidal	11.98 (0.77)	9.33 (0.89)	<b>0.03</b>	11.36 (0.67)	14.76 (0.64)	<b>&lt;0.00 1</b>	<b>&lt;0.001</b>	0.27	0.99
Suicide attempt presentation	12.26 (0.44)	10.57 (0.65)	<b>0.04</b>	10.29 (0.79)	16.91 (0.83)	<b>&lt;0.00 1</b>	<b>&lt;0.001</b>	0.40	1.00
Non-suicidal	3.33 (0.60)	7.86 (0.24)	<b>&lt;0.001</b>	4.33 (0.63)	9.16 (0.22)	<b>&lt;0.00 1</b>	0.73	0.00	0.06
Total score	37.78 (1.97)	39.07 (1.63)	0.61	37.47 (1.82)	58.90 (1.66)	<b>&lt;0.00 1</b>	<b>&lt;0.001</b>	0.40	1.00

\*p-value based on paired t-test.

Table 3. Objective Standardized Clinical Examination (OSCE) global ratings by station type.

Station type	Control (n = 29)			Intervention (n = 29)			p-value (ANOVA)	partial eta- squared	Post-hoc achieved power
	Time 1 Mean (SE)	Time 2 Mean (SE)	p- value*	Time 1 Mean (SE)	Time 2 Mean (SE)	p- value*			
Most challenging, suicidal	13.67 (0.84)	15.69 (0.82)	0.06	14.33 (0.92)	16.88 (0.63)	<b>0.05</b>	0.74	0.00	0.06
Somewhat challenging, suicidal	14.38 (0.91)	16.74 (0.67)	<b>0.05</b>	14.55 (0.83)	17.19 (0.63)	<b>0.01</b>	0.86	0.00	0.05
Suicide attempt presentation	15.33 (0.89)	15.33 (0.49)	1.00	12.81 (0.93)	18.36 (0.46)	<b>&lt;0.001</b>	<b>&lt;0.001</b>	0.24	0.98
Non-suicidal	18.45 (0.28)	19.07 (0.31)	0.15	18.10 (0.49)	18.88 (0.44)	0.18	0.83	0.00	0.06
Total score	61.83 (1.80)	66.83 (1.35)	<b>0.02</b>	59.79 (2.50)	71.31 (1.53)	<b>&lt;0.001</b>	0.06	0.06	0.47

\*p-value based on paired t-test.

Table 4. OSCE Examiner Inter-rater Reliability by Item, Nominal Items.

			Rater 1		Cohen's Kappa	SE
			No	Yes		
<b>Connecting</b>						
Did the student find out why the patient is here today?	Rater 2	No	1	0	0.309	0.239
		Yes	4	43		
Did the student explore the invitations (characteristics or statements by the patient that may indicate suicidal thoughts)?	Rater 2	No	9	1	0.627	0.125
		Yes	6	32		
Did the student ask whether the patient was suicidal?	Rater 2	No	7	4	0.622	0.140
		Yes	2	35		
Was it asked in an open way? (i.e., did NOT say "you're not thinking about it, are you")	Rater 2	No	7	4	0.528	0.146
		Yes	4	33		
Was it asked in a direct way? (i.e., did NOT use the words "thinking of hurting yourself")	Rater 2	No	16	6	0.618	0.114
		Yes	3	23		
<b>Understanding</b>						
Did the student ask about the reasons for wanting to die?	Rater 2	No	16	1	0.324	0.102
		Yes	17	4		
Did the student help the person identify reasons for wanting to live?	Rater 2	No	33	2	0.460	0.148
		Yes	7	6		
Did the student help the patient realize their ambivalence about death and life?	Rater 2	No	42	1	0.633	0.195
		Yes	2	3		
Did the student	Rater 2	No	46	1	0.657	0.319

			Rater 1		Cohen's Kappa	SE
			No	Yes		
review the risk?	Rater 2	Yes	0	1		
Did they ask about a current plan?	Rater 2	No	24	3	0.875	0.069
		Yes	0	21		
Did they ask about how bad the pain is?	Rater 2	No	43	1	0.878	0.120
		Yes	0	4		
Did they ask about resources?	Rater 2	No	22	8	0.489	0.125
		Yes	4	14		
Did they ask about prior suicidal behavior?	Rater 2	No	27	1	0.594	0.115
		Yes	8	12		
Did they ask about prior psychiatric history?	Rater 2	No	30	5	0.597	0.127
		Yes	3	10		
Did the student review the risk alerts with the person after assessing them?	Rater 2	No	45	1	0.478	0.315
		Yes	1	1		
<b>Assisting</b>						
Did the student contract a safeplan?	Rater 2	No	34	1	0.258	0.144
		Yes	10	3		
If risk is suicide, should include:						
• keep safe - agree not to act on thoughts of suicide, need to give time frame	Rater 2	No	38	6	0.391	0.178
		Yes	1	3		
• safety contacts - identify someone that they can talk to if they feel they can't keep safe, identify name of person	Rater 2	No	37	7	0.468	0.157
		Yes	0	4		

			Rater 1		Cohen's Kappa	SE
			No	Yes		
• Safe or no use of alcohol/drugs - promise not to drink or cut down for specified time frame	Rater 2	No	46	2	could not be calculated, one reviewer only scored 0s	
		Yes	0	0		
• Link to resources - formal or informal	Rater 2	No	24	15	0.116	0.127
		Yes	4	5		
If risk is prepared, should include: • Disable the plan and remove the means	Rater 2	No	40	4	0.625	0.166
		Yes	0	4		
If risk is desperate, should include: • Ease the pain - find out if they feel better after talking about it, use pain scale (1-10), if it doesn't get better then need to set up a plan for more talking, medications, admission	Rater 2	No	45	1	0.789	0.204
		Yes	0	2		
If risk is alone, should include: • Link to resources, different ones than above	Rater 2	No	37	6	0.340	0.178
		Yes	2	3		
If risk is familiarity with suicide, should include: • Protect against danger	Rater 2	No	48	0	could not be calculated, 100% agreement	
		Yes	0	0		
• Support past survival skills - what helped you before	Rater 2	No	48	0	could not be calculated, 100% agreement	
		Yes	0	0		



			Rater 1		Cohen's Kappa	SE
			No	Yes		
<b>If risk is vulnerability, should include:</b> • Link to health worker, if they are on medications make sure they are taking them properly, link with treating psychiatrist/psychologist	Rater 2	No	46	1	0.657	0.319
		Yes	0	1		
<b>Did the student have the patient repeat the elements of the contract back to them?</b>	Rater 2	No	46	0	1.000	0.000
		Yes	0	2		

Table 5. OSCE Examiner Inter-rater Reliability by Item, Ordinal Items.

			Rater 1						Cohen's Kappa SE	
			Student did not ask (0 pts)	>13 min (1 pt)	10-13 min (2 pts)	7-10 min (3 pts)	5-7 min (4 pts)	<5 min (5 pts)		
<b>How much time did it take for the student to ask the patient about suicide?</b>									0.684	0.077
	<b>Rater 2</b>	<b>Student did not ask (0 pts)</b>	7	0	1	1	1	0		
		<b>&gt;13 min (1 pt)</b>	0	2	0	0	0	0		
		<b>10-13 min (2 pts)</b>	0	2	1	0	0	0		
		<b>7-10 min (3 pts)</b>	0	0	0	12	1	0		
		<b>5-7 min (4 pts)</b>	0	0	0	1	4	4		
		<b>&lt;5 min (5 pts)</b>	1	0	0	0	0	10		

Table 6. OSCE Examiner Inter-rater Reliability by Item, Global Rating Scales.

			Rater 1						Cohen's Kappa	SE
			Inadequate	Poor	Border line Fail	Border line Pass	Clear Pass	Outstanding		
<b>Please provide your overall judgement of how well you think the student connected with the patient</b>									0.150	0.100
	Rater 2	Inadequate	0	0	0	0	0	0		
		Poor	0	0	1	0	0	0		
		Border line Fail	0	0	0	0	0	0		
		Border line Pass	0	1	1	4	4	0		
		Clear Pass	0	3	3	3	22	4		
		Outstanding	0	0	0	0	2	0		
<b>Please provide your overall judgement of how well you think the student did at understanding the patient</b>									0.113	0.074
	Rater 2	Inadequate	0	0	0	0	0	0		
		Poor	1	0	0	0	0	0		
		Border line Fail	0	0	0	0	0	0		
		Border line Pass	2	3	1	2	2	1		
		Clear Pass	3	4	3	9	14	1		
		Outstanding	0	0	0	0	0	2		
<b>Please provide your overall judgement of how well you think the student assisted the patient</b>									-0.009	0.049

			Rater 1						Cohen's Kappa	SE
			Inadequate	Poor	Border line Fail	Border line Pass	Clear Pass	Outstanding		
	Rater 2	Inadequate	0	0	0	0	0	0		
		Poor	2	0	0	0	0	0		
		Border line Fail	2	5	0	0	0	0		
		Border line Pass	3	7	3	3	6	0		
		Clear Pass	4	3	0	3	4	3		
		Outstanding	0	0	0	0	0	0		
Please provide your overall judgement of how well you think the student performed at this station									0.208	0.067
	Rater 2	Inadequate	0	0	0	0	0	0		
		Poor	0	1	0	0	0	0		
		Border line Fail	0	0	1	0	0	0		
		Border line Pass	0	8	5	3	2	1		
		Clear Pass	2	4	5	2	12	1		
		Outstanding	0	0	0	0	0	1		

Table 7. General linear models (ANOVA) examining SIRI-2 and secondary outcomes.

	Control (n = 36)			Intervention (n = 31)			<i>p</i> -value (TimeXGroup)	partial eta- squared	Post- hoc achieve d power
	Time 1 Mean (SE)	Time 2 Mean (SE)	<i>p</i> - value <sup>a</sup>	Time 1 Mean (SE)	Time 2 Mean (SE)	<i>p</i> - value <sup>a</sup>			
SIRI-2 <sup>b</sup>	52.59 (2.23)	47.12 (1.98)	<b>0.015</b>	52.65 (2.45)	47.94 (2.17)	<b>0.007</b>	0.784	0.000	0.060
Confidence to intervene	2.11 (0.11)	2.11 (0.11)	1.000	1.58 (0.12)	2.97 (0.12)	<b>&lt;.001</b>	<b>&lt;.001</b>	0.60	1.00
Skill at detecting risk	2.14 (0.10)	2.11 (0.09)	0.711	1.90 (0.11)	2.74 (0.09)	<b>&lt;.001</b>	<b>&lt;.001</b>	0.37	1.00
Knowledge of risk	1.78 (0.11)	1.89 (0.11)	0.353	1.68 (0.12)	2.84 (0.12)	<b>&lt;.001</b>	<b>&lt;.001</b>	0.34	1.00
Prepared to help someone	1.86 (0.10)	1.94 (0.10)	0.324	1.68 (0.10)	2.90 (0.11)	<b>&lt;.001</b>	<b>&lt;.001</b>	0.44	1.00

<sup>a</sup>*p*-value based on paired *t*-test.

<sup>b</sup>Lower scores indicated better performance on the SIRI-2.

Table 8. Interpersonal skills as rated by standardized patients.

Station type	Control (n = 29)			Intervention (n = 29)			<i>p</i> -value (TimeXGroup)	partial eta-squared	Post-hoc achieved power
	Time 1	Time 2	<i>p</i> -value <sup>a</sup>	Time 1	Time 2	<i>p</i> -value <sup>a</sup>			
Most challenging, suicidal	78.86	65.66	<.001	81.31	66.86	<.001	0.63	0.00	0.08
Somewhat challenging, suicidal	74.21	68.00	<.001	75.28	65.55	<.001	0.69	0.00	0.07
Suicide attempt presentation	63.38	64.35	<b>0.001</b>	61.76	70.10	<.001	<b>0.03</b>	0.09	0.62
Non-suicidal	74.76	69.28	0.675	75.44	69.04	<b>0.001</b>	0.75	0.00	0.06
Total score	291.21	267.28	<b>0.003</b>	294.04	271.93	<b>0.012</b>	0.75	0.00	0.06

<sup>a</sup>*p*-value based on paired *t*-test.

Table 9. Factor analysis of the Attitudes Towards Suicide (ATTS) Scale.

Factor		Explained variance	Factor loading	Internal consistency*
<b>1</b>	<b>Permissiveness</b>	21.7%		0.89
	Suicide never justified (item 2)		0.67	
	Suicide acceptable means to terminate incurable disease (item 5)		0.86	
	Situations where only reasonable solution is suicide (item 16)		0.80	
	I would consider possibility of suicide if suffered from severe, incurable disease (item 20)		0.71	
	Person suffering from severe, incurable disease should get help to suicide (item 29)		0.87	
	People have right to suicide (item 34)		0.69	
	I would get help to suicide if suffered from severe, incurable disease (item 36)		0.80	
<b>2</b>	<b>Preventability</b>	10.6%		0.61
	Always possible to help person with suicidal thoughts (item 1)		0.75	
	Once person made up mind about suicide, no one can stop them (item 6)		0.48	

Factor		Explained variance	Factor loading	Internal consistency*
	Once person has suicidal thoughts, never let them go (item 21)		0.57	
	Suicide can be prevented (item 37)		0.77	
<b>3</b>	<b>Knowledge about suicide</b>	8.7%		0.54
	Most suicide attempts impulsive (item 4)		0.68	
	People who suicide are usually mentally ill (item 8)		0.71	
	I am prepared to help person is suicidal crisis (item 30)		0.67	
<b>4</b>	<b>Relationship caused</b>	7.4%		0.46
	Many suicide attempts made because of revenge or to punish others (item 7)		0.62	
	Mainly loneliness drives people to suicide (item 25)		0.72	
	Most suicide attempt caused by conflicts (item 35)		0.61	
<b>5</b>	<b>Non-communication</b>	7%		0.45
	Risk of evoking suicidal thoughts in person if you ask (item 11)		0.73	
	Usually relatives have no idea what is going on (item 28)		0.59	
	People who talk about suicide do not die by suicide (item 33)		0.66	



Factor		Explained variance	Factor loading	Internal consistency*
<b>6</b>	<b>Normal / common</b>	5.9%		0.52
	Almost everyone has thought about suicide (item 15)		0.77	
	Anybody can die by suicide (item 31)		0.78	
	<b>WHOLE INSTRUMENT</b>	61.4%		0.61

Table 10. General linear models (ANOVA) of attitudinal factors.

	Control (n = 36)			Intervention (n = 31)			p-value (ANOVA)	partial eta- squared	Post-hoc achieved power
	Time 1	Time 2	p- value*	Time 1	Time 2	p- value*			
Permissive attitude towards suicide	20.00	20.72	0.090	18.77	20.90	<b>0.002</b>	0.060	0.05	0.47
Attitude suicide is preventabl e	16.78	16.17	<b>0.036</b>	15.97	15.90	0.904	0.347	0.01	0.15

\*p-value based on paired t-test.

Table 11. Reviews of ASIST.

	n (%)
Enjoyed training	
Not at all	0
A little	2 (6.3)
Some	15 (46.9)
A lot	15 (46.9)
Found training useful	
Not at all	1 (3.1)
A little	2 (6.3)
Some	11 (34.4)
A lot	18 (56.3)
Training good use of time	
Not at all	3 (9.4)
A little	3 (9.4)
Some	17 (53.1)
A lot	9 (28.1)
Training relevant	
Not at all	0
A little	2 (6.3)
Some	11 (34.4)
A lot	19 (59.4)
Gained new ideas/knowledge	
Not at all	0
A little	3 (9.4)

	n (%)
Some	14 (43.8)
A lot	15 (46.9)
Feel more willing to intervene after training	
Not at all	1 (3.1)
A little	1 (3.1)
Some	7 (21.9)
A lot	23 (71.9)
Feel better able to identify suicidal person after training	
Not at all	0
A little	4 (12.5)
Some	9 (28.1)
A lot	19 (59.4)
Understand impact of attitudes after training	
Not at all	2 (6.3)
A little	13 (40.6)
Some	13 (40.6)
A lot	4 (12.5)
Likely to make use of training	
Very unlikely	0
Somewhat unlikely	2 (6.3)
Undecided	0
Somewhat likely	12 (37.5)
Very likely	18 (56.3)

	n (%)
Likely to recommend training	
Very unlikely	1 (3.1)
Somewhat unlikely	3 (9.4)
Undecided	2 (6.3)
Somewhat likely	10 (31.3)
Very likely	16 (50.0)
Most useful parts of ASIST	
Discussion of attitudes	15 (46.9)
Suicide intervention model	28 (87.5)
Role-play	25 (78.1)
Videos	7 (21.9)
Workbook	4 (12.5)
Handbook	0
Wallet-sized card	21 (65.6)
Leaflet	0
Networking	14 (43.8)
Least useful parts of ASIST	
Discussion of attitudes	8 (25.0)
Suicide intervention model	2 (6.3)
Role-play	3 (9.4)
Videos	12 (37.5)
Workbook	11 (34.4)
Handbook	9 (28.1)
Wallet-sized card	1 (3.1)

	<b>n (%)</b>
Leaflet	9 (28.1)
Networking	5 (15.6)
Know where to refer someone at risk	32 (100.0)
Feel that follow-up needed	16 (51.6)

Table 12. Diffusion effects of ASIST.

	n (%)
Discussed training with someone	31 (96.9)
Who discussed with	
Spouse	17 (54.8)
Family member	16 (51.6)
Friend	6 (19.4)
Co-worker	0
Fellow student not in class, not in ASIST	2 (6.5)
Fellow student not in class, in ASIST	4 (12.9)
Fellow student, not in ASIST	15 (48.4)
Fellow student in ASIST	24 (77.4)
Showed training material to someone	8 (25.0)
Who showed to	
Spouse	6 (75.0)
Family member	3 (37.5)
Friend	0
Co-worker	0
Fellow student not in class, not in ASIST	0
Fellow student not in class, in ASIST	0
Fellow student, not in ASIST	1 (12.5)
Fellow student in ASIST	1 (12.5)

# Appendices

## Appendix A. Recruitment Letter #1

Hello clerkship students,

Thanks to all of you who listened through my presentation today. For those of you who missed it, I presented on a study that I'm implementing with the help of your med school class. I have attached the powerpoint presentation if you'd like to have a look at what I presented. You can also ask those who attended for a quick synopsis. The majority of the students that were at the presentation today already agreed to participate and signed the consent form. Thanks so much to all of you!

For those of you who weren't there, in short, I'm hoping to recruit your entire class to take part in a randomized controlled trial to test your current training program versus an educational program that adds on a 2-day training workshop that focuses on increasing your skills in suicide intervention (or your ability to deal with suicidal patients). The Applied Suicide Intervention Skills Training program (ASIST) will be offered, at random, to half of your class free of charge over 2 days this year. The presentation and the attached summary provide a little more detail about the project.

**The real benefits of participating include:**

**Free food! (for ASIST participants)**

**No call around participation dates**

**Extra practice on OSCEs**

**Financial incentive - \$150**

**Learn skills for how to deal with suicidal patients**

**Become more aware of suicidal peers**

Again, it would be really amazing if I can have all of your class participate in the study so that we can ensure that we have sufficient numbers to randomize into the two groups (intervention and control) and still be able to have sufficient power to determine the effectiveness of the training. If it doesn't work, then we know that we don't need to waste any future student's time in this training program. If it does, and we think it will, we will need sufficient evidence to implement the program in future years and across Canada (which we have support to do if findings are good).

I would be more than happy to address any questions or concerns you have at any point during the study. I've attached the consent form for you to have a look at and to fill out if you choose to participate. I have also left a stack of consent forms at the faculty office in Brodie and there is a box there where you can drop the completed forms off to have them sent to me. Or you can send to me directly at my office address listed on the form or below.



Thanks again to everyone who is participating and I'll be in touch soon with more details.

Best,  
Shay-Lee

Shay-Lee Belik BSc (Hons), MSc  
Principal Investigator  
PhD Candidate, Department of Community Health Sciences  
Research Assistant, Mood and Anxiety Disorders Research Group, Department of Psychiatry  
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sbelik@hsc.mb.ca  
<http://www.suicideresearch.ca/>

## Appendix B. Recruitment Letter #2

Hello Med 1 and Med 2 students,

You are invited to a **FREE PIZZA LUNCH** on November 1, 2010 from noon to 1pm in Theatre A.

At noon, I will be making a short presentation on a study that I'm implementing with the help of the medical students. I have already presented this information to the Med 3 class and the majority of students that were at that presentation have agreed to participate. With support from your class presidents, we are expanding this training opportunity to your classes as well.

In short, I'm hoping to recruit all medical students to take part in a randomized controlled trial to test your current medical school training program versus an educational program that adds on a 2-day training workshop that focuses on increasing your skills in suicide intervention (or your ability to deal with suicidal patients). The Applied Suicide Intervention Skills Training program (ASIST) will be offered, at random, to half of your class free of charge over 2 days this year. The attached summary provides a little more detail about the project.

The benefits of participating include:

**Free food**

**Extra practice on OSCEs**

**Financial incentive - \$150**

**Learn skills for how to deal with suicidal patients**

**Become more aware of suicidal peers**

The goal is to enroll as many students as possible into the study so that we have sufficient numbers to randomize into the two groups (intervention and control) and still be able to have sufficient power to determine the effectiveness of the training. If it doesn't work, then we know that we don't need to waste any future student's time in this training program. If it does, and we think it will, we will need sufficient evidence to implement the program in future years and across Canada (which we have support to do if findings are good).

I would be more than happy to address any questions or concerns you have at any point. I've attached the consent form for you to have a look at and to fill out if you choose to participate. I have also left a stack of consent forms at the faculty office in Brodie. They are collecting the consent forms for me there or you can send to me directly at my office address listed below.

Looking forward to seeing you all at lunch on November 1!

Best,  
Shay-Lee

Shay-Lee Belik BSc (Hons), MSc  
PhD Candidate, Department of Community Health Sciences  
Research Assistant, Mood and Anxiety Disorders Research Group, Department of Psychiatry  
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sbelik@hsc.mb.ca  
<http://www.suicideresearch.ca/>

## Appendix C. Recruitment Letter #3

Hello Med 4 students,

I am a PhD Student in Community Health Sciences. My upcoming PhD thesis is focused on an intervention project that will involve your medical class cohort. I believe the project can be of great value to the students. I've already presented the project to the 1st, 2nd and 3rd year classes (see attached powerpoint slides) and many of them have agreed to participate. I have space to include a few more participants in the training and therefore am extending this project to include your class as well.

Here's a synopsis of the project (I've also attached a more detailed version). I am hoping to train medical students using a known suicide intervention training program called ASIST (Applied Suicide Intervention Skills Training). It has been used around the world, although only 1 study has trained and evaluated the impact in medical students (only in Norway). This study showed that the students really enjoyed the program and felt it was a useful part of their training. The training program hopes to make people feel more comfortable in recognizing suicidal individuals and getting those people to the help that is needed. It seems this would be of value to medical students in both their upcoming careers and in recognizing suicidal colleagues. Much research has been focused on the fact that medical students, residents and physicians are at high risk for suicide. If we can help you recognize suicidal peers, we may save people's lives. And identifying suicidal patients has been noted as one of the most difficult tasks for newly trained physicians, an area that is not really addressed in the current medical school curriculum.

The aim is to recruit all medical students to take part in a randomized controlled trial to test your current medical school training program versus an educational program that adds on a 2-day training workshop that focuses on increasing your skills in suicide intervention (or your ability to deal with suicidal patients). ASIST will be offered, at random, to half of your class free of charge over 2 days (one weekend), likely at some point in January or February.

### **The benefits of participating include:**

**Extra practice on OSCEs**

**Financial incentive - \$150**

**Learn skills for how to deal with suicidal patients**

**Become more aware of suicidal peers**

If it doesn't work, then we know that we don't need to waste any future student's time in this training program. However, if the program shows promise in improving the students' capabilities, and we think it will, we have support from the Association of Faculties of Medicine of Canada (AFMC) to implement the project across the country.

I would be more than happy to address any questions or concerns you have at any point. I've attached the consent form for you to have a look at and to fill out if you choose to participate. I have also left a stack of consent forms at the faculty office in Brodie. If you would like to

participate in the trial, you can email me, send the consent form directly to my address listed below, or drop it off at the faculty office.

Best,  
Shay-Lee

Shay-Lee Belik BSc (Hons), MSc  
PhD Candidate, Department of Community Health Sciences  
Research Assistant, Mood and Anxiety Disorders Research Group, Department of Psychiatry  
University of Manitoba  
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<http://www.suicideresearch.ca/>

## Appendix D. Consent Form



Shay-Lee Belik BSc (Hons), MSc  
Departments of Community Health Sciences & Psychiatry  
University of Manitoba  
PZ430-771 Bannatyne Avenue  
Winnipeg, MB R3E 3N4  
Ph: (204) 787-5082; Fax: (204) 787-4879  
Email: sbelik@hsc.mb.ca

### RESEARCH PARTICIPANT INFORMATION AND CONSENT FORM

**Title of Study: Evaluation of a gatekeeper training program as suicide intervention training for medical students**

**Protocol number: TBD**

**Principal Investigator: Jitender Sareen, PZ430-771 Bannatyne Avenue, 204-787-7078**

**Co-Principal Investigator: Shay-Lee Belik, PZ430-771 Bannatyne Avenue, 204-787-5082**

**Sponsor: American Foundation for Suicide Prevention**

**You are being asked to participate in an Educational Trial (a human research study). Please take your time to review this consent form and discuss any questions you may have with the study staff. You may take your time to make your decision about participating in this educational trial and you may discuss it with your regular doctor, friends and family before you make your decision. This consent form may contain words that you do not understand. Please ask the study doctor or study staff to explain any words or information that you do not clearly understand.**

**The study doctor (and or/ institution) is(are) receiving professional fees and financial support to conduct this study.**

#### **Purpose of Study**

**This Educational Trial is being conducted to study suicide prevention intervention skills in undergraduate medical students. You are being asked to take part in this study because you are entering your clerkship year in the program at the University of Manitoba. A total of 110 participants will participate in this study.**

**The purpose of this study is to evaluate whether students differ in their abilities to detect and intervene with suicidal patients and to see if training in your clerkship in psychiatry will improve those skills.**

**This research is being done because we do not know whether the training provided currently is effective in improving medical students skills in suicide intervention.**

*Evaluation of a gatekeeper training program as suicide intervention training for medical students*

*Version date: 12/05/09*

1 of 8

Participants Initials \_\_\_\_\_

## **Study procedures**

In this study, you will be “randomized” into one of 2 study groups described below, either the ASIST trained group or the training as usual group. “Randomized” means that you are put into a group by chance, like flipping a coin. You will have an equal chance of being placed in either group.

Participants will be placed into either group based on assigning a number to each person and choosing numbers from a random number table. Each group will receive different kinds of training in suicide prevention.

Group 1 (ASIST trained group) will receive Applied Suicide Intervention Skills Training (ASIST). ASIST is a 2-day intensive, interactive and practice-dominated course aimed at enabling people to recognize risk and learn how to intervene immediately to prevent suicide. ASIST is designed to help all caregivers become more willing, ready and able to help persons at risk. Just as “CPR” skills make physical first aid possible, training in suicide intervention develops the skills used in suicide first aid. Group 1 will also receive education as usual based on current psychiatry clerkship teachings on suicide. Group 2 (training as usual) will receive only education as usual based on current psychiatry clerkship teachings on suicide.

If you take part in this study, you will have to complete the following tests and procedures:

- three 30 minute questionnaires on your knowledge about suicide intervention and your perceptions of interventions, completed prior to clerkship, after your clerkship in psychiatry, and at 6 months following the end of your clerkship rotations
- three objective assessments using standardized patients that will last 1 hour each which will assess your competency in recognizing and intervening with suicidal patients, again completed prior to clerkship, after your clerkship in psychiatry, and at 6 months following the end of clerkship

Participation in the study will be during your clerkship year only. The researcher may decide to take you off this study if you do not participate in all questionnaires and assessments as required.

You can stop participating at any time. However, if you decide to stop participating in the study, we encourage you to talk to the study staff first.

Participants will receive information on the aggregate results of the study at 1 year following completion of all measures.

### **Risks and Discomforts**

While on the study, you are at risk for certain side effects. These side effects are minimal and may include anxiety related to the nature of the questions asked or anxiety related to the objective assessment. It is important to note that the objective assessment scores or your responses on the questionnaires will not be used in any way to determine your grade or the outcome of your clerkship year.

### **Benefits**

By participating in this study, you will be providing information to the study staff that will show the effects of suicide prevention intervention training for medical students on their ability to recognize and respond to suicide risk in patients. We hope the information learned from this study will be used to inform undergraduate medical education for students in the future.

### **Costs**

All clinic and professional fees, questionnaires and assessments which will be performed as part of this study are provided at no cost to you. There will be no cost for the study treatment that you will receive.

### **Payment for participation**

You will be given \$25 for completion of both the questionnaire & objective assessment prior to clerkship. You will be given an additional \$25 for completion of the questionnaire and objective assessment at the end of your clerkship in psychiatry. You will also be given an additional \$50 for completion of the questionnaire and objective assessment at 6 months following the end of clerkship. This will allow a maximum honorarium of \$100 upon termination of your participation in this research study.

### **Confidentiality**

Information gathered in this research study may be published or presented in public forums, however your name and other identifying information will not be used or revealed. Despite efforts to keep your personal information confidential, absolute confidentiality cannot be guaranteed. Your personal information may be disclosed if required by law. All study documents related to you will bear only your assigned student number (or code) which will be decided by you based on your day of birth, the first two letters of your mothers maiden name and the last 2 digits of your social insurance number. This will be the only number that will be included in the database with your responses and assessment scores.

Organizations that may inspect and/or copy your research records for quality assurance and data analysis include groups such as: the University



of Manitoba Health Research Ethics Committee, the American Foundation for Suicide Prevention, and the study personnel.

All records will be kept in a locked secure area and only those persons identified will have access to these records. If any of your research records need to be copied to any of the above, your name and all identifying information will be removed. No information revealing any personal information such as your name, address or telephone number will leave the University of Manitoba.

**Voluntary Participation/Withdrawal From the Study**

Your decision to take part in this study is voluntary. You may refuse to participate or you may withdraw from the study at any time. Your decision not to participate or to withdraw from the study will not affect your grade or performance evaluation in any way.

We will tell you about any new information that may affect your welfare or willingness to stay in this study.

**Questions**

You are free to ask any questions that you may have about the trial and your rights as a research participant. If any questions come up during or after the study, contact the study doctor and the study staff: Jitender Sareen at 204-787-7078 or Shay-Lee Belik 204-787-5082.

For questions about your rights as a research participant, you may contact The University of Manitoba Health Research Ethics Board at (204) 789-3389

Do not sign this consent form unless you have had a chance to ask questions and have received satisfactory answers to all of your questions.

**Statement of Consent**

I have read this consent form. I have had the opportunity to discuss this research study with Jitender Sareen or Shay-Lee Belik and/or his/her study staff. I have had my questions answered by them in language I understand. The risks and benefits have been explained to me. I believe that I have not been unduly influenced by any study team member to participate in the research study by any statement or implied statements. Any relationship (such as employee, student or family member ) I may have with the study team has not affected my decision to participate. I understand that I will be given a copy of this consent form after signing it. I understand that my participation in this educational trial is voluntary and that I may choose to withdraw at any time. I freely agree to participate in this research study.

I understand that information regarding my personal identity will be kept confidential, but that absolute confidentiality is not guaranteed. I authorize the inspection of my research records by the American Foundation for Suicide Prevention and The University of Manitoba Health Research Ethics Board.

By signing this consent form, I have not waived any of the legal rights that I have as a participant in a research study.

I agree to participate in this study.

Yes  No

Participant signature \_\_\_\_\_ Date \_\_\_\_\_  
(day/month/year)

Participant printed name: \_\_\_\_\_

**Your email address will only be used to contact you in relation to the current study. It will not be distributed to any other company or group and will be kept confidential.**

**I agree to being contacted by email to receive reminder notifications for each evaluation period and to receive study results.**

**Yes  No**

**Participant email address: \_\_\_\_\_**

**I, the undersigned, have fully explained the relevant details of this research study to the participant named above and believe that the participant has understood and has knowingly given their consent**

**Printed Name:** \_\_\_\_\_ **Date** \_\_\_\_\_  
(day/month/year)

**Signature:** \_\_\_\_\_

**Role in the study:** \_\_\_\_\_

**Relationship to study team members (if applicable):** \_\_\_\_\_

**To facilitate creation of a confidential participant code, please complete the following:**

**Two digits of your day of birth:** \_\_\_\_ \_\_\_\_

**First two letters of your mother's maiden name:** \_\_\_\_ \_\_\_\_

**Last two digits of your social insurance number:** \_\_\_\_ \_\_\_\_

**For research staff only:**

**Participant code:** \_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_

## Appendix E. Standardized Patient Program Case Writing Template

### Standardized Patient Program Case Writing Template University of Manitoba

Case Name / Number:

Author(s):

Type of session (check one):  **Teaching**    **Examination**    **Remediation**    **Research**

√ (“Copy / Paste” this check mark where it applies)

Type of station (check all that apply):  **Communication**    **Physical Exam**    **Feedback**

Focus of case:

Allotted time for completion:

Task(s) to be completed:

- obtain a complete medical history
- obtain focused and relevant history
- deal with a communication issue
- deal with an ethical issue
- perform a complete physical exam
- perform a focused physical exam
- provide patient education
- provide student education
- counsel the patient
- indicate management decisions to be made
- discuss monitoring plan
- indicate how follow-up will occur
- other:  assess for level of suicidality \_\_\_\_\_

**Scenario**

1. Type of encounter (e.g new patient, E.R., clinic):
2. Location / Setting of encounter:
3. Opening statement from SP:

**Patient**

1. Name:
2. Age:
3. Gender:
4. Ethnic background:
5. Marital Status:
6. Highest level of education:
7. Occupation:
8. Primary language:
9. Family members (if relevant):
10. Other relevant details:

## **Medical History**

1. Chief complaint (today):

2. History of present illness:

Onset:

Duration:

Improving/worsening factors:

Description of pain (if any):

3. Current medications / drug use (if any):

Over the counter:

Prescribed:

Homeopathic:

Illicit:

4. Past medical history:

Allergies / Intolerances:

Previous hospitalizations:

5. Relevant social history:



## **Summary of timeline:**

### **Patient Affect**

1. Initial posture:
2. Appearance:
3. Dress:
4. Attitude / agenda:
5. Mannerisms / non-verbal gestures:
6. Physical symptoms or findings:
7. Psychological symptoms or findings:
8. Defining statements:
9. Any specific questions or statements the patient MAY make?
10. Any specific questions or statements the patient MUST make? (Please provide any specific cues upon which you want the SP to deliver the prompt: in response to what?)

### **Props**

*Please specify any props that will be required by the SP and/or by the candidate.*

**Additional Information**

*Please provide any additional information that will help explain the case to the SP.*

**Instructions to candidate:**

*Please provide the information exactly as it will be presented to the candidate prior to the encounter.*

## Appendix F. Standardized Patient Program Case Writing Template

Station Element	Station							
	1	2	3	4	5	6	7	8
Level of complexity	level 1	level 1	level 2	level 2	level 3	level 3	level 4	level 4
Content	cancer diagnosis, no reason to live	returning soldier, blast wound in battle, gay	depression and alcohol, physical presentation	depression, discharge after suicide attempt	car accident, suicide attempt suspected	crisis, suicide plan (overdose)	bipolar disorder, no suicide	depression, no suicide
Venue	family doctor	clinic	clinic	inpatient ward	emergency room	emergency room	inpatient ward	family doctor
Task	connect, explore invitation, ask directly	connect, explore invitation, ask directly	explore invitation, ask directly, listen to reasons, review risk	explore invitation, ask directly, listen to reasons, review risk	review risk, contract safeplan	review risk, contract safeplan	evaluate whether patient at risk or allow weekend pass	screen for depression, but no suicidality
Patient name	Frank Dreschler	Sgt. Jason McDonald	Mark Livingston	Hazel Baird	Dakota Blacksmith	Sandra Morgan	Jessica Williams	Gary Marshall
Length	15 min	15 min	15 min	15 min	15 min	15 min	15 min	15 min
Time point	baseline	post	baseline	post	baseline	post	baseline	post

Level 1 – difficult (hidden) suicidal case, need to detect suicidality

Level 2 – more obvious suicidal case, need to detect suicidality

Level 3 – Person with suicide attempt, need to follow steps for making a safeplan

Level 4 – Mental disorder no suicidality, ask candidate to perform skill not related to suicide assessment

## Appendix G. Standardized Patient Case Scenario - Time 1, Level 1

Case Name / Number: **1.1 Drechsler**

Author(s): **Shay-Lee Bolton – ASIST study for medical students**

Type of session (check one):  **Teaching**    **Examination**    **Remediation**    **Research**

√ (“Copy / Paste” this check mark where it applies)

Type of station (check all that apply):  **Communication**    **Physical Exam**    **Feedback**

Focus of case: **interview to detect suicidality in the patient**

Allotted time for completion: **15 minutes**

Task(s) to be completed:

- obtain a complete medical history
- obtain focused and relevant history
- deal with a communication issue
- deal with an ethical issue
- perform a complete physical exam
- perform a focused physical exam
- provide patient education
- provide student education
- counsel the patient
- indicate management decisions to be made
- discuss monitoring plan
- indicate how follow-up will occur
- other: \_\_\_\_\_

## Scenario

1. Type of encounter (e.g new patient, E.R., clinic): **family doctor, regular patient follow-up**
2. Location / Setting of encounter: **office**
3. Opening statement from SP: *“I’m not doing too well, Doc.”*

## Patient

1. Name: **Frank Drechsler**
2. Age: **72**
3. Gender: **Male**
4. Ethnic background: **German**
5. Marital Status: **widower, wife passed 2 years ago**
6. Highest level of education: **High school graduate**
7. Occupation: **Farmer, retired**
8. Primary language: **German / English**
9. Family members (if relevant): **Son (48) and 2 daughters (45 and 43), 4 grandchildren**

10. Other relevant details: **Frank is a hardworking man from the Steinbach area. He used to be a grain farmer, but sold off his land and retired last year. He has been pretty bored since he retired, but he realized that he could no longer work the farm at his age. He has been in good health generally and was the main caregiver for his wife until she died. She passed away 2 years ago with breast cancer, which she had struggled with for 2 years.**

**Two weeks ago Frank was told by his family doctor that he had prostate cancer. He had been having trouble urinating and was experiencing some pain during urination, but it was nothing severe. Frank was surprised by the diagnosis since he doesn't feel sick. He is worried about discussing treatment options with the doctor since he has no interest in putting up with treatment since he is an old man already. Based on his wife's experiences with cancer, and how sick and weak she was for so long, he does not want to be treated. He would rather die quickly. He feels that he has no reason to live at this point. His main source of joy was his wife, who is now gone. And without the farm he has nothing to occupy his time. His children live far away (son in BC and daughters live in mid-west US) and rarely visit. He has seen his wife die from cancer and many friends die from the disease, and it is always unpleasant and painful. He does not want to go through that.**

**In fact, Frank is considering suicide at this point, but has not told anyone. He has not formulated a plan, but is having serious thoughts of ending his life before the pain of the cancer takes him over. Frank has guns in his home and is likely to use them to end his suffering.**

## **Medical History**

1. Chief complaint (today): **Ambivalent about treatment of prostate cancer**

2. History of present illness: **prostate cancer**

Onset: **2 weeks ago**

3. Current medications / drug use (if any):

Over the counter: **aspirin, low dose**

Prescribed: **anti-hypertensives**

4. Past medical history:

Previous hospitalizations: **hip replacement surgery**

Past-psychiatric history: **no previous history of psychiatric contact, no history of suicidal behavior, no history of previous psychiatric disorder**

5. Relevant social history: **Frank lives alone in a small farm house in rural Manitoba. He is involved in the church in his community and is part of a senior's club where they get together and play cards. He was a caregiver for his wife while she was dying of breast cancer and has seen many friends die over the last few years from various forms of cancer. He speaks with his children on the phone occasionally, but has not seen them or their families in the last year. He has no interest in flying to visit them and they do not make the trip home very much since wife died.**

**Summary of timeline:**

- 4 years ago – wife diagnosed with breast cancer**
- 2 years ago – wife died from cancer**
- 1 year ago – sold his farm, retired**
- 2 weeks ago – diagnosed with prostate cancer**

**Patient Affect**

1. Initial posture: **seated in chair, good posture**
2. Appearance: **neatly dressed**
3. Dress: **casual polyester pants, collared short sleeve shirt, button up sweater**
4. Attitude / agenda: **not at all interested in any treatment, in shock about diagnosis**
5. Mannerisms / non-verbal gestures: **sits properly, polite, shakes his head a lot in disbelief, seems worn out**
6. Psychological symptoms or findings: **not doing well, in disbelief, feels like no reason to live, scared of diagnosis and of dying by cancer**

7. Defining statements: *“I’m an old man already.” “There’s nothing left here for me to do anymore.” “I’ve had a good life.”*
8. Any specific questions or statements the patient MAY make? **None**
9. Any specific questions or statements the patient MUST make? (Please provide any specific cues upon which you want the SP to deliver the prompt: in response to what?)

**If the examinee asks you directly if you have had thoughts of suicide you will tell them honestly that you do.**

**If the examinee refers to any of the following as invitations (scared of cancer diagnosis, recent stress/shock of finding out has cancer, recent death of wife, looks worn out) and offers that they are sometimes connected to thoughts of suicide and asks directly if that’s true in your case you will answer yes.**

**If the examinee checks with you to see if suicide is a real concern/serious concern you will agree that it is.**

**If examinee asks you about reasons for dying you will be open to answering this honestly (possible responses include scared about cancer diagnosis/death, wife has already passed away, does not want to experience the pain of cancer, feels alone, nothing left for him/no reason to live, feels life is over).**

**If examinee senses you have a reason for living and asks about it you are willing to acknowledge that you are worried that your children will be saddened by your death, you will miss your time spent at church, and you will miss your friends because you like playing cards with them.**

**If the examinee asks about ambivalence (parts of you that want to live; parts that want to die) answer with a ratio of 80% wanting to die, 20% wanting to live.**

**If the examinee refers to your life being at risk and asks you one or more risk review questions answer them as follows:**

- a. **You do not have a current plan (if probed, your gun does come to mind)**
- b. **Your pain is somewhat unbearable, you are not desperate yet, on a scale of 1-10 you are a 5**
- c. **You feel you have no/few resources and feel alone, you do not want to burden your family by telling them**



- d. **You have no previous experience with suicide ideation or attempt**
- e. **You have no history of a past/current mental health problem**

**If examinee asks if you are willing to work together on a way to stay/keep safe you will agree you are.**

**If the examinee offers/suggests the idea of making an individualized safeplan for risk factors you have discussed you will agree and will work with the examinee on a safeplan agreement.**

**If the examinee asks who you can talk to you will say that you have a good friend from church named Fred Thiessen. You would also be willing to talk to your pastor. If suggested that you should talk to your family about your suicidal thoughts, you will not want to do this at this point. You would be willing to go to a cancer support group if mentioned.**

**You are willing to quit drinking for the time being.**

**If the examinee asks if you are feeling better after talking about this, you will say yes and can say that you are now at a 3 out of 10.**

**If the examinee talks about follow-up options/commitments you will agree to follow through.**

**If the examinee asks you if you have firearms in the home, you will tell them that you do and will be willing to give them to your friend if the examinee requests this.**

### **Additional Information**

You will not reveal the fact that you are suicidal unless you are asked directly, at which point you will be honest about your thoughts. You will be receptive to reconsidering your treatment options, but this all must be initiated and discussed by the examinee. You will not initiate this.

### **Instructions to candidate:**

You are about to see Frank Drechsler, an 72-year old man who you have been seeing for many years in your family practice clinic. Mr. Drechsler has been relatively healthy over the past 10 years, however two weeks ago you diagnosed him with prostate cancer. This is a follow-up appointment to discuss his treatment options and next steps. You have 15 minutes to discuss his recent diagnosis appropriately. You are not expected to do a physical examination.

## Appendix H. Standardized Patient Case Scenario - Time 1, Level 2

Case Name / Number: **1.2 Livingston**

Author(s): **Shay-Lee Bolton – ASIST study for medical students**

Type of session (check one):  **Teaching**    **Examination**    **Remediation**    **Research**

√ (“Copy / Paste” this check mark where it applies)

Type of station (check all that apply):  **Communication**    **Physical Exam**    **Feedback**

Focus of case: **interview to detect suicidality in patient**

Allotted time for completion: **15 minutes**

Task(s) to be completed:

- obtain a complete medical history
- obtain focused and relevant history
- deal with a communication issue
- deal with an ethical issue
- perform a complete physical exam
- perform a focused physical exam
- provide patient education
- provide student education
- counsel the patient
- indicate management decisions to be made
- discuss monitoring plan
- indicate how follow-up will occur
- other: \_\_\_\_\_

## Scenario

1. Type of encounter (e.g new patient, E.R., clinic): **clinic**
2. Location / Setting of encounter: **office**
3. Opening statement from SP: *“I’ve been having a lot of trouble sleeping.”*

## Patient

1. Name: **Mark Livingston**
2. Age: **44**
3. Gender: **Male**
4. Ethnic background: **Caucasian**
5. Marital Status: **Married for 19 years**
6. Highest level of education: **Trade diploma**
7. Occupation: **Electrician**
8. Primary language: **English**
9. Family members (if relevant): **Wife, son (15), daughter (11)**
10. Other relevant details: **Mark is an electrician who works for a small firm. He works very closely with his boss who is the owner of the business. Mark has been working**

there for 15 years. Recently his boss noticed that Mark was not performing well on the job. Not only is Mark exhausted when he arrives at work, he has been showing up late for jobs and has been noticed to have alcohol on his breath. His boss has increasingly been questioning him about what is going on, since his work was consistently good prior to this time. The boss has actually warned Mark that if he doesn't clean up his act that he will be fired. The boss told him he had better go to see someone about his issues, which is why Mark is here today.

About 9 months ago Mark found out that his wife was having an affair. He knew things were not going well between them for a few months before, but didn't see this coming at all. When he heard of the affair he moved out of the family home, expecting a reconciliation a few months later. His wife later expressed the fact that she did not wish to get back together and that she would be filing for a divorce. She stands to benefit financially from the divorce since Mark is the main income source for the family. She blames him for the breakup and his kids are upset with him because he moved out of the house. The two kids remained in the family home with their mother and have visited on occasion, but no formal arrangement is set up. He feels he is losing the relationship with his kids.

More recently Mark has started drinking more heavily in an attempt to reduce his stress level. The drinking increased over the past few months, and now he needs it to get through the day. He has been feeling so low that he has stopped eating meals, barely sleeps, and has lost a lot of weight. He is very worried about his financial state with the impending divorce. The threat of losing his job is a huge concern.

Mark feels very alone in his problem. He feels that he has no support. He feels that he has made a mess of his life and continues to screw things up. He has no hope for things to improve. He has been thinking about suicide for a few months now. He has devised a suicide plan which involves driving out to his parent's farm house and carbon monoxidizing himself to death in his truck. He has already written a suicide note to his kids and has recently updated his will, leaving everything to the children. He is waiting for a weekend next month when his parents will be out of town so that no one will find him. His parents do not have a gun on the farm.

He hasn't acted on his suicidal thoughts up to this point because he loves his kids and doesn't want to disappoint them. He really wants the situation with his kids to improve.

## **Medical History**

1. Chief complaint (today): **insomnia**

2. History of present illness:

Onset: **10 months ago**

Duration: **Most every day he hasn't slept well. The length of sleep varies every night.**

Improving/worsening factors: **Feels that drinking helps him to fall asleep.**

3. Current medications / drug use (if any): **None.**

4. Past medical history:

Diet & exercise: **Mark does not exercise currently, but his job can be physically tiring. He used to play hockey on a men's league in the evenings in winter, but did not join this year. He also used to play sports fairly regularly with his kids (soccer, football, catch, walks) but has not been involved in these activities either. He has been eating less than usual and has lost 15 pounds in the last 3 months.**

**Mark used to only drink socially (1-2 drinks in an evening on occasion), but started drinking more frequently about 6 months ago. Now he drinks about 3-6 drinks nearly every evening "to relax from the stresses of the day". He uses alcohol to escape the reality of his hopeless life.**

**Mark has no psychiatric history and has not been suicidal in the past.**

5. Relevant social history: **Mark and his wife began arguing more than usual about a year ago. After a few months his wife disclosed that she was having an affair and was leaving him. Mark moved out of the family house 8 months ago and initially moved in with his parents who live just outside Steinbach. The commute to work was too much so he moved into a small apartment as a temporary measure, expecting the marriage to get back together. His wife has since filed for separation and will be filing for divorce in the coming months.**

**Mark has been disengaged from his family and friends over the past 6 months. He used to visit regularly with friends at his hockey games or would go over to friends' houses to watch football. He has not done this in months. He has also not had much contact with his kids since the separation. He has a good relationship with his**

parents, and they are quite worried about him, but he does not tell them how he is feeling. He doesn't want them to worry about him.

Mark has been feeling quite lonely and disconnected since the break-up. He is extremely angry with his wife and feels ashamed about what others must think of him, knowing that his wife didn't want him anymore.

#### Summary of timeline:

**1 year ago – increasing fighting with his wife**

**10 months ago – started having sleep difficulties**

**9 months ago – wife disclosed affair**

**8 months ago – moved out of house**

**6 months ago – started drinking more frequently**

**2 months ago – boss started complaining about productivity at work**

**less than 1 month ago – boss threatened job**

#### Patient Affect

1. Initial posture: **seated in chair**
2. Appearance: **tired, uninterested, low**
3. Dress: **jeans and t-shirt, ball cap, plain, a little worn out looking**
4. Attitude / agenda: **not really interested in a diagnosis, just coming here because he felt he had to please his boss, knows he drinks a lot but doesn't think it is a problem, will be happy when the office visit is over, looks sad, tearful about the loss of his kids**
5. Mannerisms / non-verbal gestures: **slow movements, seems hungover, slumped in chair, doesn't smile**
6. Psychological symptoms or findings: **doesn't offer information that is not asked directly**

7. Defining statements: *“I have a few drinks to relax from the stressed of the day.” “I’m doing OK.”*

8. Any specific questions or statements the patient MAY make?

**You will become emotional when asked about your relationship with your children and will talk about how it has not been going well.**

9. Any specific questions or statements the patient MUST make? (Please provide any specific cues upon which you want the SP to deliver the prompt: in response to what?)

**If the examinee asks you directly if you have had thoughts of suicide you will tell them honestly that you do.**

**If the examinee refers to any of the following as invitations (looking tired, sad affect, hungover, slumped in chair, emotional about loss of children) and offers that they are sometimes connected to thoughts of suicide and asks directly if that’s true in your case you will answer yes.**

**If the examinee checks with you to see if suicide is a real concern/serious concern you will agree that it is.**

**If examinee asks you about reasons for dying you will be open to answering this honestly (possible responses include feels alone, wife wants a divorce, worried about financial state, worried about job loss, breakdown of relationship with children, feels like a failure, feels there is no hope/hopelessness).**

**If examinee senses you have a reason for living and asks about it you are willing to acknowledge that you want to stay alive so that you can rebuild your relationship with your children.**

**If the examinee asks about ambivalence (parts of you that want to live; parts that want to die), you can say that you are 70% sure that you want to die.**

**If the examinee refers to your life being at risk and asks you one or more risk review questions answer them as follows:**

- a. **You do have a current plan, are prepared to do it, and you will tell the method details, time, and place if asked**
- b. **Your pain feels/is unbearable, you are in a desperate state of mind, on a scale of 1-10 you are a 8**
- c. **You feel you have no/few resources and feel alone, you do not want to burden your family by telling them**

- d. **You have no previous experience with suicide ideation or attempt**
- e. **You have no history of a past/current mental health problem**

**If examinee asks if you are willing to work together on a way to stay/keep safe you will agree you are.**

**If the examinee offers/suggests the idea of making an individualized safeplan for risk factors you have discussed you will agree and will work with the examinee on a safeplan agreement.**

**If the examinee asks who you can talk to you can say your friend from hockey named Joe Coulter. You would also be willing to talk to your boss about your issues. If suggested that you should talk to your parents about your suicidal thoughts, you will agree to this but will not suggest talking to them first.**

**You are not willing to stop drinking but will reduce your consumption to 1-2 beers per night.**

**If the examinee asks if you are feeling better after talking to someone, you will say yes and can say that you are now at a 5 out of 10.**

**If the examinee talks about follow-up options/commitments you will agree to follow through.**

### **Additional Information**

You will not reveal the fact that you are suicidal unless you are asked directly, at which point you will be honest about your intentions. You will be receptive to making a safeplan and to telling your family about your suicidality, but this all must be initiated and discussed by the examinee. You will not initiate this.

### **Instructions to candidate:**

You are about to see Mark Livingston, a 44-year old man who you have not seen before in your clinic. The medical record does not describe any conditions or medications that the man is on. You have 15 minutes to interview this patient and counsel him appropriately. You are not expected to do a physical examination.



## Appendix I. Standardized Patient Case Scenario - Time 1, Level 3

Case Name / Number: **1.3 Blacksmith**

Author(s): **Shay-Lee Bolton – ASIST study for medical students**

Type of session (check one):  **Teaching**    **Examination**    **Remediation**    **Research**

√ (“Copy / Paste” this check mark where it applies)

Type of station (check all that apply):  **Communication**    **Physical Exam**    **Feedback**

Focus of case: **detect suicidality and take appropriate intervention steps**

Allotted time for completion: **15 minutes**

Task(s) to be completed:

- obtain a complete medical history
- obtain focused and relevant history
- deal with a communication issue
- deal with an ethical issue
- perform a complete physical exam
- perform a focused physical exam
- provide patient education
- provide student education
- counsel the patient
- indicate management decisions to be made
- discuss monitoring plan
- indicate how follow-up will occur
- other: \_\_\_\_\_

## Scenario

1. Type of encounter (e.g new patient, E.R., clinic): **Emergency room**
2. Location / Setting of encounter: **patient room**
3. Opening statement from SP: *“Can I leave now?”*

## Patient

1. Name: **Dakota Blacksmith**
2. Age: **18**
3. Gender: **Female**
4. Ethnic background: **First Nations - Cree**
5. Marital Status: **Single**
6. Highest level of education: **Grade 10**
7. Occupation: **Unemployed**
8. Primary language: **English**
9. Family members (if relevant): **Mother, step-father and 3 half-siblings (2 sisters, 1 brother at home on reserve), aunt Dory in Winnipeg**

10. Other relevant details: **Dakota lives with her mother, her step-father and her three half-siblings on reserve in northern Manitoba. Two days ago she had a big fight with her step-father about his drinking problems. After the fight she decided to leave home and took the bus down to Winnipeg from the reserve by herself “for a break.” Dakota was staying with her aunt Dory in the city.**

**Last night, Dakota’s friend Cheyenne had a party. She lives down the street from Dakota’s aunt. Dakota became heavily intoxicated and took some pills that she found in the medicine cabinet in the bathroom of the house. She did not know what the pills were. Dakota returned to the party, dropped to the floor and passed out. She did not tell anyone that she had taken the pills. Cheyenne tried to wake Dakota but she could not get her to wake up. Cheyenne and some other party goers decided to drop Dakota off at the emergency room.**

**Once Dakota awoke at the hospital she admitted that she had been drinking and had taken a lot of unknown pills. Although Dakota did not tell any of the hospital staff that she was trying to kill herself, they suspected that this was the case. A psychiatric consultation was requested. Dakota had not planned the suicide attempt, but she was feeling so down and seemed like a good way to get away from the pain. She regrets making the attempt and is glad that she did not die.**

**Dakota was recently offered a small role on a TV series which will air on Aboriginal Peoples’ Television Network (APTN). She is really looking forward to this experience, and is glad that she will be around to be a part of the show. She hopes to be an actress in the future. The only issue is that she will need to return to her reserve community for the part. She does not want to go back home because she is worried about the next time that she hears another rumor that her ex-boyfriend is spreading about her. She is so embarrassed about what people might think of her or say to her.**

## **Medical History**

1. Chief complaint (today): **overdose**
2. History of present illness: **N/A**
3. Current medications / drug use (if any): **no medications, uses cannabis and binge drinks alcohol regularly**

4. Past medical history:

Allergies / Intolerances: **None**

Previous hospitalizations: **None**

5. Psychiatric history: **has had suicidal thoughts and suicidal behavior in the past with little intent to die, cut her wrists last year, aunt took her to a doctor to get it checked out after spotting the marks on her arms, never diagnosed with a mental disorder**
6. Relevant social history: **Dakota's father died by suicide when she was 5 years old. Her mother began a relationship with a new man a few years later and has since had 3 children with him. They all live together in a small house. Dakota has to share a room with the other 3 children and sometimes sleeps on a friend's couch to get some time away from them. Over the past 2 years she has been staying most of the time with her boyfriend, Damian, and his family, but he recently (10 days ago) ended their relationship. He is already dating another girl. Dakota was devastated. To make things worse, there are now rumors being spread around the community about Dakota being a prude. The breakup of her relationship and the recent bad mouthing has forced her to spend more time at home.**

**Dakota does not get along well with her step-father, mostly because he drinks too much and becomes physically abusive with the children. The abuse does not happen regularly, but most of the time the children avoid him when he is drinking. Dakota dropped out of school in grade 10 because she didn't feel like going anymore. Her parents did not encourage her stay in school, and most often they pay little to no attention to her.**

**Dakota is unhappy on the reserve and wants to find a way out. She often travels to Winnipeg to see her mother's sister to get a break.**

**Summary of timeline:**

**13 years ago – father committed suicide**

**10 years ago – mother remarried**

**2 years ago – started relationship with boyfriend, Damian**

**10 days ago – Damian ended relationship, starting dating new girl, gossip in community**

**2 days ago – fight with step-father, took bus from reserve to Winnipeg**

**last night – went to party at Cheyenne's house, suicide attempt**

**Patient Affect**

1. Initial posture: **slouching in chair**
2. Appearance: **looks worn out, messy hair**
3. Dress: **jeans, tight top, looks like was at a party**
4. Attitude / agenda: **uninterested in the assessment, does not want to say anything, pushing to leave**
5. Mannerisms / non-verbal gestures: **no eye contact, foot tapping**
6. Psychological symptoms or findings: **wanted to get away from things, did not plan on killing herself tonight, didn't really want to die**
7. Defining statements: ***"Can I go now?" "Are we done?" "I don't want to talk about it." "I don't know."***
8. Any specific questions or statements the patient MAY make?  
**You may indicate that your step-father is abusive with you if it seems appropriate to mention. You do not have to wait to be asked directly. You may reveal this fact if you are asked about how things are at home, or why you don't want to go home.**
9. Any specific questions or statements the patient MUST make? (Please provide any specific cues upon which you want the SP to deliver the prompt: in response to what?)

**If the examinee asks you directly if you took the pills to try to end your life, you will answer honestly and say that you guess that was the point of it. You didn't really think about it.**

**If the examinee asks you how you feel about surviving the suicide attempt, you will say that you are glad that you didn't die. You are looking forward to your role on the APTN TV show. You want to show everyone that you can be an actress. You can also say that you "know it was a stupid thing to do."**

**If the examinee asks you about plans for the future, you will say that you are looking forward to the TV show, but that you are really worried about returning to your community. You are not looking forward to hearing more rumors going around about you because of your ex-boyfriend. You find this really upsetting and embarrassing. You wish you never had to go back.**

**If the examinee asks you about reasons for dying you will be open to answering this honestly (possible responses include boyfriend ended relationship, step-father's alcohol problems, abuse at home by step-father, feels helpless for siblings, feels hopeless in her life on reserve, feels trapped).**

**If the examinee senses you have a reason for living and asks about it you are willing to acknowledge that you are looking forward to your role on the APTN TV show. You also want to stay alive so that you can help your sisters and brother to have a better life.**

**If the examinee asks about ambivalence (parts of you that want to live; parts that want to die), you will say that you don't think you wanted to die. You were feeling bad and thought the pills might make it all go away. Right now, you aren't interested in dying.**

**If the examinee refers to your life being at risk and asks you one or more risk review questions answer them as follows:**

- a. You do not have a current plan**
- b. Your pain does not feel unbearable, on a scale of 1-10 you are a 4**
- c. You feel you have no/few resources and feel alone, you do not want to talk to anyone**
- d. You have had suicidal thoughts many times, you have cut yourself many times before but you weren't really trying to die**
- e. You have no history of a past/current mental health problem**

**If examinee asks if you are willing to work together on a way to stay/keep safe you will be reluctant, not wanting to think about your suicidal thoughts, but will agree if you feel that the examinee is engaged. If the examinee then offers/suggests the idea of making an individualized safeplan for risk factors you have discussed you will agree and will work with the examinee on a safeplan agreement.**

**If the examinee asks who you can talk to you can say your Sara, who lives in Winnipeg in the same apartment building as your aunt. You would also be willing to talk to your aunt Dory if the examinee suggests this. If suggested that you should talk to your parents about your suicidal thoughts, you will not agree to this. You will also not agree to talk to a mental health worker, doctor, or anything similar to this. You will be willing to contact a crisis line if you are feeling suicidal in the future**

**because it is anonymous, but you don't have the number. There is too much gossip in your community to talk to anyone there.**

**You are willing to cut down on your cannabis and alcohol use if the examinee suggests this.**

**If the examinee asks if you are feeling better after talking to someone, you will say that you are feeling fine. You will say that you would feel better if you could leave and go see your friends.**

**If examinee asks you about your previous suicidal thoughts and behaviors, you will tell them that each time it has happened you feel desperate to get away from things at home. You have not acted on these thoughts as much in the past because you could distract yourself by hanging out with your boyfriend. This obviously doesn't apply now. If the examinee suggests coming up with some distractions that could work for you to get away from things, you will list going for a walk in the woods near your house (always makes you feel better).**

**If the examinee talks about follow-up options/commitments you will agree to follow through.**

### **Instructions to candidate:**

You are about to see Dakota Blacksmith, an 18-year old woman who was brought to the emergency room by a group of young adults. Her medical record describes the fact that she was unconscious when she arrived, had been heavily intoxicated and heavily sedated with anti-depressant medications. The emergency room doctor suspects that this was a suicide attempt. You have been sent in to perform a psychiatric assessment of the young woman. You have 15 minutes to interview this patient. You are not expected to do a physical examination.

## Appendix J. Standardized Patient Case Scenario - Time 1, Level 4

Case Name / Number: **1.4 Williams**

Author(s): **Shay-Lee Bolton – ASIST study for medical students**

Type of session (check one):  **Teaching**    **Examination**    **Remediation**    **Research**

√ (“Copy / Paste” this check mark where it applies)

Type of station (check all that apply):  **Communication**    **Physical Exam**    **Feedback**

Focus of case: **probe for suicidality and manage case as appropriate**

Allotted time for completion: **15 minutes**

Task(s) to be completed:

- obtain a complete medical history
- obtain focused and relevant history
- deal with a communication issue
- deal with an ethical issue
- perform a complete physical exam
- perform a focused physical exam
- provide patient education
- provide student education
- counsel the patient
- indicate management decisions to be made
- discuss monitoring plan
- indicate how follow-up will occur
- other: \_\_\_\_\_



## Scenario

1. Type of encounter (e.g new patient, E.R., clinic): **inpatient ward**
2. Location / Setting of encounter: **interview room**
3. Opening statement from SP: *“I’d like to get passes to go home.”*

## Patient

1. Name: **Jessica Williams**
2. Age: **30**
3. Gender: **Female**
4. Ethnic background: **Caucasian**
5. Marital Status: **Single**
6. Highest level of education: **University Bachelor’s degree**
7. Occupation: **Nurse**
8. Primary language: **English**
9. Family members (if relevant): **Mother very supportive and close with Jessica, close relationship with sister Kelly**

10. Other relevant details: **Jessica is an emergency nurse at St. Boniface Hospital. She is single and lives alone. Jessica has been a devout Catholic all her life. Religion is very important to her. She has a close relationship with her mother, her sister Kelly and her 2 young nieces.**

**Recently Jessica was brought to the emergency room by her mother. Jessica had likely not slept in days, she spontaneously bought an expensive luxury car, and her mother found her wandering around naked in the front lobby of her apartment building. Upon presentation at the emergency room she was diagnosed with bipolar disorder. She was admitted to hospital and has been on the ward for 6 days. She has been compliant with her medications and her symptoms are improving.**

**Jessica understands her diagnosis and realizes that she has bipolar disorder. She understands that she needs to be on medication for her disorder and willing to comply with treatment, although she feels that the doctors have been slightly overbearing in her stay. She has an aunt who was diagnosed with bipolar 20 years ago and she saw how lithium turned her life around, so Jessica realizes the benefits of her treatment.**

### **Medical History**

1. Chief complaint (today): **none**

2. History of present illness:

**Onset: diagnosed 6 days ago with bipolar disorder**

**Description of symptoms: She has complained of nervousness, insomnia, headaches, and difficulty dealing with her stress**

3. Current medications: **Lithium 900mg bedtime (therapeutic dose)**

**Drug/alcohol use: no substance use in past 4 years, used to be problematic use**

4. Past medical history: **no past history suicidal behavior**

**Allergies / Intolerances: None**

**Previous hospitalizations: None**

5. Relevant social history: **Jessica works full-time in the emergency room at St. Boniface. She often picks up extra shifts to try to make some additional money. In recent months she has felt overwhelmed and stressed by her workload, but cannot cut back on her hours because of existing student debts.**

**In the week prior to admission, Jessica's friends and family noticed a dramatic change in her behavior. Jessica had been arguing more than usual with her mother and her friends. Usually Jessica is quiet and doesn't go out much. But lately, she has been wanting to go out to bars to socialize almost every night, and in fact, will go out by herself even when she has no friends to go with. Jessica described being able to stay awake all night long, and feel refreshed and energized after only 1-2 hours of sleep. Her friends have also noticed that Jessica has been hooking up with random men at the bar and goes home with them. Whereas previously Jessica was quite shy around men and would never even think about having a one-night stand. She wears more revealing clothing than previously and has really been acting out of character.**

#### **Patient Affect**

1. Initial posture: **standing**
2. Appearance: **bright red lipstick, lots of makeup**
3. Dress: **loud colors, skirt, revealing blouse**
4. Attitude / agenda: **wants to get away from the ward, grandiose, wants to get back to normal life**
5. Mannerisms / non-verbal gestures: **sitting and standing, moving around, speaking rapidly, interrupting questions**
6. Psychological symptoms or findings: **doesn't think that she has symptoms, people are making a big deal out of nothing**
7. Defining statements: ***"I just need to get away from this place." "I need to get out of here."***

8. Any specific questions or statements the patient MUST make? (Please provide any specific cues upon which you want the SP to deliver the prompt: in response to what?)

**If the examinee asks you directly if you have had thoughts of suicide you will tell them that you do not. You will state that you do not believe that suicide should be an option for anyone, based on your religious upbringing. You would never think of taking your own life no matter how bad things seemed. And you are feeling great right now anyways, so why would you think of that.**

**If the examinee refers to any of the following as invitations (wanting to get away, agitated) and offers that they are sometimes connected to thoughts of suicide and asks directly if that's true in your case you will say no.**

**If the examinee checks with you to see if suicide is a real concern/serious concern you will state that it is not.**

**If the examinee asks if you have had suicidal behavior in the past you will say no, because of your Catholic background.**

**If the examinee asks if you realize that you have bipolar disorder, you will say that you are aware. You will also state that you realize that you will need to take medications for your disorder, and are willing to comply with treatment.**

**If the examinee asks if you are going to come back to hospital when it is time, you will say that you will. You will also contract to remain safe while out of hospital.**

**If the examinee asks you what you want to do on your passes, you will say that you want to go to the bank to get some money and then you want to go shopping to get some new clothes.**

**If the examinee asks you who will be picking you up, you will say your mother. You will be staying with your mother over the weekend.**

**If the examinee asks you about your sleep, you will say that you don't really feel that you need to sleep. You aren't tired.**

**If the examinee asks you how you are feeling, you will say that you are *"feeling great. 150%!"***

**If the examinee asks you about your energy level, you will say that you are super energetic.**

**If the examinee asks you if you are hearing voices or seeing things that other people do not seem to see or hear, you will say no.**

**If the examinee asks you about substance use, you will say that you used to have a problem but you no longer *“use the stuff.”***

**If the examinee asks you how you feel about the things that went on right before you were brought to hospital, you will say *“everyone seems to be making a big deal about it. I don’t think I wasn’t acting like myself. I was having a great time and feel great about it. It was a lot of fun!”***

**You will make the examinee answer in terms of whether or not you will be given a pass to leave for the weekend before the session is over. You may even ask repeatedly. If they do not want to commit to an answer (e.g., want to check with their supervisor), ask them what they think the decision should be or what they might guess it will be. Make sure that you pressure them to commit.**

### **Additional instructions**

Since you are still in a manic episode, from time to time you will interrupt the student and repetitively ask the same questions. You are focused on getting a pass and leaving the hospital.

### **Instructions to candidate:**

You are about to see Jessica Williams, a 30-year old woman who was admitted to hospital 6 days ago for bipolar disorder. You are a resident rotating through this inpatient ward and you are involved in the case management. The patient is starting to come down from the manic phase and is now requesting a pass to go home for the weekend. You have 15 minutes to interview the patient and make your decision. You are not expected to do a physical examination.

## Appendix K. Standardized Patient Case Scenario - Time 2, Level 1

Case Name / Number: **2.1 McDonald**

Author(s): **Shay-Lee Bolton – ASIST study for medical students**

Type of session (check one):  **Teaching**    **Examination**    **Remediation**    **Research**

√ (“Copy / Paste” this check mark where it applies)

Type of station (check all that apply):  **Communication**    **Physical Exam**    **Feedback**

Focus of case: **probe for suicidality and manage case as appropriate**

Allotted time for completion: **15 minutes**

Task(s) to be completed:

- obtain a complete medical history
- obtain focused and relevant history
- deal with a communication issue
- deal with an ethical issue
- perform a complete physical exam
- perform a focused physical exam
- provide patient education
- provide student education
- counsel the patient
- indicate management decisions to be made
- discuss monitoring plan
- indicate how follow-up will occur
- other: \_\_\_\_\_

## Scenario

1. Type of encounter (e.g new patient, E.R., clinic): **clinic**
2. Location / Setting of encounter: **office**
3. Opening statement from SP: *“I don’t think I’m ready to go back into battle.”*

## Patient

1. Name: **Sgt. Jason McDonald**
2. Age: **24**
3. Gender: **Male**
4. Ethnic background: **Caucasian**
5. Marital Status: **Single**
6. Highest level of education: **University Bachelor’s degree**
7. Occupation: **Canadian Forces**
8. Primary language: **English**
9. Family members (if relevant): **mother, father, brother Stefan (also in military – age 21)**

10. Other relevant details: **Jason has been dedicated to the military since he was 18 years of age. His father is also in the military. Jason had a very strict upbringing with his father running the home in the way that a general would organize a platoon. His brother, Stefan, is also in the military. His family moved around a lot while he was young. His mother dedicated her life to her sons and was always supportive of them both. He had a good upbringing despite the frequent moves.**

**Six months ago Jason was sent home from Afghanistan due to injuries that he received in battle. His platoon was driving in their jeep when a car bomb went off only 300 feet away. Ten members of his platoon were killed in the blast. Jason was lucky to have survived. He only endured a concussion with a brief loss of consciousness.**

**One month ago, Jason received a letter from his commanding officer stating that he would be assessed for redeployment to Afghanistan in the coming months. This assessment is part of that process. Jason is nervous and does not want to be sent back into battle. He feels he would rather his life be over than have to be redeployed.**

**In fact, Jason has been contemplating suicide for some months now.**

**He has been feeling that he doesn't fit in with his military colleagues. He is lonely since he cannot have a relationship with another man for fear of being discriminated against on the job and disowned by his father. He feels that he cannot be his true self, and as such, is having trouble getting close to anyone.**

## **Medical History**

1. Chief complaint (today): **headaches**
2. History of present illness:

**Onset: 6 months ago**

**Description of pain and symptoms: headaches is the main concern for Jason, but he is also concerned about the more recent onset of nightmares in the past 2 weeks. This has been associated with disrupted sleep, reliving the event, and has felt more jumpy than usual to loud noises.**

3. Current medications / drug use (if any): **No drug use, alcohol use moderate (1 drink per day on average), some binge drinking on occasion (5 or more on some weekends)**



4. Past medical history: **healthy**

Allergies / Intolerances: **None**

Previous hospitalizations: **Immediately after the blast, Jason was hospitalized for 24 hours for observation. Imaging of his head was negative and revealed no acute head trauma.**

5. Relevant social history: **Jason is currently single. He has casually dated many women, but the relationship has never gotten serious. His mother has tried to encourage him to get closer to girls that he has dated, but each time, he breaks things off for one reason or another. Over the past 4 years, Jason has stopped dating. Jason has not revealed to his mother and father the fact that he is gay. He is fearful of disclosing his homosexuality to his mother, even though he trusts her to respond supportively, because of the lack of acceptance (or homophobia) that would come from his father. Additionally, Jason fears the stigma that would be associated with disclosing his homosexuality to his work colleagues. He has been having an increasingly difficult time keeping this secret from his close friends in his platoon, and feels bad for lying to them. In particular, he feels like he betrayed many of those who died in the blast because he wasn't honest with them. He has been feeling extremely guilty about their death. Because of these feelings, he has been somewhat relieved by his time off.**

#### **Summary of timeline:**

- 6 months ago: platoon bombed, Jason injured, 2 weeks later sent back home**
- 1 month ago: received letter stating that he would be sent back to Afghanistan**
- 2 weeks ago: started having nightmares, reliving the event, feeling uneasy and jumpy**

#### **Patient Affect**

1. Initial posture: **sitting in chair leaning forward**
2. Appearance: **clean and neat, short hair**
3. Dress: **military fatigues**

4. Attitude / agenda: **does not want to be sent back into battle**
5. Mannerisms / non-verbal gestures: **hand wringing, looking around room nervously, jumpy if any noises (“Did you hear that?” “What was that noise?”)**
6. Psychological symptoms or findings: **nervous in the interview - worried that the assessment will recommend that he go back to Afghanistan, guilt related to surviving, shame about homosexuality**
7. Defining statements: **“I just can’t go back.” “I’ll do anything to not go back there.”**
8. Any specific questions or statements the patient MAY make?  
**You may be willing to disclose the fact that you are gay if you feel that the examinee is supportive and open to this discussion.**

**You can say that you wish you would have died in the explosion if you feel that this is an appropriate response to one of the questions.**

9. Any specific questions or statements the patient MUST make? (Please provide any specific cues upon which you want the SP to deliver the prompt: in response to what?)

**If the examinee asks you about your headaches, you will say that they happen every day especially when you think about returning to Afghanistan. In particular, they happen when you have flashbacks about the bomb explosion.**

**If the examinee asks you about vomiting, visual symptoms or headaches in the morning, you will say that you do not experience any of these.**

**If the examinee asks you about flashbacks or nightmares, you will say that they have been really upsetting. You replay the scene. The jeep ahead of you in the convoy explodes and you see your colleagues dismembered bodies lying amidst the rubble. You become very upset when talking about this. You are having a lot of trouble sleeping because of these nightmares.**

**If the examinee asks you if you are depressed, you will say no.**

**If the examinee asks you about your appetite, it has been normal.**

**If the examinee asks you if you have had trouble concentrating, you will say that you have had some trouble concentrating due to the headaches and flashbacks.**

**If the examinee asks you about returning to Afghanistan, you will say that you *“would rather die than go back.”***

**If the examinee asks you directly if you have had thoughts of suicide you will tell them honestly that you do.**

**If the examinee refers to any of the following as invitations (scared of going back into battle, recent physical trauma, recent traumatic event, not feeling like one fits in) and offers that they are sometimes connected to thoughts of suicide and asks directly if that’s true in your case you will answer yes.**

**If the examinee checks with you to see if suicide is a real concern/serious concern you will agree that it is.**

**If examinee asks you about reasons for wanting to die you will be open to answering this honestly (possible responses include scared to go back into battle, don’t feel like you fit in with your platoon, worried about people [especially parents] finding out that you are gay, feeling alone).**

**If examinee senses you have a reason for living and asks about it you are willing to acknowledge that you don’t want to do this to your mother. She will be heartbroken.**

**If the examinee asks about ambivalence (parts of you that want to live; parts that want to die) answer with a ratio of 80% wanting to die, 20% wanting to live.**

**If the examinee refers to your life being at risk and asks you one or more risk review questions answer them as follows:**

- a. **You do not have a current plan (if probed, your gun does come to mind)**
- b. **Your pain is unbearable, you are not desperate yet, on a scale of 1-10 you are a 6**
- c. **You feel you have no/few resources and feel alone, you cannot talk to anyone about this**
- d. **You have no previous experience with suicide ideation or attempt**
- e. **You have no history of a past/current mental health problem**

**If examinee asks if you are willing to work together on a way to stay/keep safe you will agree you are.**

**If the examinee offers/suggests the idea of making an individualized safeplan for risk factors you have discussed you will agree and will work with the examinee on a safeplan agreement.**

**If the examinee asks who you can talk to you at first you will say that you don't want people to think you are weak. If pressed further, you will say that you have a good friend named Chuck Langstrom that is in the Forces with you. He also survived the blast and has been off work. He could relate to you. You would also be willing to talk to your brother Stefan. If suggested that you should talk to your family about your suicidal thoughts, you will be open to considering this, but won't agree to it at first.**

**You will be willing to cut back on your drinking for the time being. If they ask you to be abstinent, you will be unsure about following through with this, but will say that you will try. You wouldn't want to end up in a situation with your friends where everyone is having a beer and you won't have one. That would draw attention to you.**

**If the examinee asks if you are feeling better after talking about this, you will say yes and can say that you are now at a 3 out of 10.**

**If the examinee talks about follow-up options/commitments you will agree to follow through.**

**If the examinee asks you if you have firearms in the home, you will tell them that you do and will be willing to give them to your friend Chuck if the examinee requests this.**

### **Additional Information**

The examinee will need to elicit upset from you before you are willing to disclose your suicidal intentions. This can happen through discussing your return to Afghanistan, your relieving of the explosion or by talking about your homosexuality. You will not, in any case, tip the examinee off to the fact that you are suicidal. In fact, you'd like the topic to not be discussed. You will be brief with your answers about this topic.

### **Instructions to candidate:**

You are about to see Sgt. Jason McDonald, a 24-year old Canadian Forces soldier who is being evaluated for re-deployment. You are seeing this patient in your clinic to gather information about his health concerns prior to returning to the field. You have 15 minutes to interview the patient about his symptoms and his ability to return to Afghanistan. You are not expected to do a physical examination.

## Appendix L. Standardized Patient Case Scenario - Time 2, Level 2

Case Name / Number: **2.2 Baird**

Author(s): **Shay-Lee Bolton – ASIST study for medical students**

Type of session (check one):  **Teaching**    **Examination**    **Remediation**    **Research**

√ (“Copy / Paste” this check mark where it applies)

Type of station (check all that apply):  **Communication**    **Physical Exam**    **Feedback**

Focus of case: **probe for suicidality and manage case as appropriate**

Allotted time for completion: **15 minutes**

Task(s) to be completed:

- obtain a complete medical history
- obtain focused and relevant history
- deal with a communication issue
- deal with an ethical issue
- perform a complete physical exam
- perform a focused physical exam
- provide patient education
- provide student education
- counsel the patient
- indicate management decisions to be made
- discuss monitoring plan
- indicate how follow-up will occur
- other: \_\_\_\_\_

## Scenario

1. Type of encounter (e.g new patient, E.R., clinic): **inpatient ward**
2. Location / Setting of encounter: **interview room**
3. Opening statement from SP: *"I'd like to go home."*

## Patient

1. Name: **Hazel Baird**
2. Age: **42**
3. Gender: **Female**
4. Ethnic background: **Inuit**
5. Marital Status: **Married**
6. Highest level of education: **Grade 9**
7. Occupation: **Unemployed**
8. Primary language: **English**
9. Family members (if relevant): **Husband Fred (45)**

10. Other relevant details: **Hazel lives in Winnipeg with her husband Fred. Hazel has had depression for as long as she can remember. Her last episode has been going on for the past 6 months.**

## **Medical History**

1. Chief complaint (today): **N/A**
2. History of present illness: **current major depression, alcohol dependence**

**Onset: depression – 6 months ago, escalation of alcohol use in the month prior to admission**

3. Current medications / drug use (if any): **Citalopram 60mg daily**
4. Past medical history:

**Allergies / Intolerances: None**

**Previous hospitalizations: Multiple hospitalizations, some to medical wards for broken bones and lacerations, and some to psychiatric wards for alcohol detox, depression and previous suicide attempt**

5. Relevant social history: **Hazel’s relationship with her husband Fred has been quite rocky, despite the fact that they’ve been married for 20 years. About 3 months ago Hazel moved out of the house and started living with some friends. But 1 month later, Fred asked her to move back in with him, promising to make their relationship work. What Hazel will not be very willing to admit is that the relationship is unstable because Fred is physically abusive towards her. The abuse has been going on for almost their entire relationship. She has had numerous injuries from the abuse, but really feels that she can’t leave. She is on social assistance and thinks that she won’t be able to live on her own. She has tried to leave numerous times, but Fred keeps coming around no matter where she goes. She feels trapped. Hazel has decided that she can’t put up with things any longer. If Fred continues to beat her, she will kill herself to finally get away from him.**

**Hazel has few close friends and has no family in Winnipeg. Most of her family is up north and she sees them infrequently. She has no children, but had given one up for adoption when she was 16.**

### Summary of timeline:

- 6 months ago – major depressive episode treated by family doctor**
- 3 months ago – Hazel moved out of her house and left Fred**
- 2 months ago – Hazel moved back in with Fred**
- 1 month ago – Hazel started drinking heavily to dull the pain of the abuse from Fred**
- 2 weeks ago – Hazel admitted as psychiatric inpatient for depression and suicidal thoughts**

### Patient Affect

1. Initial posture: **slumped in chair**
2. Appearance: **unkempt, poor hygiene**
3. Dress: **sweats, t-shirt, oversized, not clean**
4. Attitude / agenda: **quiet, passive, resigned, uninterested, does not want to talk**
5. Mannerisms / non-verbal gestures: **down-cast gaze, no eye contact, slow movements**
6. Psychological symptoms or findings: **depressed but won't admit it**
7. Defining statements: ***"It doesn't matter."* *"I don't care."* *"Don't know."***
8. Any specific questions or statements the patient MAY make?  
**You will be very uninterested in talking about any of your problems with the examinee. You will be unwilling to volunteer information, especially at first. You can say that you *"don't feel like talking."* If the rapport with the examinee is good you will warm up and you will reveal your sadness about your life.**
9. Any specific questions or statements the patient MUST make? (Please provide any specific cues upon which you want the SP to deliver the prompt: in response to what?)



**If the examinee asks you directly if you are thinking about suicide, you will answer honestly and say that you aren't right now. You won't offer this up immediately (wait for appropriate questioning) but the thing that makes you think about killing yourself is the abuse. If it continues, you certainly won't stick around to put up with it anymore. You will do something to finally put an end to it.**

**If examinee asks you about reasons for dying you will be open to answering this honestly (possible responses include abuse by husband, feels helpless, feels trapped, very sad).**

**If examinee senses you have a reason for living and asks about it you are willing to acknowledge that one day you would like to meet the child that you gave up for adoption.**

**If the examinee asks about ambivalence (parts of you that want to live; parts that want to die) you will say that 30% of you wants to die, just because you are helpless to change your situation with Fred. If that changed, things would look better.**

**If the examinee asks you one or more risk review questions answer them as follows:**

- a. **You do not have a current plan**
- b. **You are not desperate, don't feel that the pain is unbearable now**
- c. **You feel you have no/few resources and feel alone, you do not want to talk to anyone**
- d. **You have had suicidal thoughts and have acted on those thoughts before, mainly because of the abuse**
- e. **You have been told that you are depressed**

**If the examinee asks if you are willing to work together on a way to stay/keep safe you will agree only if you feel that the examinee has been supportive and empathetic. Otherwise you will be reluctant to work with them.**

**If the examinee asks if you have any follow-up appointments scheduled, you will state that you have follow-up appointments scheduled with a psychiatrist in the mood disorders program. The first appointment will be in 1 week. You are willing to attend.**

**If the examinee asks you to abstain from using alcohol, you will not be willing to do this. You recently cut back on your intake after being in detox. You will try to keep your intake down.**

**If examinee asks you about your previous suicidal thoughts and behaviors, you will tell them that each time it has happened it was related to not wanting to deal with**

**the abuse from your husband. You don't know how to get away from it. But if you're dead, then you won't have to deal with it anymore. You know that you are not willing to endure more of this from him. He has promised not to do this anymore. You aren't sure if you believe him.**

**If the examinee asks you about your appetite, you will say that it has been fine.**

**If the examinee asks you about your sleep you will say that it has been fine.**

**If the examinee asks you about your concentration you will say that it has been fine.**

**If the examinee asks you about your mood, you will say that you are doing "OK."  
You feel better than when you came in.**

### **Additional Information**

You have been out on some passes this past week accompanied by Fred and things have gone well. He is eager for you to get home. He doesn't do well without you – he doesn't cook or do laundry. You do feel that he is making an effort but know that things will turn around once you're back.

### **Instructions to candidate:**

You are a medical student who is beginning a rotation on an psychiatric inpatient ward and you are being told to see a patient who is requesting to be discharged. Your instructions are to discuss follow-up plans and the housing situation of this patient. You are about to see Hazel Baird, a 42-year old Inuit woman who has been an inpatient on your ward for 2 weeks. You have 15 minutes to discuss the appropriate follow-up and monitoring strategies with the patient. You are not expected to do a physical examination.

## Appendix M. Standardized Patient Case Scenario - Time 2, Level 3

Case Name / Number: **2.3 Morgan**

Author(s): **Shay-Lee Bolton – ASIST study for medical students**

Type of session (check one):  **Teaching**    **Examination**    **Remediation**    **Research**

√ (“Copy / Paste” this check mark where it applies)

Type of station (check all that apply):  **Communication**    **Physical Exam**    **Feedback**

Focus of case: **detect level of suicidality and take appropriate intervention steps**

Allotted time for completion: **15 minutes**

Task(s) to be completed:

- obtain a complete medical history
- obtain focused and relevant history
- deal with a communication issue
- deal with an ethical issue
- perform a complete physical exam
- perform a focused physical exam
- provide patient education
- provide student education
- counsel the patient
- indicate management decisions to be made
- discuss monitoring plan
- indicate how follow-up will occur
- other: \_\_\_\_\_

## Scenario

1. Type of encounter (e.g new patient, E.R., clinic): **Emergency room**
2. Location / Setting of encounter: **interview room**
3. Opening statement from SP: *“I’ve been feeling so down.”*

## Patient

1. Name: **Sandra Morgan**
2. Age: **30**
3. Gender: **Female**
4. Ethnic background: **Caucasian**
5. Marital Status: **Single**
6. Highest level of education: **High school graduate**
7. Occupation: **Police officer**
8. Primary language: **English**
9. Family members (if relevant): **Mother and father, older brother (37)**
10. Other relevant details: **Sandra has been brought in today by her parents. They are very concerned about her. One of Sandra’s friends called them this morning stating**

that they believed that Sandra was about to kill herself. The friend managed to stop Sandra from making the attempt and got her to come over to their house. Sandra's parents intervened there and brought her immediately to the emergency room, which is where she is being seen at present. She has a close and supportive family, with her parents and her brother all accompanying her to the emergency room today. Sandra is comforted by the fact that her family is here with her today.

Sandra has been a police officer for 6 years. She loves her job and has many close connections with the other officers. Work is not a source of difficulty.

Sandra has been dating a man named Chris for 3 years who she loves very much. Their relationship has been tumultuous and has been on again-off again pretty much since it started. About 5 months ago her boyfriend threatened to break things off and she developed suicidal thoughts at that time. The ongoing instability in her relationship caused her to lose sleep and she had trouble focusing at work. Shortly thereafter she consulted with her family doctor about her loss of sleep and trouble concentrating (her appetite was normal at the time). She was diagnosed with a mild depression and was prescribed medication to help with sleep.

Her relationship with Chris ended during an argument three days ago. She was devastated by the breakup. She is still in contact with the ex-boyfriend and is hoping for a reconciliation.

Sandra has been feeling extremely sad and emotional in the days since this breakup. She felt that she just couldn't be happy about anything. She found herself crying all the time, which is very unlike her usual personality.

Sandra made a plan to kill herself yesterday. She planned to overdose on antidepressants in her home. Yesterday afternoon she went to the pharmacy and asked for an advance on her medications, which the pharmacist granted. She stayed up all night contemplating the attempt but then decided not to follow through on the plan. Early this morning she called her best friend, Michelle, and told her that she had been suicidal. Michelle convinced Sandra to let her come over to her house. When Michelle got there Sandra broke down and explained the whole plan. Michelle called Sandra's family and they immediately rushed over to escort her to the emergency room.

Sandra is feeling upset but not suicidal right now and feels comfortable going home. She is regretful that she was suicidal and caused distressed for her family.

## Medical History

1. Chief complaint (today): **Thinking of killing herself**
2. History of present illness:  
  
Onset: **3 months**  
  
Duration: **has been getting worse lately**
3. Current medications / drug use (if any):  
  
Prescribed: **anti-depressant from family doctor, Citalopram 10mg**  
  
Recreational: **drinks alcohol socially very infrequently, no drug use**
4. Past medical history: **physically healthy, mild depression diagnosed by family physician, prior suicidal thoughts**  
  
Previous hospitalizations: **no**
5. Relevant social history: **recently broke up with boyfriend**

## Summary of timeline:

**5 months ago – long-term boyfriend threatens break-up of relationship**  
**3 months ago – mild depression diagnosed by family physician, prescribed antidepressant**  
**3 days ago – relationship ended with boyfriend**  
**yesterday – made suicide plan, went to pharmacy to get advance on medications**  
**early this AM – called friend to talk about suicidal thoughts**

## Patient Affect

1. Initial posture: **sitting in chair, slumped over**

2. Appearance: **calm, sad, looks like had been crying**
3. Dress: **neat, cargo pants, long sleeved top, no jewellery**
4. Attitude / agenda: **wants to go home, wants to see boyfriend, responds to questions very willingly**
5. Mannerisms / non-verbal gestures: **weak and slow movements, looks shaky, speaks quietly**
6. Psychological symptoms or findings: **feeling low, very sad, wants to be taken care of by her family, lonely**
7. Defining statements: ***“I’m not sure how I can go on without him.”***
8. Any specific questions or statements the patient MUST make? (Please provide any specific cues upon which you want the SP to deliver the prompt: in response to what?)

**If asked if she is still intending to kill herself, Sandra will say that she does not have a plan right now.**

**If the examinee asks you directly if you have had thoughts of suicide you will tell them honestly that you have, but don’t right now.**

**If examinee asks you about reasons for dying you will be open to answering this honestly (possible responses include can’t live without boyfriend, feels very sad, don’t enjoy your life anymore).**

**If examinee senses you have a reason for living and asks about it you are willing to acknowledge that you want to stay alive so that you can rebuild your relationship with your boyfriend, you feel that your family wants you to live, and that you really love your job.**

**If the examinee asks about ambivalence (parts of you that want to live; parts that want to die) you will say that 80% of you wants to live. You are hoping that your boyfriend will come back and work things out.**

**If the examinee refers to your life being at risk and asks you one or more risk review questions answer them as follows:**

- a. You did have a plan, were prepared to do it, and you will tell the method details, time, and place if asked**
- b. Your pain is no longer unbearable, you feel less desperate than earlier today**
- c. You feel connected to your family, do not feel alone**
- d. You have had suicidal thoughts in the past**
- e. You were recently diagnosed with a mild depression by your family doctor**

**If examinee asks if you are willing to work together on a way to stay/keep safe you will agree you are.**

**If the examinee offers/suggests the idea of making an individualized safeplan for risk factors you have discussed you will agree and will work with the examinee on a safeplan agreement.**

**If the examinee asks who you can talk to you can say your friend Michelle, who you turned to today. You are also willing to turn to your parents and your brother now that you see how worried they were about you.**

**You are willing to stop drinking for the time that the examinee recommends.**

**If the examinee suggests that contact should be made to discuss your suicidal thoughts with your family doctor, you will agree to this. You will not suggest seeing the family doctor, or making an appointment, unless the examinee suggests this first.**

**If the examinee talks about follow-up options/commitments you will agree to follow through.**

**If the examinee asks if your parents are prepared to take care of you, you will say that they want you to come and live at their house for a bit. They are eager to help you through this tough time.**

### **Additional Information**

You are not suicidal right now, and don't have a new plan. You are very dependent on your boyfriend. At this point, you are holding out for him to say that the relationship is back on because of your suicidal thoughts. You feel that your life has no meaning without him. If he doesn't want to work things out, you don't know how you'll go on.



**Instructions to candidate:**

You are about to see Sandra Morgan, a 30-year old woman who has been brought to the emergency room by her parents and brother for suicidal thoughts. The family is extremely concerned. You have 15 minutes to interview this patient and counsel her appropriately. You are not expected to do a physical examination.

## Appendix N. Standardized Patient Case Scenario - Time 2, Level 4

Case Name / Number: **2.4 Marshall**

Author(s): **Shay-Lee Bolton – ASIST study for medical students**

Type of session (check one):  **Teaching**    **Examination**    **Remediation**    **Research**

√ (“Copy / Paste” this check mark where it applies)

Type of station (check all that apply):  **Communication**    **Physical Exam**    **Feedback**

Focus of case: **probe for suicidality and manage case as appropriate**

Allotted time for completion: **15 minutes**

Task(s) to be completed:

- obtain a complete medical history
- obtain focused and relevant history
- deal with a communication issue
- deal with an ethical issue
- perform a complete physical exam
- perform a focused physical exam
- provide patient education
- provide student education
- counsel the patient
- indicate management decisions to be made
- discuss monitoring plan
- indicate how follow-up will occur
- other: \_\_\_\_\_

## Scenario

1. Type of encounter (e.g new patient, E.R., clinic): **new patient in your family practice**
2. Location / Setting of encounter: **office**
3. Opening statement from SP: *“I haven’t been feeling well lately.”*

## Patient

1. Name: **Gary Marshall**
2. Age: **45**
3. Gender: **Male**
4. Ethnic background: **Caucasian**
5. Marital Status: **Single**
6. Highest level of education: **University Bachelors degree**
7. Occupation: **Junior high school teacher**
8. Primary language: **English**
9. Family members (if relevant): **none**

10. Other relevant details: **Gary is a gym teacher at a junior high school in Winnipeg. He loves his job very much and enjoys working with the children. He finds his job to be rewarding.**

**Gary is usually quite physically active. He likes to play sports, especially raquetball and soccer, jogs regularly, and enjoys going for walks with his dog. Almost every second day he takes his dog to the dog park to run around, even in winter. His usual level of physical activity has dropped in recent months due to a lack of motivation to leave the house. He has even had little interest in taking his dog out for walks.**

**Gary's lack of motivation has even started to affect his job. He feels tired and has been feeling burdened by the children at the school, which is very unusual for him. He has called in sick a few times in the past month.**

## **Medical History**

1. Chief complaint (today): **feeling low, tired, lack of motivation or enjoyment**

2. History of present illness:

Onset: **3 months ago**

Description of symptoms: **lack of interest, lack of enjoyment, feels low, tired all the time, eating less, staying home more**

3. Current medications / drug use (if any): **none, does not drink alcohol**

4. Past medical history: **family history of obsessive compulsive disorder (uncle), family history of major depression (mother), no prior psychiatric disorders, no history of suicidal behavior**

Allergies / Intolerances: **None**

Previous hospitalizations: **no previous hospitalizations**

5. Relevant social history: **Gary has never been married and lives alone. He has a house in St. Vital and a dog (black lab) named Chico. He is currently in a relationship with**

a woman, Judy, who he met online on a dating website. Judy lives in Brandon, so they don't see each other very often. She is a travel agent. The relationship began 6 months ago and has been moving slowly. She has children of her own from a previous marriage, but they are grown up and have moved out of her house. The relationship has been very enjoyable for Gary. He really likes Judy, does not feel pressured at all by her to become more serious, and is comfortable being around her. They are good friends. The relationship has not caused him any stress. In fact, since Gary has been feeling down, he has struggled with going to see Judy. He feels very bad that he hasn't seen her recently, but has explained to her that he hasn't been feeling like himself lately. She has been understanding.

#### Summary of timeline:

**6 months ago: started dating Judy**

**3 months ago: started feeling tired, poor sleep, lack of motivation**

**2 months ago: made appt with physician to get physical to examine symptoms**

**today: follow-up appt because symptoms have not subsided and he is actually feeling worse**

#### Patient Affect

1. Initial posture: **sitting on examination table**
2. Appearance: **hair a little messy, like a hair cut is over due**
3. Dress: **jeans, button up shirt, running shoes**
4. Attitude / agenda: **thinks has a physical health condition which is causing the symptoms, would like to get treatment for his problem because doesn't want to feel this way any more**
5. Mannerisms / non-verbal gestures: **puts head in his hands, appears tired, slow movements**
6. Psychological symptoms or findings: **lack of interest, lack of enjoyment, thinks he is going to die from some disease which they can't find**

7. Defining statements: *“I don’t know what is wrong with me.” “I don’t want to feel this way any more.” “Maybe I have a brain tumor.”*

8. Any specific questions or statements the patient MAY make?

**If the examinee asks you if you have thought about suicide you can ask them why they would think that. You will be surprised by this question.**

9. Any specific questions or statements the patient MUST make? (Please provide any specific cues upon which you want the SP to deliver the prompt: in response to what?)

**If the examinee asks you directly if you have had thoughts of suicide you will tell them that you do not. You will look surprised by this question.**

**If the examinee refers to any of the following as invitations (feeling low, lack of interest, lack of enjoyment, being tired, wanting to stay home) and offers that they are sometimes connected to thoughts of suicide and asks directly if that’s true in your case you will say no.**

**If the examinee checks with you to see if suicide is a real concern/serious concern you will state that it is not.**

**If the examinee asks if you have had suicidal behavior in the past you will say no.**

**If the examinee asks you if you are depressed, you will say yes.**

**If the examinee asks you about your sleep, you will say that you have had insomnia. You have trouble falling asleep and wake up frequently throughout the night.**

**If the examinee asks you if you are feeling guilty, you will say yes. You feel that you are letting down your students and Judy.**

**If the examinee asks about your level of concentration, you will say that you feel that you have a lack of focus.**

**If the examinee asks you about your appetite, you will say that it has been poor. You will admit that you have lost 10 pounds in the past 2 months even though you didn’t mean to.**

**If the examinee suggests that you start on an antidepressant medication, you will agree to this treatment, but will want more information about it. You will be scared**

**of taking a medication for mental health issues. You are seriously worried that a physical condition is being overlooked.**

**Instructions to candidate:**

You are about to see Gary Marshall, a 45-year old male whom you have seen once before. You are a new graduate and have just joined a family practice clinic. Gary is a new patient to the clinic. He originally presented two months ago for a complete physical exam. The exam and all medical investigations were normal. He has no history of medical problems. You have 15 minutes to assess the patient. You are not expected to do a physical examination.

## Appendix O. Example of a Case Stem Presented to Student Prior to OSCE Examination

You are about to see Frank Drechsler, an 72-year old man who you have been seeing for many years in your family practice clinic. Mr. Drechsler has been relatively healthy over the past 10 years, however two weeks ago you diagnosed him with prostate cancer. This is a follow-up appointment to discuss his treatment options and next steps. You have 15 minutes to discuss his recent diagnosis appropriately. You are not expected to do a physical examination.



## Appendix P. OSCE Examiner Score Sheet (Marking Criteria)

Time Point: \_\_\_\_\_ Station number: \_\_\_\_\_ Examinee number: \_\_\_\_\_

Action to be performed	A. Was it performed? (check if yes, leave blank if no) (1pt each)
<b>Section 1: Connecting</b>	
Did the student find out why the patient is here today?	
Did the student explore the invitations (characteristics or statements by the patient that may indicate suicidal thoughts)?	
Did the student ask whether the patient was suicidal?	
Was it asked in an open way? (i.e., did <i>NOT</i> say “you’re not thinking about it, are you”)	
Was it asked in a direct way? (i.e., did <i>NOT</i> use the words “thinking of hurting yourself”)	
How much time did it take for the student to ask the patient about suicide?  ___ <5 min (5 pts) ___ 5-7 min (4 pts) ___ 7-10 min (3 pts) ___ 10-13 min (2 pts) ___ >13 min (1 pt) ___ Student did not ask (0 pts)	<b>B. Score</b> <i>(Please write the number of points)</i>          _____
<b>Total section 1 score (A + B)</b>	

Action to be performed	Was it performed? (check if yes, leave blank if no) (1pt each)
<b>Section 2: Understanding</b>	
Did the student ask about the reasons for wanting to die?	
Did the student help the person identify reasons for wanting to live?	
Did the student help the patient realize their ambivalence about death and life?	
Did the student review the risk?	
Did they ask about a current plan? How (what method)? What have they done to prepare for this? How soon?	
Did they ask about how bad the pain is? Scale of 1-10, how desperate	
Did they ask about resources?	
Did they ask about prior suicidal behavior?	
Did they ask about prior psychiatric history?	
Did the student review the risk alerts with the person after assessing them?	
<b>Total section 2 score</b>	

Action to be performed	Was it performed? (check if yes, leave blank if no) (1pt each)
<b>Section 3: Assisting</b>	
Did the student contract a safeplan?	
<p>If risk is suicide, should include:</p> <ul style="list-style-type: none"> <li>a. keep safe - agree not to act on thoughts of suicide, need to give time frame</li> <li>b. safety contacts - identify someone that they can talk to if they feel they can't keep safe, identify name of person</li> <li>c. Safe or no use of alcohol/drugs - promise not to drink or cut down for specified time frame</li> <li>d. Link to resources - formal or informal</li> </ul>	
<p>If risk is prepared, should include:</p> <ul style="list-style-type: none"> <li>a. Disable the plan and remove the means</li> </ul>	
<p>If risk is desperate, should include:</p> <ul style="list-style-type: none"> <li>a. Ease the pain - find out if they feel better after talking about it, use pain scale (1-10), if it doesn't get better then need to set up a plan for more talking, medications, admission</li> </ul>	
<p>If risk is alone</p> <ul style="list-style-type: none"> <li>a. Link to resources, different ones than above</li> </ul>	
<p>If risk is familiarity with suicide</p> <ul style="list-style-type: none"> <li>a. Protect against danger</li> <li>b. Support past survival skills - what helped you before</li> </ul>	
<p>If risk is vulnerability</p> <ul style="list-style-type: none"> <li>a. Link to health worker, if they are on medications make sure they are taking them properly, link with treating psychiatrist/psychologist</li> </ul>	
Did the student have the patient repeat the elements of the contract back to them?	
<b>Total section 3 score</b>	
<b>TOTAL SCORE (Section 1 + 2 + 3)</b>	

### Global Rating of Student

Please provide your overall judgement of how well you think the student **connected** with the patient:

\_\_\_ Outstanding

\_\_\_ Clear Pass

\_\_\_ Borderline Pass

\_\_\_ Borderline Fail

\_\_\_ Poor

\_\_\_ Inadequate

Please provide your overall judgement of how well you think the student did at **understanding** the patient:

\_\_\_ Outstanding

\_\_\_ Clear Pass

\_\_\_ Borderline Pass

\_\_\_ Borderline Fail

\_\_\_ Poor

\_\_\_ Inadequate

Please provide your overall judgement of how well you think the student **assisted** the patient:

\_\_\_ Outstanding

\_\_\_ Clear Pass

\_\_\_ Borderline Pass

\_\_\_ Borderline Fail

\_\_\_ Poor

\_\_\_ Inadequate

Please provide your overall judgement of how well you think the student performed at this station:

\_\_\_ Outstanding

\_\_\_ Clear Pass

\_\_\_ Borderline Pass

\_\_\_ Borderline Fail

\_\_\_ Poor

\_\_\_ Inadequate

## Appendix Q. Suicide Intervention Response Inventory (SIRI-2)

The following items represent a series of excerpts from clinical sessions. Each excerpt begins with an expression by the patient concerning some aspect of the situation he / she faces, followed by two possible helper responses to the patient's remark.

You are to rate each response in terms of how appropriate or inappropriate you feel the reply is to the patient's comment. In the blank you should record a rating from -3 to +3, corresponding to the chart below. Be sure to respond to each item, and try not to leave any blanks.

- + 3 Highly appropriate response
- + 2 Appropriate response
- + 1 Marginally appropriate response
- 0 Neither appropriate nor inappropriate
- 1 Marginally inappropriate response
- 2 Inappropriate response
- 3 Highly inappropriate response

1. Patient: I decided to call in tonight because I really feel like I might do something to myself... I've been thinking about suicide.

\_\_\_\_ Helper A: You say you're suicidal, but what is it that's really bothering you?

\_\_\_\_ Helper B: Can you tell me more about your suicidal feelings?

2. Patient: And now my health is going downhill too, on top of all the rest. Without my husband around to care for me anymore, it just seems like the end of the world.

\_\_\_\_ Helper A: Try not to worry so much about it. Everything will be all right.

\_\_\_\_ Helper B: You must feel pretty lonely and afraid of what might happen.

3. Patient: But my thoughts have been so terrible...I could never tell them to anybody.

\_\_\_\_ Helper A: You can tell me. I'm a professional, and have been trained to be objective about these things.

\_\_\_\_ Helper B: So some of your ideas seem so frightening to you, that you imagine other people would be shocked to know you are thinking such things.

4. Patient: No one can understand the kind of pain I've been going through. Sometimes I just feel like I have to hurt myself, so I cut my wrists.

\_\_\_\_ Helper A: It seems like you've been suffering so much that cutting your wrists is the only way you can make the pain go away.

\_\_\_\_ Helper B: But you're so young, you have so much to live for. How can you think of killing yourself?

5. Patient: What are you anyway? Are you a doctor? How do you know what I've been going through? You've probably always had it pretty soft.

\_\_\_\_ Helper A: So you're wondering if I can understand how you feel.

\_\_\_\_ Helper B: You're not even giving me a chance. I've had a pretty rough life too; you're not the only one who's seen some hard times.

6. Patient: My life has been worthless ever since my wife, Emma, died four years ago. The kids are grown and married now, and I've been retired from my job at the railroad for some time. It just seems that I'd be better off dead.

\_\_\_\_ Helper A: But try to think of what Emma would want for you. She'd want you to continue leading a productive life, wouldn't she?

\_\_\_\_ Helper B: It sounds like everything just collapsed around you when Emma died. But what has happened recently to make things even worse, to make you think that dying is the only way out?

7. Patient: I really need help. It's just...{voice breaks: silence}

\_\_\_\_ Helper A: It must be hard for you to talk about what's bothering you.

\_\_\_\_ Helper B: Go on, I'm here to listen to you talk.

8. Patient: When you sum up my problem like that, it makes it seem less confusing and not so scary.

\_\_\_\_ Helper A: See, it really isn't so bad after all. It certainly isn't anything you would think of killing yourself over, is it?

\_\_\_\_ Helper B: Sometimes talking about problems does make them a bit clearer. I think you realize how dangerous your suicidal feelings were, and that's why you decided to contact me.

9. Patient: You were supposed to help me, but you've only made things worse.

\_\_\_\_ Helper A: I'm sorry. I was only trying to help.

\_\_\_\_ Helper B: You sound pretty angry.



10. Patient: How could you ever help me? Have you ever wanted to kill yourself?

\_\_\_\_\_ Helper A: It sounds like you're concerned about whether I can understand and help you.

\_\_\_\_\_ Helper B: Sure, I've thought about suicide sometimes. But I always found more realistic solutions to my problems.

11. Patient: I don't know...this whole thing with my wife really gets to me {sobs}. I try so hard to keep from crying...

\_\_\_\_\_ Helper A: Do you think that the reason it's hard for you to cry is because you're a man?

\_\_\_\_\_ Helper B: With all the hurt you're feeling, it must be impossible to hold those tears in.

12. Patient: How can I believe in God anymore? No God would ever let this happen to me; I've never done anything to deserve what's happened.

\_\_\_\_\_ Helper A: Things have gotten so bad, that it's difficult to see any meaning in the things that have happened to you.

\_\_\_\_\_ Helper B: Well, God works in mysterious ways. Maybe this is His way of testing your faith.

13. Patient: I don't know why I'm calling you. My family is financially well off, and my husband spends plenty of time with me, even though he has a successful law career. Even my kids have been doing well. They get good marks at school and have lots of free time activities with their friends. But nothing seems to interest me. Life is just a bore...

\_\_\_\_\_ Helper A: Considering all you have going for you, your problems can't be all that serious.

Try to focus more on the positive aspects of your situation.

\_\_\_\_ Helper B: So even though things seem to be going well at one level, life still seems pretty depressing, even if it's hard to say exactly why.

14. Patient: I have to hang up now. My mother's coming home soon and I don't want her to know I've been talking to you.

\_\_\_\_ Helper A: Okay, but if you keep feeling suicidal, remember you can always call back.

\_\_\_\_ Helper B: All right, but first I want you to promise me you won't do anything to hurt yourself, until you call and talk to me. Will you repeat that promise?

15. Patient: Is it really true that many people feel this way? I thought I was the only one who had such dreadful, sinful ideas.

\_\_\_\_ Helper A: No, there are many people who suffer from mental illness. But with appropriate treatment by a qualified physician, some of these patients can be cured.

\_\_\_\_ Helper B: It is true. You're not the only one who has suicidal thoughts. And you can be helped to get through this crisis, just as others have been.

16. Patient: I'm so lonely, so tired {crying}. There just isn't anywhere left to turn.

\_\_\_\_ Helper A: You seem so alone, so miserable. Have you been feeling suicidal?

\_\_\_\_ Helper B: Come on now. Things can't be all that bad.

17. Patient: {Over telephone} It's hard to talk here, with all these people...

\_\_\_\_ Helper A: Would it help if I asked questions?

\_\_\_\_ Helper B: Why don't you call back some other time when you can talk more easily?

18. Patient: I have a gun pointed at my head right now, and if you don't help me, I'm going to pull the trigger!

\_\_\_\_ Helper A: You seem to be somewhat upset.

\_\_\_\_ Helper B: I want you to put down the gun so we can talk.

19. Patient: Why should you care about me, anyway?

\_\_\_\_ Helper A: I've been trained to care about people. That's my job.

\_\_\_\_ Helper B: Because I think your death would be a terrible waste, and it concerns me that things are so that you are considering suicide. You need help to get through this critical period.

20. Patient: I really hate my father! He's never shown any love for me, just complete disregard.

\_\_\_\_ Helper A: You must really be angry at him for not being there when you need him most.

\_\_\_\_ Helper B: You shouldn't feel that way. After all, he is your father, and he deserves some respect.

21. Patient: I don't think there's really anyone who cares whether I'm alive or dead.

\_\_\_\_ Helper A: It sounds like you're feeling pretty isolated.

\_\_\_\_ Helper B: Why do you think that no one cares about you anymore?

22. Patient: I tried going to a therapist once before, but it didn't help. Nothing I do now will change anything.

\_\_\_\_ Helper A: You've got to look on the bright side! There must be something you can do to make things better isn't there?

\_\_\_\_ Helper B: Okay, so you're feeling hopeless, like even a therapist couldn't help you. But has anyone else been helpful before – maybe a friend, relative, teacher, or clergyman?

23. Patient: My psychiatrist tells me I have an anxiety neurosis. Do you think that's what's wrong with me?

\_\_\_\_ Helper A: I'd like to know what this means to you, in this present situation. How do you feel about your problem?

\_\_\_\_ Helper B: I'm not sure I agree with that diagnosis. Maybe you should seek out some psychological testing, just to be certain.

24. Patient: I can't talk to anybody about my situation. Everyone is against me.

\_\_\_\_ Helper A: That isn't true. There are probably lots of people who care about you if you'd only give them a chance.

\_\_\_\_ Helper B: It must be difficult to find help when it's so hard to trust people.

25. Patient: {Voice slurred, unclear over telephone}

\_\_\_\_ Helper A: You sound so tired. Why don't you get some sleep and call back in the morning?

\_\_\_\_ Helper B: Your voice sounds so sleepy. Have you taken anything?

**Appendix R. Mean Ratings and Standard Deviations of Expert Panelists  
to 48 Responses Comprising the SIRI-2**

Item	<i>M</i>	<i>SD</i>	Item	<i>M</i>	<i>SD</i>
1A	-2.71	.49	13A	-2.57	.54
1B	1.86	.38	13B	2.29	.95
2A	-2.71	.49	15A	-2.57	.79
2B	1.86	.69	15B	2.14	.69
3A	-2.14	1.07	16A	2.14	.69
3B	2.14	.38	16B	-2.86	.38
4A	1.29	1.11	17A	1.57	1.27
4B	-2.71	.49	17B	-1.71	.95
5A	2.43	.54	18A	-2.00	1.41
5B	-2.71	.49	18B	1.43	1.72
6A	-2.00	1.16	19A	-2.29	.76
6B	2.57	.53	19B	1.57	.54
7A	2.00	.86	20A	2.00	1.41
7B	-1.29	1.70	20B	-2.86	.38
8A	-2.29	.49	21A	1.86	1.35
8B	2.14	.90	21B	-1.57	.79
9A	-1.29	1.50	22A	-2.71	.49
9B	1.29	1.80	22B	1.43	1.62
10A	2.29	.76	23A	1.57	1.40
10B	-2.43	.98	23B	-2.57	.54
11A	-2.42	.54	24A	-2.43	.79
11B	2.43	.79	24B	2.14	.69
12A	2.00	.82	25A	-2.57	.79
12B	-3.00	.00	25B	2.43	.79

## Appendix S. Demographic items assessed at baseline

Now, please tell us a little bit about yourself.

What is your date of birth? (dd/mm/yyyy) \_\_\_\_ / \_\_\_\_ / \_\_\_\_\_

What is your current age? \_\_\_\_

What is your sex? \_\_\_\_ Male \_\_\_\_ Female

What is your marital status?

- \_\_\_\_ Married
- \_\_\_\_ Living common-law
- \_\_\_\_ Widowed
- \_\_\_\_ Separated
- \_\_\_\_ Divorced
- \_\_\_\_ Never married

Which year of medical school are you in? \_\_\_\_ Med 1 \_\_\_\_ Med 2 \_\_\_\_ Med 3  
\_\_\_\_ Med 4

Have you completed your core clerkship in psychiatry? \_\_\_\_ Yes \_\_\_\_ No  
\_\_\_\_ Currently in progress

Have you completed an elective in psychiatry? \_\_\_\_ Yes \_\_\_\_ No  
\_\_\_\_ Currently in progress

Do you plan to complete an elective (or an additional one if one has already been completed) in psychiatry? \_\_\_\_ Yes \_\_\_\_ No

What residency specialty program have you or do you plan to apply for (check all that apply)?

- Family medicine
- Psychiatry
- Pediatrics
- Internal medicine
- Surgical specialty
- Obstetrics/gynecology
- Other, please specify \_\_\_\_\_
- Undecided

Have you had any suicide prevention education or training outside of your medical school training?

- Yes       No
- If yes, please specify \_\_\_\_\_

Have you talked openly and directly with someone at risk for suicide in the past?

- Yes     No

Do you know someone who has attempted or died by suicide?  Yes  No

If yes, who? (please mark all that apply)

- Parent
- Sibling
- Grandparent
- Other family member
- Friend
- Co-worker
- Acquaintance

## Appendix T. Self-report items on subjective suicide intervention

### abilities

How confident would you say you are currently that you could intervene effectively with someone who is at risk for suicide?

Very confident    Confident    Somewhat confident    Not at all confident

How skilled would you say you are currently at recognizing and intervening with someone who is at risk for suicide?

Very skilled    Skilled    Somewhat skilled    Not at all skilled

How knowledgeable would you say you are currently about the intervention process of helping someone who is at risk for suicide?

Very knowledgeable    Knowledgeable    Somewhat knowledgeable    Not at all knowledgeable

How prepared would you say you currently feel about helping someone who is at risk for suicide increase their suicide safety?

Very prepared    Prepared    Somewhat prepared    Not at all prepared



## Appendix U. Attitudes Toward Suicide (ATTS) Questionnaire

These questions concern your opinions about suicide. Please indicate your level of agreement with each of the following statements below (strongly agree to strongly disagree). Choose only one (1) response for each statement. There are no 'right' or 'wrong' answers!

1. It is always possible to help a person with suicidal thoughts.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

2. Suicide can never be justified.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

3. Taking one's own life is among one of the worst things to do to one's relatives.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

4. Most suicide attempts are impulsive actions (by nature).

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

5. Suicide is an acceptable means to terminate an incurable disease.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

6. Once a person has made up his/her mind about taking his/her own life, no one can stop him/her.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

7. Many suicide attempts are made because of revenge or to punish someone else.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

8. People who take their own lives are usually mentally ill.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

9. It is a human duty to try to stop someone from dying by suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

10. When a person dies by suicide it is something that he/she has considered for a long time.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

11. There is a risk of evoking suicidal thoughts in a person's mind if you ask about it.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

12. People who make suicidal threats seldom complete suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

13. Suicide is a subject that one should not talk about.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

14. Loneliness could, for me, be a reason to take my life.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

15. Almost everyone has, at one time or another, thought about suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

16. There may be situations where the only reasonable resolution is suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

17. I could say that I would take my life without actually meaning it.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

18. Suicide can sometimes be a relief for those involved.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

19. Suicides among young people are particularly puzzling since they have everything to live for.  
\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

20. I would consider the possibility of taking my life if I were to suffer from a severe, incurable disease.  
\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

21. Once a person has suicidal thoughts, they will never let them go.  
\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

22. Suicide happens without warning.  
\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

23. Most people avoid talking about suicide.  
\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

24. If someone wants to commit suicide it is their business and we should not interfere.  
\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

25. It is mainly loneliness that drives people to suicide.  
\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

26. A suicide attempt is essentially a cry for help.  
\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

27. On the whole, I do not understand how people can take their lives.  
\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

28. Usually relatives have no idea about what is going on when a person is thinking of suicide.  
\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

29. A person suffering from a severe, incurable disease expressing wishes to die should get that help to do so.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

30. I am prepared to help a person in a suicidal crisis by making contact.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

31. Anybody can die by suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

32. I can understand that people suffering from a severe, incurable disease die by suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

33. People who talk about suicide do not die by suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

34. People do have the right to take their own lives.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

35. Most suicide attempts are caused by conflicts with a close person.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

36. I would like to get help to take my own life if I were to suffer from a severe, incurable disease.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

37. Suicide can be prevented.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

## Appendix V. Items assessing knowledge about suicide

Select 'True' or 'False' for the following questions:

- |  | True  | False |
|--|-------|-------|
| 1. Talking to a person about suicide will make them commit suicide.                  | _____ | _____ |
| 2. Anyone talking about suicide should be taken seriously.                           | _____ | _____ |
| 3. People serious about suicide cannot be helped.                                    | _____ | _____ |
| 4. Most people who attempt suicide do not want to die but want to escape their pain. | _____ | _____ |
| 5. Dramatic changes in behavior may be a signal for a suicide attempt.               | _____ | _____ |
| 6. Anyone can assist someone who is suicidal.  | _____ | _____ |
| 7. People at risk of suicide should be encouraged to talk about their wish to die.   | _____ | _____ |
| 8. People thinking about suicide also have reasons for living.                       | _____ | _____ |
| 9. Anyone can be at risk of suicide.   | _____ | _____ |

10. What are 3 things that would make you think a person is at risk of suicide?

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

# Appendix W. The Interpersonal Skills Rating Form completed by standardized patients

<b>SHIPTON</b>	
<b>INTERPERSONAL SKILLS RATING FORM</b>	
<b>Simulated Patient I.D.</b> _____	<b>Candidate I.D.</b> _____

**INSTRUCTIONS:** Please place an X in the box which conveys your feelings about this doctor.  
Add up all subtotals and write the totals in the appropriate boxes below.

	Strongly Agree	Agree	Probably Agree	Not Sure	Probably Disagree	Disagree	Strongly Disagree
1. The doctor wanted to understand how I saw things.	7	6	5	4	3	2	1
2. The doctor usually sensed or realized what I was feeling.	7	6	5	4	3	2	1
3. The doctor just took no notice of some things that I thought or felt.	1	2	3	4	5	6	7
4. The doctor's response to me was usually so fixed & automatic that I didn't really get through to him/her.	1	2	3	4	5	6	7
5. The doctor treated me with respect & courtesy.	7	6	5	4	3	2	1
6. I was able to explain my problem to the doctor as fully as I needed to.	7	6	5	4	3	2	1
7. The doctor explained things so now I know what may be the matter with me.	7	6	5	4	3	2	1
8. The doctor explained what treatment, tests or other follow-up is going to happen.	7	6	5	4	3	2	1
9. The doctor gave me the opportunity to express my feelings or ideas in planning treatment, tests or follow-up.	7	6	5	4	3	2	1
10. The doctor gave me the opportunity to ask questions.	7	6	5	4	3	2	1
11. The doctor used understandable and non-technical language.	7	6	5	4	3	2	1
12. The doctor was careful and thorough.	7	6	5	4	3	2	1
13. I feel satisfied with the medical care that I received.	7	6	5	4	3	2	1
<b>SUB-TOTALS</b>							
<b>TOTAL IPS</b>	<div style="border: 1px solid black; width: 100px; height: 20px; margin: 0 auto;"></div>						

## Appendix X. Questions used to evaluate students' review of ASIST

The next questions are about your thoughts after completing the ASIST course. Choose only one (1) response, the answer that fits best, for each statement. Under specific highlights, feel free to include any information you feel will elaborate better on your responses. Take time to think about each question before answering.

1. Did you enjoy the training?

\_\_\_ A lot      \_\_\_ Some      \_\_\_ A little      \_\_\_ Not at all

Specific highlights

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2. Did you find the training useful?

\_\_\_ A lot      \_\_\_ Some      \_\_\_ A little      \_\_\_ Not at all

Specific highlights

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3. Was the training a good use of your time?

\_\_\_ A lot      \_\_\_ Some      \_\_\_ A little      \_\_\_ Not at all

Specific highlights

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4. Was the training relevant?

\_\_\_ A lot      \_\_\_ Some      \_\_\_ A little      \_\_\_ Not at all

Specific highlights

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5. Did you acquire new ideas and/or knowledge about suicide intervention from the training?

\_\_\_ A lot      \_\_\_ Some      \_\_\_ A little      \_\_\_ Not at all

Specific highlights

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6. Do you think you are more willing to intervene with a person at risk for suicide than prior to taking the intervention training?

\_\_\_ A lot      \_\_\_ Somewhat      \_\_\_ A little      \_\_\_ Not at all

What parts of the training helped you feel more willing to intervene with a person at risk?

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7. To what extent do you think you are better able to help a person at risk for suicide than prior to the training?

\_\_\_ A lot      \_\_\_ Somewhat      \_\_\_ A little      \_\_\_ Not at all



What parts of the workshop helped you feel more able to help a person at risk?

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8. Did your understanding of the impact of attitudes on someone at risk for suicide and suicide intervention change over the course of the training?

A lot     Some     A little     Not at all

9. How likely is it that you will make use of this training?

Very likely     Somewhat likely     Undecided     Somewhat unlikely      
Very unlikely

10. How likely are you to recommend this suicide intervention training to others?

Very likely     Somewhat likely     Undecided     Somewhat unlikely      
Very unlikely

11. Which elements of the training were *most* useful? (check all that apply)

- Discussing impact of attitudes on suicide and suicide prevention
- Learning the ASIST suicide intervention model (SIM)
- Practicing skills through simulation scenarios
- Video learning aids
- The ASIST workbook
- The suicide intervention handbook
- ASIST wallet-sized card
- ASIST leaflet
- Networking resources for caregivers

12. Which elements of the training were *least* useful? (check all that apply)

- Discussing impact of attitudes on suicide and suicide prevention
- Learning the ASIST suicide intervention model (SIM)
- Practicing skills through simulation scenarios

- Video learning aids
- The ASIST workbook
- The suicide intervention handbook
- ASIST wallet-sized card
- ASIST leaflet
- Networking resources for caregivers

13. Do you know where to refer a person at risk for suicide for help?  Yes  No

14. Have you been able to use the suicide intervention training to some benefit?

Yes  No, not yet

15. Do you feel there should be some follow-up training after ASIST training?

Yes  No

If yes, please specify \_\_\_\_\_

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16. What has been the most challenging aspect of using the suicide intervention training?

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## Appendix Y. Questions evaluating diffusion effects post-intervention

1. Did you discuss the intervention training with others? \_\_\_\_ Yes \_\_\_\_ No

If yes, with whom? (please mark all that apply)

\_\_\_\_ Spouse, significant other, partner

\_\_\_\_ Family member

\_\_\_\_ Friend, non-classmate

\_\_\_\_ Co-worker

\_\_\_\_ Fellow medical student, *not* in your class, who did not take the ASIST

training

\_\_\_\_ Fellow medical student, *not* in your class, who did take the ASIST training

\_\_\_\_ Fellow medical student from your class who did not take the ASIST training

\_\_\_\_ Fellow medical student from your class who did take the ASIST training

Describe the context of the discussion: \_\_\_\_\_

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2. Did you show the training materials to others? \_\_\_\_ Yes \_\_\_\_ No

If yes, to whom? (please mark all that apply)

\_\_\_\_ Spouse, significant other, partner

\_\_\_\_ Family member

\_\_\_\_ Friend, non-classmate

\_\_\_\_ Co-worker

\_\_\_\_ Fellow medical student, *not* in your class, who did not take the ASIST

training

\_\_\_\_ Fellow medical student, *not* in your class, who did take the ASIST training

\_\_\_\_ Fellow medical student from your class who did not take the ASIST training

\_\_\_\_ Fellow medical student from your class who did take the ASIST training

Describe the context of the discussion: \_\_\_\_\_

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## Appendix Z. Baseline questionnaire completed by all participants

Date (dd/mm/yyyy) \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Two digits of your day of birth: \_\_\_\_

First two letters of your mother's maiden name: \_\_\_\_

Last two digits of your social insurance number: \_\_\_\_

### Select 'True' or 'False' for the following questions:

- |  | True | False |
|--|------|-------|
| 1. Talking to a person about suicide will make them commit suicide.                  | ____ | ____  |
| 2. Anyone talking about suicide should be taken seriously.                           | ____ | ____  |
| 3. People serious about suicide cannot be helped.                                    | ____ | ____  |
| 4. Most people who attempt suicide do not want to die but want to escape their pain. | ____ | ____  |
| 5. Dramatic changes in behavior may be a signal for a suicide attempt.               | ____ | ____  |
| 6. Anyone can assist someone who is suicidal.  | ____ | ____  |
| 7. People at risk of suicide should be encouraged to talk about their wish to die.   | ____ | ____  |
| 8. People thinking about suicide also have reasons for living.                       | ____ | ____  |
| 9. Anyone can be at risk of suicide.   | ____ | ____  |

10. What are 3 things that would make you think a person is at risk of suicide?

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

The following items represent a series of excerpts from clinical sessions. Each excerpt begins with an expression by the patient concerning some aspect of the situation he / she faces, followed by two possible helper responses to the patient's remark.

You are to rate each response in terms of how appropriate or inappropriate you feel the reply is to the patient's comment. In the blank you should record a rating from -3 to +3, corresponding to the chart below. Be sure to respond to each item, and try not to leave any blanks.

- + 3 Highly appropriate response
- + 2 Appropriate response
- + 1 Marginally appropriate response
- 0 Neither appropriate nor inappropriate
- 1 Marginally inappropriate response
- 2 Inappropriate response
- 3 Highly inappropriate response

1. Patient: I decided to call in tonight because I really feel like I might do something to myself... I've been thinking about suicide.

\_\_\_\_\_ *Helper A:* You say you're suicidal, but what is it that's *really* bothering you?

\_\_\_\_\_ *Helper B:* Can you tell me more about your suicidal feelings?

2. Patient: And now my health is going downhill too, on top of all the rest. Without my husband around to care for me anymore, it just seems like the end of the world.

\_\_\_\_\_ *Helper A:* Try not to worry so much about it. Everything will be all right.

\_\_\_\_\_ *Helper B:* You must feel pretty lonely and afraid of what might happen.

3. Patient: But my thoughts have been so terrible...I could never tell them to anybody.

\_\_\_\_\_ *Helper A:* You can tell me. I'm a professional, and have been trained to be objective about these things.

\_\_\_\_\_ *Helper B:* So some of your ideas seem so frightening to you, that you imagine other people would be shocked to know you are thinking such things.

4. Patient: No one can understand the kind of pain I've been going through. Sometimes I just feel like I have to hurt myself, so I cut my wrists.

\_\_\_ *Helper A:* It seems like you've been suffering so much that cutting your wrists is the only way you can make the pain go away.

\_\_\_ *Helper B:* But you're so young, you have so much to live for. How can you think of killing yourself?

5. Patient: What are you anyway? Are you a doctor? How do you know what I've been going through? You've probably always had it pretty soft.

\_\_\_ *Helper A:* So you're wondering if I can understand how you feel.

\_\_\_ *Helper B:* You're not even giving me a chance. I've had a pretty rough life too; you're not the only one who's seen some hard times.

6. Patient: My life has been worthless ever since my wife, Emma, died four years ago. The kids are grown and married now, and I've been retired from my job at the railroad for some time. It just seems that I'd be better off dead.

\_\_\_ *Helper A:* But try to think of what Emma would want for you. She'd want you to continue leading a productive life, wouldn't she?

\_\_\_ *Helper B:* It sounds like everything just collapsed around you when Emma died. But what has happened recently to make things even worse, to make you think that dying is the only way out?

7. Patient: I really need help. It's just...{voice breaks: silence}

\_\_\_ *Helper A:* It must be hard for you to talk about what's bothering you.

\_\_\_ *Helper B:* Go on, I'm here to listen to you talk.

8. Patient: When you sum up my problem like that, it makes it seem less confusing and not so scary.

\_\_\_ *Helper A:* See, it really isn't so bad after all. It certainly isn't anything you would think of killing yourself over, is it?

\_\_\_ *Helper B:* Sometimes talking about problems does make them a bit clearer. I think you realize how dangerous your suicidal feelings were, and that's why you decided to contact me.

9. Patient: You were supposed to help me, but you've only made things worse.

\_\_\_\_ *Helper A:* I'm sorry. I was only trying to help.

\_\_\_\_ *Helper B:* You sound pretty angry.

10. Patient: How could you ever help me? Have you ever wanted to kill yourself?

\_\_\_\_ *Helper A:* It sounds like you're concerned about whether I can understand and help you.

\_\_\_\_ *Helper B:* Sure, I've thought about suicide sometimes. But I always found more realistic solutions to my problems.

11. Patient: I don't know...this whole thing with my wife really gets to me {sobs}. I try so hard to keep from crying...

\_\_\_\_ *Helper A:* Do you think that the reason it's hard for you to cry is because you're a man?

\_\_\_\_ *Helper B:* With all the hurt you're feeling, it must be impossible to hold those tears in.

12. Patient: How can I believe in God anymore? No God would ever let this happen to me; I've never done anything to deserve what's happened.

\_\_\_\_ *Helper A:* Things have gotten so bad, that it's difficult to see any meaning in the things that have happened to you.

\_\_\_\_ *Helper B:* Well, God works in mysterious ways. Maybe this is His way of testing your faith.

13. Patient: I don't know why I'm calling you. My family is financially well off, and my husband spends plenty of time with me, even though he has a successful law career. Even my kids have been doing well. They get good marks at school and have lots of free time activities with their friends. But nothing seems to interest me. Life is just a bore...

\_\_\_\_ *Helper A:* Considering all you have going for you, your problems can't be all that serious. Try to focus more on the positive aspects of your situation.



\_\_\_ *Helper B*: So even though things seem to be going well at one level, life still seems pretty depressing, even if it's hard to say exactly why.

14. Patient: I have to hang up now. My mother's coming home soon and I don't want her to know I've been talking to you.

\_\_\_ *Helper A*: Okay, but if you keep feeling suicidal, remember you can always call back.

\_\_\_ *Helper B*: All right, but first I want you to promise me you won't do anything to hurt yourself, until you call and talk to me. Will you repeat that promise?

15. Patient: Is it really true that many people feel this way? I thought I was the only one who had such dreadful, sinful ideas.

\_\_\_ *Helper A*: No, there are many people who suffer from mental illness. But with appropriate treatment by a qualified physician, some of these patients can be cured.

\_\_\_ *Helper B*: It is true. You're not the only one who has suicidal thoughts. And you can be helped to get through this crisis, just as others have been.

16. Patient: I'm so lonely, so tired {crying}. There just isn't anywhere left to turn.

\_\_\_ *Helper A*: You seem so alone, so miserable. Have you been feeling suicidal?

\_\_\_ *Helper B*: Come on now. Things can't be all that bad.

17. Patient: {Over telephone} It's hard to talk here, with all these people...

\_\_\_ *Helper A*: Would it help if I asked questions?

\_\_\_ *Helper B*: Why don't you call back some other time when you can talk more easily?

18. Patient: I have a gun pointed at my head right now, and if you don't help me, I'm going to pull the trigger!

\_\_\_ *Helper A*: You seem to be somewhat upset.

\_\_\_ *Helper B*: I want you to put down the gun so we can talk.

19. Patient: Why should you care about me, anyway?

\_\_\_ *Helper A*: I've been trained to care about people. That's my job.

\_\_\_\_ *Helper B:* Because I think your death would be a terrible waste, and it concerns me that things are so that you are considering suicide. You need help to get through this critical period.

20. Patient: I really hate my father! He's never shown any love for me, just complete disregard.

\_\_\_\_ *Helper A:* You must really be angry at him for not being there when you need him most.

\_\_\_\_ *Helper B:* You shouldn't feel that way. After all, he is your father, and he deserves some respect.

21. Patient: I don't think there's really anyone who cares whether I'm alive or dead.

\_\_\_\_ *Helper A:* It sounds like you're feeling pretty isolated.

\_\_\_\_ *Helper B:* Why do you think that no one cares about you anymore?

22. Patient: I tried going to a therapist once before, but it didn't help. Nothing I do now will change anything.

\_\_\_\_ *Helper A:* You've got to look on the bright side! There must be something you can do to make things better isn't there?

\_\_\_\_ *Helper B:* Okay, so you're feeling hopeless, like even a therapist couldn't help you. But has anyone else been helpful before – maybe a friend, relative, teacher, or clergyman?

23. Patient: My psychiatrist tells me I have an anxiety neurosis. Do you think that's what's wrong with me?

\_\_\_\_ *Helper A:* I'd like to know what this means to you, in this present situation. How do you feel about your problem?

\_\_\_\_ *Helper B:* I'm not sure I agree with that diagnosis. Maybe you should seek out some psychological testing, just to be certain.

24. Patient: I can't talk to anybody about my situation. Everyone is against me.

\_\_\_ *Helper A:* That isn't true. There are probably lots of people who care about you if you'd only give them a chance.

\_\_\_ *Helper B:* It must be difficult to find help when it's so hard to trust people.

25. Patient: {Voice slurred, unclear over telephone}

\_\_\_ *Helper A:* You sound so tired. Why don't you get some sleep and call back in the morning?

\_\_\_ *Helper B:* Your voice sounds so sleepy. Have you taken anything?

**These questions concern your opinions about suicide. Please indicate your level of agreement with each of the following statements below (strongly agree to strongly disagree). Choose only one (1) response for each statement. There are no 'right' or 'wrong' answers!**

1. It is always possible to help a person with suicidal thoughts.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

2. Suicide can never be justified.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

3. Taking one's own life is among one of the worst things to do to one's relatives.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

4. Most suicide attempts are impulsive actions (by nature).

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

5. Suicide is an acceptable means to terminate an incurable disease.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

6. Once a person has made up his/her mind about taking his/her own life, no one can stop him/her.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

7. Many suicide attempts are made because of revenge or to punish someone else.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

8. People who take their own lives are usually mentally ill.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

9. It is a human duty to try to stop someone from dying by suicide.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

10. When a person dies by suicide it is something that he/she has considered for a long time.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

11. There is a risk of evoking suicidal thoughts in a person's mind if you ask about it.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

12. People who make suicidal threats seldom complete suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

13. Suicide is a subject that one should not talk about.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

14. Loneliness could, for me, be a reason to take my life.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

15. Almost everyone has, at one time or another, thought about suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

16. There may be situations where the only reasonable resolution is suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

17. I could say that I would take my life without actually meaning it.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

18. Suicide can sometimes be a relief for those involved.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

19. Suicides among young people are particularly puzzling since they have everything to live for.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

20. I would consider the possibility of taking my life if I were to suffer from a severe, incurable disease.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

21. Once a person has suicidal thoughts, they will never let them go.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

22. Suicide happens without warning.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

23. Most people avoid talking about suicide.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

24. If someone wants to commit suicide it is their business and we should not interfere.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

25. It is mainly loneliness that drives people to suicide.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

26. A suicide attempt is essentially a cry for help.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

27. On the whole, I do not understand how people can take their lives.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

28. Usually relatives have no idea about what is going on when a person is thinking of suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

29. A person suffering from a severe, incurable disease expressing wishes to die should get that help to do so.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

30. I am prepared to help a person in a suicidal crisis by making contact.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

31. Anybody can die by suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

32. I can understand that people suffering from a severe, incurable disease die by suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

33. People who talk about suicide do not die by suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

34. People do have the right to take their own lives.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

35. Most suicide attempts are caused by conflicts with a close person.

Strongly agree     Agree     Undecided     Disagree     Strongly disagree

36. I would like to get help to take my own life if I were to suffer from a severe, incurable disease.

Strongly agree     Agree     Undecided     Disagree     Strongly disagree

37. Suicide can be prevented.

Strongly agree     Agree     Undecided     Disagree     Strongly disagree

**Now, please tell us a little bit about yourself.**

What is your date of birth? (dd/mm/yyyy)   /   /

What is your current age?

What is your sex?  Male  Female

What is your marital status?

- Married
- Living common-law
- Widowed
- Separated
- Divorced
- Never married





Do you know someone who has attempted or died by suicide? \_\_\_\_ Yes \_\_\_\_ No

If yes, who? (please mark all that apply)

- \_\_\_\_ Parent
- \_\_\_\_ Sibling
- \_\_\_\_ Grandparent
- \_\_\_\_ Other family member
- \_\_\_\_ Friend
- \_\_\_\_ Co-worker
- \_\_\_\_ Acquaintance

How confident would you say you are currently that you could intervene effectively with someone who is at risk for suicide?

\_\_\_\_ Very confident \_\_\_\_ Confident \_\_\_\_ Somewhat confident \_\_\_\_ Not at all confident

How skilled would you say you are currently at recognizing and intervening with someone who is at risk for suicide?

\_\_\_\_ Very skilled \_\_\_\_ Skilled \_\_\_\_ Somewhat skilled \_\_\_\_ Not at all skilled

How knowledgeable would you say you are currently about the intervention process of helping someone who is at risk for suicide?

\_\_\_\_ Very knowledgeable \_\_\_\_ Knowledgeable \_\_\_\_ Somewhat knowledgeable \_\_\_\_ Not at all knowledgeable

How prepared would you say you currently feel about helping someone who is at risk for suicide increase their suicide safety?

\_\_\_\_ Very prepared \_\_\_\_ Prepared \_\_\_\_ Somewhat prepared \_\_\_\_ Not at all prepared

**Thank you for taking the time to complete our questionnaire.**

## Appendix AA. Post-intervention questionnaire completed by participants in the control group

Date (dd/mm/yyyy) \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

Two digits of your day of birth: \_\_\_\_\_

First two letters of your mother's maiden name: \_\_\_\_\_

Last two digits of your social insurance number: \_\_\_\_\_

**Select 'True' or 'False' for the following questions:**

- |  | True  | False |
|--|-------|-------|
| 1. Talking to a person about suicide will make them commit suicide.                  | _____ | _____ |
| 2. Anyone talking about suicide should be taken seriously.                           | _____ | _____ |
| 3. People serious about suicide cannot be helped.                                    | _____ | _____ |
| 4. Most people who attempt suicide do not want to die but want to escape their pain. | _____ | _____ |
| 5. Dramatic changes in behavior may be a signal for a suicide attempt.               | _____ | _____ |
| 6. Anyone can assist someone who is suicidal.  | _____ | _____ |
| 7. People at risk of suicide should be encouraged to talk about their wish to die.   | _____ | _____ |
| 8. People thinking about suicide also have reasons for living.                       | _____ | _____ |
| 9. Anyone can be at risk of suicide.   | _____ | _____ |
| 10. What are 3 things that would make you think a person is at risk of suicide?      |       |       |

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

The following items represent a series of excerpts from clinical sessions. Each excerpt begins with an expression by the patient concerning some aspect of the situation he / she faces, followed by two possible helper responses to the patient's remark.

You are to rate each response in terms of how appropriate or inappropriate you feel the reply is to the patient's comment. In the blank you should record a rating from -3 to +3, corresponding to the chart below. Be sure to respond to each item, and try not to leave any blanks.

- + 3 Highly appropriate response
- + 2 Appropriate response
- + 1 Marginally appropriate response
- 0 Neither appropriate nor inappropriate
- 1 Marginally inappropriate response
- 2 Inappropriate response
- 3 Highly inappropriate response

1. Patient: I decided to call in tonight because I really feel like I might do something to myself... I've been thinking about suicide.

\_\_\_\_ *Helper A:* You say you're suicidal, but what is it that's *really* bothering you?

\_\_\_\_ *Helper B:* Can you tell me more about your suicidal feelings?

2. Patient: And now my health is going downhill too, on top of all the rest. Without my husband around to care for me anymore, it just seems like the end of the world.

\_\_\_\_ *Helper A:* Try not to worry so much about it. Everything will be all right.

\_\_\_\_ *Helper B:* You must feel pretty lonely and afraid of what might happen.

3. Patient: But my thoughts have been so terrible...I could never tell them to anybody.

\_\_\_\_ *Helper A:* You can tell me. I'm a professional, and have been trained to be objective about these things.

\_\_\_\_ *Helper B:* So some of your ideas seem so frightening to you, that you imagine other people would be shocked to know you are thinking such things.

4. Patient: No one can understand the kind of pain I've been going through. Sometimes I just feel like I have to hurt myself, so I cut my wrists.

\_\_\_\_ *Helper A:* It seems like you've been suffering so much that cutting your wrists is the only way you can make the pain go away.

\_\_\_\_ *Helper B:* But you're so young, you have so much to live for. How can you think of killing yourself?

5. Patient: What are you anyway? Are you a doctor? How do you know what I've been going through? You've probably always had it pretty soft.

\_\_\_\_ *Helper A:* So you're wondering if I can understand how you feel.

\_\_\_\_ *Helper B:* You're not even giving me a chance. I've had a pretty rough life too; you're not the only one who's seen some hard times.

6. Patient: My life has been worthless ever since my wife, Emma, died four years ago. The kids are grown and married now, and I've been retired from my job at the railroad for some time. It just seems that I'd be better off dead.

\_\_\_\_ *Helper A:* But try to think of what Emma would want for you. She'd want you to continue leading a productive life, wouldn't she?

\_\_\_\_ *Helper B:* It sounds like everything just collapsed around you when Emma died. But what has happened recently to make things even worse, to make you think that dying is the only way out?

7. Patient: I really need help. It's just...{voice breaks: silence}

\_\_\_\_ *Helper A:* It must be hard for you to talk about what's bothering you.

\_\_\_\_ *Helper B:* Go on, I'm here to listen to you talk.

8. Patient: When you sum up my problem like that, it makes it seem less confusing and not so scary.

\_\_\_\_ *Helper A:* See, it really isn't so bad after all. It certainly isn't anything you would think of killing yourself over, is it?

\_\_\_\_ *Helper B:* Sometimes talking about problems does make them a bit clearer. I think you realize how dangerous your suicidal feelings were, and that's why you decided to contact me.

9. Patient: You were supposed to help me, but you've only made things worse.

\_\_\_\_ *Helper A:* I'm sorry. I was only trying to help.

\_\_\_\_ *Helper B:* You sound pretty angry.

10. Patient: How could you ever help me? Have you ever wanted to kill yourself?

\_\_\_\_ *Helper A:* It sounds like you're concerned about whether I can understand and help you.

\_\_\_\_ *Helper B:* Sure, I've thought about suicide sometimes. But I always found more realistic solutions to my problems.

11. Patient: I don't know...this whole thing with my wife really gets to me {sobs}. I try so hard to keep from crying...

\_\_\_\_ *Helper A:* Do you think that the reason it's hard for you to cry is because you're a man?

\_\_\_\_ *Helper B:* With all the hurt you're feeling, it must be impossible to hold those tears in.

12. Patient: How can I believe in God anymore? No God would ever let this happen to me; I've never done anything to deserve what's happened.

\_\_\_\_ *Helper A:* Things have gotten so bad, that it's difficult to see any meaning in the things that have happened to you.

\_\_\_\_ *Helper B:* Well, God works in mysterious ways. Maybe this is His way of testing your faith.

13. Patient: I don't know why I'm calling you. My family is financially well off, and my husband spends plenty of time with me, even though he has a successful law career. Even my kids have

been doing well. They get good marks at school and have lots of free time activities with their friends. But nothing seems to interest me. Life is just a bore...

\_\_\_ *Helper A:* Considering all you have going for you, your problems can't be all that serious. Try to focus more on the positive aspects of your situation.

\_\_\_ *Helper B:* So even though things seem to be going well at one level, life still seems pretty depressing, even if it's hard to say exactly why.

14. Patient: I have to hang up now. My mother's coming home soon and I don't want her to know I've been talking to you.

\_\_\_ *Helper A:* Okay, but if you keep feeling suicidal, remember you can always call back.

\_\_\_ *Helper B:* All right, but first I want you to promise me you won't do anything to hurt yourself, until you call and talk to me. Will you repeat that promise?

15. Patient: Is it really true that many people feel this way? I thought I was the only one who had such dreadful, sinful ideas.

\_\_\_ *Helper A:* No, there are many people who suffer from mental illness. But with appropriate treatment by a qualified physician, some of these patients can be cured.

\_\_\_ *Helper B:* It is true. You're not the only one who has suicidal thoughts. And you can be helped to get through this crisis, just as others have been.

16. Patient: I'm so lonely, so tired {crying}. There just isn't anywhere left to turn.

\_\_\_ *Helper A:* You seem so alone, so miserable. Have you been feeling suicidal?

\_\_\_ *Helper B:* Come on now. Things can't be all that bad.

17. Patient: {Over telephone} It's hard to talk here, with all these people...

\_\_\_ *Helper A:* Would it help if I asked questions?

\_\_\_ *Helper B:* Why don't you call back some other time when you can talk more easily?

18. Patient: I have a gun pointed at my head right now, and if you don't help me, I'm going to pull the trigger!

\_\_\_ *Helper A:* You seem to be somewhat upset.

\_\_\_ *Helper B:* I want you to put down the gun so we can talk.

19. Patient: Why should you care about me, anyway?

\_\_\_\_ *Helper A:* I've been trained to care about people. That's my job.

\_\_\_\_ *Helper B:* Because I think your death would be a terrible waste, and it concerns me that things are so that you are considering suicide. You need help to get through this critical period.

20. Patient: I really hate my father! He's never shown any love for me, just complete disregard.

\_\_\_\_ *Helper A:* You must really be angry at him for not being there when you need him most.

\_\_\_\_ *Helper B:* You shouldn't feel that way. After all, he is your father, and he deserves some respect.

21. Patient: I don't think there's really anyone who cares whether I'm alive or dead.

\_\_\_\_ *Helper A:* It sounds like you're feeling pretty isolated.

\_\_\_\_ *Helper B:* Why do you think that no one cares about you anymore?

22. Patient: I tried going to a therapist once before, but it didn't help. Nothing I do now will change anything.

\_\_\_\_ *Helper A:* You've got to look on the bright side! There must be something you can do to make things better isn't there?

\_\_\_\_ *Helper B:* Okay, so you're feeling hopeless, like even a therapist couldn't help you. But has anyone else been helpful before – maybe a friend, relative, teacher, or clergyman?

23. Patient: My psychiatrist tells me I have an anxiety neurosis. Do you think that's what's wrong with me?

\_\_\_\_ *Helper A:* I'd like to know what this means to you, in this present situation. How do you feel about your problem?

\_\_\_\_ *Helper B:* I'm not sure I agree with that diagnosis. Maybe you should seek out some psychological testing, just to be certain.



24. Patient: I can't talk to anybody about my situation. Everyone is against me.

\_\_\_\_ *Helper A:* That isn't true. There are probably lots of people who care about you if you'd only give them a chance.

\_\_\_\_ *Helper B:* It must be difficult to find help when it's so hard to trust people.

25. Patient: {Voice slurred, unclear over telephone}

\_\_\_\_ *Helper A:* You sound so tired. Why don't you get some sleep and call back in the morning?

\_\_\_\_ *Helper B:* Your voice sounds so sleepy. Have you taken anything?

**These questions concern your opinions about suicide. Please indicate your level of agreement with each of the following statements below (strongly agree to strongly disagree). Choose only one (1) response for each statement. There are no 'right' or 'wrong' answers!**

1. It is always possible to help a person with suicidal thoughts.

\_\_\_\_ Strongly agree    \_\_\_\_ Agree    \_\_\_\_ Undecided    \_\_\_\_ Disagree    \_\_\_\_ Strongly disagree

2. Suicide can never be justified.

\_\_\_\_ Strongly agree    \_\_\_\_ Agree    \_\_\_\_ Undecided    \_\_\_\_ Disagree    \_\_\_\_ Strongly disagree

3. Taking one's own life is among one of the worst things to do to one's relatives.

\_\_\_\_ Strongly agree    \_\_\_\_ Agree    \_\_\_\_ Undecided    \_\_\_\_ Disagree    \_\_\_\_ Strongly disagree

4. Most suicide attempts are impulsive actions (by nature).

\_\_\_\_ Strongly agree    \_\_\_\_ Agree    \_\_\_\_ Undecided    \_\_\_\_ Disagree    \_\_\_\_ Strongly disagree

5. Suicide is an acceptable means to terminate an incurable disease.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

6. Once a person has made up his/her mind about taking his/her own life, no one can stop him/her.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

7. Many suicide attempts are made because of revenge or to punish someone else.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

8. People who take their own lives are usually mentally ill.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

9. It is a human duty to try to stop someone from dying by suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

10. When a person dies by suicide it is something that he/she has considered for a long time.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

11. There is a risk of evoking suicidal thoughts in a person's mind if you ask about it.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

12. People who make suicidal threats seldom complete suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

13. Suicide is a subject that one should not talk about.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

14. Loneliness could, for me, be a reason to take my life.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

15. Almost everyone has, at one time or another, thought about suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

16. There may be situations where the only reasonable resolution is suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

17. I could say that I would take my life without actually meaning it.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

18. Suicide can sometimes be a relief for those involved.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

19. Suicides among young people are particularly puzzling since they have everything to live for.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

20. I would consider the possibility of taking my life if I were to suffer from a severe, incurable disease.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

21. Once a person has suicidal thoughts, they will never let them go.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

22. Suicide happens without warning.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

23. Most people avoid talking about suicide.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

24. If someone wants to commit suicide it is their business and we should not interfere.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

25. It is mainly loneliness that drives people to suicide.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

26. A suicide attempt is essentially a cry for help.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

27. On the whole, I do not understand how people can take their lives.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

28. Usually relatives have no idea about what is going on when a person is thinking of suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

29. A person suffering from a severe, incurable disease expressing wishes to die should get that help to do so.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

30. I am prepared to help a person in a suicidal crisis by making contact.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

31. Anybody can die by suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

32. I can understand that people suffering from a severe, incurable disease die by suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

33. People who talk about suicide do not die by suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

34. People do have the right to take their own lives.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

35. Most suicide attempts are caused by conflicts with a close person.

Strongly agree     Agree     Undecided     Disagree     Strongly disagree

36. I would like to get help to take my own life if I were to suffer from a severe, incurable disease.

Strongly agree     Agree     Undecided     Disagree     Strongly disagree

37. Suicide can be prevented.

Strongly agree     Agree     Undecided     Disagree     Strongly disagree

**Now, please update us about yourself.**

Has your marital status changed since the last questionnaire?  Yes  No

If yes, what is your current marital status?

- Married
- Living common-law
- Widowed
- Separated
- Divorced
- Never married

Have you completed your core clerkship in psychiatry since the last questionnaire?

Yes, just finished it     No, not yet     Currently in progress  
 Already completed at time of last questionnaire

Have you completed an elective in psychiatry since the last questionnaire?

Yes, just finished it       No       Currently in progress  
 Already completed at time of last questionnaire

Do you still plan to complete an elective (or an additional one if one has already been completed) in psychiatry?       Yes       No       Undecided

Have you changed your career plans for residency since the last questionnaire?  Yes  No

If yes, what residency specialty program have you or do you plan to apply for (check all that apply)?

- Family medicine
  - Psychiatry
  - Pediatrics
  - Internal medicine
  - Surgical specialty
  - Obstetrics/gynecology
  - Other, please specify
- 

Since the time of the last questionnaire, have you had any suicide prevention education or training outside of your medical school training?

Yes       No

If yes, please specify

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Have you talked openly and directly with someone at risk for suicide since the last questionnaire?

Yes  No

Since the time of the last questionnaire, do you know someone who has attempted or died by suicide?  Yes  No

If yes, who? (please mark all that apply)

- Parent
- Sibling
- Grandparent
- Other family member
- Friend
- Co-worker
- Acquaintance

How confident would you say you are currently that you could intervene effectively with someone who is at risk for suicide?

Very confident    Confident    Somewhat confident    Not at all confident

How skilled would you say you are currently at recognizing and intervening with someone who is at risk for suicide?

Very skilled    Skilled    Somewhat skilled    Not at all skilled

How knowledgeable would you say you are currently about the intervention process of helping someone who is at risk for suicide?

Very knowledgeable    Knowledgeable    Somewhat knowledgeable    Not at all knowledgeable

How prepared would you say you currently feel about helping someone who is at risk for suicide increase their suicide safety?

Very prepared    Prepared    Somewhat prepared    Not at all prepared

Did you do any extra work to prepare for participation in this study (e.g., review suicide assessment scales prior to OSCEs)?

If yes, what did you study? \_\_\_\_\_



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**Thank you for taking the time to complete our questionnaire.**

## Appendix BB. Post-intervention questionnaire completed by participants in the ASIST intervention group

Date (dd/mm/yyyy) \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

Two digits of your day of birth: \_\_\_\_\_

First two letters of your mother's maiden name: \_\_\_\_\_

Last two digits of your social insurance number: \_\_\_\_\_

### Select 'True' or 'False' for the following questions:

- |  | True  | False |
|--|-------|-------|
| 1. Talking to a person about suicide will make them commit suicide.                  | _____ | _____ |
| 2. Anyone talking about suicide should be taken seriously.                           | _____ | _____ |
| 3. People serious about suicide cannot be helped.                                    | _____ | _____ |
| 4. Most people who attempt suicide do not want to die but want to escape their pain. | _____ | _____ |
| 5. Dramatic changes in behavior may be a signal for a suicide attempt.               | _____ | _____ |
| 6. Anyone can assist someone who is suicidal.  | _____ | _____ |
| 7. People at risk of suicide should be encouraged to talk about their wish to die.   | _____ | _____ |
| 8. People thinking about suicide also have reasons for living.                       | _____ | _____ |
| 9. Anyone can be at risk of suicide.   | _____ | _____ |
| 10. What are 3 things that would make you think a person is at risk of suicide?      |       |       |

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

The following items represent a series of excerpts from clinical sessions. Each excerpt begins with an expression by the patient concerning some aspect of the situation he / she faces, followed by two possible helper responses to the patient's remark.

You are to rate each response in terms of how appropriate or inappropriate you feel the reply is to the patient's comment. In the blank you should record a rating from -3 to +3, corresponding to the chart below. Be sure to respond to each item, and try not to leave any blanks.

- + 3 Highly appropriate response
- + 2 Appropriate response
- + 1 Marginally appropriate response
- 0 Neither appropriate nor inappropriate
- 1 Marginally inappropriate response
- 2 Inappropriate response
- 3 Highly inappropriate response

1. Patient: I decided to call in tonight because I really feel like I might do something to myself... I've been thinking about suicide.

\_\_\_\_ *Helper A:* You say you're suicidal, but what is it that's *really* bothering you?

\_\_\_\_ *Helper B:* Can you tell me more about your suicidal feelings?

2. Patient: And now my health is going downhill too, on top of all the rest. Without my husband around to care for me anymore, it just seems like the end of the world.

\_\_\_\_ *Helper A:* Try not to worry so much about it. Everything will be all right.

\_\_\_\_ *Helper B:* You must feel pretty lonely and afraid of what might happen.

3. Patient: But my thoughts have been so terrible...I could never tell them to anybody.

\_\_\_\_ *Helper A:* You can tell me. I'm a professional, and have been trained to be objective about these things.

\_\_\_\_ *Helper B:* So some of your ideas seem so frightening to you, that you imagine other people would be shocked to know you are thinking such things.

4. Patient: No one can understand the kind of pain I've been going through. Sometimes I just feel like I have to hurt myself, so I cut my wrists.

\_\_\_\_ *Helper A:* It seems like you've been suffering so much that cutting your wrists is the only way you can make the pain go away.

\_\_\_\_ *Helper B:* But you're so young, you have so much to live for. How can you think of killing yourself?

5. Patient: What are you anyway? Are you a doctor? How do you know what I've been going through? You've probably always had it pretty soft.

\_\_\_\_ *Helper A:* So you're wondering if I can understand how you feel.

\_\_\_\_ *Helper B:* You're not even giving me a chance. I've had a pretty rough life too; you're not the only one who's seen some hard times.

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\_\_\_\_ *Helper A:* But try to think of what Emma would want for you. She'd want you to continue leading a productive life, wouldn't she?

\_\_\_\_ *Helper B:* It sounds like everything just collapsed around you when Emma died. But what has happened recently to make things even worse, to make you think that dying is the only way out?

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\_\_\_\_ *Helper A:* It must be hard for you to talk about what's bothering you.

\_\_\_\_ *Helper B:* Go on, I'm here to listen to you talk.

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25. Patient: {Voice slurred, unclear over telephone}

\_\_\_\_ *Helper A:* You sound so tired. Why don't you get some sleep and call back in the morning?

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3. Taking one's own life is among one of the worst things to do to one's relatives.

\_\_\_\_ Strongly agree    \_\_\_\_ Agree    \_\_\_\_ Undecided    \_\_\_\_ Disagree    \_\_\_\_ Strongly disagree

4. Most suicide attempts are impulsive actions (by nature).

\_\_\_\_ Strongly agree    \_\_\_\_ Agree    \_\_\_\_ Undecided    \_\_\_\_ Disagree    \_\_\_\_ Strongly disagree

5. Suicide is an acceptable means to terminate an incurable disease.



\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

6. Once a person has made up his/her mind about taking his/her own life, no one can stop him/her.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

7. Many suicide attempts are made because of revenge or to punish someone else.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

8. People who take their own lives are usually mentally ill.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

9. It is a human duty to try to stop someone from dying by suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

10. When a person dies by suicide it is something that he/she has considered for a long time.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

11. There is a risk of evoking suicidal thoughts in a person's mind if you ask about it.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

12. People who make suicidal threats seldom complete suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

13. Suicide is a subject that one should not talk about.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

14. Loneliness could, for me, be a reason to take my life.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

15. Almost everyone has, at one time or another, thought about suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

16. There may be situations where the only reasonable resolution is suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

17. I could say that I would take my life without actually meaning it.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

18. Suicide can sometimes be a relief for those involved.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

19. Suicides among young people are particularly puzzling since they have everything to live for.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

20. I would consider the possibility of taking my life if I were to suffer from a severe, incurable disease.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

21. Once a person has suicidal thoughts, they will never let them go.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

22. Suicide happens without warning.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

23. Most people avoid talking about suicide.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

24. If someone wants to commit suicide it is their business and we should not interfere.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

25. It is mainly loneliness that drives people to suicide.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

26. A suicide attempt is essentially a cry for help.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

27. On the whole, I do not understand how people can take their lives.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

28. Usually relatives have no idea about what is going on when a person is thinking of suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

29. A person suffering from a severe, incurable disease expressing wishes to die should get that help to do so.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

30. I am prepared to help a person in a suicidal crisis by making contact.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

31. Anybody can die by suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

32. I can understand that people suffering from a severe, incurable disease die by suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

33. People who talk about suicide do not die by suicide.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

34. People do have the right to take their own lives.

\_\_\_ Strongly agree \_\_\_ Agree \_\_\_ Undecided \_\_\_ Disagree \_\_\_ Strongly disagree

35. Most suicide attempts are caused by conflicts with a close person.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

36. I would like to get help to take my own life if I were to suffer from a severe, incurable disease.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

37. Suicide can be prevented.

\_\_\_ Strongly agree    \_\_\_ Agree    \_\_\_ Undecided    \_\_\_ Disagree    \_\_\_ Strongly disagree

**The next questions are about your thoughts after completing the ASIST course. Choose only one (1) response, the answer that fits best, for each statement. Under specific highlights, feel free to include any information you feel will elaborate better on your responses. Take time to think about each question before answering.**

1. Did you enjoy the training?

\_\_\_ A lot    \_\_\_ Some    \_\_\_ A little    \_\_\_ Not at all

Specific highlights

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2. Did you find the training useful?

\_\_\_ A lot    \_\_\_ Some    \_\_\_ A little    \_\_\_ Not at all

Specific highlights

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3. Was the training a good use of your time?

\_\_\_ A lot     \_\_\_ Some     \_\_\_ A little     \_\_\_ Not at all

Specific highlights

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4. Was the training relevant?

\_\_\_ A lot     \_\_\_ Some     \_\_\_ A little     \_\_\_ Not at all

Specific highlights

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5. Did you acquire new ideas and/or knowledge about suicide intervention from the training?

\_\_\_ A lot     \_\_\_ Some     \_\_\_ A little     \_\_\_ Not at all

Specific highlights

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6. Do you think you are more willing to intervene with a person at risk for suicide than prior to taking the intervention training?

A lot     Somewhat     A little     Not at all

What parts of the training helped you feel more willing to intervene with a person at risk?

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7. To what extent do you think you are better able to help a person at risk for suicide than prior to the training?

A lot     Somewhat     A little     Not at all

What parts of the workshop helped you feel more able to help a person at risk?

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8. Did your understanding of the impact of attitudes on someone at risk for suicide and suicide intervention change over the course of the training?

A lot     Some     A little     Not at all

9. How likely is it that you will make use of this training?

Very likely     Somewhat likely     Undecided     Somewhat unlikely     Very unlikely

10. How likely are you to recommend this suicide intervention training to others?

Very likely     Somewhat likely     Undecided     Somewhat unlikely     Very unlikely

11. Which elements of the training were *most* useful? (check all that apply)

Discussing impact of attitudes on suicide and suicide prevention

- Learning the ASIST suicide intervention model (SIM)
- Practicing skills through simulation scenarios
- Video learning aids
- The ASIST workbook
- The suicide intervention handbook
- ASIST wallet-sized card
- ASIST leaflet
- Networking resources for caregivers

12. Which elements of the training were *least* useful? (check all that apply)

- Discussing impact of attitudes on suicide and suicide prevention
- Learning the ASIST suicide intervention model (SIM)
- Practicing skills through simulation scenarios
- Video learning aids
- The ASIST workbook
- The suicide intervention handbook
- ASIST wallet-sized card
- ASIST leaflet
- Networking resources for caregivers

13. Do you know where to refer a person at risk for suicide for help?  Yes  No

14. Have you been able to use the suicide intervention training to some benefit?

Yes  No, not yet

15. Do you feel there should be some follow-up training after ASIST training?  Yes  No

If yes, please specify \_\_\_\_\_

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16. What has been the most challenging aspect of using the suicide intervention training?

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17. Did you discuss the intervention training with others? \_\_\_\_ Yes \_\_\_\_ No

If yes, with whom? (please mark all that apply)

\_\_\_\_ Spouse, significant other, partner

\_\_\_\_ Family member

\_\_\_\_ Friend, non-classmate

\_\_\_\_ Co-worker

\_\_\_\_ Fellow medical student, *not* in your class, who did not take the ASIST training

\_\_\_\_ Fellow medical student, *not* in your class, who did take the ASIST training

\_\_\_\_ Fellow medical student from your class who did not take the ASIST training

\_\_\_\_ Fellow medical student from your class who did take the ASIST training

Describe the context of the discussion: \_\_\_\_\_

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18. Did you show the training materials to others? \_\_\_\_ Yes \_\_\_\_ No

If yes, to whom? (please mark all that apply)

\_\_\_\_ Spouse, significant other, partner

\_\_\_\_ Family member

\_\_\_\_ Friend, non-classmate

\_\_\_\_ Co-worker

\_\_\_\_ Fellow medical student, *not* in your class, who did not take the ASIST training

\_\_\_\_ Fellow medical student, *not* in your class, who did take the ASIST training

\_\_\_ Fellow medical student from your class who did not take the ASIST training

\_\_\_ Fellow medical student from your class who did take the ASIST training

Describe the context of the discussion: \_\_\_\_\_

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**Now, please update us about yourself.**

Has your marital status changed since the last questionnaire? \_\_\_ Yes \_\_\_ No

If yes, what is your current marital status?

\_\_\_ Married

\_\_\_ Living common-law

\_\_\_ Widowed

\_\_\_ Separated

\_\_\_ Divorced

\_\_\_ Never married

Have you completed your core clerkship in psychiatry since the last questionnaire?

\_\_\_ Yes, just finished it \_\_\_ No, not yet \_\_\_ Currently in progress

\_\_\_ Already completed at time of last questionnaire

Have you completed an elective in psychiatry since the last questionnaire?

\_\_\_ Yes, just finished it \_\_\_ No \_\_\_ Currently in progress

\_\_\_ Already completed at time of last questionnaire

Do you still plan to complete an elective (or an additional one if one has already been completed) in psychiatry? \_\_\_ Yes \_\_\_ No \_\_\_ Undecided

Have you changed your career plans for residency since the last questionnaire? \_\_\_\_ Yes \_\_\_\_

No

If yes, what residency specialty program have you or do you plan to apply for (check all that apply)?

- Family medicine
  - Psychiatry
  - Pediatrics
  - Internal medicine
  - Surgical specialty
  - Obstetrics/gynecology
  - Other, please specify
- 

Since the time of the last questionnaire, have you had any suicide prevention education or training outside of your medical school training?

Yes  No

If yes, please specify

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Have you talked openly and directly with someone at risk for suicide since the last questionnaire?

Yes  No

Since the time of the last questionnaire, do you know someone who has attempted or died by suicide? \_\_\_\_ Yes \_\_\_\_ No

If yes, who? (please mark all that apply)

- Parent
- Sibling
- Grandparent
- Other family member
- Friend

\_\_\_ Co-worker

\_\_\_ Acquaintance

How confident would you say you are currently that you could intervene effectively with someone who is at risk for suicide?

\_\_\_ Very confident \_\_\_ Confident \_\_\_ Somewhat confident \_\_\_ Not at all confident

How skilled would you say you are currently at recognizing and intervening with someone who is at risk for suicide?

\_\_\_ Very skilled \_\_\_ Skilled \_\_\_ Somewhat skilled \_\_\_ Not at all skilled

How knowledgeable would you say you are currently about the intervention process of helping someone who is at risk for suicide?

\_\_\_ Very knowledgeable \_\_\_ Knowledgeable \_\_\_ Somewhat knowledgeable \_\_\_ Not at all knowledgeable

How prepared would you say you currently feel about helping someone who is at risk for suicide increase their suicide safety?

\_\_\_ Very prepared \_\_\_ Prepared \_\_\_ Somewhat prepared \_\_\_ Not at all prepared

Did you do any extra work to prepare for participation in this study (e.g., review suicide assessment scales prior to OSCEs)?

If yes, what did you study? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Thank you for taking the time to complete our questionnaire.**