An Evaluation of a Public Health Intervention Aimed at Increasing Knowledge and Improving Behaviors Surrounding Suicide Prevention among Genesee Health System Staff and Genesee County Community Members

by

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Abstract

Background: Genesee Health System (GHS) implemented a Suicide Prevention Campaign from January 2021 through September 2021. The Suicide Prevention campaign was aimed at increasing knowledge and behaviors surrounding suicide prevention among community members and professionals in Genesee County. The concepts of the campaign aligned with common gatekeeper trainings and was implemented on a multisectoral level. Sectors targeted for the intervention included GHS staff and external community members. The campaign utilized a one-hour virtual training module through LivingWorks Start. The training module administers different scenarios and interactive events that cover topics relating to suicide risk, steps to recognize thoughts of suicide, and safety resources that participants can access using LivingWorks Connect, an online resource portal.

Methods: Participants of the training module completed pre- and post-surveys focusing on the following questions: how willing participants are to talk with someone who may be thinking about suicide, recognizing the signs of someone who may be thinking about suicide, knowing where to get help for someone, and confidence in the ability to help someone who may be thinking about suicide. Upon completion of the post-survey, participants received a certificate of completion for the training course administered through LivingWorks Start. An outcome evaluation compared baseline data (pre-test) to follow up data (post-test) to analyze the change in knowledge and behavior of participants. The evaluation focused on determining whether the training tool was successful at meeting the expected outcomes by assessing the impact and change in knowledge of those participating in the training regarding access and delivery of suicide care.

Results: There were 872 participants who received LivingWorks Start training licenses; of these, 736 completed the pre- and post-survey. Participants consisted of GHS staff, Substance Use Disorder (SUD) treatment providers, SUD prevention providers, faith-based partners, neighborhood groups, local school districts, local universities, community organizations and coalitions, law enforcement, and hospitals. Most respondents were female, with the average age ranging from 20 to 49 years old. Answers of agreement for questions related to willingness to engage in preventative behaviors increased from pre- to post-survey. Overall, participants reported feeling more confident in their ability to help someone who may be thinking about suicide from pre- to post-test. Knowledge pertaining to recognizing the signs of risk and how to access safety resources increased from pre- to post-test.

Conclusions: Knowledge about access and delivery of suicide care from pre- to post-test increased for the majority of participants. Additionally, the change in likelihood and confidence of participants to speak up and reach out increased from pre- to post-test. The intervention tool was successful in meeting the objectives of the Suicide Prevention Campaign for GHS by contributing to improved knowledge. Randomized control trials are needed to confirm the findings.

Introduction

Every 12 minutes someone dies from suicide, leaving behind an average of 135 people to grieve their death, as reported by the Substance Abuse and Mental Health Services Administration (SAMHSA) ("Help Prevent Suicide", 2022). Suicide is a tragedy that impacts communities all over the world. It does not stereotype or discriminate amongst those it can affect. The World Health Organization (WHO) estimates that 703,000 people take their own lives every year (*Suicide,*n.d.). In 2020, the United States had an estimated 1.20 million suicide attempts and 45,979 deaths by suicide (*Facts about suicide*, 2022). It is the tenth leading cause of death in Michigan, with approximately 1,500 deaths by suicide last reported in 2020 (*Facts about suicide*, 2022). Public health is pivotal in addressing suicide prevention, as death by suicide can be prevented through continuous research and adopting evidence-based practices (*Facts about suicide*, 2022). Suicide prevention trainings are a common tool utilized by public health professionals to equip specific audiences with relevant training. Public health professionals can help implement suicide prevention trainings on a multisectoral level, providing an opportunity to collectively prevent suicide through targeted sectors that address underlying risks influencing suicidal behaviors.

It is imperative that suicide prevention trainings be introduced on a multisectoral level within communities because it allows for sectors that may address other underlying issues influencing suicidal behaviors to collaborate in the prevention of suicide (*National Suicide Prevention Strategies, 2018*). Including diverse community sectors helps promote additional avenues of support for individuals who may be thinking about suicide to interact with outside of the clinical setting. It is essential to recognize that suicide is typically not the result of one single factor or influence, it is the cumulation of multiple influences across all areas of life. Biological,

psychological, interpersonal, environmental, and societal influences can all act as protective factors, but when they act as a risk factor, the likelihood of suicide greatly increases (*Facts about suicide*, 2022; (“Suicide Prevention”, 2021). By targeting sectors that address diverse avenues of influence, a network of safety within the community can be established to combat suicide as whole.

The social ecological model suggests that behaviors shape and are shaped by the social environment, this suggests that an environment that is supportive of suicide prevention measures, and makes an effort to promote awareness, is more likely to adopt behaviors that promote a network of safety for those at risk of suicide (Glanz, 2010). Therefore, by creating an interprofessional environment that addresses individual, interpersonal, organizational, community, and policy levels of influences, supportive behaviors of suicide prevention can be more easily adopted within various community sectors. This type of supportive environment is key in creating preventative measures that will be set up for success within a targeted community.

Preventative measures that are recommended by the Center for Disease Control and Prevention (CDC) include strengthening access to and delivery of suicide care, promoting connectedness, creating protective environments, strengthening economic supports, and identifying and supporting people at risk (*Facts about suicide*, 2022). To successfully implement suicide prevention measures, such as those suggested by the CDC, the whole community needs to be involved, including sectors beyond mental healthcare. Some of these sectors may include, but are not limited to, public and private schools, government agencies, youth outreach programs, the local media, religious organizations, law enforcement, and housing and

development agencies. This can be accomplished by using a multisectoral approach when implementing preventative measures.

One preventative measure suggested by the CDC is to identify and support people at risk (*Facts about suicide*, 2022). To effectively identify and support people at risk for suicide, it should be understood that some groups pose a greater risk for suicide based on different life situations. High-risk groups for suicide have been identified as veterans, low socioeconomic status individuals, sexual and gender minorities, middle-aged adults, and members of certain racial and ethnic minority groups (*Facts about suicide*, 2022; "Suicide Prevention", 2021). Additional risk factors that can also influence or be associated with suicide include mental illness, social isolation, barriers to health care, stigma associated with mental illness or seeking professional help, and substance addiction (*Facts about suicide*, 2022). Understanding who the vulnerable populations are and risk factors associated with suicide is of utmost importance, as these groups generally experience higher rates of suicide compared to the general population. Once identified, professionals can more precisely employ preventative measures amongst at risk populations.

One way to support at risk populations is through gatekeeper training (Cross et al., 2010). The goal of gatekeeper training is to help learners identify those who may be at risk of suicide and how to respond, such as being able to provide assistance in connecting someone to support services. Gatekeepers are defined as, "Individuals in a community who have face-to-face contact with large numbers of community members as part of their usual routine" (Burnette, Ramchand & Ayer, 2015). For the purposes of this study, gatekeeper refers to a wide variety of community members and professionals from different sectors within Genesee County, who performed the training responsibilities that are expected of suicide prevention gatekeeper trainings.

Gatekeeper trainings are often tailored to specific audiences and can be presented in a variety of ways, including in-person workshops, video trainings, guided roleplay (including online simulations), and educational presentations. The length of the training can also be audience based, with some lasting 1-hour and others taking place over several days. Having the ability to modify gatekeeper trainings creates specific content that is more appropriate for the identified sector involved in the intervention. Audience specific trainings promote more participation in and comprehension of trainings. For example, a SUD prevention specialist would receive a more simplified version of gatekeeper training when compared to the training of a clinical psychologist. It can also allow for a varied approach with regards to the size of the targeted audience; an online format, compared to in-person group trainings, can reach participants on a larger scale. Many types of gatekeeper trainings have proven effective as a prevention measure, and can be seen implemented all over the world, including here in Genesee County.

As part of their Suicide Prevention Campaign, Genesee Health System (GHS) targeted a multisectoral audience to complete a virtual training module provided by LivingWorks Start. The present study will evaluate the virtual gatekeeper training tool as a way to support future suicide prevention initiatives for both GHS and public health The present study will look at previous literature to compare the results of various styles of gatekeeper trainings. It will then narrow in on online specific gatekeeper trainings to gauge the current state of research. The evaluation will provide insight into participants knowledge and likelihood to engage in behaviors associated with suicide prevention by including raw data that can be used for future public health policies and programs, as well as manipulated data to synthesize into conclusions for the program.

Genesee Health System

Located in Flint, MI, Genesee Health System (GHS) is Genesee County's public mental health provider dedicated to providing the highest quality, most effective services and supports available to meet the mental health, developmental disabilities, and substance use disorder needs of the adults, children, and families they serve in Genesee County. GHS also prioritizes treating co-occurring disorders (i.e., looking at Substance Use Disorder (SUD) and mental illness) collaboratively, rather than independently. GHS felt it necessary to develop an intervention aimed at reducing the risk of suicide among persons with a co-occurring disorders by taking the first step in creating a community-based network of safety. They have recognized the apparent link between substance use and suicide, and with the added outcomes related to the COVID-19 pandemic, they utilized a public health framework to reduce suicidal behaviors and suicide rates through their Suicide Prevention Campaign.

The Suicide Prevention Campaign was created to aid members of the community, such as treatment providers, prevention providers, faith-based organizations, schools, and law enforcement with tools and resources typical of gatekeeper trainings for suicide prevention. Integrated care models involving mental health professionals, care managers, and primary care physicians working together has already been identified as a recommended treatment plan for those diagnosed with depression and post-traumatic stress disorder. Recent evidence suggests that this approach could also benefit those with a diagnosed Substance Use Disorder (SUD), as well as reducing the risk of suicide ("Suicide Prevention", 2021).

Rationale for GHS Suicide Prevention Campaign

Multiple risk factors are associated with suicide; however, SUD is an under-observed risk group that has been linked to a substantial number of suicides and suicide attempts. Among

persons who misuse alcohol and drugs, suicide is the leading cause of death (HHS, 2012; SAMHSA, 2008; Wilcox, Conner, & Caine, 2004; Pompili et al., 2010). Additionally, research has shown that persons diagnosed with alcohol misuse or dependence have a 10 times greater risk of suicide compared to the general population; persons who inject drugs have a 14 times greater risk, when compared to the general population (SAMHSA, 2008; Wilcox, Conner, & Caine, 2004). This is a significant factor that is often overlooked due to the separation of mental health and substance use. However, mental health and substance use are often co-occurring within an individual; those with a diagnosed SUD often struggle with a Severe Mental Illness (SMI), an independently associated risk factor for suicide (Gordon, 2019).

By understanding that SUD and risk of suicide are associated, prevention measures targeted at an integrated community network of professionals and community members promotes an environment more conducive to reducing rates of suicide. Having multisector providers and community members aware of what suicide risk can look like, how to approach having that conversation with an individual who may be thinking about suicide, and knowing where and how to get them help, can increase the overall network of safety for SUD patients, and ultimately decrease the amount of deaths by suicide. The present evaluation will help determine whether the virtual gatekeeper training was successful in meeting the desired outcomes of the campaign, as well as guide future public health initiatives related to suicide prevention trainings.

Public Health Significance

The present evaluation will benefit public health by providing data specific to an online gatekeeper training conducted on a multisectoral scale. It will allow for analysis of successes and failures, lessons learned, and future directions for similar types of interventions. The data collected will also benefit public health by determining whether this type of training is appropriate for future use among other community sectors. Gatekeeper training has already been identified as a preventative measure in the CDC's technical package of policy, programs, and practices for preventing suicide (*Facts about suicide*, 2022). However, implementation of gatekeeper training tends to target individual sectors, rather than a variety of multiple sectors. The present research will aid in expanding research to support the use of a multisectoral approach for the implementation of interventions. The results from this evaluation assess how access to gatekeeper training presented in an online format, can influence the likelihood of future behaviors. The present study will provide supportive evidence to be of value to GHS and the community.

Value of the Project to GHS

Genesee Health System will be able to use this evaluation for implementation of future suicide prevention initiatives. By evaluating the tool used during their Suicide Prevention Campaign, conclusions can be made on the usefulness of virtual training modules for future use among SUD prevention and treatment professionals. The present evaluation will be able to show GHS if they need to make changes, and where, when planning future interventions. It also lets them see how successful their campaign was at reaching the community, while lending insight into other sectors that should be included in future programs.

The present study provides a baseline to compare future programs to for GHS. By collecting and analyzing data from their first campaign of this nature, the data can be used to compare future programs to, overtime, to measure the overall success in addressing suicide prevention. The results can be used as a community assessment tool to observe where the community currently stands with the topic of suicide, granting a general look into participants self-reported likeliness to engage in behaviors addressed in gatekeeper trainings. Having this information will let GHS look back over time to see if participation in the training has increased or decreased, if average participant responses are more or less positively associated with knowledge and behaviors gained from the training, and document the community sectors already targeted to see where future efforts should be prioritized.

GHS will be able to use the data derived from this study to include in future grants to support programs aimed at suicide prevention. By evaluating the impact of this campaign, GHS can show supportive evidence for continued funding, allowing for the campaign to be extended beyond the one year it was originally granted funds for. Since the Suicide Prevention Campaign received grant funding, it needs to be shown that it did what it proposed it would and met the objectives included in the campaign. Having the added benefit of an evaluation of the program will grant GHS the opportunity to expand their initiative of suicide prevention and secure future funds by having supportive results from impact of their campaign.

Value of the Project to the Community

The impact of this project will go beyond facilitating improvements for program developments at GHS. The data procured from this project may help aid in a wider implementation of virtual trainings amongst "non-traditional" suicide prevention gatekeepers. Suicide is indeed a sensitive topic, especially when considering that the learner may not be a

mental health or healthcare professional. Presenting the training in an online format allows learners to progress through the module at their own pace, granting further clarification of the content presented. An online format also allows the learner to take breaks and come back to the training, providing flexibility for more participants to be able to engage in the training. Looking at these aspects will help research advance and continue to create more in-depth suicide prevention trainings, with the hope that it will guide implementations to be amongst a larger scope of gatekeepers than traditionally observed.

The virtual tool itself could lead to more people accepting those struggling with thoughts of suicide. It may prepare more community members to become someone who could help those who are thinking of suicide. Ultimately, it will begin to create a wider network of safety for those who are at risk of suicide to turn to, beyond the clinical setting.

Literature Review

Suicide prevention trainings were researched via Web of Science to obtain articles that explored various methods of prevention trainings. The articles include those that target various groups of healthcare professionals, and other types of community members, that are similar to the present study. Articles were included from 2008-2021 and included both intervention and evaluation studies. Table 1 describes the different types of interventions reviewed and highlights the differences in methods used to implement suicide prevention trainings.

Suicide Prevention Training

Choosing suicide prevention interventions that target attitudes, behaviors, knowledge, and self-efficacy is important in shaping the future behaviors of professionals or community members, who may interact with someone at risk of suicide. It has been proposed that understanding the attitudes towards suicide is key to the design and implementation efforts of educational or preventative interventions (Brunero et al., 2008). If professionals and community members have an attitudinally negative view towards suicide, their behaviors while interacting with patients at risk for suicide may be less responsive or helpful. Attitudes significantly affect and help determine future behaviors; the theory of reasoned action and the theory of planned behavior explain the relationship attitudes have with behaviors (Brunero et al., 2008). Based on these theories, if multiple sectors of the community have favorable attitudes toward suicide prevention, they are more likely to engage in positively associated behaviors (i.e., willingness to talk to patients who may be at risk for suicide; understanding suicidal behaviors and risk factors that patients may exhibit during an appointment) (Chan et al., 2008; Coppens et al., 2014; Harris et al., 2021; Kaniwa et al., 2012).

Additional studies have found that by dispelling myths surrounding suicide, suicidal behavior was better understood, leading to increased knowledge and confidence in caring for suicidal patients (Chan et al., 2008). If health professionals do not have a basic understanding of the facts surrounding suicide, it cannot be expected that they feel confident enough to address this highly sensitive topic with patients. Enhanced knowledge leads to enhanced confidence; when professionals feel confident in the subject matter they are addressing, the theory of planned behavior suggests they will be more likely to screen for suicide in patients, communicate more effectively with suicidal patients, and overall implement behaviors positively associated with suicide prevention (Brunero et al., 2008).

A previous literature review on cross-sectional studies of health care professionals' attitudes, knowledge, and confidence in caring for people at risk for suicide looked at 27 articles from various countries to gather insight on how treatment can be influenced based on these attributes of health care professionals. One study found that increased self-confidence of suicide assessment skills among health care professionals showed a higher likelihood of screening for suicidality (Betz et al., 2013). Overall, the articles pointed towards more positive and less biased views towards suicidal individuals among those who interacted with suicidal patients the most, or felt they had higher confidence in assessment and treatment of suicidal patients (Boukouvalas et al., 2020). Professionals who work in mental health, nurses working in emergency rooms or psychiatric units, those who had previous suicide education and overall higher perceived competence, all had more confidence and attitudinally positive views towards suicidal individuals; they were more willing to treat suicidal patients compared to those who rarely interacted with suicidal patients (Boukouvalas et al., 2020). The same literature review also looked at intervention studies regarding health care professionals' attitudes, knowledge,

confidence, and perceptions of suicide. The review looked at 19 articles to see the impact suicide interventions had on participants. A consensus among the articles was that attitudes, beliefs, and knowledge significantly improved after the training interventions, leading to increased confidence in treating suicidal patients (Boukouvalas et al., 2020).

Self-efficacy is an important determinant that can influence the confidence of an individual when approaching the topic of suicide. Many studies have found that increased knowledge gained from suicide prevention trainings led to higher confidence among professionals interacting with or caring for suicidal persons (Berlim et al., 2007; Boukouvalas et al., 2020; Chan et al., 2008; Coppens et al., 2014; Harris et al., 2021; Kaniwa et al., 2012; Kato, 2010; Shim & Compton, 2010; La Gauardia et al., 2021; Zinzow et al., 2020). Professionals also reported feeling more competent and prepared with suicide prevention content, increasing their overall confidence and attitudes (Berlim et al., 2007; Boukouvalas et al., 2020; Chan et al., 2008; Coppens et al., 2014; Harris et al., 2021; Kaniwa et al., 2012; Kato, 2010; Shim & Compton, 2010; La Gauardia et al., 2021; Zinzow et al., 2020).

Types of Suicide Prevention Training

Suicide prevention trainings are not cohesive in how they are presented, and the content can vary based on the intended audience and use of the training. Variation of presentation methods comes with both positive and negative aspects; because it can be modified on multiple levels, it allows for specific tailoring of trainings to be more impactful based on the needs of the audience. However, it also causes research of suicide prevention trainings to be broad, with many avenues of implementation observed.

Reviewed articles (Table 1) have demonstrated that the most common way suicide prevention trainings are implemented is in a face-to-face format (Berlim et al., 2007; Chan et al

2008; Coppens et al., 2014; Kaniwa et al., 2012; Kato, 2010; Shim & Compton, 2010; Zinzow et al., 2020). The length of trainings ranged from 90-minutes to 18-hours, with various methods included in disseminating information and accumulating data for analysis. The most common method for disseminating information, observed from the literature, is through a lecture or educational presentation (Berlim et al., 2007; Coppens et al., 2014; Kaniwa et al., 2012; Kato, 2010; Shim & Compton, 2010; Zinzow et al., 2020). Role-playing or group discussion sessions have also been identified as additional components to the trainings to provide a more interactive feature (Berlim et al., 2007; Kaniwa et al., 2012; Kato, 2010; Shim & Compton, 2010; Zinzow et al., 2020). One study, that differed from the majority, utilized focus groups rather than lecture (Chan et al., 2008). The focus groups allowed for more in-depth feedback from the participants and resulted in participants reporting feeling more competent in assessing, communicating, and helping people with suicidal intent, leading to improved self-confidence, changes in attitudes, and changes in practice (Chan et al., 2008).

All studies were comprised of pre- and post-questionnaires that targeted a combination of the following measures: attitudes, knowledge, confidence, self-efficacy, and behaviors in relation to suicide (Berlim et al., 2007; Chan et al 2008; Coppens et al., 2014; Kaniwa et al., 2012; Kato, 2010; Shim & Compton, 2010; Zinzow et al., 2020). However, follow-up beyond the post-questionnaire was only seen in three of the studies. The first study found that improvements with regards to attitudes toward depression, knowledge about suicide, and confidence to identify suicidal persons remained significant at 3–6-month follow-up (Coppens et al., 2014). Conversely, the remaining two studies both saw a decline in attitudes, knowledge, and self-efficacy from post-test to follow-up (Kato, 2010; Zinzow et al., 2020). The decline observed suggests that more frequent and regular trainings be offered to participants, compared to a one-

time training, to maintain the positive effects associated with prevention training observed immediately after.

Gatekeeper Training

Gatekeeper trainings have been identified as a suicide prevention intervention that addresses the above concerns in prevention trainings (Cross et al., 2010; Lancaster et al., 2014; Ghoncheh et al., 2014; Kullberg et al., 2020). Research has shown positive results that demonstrate the ability of gatekeeper trainings to improve knowledge and attitudes of learners toward suicide prevention, in turn, increasing their perceived self-efficacy and likelihood of performing preventative behaviors (Cross et al., 2010; Lancaster et al., 2014; Ghoncheh et al., 2014; Kullberg et al., 2020).

Gatekeeper trainings can be conducted in several ways, with the most observed being in-person. To narrow the search of web-based gatekeeper trainings specifically, keywords were used to compile articles most aligned with the present research. Keywords searched in Web of Science included “web-based”, “online training”, “e-learning”, “virtual”, “gatekeeper”, and “suicide prevention”. Articles were included from 2010-2020. While there is much research that addresses suicide prevention trainings, few are available that specifically assess online formats as a method for gatekeeper training tools. Articles that have been identified as an online format are described in Table 2 below.

Several types of suicide prevention gatekeeper trainings have shown positive effects on knowledge, attitudes, behaviors, and confidence (Cross et al., 2010). Gatekeeper trainings focus on identifying risk for suicide and provide behavioral interventions, such as helping someone access help and resources. Therefore, gatekeeper training can be beneficial to everyone within a community, even beyond the mental health sector. By preparing learners to identify and respond

to someone who may be thinking about suicide, learners are prepared beyond the scope of their immediate profession to help those who may not choose to access help via a clinical setting.

Few gatekeeper trainings have been presented in an online format (see Table 2 for specific studies). However, these studies have shown to have the same effect as in-person suicide prevention trainings, with additional positive features exclusive to an online format (Cross et al., 2010; Lancaster et al., 2014; Ghoncheh et al., 2014; Kullberg et al., 2020). Positive features exclusive to an online format for training includes having the costs significantly reduced while still being able to reach a large audience (Cross et al., 2010; Lancaster et al., 2014; Ghoncheh et al., 2014; Kullberg et al., 2020). Additionally, learners can complete trainings at their own pace, allowing for learners to go back and repeat sections to gain further clarity of a topic. Presenting gatekeeper training in an online format also allows for flexibility for those who may have busy schedules, unreliable transportation, or other reasons that may prohibit them from engaging in face-to-face trainings.

Specific studies have looked at the effect that exposure to web-based gatekeeper trainings have on participants compared to those who are not exposed (Ghoncheh,et al., 2014; Kullberg et al., 2020; Lancaster et al., 2014). All intervention groups showed increased knowledge, self-efficacy, and self-confidence that was maintained through follow-up (length of follow-up varied by study) (Ghoncheh,et al., 2014; Kullberg et al., 2020; Lancaster et al., 2014). Knowing that these characteristics are key to behavioral change, it can be hypothesized that suicide prevention gatekeeper training increases the likelihood of learners applying skills obtained within the training to their future behaviors.

Table 1. *Prior Research on the Topic of Suicide Prevention Trainings*[1]

Author(s)	Location	Type of Participants	Type of Training	Methods	Findings	Limitations
Berlim	Brazil	102 Clinical: nursing attendants and registered nurses 40 Non-clinical: administrative staff and security staff Participants had no training or qualification in mental health.	3-hour class session followed by discussion	Participants completed pre- and post-training attitude questionnaires.	Strong effects were seen between the association of suicidality and mental disorders, as well as knowledge about and confidence in interacting with suicidal individuals.	Volunteer sample. Unsure of extent to which findings can be generalized to other hospitals. Additional research is needed to know how long change in knowledge is maintained and whether the changes are in attitude are reflected behaviors.
Chan	Hong Kong	Registered nurses	18-hour educational program on suicide prevention & management	Focus groups were used within two hospitals with a total of 54 participants.	After the program, participants felt more competent in assessing, communicating, and helping people with suicidal intent. Improved self-confidence, facilitated changes in attitudes, and facilitated changes in practice.	Participants were volunteers; results may not be generalizable to unwilling participants. No performance measures.
Coppens	Germany, Hungary, Ireland, and Portugal	Teachers, pharmacist, nurses, clergy, social workers, counselors, managers, and careers for the elderly	Germany: 8-hr training was used for mental health professionals to acquire correct gatekeeper competencies to then provide 4-hr trainings to groups of community facilitators. Hungary: 3 expert trainers provided 8-hr trainings to groups of community facilitators. Portugal: 3 expert trainers provided 4-8-hr trainings to community	Pre- and post-questionnaires were administered to 1,276 participants to measure the effects of the training related to attitudes, knowledge, and confidence. Sustainability of training effects were measured at 3-6 month follow-up.	Attitudes toward depression, knowledge about suicide, and confidence to identify suicidal persons significantly improved following the training. At follow-up, improvements remained significant.	No control group. The training procedures differed amongst the countries

			facilitators. Ireland: 3 expert trainers provided 3-hr trainings to community facilitators			
Kaniwa	Japan	Local government officers and hospital	90-minute lecture on suicide prevention	Nine local government offices and one hospital attended the lecture. Pre- and post-questionnaire was administered to assess knowledge and attitudes concerning suicide.	Knowledge and attitudes were significantly improved following the training.	Small sample size of the government officers. Low response rate for post-training questionnaire. Self-reported questionnaire may not capture actual knowledge and attitudes. Long-term effects on suicide prevention cannot be assessed.
Kato	Japan	First-year medical residents	2-hour suicide intervention program. Consisted of 1-hour lecture and 1-hour role-play session.	Self-reported questionnaire was given to 54 participants before, after, and at 6-month follow-up to measure confidence, attitudes, and behaviors.	Improvements were reported post-intervention regarding confidence, attitudes, and behaviors. Attitude change did not continue at 6-month follow-up.	Small sample size with no control group. Actual decrease in suicide rates could not be measured. Stress of medical residency could have influenced outcomes. Self-reported answers may not reflect actual attitudes and outcomes.
Shim & Compton	Georgia	Emergency department personnel	2-hour lecture and 1-hour participant discussion	Pre- and post-surveys were given to measure knowledge, self-efficacy, and attitudes about the curriculum.	Increase in knowledge and self-efficacy related to management of suicidality after the training.	Small sample size. Not all participants worked in emergency department setting. Participants were all volunteers. Longer follow-up is needed.
Zinzow,. Thompson, Fulmer, Goree & Evinger		Students, staff, and faculty	90-minute training. Included didactic component and engage participants in role-play exercises.	Pre, post, and 3-month follow-up tests were given 555 participants to measure self-reported knowledge and self-efficacy. Pre-test also measured gatekeeper behaviors over past 3 months.	All five knowledge and self-efficacy factors showed significant changes. Post-test and follow-up scores significantly differed from pre-test. Decline was observed from post-test to follow-up.	No control group. Differences in group composition. Limited generalizability to broader population of students. Lack of demographic information.

1. This review was conducted using Web of Science to compile relevant articles. Articles included were from 2008-2021. Articles were not restricted to geographic locations to allow for a global view of the impact suicide prevention trainings have. Search words used include: “gatekeeper”, “suicide prevention”, “suicide prevention training”, “suicide training”, and “gatekeeper training”

***Table 2**. Prior Research on the Topic of Virtual Gatekeeper Trainings*[1]

Author(s)	# Of Subjects	Location	Methods	Findings	Limitations
Cross, Matthieu, Lezine, and Knox	68	U.S Universities	Participants were randomly selected for a 1-hour gatekeeper training that included: lecture, 10-minute video, overview booklets and referral cards, and question-and answer discussions. Data collected was used to measure declarative knowledge, perceived efficacy, observational rating scale of gatekeeper skills, and adherence to standardized script.	Gatekeeper skills increased from pre- to posttest. Declarative knowledge and perceived efficacy: significantly increased knowledge & self-efficacy scores from pre-to-post	Does not conclude relationship between observed skills and use of those skills in the future. Sampling bias. Sample size. Does not address maintenance of skills over time.
Lancaster, Moore, Putter, Chen, Cigularov, Baker, and Quinnett	107	Australia	Pre-test-posttest control group design. All participants completed the pre-test and were then randomly assigned to either a training group or a control group. 56 individuals in the training group; 51 in control group. Training group completed web based QPR training and then posttest. Control group read an online 10-page article , completed posttest, and then attended the same we-based QPR training. Measure were: reactions, knowledge about suicide and suicide prevention, self-efficacy for suicide prevention, behavioral intention to engage in suicide prevention, and past suicide prevention behaviors	Improvements in knowledge, self-efficacy, and behavioral intentions from pre-test to post-test. Both groups generally declined 6 months after the training.	Low response rate
Ghoncheh, Kerkhof & Koot	190	Netherlands	RCT. All participants completed the pre-test and were then randomly assigned to experimental group or waitlist control group. Three questionnaires used to measure perceived knowledge, perceived self-efficacy, and the actual knowledge of participants regarding adolescent suicidality.	Had large positive effect on actual knowledge, perceived knowledge, and perceived self-confidence. Effects were sustainable at 3-month follow-up	Questionnaires have not been validated. No standardized instruments to test outcome measurements. Couldn't measure changes in actual suicide prevention skills and performance
Kullberg, Mouthaan, Schoorl, de Beurs, Kenter, and Kerkhof	398	Netherlands	RCT. 3rd and 4th year undergrad clinical students at Vrije Universiteir (VU) University in Amsterdam. All participants completed baseline questionnaires and were then randomly assigned to the intervention or waitlist control group. Follow-up questionnaires were sent at month 1 and month 3 after the baseline questionnaire. Outcome measures focused on guideline adherence, knowledge of suicidal behavior, providers confidence, and evaluation of the e-learning module.	Students reported feeling more confident and knowledgeable in the intervention group compared to control. Maintained at 3-month follow-up.	Dropout rate. Self-reported answers could be affected by social desirability and demand characteristics

1. This review was conducted using Web of Science to compile relevant articles. Articles included were from 2008-2021. Articles were not restricted to geographic locations to allow for a global view of the impact suicide prevention trainings have. Search words used include: “gatekeeper”, “suicide prevention”, “suicide prevention training”, “suicide training”, “gatekeeper training”, “web-based”, “online training”, “e-learning”, and “virtual”

Gaps in the Literature

While many studies have been done on gatekeeper trainings, the largest gap in the literature is that of online specific gatekeeper trainings. The interventions included in Table 2 are a collection of previously reviewed web-based trainings that varied in the actual type and length of tools used. They all agree that the online feature has positive aspects in regard to saving time and money, while still being able to train large quantities of people, but these studies are limited in quantity.

Additional limitations presented in the literature include, but are not limited to:

- Low response rates/Dropout rates

  Among the virtual gatekeeper trainings, one study reported low response rates as a limitation (Lancaster et al., 2014; Kaniwa et al., 2012). Low response rates may be reflective of having a training presented online with no mandatory procedures to ensure participants complete all measurement tools, such as pre- and post-surveys. Additionally, participant drop out was observed among the literature, and may have contributed to the low response rates (Kaniwa et al., 2012; Kullberg et al., 2020). Specifically , post-questionnaires and follow-up experienced low response rates as participants did not complete the intervention in its entirety (Kaniwa et al., 2012; Kullberg et al., 2020; Lancaster et al., 2014).

- Unable to correlate observed skills with future behaviors

  Many studies reported a limitation in being able to correlate observed skills with future behaviors (Chan et al., 2008; Cross et al., 2010; Ghoncheh et al., 2014). The studies were able to measure participants intended behaviors, however, they did not contain a measurement that assessed the extent in which behaviors were enacted. Additionally,

because not all of the literature included follow-up, there was a limitation in measuring how skills were maintained over time (Berlim et al., 2007; Cross et al., 2010; Kaniwa et al., 2012; Shim & Compton, 2010). Follow-up measurements may be able to provide evidence of change in behavior of participants by comparing post-questionnaire answers to follow-up. Follow-up will allow researchers to assess whether responses to behavioral questions were maintained or declined.

- Small sample size

Many studies reported small sample sizes as a limitation (Cross et al., 2010; Kaniwa et al., 2012; Kato et al., 2010; Shim & Compton, 2010). Most of the interventions were volunteered based, which may have caused smaller sample sizes due to limited willingness to volunteer for the training. Larger scale interventions are needed; providing an online format for the training may be one way to disseminate trainings to larger sample sizes.

- Sampling bias

The reviewed articles have reported that sampling bias may be a limitation present in their research (Berlim et al., 2007; Chan et al., 2008; Cross et al., 2010; Shim & Compton, 2010; Zinzow et al., 2020). Due to the voluntary nature of the programs, combined with self-reported measures, results may not be generalizable to other samples of the population. Self-reported questionnaires were used for all interventions consisting of pre- and post-surveys (Berlim et al., 2007; Chan et al., 2008; Cross et al., 2020; Kaniwa et al., 2012; Shim & Compton, 2010; Zinzow et al., 2020). The self-reported nature of methods used may contribute to more favorable answers being selected due to

participants wanting to choose the answer they believe to be right, rather than how they actually feel.

- Differing methods of training

All studies reviewed presented different types of methods for their specific training. Observed types of trainings included lectures, class sessions, role-play sessions, participant discussions, videos, focus groups, and web-based trainings (Berlim et al., 2007; Chan et al., 2008; Coppens et al., 2014; Cross et al., 2020; Ghoncheh et al., 2014; Kato et al., 2010; Kaniwa et al., 2012; Kullberg et al., 2020; Lancaster et al., 2014; Shim & Compton, 2010; Zinzow et al., 2020). This can cause a discrepancy in the content being disseminated, as well as impact the effects the training had based on the way it was implemented.

Some of the reviewed interventions utilized role-playing and real life-based scenarios, however, they were not as immersive as what is offered in the LivingWorks Start module (Appendix D outlines questions asked within the course). Within the present study's module, learners are able to "text" with a friend and approach the subject of suicide; they then learn how to look up resources and refer them to help. It allows for a real-life perception of what it may look like when interacting with someone showing signs of suicide. It also has an activity that allows you to speak out loud and record yourself responding appropriately to a pre-recorded scenario. The previously mentioned activity lets you practice speaking to someone who may be at risk for suicide, rather than reading suggested prompts. Having this type of activity included in the module allows learners to be immersed within the scenario; responses can be practiced without fear of saying the wrong thing or having to speak in front of others as many times as they would like before moving forward. The ability to practice as many times as needed and

listen to yourself as it plays back creates more comfortability amongst participants when bringing up the topic of suicide in the future. The confidence gained from practice allows for a more casual conversation in the future, compared to memorized suggestions, which can make individuals feel more comfortable when expressing suicidal ideations.

Another gap observed in the literature was that it primarily focused on clinical professionals such as, primary care physicians, mental health professionals, and nurses. While many who are at risk for suicide often visit these types of clinical settings, some patients may not seek out help with clinical professionals due to stigma and fear of judgement. Only targeting mental health or healthcare professionals for prevention training does not help those who are at risk for suicide who do not feel safe enough with medical professionals to disclose suicidal behaviors.

The evaluation of Genesee Health System's Suicide Prevention Campaign looks to close some of these gaps by looking at a virtual gatekeeper training that was distributed on a multisectoral level. Looking to create a community-based network of safety, GHS included important stakeholders and sectors of the community, such as law enforcement, religious entities, schools, and community members, as their target audience. This multisectoral approach of the campaign supports a safety net of resources that reach beyond the clinical walls and allows the community to become more confident in preventing suicide as an integrated team. The present evaluation will help provide supportive evidence on virtual gatekeeper trainings for suicide prevention, while also highlighting the importance of these trainings being administered within diverse community sectors.

Purpose of the Project

The purpose of this project is to look at the change in knowledge and behaviors of participants of the LivingWorks Start online training module, used during the Suicide Prevention Campaign through GHS. The project will look at pre-survey (baseline) and post-survey (follow-up) data to compare the differences amongst participants' answers to select questions. The data will provide insight into how well the online training tool worked to meet the campaign's overall goal of creating a network of safety amongst community gatekeepers. The data will also allow for analysis of the effectiveness of increasing knowledge about access and delivery of suicide care and resources. Additionally, the data will be used to analyze the likelihood of individuals to speak up and reach out for suicide resources, allowing for conclusions to be drawn on the likelihood of behavioral changes amongst participants after exposure to the training.

Methodology

Program Description

The Suicide Prevention Campaign is ultimately the starting point to create a community-based network of safety and move towards impacting rising SUD and suicide rates in Genesee County. With this first step, the program implemented comprised of two main components: 1) a media campaign to increase SUD treatment and prevention messaging; 2) increased virtual training opportunities to strengthen access and delivery of suicide care. The aim of these components was to focus on how those with a SUD are at a greater risk of suicide and connection to treatment resources may reduce their risk. The program took place from 01/2021 through 09/2021.

Media Campaign

The media campaign activities included a website (https://www.genhs.org/letstalk) dedicated to the program through GHS, where virtual toolkits and other resources are provided. The website contains informational flyers, print ads, resource links, video links, and the link to the LivingWorks Start virtual training. The website also discusses what to do if you or someone you know is showing certain warning signs, what numbers to call to find help, and what to do if someone is at risk. The campaign website is associated with all outreach and promotional materials. Billboard signage was acquired to promote the program, as well as TV and radio commercials. Social media was utilized to post specific messages related to SUD and suicide prevention. All of these activities were used to increase messaging surrounding SUD and suicide prevention. The goal was to increase messaging about resources available in Genesee County and provide free access to the virtual training for anyone interested in completing it. Additionally, Concept Three, a marketing firm, created rack cards, business cards, and other

promotional materials for outreach pertaining to the program. All outreach materials have been included in Appendix F.

Virtual Training Opportunities

LivingWorks Start is the platform used to provide virtual training focused on access and delivery of suicide care. The LivingWorks Start training takes roughly 1-hour to complete and contains both a pre- and post-survey for participants to complete. GHS acquired 1,054 licenses to distribute amongst GHS staff, as well as external community partners, stakeholders, and providers. The training module helps prepare individuals who may encounter someone at risk for suicide. GHS wanted to focus on a community-based network of safety by including an assortment of community sectors such as, SUD treatment providers, SUD prevention providers, Genesee County Schools, Genesee County Faith-based entities, and local law enforcement.

Consent

The LivingWorks Start training module was available to all who were interested. Once beginning the module, consent for the information received and how it will be used is displayed through LivingWorks Start. LivingWorks Start terms and conditions of use and privacy policy are included in Appendix A & B.

COVID-19 Precautions

All trainings were completed virtually. No face-to-face interaction took place.

IRB Approval

The present study is approved for Not Regulated status from the University of Michigan's Health Sciences and Behavioral Sciences Institutional Review Board (IRB-HSBS). Not Regulated status was determined based on the study's intent to contribute to generalizable knowledge without any interaction with human subjects. Identifiable information from

participants was not included in the data obtained from GHS. The letter of determination is included in Appendix H.

Logic Model

Inputs

GHS was given a total budget of $73,894.30 from a grant obtained through Region 10 Pre-Paid Inpatient Health Plan (PIHP) that allowed them to acquire 1,054 LivingWorks Start licenses. They also used part of this grant ($50,000) to fund outreach materials created by Concept Three Marketing. The community partners involved in this campaign are those who have interactions with SUD patients within Genesee County, as well as other community members and stakeholders. The training through LivingWorks Start provides learners with knowledge and tools that teaches learners how to access resources and find delivery of suicide care. These community partners, along with GHS staff, are the participants for this program. All participants took the training module on their own accord. Licenses were distributed via email to community partners who interact with SUD patients within Genesee County. Other participants came from the community by reaching out to GHS for access to the module or visiting the campaign's website where they were able to access it for free.

Activities

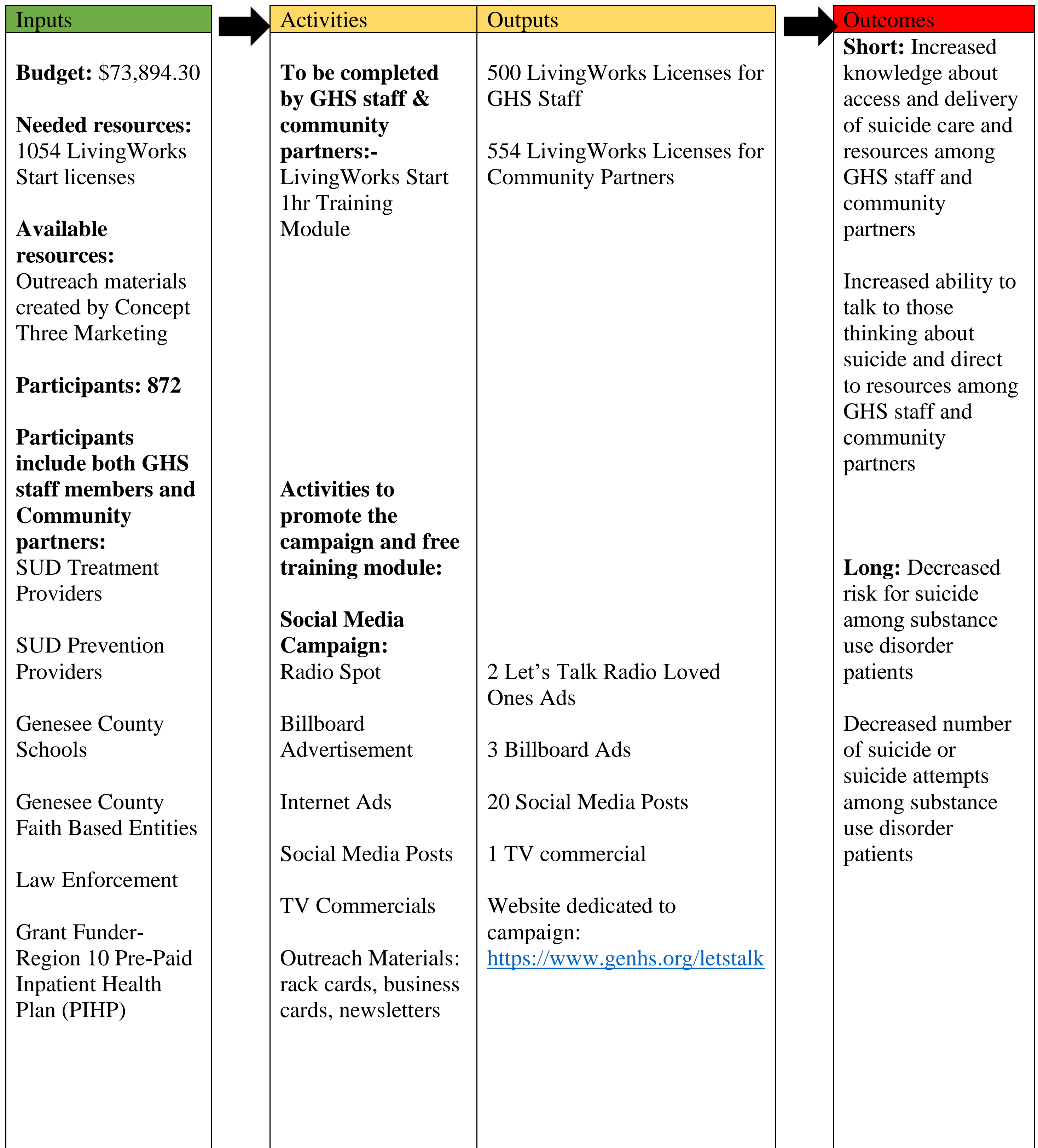
To strengthen access and delivery of suicide care, LivingWorks Start one-hour training module was purchased in the form of licenses through GHS. The LivingWorks Start training was distributed to the community partners listed above, GHS staff members, and was available for free to the public through the campaign's website. Other activities included a social media campaign aimed at increasing awareness surrounding SUD and suicide. To promote the media campaign, activities included billboard advertisements, internet ads, social media posts, TV

commercials, and printed outreach materials (business cards, newsletters, etc.). All promotional activities included the campaign's website where access to the training module, and other important resources for suicide prevention, were available.

Outcomes

Outcomes are based on assessment of all participants who completed the LivingWorks Start one-hour module. Full completion of the module includes completion of both the pre- and post-survey (included in appendix C and E), which will be used to evaluate the expected outcomes of the program. The expected short-term outcomes for the Suicide Prevention Campaign are: 1) Increased knowledge about access and delivery of suicide care and resources among GHS staff and community partners, and 2) Increased ability to talk to those thinking about suicide and direct to resources among GHS staff and community partners. The expected long-term outcomes are: 1) Overall decreased risk for suicide among substance use disorder patients, and 2) Overall decreased number of suicide or suicide attempts among substance use disorder patients. Figure 1 below depicts the logic model in its entirety.

Figure 1. *Logic Model for the Suicide Prevention Campaign*



Inputs	Activities	Outputs	Outcomes
Budget: $73,894.30	**To be completed by GHS staff & community partners:-** LivingWorks Start 1hr Training Module	500 LivingWorks Licenses for GHS Staff	**Short:** Increased knowledge about access and delivery of suicide care and resources among GHS staff and community partners
Needed resources: 1054 LivingWorks Start licenses		554 LivingWorks Licenses for Community Partners	
Available resources: Outreach materials created by Concept Three Marketing			Increased ability to talk to those thinking about suicide and direct to resources among GHS staff and community partners
Participants: 872			
Participants include both GHS staff members and Community partners:	**Activities to promote the campaign and free training module:**		
SUD Treatment Providers			**Long:** Decreased risk for suicide among substance use disorder patients
SUD Prevention Providers	**Social Media Campaign:** Radio Spot	2 Let's Talk Radio Loved Ones Ads	
Genesee County Schools	Billboard Advertisement	3 Billboard Ads	Decreased number of suicide or suicide attempts among substance use disorder patients
Genesee County Faith Based Entities	Internet Ads	20 Social Media Posts	
Law Enforcement	Social Media Posts	1 TV commercial	
Grant Funder-Region 10 Pre-Paid Inpatient Health Plan (PIHP)	TV Commercials	Website dedicated to campaign: https://www.genhs.org/letstalk	
	Outreach Materials: rack cards, business cards, newsletters		

Evaluation Focus

The focus of the evaluation is on the effectiveness of the LivingWorks Start training module that was used during the aforementioned campaign. Expected short-term outcomes related to the training module include: 1) Increased knowledge about access and delivery of suicide care and resources among GHS staff and community partners, and 2) Increased the likelihood of individuals to speak up and reach out for suicide resources. By evaluating this part of the program, GHS and appropriate stakeholders will be able to see what objectives were met and where improvements may need to take place. The study design is an outcome summative quantitative evaluation. The study design will allow for analysis of both changed behaviors and knowledge. The evaluation goals are to: 1) as part of an outcome evaluation, assess the impact and change in knowledge of those participating in the LivingWorks training regarding access and delivery of suicide care, 2) as part of an outcome evaluation, assess the level of change in likelihood and confidence of participants to speak up and reach out. The outcome evaluation will be accomplished using the pre- and post-survey included in the LivingWorks Start course (see appendix C and E). The pre- and post-survey includes quantitative data that will allow for analysis of program outcomes and objectives. Table 3 below shows the four questions asked that were included in both the pre- and post-survey. These questions allowed for an answer on a 4-point scale from strongly agree to strongly disagree. The data obtained from these questions will help gauge the amount of change from participants before they had the training and after exposure to the training.

The two types of changes being looked at in this study are a change in knowledge (increased or decrease) and behavioral change (expected behavioral change based on answer of participants agreeing or disagreeing with statement). Additional questions from the post-survey

will also be analyzed to determine the likelihood of future behaviors of participants in integrating skills learned from the training. Table 4 below shows the additional questions from the post-survey being observed. These questions allowed for an answer on a 5-point scale from very likely to very unlikely. Additional methods involved in data collection for the evaluation will include the use of secondary data from previous literature to compare it to baseline data and results of this program.

Table 3. *Pre- and Post-Survey Questions*

Question	Possible Answers	Type of Change
1. I am willing to talk with someone who may be thinking about suicide.	Strongly agree / Agree / Disagree / Strongly disagree	Behavioral change
2. I believe I could recognize the signs that someone might be thinking about suicide.	Strongly agree / Agree / Disagree / Strongly disagree	Change in knowledge
3. I know how and where to get help for someone who may be thinking about suicide.	Strongly agree / Agree / Disagree / Strongly disagree	Change in knowledge
4. I feel confident in my ability to help someone who may be thinking about suicide.	Strongly agree / Agree / Disagree / Strongly disagree	Behavioral change

Table 4. *Additional Post-Survey Questions Looking at Future Changes in Behavior*

Question	Possible Answers	Type of Change
Tune into possibility of suicide	Very Likely / Likely / Neither Likely nor Unlikely / Unlikely / Very Unlikely	Expected future change in behavior
Ask an individual if they are thinking about suicide	Very Likely / Likely / Neither Likely nor Unlikely / Unlikely / Very Unlikely	Expected future change in behavior
Connect an individual thinking about suicide with helping resources	Very Likely / Likely / Neither Likely nor Unlikely / Unlikely / Very Unlikely	Expected future change in behavior

Data Analysis

Both pre- and post-survey answers have been collected through the LivingWorks Start data portal and pulled as raw data, with identifiable information removed. The data obtained was then imported into SPSS for data analysis. Descriptive statistics of the participants were obtained at baseline, including gender, age, and field of work or study. Closed-ended questions, with a Likert scale response, were used to obtain quantitative data for analysis of the effectiveness of the training tool used for the Suicide Prevention Campaign. The specific questions asked for both pre- and post-surveys can be found in appendix C and E.

Program Objectives

The program objectives listed in Table 5 are the objectives that were created during the planning and implementation stages of the program at GHS. These objectives are ways to see if the program did what it was intended to, fell short on any aspects, and overall made a change related to suicide prevention based on the data analysis.

Performance Indicators

The performance indicators shown in Table 5 are how the results of the program are measured in order to assess whether the program objectives were met.

Data Collection Source

The data collection sources described in Table 5 is where data was obtained from to input it into SPSS to use for analysis. LivingWorks Start provides a report that breaks down how many licenses have been used, how many have been started or fully completed, and the totals for responses to questions asked at pre- and post-survey. The LivingWorks Start report contains the data by which to determine the performance indicators being examined. The report allows for

baseline numbers on where participants started before the module (pre-test) and the difference in knowledge and confidence gained at the end of the module (post-test).

Table 5. *Evaluation Indicators and Performance Measures*

Program Objective	**Performance Indicator**	**Data Collection Source**
Distribute 700 licenses out of 1054 available	# of certificates of completion distributed	LivingWorks Report
Increase knowledge of suicide prevention resources	# and % of participants reporting they received information on suicide prevention resources	LivingWorks Report of pre/post survey
Increase likelihood and confidence of participants to speak up and reach out (for either themselves or someone they may know)	# and % of participants reporting they are able to identify risk for suicide	LivingWorks Report of pre/post survey

Results

Participants were comprised of GHS staff, SUD treatment providers, SUD prevention providers, faith-based partners, neighborhood groups, local school districts, local universities, community organizations and coalitions, law enforcement, and hospitals. There were 872 participants who started the module; of these, 736 completed the pre- and post-survey. Previous training in suicide prevention was recorded from participants: 167 (22.7%) had no prior training in suicide prevention, while 191 (26%) had 2-5 hours of previous suicide prevention training (Figure 2). The participants were primarily females, with 595 (80%) self-identifying as female, 118 (16%) male, and 2 (0.3%) transgender (Table 6). Most participants identified as working or studying in the field of health and wellness; the breakdown of all subgroups is showcased in Table 6 below.

Pre-Survey Results

Data analysis showed the total numbers reported for each possible answer for each of the four questions (Table 7). The pre-survey reported that 61.5% of participants strongly agree that they are willing to talk to someone who may be thinking about suicide, while 35.5% agreed, and 2.2% disagreed. When asked if participants felt they could recognize the signs that someone may be thinking about suicide, the pre-survey reported 23.2% strongly agreed, 61.7 % agreed, and 14.4% disagreed. The third question asked of the participants was if they knew how and where to get help for someone who may be thinking about suicide; 24.7% strongly agreed, 53.5% agreed, and 19.6% disagreed. The last question asked participants of their confidence in their ability to help someone who may be thinking about suicide, with 37.5% responding that they strongly agree, 47.6% agree, and 13.6% disagree.

Post-Survey Results

The post-survey reported that 68.5% of participants strongly agree that they are willing to talk to someone who may be thinking about suicide, while 24.5% agreed, and 0.4% disagreed. When asked if participants felt they could recognize the signs that someone may be thinking about suicide, the post-survey reported 63.5% strongly agreed, 29.1% agreed, and 0.7% disagreed. The third question asked of the participants was if they knew how and where to get help for someone who may be thinking about suicide; 61.4% strongly agreed, 30.6% agreed, and 1.1% disagreed. The last question asked participants of their confidence in their ability to help someone who may be thinking about suicide, with 67% responding that they strongly agree, 25.8% agree, and 0.5% disagree.

Additional questions from the post-survey were analyzed and reported in Table 8 (these questions were not included in the pre-survey and are indicative of future behaviors based on taking the training). On average, 75% of participants reported being very likely to consider behaviors associated with reducing suicide (Table 8). The study had about 6% of missing answers for each question, due to participants not submitting an answer, and were considered as "No Response".

Table 6. *Characteristics of Participants who Completed LivingWorks Start Training Module*

Characteristics of Participants	
Gender, n (%)	
Male	118 (16%)
Female	596 (81%)
Transgender	2 (0.3%)
*No Response***	20 (2.7%)
Age*, (years), n (%)	
0-19	1 (0.1%)
20-39	238 (32.5%)
40-59	358 (48.8%)
60-79	96 (12.9)
*No Response***	43 (5.8%)
Field of Work/Study, n (%)	
Business Science and Professional	
Business and Financial Operations	15 (2%)
Computer and Mathematical	8 (1.1%)
Life Physical and Social Science	9 (1.2%)
Management	4 (0.5%)
Other	9 (1.2%)
Education Arts Entertainment and Service	
Community and Social Services	37 (5%)
Education Training and Library	49 (6.6%)
Office and Administrative Support	4 (0.5%)
Personal Care and Service	2 (0.3%)
Other	16 (2.2%)
Law Enforcement	4 (0.5%)
Health and Wellness	
Health Research	13 (1.8%)
Healthcare Practitioners	146 (19.7%)
Healthcare Support and Technical Occupations	94 (12.7%)
Other	255 (34.5%)
	1 (0.1%)

Military Veterans Protective Services	
Not in Active Workforce	1 (0.1%)
Home Duties	1 (0.1%)
Student	3 (0.4%)
Other	1 (0.1%)
Production Construction Extraction Maintenance and Transportation	
Building Installation Maintenance, Grounds Keeping, and Repair	3 (0.4%)
Production	1 (0.1%)
Other	1 (0.1%)
No Response**	60 (8.2%)

*Ages were originally recorded as birth year, upon analysis, this was changed to reflect the age of the participant in year of birth year subtracted from current year (2022)
**Missing answers were labeled as "No Response"

Figure 2. *Previous Suicide Prevention Training among Participants of LivingWorks Start Suicide Prevention Training*

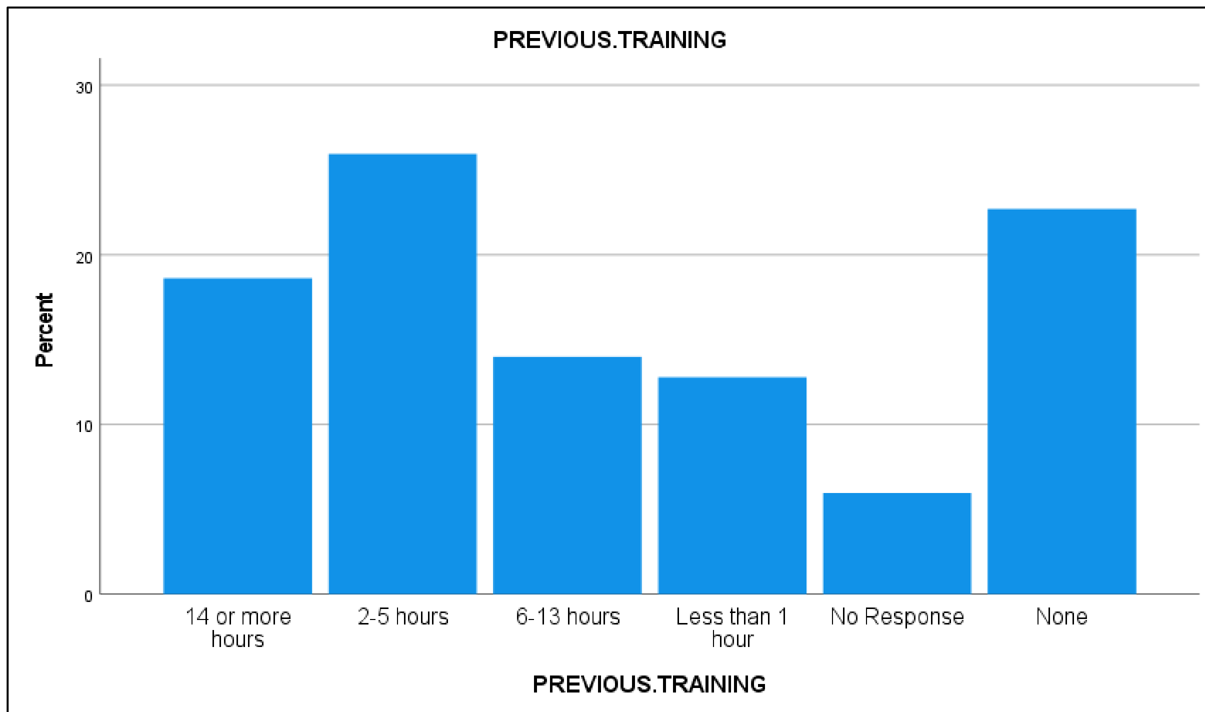


Table 7. *Participant Results of Pre- and Post-Survey from LivingWorks Start Training Module for Suicide Prevention*

Participant Results: Pre/Post			
Survey Questions	**Pre-Survey, N= 736, n (%)**	**Post Survey, N= 736, n (%)**	**Score Change From Pre- to Post-Survey %, (increase/decrease)**
Q. #1: I am willing to talk with someone who may be thinking about suicide			
Strongly Agree	453 (61.5%)	504 (68.5%)	7% (increase)
Agree	261 (35.5%)	180 (24.5%)	11% (decrease)
Disagree	16 (2.2%)	3 (0.4%)	1.8% (decrease)
Strongly Disagree	4 (0.5%)	5 (0.7%)	0.2% (increase)
*No Response***	2 (0.3%)	44 (6%)	5.7% (increase)
Q. #2: I believe I could recognize the signs that someone might be thinking about suicide			
Strongly Agree	171 (23.2%)	467 (63.5%)	40.3% (increase)
Agree	454 (61.7%)	214 (29.1%)	32.6% (decrease)
Disagree	106 (14.4%)	5 (0.7%)	13.7% (decrease)
Strongly Disagree	3 (0.4%)	4 (0.5%)	0.1% (increase)
*No Response***	2 (0.3%)	46 (6.3%)	6% (increase)
Q. #3: I know how and where to get help for someone who may be thinking about suicide			
Strongly Agree	182 (24.7%)	452 (61.4%)	36.7% (increase)
Agree	394 (53.5%)	225 (30.6%)	22.9% (decrease)
Disagree	144 (19.6%)	8 (1.1%)	18.5% (decrease)
Strongly Disagree	10 (1.4%)	4 (0.5%)	0.9% (decrease)
*No Response***	6 (0.8%)	47 (6.4%)	5.6% (increase)
Q. #4: I feel confident in my ability to help someone who may be thinking about suicide			
Strongly Agree	276 (37.5%)	493 (67%)	29.5% (increase)
Agree	350 (47.6%)	190 (25.8%)	21.8% (decrease)
Disagree	100 (13.6%)	4 (0.5%)	13.1% (decrease)
Strongly Disagree	8 (1.1%)	4 (0.5%)	0.6% (decrease)
*No Response***	2 (0.2%)	45 (6.1%)	5.8% (increase)
**Missing answers were labeled as “No Response”			

Table 8. *Participant Results from Additional Post-Survey Questions included in LivingWorks Start Training Module for Suicide Prevention*

Post-Survey Additional Questions	
After completing LivingWorks Start, if I encounter a person who I think might be considering suicide, I am likely to:	**N= 736, n (%)**
Tune into possibility of suicide	
Very Likely	532 (72.3%)
Likely	149 (20.2%)
Neither Likely nor Unlikely	7 (1.0%)
Unlikely	0
Very Unlikely	3 (0.4%)
*No Response***	45 (6.1%)
Ask an individual if they are thinking about suicide	
Very Likely	515 (70%)
Likely	161 (21.9%)
Neither Likely nor Unlikely	11 (1.5%)
Unlikely	0
Very Unlikely	2 (0.3%)
*No Response***	47 (6.4%)
Connect an individual thinking about suicide with helping resources	
Very Likely	602 (81.8%)
Likely	84 (11.4%)
Neither Likely nor Unlikely	2 (0.3%)
Unlikely	1 (0.1%)
Very Unlikely	2 (0.3%)
*No Response***	45 (6.1%)
*Missing answers were labeled as "No Response"	

Discussion

Summary

The results of the present study demonstrate an overall increase in answers of agreement among respondents for each of the four questions looked at in both the pre- and post- survey. Upon completion of the training module, answers among participants for question one increased by 7% for *Strongly Agree and* decreased by 1.8% for *Disagree.* From pre- to post- survey, the responses to question two increased by 40.3% for *Strongly Agree* and decreased by 13.7% for *Disagree*. From pre- to post- survey, the responses to question three increased by 36.7% for *Strongly Agree*, and those who chose *Disagree*, decreased by 18.5%. From pre- to post- survey, the responses to question four increased by 29.5% for *Strongly Agree*, and those who chose *Disagree*, decreased by 13.1%. The increase amongst participants level of agreement or likelihood of behavior, shows that the tool used was successful in meeting the objectives of the campaign conducted by Genesee Health System.

The program objectives included in the campaign are: train GHS staff, external community members, and providers using LivingWorks, distribute 700 of the 1,054 licenses, increase knowledge of suicide prevention resources, and increase the likelihood and confidence of participants to speak up and reach out. These outcomes were met by distributing over 800 LivingWorks start licenses to staff and community members. Knowledge of suicide prevention resources was addressed within the training module, resulting in over 60% of respondents strongly agreeing that they know where and how to access these resources. The confidence and likelihood of participants engaging in suicide prevention behaviors, such as speaking up or reaching out, was also demonstrated in the training module. Results showed an average of 66% of respondents strongly agreeing to talk to, recognize, and help someone who may be thinking about suicide. An average of 75% of participants reported being very likely to tune into signs of

suicide, ask about suicide, and connect someone who may be thinking about suicide to help and resources. Overall, participants were highly likely to recommend this training to someone else (63% responded as very likely to recommend) suggesting that this program was quite favorable and resonated well with the participants.

Comparisons of the Findings to Prior Research

In line with the literature, most participants were female with the age of participants ranging from 14-79 years old (Berlim et al., 2007; Chan et al., 2008; Cross et al., 2010; Coppens et al., 2014; Ghoncheh, et al., 2014; Kaniwa et al., 2012; Kato, 2010; Kullberg et al., 2020; Lancaster et al., 2014; Shim & Compton, 2010; Zinzow et al., 2020). Most participants had little to no prior experience with suicide prevention trainings, a common theme elicited in prior suicide prevention research (Berlim et al., 2007; Chan et al., 2008; Cross et al., 2010; Coppens et al., 2014; Ghoncheh, et al., 2014; Kaniwa et al., 2012; Kato, 2010; Kullberg et al., 2020; Lancaster et al., 2014; Shim & Compton, 2010; Zinzow et al., 2020). The characteristics of participants are similar to that of previous studies with most participants indicating they work or study in the field of health (Berlim et al., 2007; Chan et al., 2008; Cross et al., 2010; Coppens et al., 2014; Ghoncheh, et al., 2014; Kaniwa et al., 2012; Kato, 2010; Kullberg et al., 2020; Lancaster et al., 2014; Shim & Compton, 2010; Zinzow et al., 2020).

Previous studies have shown that increasing knowledge about suicide prevention tools can increase the confidence and likelihood of applying these techniques (Berlim et al., 2007; Chan et al., 2008; Cross et al., 2010; Coppens et al., 2014; Ghoncheh, et al., 2014; Kaniwa et al., 2012; Kato, 2010; Kullberg et al., 2020; Lancaster et al., 2014; Shim & Compton, 2010; Zinzow et al., 2020). The present study aligned with previous research discussed that showed significant positive effects in participants post-training. The specific virtual gatekeeper training tool used

within this study was able to increase knowledge and confidence among learners, suggesting a strong likelihood of future engagement of behaviors learned, a common consensus within the literature.

Congruent with prior research, this evaluation was able to see whether knowledge increased and what learners self-reported their behaviors would be in the future. Randomized control trials are needed to confirm the results, as we do not know if future behaviors reported will be enacted.

Implications for Future Research

The present study highlights the importance of suicide prevention trainings for various sectors outside of mental health. Exposing members of the community to a 1-hour virtual training showed positive results related to suicide prevention behaviors and resources. However, more in-depth trainings may be needed to fully prepare professionals for suicide prevention care; over half of the participants (52%) responded that they would like more training beyond this module. The present research serves as a baseline for what is possible when training opportunities are available to the community to further advance their personal and professional behaviors regarding suicide. Using this data, public health professionals can propose that virtual training modules can be successfully implemented to provide communities with suicide prevention resources.

The data from the present study can also be used to further examine the long-term effect training modules have on learners' attitudes and behaviors. Researching the longevity of positive results after the training could show researchers what areas may need additional attention during implementation. It could also be used to determine whether monthly, annual, or semi-annual

trainings should be provided for participants to maintain knowledge (through current and up to date research) and continue to build upon their confidence level.

Future research should consider additional studies involving interviews and focus groups. Interviewing participants after completion of the training will help researchers determine whether participants truly grasped the concepts, or simply chose what they considered to be the most appropriate answer for the survey questions. Focus groups would be beneficial to see how learners feel about the module, gauge where improvements need to be made, and gain valuable feedback to continue enhancing suicide prevention trainings. Focus groups and interviews would also allow researchers to inquire deeper into the behavioral aspect of the training. Simply using a survey to measure future behaviors is not concrete evidence that the learner will enact those behaviors. Interviews or focus groups may allow learners to be asked specific questions regarding how often, in what way, and to what extent they are using the behavioral techniques gained from the training course. Focus groups would also allow for a safe space to discuss personal experiences with using the behaviors and knowledge from the prevention training, letting researchers see how it is received in real world settings and areas that may need enhancing for realistic use in settings outside of mental healthcare.

Future research should also focus on randomized control trials (RCTs) to see to what extent virtual training modules can impact gatekeepers. A RCT could hypothetically look at two groups of gatekeepers and compare many types of trainings, such as online versus in person. It could also evaluate the affect no training at all (control) and LivingWorks Start one-hour training module (intervention) has on participants to conclude more precise outcomes. The present research supports the aforementioned implications for future research into online suicide

prevention trainings by presenting the positive effects the training had on participants answers at follow-up (post-survey).

Implications for Practice

Based on this research, implications for practice in public health education are limitless. With prevention being a pillar of public health, this study solidifies the need for prevention education focused on suicide. Public health professionals play a central role as a disseminator of resources, and often collaborate with many sectors of the community to bring prevention services to at risk populations. The present research suggests that suicide prevention should be at the forefront of public health education interventions.

Public health education can use data procured from this research to present for grants specific to gatekeeper or other prevention trainings. The present research demonstrates improved knowledge and could help support the argument for funding related to implementing similar types of trainings. The data could also be used for those researching web-based trainings looking to compare which option may be best to serve their intended purposes. The positive ratings of the training, paired with increased results from pre- to post-survey, could influence other public health educators to use this tool for their own suicide prevention interventions. It may also influence public health educators to use the data obtained for creation of educational materials that support online gatekeeper training, such as pamphlets or factsheets.

Implications for Policy

Implications for policy in public health, based on this research, would be recognizing that direct regulation of suicide prevention training is needed for professionals of various backgrounds. Creating policies that mandate suicide prevention training requirements is essential in maintaining the knowledge and confidence of professionals in addressing suicide. The present

research could be used to demonstrate the positive effects gatekeeper training has on the knowledge and behavioral intentions of learners. The more professionals who engage in suicide prevention training, the wider the network of safety expands within a community, hence the need for multiple levels of support. With suicide being a national public health issue, the next step would be to address federal support to ensure adequate access to resources, such as funding.

Future policies could also look to promoting suicide awareness, such as recognizing national days related to suicide awareness and prevention. One example is World Suicide Prevention Day, which takes place on September 10th (*National Suicide Prevention Strategies, 2018*). Involving other sectors to take place in these types of awareness days could be one way to make a larger impact in communities. Implementing policies that help create larger recognition of suicide and resources that are available can help to familiarize this type of information. Regular exposure and availability of suicide prevention resources, along with promotion of awareness, is a way to normalize the topic of suicide prevention outside of the healthcare sector. Having a wider acceptance of suicide can help reduce stigma and prejudices, leading to more open conversations and opportunities to help someone who may be thinking about suicide. With knowledge and confidence being factors that drive how likely individuals are to approach or react to someone who may be thinking about suicide, it could be posed that this research necessitates that more initiatives focused on awareness and familiarity with suicide be explored.

In 2020, Congress signed into effect the National Suicide Designation Act, establishing 988 as the nationwide crisis call line for suicide and mental health (Severance-Medaris, 2021). The present research can aid this policy by being used to support evidence that there is a need for continued suicide prevention measures. The present research suggests that gatekeepers beyond the healthcare sector can have an impact on someone who may be thinking about suicide; this

conclusion could persuade future policies that target creating crisis call centers with gatekeeper involvement. Involving community gatekeepers with the work of crisis call centers could potentially involve gatekeepers volunteering, providing support staff, and having an active presence in the community. This demonstrates an approach to expanding the network of safety within a community. Interconnecting the private sector (i.e., crisis call centers) with the community (i.e., community gatekeepers) can create a more trusting environment and promote a united front in the face of suicide.

Limitations

The present study is not without its limitations. The study saw a loss of participants at follow up (post-survey), that could be due to the training being offered online rather than in person. Since the module could be started and stopped, to complete it at the learners' pace, loss of participants could have been due to forgetting to come back to the training, becoming too busy, or no longer being interested in completing it. There was no way to ensure that all participants completed both pre- and post-surveys. A second limitation is that most of the participants were female, which may not adequately represent the general population. Additionally, no demographic data on race, ethnicity, or level of education was obtained to allow for further comparison of variables that may affect the way a participant responds. Higher levels of education could be related to higher confidence; having this information would allow for analysis of correlation to determine whether there was an effect or not.

Another limitation would be that there was no long-term follow up of the study. Previous literature suggests that over time, the effect of trainings can decrease among participants (Kato, 2010; Zinzow et al., 2020). The present study does not look at participants after they have completed the post-survey, therefore there is no data that shows if the behaviors were performed

by the participant, or to what extent. They may have felt confident immediately after the training, but once faced with a real-life situation, felt less prepared than they previously identified as.

Synthesis of Competencies

The first competency addressed is Evidence-Based Approaches to Public Health: 3. Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming, and software, as appropriate. This competency was met by analyzing quantitative data from the pre- and post- surveys completed during the program. Baseline data was collected through the pre-survey, which also included basic participant characteristic questions. The data obtained granted analysis of the average age of participants, the most reported field of study/work, and gender. The main questions analyzed from both the pre- and post-surveys consisted of closed- ended questions with Likert scale responses, presenting ordinal data to be analyzed and interpreted. The surveys were imported into SPSS in order to obtain descriptive statistics of answers before and after the intervention. SPSS was also used to analyze qualitative characteristics of participants and used to conclude themes found in gender and field of work or study that are similar to that of previous research. Multiple tables and figures were created from the evaluated data to present within the paper.

The second competency addressed is Evidence-Based Approaches to Public Health: 4. Interpret results of data analysis for public health research, policy, or practice. This competency was met by interpreting the results of the data analysis, based on the expected outcomes, and synthesizing it into conclusions and recommendations for the future. Future implications for research, policy, and practice were explored within the paper.

The third competency addressed is Planning and Management to Promote Health: 11. Select methods to evaluate public health programs. I met this competency by selecting appropriate

methods to evaluate the Suicide Prevention Campaign. The methods included data collection from pre- and post-surveys collected during the Suicide Prevention Campaign implemented through Genesee Health System during my APE. The obtained data was used to perform an outcome summative quantitative evaluation that observed overall improved results among participants in all outcome areas assessed. This information will be distributed to Genesee Health System to use as supportive evidence for future public health programs targeting suicide prevention.

The concentration competency addressed is Analyze and report community assessment data collected using an appropriate existing or new instrument. I met this competency by analyzing the community data involved with the evaluation. The data was collected from pre- and post-surveys in order to analyze the difference in change of knowledge and behaviors among participants. SPSS was used to run analysis on the data obtained. The data will be reported to Genesee Health System as an evaluation of their Suicide Prevention Campaign that will be kept with the program. The collected data can be considered community assessment data because it was the first step taken by GHS to address the community to get baseline data from community stakeholders on their self-reported knowledge and behaviors. The data procured from this study can assist GHS with making necessary changes for future program implementation by addressing the feedback and results from the evaluation.

Conclusions

The Suicide Prevention Campaign successfully achieved the objectives set for the intervention conducted by Genesee Health System. The virtual training intervention was able to reach over 800 community members and stakeholders from varied age groups and backgrounds. The intervention was able to increase participants awareness and knowledge of suicide prevention resources, while also increasing their confidence to apply suicide prevention behaviors. GHS has been able to build onto this campaign for a second year with another media campaign, more LivingWorks Start licenses, and a new component that offers two in-person LivingWorks courses (ASIST and SafeTalk).

The present evaluation shows that prevention to combat suicide cannot be accomplished by a single sector or professional field. It solidifies the necessity of interprofessional teams to combat complex health issues, such as suicide. It is impossible to independently address all risk factors that may be influencing thoughts of suicide in an individual; by working together as an interprofessional team, and providing training to sectors beyond mental health, communities can support suicide prevention efforts collaboratively to address the many factors that can influence suicide.

The authors' opinion is that more research is needed to measure the impact gatekeeper trainings have in real world applications. The present study only shows what participants self-reported as intended behaviors, however, there is no way to conclude the application of behaviors in the future. It would be beneficial to include a follow-up component to this campaign in the future to observe how gatekeepers respond 6 months after the training, as a way to measure the maintenance of knowledge and behaviors over time. It is clear that suicide prevention training is needed; this research reflects the essential aspect that, when implemented,

trainings amongst community sectors can promote additional avenues of support for someone who may be thinking about suicide. Continuous development of programs, that can be modified to fit the needs of the intended audience, is needed to support efforts of large-scale implementation.

Suicide is a tragedy that impacts people all over the world. It is a prevalent public health issue that should be addressed amongst sectors associated with underlying risk factors that can influence suicidal behavior. Multisector involvement promotes a community-based network of safety that can aid in the implementation of suicide prevention interventions. Through presenting an interactive and immersive online gatekeeper training, GHS has taken the first step in promoting a community-based network of safety within Genesee County. By continuing to work together, public health professionals can support these efforts and elevate the capacity in which suicide prevention trainings are promoted and implemented. The future depends on public health professionals to utilize best-practices in ensuring proper support and education for gatekeepers. As an integral role of the community, public health professionals can pave the way for increased access to, and widened dissemination of, suicide prevention gatekeeper trainings to continue to unite communities in decreasing overall deaths by suicide.

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APPENDIX A: LIVINGWORKS START TERMS AND CONDITIONS OF USE

LivingWorks Start

Terms and Conditions of Use

Effective as of 20th September, 2019

By using LivingWorks Education's websites you accept our terms and conditions of use. Unless you have read and accepted all of these terms and conditions of use, do not use this website. If you do not wish to accept the terms and conditions of use, do not use the website.

General Terms and Conditions of Use:

- LivingWorks reserves the right to add to, change or remove any of the material on its websites at any time without notice.
- You acknowledge that LivingWorks owns the copyright and intellectual property rights for the contents of their websites and any associated trainings. You agree to not copy or distribute any of the content on LivingWorks' websites unless you have express written permission from LivingWorks to do so.
- LivingWorks regularly reviews the information on our websites, however we cannot guarantee that all of the information is accurate. Where health or medical advice or additional crisis resources are needed, users should always seek the advice of a qualified health professional.
- The LivingWorks website/s or any associated trainings are not designed for children under 13 years of age. We do not knowingly collect or maintain personal information from any children under 13. If you are under the age of 13, do not use this or any other LivingWorks website and do not share any personal information with us.
- If you are under the age of 16, you must have permission and/or supervision from your parents, legal guardian or authorized public authority to use this website.
- This website is not optimized for Internet Explorer browsers. For best performance, we recommend using Google Chrome, Safari, Mozilla FireFox or Microsoft Edge.
- By providing your email address to us, you expressly consent to receive emails from us, however you may unsubscribe from this service at any time. We may use email to communicate with you, to send information that you have requested or to send information about other products or services developed by LivingWorks.
- We use email communication to help you to register an account on our websites. Some email servers may filter our emails to "spam" or block our emails entirely. If this is the case, please ensure that your email account settings flag emails from admin@livingworks.net as safe to enter your inbox.
- By creating an account, you agree to provide accurate and current information during registration. You must keep your access credentials private and

confidential. You must not use a false email address or impersonate any person or entity when creating an account. We recommend that you confirm and update your profile regularly. This information will be stored and used to provide you the best possible experience of our websites, in accordance with our Privacy Policy.

- LivingWorks websites contain links to third party websites. LivingWorks is not responsible for the currency, content or privacy practices of third party websites. You acknowledge that you enter any third party website at your own risk.
- LivingWorks reserves the right to terminate, without prior notice, any user account or suspend access to the content, for violating these Terms and Conditions of Use. If your account is terminated, your rights to use the LivingWorks websites and associated content will cease immediately.
- You agree to check our Terms and Conditions of Use periodically for new information and terms that govern your use of LivingWorks websites. LivingWorks reserves the right to make changes to our policies and Terms and Conditions of Use at any time. Updating the modified Terms and Conditions of Use or policies will give effect to the revised terms. Your continued use of LivingWorks websites indicates your acceptance of any revised terms.

LivingWorks Start Terms and Conditions of Use:

By participating in the LivingWorks Start training, you agree to the General Terms and Conditions of Use as well as the LivingWorks Start Terms and Conditions of Use which are as follows:

- Information covered in LivingWorks Start relates to the topic of suicide and may be sensitive for some users. If you have been recently bereaved by suicide or feel that now is not the right time for you to complete this training, consider your well-being before commencing.
- LivingWorks Start is for individual use only. You must keep your access credentials private and confidential. LivingWorks Start is not to be displayed in a classroom or group setting.
- For the best training experience, you will need to have access to a microphone and speakers or earphones during your participation. (Closed captions are available where needed).
- Access to LivingWorks Start will expire 60 days after account creation. At this time, you will still have access to a summary of your key training learnings, as well as all other resource tools in the Connect platform, including the "Find Safety" feature. If you require help or an extension to this period, please contact LivingWorks directly at info@livingworks.net.

APPENDIX B: LIVINGWORKS START PRIVACY POLICY

LivingWorks Education Privacy Policy

Effective as of 20th September, 2019

Introduction and Scope

Your privacy is important to LivingWorks Education Inc. and its affiliates (collectively, "**LivingWorks**", "**we**", "**our**" or "**us**"). To provide our services to you, we need to collect, store, use, and disclose some of your personal information. We have developed this privacy policy (the "**Privacy Policy**") to inform you of the ways in which we may collect, use and disclose your personal information. This Privacy Policy applies to LivingWorks, the livingworks.net website and all related mobile apps, e-commerce shops, social media apps, desktop apps, and software services (collectively, the "**Platform**"), any services offered by us ("**Services**"), and to any program or joint venture LivingWorks participates in. In this Privacy Policy, "you" and "your" mean you, provided you have created an account on the Platform, provided any information to us, or applied for, enrolled in, or used any Services.

General

We will only collect, use and disclose your personal information where we have a lawful basis for doing so. Usually this will require that we obtain your informed and express consent for the collection, use and disclosure of your personal information for a particular purpose. However, in certain circumstances your consent is not required. Some examples where consent may not be required are: where the collection, use or disclosure of the personal information is reasonable and required for LivingWorks to comply with a legal obligation; where the collection, use or disclosure of personal information without consent satisfies a legitimate interest of ours, or a vital interest of yours—for example, if a circumstance required your medical history to be disclosed for emergency treatment. We may collect, use and disclose your personal information without your consent or knowledge in those types of circumstances.

We may amend this Privacy Policy from time to time. If we make material changes in the way we use personal information, we will notify you by posting an announcement on the Platform or sending you an email. Users are bound by any changes to the Privacy Policy when they use the Platform or Services after such changes have been first posted.

What personal information does LivingWorks collect and how do we collect it?

- We receive and store personal information you provide to us through the Platform, the Services, or in any other way. The types of personal information we collect may include: your name, email address, occupation, age range, place of work, address (city), interests, and IP address.
- We may also collect personal information from you relating to your experience of our training programs, such as: demographic information and outcomes of the application of your learning from our training programs (whether an intervention occurs after the training, on what dates the training and any intervention occurred, and what types of resources you accessed). We will collect these types of information to enable us to fulfill our contractual obligations to you by providing

our services that you request; to use in aggregated form to contribute to public health research initiatives and the field of suicidology, and other public interest purposes; and for scientific research purposes which respect your right to data protection and provide suitable and specific measures to safeguard your fundamental rights and the interests.

- We use common internet technologies, such as cookies and beacons, on our websites and emails, to help provide you with a better, faster, and safer experience, and to provide you with customised resources, learning and support. See our cookie policy, available at [URL] for more information.
- Unless otherwise required or permitted by law or unless otherwise set out in this Privacy Policy: (i) we will only collect your personal information directly from you, and (ii) when we collect your personal information we will inform you of the uses and disclosures that we intend to make of your personal information.

How do we use and share personal information we collect?

- LivingWorks may use the personal information you provide for such purposes as allowing you to set up a user account and profile that you may use to interact with the Services, improving the content of the Services, and research and development to support new products and advance the field of suicidology.
- Information about our users is an integral part of our business. We use your personal information in order to provide you with: information you request, customized learning and support resources, the Platform and the Services, and to help us develop new Services that meet your needs, all in a manner consistent with this Privacy Policy.
- We do not share your personal information with third-party marketers.
- We will use personal information you provide only for purposes consistent with the reason you provided it.
- When we temporarily provide personal information to companies that perform services for us, such as Shopify, we require those companies to protect the information in the same manner as LivingWorks. These service companies may not use your personal information for any other purpose than the reason you provided it to LivingWorks.
- We share personal information with employers and host organizations to understand training uptake and related activity. Limited portions of this information will be personally identifiable—specifically, information about which employees have completed specific training courses. The purpose of this information sharing is to enable employers to track the effectiveness of their training programs. All other personal information shared with employers will be shared as aggregate or anonymous information, formatted such that there is not a serious possibility that an individual could be identified through the use of that information, alone or in combination with other information.
- We may share such information with third-party research partners in an aggregated form as part of a segment of users or in a de-identified form, but we would not share such information in a manner that specifically identifies you.

- The Services may contain links to other sites. LivingWorks is not responsible for the privacy policies or practices on other sites. When linking to another site, you should read the privacy policy stated on that site.
- We neither rent nor sell your personal information to anyone for their own use; however, we may provide aggregate or anonymous information to third parties for research purposes, by license or otherwise, provided there is not a serious possibility that an individual could be identified through the use of that information, alone or in combination with other information.
- We may use collect and use geolocation data relating to your mobile device to help provide access to local crisis resources for you and for statistical analysis for suicide prevention research.
- By providing your email address to us, you expressly consent to receive emails from us, however you may unsubscribe from this service at any time. We may use email to communicate with you, to send information that you have requested or to send information about other products or services developed or provided by us or our partners.

What choices do I have regarding LivingWorks's use of my personal information?

- You have certain choices relating to your personal information we collect and use. You may request that we provide you with access to the personal information that we hold about you. You may ask us to correct any errors or delete any of the information we have about you. We note, however, that your ability to exercise these choices is not absolute. In some circumstances (for example, if the information is protected by legal privilege or if the information was collected for an investigation or legal proceeding), we may be permitted or obliged to deny such requests. In addition, to protect your privacy and the privacy of others, we may have to verify that you are who you say you are before we can give you access to, change or remove information about you.
- We may retain your personal information for as long as your Services account is active or as long as we are legally permitted or obligated to retain it to comply with our legal obligations, resolve disputes, and enforce our agreements.
- You can remove or change content or information that you have posted on the Platform on your account and profile through the Platform or you can ask us to remove it by emailing info@livingworks.net. Even after you remove information from your account or profile, copies of that information may remain viewable elsewhere, if there are legal reasons why we may need to retain it. Removed and deleted information may remain on backup media for a period of time prior to being deleted from our servers.
- If you ever decide to delete your LivingWorks account, please email info@livingworks.net from the email address used on your LivingWorks account. LivingWorks will terminate your account within 7 working days of receiving the request. Notwithstanding the foregoing, we will retain information as required by applicable law and we will not delete any information that has already been aggregated or anonymized.

GDPR (the European Union's General Data Protection Regulation) compliance

LivingWorks is committed to compliance with the GDPR and its principles, including: prioritizing informed consent respecting the collection of personal data; lawful processing of personal data; maintaining accurate, updated, and secure personal data; and respecting data subjects' rights concerning their personal data.

LivingWorks is a controller of our users' personal information. If you have questions about our GDPR compliance, please contact our Data Protection Officer (DPO), Brian Bleakley at info@livingworks.net.

Our GDPR compliance actions include: creating and maintaining this Privacy Policy; appointing our DPO; periodically reviewing the personal data we collect, store, manage, process, and control; assessing our bases for processing personal data to ensure there is a lawful basis for all such processing; monitoring our systems to identify and investigate potential personal data breaches; and, providing training to our employees and raising the awareness of GDPR compliance throughout our business.

How to contact us

You may contact us, to ask questions, raise concerns or exercise choices relating to this Privacy Policy, in the following ways:

Privacy Officer: Brian Bleakley

Mail: #119, 807 – 42 Avenue SE, Calgary, Alberta, CANADA, T2G 1Y8

Phone: 1-403-209-0242

Email: info@livingworks.net

We will make every effort to answer your questions or resolve your concerns.

Contact Us

You must agree to the Terms and Conditions of Use and Privacy Policy to continue.

☐ I agree to the Terms and Conditions of Use and Privacy Policy

APPENDIX C: LIVINGWORKS START PRE-SURVEY QUESTIONS

Pre-training survey

Before you begin your training, rate how strongly you agree with each of the statements below:

(4-point scale – Strongly agree / Agree / Disagree / Strongly disagree)

5. I am willing to talk with someone who may be thinking about suicide.
6. I believe I could recognize the signs that someone might be thinking about suicide.
7. I know how and where to get help for someone who may be thinking about suicide.
8. I feel confident in my ability to help someone who may be thinking about suicide.

APPENDIX D: LIVINGWORKS START IN-COURSE QUESTIONS

In-Course Questions

1. After you tune in to the possibility of suicide, what is the next thing you do?
    a. Connect
    b. Ask
    c. State
    d. Tune In

2. In the park, you see someone who appears visibly upset. They have tears in their eyes. What would you say?
    a. Hey there, I couldn't help but notice that you look sad. I've got a few minutes to listen.
    b. Cheer up… It can't be so bad that you're thinking about suicide, can it?
    c. It'll get better, and if it doesn't there's phone numbers you can call when you need someone to talk to. I've got one written down in my wallet if you want it.
    d. You smile and then say, "I hope your day gets better!"

3. You ask your co-worker how he's doing in the afternoon. He says, "I guess I'm doing OK... I've just been really tired lately... all I want to do is sleep. But we're all tired, right? How are you doing?
    a. You don't get off that easy... Why are you so tired? Work's been light since the reports went in... is something else bothering you?
    b. You don't sound like yourself. How tired are you? Do you want to sleep forever, like suicide?
    c. If you are tired like that, it must be something serious. Whether it's medical... or psychological.
    d. You're right, I'm tired too. How about we both get some rest and catch up over a cup of coffee tomorrow morning?

4. At lunch, your close friend says: "But my thoughts are like, really dark and overwhelming... It's not the sort of thing people talk about."
    a. We're talking now, it's OK to tell me more about those thoughts.
    b. How dark do you mean? Are you talking about suicide?
    c. I know how to get in touch with people that you could talk to, people who are trained to listen to dark thoughts.
    d. Maybe we shouldn't then. When I have dark thoughts, I try to distract myself. I need to swing by the mall, do you want to come along?

5. When talking on the phone, your 50-year-old aunt says, "...my knee has been getting worse. But I don't spend as much time in the garden since your uncle died. So it's not really a problem. Besides, I've lived a full life. I won't have to worry about it for that much longer."
    a. You're not that old! Is there something else going on I don't know about?

b. The way you just said that sounds like you may be thinking about suicide. Are you thinking of killing yourself?
c. Promise me that you'll ask your doctor next week about those new arthritis drugs. And I know Dr. Hemmings... if it's really emotional pain that's bothering you, she's a good listener and could refer you to a great psychologist.
d. Don't say that! I'm going to see you in the summer and I've got adventures planned.

6. You just asked your friend who has been visibly depressed if he is considering suicide. He says, "Yeah, I guess so. But anybody who's been through what I've been through would."
    a. Do you have a plan? Have you thought about how you would to it?
    b. You're probably right, but if you're thinking about suicide, then that is very serious.
    c. Well, if you are thinking about suicide, should we call one of those crisis lines now? Or maybe we can get you an appointment next week at student health? I know a great counselor.
    d. Wow, I didn't think you'd actually say that you were suicidal! It's going to be OK. We'll get you through this.

7. Your friend answers your text with "It's not like I want to kill myself, but sometimes I wouldn't mind if I was dead."
    a. I don't understand... so you have thought about suicide before, but right now, you just are kind of depressed?
    b. Even if you are thinking that you'd be better off dead, that's still serious. Seems like help would be a good idea.
    c. OK, promise to call me or the crisis line if you do become suicidal. Let me get the number... 1 sec.
    d. Well, that's called passive suicidal ideation. It's not as serious, but let me know if gets any worse, OK?

8. Upon asking if your sister knows her suicidal thoughts are serious, she replies, "I know it's serious! But how is anyone going to help? Seeing that shrink in college was a waste of time. I just have to figure this out on my own. I appreciate the concern, but it's alright."
    a. You're damn right I'm concerned, you're my sister! I asked in order to be helpful. We can figure this out together.
    b. I'm not sure *you* appreciate how serious this is. Suicidal thoughts are too big to deal with on your own.
    c. You're right, that guy was not a good fit. But we can find somebody that is. I've got the number to a crisis line... Can we start there?
    d. I'll always be concerned about you, and I'm glad you agree that it's something that you need to get control over.

9. Your friend asks, “Well, what am I supposed to do then, go to the ER and say I’m suicidal? They’ll keep me there all weekend.”
    a. I’ll go and stay with you the whole time… your weekend is my weekend.
    b. Suicide is more serious than your weekend plans.
    c. These thoughts are serious, but you don’t have to go to the hospital. There are other places to get help - let’s figure it out together.
    d. I think that’s a great plan. It will keep you safe for now. And I heard it is going to rain.

APPENDIX E: LIVINGWORKS START POST-SURVEY QUESTIONS

Post-training survey

1. How much previous training in suicide prevention have you had?
    a. None
    b. Less than 1 hour
    c. 2-5 hours
    d. 6-13 hours
    e. 14 or more hours

2. Now that you have completed LivingWorks Start, respond to the following questions indicating how much you agree with each one: *(matrix scale: strongly agree/agree/disagree/strongly disagree)*
    a. I am willing to talk with someone who may be thinking about suicide.
    b. I believe I could recognize the signs that someone might be thinking about suicide.
    c. I know how and where to get help for someone who may be thinking about suicide.
    d. I feel confident in my ability to help someone who may be thinking about suicide.

3. After completing LivingWorks Start, if I encounter a person who I think might be considering suicide, I am likely to: *(matrix scale: very likely/likely/neither likely nor unlikely/unlikely/very unlikely)* a. Tune in to the possibility of suicide
    b. Ask an individual if they are thinking about suicide
    c. Tell someone thinking about suicide that suicide is serious
    d. Connect an individual thinking about suicide with helping resources

4. I see LivingWorks Start as being useful for helping: (check all that apply)
    a. Family
    b. Friends
    c. Work colleagues
    d. Acquaintances
    e. Classmates (where applicable)
    f. Youth
    g. Individuals in my community
5. I already have someone in mind that I could use my new skills with.

a. Yes
b. No

6. Having taken LivingWorks Start, if I were struggling with thoughts of suicide myself, I know how to use the resources provided to me to get help.
   a. Yes
   b. No

   If your answer was no, remember that you can always find details of crisis and safety resources by visiting connect.livingworks.net and clicking on the "Find Safety" button.

7. The role I would like to play in suicide prevention is: (check all that apply)
   a. Identify a person with thoughts of suicide and connect them to a helping resource.
   b. Be alert to suicide and listen to help a person with suicide thoughts to keep safe.
   c. Provide an intervention to a person with suicide thoughts to create a safety plan.
   d. Provide long-term recovery and growth support in a professional context.

8. What were your favorite parts of learning? (open text field)

9. How likely are you to recommend LivingWorks Start to someone else?
   a. Very likely/likely/undecided/unlikely/very unlikely

10. What, if anything, would help deepen your learning? (open text field)

11. What part of the course was challenging and beneficial? (open text field)

12. Would you like more training?
    a. Yes
    b. No

13. Any other comments? (open text field)

14. Do you give your permission to quote you?
    a. Yes
    b. No

APPENDIX F: GHS SUICIDE PREVENTION CAMPAIGN OUTREACH MATERIALS

Informational Rack Card / Handout

3-5/8" W x 8-1/2" H

YOU CAN HELP PREVENT SUICIDE

CAN WE TALK?

Sadly, suicide is a national health issue. And right here in Genesee County, an average of more than 50 people die by suicide each year. However, there is something we all can do to help prevent suicide.

- Learn about the warning signs
- Speak up if you are concerned about someone
- Reach out to people you know
- Become aware of the resources available

You are not alone, we are here to help.

810.257.3740

Text **FLINT** to **741741**

LET'S TALK ABOUT **SUICIDE**

Speak Up. Reach Out.

GHS Genesee **HEALTH SYSTEM**

Paid for with local funds through Region 10 PIHP

FRONT

What to do when someone is at risk

If you think someone is thinking about suicide, assume you are the only one who will reach out. Here's how to talk to someone who may be struggling with their mental health.

Have an honest conversation

- Talk to them in private
- Listen to their story
- Tell them you care about them
- Ask directly if they are thinking about suicide
- Encourage them to seek treatment or contact their doctor or therapist
- Avoid debating the value of life, minimizing their problems or giving advice

If a person says they are considering suicide

- Take the person seriously
- Stay with them
- Help them remove lethal means
- Call the GHS 24 hour Crisis and Virtual Behavioral Health Urgent Care Line: **(810) 257-3740**
- Call the National Suicide Prevention Lifeline: **1-800-273- TALK** (8255)
- **Text FLINT to 741741** to text with a trained crisis counselor from the Crisis Text Line for free, 24/7
- Escort them to mental health services or an emergency room

People sometimes need a little extra assistance. Genesee Health System has trained, professional staff available to assist individuals and families during a mental health, substance abuse, or family crisis. Call 24 hours a day, 7 days a week.

GHS Genesee **HEALTH SYSTEM**

Get more info: www.**LetsTalkGenesee**.com

BACK

Business Card / Handout
3-1/2" W x 2" H

FRONT

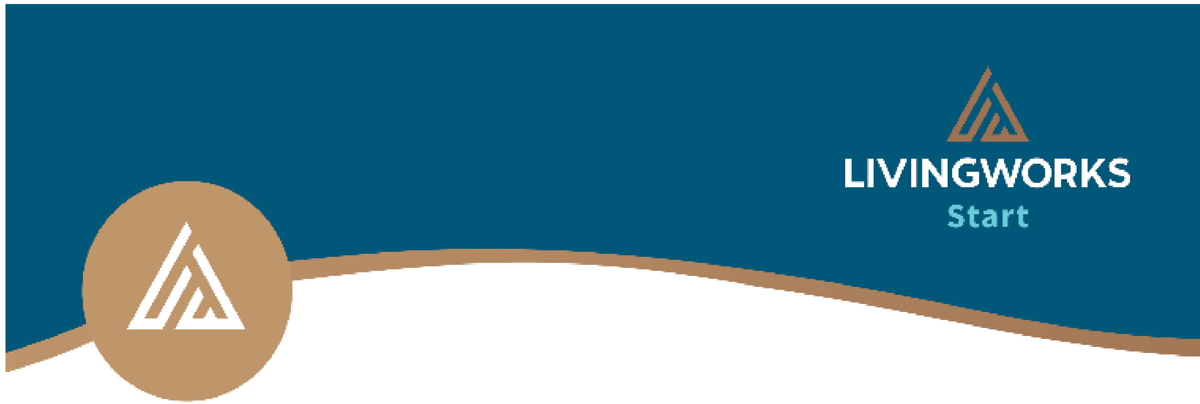
BACK

Bulletin Billboards - Expressway

Poster Billboards - Side Streets

Radio Ad Script: "Getting help for a loved one is easier than you might think. If you or a loved one are struggling with suicidal thoughts, hope begins with a phone call. Call 810-257-3740 or text "flint" to 741741. Our professional staff is available 24hrs a day 7 days a week. So let's talk. Speak up. Reach out. Get more info at letstalkgenesee.com Paid for with local funds through Region 10 PIHP."

APPENDIX G: LIVINGWORKS START CERTIFICATE OF COMPLETION

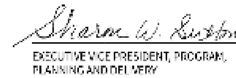


Cora Hickey

has completed LivingWorks Start, learning the TASC steps
to recognize thoughts of suicide and engage safety
resources using LivingWorks Connect.

05/04/2021
DATE

PRESIDENT, LIVINGWORKS EDUCATION


EXECUTIVE VICE PRESIDENT, PROGRAM,
PLANNING AND DELIVERY

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APPENDIX H: IRB APPROVAL

Health Sciences and Behavioral Sciences Institutional Review Board (IRB-HSBS) • 2800 Plymouth Rd., Building 520, Room 1170, Ann Arbor, MI 48109-2800 • phone (734) 936-0933 • fax (734) 998-9171 • irbhsbs@umich.edu

To: Cora Hickey

From:

Riann	Palmieri-Smith
Thad	Polk

Cc:

Gergana	Kodjebacheva
Cora	Hickey

Subject: Notice of Determination of "Not Regulated" Status for [HUM00209742]

SUBMISSION INFORMATION:
Title: An Evaluation of a Public Health Intervention Aimed at Increasing Knowledge and Improving Behaviors Surrounding Suicide Prevention among GHS Staff and Genesee County Community Members
Full Study Title (if applicable):
Study eResearch ID: HUM00209742
Date of this Notification from IRB: 12/22/2021
Date of IRB Not Regulated Determination: 12/22/2021

IRB NOT REGULATED STATUS:

Category	Outcome Letter Text
Research Involving De-identified Biological Specimens or Information	Based on the information provided, the proposed study does not fit the definition of research involving human subjects (45CFR46.102) because the researchers intending to contribute to generalizable knowledge do not interact with human subjects, nor obtain identifiable private information or identifiable biospecimens.

Thad A. Polk

Riann Palmieri-Smith Co-chair, IRB HSBS

Thad Polk Co-chair, IRB HSBS