MARYLAND
SPIN
Suicide Prevention and Early Intervention Network

Garrett Lee Smith State and Tribal Suicide Prevention Grant Program

Year 4 Annual Report
Cohort 9

Reporting Period:
September 30, 2017 – September 29, 2018

Suicide Prevention Branch
Division of Prevention, Traumatic Stress and Special Programs
Center for Mental Health Services
Substance Abuse and Mental Health Services Administration
Department of Health and Human Services

MARYLAND DEPARTMENT OF HEALTH
Behavioral Health Administration

MD-SPIN Staff

Behavioral Health Administration

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University of Maryland

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- Dr. Nancy Lever, Director of Training
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- Natasha Link, Graduate Assistant
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- Dr. Holly Wilcox, Lead Evaluator
- Dr. Mary Cwik, Emergency Department Suicide Prevention Coordinator
- Taylor Ryan, Research Assistant

SAMHSA, SPRC, ICF Staff

- Savannah Kalman, SAMHSA Government Project Officer
- Amy Loudermilk, SPRC, Prevention Specialist
- Tasneem Tripathi, ICF, Technical Assistance Liaison

Personnel Changes

Over the past year, MD-SPIN hired two new research assistants. At the University of Maryland Baltimore, Rebecca LaCosta was hired (for 10% FTE). At Johns Hopkins University, Taylor Ryan replaced Samantha Jay (who left the position). Amy Loudermilk replaced Ryan Swanson as the SPRC Prevention Specialist. Tasneem Tripathi became the Technical Assistance Liaison for ICF.

Goals and Objectives

Goal 1: Enhance culturally competent, effective, and accessible community-based services and programs by developing a Maryland Suicide Prevention and Early Intervention Network (MD-SPIN) that includes technical assistance and support.

Objective 1: Partner with MSDE and Center for School Mental Health to outreach to primary and secondary schools, including those in all juvenile services facilities, around dissemination of Kognito and linkages to the MD-SPIN Initiative.

Objective 2: Partner with two local Garrett Lee Smith Prevention Grants Awardees and a Historically Black College to promote Kognito training and linkages to the MD-SPIN Initiative for public community college and university networks.

Objective 3: Partner with the Community Behavioral Health Association of Maryland to outreach to behavioral health organizations to promote participation in MD-SPIN efforts.

Objective 4: Partner with the Maryland Behavioral Health Integration in Pediatric Primary Care Project around outreach to and training of primary care providers in suicide prevention.

Objective 5: Partner with the MSDE and its Maryland Coalition of Families to outreach to and train staff working with veterans and military families on suicide prevention.

Objective 6: Maryland Coalition of Families will promote the Kognito Family of Heroes module to the military and other families.

Goal 2: Increase and broaden the public's awareness of suicide, its risk factors, and its place as a serious and preventable public health concern by utilizing MD-SPIN to support marketing, dissemination, and diffusion related to suicide prevention for youth and young adults.

Objective 1: Expand existing Maryland Behavioral Health website to host online training, support resources, and a learning community for suicide prevention.

Objective 2: Serve as a portal for the public to become more aware of and utilize webinars, training materials and other resources developed by the SPRC, National Suicide Prevention Lifeline, National Action Alliance and other partners.

Objective 3: Enhance the use and capacity of the hotlines by promoting the use of the National Suicide Prevention Lifeline and Maryland's Crisis Hotline and providing resources to expand the availability of local online chat hours.

Objective 4: Incorporate a statewide suicide prevention marketing campaign into the existing Children's Mental Health Matters!, a Maryland public education campaign.

Objective 5: Partner with Taking Flight (MCF program for adolescents and young adults) to promote Kognito's Friend 2 Friend module with participating Prince George's County high school students.

Objective 6: CBH will collect operational and health outcome data for member organizations via a data warehouse to drive systematic change in Maryland's public behavioral health system and inform state and federal advocacy efforts.

Goal 3: Increase evidence-based or best practice training opportunities for professionals and those who come into contact with high-risk groups (i.e., LGBTQ, transition age youth, youth with emotional and behavioral disorders, juvenile justice-involved youth, returning veterans and military families) by training a diverse, multidisciplinary group of youth and adults across the state using a suite of tailored suicide prevention programs (Kognito/SPRC/Action Alliance).

Objective 1: Increase the number of primary and secondary public school staff, community college and university staff, pediatric primary care providers, families including military-connected families, and youth peers trained.

Objective 2: Increase the number of individuals who are trained to identify and refer youth ages 10-24 at risk for suicide.

Objective 3: As a result of this training, increase the number of youth identified as at risk for suicide and referred for support.

Goal 4: Assure effective services to those who have attempted suicide or others affected by suicide attempt/death by developing a state training and technical assistance model to promote access and follow through with quality behavioral health resources, including mental health and substance abuse, within the community, region, and state.

Objective 1: Increase the number of ED, inpatient and behavioral health providers who are trained to screen for and treat suicide risk.

Objective 2: Improve communication between providers along the continuum of care for youth identified as at-risk.

Objective 3: Increase standardized follow-up with suicidal patients post-discharge from EDs and inpatient units.

Programmatic Recap

Maryland's Suicide Prevention and Early Intervention Network (MD-SPIN) provides a continuum of suicide prevention training, resources, and technical assistance to advance the development of a comprehensive suicide prevention and early intervention service system for youth and young adults. MD-SPIN will increase the number of youth, ages 10-24, identified, referred and receiving quality behavioral health services, with a focus on serving high risk youth populations (LGBTQ, transition age, veterans and military families, youth with emotional and behavioral concerns) and in target settings (schools, colleges/universities, juvenile services facilities, primary care, emergency departments).

Training

Kognito Gatekeeper Training

Kognito is an online, avatar-based gatekeeper training that allows users to simulate a conversation with a peer, student, or patient that is exhibiting symptoms of psychological distress. The simulations enhance users' confidence to have a conversation with the person at risk and make an appropriate referral to mental health resources. In FY18, there were 6,747 Kognito activations. There are currently 14 Kognito modules available to Maryland residents through md.kognito.com. The modules include:

- At-Risk on Campus – Students (ARUS)
- At-Risk on Campus – Faculty (ARUF)
- LGBTQ on Campus for Factuly & Staff (LGBTQF)
- LGBTQ on Campus for Students (LGBTQS)
- Veterans on Campus for Factuly & Staff (VOCF)
- Veterans on Campus: Peer to Peer (VOCP2P)
- At-Risk for High School Educators (ARHS)
- At-Risk for Middle School Educators (ARMS)
- At-Risk for Elementary School Educators (ARES)
- At-Risk in Primary Care (PCP)
- At-Risk in Primary Care – Adolescents (PCP Teen)
- Step In, Speak UP (SISU)
- Transitions: Supporting Military Children (SMC)
- Friend to Friend (F2F)
- Family of Heroes (FOH)

Kognito Module Completions vs. Activations

Kognito Data - 9/30/17-09/29/2018		
Course	**Completions**	**Activations**
ARUS	2372	2455
LGBTQ STUDENT	1375	1495
ARUF	546	655
ARES	304	425
ARHS	201	352
VOC PEER	230	319
LGBTQ FACULTY	242	281
ARMS	223	297
VOC FACULTY	93	105
F2F	49	130
SISU	59	78
SMC	35	52
PCP	25	38
PCP TEEN	18	33
FOH	5	30
F2F EVAL	3	15
Total	5780	6760

Kognito Activations By Module and Quarter

Simulation	Q1	Q2	Q3	Q4	Total
At-Risk for College Students (ARUS)	822	396	458	780	**2456**
At-Risk for Faculty & Staff (ARUF)	130	98	80	347	**655**
LGBTQ on Campus for Faculty & Staff (LGBTQF)	83	42	48	108	**281**
LGBTQ on Campus for Students (LGTBQS)	228	950	158	159	**1495**
Veterans on Campus for Faculty & Staff (VOCF)	28	18	14	45	**105**
Veterans on Campus: Peer to Peer (VOCP2P)	96	44	109	70	**319**
At-Risk for High School Educators (ARHS)	68	182	82	20	**352**
At-Risk for Middle School Educators (ARMS)	90	128	72	7	**297**
At-Risk for Elementary School Educators (ARES)	60	202	147	17	**426**
Primary Care Providers	18	7	8	5	**38**
Primary Care Providers –Adolescents	18	4	7	4	**33**
Step in, Speak Up (SISU)	14	39	20	5	**78**
Transitions: Supporting Military Children	13	23	13	3	**52**
Friend2Friend	2	74	53	1	**130**
Family of Heroes (FOH)	2	8	12	8	**30**
TOTAL	**1672**	**2215**	**1281**	**1579**	**6747**

**Note: These numbers reflect the number of activations, not completions of Kognito modules.*

Kognito Module Activations by Year

MD-SPIN Kognito Module Activations by Year					
Course	**Y1**	**Y2**	**Y3**	**Y4**	**Total**
At-Risk for Elementary School Educators (ARES)	140	3633	697	426	**4896**
At-Risk for Middle School Educators (ARMS)	293	2133	319	297	**3042**
At-Risk for High School Educators (ARHS)	461	3305	546	352	**4394**
At-Risk for College Students (ARUS)	230	2389	3041	2456	**8116**
At-Risk for Faculty & Staff (ARUF)	258	624	663	655	**2200**
Primary Care Providers	0	13	98	38	**149**
Primary Care Providers –Adolescents	0	8	46	33	**87**
Family of Heroes (FOH)	17	17	8	30	**72**
Friend2Friend (F2F)	0	9	2	130	**141**
LGBTQ on Campus for Faculty & Staff (LGBTQF)	142	706	1729	281	**2858**
LGBTQ on Campus for Students (LGTBQS)	81	519	473	1495	**2568**
Step in, Speak Up (SISU)	113	481	192	78	**864**
Veterans on Campus: Peer to Peer (VOCP2P)	84	220	309	319	**932**

Transitions: Supporting Military Children	0	0	35	52	**87**
Veterans on Campus for Faculty & Staff (VOCF)	130	200	222	105	**657**
Total	**1949**	**13987**	**8380**	**6747**	**31,063**

**Note: These numbers reflect the number of activations, not completions of Kognito modules.*

Evaluation of Kognito

Over the last year, members of the MD-SPIN research team conducted several evaluations using the grant data.

One team member used Kognito K-12 data for her Master's thesis, which she defended in May 2018. Below is her abstract:

> While schools have the capacity to reach youth at-risk for suicide, there remains a gap between the number of youth with mental health issues and those who receive services. Accordingly, gatekeeper training programs, which teach community members signs of psychological distress and strategies to refer youth to mental health support, are often one component of suicide prevention. Nevertheless, there is a dearth of research about the efficacy of online gatekeeper trainings, which may provide the flexibility and accessibility needed for overburdened schools. This study sought to investigate whether Kognito, an online and easily accessible gatekeeper training, was related to changes in educators' suicide prevention appraisals and behaviors (number of students identified, approached, and referred). Educators significantly increased their preparedness, likelihood, self-efficacy, and overall appraisals to intervene with at-risk students. However, chi-square goodness of fit tests revealed that most educators did not change suicide intervention behaviors. Natural gatekeeper status (e.g. educators approaching students at baseline) predicted changes in suicide intervention behaviors; self-efficacy change, however, did not precede behavior change. The findings taken as a whole indicate gatekeeper training alone appears insufficient to change suicide prevention behaviors, and accordingly, suicide prevention needs to employ a comprehensive approach.

Another staff member led the evaluation on the Kognito modules tailored to higher education students and faculty. The evaluation revealed both faculty's and students' self-perceived preparedness to intervene, likelihood of intervening, and self-efficacy to intervene increased from pre-test to post-test and were sustained at follow up. College faculty and staff did not demonstrate any significant changes in gatekeeper intervention behaviors. However, behavioral changes were observed in college students such that there were significant increases in the number of people students reported being concerned about, the number of people they approached about those concerns, and the number of people thinking about suicide that they referred for counseling services.

Follow-Up Survey Responses Pertaining to Gatekeeper Behavior

Participants complete a pre and post survey with completion of Kognito module(s). Participants are encouraged to complete a follow-up survey four months after their completion of the Kognito module(s). Unfortunately, responses to the follow-up surveys have been quite low. Below are responses to follow-up questions pertaining to gatekeeper behavior, rather than perceived confidence or likeliness to engage in behaviors.

At-Risk for Faculty & Staff (ARUF)

Since taking the Kognito At-Risk gatekeeper course…

Answer Choices	Average #	Total #	Responses
Approximately how many students have you been concerned about due to their psychological distress?	2	119	52
Approximately how many students have you approached to discuss your concerns about their psychological distress?	2	105	52
Of those you have approached, how many have you referred to support services?	2	93	52
How many times have you asked a student you were	1	34	47

concerned about whether they were considering suicide?			
Of those you approached, how many did you refer to support services?	1	38	45

At-Risk for Elementary School Educators (ARES)

As a result of taking this simulation, there has been an increase in the number of parents that I have:

Question	Yes	No	Total
Talked to regarding concern about the signs of psychological distress their child is showing to motivate them to connect their child with mental health support services.	26.09%	73.91%	23
Helped to inform about mental health support services available to a child who is exhibiting signs of psychological distress.	30.43%	69.57%	23

At-Risk for Middle School Educators (ARMS)

In the past two academic months, approximately how many students have you…

Answer Choices	Average #	Total #	Responses
Been concerned about due to their psychological distress	5	92	20
Approached to discuss your concerns about their psychological distress	4	79	20
Discussed a referral to support services	3	66	20

As a result of taking this simulation, there has been an increase in the number of:

Question	Yes	No	Total
Students I have recognized as exhibiting signs of psychological distress	33.33%	66.67%	15
Students I have approached to discuss my concern about their psychological distress	40%	60%	15
Students I had discussed a referral to support services	40%	60%	15
Conversations I have had with other teachers and/or staff regarding students that I am concerned about	46.67%	53.33%	15

Sustainability of Kognito

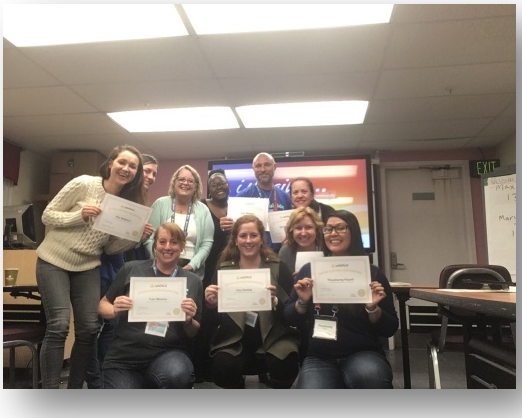
MD-SPIN staff has had conversations with Kognito staff to see the costs of various packages of Kognito trainings (e.g. K-12 modules, K-12 + higher education modules). Carryover funds were used to purchase additional access for Kognito modules through the end of December 2019. Kognito is not sustainable beyond the end of grant funding. In response to being unable to sustain Kognito, the MD-SPIN team has been developing an online suicide prevention module.

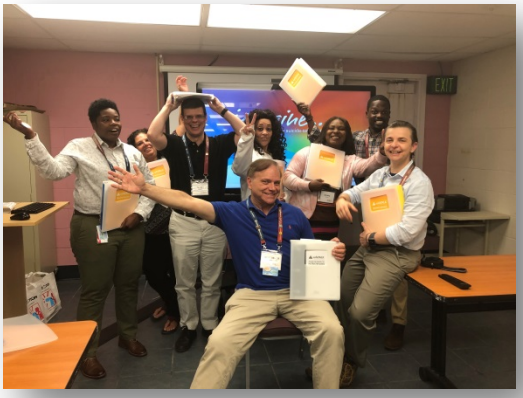
safeTALK

safeTALK is a three hour workshop teaching participants suicide alertness skills. Participants are taught about warning signs for suicide and taught an easily remembered intervention model (TALK). The TALK steps stand for Tell, Ask, Listen, Keepsafe. Participants learn how to identify someone who may be thinking of suicide, ask directly about suicide, listen to the person at-risk, and connect them with a keepsafe resource. At the end of each workshop, participants complete feedback forms that are submitted to Living Works to maintain fidelity to the program.

In May 2018, BHA hosted a safeTALK Training for Trainers (T4T). Nineteen safeTALK trainers completed the T4T. The trainers were provided the T4T at no cost with the agreement that they would provide their first workshop for free, provide training numbers to BHA, and provide pre/post evaluations to BHA. Each trainer received thirty participant kits to facilitate their first workshop. 13 of the 19 candidates had roles in the public school system, including school social workers, school psychologists, and school counselors. The other trainer candidates were military affiliates or employees of local core service agencies. Between June and September 2018, eight of the trainer candidates had facilitated 14 workshops. Among the eight trainer candidates that had facilitated workshops, a total of 322 people were trained in safeTALK. safeTALK is sustainable because the trainer candidates will maintain their trainer status beyond the end of the grant and many have developed plans for acquiring funding to continue to provide training.

Though MD-SPIN did not fund the safeTALK T4T, safeTALK has been incorporated into our training and evaluation objectives. MD-SPIN has been partnering with the Maryland State Department of Education (MSDE) around suicide prevention training for certificated school staff in response to legislation that went into effect this year. Various trainings have been discussed with MSDE, including safeTALK. MSDE expressed concerns that much of the evaluation completed on safeTALK was completed in foreign countries including Europe. MD-SPIN created a pre and posttest evaluation to provide participants so that evaluation can be conducted on the efficacy of safeTALK. The evaluation assesses education level, previous suicide prevention training, and behaviors. This year, MD-SPIN budgeted to purchase safeTALK materials to provide to the safeTALK trainers affiliated with MSDE.

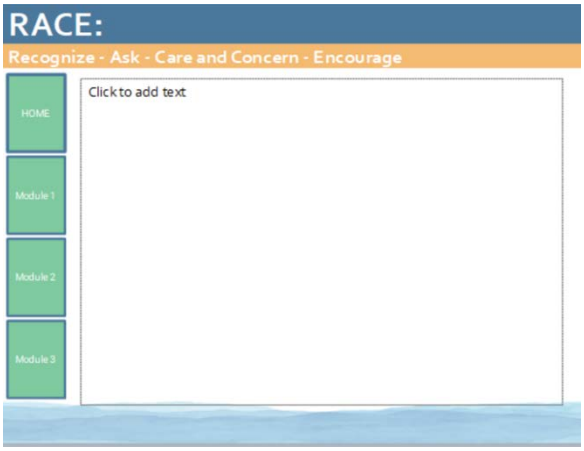


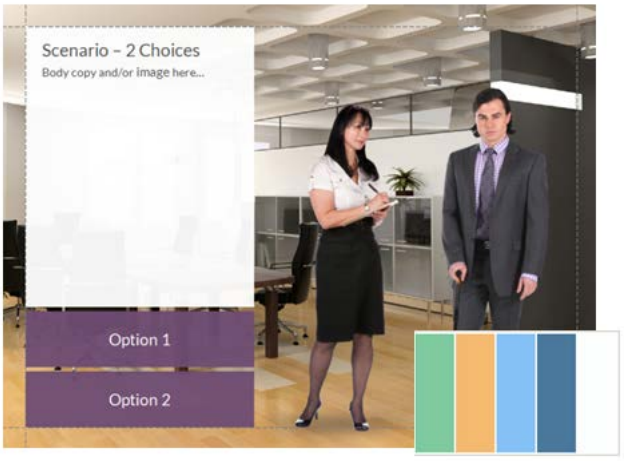


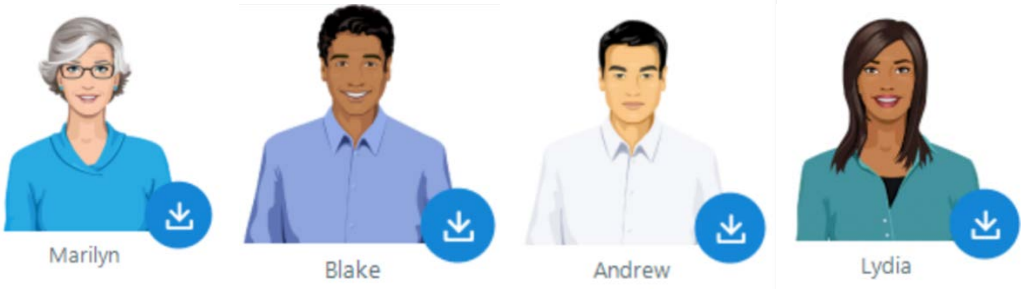
Online Suicide Prevention Module

The MD-SPIN team has collaborated with the Armstrong Institute of Johns Hopkins University to develop an online suicide prevention module that will exist beyond the end of grant funding. MD-SPIN is inquiring about which website the module will be housed and any web hosting costs associated with the module. The design of the module has been approved and discussed with the Armstrong Institute. MD-SPIN and Armstrong are currently developing the scenario template for the module. The completed module will be delivered to MD-SPIN on March 1, 2019.

The acronym used in the online module is RACE – **R**ecognize warning signs, **A**sk directly about suicide, **C**are for the person, **E**ncourage to seek help. Below is the acronym and color scheme of the online suicide prevention module. It was important to the team to have a color palette that was calming and not distracting. The module will be interactive and use avatars to introduce information and role play a practice scenario with a person at-risk. The four slides below show the format the module will be in for introductory pages, scenario/practice pages, and knowledge-testing pages.







Webinar Series

After the resurgence of national conversations about access to lethal means, MD-SPIN recognized the need to introduce suicide into the conversation. With a very quick turn-around, MD-SPIN hosted a webinar entitled "Virtual Town Hall: Preventing Suicide Through Means Restriction". The town-hall panel consisted of representatives from the suicide prevention, clinical, and law enforcement fields as well as a family member of a loved one with mental illness. The popularity of the virtual town hall ignited interest in hosting a suicide prevention webinar series. MD-SPIN hosted two additional webinars in FY18 entitled "Suicide Prevention in the Era of Social Media" and "Engaging Youth and Young Adults in Suicide Prevention". The remaining two webinars will occur in FY19 and are entitled "Suicide Prevention to Support Veterans and Military Connected Families" and "Suicide Prevention in the Holiday Season". MD-SPIN has begun planning for the FY19 webinar series to include topics about suicide and the LGBTQ community, a panel of suicide attempt survivors and suicide loss survivors, suicide prevention month planning, and suicide in the child welfare and juvenile justice systems. The webinars are recorded and posted on BHA's Suicide Prevention website for viewing.

Webinar	# of Registrants
Virtual Town Hall: Preventing Suicide Through Means Restriction	133
Suicide Prevention in the Era of Social Media	200
Engaging Youth and Young Adults in Suicide Prevention	155
Suicide Prevention to Support Veterans and Military Connected Families	99
Suicide Prevention in the Holiday Season	87

Other Training Events

The MD-SPIN team received many training requests throughout Year 4. The trainings were provided to a wide range of occupations including legal advocates, child welfare professionals, behavioral health professionals, school staff, nurses, juvenile justice staff, and law enforcement. Below is a summary of additional trainings provided by the MD-SPIN team:

- Suicide Prevention is Everybody's Business Webinar
- Suicide Prevention is Everybody's Business: The Role We Play as Providers
- Military Webinar for Maryland's Coalition for Families
- UMB Trained Prince George's County Peer Support Specialists
- safeTALK
- Counseling on Access to Lethal Means
- Applied Suicide Intervention Skills Training (ASIST)

Emergency Department Screening Assessment and Follow-Up

The emergency department screening was implemented in University of Maryland Medical Center, Johns Hopkins Hospital, Johns Hopkins Bayview, and Kennedy Krieger Institute. Emergency departments can elect to implement screening for patients with behavioral health chief complaints or universal screening for patients with medical and/or behavioral health chief complaints. The participating emergency departments receive training on the Ask Suicide-Screening Questions (ASQ) tool from the National Institute of Mental Health and have the tool embedded in their electronic medical record. The ASQ was chosen for the language used in the tool as well as the length of the tool. Universal screening with the ASQ started January 1, 2017 in all Inpatient units and the pediatric emergency department. Johns Hopkins Children's Center and Kennedy Krieger outpatient clinics have prioritized suicide risk screening and have made the ASQ screening a standard practice of care. Analysis of the JHH and KKI data has shown that the ASQ is effective in identifying individuals at risk for suicide. This data will inform the JHH and KKI healthcare systems to ensure each patient is receiving quality mental health care.

One of our short term goals was to establish universal suicide screening at the JHH Bloomberg Children's Center. After a few months, this goal was met once clinical staff established a process to integrate the ASQ into their workflow. A long term goal of our project is to understand how the ASQ screen leads to long-term mental health outcomes for individuals who have been screened. For example, if an individual screens positive on the ASQ, is the clinician taking appropriate steps to connect the patient with mental health services? We have classified this as a long-term goal because of the difficulty to capture referral data and the likelihood that institutional changes will need to occur to ensure referrals are being made in appropriate cases. We are hopeful that the ASQ data collected from our project will help inform protocols that practitioners can use to ensure the individual is referred to mental health treatment and services after a positive ASQ screen.

We have faced significant challenges in obtaining our ASQ data due to institutional protocols at JHU. To address this challenge, we have used persistence and determination to overcome institutional barriers. We have decided that working with colleagues in the Emergency Department is the best solution at this time to work around the limitations put on public health staff at Hopkins.

The team is currently working on expansion to other hospitals in Maryland. MedStar Hospital has been approached about implementing the ASQ suicide screener and is having internal discussions about the possible implementation. The JHU team spoke with the University of Maryland Medical Center about coordinating training on universal ASQ screening for the pediatric emergency department staff. The team has also had meetings with SBIRT coordinators to integrate suicide risk screening into the SBIRT project.

On July 25th, JHU and BHA held a meeting with the Maryland Hospital Association. A total of 48 participants attended, with representation from medical centers including MedStar Health, St. Agnes, Mercy Medical Center, UMMC Midtown, Suburban Hospital, GBMC, Holy Cross, and Shady Grove.

The team presented on various topics including:

- Data about suicide in Maryland and information on current initiatives in the state.
- Information about JHH universal suicide prevention screening and provided data on the current screens from JHH, KKI, and UMMC.
- Information about the ASQ, the importance of screening, and implementation

All participants received the PowerPoint slides with MD-SPIN contact information, as well as packets of information about the ASQ and other suicide screeners. There was positive feedback from the group, as well as questions about implementation and use of different screeners. The Emergency Nurses Association endorses use of the ASQ for ED admissions over the C-SSRS. JHU sent a survey to the Maryland Hospital Association to assess which hospitals are administering suicide risk screening. JHU was invited to the Behavioral Health Task Force meeting for the Maryland Hospital Association in August.

Currently, we plan to use ASQ data and data from the Medical Examiner's Office to determine whether individuals screened with the ASQ went on to die by suicide after their screening. The data will be helpful to identify possible gaps in the continuum of mental health care that may not be leading to a reduction of suicide risk.

We started reviewing the ASQ screens from KKI and are finding interesting results among individuals living with developmental disabilities. Currently, there is minimal research on suicide risk in individuals living with disabilities. Through our screening, we have found that individuals with developmental disabilities experience suicidal ideation at a similar rate to their peers without disabilities. We will continue to analyze the data to better understand the etiology of suicide risk and related behaviors in individuals living with developmental disabilities and develop recommendations for reducing the risk of suicide within this population.

There have been no major objective changes from the previously approved proposal; however, for the last year of the grant we plan on focusing on expanding ED suicide risk screening. It would be beneficial to create partnerships and contacts in rural areas of the state to implement suicide risk screening in their systems of care. In addition, the team is brainstorming effective and sustainable ways to have Dr. Cwik's ASQ training available after the grant ends. One idea to sustain Dr. Cwik's ASQ training is to create a video or a webinar of the training that will be available on BHA's website for hospital staff to view.

Data

From October 1, 2017 to September 30, 2018, there were 4,525 individuals screened with the ASQ in the pediatric emergency department including those with medical chief complaints and behavioral health chief complaints. About 13% of patients screened positive for suicide risk on the ASQ. There were 14,233 inpatients treated at Johns Hopkins Children's hospital during this period and 1902 (13.3%) screened positive. Females were more likely to screen positive.

Kennedy Krieger Institute Outpatient Universal System-wide Suicide Risk Screening

Suicide risk screening was performed on children ages 8 to 17 years seen for a medical or behavioral health visit at the outpatient clinics at the Kennedy Krieger Institute, a specialty children's developmental health facility, as part of an institutional quality improvement project over five months. The "Ask Suicide-Screening Questions" (ASQ) was completed by nursing staff through child or parent/guardian interview before seeing a physician. Screening results, demographics, and reasons for refusals among individuals eligible for screening were examined. A total of 3,654 children were eligible for screening between August 2017 and January 2018, and 2,712 unique patients completed the screening. There was a statistically significant association between age and screen refusal, with younger patients or their parents being more likely to decline screening (declined: M_{age} = 11.09, screened: M_{age} = 12.02; $t(3653) = 8.85$, $p < 0.001$). Similarly, patients who identified as Asian were more likely to decline screening (OR = 1.67, CI: 1.17, 2.40, $p = 0.004$). 181 (6.7%) of the patients screened positive for suicide risk. Females were more likely than males to screen positive (OR = 1.61, CI: 1.18, 2.19, $p = 0.002$). African Americans were less likely to screen positive (OR = 0.60, CI: 0.42, 0.87, $p = 0.007$).

In regard to the ASQ questions, the most frequently endorsed question was the first question "In the past few weeks have you wished you were dead" (n = 96, 53%). The younger children were more likely to endorse the second ASQ question "In the past few weeks have you felt that you or your family would be better off if you were dead" ($Mean_{diff}$ = -1.29, $t(180) = -3.03$, $p < 0.001$). Finally, individuals who identified as a minority were more likely to endorse having recent thoughts of suicide (OR = 1.89, CI: 1.02, 3.50, $p = 0.044$).

KKI found that suicide risk screening is both feasible and not overly burdensome as implemented as routine care in clinics serving children with neurodevelopmental and related disabilities. Both age and race were related to the decision to participate in screening. Because suicidal thoughts are prevalent within this specific patient population, suicide risk screening should be included as routine care for best clinical practice. Future work is planned to establish the clinical correlates and validity of screening results in children with neurodevelopmental disabilities.

Kennedy Krieger Institute Center for Autism and Related Disabilities

Suicide thoughts and behaviors are reported at high rates in people with autism spectrum disorder (ASD). We conducted subanalyses from the KKI screening initiative above but focusing on patients served by one clinic serving youth with autism spectrum disorder (ASD). to determine suicide risk in children with ASD seen during medical visits using a the ASQ at a KKI and examine clinical characteristics of those with screening-identified suicide risk.

ASQ screening results, demographics, and clinical characteristics of those with ASD and identified suicide risk were analyzed, including past and current ideation and attempts, associated mental health diagnoses, therapies, medication, and family history of suicide.

There were 775 children eligible for screening between August 2017 and January 2018. 542 were screened; 30% (233) eligible declined. 58 (10.7%) children demonstrated suicidal risk. Risk was two-fold higher in white children. 48 of the children (8.9%) had confirmed or probable ASD diagnosis (73% male; 71% white; median age 12 years [range 8-17]). Of those with ASD screening at suicide risk, 40 (83%) were child-completed, 8 (17%) by the parent /guardian. On the ASQ questions, 27 (56%) of the 48 children with ASD wished they were dead in the past few weeks, 16 (33%) thought they or family would be better off if they were dead, 17 (35%) had suicide thoughts within the past week, and 22 (46%) reported trying to kill themselves. Five (6%) were actively suicidal at screening; one was sent to the emergency department. None required hospital admission.

Chart review indicated that 44 (92 %) of the children with ASD who screened at risk had psychiatric comorbidities, with 15 (31%) having one disorder and 29 (60%) two or more. 35 (73%) had a history of ADHD, 28 (58%) anxiety, and 15 (31%) depression. Four (8%) had family history of suicide. They had high rates of mental health treatment (39; 81%), with 35 (73%) receiving psychiatric care and 29 (60%) psychotherapy. 40 children (83%) were currently treated with psychotropic medication, with 38% (18) taking one and 46% (22) two or more. 21 (44%) received an SSRI, 20 (42%) stimulant, and 12 (25%) antipsychotic medication.

Suicide risk screening in children with ASD at a specialty medical center demonstrates that suicide thoughts and attempts are common. Those with suicide risk have high rates of psychiatric comorbidity and are commonly treated with medication and psychotherapy. Children with ASD seen in specialty centers, particularly those receiving mental health treatments, are at high risk and should be screened for suicidal behavior as part of best clinical practice.

If patients screen positive, physicians refer them to behavioral or mental health care. One challenge is that there is no uniform way physicians have been documenting referrals in EPIC. Most physicians document whether they have referred patients in the notes section, and currently, MD-SPIN staff are coordinating with data scientists to see the best way to extract referral information. Additionally, MD-SPIN faculty and staff are coordinating with hospitals to add a referral section to the electronic medical record.

Follow-Up and SMS Study

In addition to the ED screening, the study also includes a follow-up component. The study follows behavioral health patients who screen positive on the ASQ. 11 follow-up assessments are used at baseline, 3 months, 6 months, 9 months, and 12 months. There are currently 108 participants in the follow-up study. An SMS pilot study was started in conjunction with the follow-up study. Currently, there are 29 participants in the SMS pilot study. Adolescents who screen positive on the ASQ or present with suicidal ideation will be sent a total of 4 text messages at 1 pm EST on day 2, 8, 15, and 30 following discharge. The participants' guardians receive all four text messages and also have the option to opt-out at any time by texting "stop" to the platform. The SMS pilot study is made possible by using Suicide Intervention Assisted by Messages (SIAM) software. A sample message reads:

"Dear X, we hope you are doing well. We are thinking about you and wishing you the best. If you need any help, please contact your regular psychologist or psychiatrist. You may also contact the crisis hotline at xx. Sincerely, Mary Cwik, Ph.D. Sent on behalf of your treatment team at Johns Hopkins Hospital Text STOP to opt-out Text HELP for help."

We have been actively working to finish up our pilot study on sending supportive text messages to individuals who presented at the JHH Pediatric ED and had a positive screen on the ASQ. We are evaluating whether these text messages will work as a protective factor during the high risk period that follows an individual leaving the hospital after experiencing suicidal ideation and/or a suicide attempt. We are also exploring if these text messages have an impact on whether or not individuals felt connected to mental health providers following their discharge from the hospital.

Working With State, Local, Non-Profit, and Community Partners

Community Behavioral Health Association of Maryland

The Community Behavioral Health Association partners with the University of Maryland School of Medicine (UMSOM) on outreach efforts to behavioral health organizations to encourage participation in MD-SPIN efforts. CBH supports MD-SPIN marketing, dissemination, and diffusion to behavioral health organizations and providers related to suicide prevention resources and entities. CBH also works with state agencies and programs to plan for the expansion of MD-SPIN, provides resource information and links to training to community behavioral health service providers.

Higher Education Partners

MD-SPIN coordinates with higher education institutions to embed suicide prevention efforts into their existing programming. Higher education partners are responsible for disseminating suicide prevention resources, establishing suicide prevention activities within their campus, and promoting the use of Kognito among faculty, staff, and students. Many higher education partners plan events on campus and have speakers talk about topics related to suicide or mental health. Tabling events, health fairs, conferences, in-class presentations, and emails were among the most popular outreach tactics used by colleges and universities. MD-SPIN also encourages the colleges and universities to bolster their relationship with the counseling department and incorporate the counseling department into their outreach efforts. Our current higher education partners include Coppin State University, Howard Community College, Morgan State University, Salisbury State University, Universities of Shady Grove, Towson University, University of Maryland College Park, and University of Maryland Baltimore County.

Number of People Reached Through Outreach Efforts by Activity

Activity	Kognito Outreach	Suicide Prevention Outreach
Email	8,613	672
Fairs	3,219	3185
Conferences	88	88
Training	3,763	3906
Flyers	1,272	675
Tabling	707	585
Other	2,312	1673
Total	**19,974**	**10,784**

Maryland's Coalition for Families

Maryland's Coalition for Families (MCF) provides support to MD-SPIN in several ways. MCF disseminates marketing materials as well as information on Kognito, There is Hope App, and Maryland Crisis Connect. MCF has posted a direct link to the Family of Heroes module on their website and has shared the direct link to the module on MCF's Facebook page several times. MCF has also included information about Maryland Crisis Connect on their website. MCF includes MD-SPIN fact sheets and crisis hotline information in bags for their Children's Mental Health Matters! Campaign. In addition to disseminating materials, MCF also works with treatment provider organizations, schools, and health care providers to provide assistance to families, including military families. MCF's integrated youth advocacy organization, Taking Flight, work with youth in Prince George's County to promote suicide prevention and the use of Kognito's Friend2Friend module.

Number of People Reached Through Outreach Efforts by Activity

Activity	Kognito Outreach	Maryland Crisis Connect	There is Hope App
Email	8,814	2,787	15,570
In-Person	663	1,690	1,379
Events	624	1,735	3,981
Other	39	4,161	46
Total	**10,140**	**10,373**	**20,796**

Maryland State Department of Education

MD-SPIN collaborates with the Maryland State Department of Education (MSDE) to coordinate suicide prevention efforts across the state. In March 2017, Governor Larry Hogan signed HB0290, a bill that requires all school personnel to receive suicide prevention training starting in July 2018. Certificated school staff had to have suicide prevention training completed by December 2018. Kognito was included on a list of recommended trainings by MSDE that was disseminated to staff. After Lauryn's Law went into effect, MD-SPIN received many requests for training and inquiries about available trainings. MD-SPIN continues to work with various schools to incorporate the Friend2Friend module into their health class curriculum. Recently, an option was added for parents or educators to be able to view the Friend2Friend module before having children or students complete the module. It is our hope that allowing adults to view the content prior to having their children complete the module will increase their comfort and confidence in having their children complete the module.

Governor's Commission on Suicide Prevention

The Governor's Commission on Suicide Prevention was convened via executive order in 2009. Two MD-SPIN staff, Holly Wilcox and Janel Cubbage, are appointed to serve on the Commission. In addition to Holly and Janel, MD-SPIN staff regularly attend the Commission meetings. MD-SPIN staff have also been participating in the Maryland Governor's Commission on Suicide Prevention, an advisory group that will produce recommendations on strategies for suicide prevention to the State. The Commission recently revised the executive order to include members of various groups impacted by suicide, including but not limited to a high school student, a member of the LGBTQ community, and a member of the Native American community.

Partner Calls

Partner calls were used to share implementation strategies, but also provided several opportunities to have presentations on resources and other initiatives taking place in the state. In November 2017, partners received a presentation from two call center directors that participate in the state crisis hotline system. The call center directors provided information on how the state crisis hotline system works and the other services their call centers provide. Dr. Lanny Berman presented on the process of psychological autopsies for the May 2018 partner call. For the July 2018 partner call, Dustin Richardson from Native American Lifelines presented about the various services NAL provides including building partnerships with local student groups, providing counseling/substance abuse programs and providing grief services for youth. The September 2018 partner call focused on sustainability with partners. MD-SPIN's higher education's partners plan to engage in suicide prevention and continue to train students, faculty, and staff about signs of suicide and strategies for referrals. MCF will continue to share information about the crisis hotlines, suicide prevention resources, and the There is Hope App with their families. MCF will also continue to engage in safety planning with their families. Baltimore Crisis Response will continue to conduct follow-up for those at-risk of suicide and engage higher education campuses in suicide prevention, and EveryMind will continue to conduct presentations and webinars about suicide prevention.

Advisory Council

MD-SPIN holds Advisory Council meetings twice annually, in the fall and spring. As MD-SPIN became familiar with other organizations within the state with similar missions, the attendee invite list grew beyond the original list of Advisory Council members. MSDE Suicide Prevention Coordinators, American Foundation for Suicide Prevention (AFSP), Native American Lifelines, and American Association of Suicidology (AAS) were invited to participate in the advisory council meeting in June.

Advisory Council – November 7, 2017

BHA provided an update about the Governor's Commission on Suicide Prevention, the crisis hotlines, and the Suicide Prevention Conference. MD-SPIN updates included suicide screening and follow-up in emergency departments as well as Kognito usage data. MSDE presented information on suicide prevention training and Lauryn's Law, recommendations of the Mental Health Committee to the State Board of Education, and the Resource Guide of Maryland School Mental Health and Wellness Programs. MSDE included Kognito as a recommended training for certificated staff. Representatives from Aberdeen Proving Ground and the Maryland

National Guard attended the meeting to help us better reach military families. David Galloway from Maryland's Commitment to Veterans presented at the Advisory Council Meeting on the issue of suicide with the military and their families.

Advisory Council - June 22, 2018

The meeting was originally scheduled for May but was delayed due to lack of availability amongst the members of the Advisory Council. BHA provided an update on suicide-specific data in Maryland, including comparisons to national rates, suicide rates by county, and suicide proportion by means. BHA also shared information on state suicide prevention initiatives including the Governor's Commission on Suicide Prevention and Maryland Crisis Connect as well as aspirational goals for training, workforce development, and data collection. The MD-SPIN evaluation team gave an update on evaluation including the number of youth screened for suicide risk in emergency departments, outcomes of screening by subgroup, and Kognito gatekeeper training. Attendees divided into groups to discuss ways to collaborate around suicide prevention efforts. The subgroups were primary care/emergency departments, community organizations, and K-12/higher education. Below are the recommendations from each of the subgroups.

Group	Recommendation
Primary care/emergency departments	Share information at professional meetings (MD AAP, Family Medicine); use peer navigators as a way to improve communication, provide continuum of behavioral health care, and also, as a way to increase follow-up after positive suicide screening; create mechanism (such as a "flag") in EPIC in order to link Emergency Department screening with primary care physician; present information about means safety from a child development perspective; more formal training in Emergency Room about suicide risk; and reach out to big hospitals/private practices about screening.
Community organizations	Continue collaboration with partners and build new partnerships with AFSP and Native American Lifelines.
K-12/higher education	Connect Maryland Board of Education Platform to Kognito (e.g. integrate Kognito into existing platform), better publicize F2F modules, other Kognito modules, 211-1, grassroots efforts, train peers in Friend2Friend, integrate suicide prevention into health classes or community service requirements, include parents and adapt information for children with intellectual or other disabilities, reach out to primary schools (because they are not as equipped to deal with suicide risk and psychological distress), share information in back to school nights, connect suicide prevention to other programs (such as bullying prevention).

Media, Conferences, and Presentations

The MD-SPIN team participated in and presented at several events during Year 4. Presentations included presenting at conferences, child fatality review boards, and government agencies. Below is a summary of the events attended.

Conferences	8
Forums/Summits	3
Awareness Fairs	3
Presentations	11
Media	2

- Maryland's School Health Interdisciplinary Conference (SHIP)
- Forum on Health and Farm Vitality
- Advancing School Mental Health Conference
- Community College of Baltimore County Awareness Fairs
- NAMI Conference
- Rural Health Conference
- Baltimore City Health Department Child Fatality Review Summit
- Behavioral Health Administration Annual Conference
- Maryland Assembly on School Based Health Care Conference (MASHBHC)
- Annual Suicide Prevention Conference
- Life Matters Harford County Suicide Prevention Conference
- UMB's Department of Psychiatry's Research Day
- Interview with the Daily Beast about youth survivors of suicide loss
- WBAL TV Interview about youth suicide trends in Maryland

Website, Social Media, and Newsletter

BHA has been working to update the state suicide prevention website to include more information on resources, training, and information about suicide prevention. The site originally was mostly focused on the Governor's Commission on Suicide Prevention and while information about the Commission still remains, the site has been reorganized to include more general information about suicide. A "Resources and Training" tab was recently added that includes drop-down menus with fact sheets and resource guides, information on suicide risk assessments, webinars (upcoming and recorded), the lunch and learn series, trainings available, and our past newsletters. A tab was also created for Maryland's Annual Suicide Prevention Conference which includes general information about the conference and a link for interested persons to submit presentation proposals for the upcoming conference.

BHA has also been working to increase social media presence for our suicide prevention program. During Year 4, our team reactivated the existing @MDSuicidePrev Twitter account that had not been used in years. The Twitter account was made public again so that tweets could be retweeted and shared. The team began tweeting general information about suicide prevention, the crisis hotlines, and information about upcoming events. The account now has 469 followers.

Time Period	Number of Impressions
September 2017 – December 2017	10
January 2018 – March 2018	859
April 2018 – June 2018	17,000
July 2018 – September 2018	38,400
Total	56,269

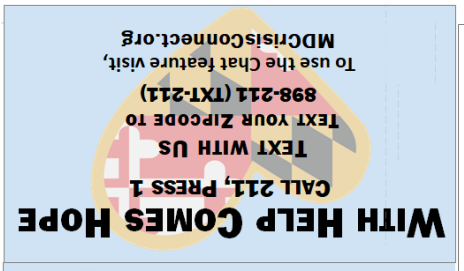
The team distributed our first newsletter in August 2018 for Suicide Prevention Month. The newsletter consisted of ways to observe suicide prevention month, information on Maryland Crisis Connect, suicide and social media, suicide and the media, updates from the field, and upcoming events. The team will continue to distribute a newsletter bi-monthly. The newsletter goes out to our email distribution list which is comprised of core service agencies, local addictions authorities, Commissioners, and interested persons who have requested to be on our email list.

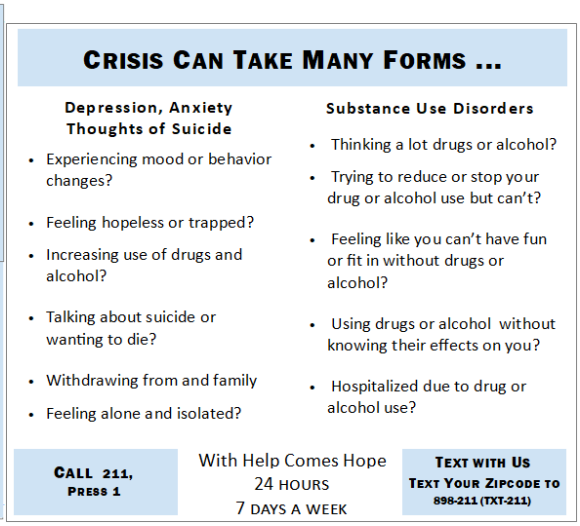
Maryland Crisis Connect (Formerly Maryland Crisis Hotline)

In April 2018, the state crisis hotline system partnered with 211 MD to introduce a new, easily memorable state crisis hotline phone number. The hotline was rebranded as Maryland Crisis Connect and callers were able to connect with a crisis counselor by calling 2-1-1 and pressing option 1. Reviewing the data collected from our call centers, we realized that only about 10% of callers to the hotline were 24 years old or younger. The partnership with 211 allowed for the addition of 24/7 crisis chat and text, as well as a website with a behavioral health resource database. Marylanders can text their zip code to 898-211 or visit MDCrisisConnect.org in addition to being able to call 2-1-1, press 1. With the addition of chat and text, the first quarter of available data showed that 59% of chatters were 24 years old or younger. The addition of chat and text allowed the younger demographic easier access to the state crisis hotline system.

Radio campaigns and marketing materials were developed to promote Maryland Crisis Connect. Over 5,000 wallet cards and 3,000 phone card holders have been distributed in Maryland. Below is the number of impressions made with broadcast radio and Pandora radio campaigns as well as pictures of the marketing materials developed for Maryland Crisis Connect.

Gross Impressions – Broadcast Radio	
Persons 65+	5,591,100
Males 45+	8,248,700
Persons 12-24	2,317,200
Total	**16,157,000**
Gross Impressions – Pandora Radio	
Persons 65+	906,057
Males 45+	1,326,100
Persons 13-24	1,143,211
Total	**3,375,368**





Challenges

One challenge has been executing the subcontracts in a timely manner; however, staff have worked with various agencies to streamline the process. Additionally, another challenge has been capturing the work of our MD-SPIN partners effectively. To address this challenge, we have changed subcontracts to more accurately reflect the work of our partners and improved our reporting process through an online questionnaire (i.e., Qualtrics). The new reporting better captures qualitative and quantitative aspects of the work our partners are carrying out in the field. Another challenge has been the cost of the Kognito modules, which is not feasible to sustain after the grant ends. To address this challenge, our team has been developing our own suicide prevention training with Armstrong, which will be free to access for Maryland residents and available after the end of the grant. As noted in the section pertaining to emergency department screening, there have been significant barriers to accessing the data from emergency departments. The JHU team has actively been working to address these challenges and receive the needed data.

Accomplishments

Over the last year, the MD-SPIN team has implemented a free webinar series for Maryland residents. Topics have included the relationship between suicide prevention and means restriction, social media, engaging youth, and suicide prevention with active military and veterans. Our team has also implemented a Lunch and Learn series and newsletter to share information about best practices and engage community members in suicide prevention. Our team presented data from our grant at local conferences (i.e., University of Maryland Baltimore's Psychiatry Research Day) and state conferences (i.e., the Behavioral Health Administration's Suicide Prevention Conference). Additionally, we have screened over 10,000 youth for suicide risk in the State.

Engaging the Military

MD-SPIN's engagement with the military improved in Year 4. MD-SPIN established connections with suicide prevention representatives from the Maryland National Guard, Army Reserves, Army, Navy, and Veteran's Affairs (VA). All of the military and veteran representatives have been provided with the resources offered by MD-SPIN, including the Family of Heroes module and Supporting Military Children module. In addition, MD-SPIN planned a webinar for October 2018 entitled "Suicide Prevention to Support Veterans and Military-Connected Families". In addition, MD-SPIN and Kognito presented a webinar to Maryland's Coalition of Families on military culture and suicide prevention with military families. MD-SPIN has participated in two Military Musters to provide materials on Kognito and Maryland Crisis Connect. The musters are bi-monthly gatherings of veterans and active duty service members in the area to connect with organizations that serve veterans and military. MD-SPIN has also supported several of the Maryland National Guard's Yellow Ribbon events by providing information, resources, and presentations. Yellow Ribbon Events are pre or post deployment events for Soldiers and their families.

Lessons Learned

One lesson learned has been that it is difficult to secure professional development time for the Kognito modules. Professional development time is an incentive for teachers and school personnel to take Kognito trainings. To facilitate suicide prevention training, it is recommended to include live demonstrations of how to access the Kognito modules, as well as discussions before and/or after completion of the training.