

A Stepped Care Approach to Clinical Suicide Prevention

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Despite the enormous humanitarian and economic toll of suicide, mental health systems of care are largely underprepared to work effectively with suicidal individuals and suicide is a leading “Sentinel Event” in U.S. health care settings (The Joint Commission, 2016). In response to these concerns, a recent policy initiative called “Zero Suicide” has advocated a *systems-level* response to the suicidal risk within health care and this policy initiative is yielding positive results (Hogan & Goldstein Grumet, 2016). Along these lines, a “stepped care” approach developed by Jobes (2016) has been adapted and used within the Zero Suicide curriculum as a model for systems-level care that is suicide-specific, evidence-based, least-restrictive, and cost-effective. The Collaborative Assessment and Management of Suicidality (CAMS) is an example of one suicide-specific evidence-based clinical intervention that can be adapted and used across the full range of stepped care service settings (Jobes, 2016). This article describes various applications and uses of CAMS at all service levels and highlights CAMS-related innovations. It is argued that psychological services are uniquely poised to make a major difference in clinical suicide prevention through a systems-level approach using evidence-based care such as CAMS.

Keywords: Zero Suicide, stepped care, suicide treatment, CAMS

Data show that 9.8 million Americans suffer through suicidal thoughts each year and 1.4 million make suicide attempts (Piscopeo, Lipari, Cooney, & Glasheen, 2016). With over 44,000 deaths per year, suicide stubbornly remains the 10th leading cause of death in the United States with steady increases over the past decade (Centers for Disease Control & Prevention, 2015). Given the striking death toll and suicide-related suffering numbering in the millions, there is an urgent need to develop broad and generalized approaches to suicide prevention efforts that have the potential to reach vulnerable individuals across various systems of care.

A Systems-Level Response

In recent years, the National Action Alliance for Suicide Prevention has created 14 different task forces to help guide suicide prevention at the national level in the United States (National Action Alliance, 2011). Particular to the present discussion, the Clinical Care and Intervention Task Force was formed to help

mental health professionals work more effectively with suicidal people. The work of this task force ultimately led to the publication of a document entitled *Suicide Care in Systems Framework*, making a strong policy argument that the best approach to clinical suicide prevention is a *systems approach* (National Action Alliance, 2011). From a patient-centric perspective, the task force asserted that suicide risk should be screened and effectively assessed, tracked, and treated using evidence-based interventions throughout a suicidal patient’s journey in a system of care. The key ideas in this task force report subsequently led to the development and launch of the Zero Suicide in Health and Behavioral Healthcare initiative (see: <http://zerosuicide.sprc.org/>). At the time of this writing, 25 states in the U.S. have started developing state-level Zero Suicide programs, as have 21 tribal Indian Health Services authorities and urban centers. In the history of the field of suicide prevention there has never been a broad-based policy initiative as far-reaching and impactful as Zero Suicide has been over the past several years (Hogan & Goldstein Grumet, 2016).

A Stepped Care Approach

As developed by Jobes (2016), a “stepped care” model for suicidal clinical care has been adapted, modified, and integrated into the Zero Suicide Academy’s core curriculum (designed to guide implementation of this suicide-specific care policy). As shown in Figure 1, health care costs on the Y-axis (ranging from low to high), represent a major force that will likely drive future suicide-specific care. In turn, from the bottom to top of the pyramid figure we see different kinds of services ranging from least to most expensive forms of care for suicidal individuals (i.e., from “free” crisis center hotline/text support all the way to expensive inpatient care at the top of the pyramid). Each service layer in the model reflects increasingly expensive care that clinical trial research has convincingly shown needs to be suicide-specific (vs. diagnosis-focused; The Joint Commission, 2016). A major virtue

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David A. Jobes would like to disclose the following potential conflicts: grant funding for clinical trial research from the Department of Defense, the American Foundation for Suicide Prevention, and the National Institute of Mental Health; book royalties from American Psychological Association Press and Guilford Press; co-owner of CAMS-care, LLC (a clinical training/consulting company). We thank our research collaborators over the past 30 years who have made the work described throughout this article possible. Special appreciation goes out to members—past and present—of The Catholic University of America Suicide Prevention Lab.

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Figure 1. From the bottom to top of the pyramid figure we see different kinds of care ranging from least to most expensive forms of care for suicidal individuals. The virtue of this model is the promise of driving suicide-specific care that is: *evidence-based, least-restrictive, and cost-effective*. Because CAMS is both a philosophy of care and a highly flexible suicide-specific therapeutic framework, it can be readily applied and adapted for use across each level of the stepped care model.

of the stepped care model is that it offers an approach to suicide-specific care that can be evidence-based, least-restrictive, and cost-effective.

The Collaborative Assessment and Management of Suicide (CAMS)

The Collaborative Assessment and Management of Suicidality (CAMS) was developed as a suicide-focused clinical framework that addresses various points raised thus far. CAMS is a phenomenological clinical approach centered on understanding a patient's suicidality (Jobs, 2016). CAMS is an evidence-based clinical intervention supported by numerous empirical studies, including correlational/open clinical trials as well as several randomized controlled trials (refer to Table 1). CAMS is said to be "non-denominational" in that a variety of clinical techniques and therapeutic orientations can be used within the CAMS framework (Jobs, 2016). CAMS neither dictates treatment nor the use of specific theoretical approaches; it is best understood as a "philosophy of care" that focuses on the identification and targeted treatment of *patient-defined* suicidal "drivers." Suicidal drivers are idiosyncratically defined problems that compel the patient to consider suicide as a means of coping (Jobs, 2016; Tucker, Crowley, Davidson, & Gutierrez, 2015). Central to CAMS is a collaborative assessment and treatment planning process, wherein the patient serves as a "coauthor" of their own treatment plan (Jobs, 2016). Collaboration and reciprocity help foster a strong therapeutic alliance, capitalizing on the patient's invaluable first-person insights which tend to enhance the patient's motivation.

The Suicide Status Form (SSF)

The Suicide Status Form (SSF) serves as a multipurpose assessment, treatment planning, tracking, and outcome tool that functions as a clinical "roadmap," guiding the dyad through the course of CAMS-based care. The SSF helps the dyad in their evolving

understanding and treatment of the patient's underlying suicide-causing drivers (Jobs, 2016).

CAMS First Session

The first session of CAMS is pivotal; it establishes the suicide-specific and driver-oriented treatment within a collaborative dynamic that is used throughout CAMS-guided care. Each session begins with SSF-based assessment and ends with SSF-based treatment planning.

Assessment. During the first session of CAMS, the patient and clinician sit side-by-side (with the patient's permission) to complete the first session version of the SSF together, which consists of both quantitative scales and qualitative prompts for the patient to write about their suicidal experience in their own words. In Section A patients are asked to rate themselves on six key constructs: psychological pain, stress, agitation, hopelessness, self-hate, and overall behavioral risk of suicide. The patient is prompted to write in their own words qualitative responses for the first five constructs—for example "What I find most painful is: ____." The initial five constructs are also rank-ordered from most to least important. Taken together, the six initial rating variables make up the "SSF Core Assessment" which is revisited throughout the duration of CAMS-guided care. There are additional questions in the first session asking the patient to rate how much their suicidal thoughts are related to feelings about themselves versus others and the listing (and rank-ordering) of their respective reasons for living versus reasons for dying. Finally, the patient writes a response to the prompt: "The one thing that would help me no longer feel suicidal would be: ____." Beyond these various quantitative and qualitative responses, Section B gathers specific suicide risk factor and warning sign information related to their plan and access to means, their suicidal history, substance abuse, sleep troubles, and so forth.

Treatment planning. CAMS treatment planning in the first session (Section C of the SSF) focuses on the goal of keeping a suicidal patient *out* of the hospital (if possible). To this end, there is an initial focus on self-harm potential which prompts the completion of the CAMS Stabilization Plan (CSP) as the dyad collaboratively develops a plan that helps ensure the patient's ability to cope with current and future suicidal crises. Importantly, the CSP is similar to safety planning (Stanley & Brown, 2012) and crisis response planning (Bryan et al., 2017) and is not a variation of "no-suicide" or "no-harm" contracting which lacks empirical support and may actually *increase* clinician liability (Lewis, 2007; Rudd, Mandrusiak, & Joiner, 2006). After completing the CSP, the CAMS treatment planning process identifies the two most pressing problem-drivers (from the *patient's* perspective). The clinician then proposes goals for effective treatment and possible interventions to effectively treat each driver-problem. Patients are given a hard copy of their CSP and completed SSF documents throughout care (or they can take pictures of these documents on their smart phone for between-session reference purposes).

HIPAA documentation. Under the Privacy Rule of the Health Insurance Portability and Accountability Act (HIPAA) there is an expectation that mental health professionals regularly assess and document information pertinent to patient's care (e.g., mental status, diagnoses, formulation of risk, and case notes) within any HIPAA-compliant medical record progress note. A

Table 1
Empirical Support for the SSF and CAMS

Authors	Sample/setting	Design	Results
Jobes, Jacoby, Cimboric, and Hustead (1997)	106 College students, university counseling center	Correlational	Significant pre-post reductions in overall distress; significant pre-post reductions in SSF core assessment ratings
Jobes, Wong, Conrad, Drozd, and Neal-Walden (2005)	56 U.S. Air Force personnel, outpatient clinic	Nonrandomized case-control	Significantly quicker reductions in SI for those treated with CAMS versus TAU; significant reductions in PC/ED visits with CAMS
Arkov, Rosenbaum, Christiansen, Jönsson, and Münchow (2008)	27 Danish outpatients, community mental health	Correlational	Significant pre-post reductions in SSF core assessment ratings
Jobes, Kahn-Greene, Greene, and Goeke-Morey (2009)	55 College students, university counseling center	Correlational	Significant linear reductions in overall symptom distress and SI
Nielsen, Alberdi, and Rosenbaum (2011)	42 Danish outpatients, community mental health	Correlational	Significant pre-post reductions in SSF core assessment ratings
Comtois et al. (2011)	32 Outpatients, community mental health	Randomized controlled trial	Significantly greater reductions in SI for CAMS vs. TAU; Significant improvements in hope/optimism, overall symptom distress, and patient satisfaction for CAMS patients
Ellis, Green, Allen, Jobes, and Nadorff (2012)	20 Psychiatric inpatients	Open trial, case series	Statistically significant reductions in depression, hopelessness, and SI; Significant pre-post reductions in SSF core assessment ratings
Andreasson et al. (2016)	108 suicide attempters with borderline features	Superiority randomized controlled trial	N.S. between-group differences for self-harm and subsequent suicide attempts for participants treated with versus DBT (twice/week for 16 weeks) versus CAMS (8–10 sessions/week)
Ellis, Rufino, Allen, Fowler, and Jobes (2015)	52 Psychiatric inpatients	Controlled comparison	Between-group changes in SI and suicide-related cognitions favoring CAMS versus PSM control
Ellis, Rufino, and Allen (2017)	104 Psychiatric inpatients	Controlled comparison	CAMS had significantly greater improvements in SI, depression, functional disability, and well-being at discharge than PSM control patients
Jobes et al. (in press)	148 U.S. Army infantry soldiers, outpatient clinic	Randomized controlled trial	Robust effects for CAMS and E-CAU on all primary/secondary measure; CAMS significantly eliminated SI sooner than E-CAU at 3-month follow-up (all treatment effects were maintained at 6 and 12 months)

Note. SSF = Suicide Status Form; CAMS = Collaborative Assessment and Management of Suicidality; E-CAU = enhanced care as usual; ED = emergency department; N.S. = nonsignificant; PC = primary care; PSM = propensity score matched; SA = suicide attempt; SI = suicidal ideation; TAU = treatment as usual.

final page of the SSF thus documents this information for each session at each phase of CAMS to ensure that CAMS progress notes within the medical record are both complete and thorough.

CAMS Interim Tracking Sessions

Assessment. Across CAMS-guided care, every interim session begins with the completion of the SSF Core Assessment and ends with collaborative treatment planning in which the CSP is improved as needed and the dyad endeavors to “sharpen” the focus of the patient’s suicidal problem-drivers (Jobes, 2016). Although suicidal problem-drivers are first identified in the initial session, these self-identified reasons for suicidality may change in subtle or dramatic ways as new insights and information are revealed over the course of care. As the patient’s suicidal drivers evolve over time, their treatment evolves accordingly.

Treatment planning. The emphasis of treatment during all interim sessions is focused on the two problem drivers; interventions can be whatever the clinician deems are appropriate to treat each driver (e.g., cognitive-behavioral therapy, psychodynamic

insight work, couples therapy, etc.). Although the model is agnostic and does not dictate the use of a particular treatment modality, the model still offers several optional tools that may be used to help treat common suicidal drivers (e.g., self-hate, hopelessness, or perceived burdensomeness).

CAMS Outcome/Disposition Session

CAMS optimally comes to a close when criteria for resolution are met (i.e., three consecutive sessions of low suicidal risk and the successful management of suicide-related thoughts/feelings and behaviors; see Jobes, 2016). For all clinical outcomes within CAMS there is an SSF Outcome/Disposition form that is used which documents the full array of clinical outcomes such as resolution, unilateral termination, dropout, hospitalization, and so forth.

Decreasing Malpractice Liability

The key for decreasing suicide-related malpractice liability is providing clinical care that meets or exceeds the “standard of care”

of what a reasonably prudent practitioner in a similar setting and with a similar patient would do (Jobs & Berman, 1993). Malpractice litigation for “wrongful death” centers on three major issues: (a) Was there sufficient suicide-specific assessment?; (b) Was there sufficient suicide-specific treatment planning?; and (c) Was there sufficient execution of the treatment plan? Beyond these considerations there should be professional consultation as needed and ample documentation of clinical practices reflected within medical record progress notes. Given the overt emphasis of suicide-specific assessment, treatment planning, and tracking of risk to clinical outcomes with extensive SSF-based documentation all along the way, using CAMS should help to significantly decrease exposure to malpractice liability in the event of a completed suicide (Jobs, 2016).

Training in CAMS

As discussed elsewhere (Jobs, 2016), it can be challenging to change mental health providers’ practice behaviors to the use of an evidence-based approach such as CAMS. Indeed, didactic training alone may have limited impact on changing practice behaviors. As successfully shown by Veterans Affairs trainings of evidence based practices, a “blended” training approach (e.g., learners receive didactic content, engage in role-play training, and further engage in coaching/consultation support as they use the new practice) shows greater promise for changing clinical behaviors (Smith et al., 2017). Given these considerations, authorized training in the adherent use of CAMS employs an integrated training model that includes: (a) in-depth content coverage of the CAMS model in a 3-hr online course, (b) a 1-day practical role-play training, and (c) six to eight coaching/consultation calls. This integrated training model is now being studied to optimize the CAMS training experience within a cost-effective model (Jobs, 2016).

Applications and Use of CAMS Across the Stepped Care Model

Because CAMS is both a philosophy of care and a highly flexible suicide-specific therapeutic framework, it can be readily adapted and easily used at each level of the stepped care model depicted in Figure 1. However, one cannot assume that an intervention proven in one setting will necessarily work in all settings; clearly additional setting-specific research is needed.

With this important consideration in mind, what follows is a review illustrating applications of CAMS across different service settings for various populations of suicidal patients to date.

Crisis Hotline Support

Staffed by well-trained, compassionate paraprofessionals, crisis lines have the unique capacity to provide vital crisis support to a range of suicidal individuals from all walks of life. Furthermore, crisis lines can effectively manage suicidal individuals that may not be able to afford or even need costly clinical interventions (Jobs, 2016). Because crisis center work focuses on the determination of imminent risk largely through the establishment of a therapeutic alliance via collaborative dialogue, CAMS has been suggested as an optimal point of reference for use within call centers (Draper, Murphy, Vega, Covington, & McKeon, 2015).

Given its easy to learn, structured, yet nondirective framework, the SSF may be well-suited for adaptation by paraprofessionals as a therapeutic assessment tool that can efficiently stratify the level of risk during a crisis call. The SSF can also be used for tracking the ongoing risk of repeat callers, providing continuity of care when multiple crisis workers speak with the same caller over a period of time across shifts. Recent use of crisis text lines present additional opportunities for using the SSF as a framework for facilitating a collaborative suicide-specific engagement.

Brief Intervention

Another treatment modality where CAMS may be useful is in emergency department (ED) environments. ED practitioners are responsible for conducting appropriate identification, risk assessment, and referral of suicidal individuals in a timely manner. Accordingly, CAMS Brief Intervention (CAMS-BI) has been developed to help meet these demands (Jobs, 2016). CAMS-BI is a single first session of CAMS using the SSF to learn about the patient’s suicide risk and the drivers of their suicidality, which leads to the development of a CAMS Stabilization Plan. CAMS-BI can be linked to nondemand caring follow-up contact in any modality that is agreeable to the patient (e.g., phone calls, text messages, e-mail, letters, etc.). A Coping Care Package can be given out that includes various resources that may be prospectively helpful.

Outpatient Settings

Because the SSF was originally developed for use in outpatient care, it follows that CAMS is particularly well-suited for general outpatient mental health care services. As with any mental health service setting, it is essential for clinicians to attend to, assess, and treat suicidal risk. To this end, CAMS can help mitigate concerns regarding suicidal patients “falling through the cracks” by providing valuable structure and tracking support for both patients and clinicians. CAMS has been adapted for use in several outpatient settings, including university counseling centers, community mental health centers, employee assistance programs, private practices, military, and Veterans Affairs behavioral health settings. CAMS has also been successfully adapted to accommodate cultural considerations and has been used around the world (e.g., Lithuania, China, Western Europe, and Australia). We have anecdotally seen success using CAMS with suicidal Native Americans where traditional medicine or ritual can be integrated into the framework to help address and treat patient-defined suicidal drivers within the culture. Let us now turn to some of the uses of CAMS across various clinical service settings.

University counseling centers. CAMS has been successfully used in university counseling centers for many years, and has proven to be especially adaptable to the unique culture of college campuses (Jobs et al., 1997, 2009). Integral to the CAMS framework is the engagement of outside resources (e.g., resident advisors, student-run organizations, campus ministry, and health care services) that can be engaged therapeutically to help intervene with certain suicidogenic drivers (e.g., engaging the Dean of Students about academic issues).

Community mental health centers (CMHCs). Clinicians working in CMHCs face unique challenges including large case-

loads, a lack of resources, and complex cases. CAMS may offer solutions to some of these challenges and indeed we have seen CAMS used with success in CMHC settings in the U.S. and abroad. For instance, CAMS was effective in increasing hope and reducing suicidal ideation and overall symptom distress for outpatient CMHC patients, 40% of whom were homeless (Comtois et al., 2011). In a large scale 5-year roll out of CAMS across the state of Oklahoma, effective adaptations of the CAMS intervention across CMHC patients have been achieved including the successful application and use of CAMS for patients with psychotic disorders and developmental delays.

Independent practice. CAMS is very well-suited for use in outpatient independent practice service settings. Many clinicians in independent practice may feel particularly vulnerable and isolated when working with suicidal patients as they may not have access to various resources or a team of colleagues to help provide services and professional support. In situations like these, CAMS may be quite helpful in providing a clear procedural outline for assessing and treating suicidal patients. As noted earlier, the SSF provides valuable clinical documentation of the care.

Military. It is now well known that suicide remains a significant problem within the U.S. military. Although military service members are routinely asked if they endorse current suicidal ideation, a frequent outcome from such an endorsement is a psychiatric hospitalization, where suicide-specific treatment is limited. Further, some military Behavioral Health Clinics lack a system for tracking ongoing suicidal ideation, which may preclude service members from receiving potentially life-saving treatment (Archuleta et al., 2014).

Given these considerations, CAMS offers a well-suited framework for assessing, tracking, and treating suicidal risk within military treatment facilities. Considering that service members may not stay in one location long enough to complete a lengthy treatment protocol, CAMS aims to efficiently resolve suicidality in relatively short order within 12 sessions (Jobes, Wong, Conrad, Drozd, & Neal-Walden, 2005) or as short as six to eight sessions (Jobes et al., in press). CAMS has been the centerpiece of systems-level “process improvement” interventions to raise the clinical standard of care for suicidal risk across mental health services in military treatment facilities (Archuleta et al., 2014).

There is also a growing interest in the use of CAMS for military populations through telehealth (Jobes, 2016). Although this mode of treatment delivery may at first seem counter to the CAMS philosophy (e.g., a lack of side-by-side seating), preliminary use of CAMS through telehealth has demonstrated that both patients and clinicians seem to value the experience. Like standard CAMS, telehealth dyads are still able to work collaboratively together by jointly following the SSF as their clinical road map. Given the large number of service members who may not be able to access a treatment facility due to deployment, residing in remote areas, or physical disabilities, telehealth may provide a viable alternative to standard care. Telehealth may be preferable for younger military members, who are accustomed to interacting with technology every day. Additional exploratory use of CAMS through the telehealth modality is now being explored within rural and frontier mental health care delivery in the Western United States.

Veterans Affairs (VA) outpatient settings. Over many years CAMS has been extensively trained to providers across VA mental health treatment settings (Marshall et al., 2014; Schuberg et al.,

2009). CAMS has been successfully used within VA medical centers as well as Community-Based Outpatient Clinics (CBOCs). VA clinicians have a keen interest in the model and suicidal veterans anecdotally find the model helpful, but further clinical trial research is needed which is now being pursued by our research team (Jobes, 2016).

Emergency Respite Care

As mentioned earlier, over the past several years the state of Oklahoma has embraced the Zero Suicide policy model and has sought to systematically train CAMS to providers in their public mental health system. As part of their process improvement initiative, CAMS has been trained and used by hundreds of outpatient providers along with clinicians who work in brief intensive respite clinics where suicidal patients are stabilized over a 48-hr period and then discharged. In the optimal care transition model, CAMS is initiated within crisis respite care to help stabilize the patient who is then discharged to a CAMS-trained provider who can continue the CAMS-guided care initiated in respite in an uninterrupted manner on an outpatient basis.

Partial Hospitalization

There has been some interest in using CAMS within partial hospitalization service settings. For example, there was some early clinical use of CAMS within a group format for severely mentally ill patients in a day treatment program within a VA Medical Center (Jennings, 2012). Because partial programs offer intensive treatment in a more cost-effective and least-restrictive form of care, it seems inevitable that CAMS will increasingly be used in such settings in the years ahead as a viable alternative to more expensive inpatient psychiatric care.

Inpatient Psychiatric Hospitalization

Within the current system of mental health care, individuals recognized to be at imminent risk for suicide are often referred for inpatient care. While the inpatient psychiatric setting may provide a safe and supportive environment for specific acute care services and stabilization, most of the interventions provided to suicidal patients are neither suicide-specific nor evidence-based. Indeed, as noted by Knesper (2011) in a report from the Suicide Prevention Resource Center (SPRC) and SAMHSA “. . . the research base for inpatient hospitalization for suicide risk is surprisingly weak. This review could not identify a single randomized controlled trial about the effectiveness of hospitalization in reducing suicidal acts after discharge” (p. 41).

For quite some time, adaptations of the SSF and CAMS have been used effectively for the assessment and treatment of suicidal risk within inpatient settings (e.g., Conrad et al., 2009; Hershey, Crumlish, Ibrahim, & Pelka, 2016). For many years the Mayo Clinic has used the SSF assessment to inform inpatient treatment and disposition discharge planning, and has further integrated the SSF into their routine assessment used with all patients at admission (Romanowicz, O’Connor, Schak, Swintak, & Lineberry, 2013). In terms of treatment, CAMS has been used in several different inpatient settings. For example, a Swiss team created an inpatient version of CAMS that was associated with dramatic

decreases in overall symptom distress and suicidal risk in a sample of 45 suicidal inpatients over the course of 10 days of inpatient care (Schilling, Harbauer, Andreae, & Haas, 2006).

Our team is currently exploring the use of an intensive inpatient version of CAMS, called CAMS Intensive Inpatient Care (CAMS-IIC). To date this approach has been used in several inpatient treatment settings within the U.S. over a 3- to 6-day hospital stay (e.g., Hershey et al., 2016). Among the virtues of one to three sessions of CAMS during a brief inpatient stay is that there is the necessary development of a stabilization plan, discussions of access to lethal means, and preliminary identification of issues in need of treatment (i.e., suicidal drivers) all of which should be quite relevant to the disposition of the patient upon discharge.

An adapted inpatient version of CAMS has also been used successfully at the Menninger Clinic in Houston, Texas, resulting in a series of publications (Ellis, Daza, & Allen, 2012; Ellis, Rufino, Allen, Fowler, & Jobes, 2015; Ellis, Rufino, & Allen, 2017). Referred to as CAMS-M, this adaptation offers CAMS twice per week with highly suicidal inpatients over a 50- to 60-day stay; clinicians focus on intensively treating suicidal drivers while nursing staff focus on stabilization planning. The entire team then focuses on meaningful suicide-specific disposition and discharge planning. In an initial open trial, a case series investigation of the effectiveness of CAMS within this longer-term inpatient psychiatric setting found statistically and clinically significant reductions in depression, hopelessness, suicidal ideation, and improvement in relation to suicidal drivers for 20 inpatients (Ellis, Green et al., 2012). A second study at the Menninger Clinic was a naturalistic controlled-comparison trial using “propensity score matching” to rigorously create a control group and found significant between-groups changes in overall suicide ideation and suicide-related cognitions (Ellis et al., 2015). Supportive findings for CAMS-M were further replicated in a third clinical trial using propensity score matching to create control care (Ellis et al., 2017).

CAMS-Related Innovations

Having now reviewed the varied applications of CAMS across service settings, we would like to highlight some CAMS-related innovations that are underway addressing different suicidal populations and systems of care in novel ways. As a flexible clinical framework, CAMS has proven to be uniquely adaptable and modifiable to meet the needs of different patients, providers, and systems of care in the “real world” of psychological services.

Suicidal Adolescents and Children

While CAMS has been primarily developed and used with suicidal adults, in recent years there have been concerted efforts to use CAMS with adolescent populations (O'Connor, Brausch, Anderson, & Jobes, 2014). As previously noted, the SSF has been used with suicidal youth at the Mayo Clinic (Romanowicz et al., 2013) and a new clinical feasibility work using CAMS with suicidal inpatient teenagers is now underway at Seattle Children's Hospital.

One of the most innovative efforts along these lines has been a highly modified use of CAMS with suicidal children ages 5–12 (Anderson, Keyes, & Jobes, 2016). This modified use of CAMS employs key elements of the intervention in a more child-friendly

manner (e.g., sticker books used for CAMS-inspired coping cards). Within clinical use, suicidal children readily respond to this approach. Plans are currently underway to develop a feasibility randomized controlled trial of this innovative use of CAMS (and how to optimally engage their parents).

Forensic Settings

Suicide is a leading cause of death in jails and prisons (United States Department of Justice, Bureau of Justice Statistics, 2015). Yet there is virtually no research on effective psychological treatments for suicidal risk among this often-stigmatized population. In recent years, the use of CAMS has been extended to forensic settings, including juvenile justice facilities in Georgia (Saghafi, Monahan, Holmes, Cardeli, & Jobes, 2014) and the California state prison system. Clinician receptivity to using CAMS with this population has thus far been mixed. While some have readily found the therapeutic framework to be clinically useful, others have expressed discomfort about the notion of “collaborating” with an inmate, preferring instead to maintain a traditional doctor-patient authority dynamic. We are now exploring opportunities to conduct clinical feasibility studies on the use of CAMS in correctional settings through use of both traditional face-to-face CAMS and possible delivery via telehealth.

SMART Design Research

As described by Pistorello et al. (in press), an exciting new line of CAMS research has recently been done using a sequential multiple assignment randomized trial (SMART) methodology that compares the use of CAMS with suicidal college students versus treatment as usual (TAU) for 8 weeks in Stage 1 care. Suicidal patients who do not respond to either treatment in Stage 1 are then subsequently randomized to Stage 2 care, which is either 16 weeks of CAMS or 16 weeks of Dialectical Behavior Therapy (DBT). A SMART design methodology thus enables us to learn about matching different types and intensities of suicide-specific care to different types of suicidal states. Accordingly, this research is beginning to provide meaningful answers for the aspiration of providing individually tailored suicide-specific care to help achieve optimal clinical outcomes (i.e., a contemporary version of “prescriptive” suicide treatment; see Jobes, 1995).

CAMS Group

There has been some initial success conducting suicide-specific group therapy within VA health care settings. Indeed, Johnson, O'Connor, Kaminer, Jobes, and Gutierrez (2014) conducted an assessment-oriented study that used the SSF as part of the group's process. A group version of CAMS (CAMS-G) has now been developed and found to be a feasible course of care for suicidal veterans, but larger use of CAMS-G awaits rigorous investigation in well-powered randomized controlled trials.

CAMS Relational Agent System

A team of researchers at Boston University developed an avatar called “Nurse Louis” who provided postdischarge orders to medical surgical patients that led to markedly improved postdischarge behaviors (Berkowitz et al., 2013). Given the promise of this

model, a “relational agent” (avatar) named “Dr. Dave” has been designed and tested to provide a highly modified version of CAMS with suicidal patients in emergency departments (Jobes, 2016). Considering that suicidal patients typically sit in EDs for hours waiting to see the doctor, there is a unique window of opportunity to engage and assess a patient using an avatar modality on a computer tablet that generates a report for the doctor based on extant SSF research. The initial proof of concept demonstrated that Dr. Dave was deemed acceptable and helpful which now sets the stage for a RCT to prove the effectiveness of this innovative intervention (Dimeff, 2017).

Conclusion

The field of suicidology has matured and in recent years a systems approach to suicide prevention has clearly emerged as the best means for raising the overall standard of clinical care for suicidal patients with the promise of saving lives. Zero Suicide is a game-changing policy initiative that is gaining considerable traction in the U.S. and abroad. In deference to these developments, we have presented a stepped care model of suicide that is designed to treat suicidal risk in an evidence-based, least-restrictive, and cost-effective manner. Moreover, we have shown the potential value of applying and using one evidence-based approach (the Collaborative Assessment and Management of Suicidality) across the full range of psychological services—from paraprofessional interventions, to outpatient settings, to respite care, to partial care, and to inpatient psychiatric care. CAMS may not work for every suicidal patient or setting, but it is highly adaptable and effective for a range of suicidal patients across systems of clinical care. Given that suicide is the fatality of mental health care, we argue that members of our field must do all that we can to enhance our abilities to effectively assess and treat suicidal risk across the full range of organized health care settings to help save lives.

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Received May 30, 2017

Revision received November 12, 2017

Accepted November 19, 2017 ■