

# Special Forces Medical Sergeants' Perceptions and Beliefs Regarding Their Current Medical Sustainment Program: Implications for the Field

Ramey L. Wilson, MD, FACP; Kent J. DeZee, MD, MPH, FACP

## ABSTRACT

**Background:** Special Forces Medical Sergeants (SFMS) are trained to provide trauma and medical care in support of military operations and diplomatic missions throughout the world with indirect physician oversight. This study assessed their perceptions of the current program designed to sustain their medical skills. **Methods:** An Internet-based survey was developed using the constructs of the Theory of Reasoned Action/Planned Behavior and validated through survey best practices. **Results:** Of the 334 respondents, 92.8% had deployed at least once as an SFMS. Respondents reported spending 4 hours per week sustaining their medical skills and were highly confident that they could perform their duties on a no-notice deployment. On a 5-point, Likert-type response scale, SFMS felt that only slight change is needed to the Special Operations Medical Skills Sustainment Course (mean: 2.17; standard deviation [SD]: 1.05), while moderate change is needed to the Medical Proficiency Training (mean: 2.82; SD: 1.21) and non-trauma modules (mean: 3.02; SD: 1.22). Respondents desire a medical sustainment program that is provided by subject matter experts, involves actual patient care, incorporates new technology, uses hands-on simulation, and is always available. **Conclusions:** SFMS are challenged to sustain their medical skills in the current operational environment, and barriers to medical training should be minimized to facilitate sustainment training. Changes to the current medical sustainment program should incorporate operator-level perspectives to ensure acceptability and utility but must be balanced with organizational realities. Improving the medical sustainment program will prepare SFMS for the challenges of future missions.

**KEYWORDS:** *Special Forces Medical Sergeants, medical sustainment program, medical training*

## Introduction

Special Forces Medical Sergeants (SFMS) are trained to provide trauma and medical care in support of military

operations and diplomatic missions throughout the world with indirect physician oversight.<sup>1</sup> While trained to a high level of competency in medical, surgical, veterinary, dental, and preventive medicine knowledge and skills, the system designed to sustain their level of competency has not changed significantly over the past decade. With a shift in focus from supporting major combat operations back to traditional special warfare operations, the ability of SFMS to provide medical care in remote or austere locations mitigates the inherent risks of using small units to accomplish national objectives. If a member of the Special Forces team is injured while operating in locations far from conventional medical support, the medics provide the team with an intrinsic medical capability.

More recently, however, many of the Special Forces teams deployed in Iraq and Afghanistan conducted their operations under an umbrella of care provided by conventional military health services, which may have removed opportunities to sustain medical skills beyond initial trauma management. As conventional forces continue to downsize over the next year in Afghanistan, for example, the areas with a quick response aerial medevac provided by general purpose forces will be reduced.<sup>2</sup> However, the demand for Special Forces units to operate as trainers and advisors in places like Afghanistan and other areas of instability will continue.<sup>3</sup>

In addition to providing medical care to US soldiers, SFMS also advise and train host-nation forces on medical and prehospital care as part of international partnerships or Security Force Assistance/Foreign Internal Defense operations. To be effective medical instructors and advisors, medics must sustain and improve the quality of their medical skills and knowledge through continuing medical education, training, and practice. In addition, as the only combatant medical practitioners on the battlefield, SFMS must also maintain their combat, tactical, cultural, and language skills to be effective. Despite mandatory programs to direct and resource medical sustainment training, the demands on SFMS'

time challenge the maintenance of their medical skills. The aims of this study were to identify the attitudes, perceived barriers, and self-efficacy of SFMS about their current medical sustainment training and their opinions on the need to make changes to the current program.

## Background

The last major revision to the medical sustainment program followed a 1994 needs-based assessment that investigated the high rates of SFMS attrition and the medical sustainment program.<sup>4</sup> The results of this study led to the decentralized teaching of general medical topics to the group level, justified the placement of board-certified physicians into Special Forces battalion surgeon positions, guided the development of the Joint Special Operations Medical Training Center (JSOMTC), established a 2-week medical skills refresher program, and eliminated the point-based tracking system used to validate sustainment training.

The current SFMS medical sustainment program has undergone no significant changes since those introduced after the 1994 survey. The medical sustainment program currently comprises three training events/requirements that are designed to maintain the medical knowledge and skills of SFMS in different areas: Medical Proficiency Training (MPT), the Special Operations Combat Medical Skills Sustainment Course (SOCMSSC), and nontrauma modules (NTMs).

MPT focuses on clinical and hospital-based medical care and must be conducted for 2 weeks every 2 years (or for 4 weeks every 4 years) at a local hospital or clinic. During this training, SFMS are on temporary duty away from their units and participate in the delivery of hospital/clinic-based medical care under the supervision of a physician or physician assistant. This training is designed to refresh and sustain general medical and surgical skills that the SFMS do not normally perform while serving in garrison.<sup>5</sup> Due to the high operational tempo of the past 12 years, however, it has been difficult for SFMS to find the required time to attend MPT. Instead, alternative credit has been granted for medics who “volunteer” at US military medical facilities while deployed. Because of the focus of combat operations, training in deployed medical facilities has focused on trauma and emergency care instead of basic primary and traditional hospital care, and fails to sustain the medical skills needed to provide care in nontrauma situations. While previously managed at higher levels, recent changes to the MPT program have aligned specific Groups with local military and civilian hospitals. These changes have decentralized the programs to the Group Surgeons for implementation in an effort to improve the quality of instruction and rotational objectives.

JSOMTC conducts the 2-week SOCMMSC at Fort Bragg, North Carolina, on an ongoing basis. With classes starting every 2 weeks, the course focuses on refreshing and sustaining the tactical trauma skills taught during the Special Operations Combat Medic (SOCM) course. While all SFMS attend the SOCM course as part of their Qualification Course (Q-Course), non-SFMS medics also attend this course (e.g., Soldiers with the MOS 68WW1 SOCM). SOCMs are taught “. . . the knowledge and skills required to manage combat casualties from initial point of injury through evacuation” and how “. . . to prescribe appropriate treatments for diagnosed diseases in accordance with tactical medical emergency protocols and their corresponding formulary.”<sup>1</sup> The scope of SOCM care is focused on prehospital trauma management, and the SOCMMSC sustains this training through a combination of didactic lessons and hands-on casualty simulation scenarios. Notably, SOCMMSC meets the biennial requirements for medics to maintain their Advance Tactical Paramedic (ATP) certification, a deployment requirement for all SFMS.

NTMs are directed and coordinated at the Group level under the supervision of each Special Forces Group Surgeon. Required every 2 years, these modules provide a venue for tailored sustainment training at the organizational level. This training has historically included modules on preventive medicine, physical therapy, veterinary medicine, dental medicine, and behavioral health and been delivered in a variety of formats.<sup>6</sup> NTMs are intended to sustain the many medical skills not covered during MPT or SOCMMS but are required to maintain competency in performing the SFMS critical tasks outlined in STP 31-18D34-SM-TG/C1, *Soldier's Manual/Trainer's Guide MOS 18D Special Forces Medical Sergeant Skill Levels 3 and 4 (with Change 1)*.<sup>7</sup> The requirements for maintaining other tactical and combat skills (e.g., weapons training, special skills, language) and the current operational tempo have limited the frequency and attendance at NTMs.<sup>8</sup> Given the continued emphasis on Special Forces and their ability to support the national security strategy with a light-footprint approach, it is unlikely that the tempo of their operations will decrease.<sup>3,9</sup>

The challenges of maintaining medical skills in an operational context, however, are not unique to the Special Forces medical community. The military medical establishment, in general, has wrestled with the right techniques to sustain competency in medical skills in both garrison and deployed environments.<sup>10</sup> Deering et al., for example, conducted a large survey of military physicians who were deployed overseas, to measure their perceived degradation of surgical and clinical skills.<sup>11</sup> They concluded that most hospital-based physicians perceived a decrement in their skills when deployed for more than 6 months and required 3 to 6 months upon their return

before practicing at their previous level of clinical and surgical performance.<sup>11</sup> With the advances in technology and training aids, many have called upon the role of simulation as a sustainable, ethical, effective, and affordable method to maintain and improve medical skills, especially those that are not common in everyday practice.<sup>12-14</sup>

Similarly, advances in distributed learning have shown promise in individualizing medical education and providing training to Groups in different geographical areas. A computer-based learning environment has been adopted by the JSOMTC for use by SFMS during the Q-Course with the goal of continuing access following graduation. While computer-based learning was initially investigated as a teaching modality for Special Operations medics in 1994, it has not been incorporated into medical sustainment training.<sup>15</sup> In fact, other than the patient simulators used during the SOCMSS course as training aids, sustainment training has not systematically used simulations or distributed learning techniques as part of their programs.

With major combat operations coming to a close in Afghanistan and the current fiscal and budgetary environment, the future missions of Special Forces mission will adjust to re-emphasize engagement with partner military forces using small units without the logistical and medical support previously provided in Afghanistan and Iraq, which included significant area medical support by large military medical hospitals and robust evacuation systems. As military commanders rely on their SFMS to mitigate the medical risks assumed when deploying Special Forces teams to austere environments with underdeveloped medical systems, evaluating and improving the medical sustainment program will ultimately help to ensure high-quality trauma and medical care in support of Special Forces military and diplomatic missions.

From a public health and medical perspective, SFMS often provide medical care to civilians, work with local medical leaders to strengthen local medical systems, and train first responders to provide medical care. Following the ethical principle of “First, Do No Harm,” Special Forces leaders have an ethical and professional obligation to ensure that the care provided by SFMS to both US and non-US patients conforms to current standards. By validating and maintaining the medical skills, knowledge, and attitudes of their SFMS, Special Forces Command and medical leaders are able to deploy their medics with confidence knowing that their SFMS are providing appropriate and high-quality care.

To evaluate the efficacy of the current medical sustainment program, the US Army Special Forces Command medical leadership sought operational-level feedback on the current medical sustainment program and any need to update the program. Should revisions be necessary,

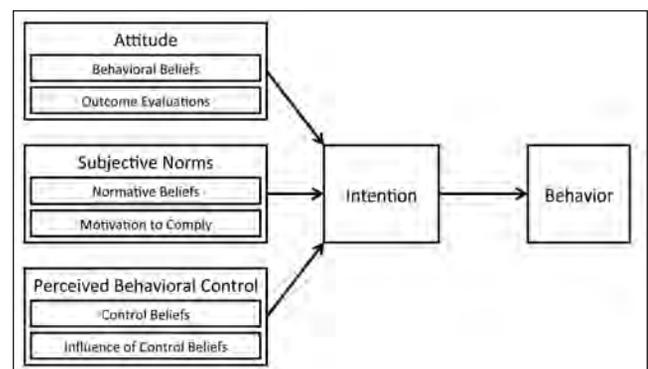
the leadership desired to incorporate end-user feedback to increase the likelihood of participation, acceptance, and utility of the program.

## Methods

### Survey Design

To evaluate SFMS’ perceptions of the current medical sustainment program and the need for any change to the program, a survey instrument was created to assess their attitudes about the current program and perceived barriers and self-efficacy of sustaining their medical skills. Survey best practices were used to improve the validity of the survey.<sup>16</sup> The theoretical constructs of the Theory of Reasoned Action/Planned Behavior (TRA/PB) framed survey development. This theory, which focuses on individual behavior, claims that behavior intention is the best predictor of actual behavior. Intention, however, is influenced by three factors: an individual’s attitude toward the behavior, the value placed on the behavior by their subjective norms, and an individual’s perceived behavioral control to perform the behavior (Figure 1). Maximizing these factors increases intention, and maximizing intention, in turn, increases the likelihood that individuals will engage in a specific behavior.<sup>17</sup>

**Figure 1** *The Theory of Reasoned Action/Planned Behavior provides the theoretical construct for investigating the motivation and intention of SFMS to engage in training designed to sustain their medical skills (Ajzen, 1991).<sup>17</sup>*



The first factor, a medic’s attitude, is determined by the behavioral beliefs and outcome evaluation. Behavioral beliefs assessed the respondents’ perceived value of sustaining their medical training, and outcome evaluation explored whether respondents felt that engaging in the behavior would lead to improved medical skills. The second factor, subjective norms, assessed the social pressures associated with sustaining medical skills, by exploring how the respondent perceived others as valuing the medics sustaining their medical skills. Normative beliefs assessed how peers influenced the respondents, while motivation to comply measured the impact of the Command and medical supervisors on the medic’s

intention to sustain their medical skills. The third factor, perceived behavior control, assessed the respondent's control beliefs and the influence of that control. Control beliefs assessed each individual's perceived level of control on how they conduct their sustainment training, and influence of control beliefs assessed how that level of control influenced their ability to conduct the behavior.

These constructs represented the foundation for assessing medics' attitudes, perceived barriers, and self-efficacy, and were operationalized by developing questions relating to each component of the constructs. Answer choices for each question used Likert-type scales: 5-point scales were used for unipolar responses, and a 7-point scale was used for bipolar answers. Three open-ended questions were included to allow respondents to provide unstructured responses. The survey was constructed using LimeSurvey, an online survey program hosted on the secure servers at the Uniformed Services University of the Health Sciences (USUHS).<sup>18</sup>

The final survey instrument included 47 items, several of which included subcategories of medical care corresponding to SFMS critical training requirements and training manual.<sup>7</sup> Three general, open-ended questions provided respondents the opportunity to provide feedback in an unstructured format. Demographic information was collected on respondent age, unit, length of military service, length of service in special operations, time since completing sustainment training, and deployment experience.

#### *Initial Survey Validation*

Following initial development, the survey instrument was evaluated and revised through subject matter expert review and cognitive testing with former SFMS. Through each stage in the process, survey questions were revised to improve clarity and understanding.

#### *Survey Implementation*

This survey targeted all 869 SFMS (both active duty and National Guard) serving in the US Special Operations Command (USASOC). Former SFMS or SFMS serving outside of USASOC were excluded. To recruit participants, a study invitation e-mail with a link to the online survey was distributed through the USASOC medical support channels to all potential respondents. The invitation contained a description of the study and a statement highlighting the voluntary nature of participation. Reminder e-mails with a link to the survey were distributed to all potential respondents 2 and 4 weeks later. The survey was closed at the end of 6 weeks. Data collection was performed electronically and stored on secure USUHS servers behind password protection. In accordance with Department of Defense Instruction 3216.02, Protection of Human Subjects and Adherence to Ethical Standards in DoD-Supported Research,

November 8, 2011, no monetary compensation for participation was allowed.

#### *Ethics Statement*

The research protocol for this survey was approved by the USUHS Institutional Review Board prior to cognitive testing and survey deployment. The survey maintained complete respondent anonymity and informed consent was obtained when the respondent began the first page of the survey (beyond the consent page). The consent page highlighted the purpose of the study, the risks and benefits of participation, alternatives to participation, the right to withdraw, and where to get more information. No personally identifiable or health information was collected and respondents were allowed to skip questions if desired.

#### *Statistical Analyses*

Prior to analysis, data were screened for accuracy, missing values, and normality. Descriptive statistics were calculated using frequency for categorical variables. Subgroup comparisons using demographic information were made based on participant characteristics (e.g., Group assignment, deployment history, and time since initial training) to identify underlying relationships between measured variables. When appropriate, analysis of variance for subgroup comparisons or Student *t* test to compare means was performed. Presurvey power analysis concluded that with a 40% response rate, 95% confidence intervals (CIs) for descriptive statistics would generate a width of 20.7% of one standard deviation (SD). For comparing means, a response rate of 40% would still provide 80% power to find a difference of 30% of one SD (standardized effect of 0.3) based on a *t* test for independent samples with two groups of similar size and a 5%, two-sided significance level. All analyses were completed using SPSS 22.0 with statistical significance level of  $p \leq .05$  (IBM Corporation, Armonk, NY, USA; <http://www-01.ibm.com/software/analytics/spss/>).

#### *Results*

The survey had a total of 334 respondents, which resulted in a 38.4% overall response rate. Approximately 89% of all respondents completed the entire survey. The average respondent was 32 years old (SD: 4.9) and has served in the Army for 10.5 years (SD: 4.5) and in Special Forces for 5.4 years (SD: 3.4). Nearly 93% of the respondents had deployed at least once, with the average having 4.2 deployments (SD: 3.5). The average respondent has been deployed in a combat zone for a total of 13 months (SD: 9.4), deployed in a noncombat zone for 6.5 months (SD: 9.3), and had returned from his last deployment 9.1 months (SD: 11.6) prior to the survey. There was no difference in these values between the different Special Forces Groups (SFG) except for 19th Group,

where the average age of the respondent was older (37.4 years old). Most respondents (82.7%) had completed SOCMSSC and NTMs (87.4%), but less than one-half had completed an MPT (46.7%). There was no difference in participation in these training events between SFGs, except that respondents from the National Guard (19th and 20th SFG) were less likely to have completed NTMs. Almost three-quarters (73.5%) of the respondents served on an Operational Detachment–A (ODA). The characteristics of the 334 participants are presented in Table 1.

### Current Readiness

SFMS reported that their average confidence in performing their medical duties during a no-notice deployment in the next 6 months was 89 (95% CI 88–90) on a 0–100 scale (Figure 2). There was no significant difference between SFGs.

**Figure 2** Reported overall confidence to perform medical duties as an SFMS during a no-notice deployment in the next 6 months.



### Behavior and Intention

On average, SFMS spend 4.6 hours per week (95% CI 3.9–5.2) sustaining their medical skills. To reduce and evaluate the impact of several outliers who reported spending significant amounts of time sustaining their medical skills, the 5% trimmed mean, which excludes the upper and lower 5% of values, was calculated to be 3.7 hours per week (Figure 3).

SFMS reported that, on average, they intend to spend between a slight and moderate amount of time each week sustaining their medical skills. The average of responses was 2.72 (95% CI 2.63–2.80) on a 5-point Likert-type scale (Figure 4).

### Attitude

#### Behavior beliefs

Respondents reported that maintaining their medical skills was significantly more important than maintaining

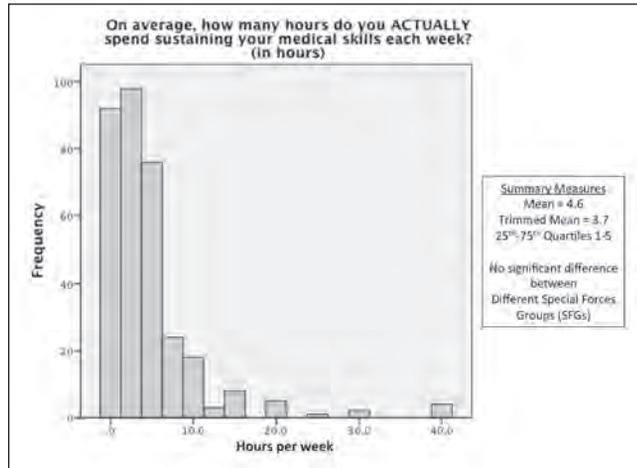
**Table 1** Study sample statistics

Total respondents	334 (869)
Response rate, %	38.4
Age, yr	32.2 (29–35; 23–47)
Service in the Army, yr	10.5 (7–13; 3–35)
Service in Special Forces/Operations, yr	5.4 (3–7; 0–18)
Time since graduating from SFMS course, yr	5.2 (3–7; 0–18)
Unit assignment	
1st Special Forces Group	64 (21.5)
3rd Special Forces Group	33 (11.1)
5th Special Force Group	75 (25.3)
7th Special Forces Group	47 (15.8)
10th Special Forces Group	40 (12.0)
19th Special Forces Group	7 (2.4)
20th Special Forces Group	18 (6.1)
Special Warfare Center and School	19 (6.5)
Other	2 (0.7)
Level of organization	
Operational Detachment – A	214 (73.5)
Operational Detachment – B	24 (8.2)
Battalion Medical/Staff	19 (6.5)
Group Medical/Staff	13 (4.5)
Special Warfare Center and School	19 (6.5)
Other	2 (0.7)
Has deployed OCONUS as a SFMS	270 (92.8)
Total OCONUS deployments as 18D, no.	4.2 (2–5; 0–24)
Total time in combat zones as 18D, mo	13.0 (6–19; 0–44)
Total time in noncombat zones as 18D, mo	6.5 (1–8; 0–67)
Times since last deployment, mo	9.1 (1–12; 0–60)
Has completed MPT	135 (46.7)
Time since last MPT, mo	20.3 (5–24; 0–96)
Has completed NTMs	228 (78.4)
Time since last NTM, mo	12.7 (3–16; 0–108)
Has completed SOCMSSC	244 (82.7)
Time since last SOCMSSC, mo	12.4 (5–18; 0–96)

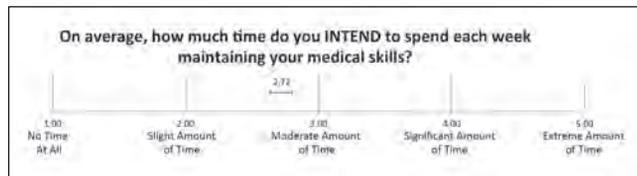
Note: Continuous variables are described as mean (interquartile range; range) and categorical variables as number (%) unless otherwise noted. OCONUS, outside the continental United States. See text for expansion of other abbreviations.

their skills in other key areas, with an average response of 4.85 on a 5-point scale (95% CI 4.80–4.90). They reported that the next most important skills were physical fitness, tactical engagement skills, shooting, and cross

**Figure 3** Reported average amount of time SFMS spent each week sustaining medical skills.



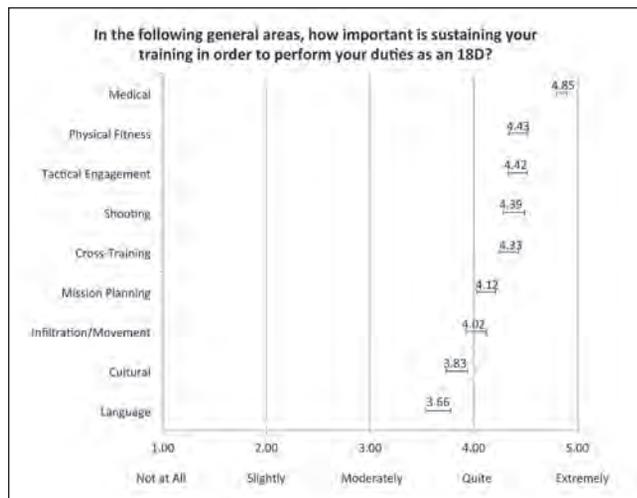
**Figure 4** Reported average amount of time respondents intended to spend each week maintaining their medical skills.



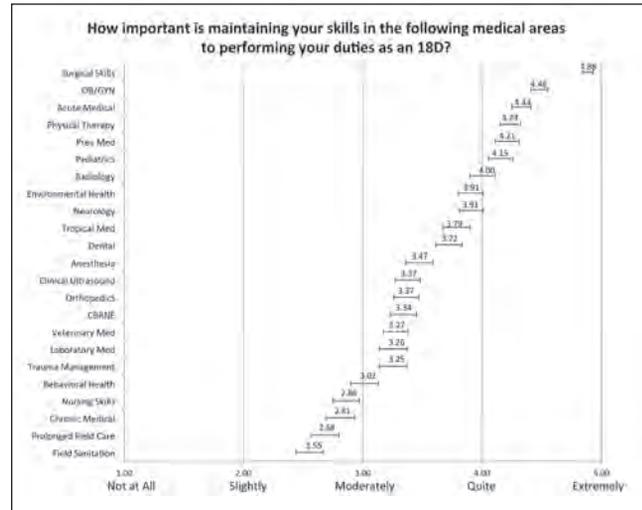
training. There was no significant difference among these skills. Cultural and language skills were the only skills that SFMS felt were less than “quite important,” as compared to the other skills (Figure 5).

Within the specific areas of medical training, SFMS reported that sustaining surgical, obstetrics/gynecology, acute medical, physical therapy, preventive medicine, and pediatric skills were all above quite important, and the majority of areas were evaluated as moderately important or greater (Figure 6).

**Figure 5** SFMS’ reported relative importance of sustaining the various skills to performing their duties.



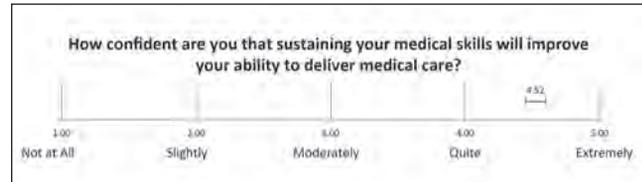
**Figure 6** SFMS’ reported importance of sustaining various medical skills to performing their duties.



### Outcome Evaluation

SFMS rated their perception of outcome evaluation between quite confident and extremely confident at 4.52 (95% CI 4.45–4.60), which suggests they felt that sustaining their skills would lead to an improved ability to provide medical care (Figure 7).

**Figure 7** SFMS’ reported confidence that sustaining their medical skills will improve their ability to deliver medical care.



### Subjective Norm

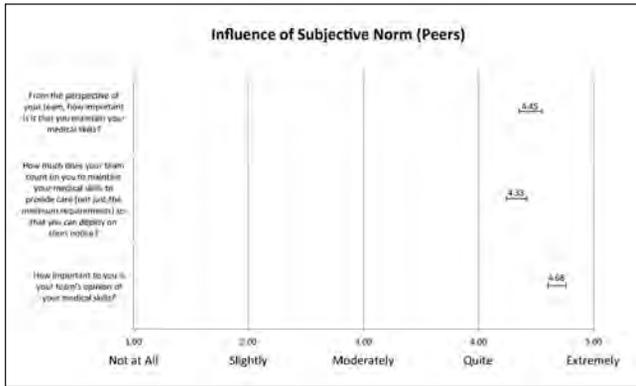
SFMS reported that their peers value and support their sustainment training and that the opinion of their peers about their medical skills is important to them (Figure 8). Similarly, SFMS reported that medical supervisors and their Command also value the capabilities SFMS contribute to the organization and support the sustainment of their medical skills (Figures 9 and 10). Support from the Command, however, appears to be perceived as only focusing on meeting minimum credentialing requirements (3.72, 95% CI 3.60–3.84), as support for sustaining skills beyond the minimum credentialing requirements was perceived as significantly lower than for meeting credentialing requirements (2.83, 95% CI 2.70–2.96).

### Perceived Behavioral Control

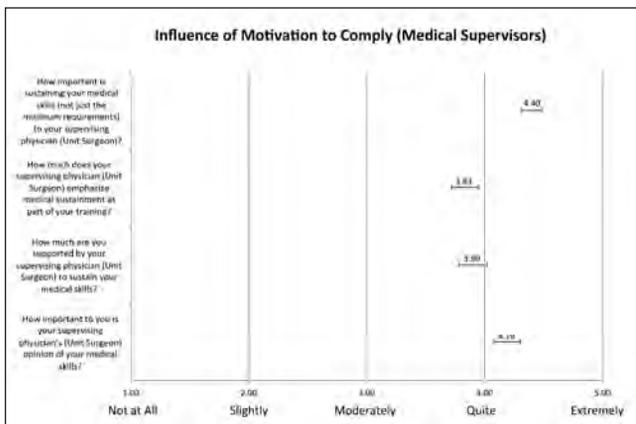
#### Control beliefs

SFMS reported that they have between slight and moderate control over their medical sustainment training

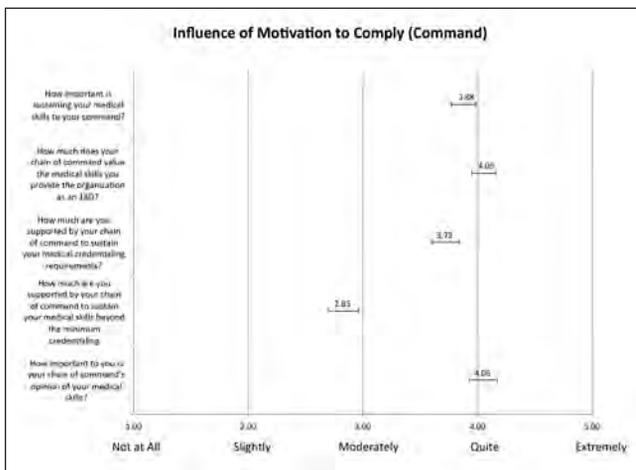
**Figure 8** Reported beliefs relating to SFMS' subjective norms/peers.



**Figure 9** Reported beliefs relating to SFMS' motivation to comply/opinion of medical supervisors.



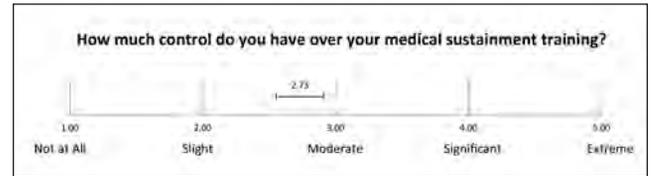
**Figure 10** SFMS' reported beliefs relating to their motivation to comply/opinion of Command.



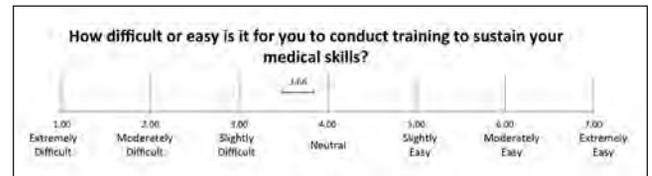
(Figure 11) and feel that it is between slightly difficult and neutral to sustain their medical skills (Figure 12).

SFMS reported that the major barriers to conducting medical sustainment training are operational tempo, unit taskings, the requirements to sustain other skills,

**Figure 11** Reported perception of control over SFMS' medical sustainment training.



**Figure 12** SFMS' reported perception of control over their medical sustainment training.



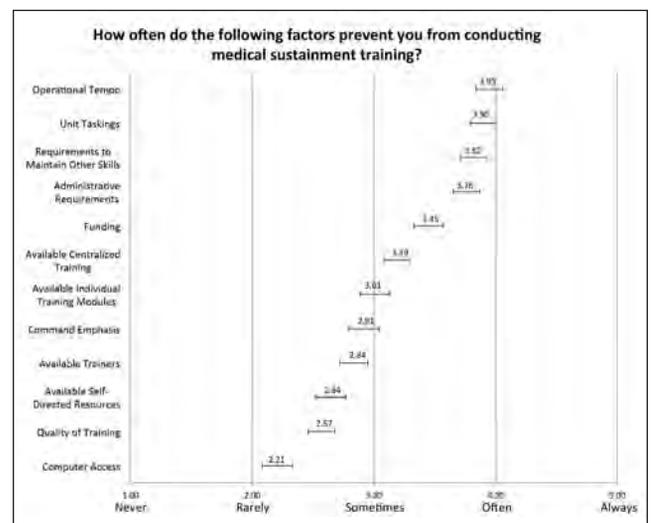
and other administrative requirements. They rated these as barriers occurring close to often. Funding was thought to be a barrier more than sometimes, and Command emphasis was seen as a barrier sometimes (Figure 13).

### Influence of control beliefs

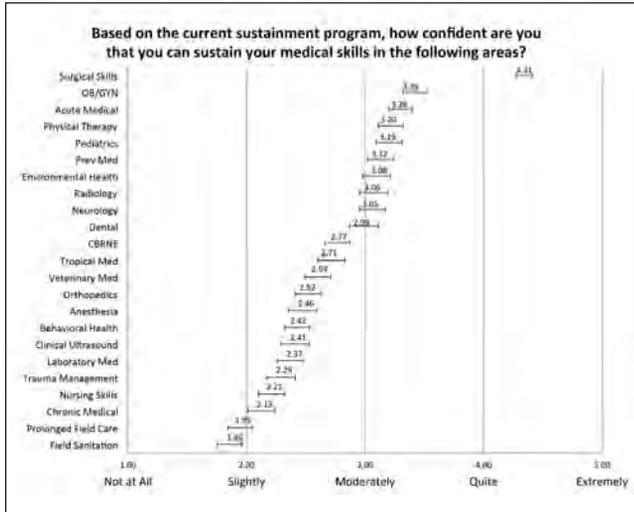
The influence upon these control beliefs revealed that SFMS felt that they were less than “moderately confident” in the current sustainment program to sustain their medical skills in more than one-half of the medical areas and only “quite confident” in one area: sustaining their surgical skills (Figure 14).

In contrast, SFMS felt between quite confident and extremely confident that they would be able to sustain their medical skills if a theoretical “ideal” sustainment program were in place (Figure 15).

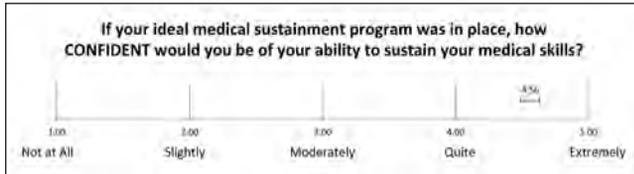
**Figure 13** Reported perception of different barriers to conducting medical sustainment training.



**Figure 14** SFMS' reported confidence in their ability to sustain their medical skills in various medical areas.



**Figure 15** SFMS' reported confidence to sustain their medical skills in an "ideal" medical sustainment program.

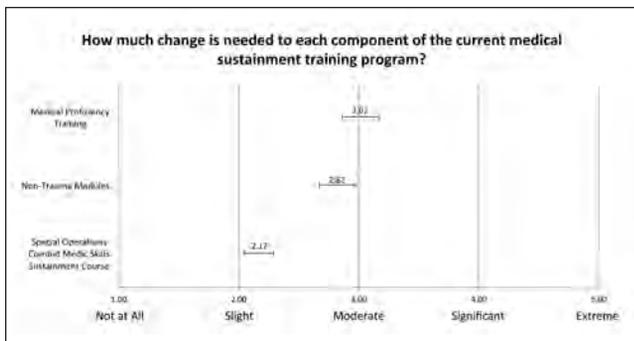


### Need for Change

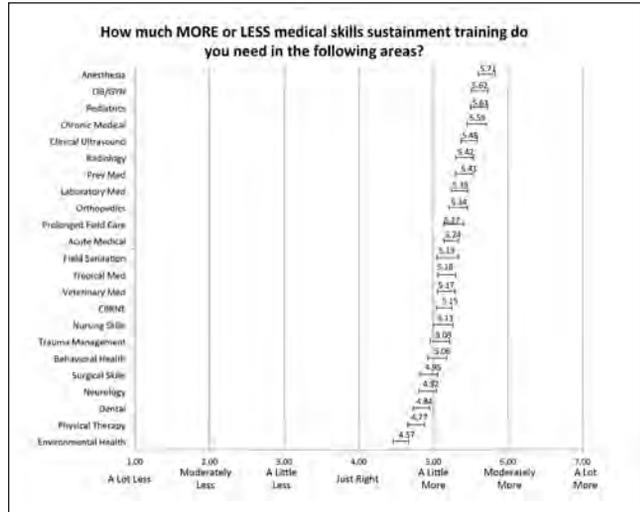
SFMS reported that the MPT program needed moderate changes and that the NTM needed just below moderate changes. SOCMSSC only needed a little more than slight change. No program needed significant or extreme change (Figure 16).

SFMS reported, however, that they needed more sustainment training in all areas of medicine. The top five areas were anesthesia, obstetrics/gynecology, pediatrics, chronic medical conditions, and clinical ultrasound. The majority of medical areas were rated between a little more and moderately more (Figure 17).

**Figure 16** Reported perceived need to change the various components of the current medical sustainment program.



**Figure 17** Reported perceived need for more or less sustainment training in the various medical areas.



### Ideal Medical Sustainment Program

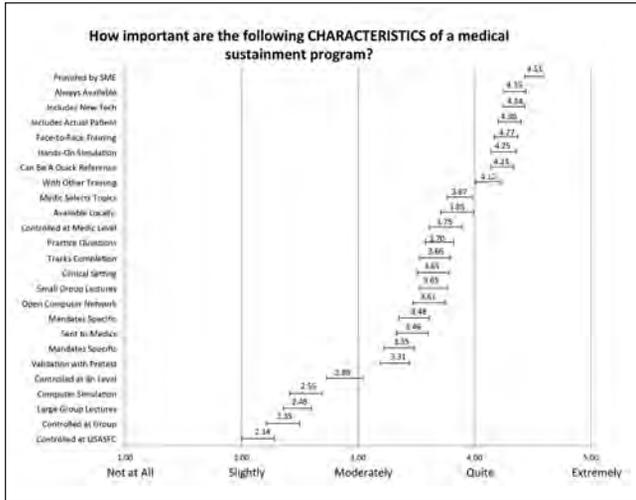
SFMS reported that they consider the following characteristics as more than quite important in a medical sustainment program: provided by a subject-matter expert, always available, incorporates new technology, includes actual patient care, provided face-to-face with an instructor, includes hands-on simulation, can be used as a quick reference, and is incorporated into other training events. Other characteristics that were considered between moderately important and quite important included the ability for medics to select the topics, local availability, practice questions, and performed in a clinical setting (Figure 18).

### Discussion

While SFMS are well-trained medical technicians when they complete their initial medical training, failure to sustain and build upon that knowledge leads to the decay of their medical knowledge and skills.<sup>20,21</sup> The current medical sustainment program for SFMS is designed to sustain each SFMS's medical knowledge and build upon their initial training through hospital experiences, didactic medical lectures, and hands-on training and certification. Time and other training demands, however, hinder the ability of SFMS to complete their medical sustainment training.

In this descriptive study, the attitudes and beliefs of current SFMS provide insight into the operators' perspective on the current medical sustainment program and whether the program meets their perceived current and future needs. As the war in Afghanistan continues to migrate from combat operations to advise and assist missions, the role of SFMS will refocus on missions other

**Figure 18** *Reported importance of various characteristics in a medical sustainment program.*



than direct action. While the ability to provide immediate care to trauma casualties will remain important, other skills, such as prolonged field care, nursing skills, the treatment of chronic medical conditions, and the care of pediatric and obstetrical care will become more important. The results of this study revealed that SFMS are already thinking about future missions and the need to improve their medical skills in areas beyond trauma management.

SFMS rated the maintenance of their medical skills as the most important skillset they needed to sustain. In addition to trauma and surgical skills, they reported needing a mix of medical skills to support longitudinal care, such as acute medical care, physical therapy, pediatric care, obstetrical/gynecological care, and preventive medicine, to conduct their combat missions, and SFMS strongly believed that conducting medical sustainment training would improve the quality of the care they could provide while deployed. While their overall evaluation of their ability to perform their medical duties on no-notice missions implies confidence in their medical skills, respondents stated that they needed more training in all areas. SFMS maintained a high level of confidence that they could maintain their skills in an ideal medical sustainment program and suggested that changes to the current program need to be made to improve their capability and readiness.

SFMS, however, suggested that only slight to moderate changes to the current program are needed, and these changes varied among the different parts of the sustainment program. For the SOCMMS component, medics only recommended slight changes, while moderate changes were recommended for the NTM and MPT components. This would suggest that wholesale changes to the current program are unnecessary. Instead, adjustments to

the current programs can meet their current and future needs.

These changes can be guided by the feedback SFMS provided in this study based on the characteristics they desire in a sustainment program. These would include: high-quality education and training by subject matter experts, actual patient care, availability at all times, instruction in new technology, and integration into other training events.

Major barriers to conducting medical sustainment training appear to be administrative requirements and the need to sustain their training in other areas. As ODA members operate as a team, much of their training needs to be conducted as a group, and finding time for medics to improve their medical skills outside of team training can be difficult. As the medic is, by tradition, the administrative officer for the team, it is not surprising that SFMS report that administrative requirements are an obstacle to conducting medical training. Here again, the needs of the team often come before the needs of the individual medic.

As expected, others' opinions of medics' medical skills are important to SFMS, and they want to be perceived as competent and capable medical technicians. They rank the opinion of their teammates, their peers, as most important to them, but the opinion of their medical and command supervisors are quite important, as well. While they feel supported by their medical supervisors and Command, they feel that the support and emphasis from the Command is limited to meeting the minimum credentialing requirements to deploy, as opposed to improving their medical knowledge. This suggests that the credentialing requirements for SFMS are a significant driver in resource allocation for the Command and may need to be changed for the Command to support SFMS spending more time sustaining their medical skills.

This study suggests that SFMS feel that the medical sustainment program needs to be improved within the confines of the current program, with an emphasis on NTM and MPT. These changes could be directed by seeking to improve the current system with the feedback provided by the medics that suggests that they would like more sustainment training to involve actual patient care under the supervision of a subject matter expert, such as a physician or physician assistant. A potential solution might be to seek increased medical credentialing for SFMS, similar to that of Independent Duty Corpsmen in the US Navy, so that they can provide care in military treatment facilities on a regular basis. While gaining and maintaining these credentials would add to the training requirements of SFMS, they would provide additional emphasis on medical sustainment and would likely improve the maintenance of medical skills and knowledge, while also aligning with the stated preference of SFMS

for patient-centered, supervised sustainment training. Obviously, any increase in sustainment or credentialing requirements would require a decrease in other obligations. Increasing the credentialing requirements of the medics, however, could provide justification for reprioritizing SFMS' time to make medical sustainment a greater priority, strengthen the link between operational and clinical care, and provide sustainment experiences consistent with the desires expressed by operators.

The findings of this study also suggest the need and desire for medical sustainment training that is readily available to individual medics so that it can be conducted in a distributed manner when opportunity becomes available. Given the decentralized nature of operations and training in Special Forces, a program that provides on-demand training in the core areas, while allowing medics to select training that will meet their perceived needs, could augment the training provided by the training opportunities of the current program. Similarly, establishing a formalized program to partner with subspecialty experts working in the medical treatment facilities who would be willing to supervise medics on a planned or short-notice basis could assist medics in meeting their short-notice training needs or interests. While ad hoc training occurs at many facilities, formalizing the program could expand the available opportunities.

#### **Limitations**

Limitations of this study include the response rate and how the study was distributed. While a response rate of almost 40% provides a large sample that provided good statistical power, it failed to reach the presurvey goal of 50%. The response rate, however, was consistent with most Internet-based, online surveys that often receive a response rate closer to 40%.<sup>22</sup> As the survey was distributed through medical channels, rather than directly to potential participants, the response rate was calculated based upon the total potential respondents, since it was not possible to confirm exactly how many potential participants actually received the survey invitation. While the actual response rate may be higher, the reported response rate represents the best estimate available.

The self-reported nature of the data represents another limitation of this study. While, by design, the study sought each participant's perceived belief or self-assessment of each of the constructs, the self-reported data are subject to bias. As SFMS represent, as a group, a confident and well-trained cohort based on their completion of the Q-Course, they may tend to overestimate their abilities and confidence to provide medical care according to current best practices. While objective measurement of their medical knowledge and skill would be helpful in crafting changes to their sustainment program, it was not possible with this study design and

should be considered in future studies and assessment of SFMS skills.

Finally, another limitation of this study is that respondents may have evaluated their current and future needs based upon their combat and noncombat experiences of the past decade and these may not align with actual needs of future deployments and operations. While recent experiences may not be congruent with future needs, there will be significant overlap in the medical requirements of stability operations and counterinsurgency missions with future threats and missions. Medical training planners, therefore, should interpret the findings of this study with this limitation in mind.

#### **Conclusions**

SFMS must plan for the unexpected and train for the worst. Sustaining their broad-based medical education and training mitigates the risks of uncertainty by providing well-trained, flexible, and adaptable medical technicians who are a significant force multiplier when operating in small groups, far from traditional medical facilities. Sustaining that knowledge and skill requires an investment in time and resources that are often in competition with other requirements. Barriers to medical sustainment training must be removed and the current programs must be revised to provide timely, accurate, relevant, and state-of-the-art methods to sustain SFMS skills and improve the quality of the care they provide to their teammates, partner forces, and civilians around the world. These findings highlight the need for varying degrees of change in each of the components of the current medical sustainment program. Making these changes now will prepare SFMS for the uncertainties of future deployments and support mission accomplishment.

This study represents the most recent assessment of the perceptions regarding the current SFMS medical sustainment program and should be followed by additional research and investigation. Future research should consider objectively measuring the skills and knowledge of SFMS, how to best validate and sustain SFMS knowledge and skills, the use of simulators and observed clinical skills exams as part of sustainment training, the efficacy of distributed learning for SFMS medical sustainment, and adapting current or off-the-shelf medical education programs designed for physicians, nurses, veterinarians, and other medical professionals to sustain the capabilities of SFMS.

#### **Disclaimer**

The views and opinions expressed in this paper do not necessarily represent the official policy of the US Department of Defense, the US Army, Walter Reed

National Military Medical Center, or the Uniformed Services University of the Health Sciences.

## Disclosures

The authors have nothing to disclose.

## References

1. US Army John F. Kennedy Special Warfare Center and School. *Academic handbook 2013*. Fort Bragg, NC: US Army Special Operations Command; 2013.
2. Chandrasekaran R Higham S. Shrinking U.S. government oversight. *Washington Post*. 26 October 2013. [http://www.washingtonpost.com/world/national-security/after-troops-leave-us-to-lose-access-to-afghan-reconstruction-projects-worth-billions/2013/10/26/5a9212a6-3d9c-11e3-b6a9-da62c264f40e\\_story.html](http://www.washingtonpost.com/world/national-security/after-troops-leave-us-to-lose-access-to-afghan-reconstruction-projects-worth-billions/2013/10/26/5a9212a6-3d9c-11e3-b6a9-da62c264f40e_story.html).
3. US Special Operations Command. *SOCOM 2020: Forging the tip of the spear*. MacDill AFB, FL: US Special Operations Command; 2013.
4. Graham SE. *Analysis of Special Forces Medic (18D) attrition*. Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences; 1994.
5. Derr RE, Roepke DL, Lyons WH. Community hospitals and military sustainment training. *J Trauma Nurs*. 2008;15: 200–204.
6. Dean P, McNeil J. Breaking the stigma of behavioral healthcare. *Special Warfare*. 2012;25:7–9.
7. US Department of the Army. STP 31-18D34-SM-TG/C1: *Soldier's Manual/Trainer's Guide MOS 18D Special Forces Medical Sergeant Skill Levels 3 and 4 (with Change 1)*. Washington, DC: US Army; 2003.
8. Hughes J, Hughes T. Pre-deployment training recommendations for Special Forces Medical Sergeants based on recent Operation Enduring Freedom Experiences. *J Spec Oper Med*. 2009;9:16–19.
9. Feickert A. U.S. Special Operations Forces (SOF): background and issues for Congress. Washington, DC: *Congressional Research Services*; 2013.
10. De Lorenzo RA. How shall we train? *Mil Med*. 2005; 170:824–830.
11. Deering SH, Rush RM Jr, Lesperance RN, Roth BJ. Perceived effects of deployments on surgeon and physician skills in the US Army Medical Department. *Am J Surg*. 2011;201:666–672.
12. Kaufmann C, Liu A. Trauma training: virtual reality applications. *Stud Health Technol Inform*. 2001;81:236–241.
13. Moses G, Magee JH, Bauer JJ, Leitch R. Military medical modeling and simulation in the 21st century. *Stud Health Technol Inform*. 2001;81:322–328.
14. Leitch RA, Moses GR, Magee H. Simulation and the future of military medicine. *Mil Med*. 2002;167:350–354.
15. Hermansen LA, Ly HL. *An overview of the Special Operations Interactive Medical Training Program (SOIMTP)*. San Diego, CA: Naval Health Research Center; 1994.
16. Gehlbach H, Artino AR Jr, Durning S. AM last page: survey development guidance for medical education researchers. *Acad Med*. 2010;85:925.
17. Ajzen I. The theory of planned behavior. *Organ Behav Hum Dec*. 1991;50:179–211.
18. LimeSurvey Project Team. LimeSurvey: An Open Source survey tool. 2012. <http://www.limesurvey.org>.
19. IBM Corp. *IBM SPSS Statistics for Macintosh, Version 21.0*. Armonk, NY: IBM Corp; 2012.
20. Custers EJ, Ten Cate OT. Very long-term retention of basic science knowledge in doctors after graduation. *Med Educ*. 2011;45:422–430.
21. Perez RS, Skinner A, Weyhrauch P, et al. Prevention of surgical skill decay. *Mil Med*. 2013;178(10 Suppl):76–86.
22. Cook C, Heath F, Thompson, RL. A meta-analysis of response rates in Web- or Internet-based surveys. *Educ Psychol Meas*. 2000;60:821–836.

---

LTC Wilson is a fellow in general internal medicine at the Walter Reed National Military Medical Center, Bethesda, Maryland; and assistant professor of Medicine, Uniformed Services University of the Health Sciences, Bethesda, Maryland. E-mail: ramey.wilson@usuhs.edu.

LTC(P) DeZee is the former director, General Internal Medicine Fellowship, and is the assistant director of Graduate Medical Education at Tripler Army Medical Center in Honolulu, Hawaii, and an associate professor in the Department of Medicine at the Uniformed Services University of the Health Sciences.

Copyright of Journal of Special Operations Medicine is the property of Breakaway Media, LLC and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.