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Provider Attitudes toward Standardized Clinical Assessment and Management Plans (SCAMPs)

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Abstract

Introduction—Despite the growing importance of clinical guidelines, their adoption has encountered significant resistance among clinicians. We developed Standardized Clinical Assessment and Management Plans (SCAMPs) as an innovative, clinician-led approach to building, implementing, and constantly improving flexible guidelines. We hypothesized that SCAMPs would fit well within the culture of medicine and that clinicians would therefore prefer SCAMPs over other guidelines.

Methods—We implemented an anonymous, computer-based survey to analyze provider attitudes toward SCAMPs at our institution.

Results—Sixty-nine providers completed the questionnaire (73% response rate). Most providers reported a positive opinion about SCAMPs along axes of overall familiarity (83%), trust (91–94%), utility (75–87%), and overall attitude (64%). Fewer providers felt familiar with the SCAMP improvement process (60% neutral to unfamiliar) or knew that they played a role in this process (62% said no or unsure). Sixty-five percent reported experiencing an erosion in their autonomy with SCAMPs; when comparing this to other guidelines, 38% said other guidelines erode more, 26% felt SCAMPs erode more, and 36% were neutral. The plurality of providers chose SCAMPs as their preferred means to incorporate evidence-based medicine into their practice (46% vs 29% for clinical practice guidelines, 25% for other guidelines).

Conclusion—Providers look upon SCAMPs favorably and believe that SCAMPs successfully address numerous barriers to guideline adoption. Furthermore, SCAMPs are the preferred means to incorporate evidence-based medicine into practice among providers surveyed. SCAMPs may represent an important step in building guidelines that fit into the culture of medicine, obtain clinician “buy-in,” and better influence clinical decision making.

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Supporting information

Additional Supporting Information may be found in the online version of this article:

Keywords

Guidelines; Clinician Satisfaction; Physician Attitudes; Quality Improvement

Introduction

Clinical practice guidelines (CPGs), through their standardization of care and promotion of evidence-based medicine (EBM), are intended to improve the quality of care that doctors deliver to their patients.^{1,2} Expanding the role of CPGs within medicine has long been a topic of interest in the discussion on health care reform in the United States.³ In an effort to control the ballooning costs of care without jeopardizing quality, policymakers are turning to guidelines to help direct medical decision making and thereby curb unnecessary resource utilization.^{4,5}

Numerous studies have shown, however, that guidelines often meet significant resistance from clinicians for a variety of reasons.^{6–10} First, adoption of guidelines is limited by simple lack of awareness and familiarity. Even with access to guidelines, clinicians encounter barriers to adherence ranging from patient preferences to difficulty incorporating into practice workflow. Clinicians may mistrust the actual content of guidelines for reasons including questionable validity related to industry influence,¹¹ limitations in generalization because of variations in patient populations, and guideline relevance given the constant flux of medical knowledge and limited shelf-lives of studies and recommendations.^{12,13}

In addition, guidelines often fail to fit within the culture of medicine. Clinicians may find guidelines to be unnecessarily rigid, especially when they feel that idiosyncratic care of a patient is indicated.¹⁴ Clinicians also fear that guidelines represent a means of cost containment rather than a contribution to quality improvement.¹⁵ In academic medicine, some contend that guidelines inhibit both physician training and innovation in medical care. Lastly, it has been purported that CPGs are causing a fundamental shift in the professional focus of clinicians from autonomy to accountability.¹⁶ This perceived erosion of autonomy, moreover, may be a significant source of clinician dissatisfaction.^{17,18}

Clinician resistance cannot be overcome by increasing access to guidelines and boosting incentives for adherence alone. To promote trust of guideline content, the creation process should be transparent and led by physician and nursing experts without external influence. In addition, guidelines should be continuously modified to incorporate the most recent findings from medical research. To address concerns over generalization and rigidity, guidelines need to be both broad, to account for differences in patient populations, and flexible, to allow for idiosyncratic management of patients when necessary. Lastly, to better fit into the culture of medicine and achieve clinician “buy-in,” guidelines should acknowledge and capture clinician input as an important potential source of information and innovation. In this way, flexible guidelines that value the preeminence of clinical acumen may mitigate any perceived erosion of autonomy.

With many of these concepts in mind, we developed Standardized Clinical Assessment and Management Plans (SCAMPs) as an innovative, clinician-led approach to building, implementing, and constantly improving flexible guidelines. We hypothesized that by addressing many of the barriers to guideline adoption, SCAMPs might achieve higher acceptance among clinicians and better influence medical decision making.

Overview of SCAMPs

A SCAMP is a quality improvement initiative that guides clinical decision making and gathers and acts upon relevant clinical information.¹⁹ It is developed by a multidisciplinary committee of physician and nursing experts for a particular medical condition. A SCAMP provides a flexible guideline that standardizes the assessment and management of patients with a specific disorder and is accompanied by a systematic and robust, but also selective, data collection process. The SCAMP also actively invites knowledge- and experience-based clinician deviations from its recommendations, which are recognized as a rich source of information and innovation.²⁰ Based on periodic review of collected data, clinician deviations, and updates in the medical literature, a SCAMP undergoes iterative and progressive modification of its care-delivery algorithm at scheduled intervals. As such, the SCAMP is continuously improved to offer up-to-date and comprehensive medical management recommendations.

At first glance, SCAMPs appear similar to CPGs in their attempt to standardize the delivery of care for a subset of patients; however, SCAMPs differ in several important ways. Figure 1 provides a schematic overview of how SCAMPs work compared with CPGs. Most CPGs lack methods to capture data on their use and outcomes, and have no built-in method of revision. As such, these CPGs are “dead ends,” and their improvement is dependent on external clinical research and consensus-based revision that can take years to carry out. SCAMPs, on the other hand, achieve enhanced data gathering by collecting information on outcomes, examining resource utilization, and capturing clinician input on deviations. Periodic review and iterative improvement are fundamental principles of the SCAMP process. In this way, SCAMPs not only disseminate knowledge through their recommendations, but also work to continuously build knowledge that can improve patient care and optimize resource utilization.

The SCAMP initiative has been active in the Cardiovascular Program at Children’s Hospital Boston since March of 2009. Recently, several additional domestic and international pediatric cardiology departments, as well as other departments at Children’s Hospital Boston, have become active participants in SCAMPs. To date, over 2000 patients have been enrolled in 13 different SCAMPs, and 13 new SCAMPs are currently under development (Table 1).

Survey Design

We recognized the importance of evaluating provider attitudes toward SCAMPs to measure our success and identify targets for improvement. We sought to accomplish these goals through the implementation of a provider satisfaction survey, and designed our survey to assess clinician opinion along previously described axes of barriers to guideline implementation: knowledge, attitudes, and behaviors.⁶ We also sought to evaluate certain aspects unique to SCAMPs, including their capacity for knowledge-based deviations and their expanded involvement of clinicians through capturing and learning from these deviations. In addition, we attempted to gauge the impact that SCAMPs have on clinician autonomy in an effort to quantify the purported erosion of autonomy that accompanies guideline use. Lastly, we tried to compare provider perception of SCAMPs to that of other guidelines. The purpose of this survey was to gather opinions, not to assess the impact of SCAMPs on quality of care, which is the subject of separate, ongoing studies.

Methods

The survey included 38 questions about SCAMPs and seven demographic questions (Appendix S1). Questions and responses were framed in one of five styles: bipolar 5-point

Likert scale, unipolar 5-point Likert scale, yes/no/unsure, selection from a list, or open space for comments. All questions were tested through cognitive interviews with a subset of providers to assure validity and ease of understanding. The survey tool and research plan received approval from the Department of Cardiology Scientific Review Committee and the Institutional Review Board of Children's Hospital Boston.

The questionnaire was programmed as an online form with de-identification of responses to preserve anonymity. The link to the survey was sent via e-mail to eligible providers from Children's Hospital Boston's Department of Cardiology in June 2010. Four reminder e-mails followed over the course of 6 weeks. The survey was closed in August 2010.

Data from respondents were interpreted using descriptive statistics. Additional bivariate analyses were performed to assess the influence of age, years of practice, and SCAMP Committee membership on opinion. Significant relationships were assessed through Fisher's exact test.

Results

Survey Implementation

Sixty-nine providers answered the survey request, amounting to a response rate of 73.4% (AAPOR Response Rate²¹). Responses to the first two questions showed that 13% of providers had never completed a SCAMP form and another 9% of providers were very unfamiliar with SCAMPs. These respondents were therefore instructed to answer only the last part of the survey. More detailed questions were presented to the remaining respondents.

Forty-nine respondents provided answers to at least some of the demographic questions; demographic data are summarized in Table 2.

Understanding and Attitudes

The majority of providers felt that they were familiar or very familiar with SCAMPs overall (83%) and with the SCAMPs creation process (60%). Only 40% felt familiar or very familiar with the SCAMPs improvement process. The majority of providers indicated moderate to complete trust in the validity of the SCAMPs creation process (94%) and the evidence within SCAMPs to guide patient care (91%). Nearly all providers felt that there was little to no risk in using SCAMPs to guide patient care (98%).

Providers felt that SCAMPs will improve or will significantly improve the care delivered to their patients (75%) and to all patients in general (80%). Two-thirds of providers found SCAMPs at least somewhat useful in making clinical decisions (66%), and an even higher percentage (87%) believed SCAMPs are at least somewhat worth incorporating into practice. Overall, nearly two-thirds of providers had a positive to very positive attitude about SCAMPs (63%).

Practice and Implementation

Thirty-six percent of providers indicated that it was easy to incorporate SCAMPs into the work-flow of their practice and an additional 34% felt that this task was neither easy nor difficult. The majority of providers (55%) also felt that SCAMP data forms were easy to complete and an additional 28% found them neither easy nor difficult. Thirty-eight percent of providers indicated that SCAMPs did not change the average length of a clinic visit, and 32% of providers said that SCAMPs added 5 minutes or less to the time they spent on each visit. No providers believed that SCAMPs decreased the time spent on a visit.

SCAMP-specific Questions

Two-thirds of providers felt comfortable deviating from SCAMP recommendations (64%), and concerns over liability did not deter 67% of providers from deviating from SCAMP recommendations. Fifty-nine percent of providers were uncertain of how their deviations influenced SCAMP modification, and 62% did not feel as though they played a role in the SCAMP modification and improvement process. Forty-two percent of clinicians felt a small but tangible erosion in their autonomy and control over their professional practice with SCAMPs, with an additional 23% feeling this erosion more significantly.

Comparison with Guidelines

Providers who had experience with other types of guidelines ($n = 44$, 85%) were asked to compare SCAMPs to those guidelines. Nearly all of the providers felt either more involved (47%) or at least equally involved (44%) with SCAMPs compared with other guidelines. When comparing the erosion of autonomy experienced from SCAMPs to that from other guidelines, 38% of providers felt that other guidelines erode more, 26% felt that SCAMPs erode more, and the remaining 36% were neutral. Overall, more providers said that they preferred SCAMPs as a means to incorporate EBM into their practice over other forms of guidelines (46% for SCAMPs vs 29% for CPGs, 11% for care pathways, and 13% for clinical protocols).

Additional Analyses

We examined the impact of SCAMP committee membership on provider attitudes. Sixteen of the providers surveyed self-identified as being part of a SCAMP committee (35%). More SCAMP committee members felt very familiar with SCAMPs overall (75% vs. 20%, $P = 0.001$) and very familiar with the SCAMP creation (63% vs. 0%, $P = 0.001$), improvement (31% vs. 0%, $P = 0.001$), and modification (69% vs. 27%, $P = 0.004$) processes. SCAMP committee members were also more likely to feel that they played a role in the SCAMP improvement process (63% vs. 23%, $P = 0.028$) and that SCAMPs were applicable to the patients for whom the SCAMPs were provided (81% vs. 45%, $P = 0.047$). Lastly, committee members were less likely to prefer CPGs (17% vs. 60%, $P = 0.028$) as a means to incorporate EBM into their practice. Being on a SCAMP committee had no other statistically significant effects on results (Table 3).

Discussion

Understanding and Attitudes

Establishing baseline understanding and trust is an important early step in building acceptance of a new initiative like SCAMPs. Our roll-out and educational efforts, which involved presentations and discussions at numerous staff meetings and paper and electronic distribution of SCAMP materials, made the vast majority of providers familiar with SCAMPs overall. Providers also reported that they found SCAMPs trustworthy, beneficial to patient care, and subsequently worth incorporating into their practice. These are important confirmations of provider acceptance of the SCAMP initiative.

Despite these positive findings, we discovered an area for improvement with far fewer providers reporting familiarity with the SCAMP modification process, a critical feature of SCAMPs that makes them unique from other guidelines. This finding of unfamiliarity is not surprising, as at the time that this survey was administered, only three SCAMPs had completed at least one round of periodic review and improvement. As such, very few providers were privy to the process of SCAMP modification.

We have since made great efforts to enhance both the transparency of and participation in the SCAMP modification process, as an understanding of this process is key for clinicians to grasp the importance of their input. To this end, we have initiated a data share to make interval statistical analyses available to all interested clinicians. We have also created an open forum for SCAMP committees to entertain interpretations and innovations based on these data. We expect that these measures have significantly increased provider understanding and trust of SCAMPs, an effect which we intend to measure with repeated survey implementation.

Practice and Implementation

Implementation of guidelines must be well orchestrated in order to minimize external and environmental barriers to adoption. Providers find SCAMP forms easy to use and do not find SCAMPs challenging to incorporate into the workflow of their practice. Still, most providers feel that SCAMPs increase the average time spent on a clinic visit. This estimate is based on the current SCAMP system of utilizing paper forms that are separate from the electronic medical record (EMR). We are close to implementing an information technology tool that will integrate SCAMP guidelines with EMRs and greatly facilitate their use. It is our hope that this effort will ultimately turn SCAMPs into a time-saving venture.

SCAMP-specific Questions and Comparison with Guidelines

As previously mentioned, SCAMPs differ from traditional clinical tools and guidelines in several important ways that we believe both improve their utility as decision-making tools and enhance their acceptance by clinicians. A fundamental distinguishing feature of a SCAMP is the capacity for clinicians to deviate from its recommendations. This is important for two reasons—to permit flexibility if idiosyncratic care of a patient is indicated and to capture and learn from deviations as a source of information and innovation. Furthermore, because clinician input is valued and plays a major role in the SCAMP improvement process, we hypothesized that clinicians would feel more involved with SCAMPs than with traditional guidelines, leading to greater satisfaction.

Our results indicate that while providers felt comfortable deviating from SCAMP recommendations, most did not feel as though they played a role in SCAMP modification. This latter finding is not surprising given that few providers reported familiarity with the SCAMP improvement process. Even without this understanding, providers reported feeling more involved with SCAMPs in comparison with other types of guidelines. This result was maintained after exclusion of respondents who self-identified as SCAMP committee members and likely represents at least a partial understanding among providers of the role of clinician input in SCAMP modification. Again, we expect this sense of involvement to have increased because of improved outreach efforts regarding SCAMP modification.

Lastly, we attempted to quantify the erosion in autonomy that providers experience with guideline implementation. This is an important phenomenon that must be properly acknowledged in the effort to enhance clinician compliance with guidelines. Most providers indicate a tangible loss of autonomy and control over their professional practice with SCAMPs, but the plurality of providers find SCAMPs to be less erosive than other guidelines. Correspondingly, more providers prefer SCAMPs as a means to incorporate EBM into their practice over other forms of guideline. These results corroborate our hypothesis that by inviting deviations (preserving autonomy) and capturing provider input (valuing clinical acumen), SCAMPs may be perceived as a less erosive and therefore preferred form of guideline.

Limitations

Because the SCAMPs initiative was conceived and implemented by the Cardiovascular Program at Children's Hospital Boston, the results of our survey must be interpreted within this context. Many provider opinions may be biased in both positive and negative ways by their own and their colleagues' participation in SCAMPs. We attempted to minimize these effects through the anonymous nature of the survey. We also examined the effect that SCAMP committee membership had on opinions, as reported above. Although a large proportion of respondents were members of at least one SCAMP committee, this high rate of voluntary participation is itself a form of validation that must be acknowledged.

Another limitation of this study is that, as a cross-sectional survey, it provides only a snapshot of provider opinions. We plan to address this with longitudinal surveys at Children's Hospital Boston and other institutions that have joined the SCAMPs initiative. External surveys will help us to obtain before and after opinions on SCAMP implementation and address the above concerns related to intradepartment confounding.

Conclusion

The findings from this survey have several important implications, especially as the role of SCAMPs continues to expand. First, the majority of providers identify the SCAMPs initiative as productive and worthwhile, and providers' overall positive attitude about SCAMPs is an important validation. Second, providers find that the SCAMPs process successfully addresses many of the previously described barriers to guideline adoption. Third, areas for improvement of SCAMPs have been identified, and efforts are underway to address these gaps and further enhance the acceptance of the initiative.

Lastly, and perhaps most importantly, the survey results have helped us to better gauge the potential role for SCAMPs within the broader movement of EBM. The estimates of success in SCAMP implementation are bolstered by findings that providers perceive SCAMPs to be less erosive to their professional autonomy and prefer SCAMPs over other methods of incorporating EBM into practice. As the health care system struggles to devise effective methods to influence clinical decision making, SCAMPs may offer a compelling example of flexible and continuously improving guidelines that fit well within the culture of medicine and achieve strong clinician buy-in.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Appendix 1 Paper Version of Electronic Survey

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Figure 1.

Schematic overview of CPGs vs. SCAMPs. Clinical practice guidelines provide “best practice” management recommendations for patient management, but in and of themselves have no ability to capture data on their use, patient outcomes, or deviations from protocol. SCAMPs standardize the care of a relatively diverse patient population based on principles of “sound practice.” SCAMPs capture targeted data on outcomes and deviations; these data are analyzed and used to iteratively improve SCAMP protocols in a continuous improvement cycle. CPGs, clinical practice guidelines; SCAMPs, Standardized Clinical Assessment and Management Plans.

Table 1**SCAMPs in Practice and Under Development**

SCAMPs in Practice	SCAMPs under Development
Transposition of the great arteries status-post arterial switch operation	Electrophysiology management of patients status-post cone procedure
Hypertrophic cardiomyopathy	Asymptomatic Wolf–Parkinson–White disorder
Dilated aorta	Management of patients status-post Fontan procedure
Aortic stenosis	Tetralogy of Fallot
Aortic regurgitation	Pediatric hypertension
Interstage single ventricle	Syncope
Mitral stenosis/aortic atresia	Myocarditis
Chest pain	Nutrition in congenital heart disease patients
Lipid disorders	Sedated echocardiogram
Patent ductus arteriosus	Appendicitis (surgery)
Catheterization management of aortic stenosis	Seizure disorders (neurology)
Pressure ulcer prevention	Ureterocele (urology)
Intraoperative management of tetralogy of Fallot (cardiac surgery)	Fever of unknown origin (rheumatology, infectious disease)

SCAMPs, Standardized Clinical Assessment and Management Plans.

Table 2**Demographic Information**

	n (%)
Gender	
Male	26 (58)
Female	19 (42)
Age	
30 years	3 (6)
31–35 years	15 (32)
36–40 years	11 (23)
41–50 years	8 (17)
>50 years	10 (21)
Level of training	
MD	43 (88)
NP	6 (12)
SCAMPS committee member	
Yes	16 (35)
No	30 (65)
Years practicing medicine	
5 years	7 (16)
6–10 years	17 (40)
11–15 years	7 (16)
16–20 years	4 (9)
>20 years	8 (19)

SCAMPS, Standardized Clinical Assessment and Management Plans; MD, Doctor of Medicine; NP, Nurse Practitioner.

Table 3

Summary of Selected Survey Results, n (%)

Bipolar Likert Scales:					
	1	2	3	4	5
	Negative	Neutral			Positive
					Total
How familiar or unfamiliar are you with SCAMPs?	6 (10.0%)	2 (3.3%)	2 (3.3%)	31 (51.7%)	19 (31.7%) 60
How familiar or unfamiliar are you with the process of creating a SCAMP?	2 (3.8%)	11 (20.8%)	8 (15.1%)	21 (39.6%)	11 (20.8%) 53
How familiar or unfamiliar are you with the SCAMP improvement process?	10 (18.9%)	14 (26.4%)	8 (15.1%)	15 (28.3%)	6 (11.3%) 53
Do you think that using SCAMPs will improve or deteriorate the care you deliver to your patients?	0 (0.0%)	0 (0.0%)	13 (25.5%)	33 (64.7%)	5 (9.8%) 51
How comfortable or uncomfortable do you feel deviating from the recommended course of action in a SCAMP?	1 (1.9%)	7 (13.2%)	11 (20.8%)	26 (49.1%)	8 (15.1%) 53
Compared with traditional guidelines, pathways, and protocols, how involved do you feel in the process of SCAMP review/improvement?	2 (4.7%)	2 (4.7%)	19 (44.2%)	16 (37.2%)	4 (9.3%) 43
Comparing SCAMPs with traditional guidelines, pathways, and protocols, which do you feel erodes the control you have over your practice more?	2 (5.1%)	8 (20.5%)	14 (35.9%)	6 (15.4%)	9 (23.8%) 39
Overall, how positive or negative is your opinion of SCAMPs?	0 (0.0%)	5 (9.6%)	14 (26.9%)	25 (48.1%)	8 (15.4%) 52
Unipolar Likert Scales:	1	2	3	4	5
	No	Moderate			Complete
					Total
Do you trust the validity of the SCAMP-creation process?	0 (0.0%)	3 (5.9%)	29 (56.9%)	17 (33.3%)	2 (3.9%) 51
Do you trust the evidence within a SCAMP for guiding patient care?	0 (0.0%)	5 (9.4%)	30 (56.6%)	16 (30.2%)	2 (3.8%) 53
Does concern over liability deter you from deviating from a SCAMP recommendation?	34 (66.7%)	8 (15.7%)	8 (15.7%)	1 (2.0%)	0 (0.0%) 51
Do you think that using SCAMPs erodes the control you have over your professional practice?	18 (34.6%)	22 (42.3%)	10 (19.2%)	2 (3.9%)	0 (0.0%) 52
Other Question Types:					
	Yes	No	Unsure	Total	
Are you aware of how deviations influence the process of modifying a SCAMP?	21 (40.4%)	23 (44.2%)	8 (15.4%)	52	
Do you feel that you play a role in the SCAMP improvement process?	20 (38.5%)	19 (36.5%)	13 (25.0%)	52	
	CPGs	Care Pathways	Clinical Protocols	SCAMPs	Other
Given the increasing role that EBM and guidelines are playing in the practice of medicine, which of the following would you prefer as a means to incorporate EBM into your practice?	15 (15.8%)	6 (11.5%)	7 (13.5%)	24 (46.2%)	0 (0.0%) 52

SCAMPs, Standardized Clinical Assessment and Management Plans; EBM, evidence-based medicine; CPGs, clinical practice guidelines.