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Standardized Clinical Assessment and Management Plans: A Clinician-Led Approach to Unwarranted Practice Variation

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A nine-year-old girl comes to your clinic with chest pain. Over the past four weeks she has been bothered by intermittent, fleeting pain in her chest that generally occurs at rest, but occurred last week when she was playing soccer. She is otherwise healthy. When you ask her where it hurts, she points to the center of her chest. Her physical exam is entirely normal. Her parents are especially worried because last month a local high school football player suffered a cardiac arrest during training camp.

One Complaint, Many Approaches

You consider potentially dangerous diagnoses like hypertrophic cardiomyopathy, an anomalous origin of a coronary artery, or a tachyarrhythmia, but you are confident that this child has only musculoskeletal pain. You obtain an ECG that is unremarkable and attempt to reassure her parents. However, their fears are not allayed and they seek another opinion. You later learn that the child underwent echocardiography and exercise stress testing and that the results of both studies were normal.

Why did the other doctor take such a markedly different approach? Was he or she justified in doing so? Did parental concern influence that physician's decision making, or perhaps did the monetary advantage of ordering additional testing play a role? Alternatively, had you been mistaken and was this child actually at greater risk than you had judged? Was the expensive additional testing indeed indicated?

These questions address many of the factors that underlie variation in care—lack of clear data to guide decision making, differences in clinician knowledge or experience, influence of patient preferences, and even perverse financial incentives. These factors, furthermore, are not limited to pediatric chest pain—they are universal throughout medical practice [1]. Some degree of practice variation is certainly justified: family histories, comorbidities, and special circumstances frequently necessitate individualized patient management. It is well documented, however, that there is considerable unnecessary variation in medical care. Although sometimes more care is sought by patients and their clinicians, more care does not necessarily equal better care, and this variation leads to increased costs without improved patient outcomes or satisfaction [2, 3].

A Challenging Problem to Fix

With health care costs continuously escalating, there is a pressing need to limit unwarranted practice variation. However, few efforts have met with considerable success. Pay-for-performance strategies promote care standardization and improvement, but can be limited in their efficacy because of inadequate metrics or insufficient incentives. At the other extreme, measures such as forcing guideline adherence or rationing care can significantly curb variation, but meet resistance from patients and clinicians alike for their restriction of clinical autonomy, limitation of individualized management, and potential ethical problems.

Recognizing the need to standardize practice in a manner that does not unduly restrict clinician autonomy or the ability to provide individualized care, our group hypothesized that a new kind of practice guideline was required. We created a novel decision-making tool, the Standardized Clinical Assessment and Management Plans (SCAMPs), with three goals in mind—to standardize care, optimize resource use, and improve patient outcomes [4].

What Is a SCAMP?

A SCAMP is a specialized care pathway for a particular condition designed by a multidisciplinary team of expert physicians, nurses, and biostatisticians to standardize the care of a diverse group of patients with a diagnosis of that condition. Each SCAMP comprises management recommendations alongside a systematic and targeted data collection process. One distinguishing feature of a SCAMP is its invitation and capture of knowledge-based diversions from its pathway, which not only permits but also learns from individualized patient management.

Analysis of collected patient data, outcomes, and management decisions provides valuable information on the efficacy of the SCAMP and helps to identify ways in which its algorithm can be progressively improved. In this way, every SCAMP encounter becomes a learning experience, and rapid-cycle improvement allows the SCAMP to provide state-of-the-art, relevant, and appropriate care recommendations. The 8-step SCAMP development process is summarized in Table 1.

Table 1. The SCAMP development process

1	Committee establishes a foundation for sound clinical practice through literature review, composes a background position paper, and, if necessary, conducts a focused retrospective study to analyze current practice.
2	Committee formulates plausible findings and statements that address known gaps in knowledge regarding the management of the disorder, which become the focus of targeted on-site data collection.
3	Committee builds expert consensus on the inclusion/exclusion criteria, assessment recommendations, and management algorithms (decision trees) for the SCAMP.
4	Committee develops data forms and information technology tools that provide management recommendations and collect targeted clinical information and reasons for diversions from the pathway.

5	Clinicians and/or support personnel (e.g., data coordinators) identify eligible patients for the SCAMP based on the previously defined inclusion/exclusion criteria. This can be done in real time or behind the scenes by the data coordinators.
6	Clinicians document targeted clinical data on paper or online data forms and record reasons for diversions from the pathways. Some necessary data that is already in the electronic medical record can be abstracted using information technology tools or by data coordinators.
7	Statisticians analyze SCAMP data and diversions from the pathway on a relatively frequent basis to assess the clinical and cost effectiveness of recommendations.
8	Committee periodically and iteratively revises the SCAMP based on this analysis and relevant updates from the medical literature.

In practice, the SCAMP can exist as a paper or electronic form that clinicians use during patient encounters to guide their decision making. If a clinician decides to diverge from the SCAMP recommendations, this decision and the rationale behind it are captured on the form.

The SCAMPs effort has made considerable progress since its inception in 2009, with more than 16,000 patients from 15 different institutions enrolled in 50 active SCAMPs. SCAMPs currently in use span the gamut of medical practice, from common outpatient concerns to advanced surgical procedures, in both pediatric and adult care. Many more SCAMPs are currently in development, and the list of institutions interested in joining the effort continues to grow.

Benefits of SCAMPs

The rapid spread of SCAMPs stems from the success of the tool in addressing several of the aforementioned challenges:

Standardizing patient care. Adherence to the recommendations of the first six SCAMPs (arterial switch operation, hypertrophic cardiomyopathy, aortic stenosis, aortic regurgitation, chest pain, and dilated aorta) exceeds 80 percent [5], which compares favorably to other guideline adherence rates, which range from 39 to 53 percent [6]. The much higher adherence rate suggests that physicians believe SCAMPs offer effective care standardization without significant curtailing of individualized patient management. We think physician comfort with SCAMPs is due in large part to its allowance of diversions from the pathway and iterative improvement of the recommendations to provide better patient care.

Optimizing resource use. The true optimization of resource use involves not only the elimination of unnecessary use but also the appropriate enhancement of necessary use, so that patients do not miss out on testing or treatments that are indicated. Underuse can occur for a range of reasons, from lack of clinician knowledge to poor insurance coverage or discriminatory provision of care (e.g., patients receive

suboptimal care because of age, race, or sex). SCAMPs can aid in the identification of over- and underutilization of necessary care.

As a guideline applicable to patients regardless of their demographics or economic status, SCAMPs have demonstrated both fair and real resource optimization. The implementation of a SCAMP on pediatric chest pain was effective in reducing unnecessary echocardiograms from 28 to 15 percent of visits and increasing necessary echocardiograms from 62 to 87 percent [7]. Overall, this resource-use optimization leads to real cost savings, with a 26 percent reduction in cost noted across 5 SCAMPs (chest pain, arterial switch operation, hypertrophic cardiomyopathy, aortic stenosis, aortic regurgitation) [5].

Improving patient care. The standardization of care and resource optimization achieved by SCAMPs has in no situation that we are aware of resulted in poorer patient outcomes. In fact, many SCAMPs show promise of significantly improving outcomes. As an example, a SCAMP on catheterization management for aortic stenosis in children increased the rate of cases with optimal results following balloon dilation from 34 to 52 percent and reduced inadequate results from 45 to 17 percent [8]. This improvement is predicted to markedly prolong event-free survival [9].

Implications

SCAMPs have achieved the above goals while obtaining acceptance from multiple stakeholders in the health care system, including clinicians, patients, hospitals, and insurance companies [5]. Because of this success and wide acceptance, SCAMPs offer a valuable paradigm for effectively reducing unwarranted practice variation in an evidence-based and equitable manner, with the added benefits of reducing costs and improving outcomes. Innovative tools like SCAMPs have the potential to positively impact a broad range of medical practice and should be considered by clinicians and health care leaders looking to ensure the delivery of safe, high-quality, and effective care.

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