

Streamlining rheumatology practice

The demands for reforming healthcare delivery are increasing from all quarters, owing to the fact that optimal disease outcomes are not being achieved and the costs of care are higher than necessary. Streamlining rheumatology practice is part of this priority. It is critical to improve chronic disease management at the practice and system levels to achieve these higher expectations for patients and disease populations. Examples of excellent rheumatic disease care within integrated health systems and individual practices suggest the type of thinking and action needed to achieve these results more generally. Rheumatologists need to understand the barriers to streamlining their practices, learn the continuous quality improvement methods required to do so and must begin these efforts now.

KEYWORDS: continuous quality management ■ healthcare ■ quality assessment

Streamlining healthcare has become a top-of-mind issue in health policy debates in developed countries. Healthcare costs, which consume 16% of the US gross national product, are increasingly viewed as diverting resources from other societal priorities. Expanding access to healthcare is politically and fiscally unsustainable unless costs and waste are reduced. These realities are equally true for care financed through private, fee-for-service insurance and the public programs that consume 45% of the US healthcare budget. Care and prevention of chronic diseases are viewed as critical because conditions such as diabetes, heart failure, asthma and arthritis, among others, account for 70% of healthcare spending [1].

However, the healthcare reform dialog in the USA is not only about cost. US citizens are not receiving sufficient value for their high expenditures. In fact, the opposite is true across the spectrum of preventive, acute and chronic disease services [1,2]. The rheumatic disease literature and rheumatologists' experience also demonstrate this reality within our own field [3–6]. Furthermore, personal habits, such as dietary indiscretion and high-risk behaviors, have increased the burden of acute and chronic diseases, and injuries [7–9]. The US healthcare delivery system has failed to address these population health problems, and has become instead what it has been paid to be: a very expensive, poorly organized disease-treating machine geared up to deliver more services at an ever increasing cost.

Streamlining healthcare at the practice, health system and national levels is a daunting challenge. However, this article reflects our

conviction that such streamlining is necessary and achievable, a conviction that is shared by an increasing number of medical and political leaders. Furthermore, we believe that the best outcomes for patients will only occur if physicians and other providers take the lead in doing this, rather than bureaucrats, politicians and insurance companies. Our point of view is not based on wishful thinking, but on personal experience with practice and system redesign over the last decade [10,11], and on other exceptional examples of improving delivery of care across the USA and other developed countries [12–16].

This article focuses on rheumatology practice and the rheumatic diseases, but we also emphasize the need for commonality of chronic disease management processes at the health system level for several reasons. First, optimal care processes should not differ from one chronic disease to the next, or from specialty to specialty for the same disease. Second, we can also learn from the successes of our colleagues in primary care and other specialties, and even more from the process management methods used in other industries and other countries' health systems. Third, we can only manage patients with multiple comorbidities effectively if their care is predictable and integrated at the health system level across diseases and provider specialties. This requires standardized processes that are inherently more reliable and efficient, and are needed to coordinate the flow of patients and information throughout healthcare environments. If the healthcare system is to improve, physicians need to embrace standardization rather than disparage it as an invasion of our entitlements.

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Finally, streamlining rheumatology practices and the very survival of rheumatology will require cooperating with, rather than competing against, primary care and other specialties, as well as including other healthcare professionals in our practice teams. There will not be enough of us to provide necessary rheumatic disease care by ourselves [17]. An equally threatening reality is that health planners and payers do not recognize the expertise rheumatologists bring to the evaluation and management of rheumatic disease patients. Consultative services are being characterized as indistinguishable from, but more costly than, those provided by primary physicians. The Medical Home Initiative [101] and Medicare's proposals to discontinue consultative codes illustrate this devaluing of specialty services.

An independent small business rheumatology practice model has been supported in the USA by patients' preference for specialty care and fee-for-service reimbursement, but this approach will not survive in health financing environments that demand collaboration and efficiency, here or in other countries. High-value care within health systems will instead require physicians and other providers to cooperate for the good of our patients, our communities and society [18].

How have we selected the information used for this article?

Our evidence is drawn from a broad sampling of scientific, theoretical and public publications. Business and industry books also provide additional value for improving healthcare delivery. These sources cannot be ranked in the same way as scientific reviews since many of the best ideas are not derived from research, nor are they published in medical journals, if at all.

Human process improvement, including how physicians learn to practice, is accomplished largely through the cumulative experience of trying, failing, learning and trying again. The stories of these successes and failures inform others' efforts.

Our own experiences and collaborations with practice colleagues and interested others are also included in this article. In these cases, we have either referenced our own previous publications, or they can be recognized because they are not referenced.

Why does streamlining rheumatology practice depend on redesigning delivery of care processes?

This article is based on the premise that the performance of any system depends on the processes

used to provide its products and services [19]. It follows that problems with health system performance are caused primarily by how care is delivered, and that process redesign will be the key to improving the value of healthcare. To put it another way, things will not improve for our patients, or for us, as long as we practice as we are now. This principle had been proven over and over in other industries that routinely use continuous quality improvement (CQI) methods to optimize results and costs [20–22]. It has already been embraced by a number of successful health systems [23–25], and has been validated for a few exceptional medical services, such as anesthesia [26].

By contrast, the delivery of care in most practices and health systems is individualistic, inefficient, duplicative and undependable [1,27,28]. Providers too often have the myopic view that what they do for each patient during each encounter is sufficient, or indeed all that they can accomplish, and they cling to traditional processes in spite of overwhelming evidence that these are not working dependably for patients or society. This denial has been characterized as 'a culture of low expectations' [29], and our collective high resistance to change is illustrated in part by the 17-year average time for new discoveries to be incorporated into routine care [1].

Many academic physician leaders believe that new delivery of care processes must be proven in translational research studies before being considered safe and worthy [30], and future physicians are being schooled in this mindset. At the same time, both CQI methods and translational research are being used to great advantage by futuristic health systems with well-integrated provider groups and a strong focus on patient benefit and efficiency [31–33]. The success of these systems also depends on employing alternative physician compensation systems and other incentives to encourage this shift from volume to value of care [12–14,34].

The Institute of Medicine addressed the underperformance of the US health system in the 2001 publication 'Crossing the Quality Chasm: A New Health System for the 21st Century' [1]. It advanced an ambitious agenda for health system redesign (Box 1) that provides the blueprint for current government and private health policy. If the political tipping point has been reached, and we believe it has, providers will either lead or be led through a fundamental redesign of the US health system, and the same is true in other countries.

What will a successful rheumatology practice look like in 10 years?

A successful rheumatology practice will be one that fulfills three goals: it will be financially thriving, professionally satisfying for all of its team members, and it will improve the disease status and lives of patients with rheumatic diseases. This utopian practice will have certain qualities, infrastructure and core functions.

Let us fast forward 10 years. The qualities of this successful practice include a value-based approach to healthcare, a focus on both patients and populations, pervasive use of electronic tools and the ability to be nimble. The 'widget-based', fee-for-service, work volume reward system has disappeared. Payers are instead rewarding value-based care; higher quality, efficiency and access at a lower cost [24]. Patients, not physicians, are at the center of the rheumatology healthcare team. The ability of the patient to access care and their satisfaction with their rheumatology care experience are a prime consideration.

This practice takes ownership for the care of certain rheumatic conditions, and comanages these populations with primary care and other specialty teams, regardless of whether the patients are physically seen by the practice. This successful rheumatology practice has incorporated the use of:

- An electronic medical record to provide a steady source of required information;
- Task management software to effectively and efficiently manage the populations it 'owns';
- Patient information capture tools to create a patient-centric environment;
- Visual display tools to empower the rheumatology provider at the point of service to define the patient's disease status, more effectively solve problems and provide education;
- A patient messaging system to allow care to be delivered and dialog to be generated in a secure, asynchronous manner (at the convenience of the patient).

All of the practice-based rheumatology team members, as defined later, are skilled at problem solving and process redesign [10,11], so that the practice can be nimble. The ability to effect change is embraced, the time allotted to do this is carved out, and it is considered a core value and skill set in the practice.

The rheumatology practice team includes key representatives of the clinical microsystem – front desk, office assistant, nurse, mid-level

Box 1. Institute of Medicine requirements for health system improvement.

- Redesigning care processes
- Making effective use of information technologies
- Managing clinical knowledge and skills
- Developing effective teams
- Coordinating care across patient conditions, services and settings over time
- Incorporating performance and outcome measurements for improvement and accountability

Institute of Medicine requirements for health system improvement [1].

provider (PA and CRNP), scheduler, business person, administrator and physician. In terms of core functions, the team meets weekly to discuss short-term issues and horizon goals, helping to guide smaller project-focused work teams to problem solve when needed. Each team member is responsible for communicating the team's directions to their counterparts (physician to physicians and nurse to nurses). The team members are rotated every 6 months and each team member contributes to creating value. The team is led by a partnership between a physician champion and an administrative partner, and both financial and other incentives are aligned to ensure success. The practice team not only drives the local care of rheumatology patients seen at the practice, but also leads or comanages patients as part of the larger local systems of care, be it a Medical Home primary care-based system, or an integrated healthcare delivery system.

How do we get from here to there?

A quick scan of rheumatology practices today shows that a few are already practicing close to this paradigm, while most are mired in the same practice structure and function that have existed for the past hundred years. A journey always requires a road map to guide our getting from here to there. With that in mind, there are a few key areas for changing today's rheumatology practices into those of the future [10,11,25,35,36].

The first key area is clinical data management. This will include implementing an electronic medical record [37–39] and collecting standardized objective patient information on a routine basis. Their disease and what is required to drive clinical decision making and document optimal outcomes will determine each patient's information. Disease activity measurement for rheumatoid arthritis is a critical example of the need for improvement (FIGURE 1) [6,40]. Rheumatoid arthritis disease control is best when standardized measurement and treatment acceleration are tightly linked [3,4]. Roles can be reassigned, with patients and nurses initially using paper data

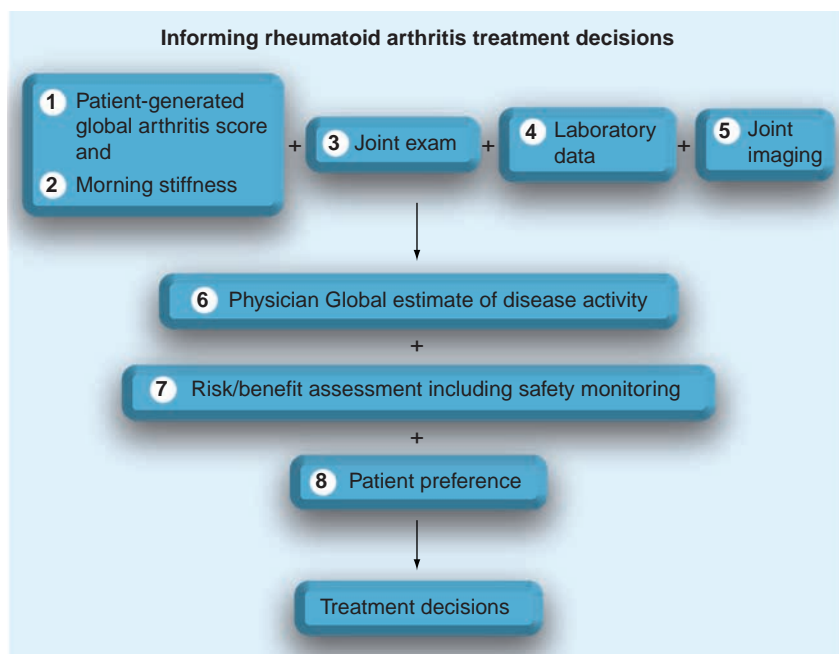


Figure 1. Informing rheumatoid arthritis treatment decisions. This algorithm outlines the logic for using the Physician Global to direct rheumatoid arthritis patients' care, as informed by standardized, comprehensive clinical data. It reflects the perspective that a quantitative disease activity score may be an important contributor to analyzing data and informing the Physician Global, but should not include or replace it in guiding disease management or reimbursement decisions. Reproduced with permission from [40].

forms and then eventually electronic tools to gather, process and display information [10]. The rheumatologist will spend less time finding out what is going on and more time doing what they do best – solving patients' problems. Monitoring the key vital signs of the practice – access, patient satisfaction, resource costs, work capacity and profit – will be included as well.

The second key area is analyzing and reorganizing patient flow to improve access to and the efficiency of care, both within the practice and throughout the local system of care. Traditional patient flow processes are not working [41,42], and there are ample examples in the field of rheumatology of successful process changes and their favorable impacts, including preappointment management and advanced access [10,11,41,43–45].

A third key area is developing system-level, interdisciplinary chronic disease management programs [24]. The Medical Home concept has no defined role for a specialist, aside from waiting to be consulted, often inappropriately or later than necessary [46,101]. The opportunity exists for us to define a proactive role for rheumatology based on our superior knowledge of rheumatic diseases and their management. We may develop specialized services for patients with more serious complications of their disease, such as all patients with osteoporosis on steroids [47], or those who

have already sustained a fracture [48,49]. We may also develop programs to effectively manage the entire populations of patients with important rheumatic diseases, such as lupus and rheumatoid arthritis. The first steps will be to optimize our internal disease management processes and, following this, to collaborate with other specialties and primary-care physicians in integrating the care of these chronic disease patients and populations across the system.

A fourth key area is to begin learning and applying CQI methods, also known as plan–do–study–act (PDSA) methods, which are ideal for managing change in complex systems such as healthcare delivery [10,50]. These are very important for successful process redesign. Process improvement begins with measuring performance and reporting on it – this is the only way to truly understand the care we are delivering where it is actually being delivered [32,51]. Only then can we begin redesigning the existing rheumatology care team and practice processes. A commitment to CQI creates a different and more functional culture – a culture of change [36]. Embracing change will be one of the most challenging and necessary aspects of surviving and thriving through the tumultuous times we all face, and it can only be accomplished through effective physician leadership, vision and change management.

Finally, the recent debate about healthcare reform has convinced us that rheumatologists must not only treat rheumatic diseases effectively, but we must also promote the broader health of our patients. Control of disease is futile if our patients do not first rehabilitate and then exercise, eat prudently and reduce life stresses. We cannot reduce the cardiovascular burden of inflammatory diseases by only controlling inflammation, and the costs of healthcare cannot be sufficiently reduced unless the overall health of the US population is improved through changes in personal habits and more individuals accepting this responsibility [7–9].

What barriers impede streamlining rheumatology practice, & how might they be overcome?

A principle of CQI is to focus on those problems that an individual or team can influence. From this perspective, the barriers to improving rheumatology practice and the care of patients with rheumatic diseases fall into three categories: those we can deal with ourselves, those that we can influence, and those we have no control over. The scope of our practices, how effectively

we perform our work and whether we share improvements with our colleagues are within our control. Managing chronic diseases, especially for those patients with multiple comorbidities, requires interdisciplinary, health system collaboration that we can only influence, and only if others are prepared to participate [11,52]. The means by which and the amount we get paid for our work is becoming progressively beyond our control, but we must believe that high-value care will be better supported through the predicted shifts from fee-for-service payment to reimbursing accountable health teams for effectively managing populations. In saying this, we recognize that current episode of care and pay-for-performance programs may not justify this optimism.

Barrier 1: uncertainties regarding practice finances & professional compensation

Financial worries top the list of concerns of most rheumatologists across all practice environments, and provide a compelling argument for streamlining rheumatology practice. Money influences what we do, how we do it and the decisions of those considering a career in rheumatology. The current healthcare reform debate in the USA is all about how to finance and pay for it, and health policy planning in other countries is also influenced by financial concerns. Payer bureaucracies, including the Center for Medicare and Medicaid Services and private insurers, are driven by escalating healthcare costs coupled with generalized perceptions of high waste and low value. The fee-for-service payment system that has shaped healthcare in the USA is unlikely to survive, and what will replace it is unclear. We can assume, however, that physicians will generally be paid less and differently than now.

Rheumatologists are not faring well in these discussions. We are viewed as costly because of biological therapies and the inaccurate perception that all specialists are a more expensive alternative to primary care for evaluation and management services without additional benefit [53]. Evaluation and management services have been undercompensated for decades, causing rheumatologists to rely on reimbursements for ancillary services to make ends meet (e.g., for laboratory tests, imaging, bone density testing, injections and infusions). The payers are now attacking both consultations and ancillary services as wasteful and overvalued. Single specialty rheumatology practices, the ‘canaries in the coal mine’ of our specialty, are being forced to make

short-term survival decisions, exclusive of long-term strategies focused on patients’ and society’s needs. As we become more aware of the need to streamline rheumatology practice, our time and resources to do so are diminished.

These unfavorable financial projections and high educational debt threaten the supply of rheumatologists [17]. Future rheumatologists will be drawn from the same candidate pool as primary internists, but the inducements being proposed to increase primary care are less likely to be provided for those who choose rheumatology.

■ Suggested actions

To sustain rheumatology, we must rely on addressing needs of rheumatic disease patients, practice more effectively and efficiently, collaborate with other musculoskeletal specialties and document our high value. We must make efficient use of our limited resources to first make high-value affordable changes, and also accept that things may get worse before they get better. We must consolidate small practices into larger ones to achieve economies of scale for practice support needs and infrastructure.

Barrier 2: reluctance to change, denial of the need to do so, & lack of training in how to manage change

Change does not come naturally to many humans. Receptiveness to change in human populations has been carefully studied and, as expected, individuals within organizations vary across a continuum from innovators through early and late adapters to nonadapters [54]. Medical careers have been characterized by stability and individualism. Physician cultures often protect variation, entitlements and the nonadapters, making change difficult and slow in spite of recognized needs to do so. These characteristics are the foundation of underperformance and waste in many medical communities, and they predict high resistance to necessary reforms, accountability and collaboration.

Internal medicine training has been focused on knowledge more than delivery of care processes, which are too often left to the trainee to figure out for themselves. Internists know a great deal about pathophysiology and not enough about process management and CQI. Academic health centers have used quantitative measurement skills in advancing knowledge, but not in managing their clinical enterprises and patient care. Standardization, team function and efficiency are only beginning to be taught in training programs, and the industrial methods

required to redesign processes and measure clinical function and outcomes within practices are still resisted by many academics wedded to individualism and research methods.

■ Suggested actions

Physicians must study and learn to manage practice process change skillfully with as much commitment as we have applied to studying and treating disease. Resistance to change needs to be eliminated or managed, and we must actually embrace the need for positive change, learn the CQI methods required to manage it and start doing it.

Barrier 3: provider (rather than patient) centered care

Michael Porter and Elizabeth Teisberg have provided a remarkably perceptive economic analysis of the market forces that have shaped the US health system [26]. They describe a 'zero sum game' in which stakeholders compete against one another based on their own narrow interests with little regard to what is best for patients and society. This model characterizes much of the current opposition to healthcare reform in the USA and, regretfully, it is also reflected in many physicians' behaviors within practices and local health systems [13,14]. Porter and Teisberg, among other health policy leaders, are advocating for a shift in policy, governance and financing mechanisms to support what is best for the patient, the population and our economies [34,55,56]. Another essential aspect of this 'patients first' philosophy is expanding health systems from disease management to include health promotion [57].

■ Suggested actions

Physicians must join the advocacy for change within medical practices and local health systems.

Barrier 4: traditional physician leadership

Physician leaders have too often supported the status quo, and have been selected for their skills in doing so. By contrast, the key role of visionary leadership has long been recognized in successfully changing any system, including health systems [58]. Without effective visionary leadership, fundamental improvement is difficult to impossible at the point of patient care where it must be tested and implemented. Strong leadership that promotes physician consensus, collaboration, and professional dedication to the interests of patients and society is essential to the

documented successes of exceptional physician organizations and communities. These provide examples for other more traditional health systems to follow, and in fact this level of leadership is becoming an expectation within health reform [13,14,16,24].

■ Suggested actions

Physician leaders must create high expectations for local health system performance, reject incremental internal improvements, and pursue the superior outcomes and lower costs that are being generated by high-performing integrated systems [13]. Leaders must also learn and practice change management methods.

CQI methods: the key to practice redesign

Continuous quality improvement in healthcare involves a constant vigilant evaluation and pursuit of the processes involved in delivering the highest quality and most efficient healthcare. 'Continuous' helps to emphasize that this is not a once and done activity. 'Quality improvement' focuses on the fact that we need to examine our current ways, and adjust and adapt them to better ways of accomplishing our goals.

While there are a number of different methodologies for accomplishing process improvement (e.g., Lean and Six Sigma), the Deming PDSA Cycle appears to dominate in healthcare [10]. W.E. Deming, an American statistician, developed a model for continuous process improvement after World War II using previous work by Walter Shewart (plan-do-see). PDSA is often referred to as 'learning in action', and focuses on small-scale tests of change and rapid cycle testing. One might think of it as highly organized pilot testing.

Testing on a small scale is crucial as we are trying to effect change in a system. A system is a set of interdependent variables that work together to achieve a common goal. Systems are complex, unruly and unpredictable – it is hard to predict up front all of the upstream and downstream changes that will occur when something new is introduced into that system – hence the importance of small-scale tests of change. The second issue is that PDSA testing involves rapid cycles. This is in contradistinction to research paradigms, which may study and evaluate issues for years. PDSA cycles are typically completed in days to weeks, and the results of the current cycle help us to design the next cycle. After a number of cycles, if the process is working well, it can be standardized as part of routine practice.

The four basic elements to any PDSA project are having an aim, having good ideas for change, having the ability to measure results, and again to test on a small scale. The cycle parts are as follows:

- Plan: state objective, predict what will happen and develop a plan;
- Do: do it, record problems and observations and begin data analysis;
- Study: complete data analysis, compare to predictions and summarize;
- Act: what are the modifications and what happens next cycle?

As an example, suppose we would like to do a PDSA project to improve our patient 'no-show' rate. An example of what the first cycle might look like can be seen in Box 2.

This example illustrates both the simplicity of the process and its power. It avoids making sweeping decisions without understanding the consequences, yet allows one to rapidly redesign the current process, 'tweak' it to make it better and standardize it when it is sufficiently improved. It also allows for a tremendous learning opportunity – in the PDSA world there are no failures, simply opportunities to make things even better.

There are many side benefits to this approach. First, it gives one the opportunity to truly understand how the practice works. Early steps involve understanding and mapping out current flows and processes, from scheduling services, to flow through a clinic visit, communication with patients and referring providers. Second, it palpably reveals the significant and unacceptable variation in practice. Third, it gives one the opportunity to create more powerful and meaningful care delivery by empowering all members

Box 2. Example of a first cycle of a plan–do–study–act project to improve our patient 'no-show' rate.

Plan

- Decrease new patients who 'no-show'
- More appointment slots will then be used
- Call all scheduled new patients during the daytime 2 days before their scheduled visit

Do

- Test for 2 weeks
- Call all scheduled new patients 48 h before their appointment
- Monitor whether the patient is reached, how they are reached (e.g., in person or via an answering machine) and measure the work effort involved (minutes per appointment scheduled)

Study

- 80 patients called
- 50% of patients reached in person
- No-show rate higher for messaged patients and those not reached
- Cost per appointment call = US\$1 (total cost \$80)
- No shows averted and filled with alternative patients = $6 \times \$200/\text{consult} = \1200
- Net additional revenue = $\$1200 - 80 = \1120 per 2 weeks = \$29,120/year

Act

- For cycle 2 – call at night to see if yield is better

of the healthcare team – improving care while improving employee satisfaction. Finally, it will help us to effectively redesign our way into a stable and thriving future.

Conclusion & future perspective

Streamlining rheumatology practice, both internally and cooperatively at the local health system level, is a survival priority for our specialty and the patients we serve. For those who do not engage in redesign, it will soon be too late to catch up. We cannot wait for healthcare policy and financing to emerge from its present chaos before committing to this necessary work. We must focus on what serves our patients' needs. We should not underestimate the depth of change and work that is required – or the potential rewards. The

Executive summary

- Healthcare reform, including delivery of care in practices and health systems, is recognized as a high societal priority. Evidence shows that present healthcare is not reliable, is often wasteful, and is more costly than necessary. Rheumatic disease care shares these characteristics.
- Rheumatology practice must change to survive.
- Improved performance depends on redesigning delivery of care processes, including:
 - Optimizing clinical data management;
 - Improving patient flow within practices and throughout health systems;
 - Developing interdisciplinary chronic disease programs;
 - Applying continuous process improvement methods.
- Significant barriers must be overcome in order to streamline rheumatology practices, including:
 - Financial uncertainties;
 - Resistance to change;
 - Provider (rather than patient) centered care priorities;
 - Traditional leadership.
- Rheumatologists need to commit to providing optimal care at the lowest possible cost.

agenda for change and key processes have been identified, as have the methods we must learn to measure and manage change. Early success stories are accumulating, and these are elevating the expectations of patients, payers, politicians and society for our performance. What remains is for rheumatologists and our provider colleagues to commit to redesigning our practice processes for efficiency and effectiveness, for our patients and for ourselves.

Financial & competing interests disclosure

The authors have no relevant affiliations or financial involvement with any organization or entity with a financial interest in or financial conflict with the subject matter or materials discussed in the manuscript. This includes employment, consultancies, honoraria, stock ownership or options, expert testimony, grants or patents received or pending, or royalties.

No writing assistance was utilized in the production of this manuscript.

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