



Barriers to evidence-based physician decision-making at the point of care: a narrative literature review

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We conduct a narrative literature review using four real-world cases of clinical decisions to show how barriers to the use of evidence-based medicine affect physician decision-making at the point of care, and where adjustments could be made in the healthcare system to address these barriers. Our four cases constitute decisions typical of the types physicians make on a regular basis: diagnostic testing, initial treatment and treatment monitoring. To shed light on opportunities to improve patient care while reducing costs, we focus on barriers that could be addressed through changes to policy and/or practice at a particular level of the healthcare system. We conclude by relating our findings to the passage of the Medicare Access and Children's Health Insurance Program Reauthorization Act in April 2015.

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Keywords: acid suppression therapy • appendicitis • cardiac imaging • claudication • coronary heart disease • deprescribing • evidence-based medicine • gastroesophageal reflux disease • physician decision-making • vascular surgery

Background

The USA spends more than 17% of its gross domestic product on healthcare. A substantial portion of this spending is for services that, according to evidence, do not improve patient's health [1]. At the same time, many services with strong evidentiary support are underutilized [2]. Furthermore, clinical practice varies widely between and/or within geographic regions, specialties and physicians. These findings affirm the importance of identifying factors that are under the control of physicians, patients, provider organizations and payers that can influence whether evidence-based clinical care is consistently delivered [3,4].

Partly as a result of this variation in cost and quality across the country, US policy-makers and healthcare stakeholders have begun experimenting with new payment and regulatory strategies aimed at influencing the environment in which healthcare is provided

so as to reduce unnecessary care and costs, and increase evidence-based treatment. The most salient recent example of such efforts is the Patient Protection and Affordable Care Act of 2010 [5]. More recently, initiatives begun by the Centers for Medicare and Medicaid Services – but also endorsed by many private payers – are promoting new payment and care delivery models that may foster a practice environment in which physicians are consistently supported in offering evidence-based recommendations [6]. Passage of the Medicare Access and Children's Health Insurance Program Reauthorization Act in April 2015 will further accelerate the development of additional payment and care delivery models aimed at rewarding higher quality and lower cost care. Thus, in the current healthcare environment, physicians in the USA are faced with a variety of incentives related to reimbursement, available resources, practice regulations, and the broader health-

Kara Contreary^{*1}, Anna Collins¹ & Eugene C Rich¹

¹Mathematica Policy Research, Princeton, NJ, USA

^{*}Author for correspondence:

Tel.: +1 510 285 4614

Fax: +1 510 830 3701

kcontreary@mathematica-mpr.com

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care market – many of which are in flux. Promoting evidence-based solutions to different patient problems requires an understanding of how different facets of the healthcare system influence physician behavior.

In this paper, we conduct a narrative literature review using four real-world cases of clinical decisions to show how barriers to the use of evidence-based medicine affect physician decision-making at the point of care, and where adjustments could be made in the healthcare system to address these barriers. Our four cases constitute decisions typical of the types physicians make on a regular basis, and represent the three broad domains of: diagnostic testing, initial treatment and treatment monitoring. These cases are based on a small sample of the many clinical recommendations included in the Choosing Wisely® initiative – a project of the American Board of Internal Medicine. By basing all of our cases on the same source, we avoid issues of varying guideline quality; moreover, the recommendations made under the Choosing Wisely initiative enjoy strong support from numerous medical specialty societies. Two of our cases examples (two and four below) concern overuse of a particular test or treatment, while the others (one and three below) involve recommendations to substitute more invasive and/or expensive therapies with less invasive and/or expensive ones that produce equivalent or better outcomes:

- Case one. Imaging in initial assessment of children with suspected appendicitis (general surgery);
- Case two. Imaging in routine follow-up with asymptomatic cardiac patients (cardiology);
- Case three. Interventions in patients with intermittent claudication (vascular surgery);
- Case four. Titration of long-term acid suppression therapy in patients with gastroesophageal reflux disease (GERD; gastroenterology).

Throughout this narrative review, we focus on barriers to evidence-based physician decision-making at the point of care that could be addressed through changes to policy and/or practice at a particular level of the healthcare system. In doing so, we aim to shed light on opportunities to improve patient care while simultaneously reducing costs. A companion article describes findings from structured interviews with physicians about their decision-making processes in our four clinical cases [7], and a related policy brief discusses how different payment models might affect evidence-based decision-making at the point of care [8].

This review proceeds as follows: conceptual framework describes in more detail the conceptual framework we use to categorize factors influential to physi-

cian decision-making, and provides some background on the types of decisions our selected cases represent; literature review presents the narrative literature review on barriers relevant to each of our four cases; and conclusion summarizes and concludes.

A number of authors have attempted to systematically describe the various factors that might influence physician decision-making, leading to recommendations or actions inconsistent with evidence [9–15]. As part of a larger research agenda on this topic, this paper draws heavily upon intellectual contributions introduced in two prior papers. The first (Rich *et al.* [16]) presents an original conceptual framework for better understanding the various individual and organizational factors that may facilitate or impede evidence-based physician decision-making at the point of care, particularly decision-making about testing, diagnosis and treatment. This framework was extended and formalized in Reschovsky *et al.* [17], which organizes these factors into different levels discussed in greater detail below (and presented in Table 1).

E Rich's conceptual framework focuses on activity at the point of care – where patient and physician meet. Due to our focus on barriers to evidence-based decision-making at this juncture that are amenable to policy changes at the relevant level of the healthcare system, we do not consider issues of clinical guideline dissemination or psychological processes within physicians (e.g., biases and cognitive limitations). However, both potentially play a role in adherence to evidence-based medicine. We also abstract from features of evidence-based guidelines that make them more or less likely to be applied in the clinical setting, such as ambiguity or whether they include advice for treating patients with complex chronic conditions.

Conceptual framework

Table 1 presents the components of the conceptual framework in more detail; throughout the remainder of this review, these have been made bold to visually tie our findings to the conceptual framework. At the center of the framework is the physician, who makes decisions and recommendations regarding patient care. A number of physician characteristics can influence his or her decision-making; we focus on aspects such as training and specialty, which can be influenced by policy or regulatory decisions.

The practice site and practice organization can also influence physician decision-making. The practice site is the physical location where the physician provides care, as well as the social context and the available medical infrastructure. It includes access to peers, support staff, diagnostic and therapeutic technology, health information systems (including decision sup-

Table 1. Healthcare system factors influencing physician decision-making.	
Level of healthcare system	Factors affecting decision-making
Physician	Training/specialty Competencies around numeracy and relative/absolute risk Experience Types of performance feedback received
Practice site	Peer relationships (including presence of learners at the site) Care management infrastructure/care processes Leadership/organizational culture Patient population Access to resources Workload/time pressures
Practice organization	Leadership/organizational culture Mix of payers Payment incentives from payers Other compensation incentives Access to resources (including other physicians and support staff) Performance feedback mechanisms
Networks, hospital and other affiliations	Oversight/network financial arrangements Network of peers Network leadership/culture/values Access to resources Shared practice services with other organizations
Market environment	Local population (demographics, disease incidence) Local practice norms Level of competition Resources (skilled nursing facility supply, data exchange among others.) Legal environment Prices
State and national policy	Regulatory policies Payment policies

port systems) and other resources that affect physician decision-making both directly and indirectly through effects on work load and flows. The practice organization is the organization employing the physician. This could be a solo practice, small partnership of several physicians or any of a variety of single or multispecialty practices of different sizes. It is the practice organization that establishes the terms of a physician's employment, compensation and financial incentives, as well as overseeing arrangements with healthcare payers and purchasers. The practice organization can exert considerable influence over the environment in which decision-making occurs, from leadership and organizational culture, to care management resources, performance feedback or an infrastructure that favors some clinical decisions over others.

Practice organizations may also enter into affiliations with other physician practices (e.g., independent practice associations) or hospitals (e.g., physician hospital organizations), or establish formal joint financial ven-

tures (e.g., with ambulatory surgery centers). Depending on the nature of these affiliations, they too may influence the incentives, information and resources that affect physician decisions at the point of care.

The broader market environment for healthcare may further affect practice organizations, practice sites and individual physicians. For example, the number and type of physicians, practice organizations and payers in the market may interact to influence payment rates. Medicolegal characteristics of the local market may also be relevant to certain types of physician decisions, although in some cases, physicians' perception of litigation risk may be more important than the actual risk levels [18]. Another critical element of the local market is the population served, including its illness prevalence, socioeconomics and demographics. Finally, [Table 1](#) notes that the broader payment and regulatory policy environment, including both state and national policy, may also shape the organizations and practices within which physician decision-making occurs. The

primary examples of national policy that shape medical decision-making are the payment rates and regulations associated with Medicare, which, because of its size and importance, strongly influences the rest of the healthcare system. At the state level, insurance regulations may influence decision-making at the point of care.

Physician decisions at the point of care

All of the factors in our conceptual framework can both individually, and in concert, affect physician decision-making due to their influence at the point of care, where the patient first brings a concern or concerns to the physician's attention. The physician must decide which diagnostic tests, if any, to recommend and, upon receiving the results of those tests, interpret them in light of competing diagnostic possibilities. At some point in this process, the physician achieves sufficient certainty regarding the diagnosis to recommend additional tests or a treatment plan. Before making a recommendation, the physician may take steps to better understand the patient's own preferences and values, and allow these to inform the choice of test or treatment. The physician may also take additional steps to enhance the likelihood that the patient will follow through on the recommendation. Once treatment is initiated, the physician may be more or less proactive in monitoring treatment response. In our narrative literature review, we select cases that represent three typical decisions physicians make at the point of care: diagnostic testing, initial treatment and treatment monitoring. In the remainder of this section, we describe how the factors in our conceptual framework can influence these general types of physician decisions.

Diagnostic testing (cases one & two)

The use of technology to aid in diagnosis has dramatically enhanced medical care, but overuse of diagnostic tests can cause harm to patients through direct adverse effects, spurious abnormal results and recommendations of unnecessary treatment [19–21]. Researchers have found evidence for several reasons why physicians might engage in excessive diagnostic testing. Physician experience and institutional placement can influence test ordering. More experienced physicians [22,23], and those at higher ranked institutions [24], order fewer diagnostic tests. Owing to changes in medical practice norms, diagnostic testing may have become an automatic response, especially among newly minted doctors who have not been trained on how to practice without them [25]. When the optimal diagnostic test is unknown, the test ordered may depend on physician specialty [26].

Practice site may also matter. In one study, physicians in solo practices tended to order more tests than physicians in group practices [27]. Various studies have shown that ordering processes may influence the rate of use of various diagnostic tests [28–31]. The effects of work environment and workload on test use may also be significant. One study showed that higher workloads can prompt physicians to substitute diagnostic testing for patient communication [32]. In the case of imaging tests specifically, evidence suggests that physician ownership of imaging facilities is associated with increased utilization of these services [33].

The local market may also have an influence on diagnostic test use. For example, malpractice concerns have been widely cited as a potential driver of increased and, in many cases, unnecessary testing, as physicians more heavily weight the possibility of misdiagnosis and liability [20,34–40]. A fragmented local market may result in duplicate tests when patients seek care from new physicians who cannot easily share test results [39,41].

Initial treatment (case three)

Once a diagnosis is made, a physician must recommend a treatment. As in the case of diagnostic testing, treatment choice, as well as treatment intensity, can be affected by various factors. Physician financial incentives (at the practice organization level) have received a great deal of attention. Fee-for-service payment systems reward the provision of treatment regardless of its necessity, and procedures that are more highly remunerated may be more attractive to physicians [42–45]. Similar to the case of diagnostic testing equipment, physicians with a financial stake in treatment facilities (e.g., ambulatory surgery centers and radiation therapy facilities) appear to be more likely to perform those services [46–48].

Workload and time pressure – both practice site factors – may also influence choice of treatment. Studies have suggested that physicians with high workloads, or under time pressure, are less likely to provide evidence-based treatments [49–52]. One way to mitigate the effect of high cognitive load associated with overwork is to provide additional resources at the point of care to support more evidence-based decisions. Both support staff and the availability of decision support technology at the practice site have been associated with improved clinical decision-making [53–60]. Providing information on the relative costs of options can also influence point-of-care decisions [61]. Market-level factors, such as knowledge spillovers and the proliferation of certain technologies, have also been shown to affect physician treatment choice at the point of care [62].

Case three below centers on a decision relevant to elective surgery. Much has been written about sources

Table 2. Literature search parameters.	
Search characteristic	Parameters
Sources	Ovid MEDLINE Science Direct Google Scholar Hand searches of references of retrieved literature Discussions with experts in literature on evidence-based medicine
Keywords	General surgery: – Appendicitis; computed tomography; ultrasound; pediatric; children Cardiology: – Echocardiography; cardiac imaging; stress cardiac imaging Vascular surgery: – Surgical bypass; angiography; angioplasty; stent; claudication, peripheral arterial disease Gastroenterology: – Gastroesophageal reflux disease; acid suppression; proton pump inhibitors; H-2 receptor antagonist; deprescribing General: – Evidence-based medicine; overuse; physician decision-making; physician behavior; point of care; (terms in conceptual framework)
Dates	January 2005–May 2015
Language	English
Country	USA

of variation in the use of surgical procedures across geographic areas. Market-level practice norms, such as upstream testing practices that can lead to interventions, may be important [63,64]. Medicolegal concerns have also been suggested as a rationale for why physicians recommend interventions despite limited evidence supporting these actions [20,21].

Treatment monitoring (case four)

Deprescribing refers to the practice of ceasing to renew prescriptions for long-term medication when it is no longer clinically appropriate [65]. Whether a medication is appropriate can depend on other medications the patient is taking, or simply the risk–benefit ratio when continuation invites adverse events, and reduction or elimination would not negatively impact quality of life. This decision is also related to the concept of clinical inertia, which is ordinarily used to describe failure to appropriately escalate treatment of chronic conditions over time, but equally applies to a failure to de-escalate treatment when applicable [66,67].

Literature review

The remainder of this review applies the conceptual framework to point-of-care physician decisions related to four common cases, representing the different types of decisions physicians make on a daily basis. We chose topics from the Choosing Wisely initiative, a program

sponsored by the American Board of Internal Medicine Foundation. Each topic involves a decision for which current practice varies significantly, but for which the relevant specialty society has endorsed a specific choice as a best practice based on strong available evidence. Our cases address diagnostic testing, initial treatment and treatment monitoring. For each of these decisions, the relevant specialty societies (for general surgery, cardiology, vascular surgery and gastroenterology, respectively) identified the topic as involving important real-world variation in clinical practice that occurs despite available evidence and professional society consensus. The decisions were purposefully selected to represent four broad domains of care: diagnostic testing for a new patient problem, diagnostic testing for an ongoing health concern, initial choice of treatment/intervention and monitoring response to a treatment (including identifying opportunities to ‘deprescribe’). By taking this approach, we are better able to explore decision-making factors relevant to a wide range of physician roles, clinical settings and patient circumstances, rather than being limited by issues of evidence quality and applicability to particular types of specialty practices.

Methods

Our literature search strategy is summarized in Table 2. We conducted keyword searches in PubMed, Ovid MEDLINE, Science Direct and Google Scholar from

January 2005 through May 2015, supplementing with hand searches of the references in retrieved literature, and discussions with experts in the literature. Keywords included terms in the conceptual framework section, as well as the specific cases and specialties of interest (i.e., general surgery, cardiology, vascular surgery and gastroenterology). We restricted our searches to articles published in English and focused on the US population. Although several excellent studies on evidence-based decision-making have focused on other countries and populations, our interest in the policy implications for various new payment and regulatory strategies being developed in the USA led us to concentrate on its particular context (see the Future perspective, section). We included only studies that empirically explored the factors that increase or decrease the probability of the recommended physician action being taken; studies purely about relative efficacy or that contribute to the evidence base for the recommendation without consideration of whether the recommendation is followed were excluded.

Results

Because we consider a very narrow set of clinical cases, the applicable literature is limited. We found eight studies relevant to case one, seven relevant to case two, three relevant to case three and four relevant to case four. In almost all cases, we found only one or two studies examining how a particular facet of the health-care system relates to evidence-based practice at the point of care. Our results are summarized in [Table 3](#), where we indicate the factors identified in the literature as constituting barriers to the use of evidence in physician decision-making.

Case one (general surgery): imaging in initial assessment of children with suspected appendicitis

Our first case involves the choice of which, if any, diagnostic test to order for a child with suspected appendicitis. According to available evidence, physicians should not choose computed tomography (CT) for evaluation in this scenario until after ultrasound has been considered [68]. While CT scanning has superior diagnostic accuracy, it exposes the patient to radiation. Ultrasound requires an experienced operator but does not involve radiation exposure – making it the preferred choice for children. Despite this evidence, CT scanning is still commonly used. Thinking about the aforementioned conceptual framework, we consider below what factors might drive some physicians to make the evidence-based decision in this case, and others not to.

Several studies found that the practice site where the child is evaluated was strongly associated with test

choice. CT scans were more frequently performed than ultrasounds when children presented to community rather than to children's hospitals [69–73]. Various reasons have been posited for why the practice site might be important in this case. Because of their pediatric focus, physicians in children's hospitals may be more aware of differences in recommendations for adults and children. In one study, emergency physicians were significantly more likely than pediatricians to order CT scans for children, meaning that physician specialty may matter [74]. Children's hospitals may also be more likely to have ultrasound available as a first option, particularly at night; when CT is the only imaging modality available, it is used much more often [75]. Work processes at the practice site, including which physician is responsible for making decisions about imaging studies (e.g., the emergency physician or the surgeon), have also been shown to affect the use of CT in children [76].

Case two (cardiology): imaging in routine follow-up with asymptomatic cardiac patients

Our second diagnostic testing case focuses on the routine use of stress cardiac or advanced noninvasive imaging as part of long-term monitoring in asymptomatic patients with known coronary heart disease. The evidence-based recommendation is not to routinely use such imaging because it involves both excess radiation exposure and the potential for unnecessary care later [77]. Below, we consider the factors that may contribute to departures from this recommendation.

Stress testing following a cardiac procedure is more common among patients treated by physicians who own the equipment (a practice site and practice organization factor) [78], although the mechanism for this effect is subject to speculation. In some clinical circumstances, studies have suggested that risk-averse physicians order more tests [79,80], but there is no evidence to suggest that risk-averse cardiologists are more likely to purchase (or to work in practices that have purchased) imaging equipment. Noting the high levels of spending on cardiac imaging, payers have reduced reimbursement for some of these tests in recent years [81]. Reduced reimbursements in turn have led to changes in practice affiliations and ownership because hospitals can often bill for higher rates when these services are provided in hospital outpatient departments [81–83]. Whether these changes in levels of reimbursement have resulted in more evidence-based use of these diagnostic tests is not clear; in fact, utilization may have increased [81,84].

Case three (vascular surgery): interventions in patients with intermittent claudication

The third recommendation we explored indicates that surgical interventions – including surgical bypass,

angiography, angioplasty and stent placement – for patients with intermittent claudication from peripheral arterial disease should not be pursued until risk factor modification and pharmacologic treatment have been attempted [85]. Despite this recommendation the number of surgical interventions in this population has increased tremendously over the past several decades, particularly in older patients (age 65 years and older) [86–88].

Practice patterns vary by physician specialty; one study showed that patients with claudication are more likely to undergo interventions when being treated by cardiologists than by vascular surgeons, and that their treatment by cardiologists is more resource-intensive [89]. Little direct evidence exists regarding practice organization characteristics associated with intervention decisions, although some have speculated that financial incentives play a role [86,90].

Case four (gastroenterology): titration of long-term acid suppression therapy in patients with GERD

Evidence recommends that for a patient with GERD whose symptoms are controlled, the physician should titrate acid suppression therapy to the lowest possible dose that does not cause symptom recurrence [91]. The rationale for this recommendation is that such medications have potentially harmful side effects – including pneumonia, infections and hip fractures [92–94] – when used long term.

Physicians may worry about recurrence of their patients' symptoms or other adverse withdrawal events, which may subject them to increased risk of litigation (a market-level factor) [65,94]. Following up with patients to alter their medication also takes time, and physicians may not wish to increase their personal workloads or the workloads of supporting staff (e.g., nursing staff) [65]. Access to information technology systems at the practice site may be useful to physicians in identifying medications that are promising targets for deprescribing [95].

Certain features of the healthcare delivery market may also present barriers to evidence-based deprescribing. Physicians may be uncomfortable changing or stopping a medication started by another physician [65,94–95], particularly in a fragmented system where information on why medications were originally prescribed is scarce [94]. In most markets, physician payment policies do not reward investigating these issues or proactively adjusting medications – a challenge made more daunting by increased prescriptions of acid suppression medication in emergency departments, which increases the rate of use of these drugs in the population [96].

Table 3. Barriers to use of evidence in physician decision-making at the point of care.

Specialty	Physician's characteristics		Practice site			Practice organization		Network and market	
	Training and specialty	Access to technology	Workload	Onsite care processes	Information technology	Physician financial incentives	Organizational financial incentives	Network culture/ management practices	Provider market/ fragmentation
General surgery	✓	✓	✓	✓					
Cardiology		✓			✓	✓	✓	✓	
Vascular surgery	✓					✓			
Gastroenterology			✓		✓				✓

Conclusion

Although evidence on factors affecting physician decision-making at the point of care is often scarce for specific clinical decisions, in examining the available literature on our four representative decisions, we find support for the influence of all levels of the healthcare system represented in our hierarchical conceptual framework. Patient-level factors such as demand for care or preferences regarding treatment are cited frequently as affecting physician behavior. Physician characteristics also play a role, in particular traits such as training and specialty, as well as physicians' beliefs about what constitutes appropriate care. Medicolegal factors are frequently mentioned in studies, but physician perception of the risk of malpractice litigation can be more important than actual risk in driving their behavior [18].

Practice site is important in large part because of its role in determining physician access to resources. The availability of peers and access to diagnostic and decision support technology are important factors in diagnostic decisions. Physician and support staff workloads are another important consideration and feature of the practice site. Features of the practice organization also appear regularly in our review, most notably in the context of influencing physician financial incentives. Physician or practice ownership of diagnostic or treatment technology is associated with greater use of the technology, likely both because it facilitates access, and because physicians can enhance their reimbursements by billing for its use.

Network characteristics appear less frequently in our literature review, most notably in the suggestion that a feedback loop exists between reimbursement policy and formation of networks between physicians and hospitals. At the market level, fragmentation contributes both to overuse of diagnostic testing and to a failure to revisit prescription decisions with an eye to reducing unnecessary medication.

Future research could explore the barriers to evidence-based care for other typical physician decisions. A larger evidence base might shed light on important patterns or commonalities that will enable policy makers and other stakeholders to identify priority areas for altering the practice environment to promote the use of evidence at the point of care. For example, in our four cases, financial incentives were the most frequently cited barriers (Table 3). It is therefore not surprising that many reform efforts involve alternative physician and hospital payment models. However, access to technology and practice site workload were also associated with lack of evidence-based care in two cases each. If these fac-

tors appear frequently in the literature as barriers to following evidence-based recommendations, future reform efforts might focus on these components of modern US practice.

Limitations

Our aim in this narrative review was to use four exemplar clinical cases to illustrate the relationship between features of the healthcare system at all levels and the incentives physicians face at the point of care. We limit our attention to the context in the USA, and so our findings cannot be readily extended to other countries whose healthcare systems may differ in important ways. We also use an existing conceptual framework to structure our findings, and focus particularly on factors that are subject to policy changes. Hence, we do not consider a number of other factors that may influence physician decision-making, such as psychological biases against withdrawing treatment, or issues of guideline applicability to specific patient populations. Furthermore, our cases, while selected to represent a broader range of decisions within the four domains we consider, are narrowly constructed. Our findings may not be readily extrapolated to other diagnostic and therapeutic decisions.

Future perspective

In the current complex healthcare environment in the USA, physicians face a variety of barriers to recommending the most evidence-based solutions to different patient problems. Policy makers recognize that current proposals do not necessarily address the broad range of clinical decisions and specialties reflected in the types of cases we discuss here. Therefore, a new commission was established under the Medicare Access and Children's Health Insurance Program Reauthorization Act to consider a wide variety of stakeholder proposals for innovative physician-focused payment models that are intended to provide payment incentives for higher value care, and support care delivery improvements that encourage patient engagement in decision making [97]. Thus, we anticipate future shifts in several factors relevant to physician decision-making at the point of care. For at least some specialties and types of cases, these policy initiatives will result in changes in practice site and practice organization configurations and incentives. Furthermore, as payment models come to emphasize engaging patient perspectives, changes may follow in physician training and in point-of-care resources that are available for patient education and shared decision-making. Greater emphasis and investment in efforts in the local practice community to promote value-based care may improve the resources available for actionable

feedback to clinicians and thus facilitate local norms emphasizing evidence-based use of tests and treatments. This progress will likely be slow, however, and will require care evaluation and monitoring. Given the complexity of the environment for point-of-care clinical decision-making that we highlight, the feasibility and likely effectiveness of these strategies can vary considerably across clinical problems, practice settings and communities.

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Executive summary

- A substantial portion of healthcare spending is for services that do not improve patient health, while many evidence-based services are underutilized.
- To address this, we need to understand the barriers to evidence-based physician decision-making at the point of care.

Background & conceptual framework

- The 'point of care' is where the patient first brings a concern or concerns to his or her physician's attention. The physician must then decide how to address this or these concern(s).
- A multitude of factors may impact physician decision-making at the point of care, including: the physician's professional characteristics, the practice site, the practice organization, affiliations, the broader market environment, and payment and regulatory policy.

Approach to literature review

- We explore the factors that may influence physician decision-making at the point of care in the context of four real-world clinical cases involving diagnostic testing, initial treatment and treatment monitoring.

Diagnostic testing

- Physician, practice site and market environment factors may all influence physician decisions about diagnostic test use in general.
- Looking at the specific case of imaging in initial assessments of children with suspected appendicitis emphasizes the potential influence of practice site factors on physician decision-making related to diagnostic testing at the point of care.
- Looking at the specific case of imaging in routine follow-up with asymptomatic cardiac patients emphasizes the potential influence of practice site and affiliations factors on physician decision-making related to diagnostic testing at the point of care.

Initial treatment

- Physician specialty, practice site and market factors may all influence physician decisions about initial treatment in general.
- Looking at the specific case of interventions in patients with intermittent claudication emphasizes the potential influence of physician-level and practice site factors on physician decision-making related to initial treatments at the point of care.

Treatment monitoring & deprescribing long-term therapy

- Looking at the specific case of titration of long-term acid suppression therapy in patients with gastroesophageal reflux disease emphasizes the potential influence of practice site and market factors on physician decision-making related to treatment monitoring and deprescribing at the point of care.

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