Assessing the Budgetary Implications of Alternative Strategies to Influence Utilization of Diagnostic Imaging Services

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THE MORAN COMPANY

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Executive Summary

The Moran Company was engaged by the Access to Medical Imaging Coalition, a consortium of physician, provider, patient and industry groups, to evaluate available strategies to ensure appropriate imaging utilization and to assess the federal budgetary implications of these strategies.

Our report evaluates the literature surrounding the two central strategies currently available to policymakers seeking to influence the ordering of imaging services to promote appropriate utilization.

Highlights of Our Findings:

Among the highlights of our findings, we conclude that:

- Both prior authorization and decision support tools can have an impact on utilization management.
- Various utilities have created growing opportunities for the use of decision support tools, but widespread diffusion of these tools is difficult to detect in the present literature.
- Perhaps surprisingly, the literature on the impact of prior authorization is similarly limited, a fact that has been noted by government agencies in response to recommendations to implement prior authorization for imaging services.
- In response to Government Accountability Office (GAO) recommendations on implementation of prior authorization for imaging services, the Department of Health and Human Services noted the lack of data on prior authorization program success, the administrative difficulty of implementing such programs in Medicare and the potential for reduced savings if prior authorization denials in Medicare were successfully appealed.
- A conversation with the Congressional Budget Office (CBO) indicates that the savings CBO had previously scored from prior authorization for imaging purposes would now be considered already present in the budget baseline.
- We conclude that CBO might determine that the impact of increasing utilization of decision support tools would similarly be part of current baseline activities.

Decision Support Tools

The growing role of local computing and hand-held information utilities in medicine has created a platform for the development and diffusion of "decision support" tools for physicians, nurses and other professionals who make decisions about managing patients. The most sophisticated variants of these tools are software utilities that can evaluate available options at each point of

the diagnostic and therapeutic process, and suggest issues that the decision-maker should consider before deciding the next step in the process.

Evidence suggests that these tools are efficacious when they are available—and when they are used. Yet the vast majority of physicians ordering diagnostic imaging services are not presently exposed to these tools, or expected to use them.

Based upon our review of the literature surrounding decision support systems, we conclude that:

- Diagnostic decision support tools have been demonstrated to influence the volume and type of imaging services ordered in the direction of more conservative use.
- To date, the most successful efforts have been in academic settings and selective specialties such as cardiology, where there is greater centralized control over resource use than there is, generally, in the ambulatory care setting and where appropriateness criteria are well developed.
- While these tools could be generalized to all clinical settings, diffusion is difficult to detect.

To our knowledge, CBO has not previously scored legislative proposals to implement imaging-specific decision support programs. However, it seems to us unlikely that CBO would score significant savings for a program that mandated the diffusion of decision-support tools, but did nothing more. CBO clearly expects significant efforts going forward under current law to promote the evidence base underlying medicine, and to develop and diffuse tools to bring this knowledge base into day-to-day practice. Thus, most or all of the impact of policies implementing the use of decision support systems would seem to be in the baseline for scoring purposes.

Prior Authorization

Prior authorization attempts to check unnecessary service use by requiring explicit approval of the choice a clinician has already made. This control mechanism is enforced by denying payment for the service if prior approval is not obtained.

Most prior authorization programs have an initial procedure for submission of information before claims can be approved, with opportunities for appeal where necessary. In the commercial sector, a substantial share of the population is subject to prior authorization of imaging services via so-called radiology benefit managers (RBMs), specialized benefits management companies that subcontract with health plans, typically for a monthly fee per member covered, to manage their imaging utilization.

Despite its 30-year track record as a mainstay strategy for managing inpatient hospital services, we were unable to find a single study in the peer-reviewed health economics literature that evaluated the cost-effectiveness of prior authorization of inpatient hospital services. This may be particularly surprising given the widespread use of prior authorization requirements for inpatient services. The literature on the use of prior authorization for imaging services was similarly thin.

Based on our review of the limited literature available, we conclude that prior authorization for imaging services may be difficult to structure in ways that provides meaningful savings. Indeed, it is possible that the returns from prior authorization may be meaningfully smaller than the operating costs of conducting these programs.

In response to a Government Accountability Organization recommendation that it consider implementing prior authorization for certain imaging services, the Department of Health and Human Services raised concerns about the administrative burden of prior authorization services and noted the lack of independent data on the success of RBMs in managing imaging services. The Department also noted the potential for problems if significant numbers of prior authorization denials were overturned on appeal.[1]

Conversations with staff of CBO suggest that organization might similarly find that prior authorization programs for imaging services would not provide meaningful savings. Given the major efforts underway under the new legislative authorities enacted since 2008 to implement evidence-based care management strategies—e.g., via electronic health records—many of the savings CBO previously visualized from prior authorization of imaging services would now be considered the prior law baseline for scoring purposes.

Conclusions

Based on our review of the literature regarding the impact of decision support systems and prior authorization, we find that policies to adopt either of these strategies as a means of controlling imaging utilization would be unlikely to score significant savings.

Policymakers seeking budget savings from utilization management in diagnostic imaging may wish to consider options that provide for explicit effects on program spending, such as programs that provide for downward payment adjustments for providers whose ordering patterns are aberrant, as judged by some form of profiling activity.

[1] Comments made in response to Government Accountability Office (GAO) report, "Medicare Part B Imaging Services: Rapid Spending Growth and Shift to Physician Offices Indicate Need for CMS to Consider Additional Management Practices" GAO-08-452 (June 13, 2008).

Objectives of Utilization Management

Over the past decade, substantial concerns have been raised in federal policy circles about the growth in costs associated with diagnostic imaging services.[2] Since the enactment of the Deficit Reduction Act of 2005, a variety of regulatory and legislative changes have been made to payment rates for imaging services under Medicare.[3,4] While cost growth of imaging services in Medicare has moderated as a result, concerns remain about the overall affordability of imaging, particularly for such advanced imaging modalities as computed tomography (CT), magnetic resonance (MR) and positron emission tomography (PET). In response to these concerns, policymakers are evaluating whether additional measures may be needed to more directly influence ordering of imaging services.

The Moran Company was engaged by the Access to Medical Imaging Coalition, a consortium of physician, provider, patient and industry groups, to evaluate available strategies to ensure appropriate imaging utilization. As part of our analysis, we were asked to assess the federal budgetary implications of alternative approaches to managing imaging utilization in Medicare. In particular, we were asked to evaluate how the Congressional Budget Office (CBO) might "score" legislation intended to establish explicit mechanisms to promote appropriate imaging utilization. The findings of our analysis of these questions are presented in this report.

In evaluating approaches to managing imaging ordering, it is important to take cognizance of the fact that imaging studies are not "free-standing" events that can be evaluated in isolation from other services being rendered on behalf of patients. Imaging studies are ordered as part of a broader effort by physicians to reach a definitive diagnosis of a patient's condition, and then to monitor developments downstream of treatment decisions.[5] The decision to order an imaging study at a particular point in the clinical process reflects a decision by a physician that additional information is needed, over and above that obtainable via the patient's medical history, physical examination and other diagnostic findings, in order to make effective management decisions for a specific patient. In ordering a diagnostic imaging test, the managing physician is seeking both additional physical evidence, and the expert judgment of a specialist interpreter of that image about the meaning of that evidence, in order to inform treatment choices downstream of the receipt of that information.

Given this reality, the appropriateness of the ordering physician's decision can only be judged in light of all the facts and circumstances of the patient's case at the time the study is ordered. Proceeding from the assumption that physicians are well-meaning professionals, the motivation for external efforts to manage imaging utilization cannot simply be based on a desire to second-guess every decision to order a high-cost service. Rather, it derives from the possibility that physicians may order certain procedures reflexively, or that ordering physicians may lack timely access to state-of-the-art information about the value of alternative diagnostic options at particular points in the clinical process. The objective is not to establish a service-by-service

[2] MedPAC: Report to Congress, Aligning Incentives in Medicare, June 2010. Chapter 8, page 220.
[3] Federal Register, Vol. 70, No. 223, November 21, 2005, page 70263.
[4] Patient Protection and Affordable Care Act, pub. L. 111-148, enacted March 23, 2010, as amended by the Health Care and Education Reconciliation Act of 2010, Pub. L. 111-152, enacted on March 20, 2010.
[5] Bernardy, et al. (2009), "Strategies for Managing Imaging Utilization". J Am Coll Radio 2009; 6:844-850.

regulatory check on every decision that is made. The objective is to help ordering physicians internalize the best available information about the role of imaging in the broader clinical context in which they operate.

Presently-Available Strategies

If policymakers wish to better optimize the use of advanced diagnostic imaging technologies, there are two main types of tools available to benefits managers.[6] Clinical decision support tools attempt to prospectively influence the choice of imaging tests before they are ordered. Prior authorization programs, by contrast, attempt to regulate implementation of orders after they are made, but before the service is performed. In this section, we provide a high level description of each of these strategies, and then review the extant peer-reviewed literature for evidence on their effectiveness.

Decision Support Systems

The growing role of local computing and hand-held information utilities in medicine has created a platform for the development and diffusion of "decision support" tools for physicians, nurses and other professionals who make decisions about managing patients. The most rudimentary of these tools give physicians the capacity to look up and verify information that they were previously expected to commit to memory. More sophisticated variants are literally decision-support tools—software utilities that can evaluate available options at each point of the diagnostic and therapeutic process, and suggest issues that the decision-maker should consider before deciding the next step in the process. In addition to suggesting productive lines of inquiry, such tools can bring forward information from the clinical literature to inform decision-making about the probabilities of outcomes downstream of the immediate decision. They can also embed treatment guidelines developed by relevant medical specialty societies so the decision-maker can consider the "recommended" course of action in specific circumstances. The most sophisticated variants of such systems are deemed by the Food & Drug Administration to be medical devices, and are regulated as such.[7]

As will be discussed more fully below, the existing peer-reviewed literature on the subject of decision support utilities suggests that we are at early stages of development of such tools. Most of the applications reported are focused on specific clinical situations (e.g., emergency department presentations of injured joints) rather than more generic concerns (e.g., ordering diagnostic imaging studies). Given the push toward "evidence-based medicine" over the last two decades, however, much of the content required to enable more generic capabilities now exists.

As this discussion suggests, development and implementation of diagnostic decision support tools as a utilization management strategy is fully congruent with the objectives of utilization

[6] In this report, we consider the effects of what might be called "direct" utilization management strategies, which seek to influence physician orders for individual patients. As we note in the concluding section, policymakers seeking significant budgetary savings may also wish to consider "indirect" strategies that employ financial incentives to influence physicians' overall utilization of particular services.

[7] Moran, D. "Health Information Policy: On Preparing for the Next War." *Health Affairs,* Vol. 17 No. 6 November/December 1998.

management as we have outlined them above. The use of decision support tools embeds the question of imaging use in the exact clinical context in which alternative options are being weighed and considered for a specific patient. As will be discussed, the evidence suggests that these tools are efficacious when they are available—and when they are used. Yet the vast majority of physicians ordering diagnostic imaging services are not presently exposed to these tools, or expected to use them.

Prior Authorization

Rather than attempting to influence clinical decision-making before a choice of diagnostic modality has been made, prior authorization attempts to check unnecessary service use by requiring explicit approval of the choice a clinician has already made. This control mechanism is enforced by denying payment for the service if prior approval is not obtained.

Prior authorization is typically conducted as a two-tiered activity.

In the first tier, commonly called "first-line review," a clinician who has ordered the service in question (here, a diagnostic imaging test) is required to submit information explaining the motivation for ordering the test to the authorizing entity. In many forms of review, this can be done by calling a nurse-reviewer telephonically, and providing answers to a checklist of questions the reviewer will pose. The answers to those questions are then analyzed against a set of pre-specified criteria, and a "first line" determination is made.[8] If the procedure is approved, the provider who will perform the procedure is given an authorization number that must be submitted with the claim for the service in order for the claim to be paid. Note that, in the case of most diagnostic imaging services, the physician who is ordering the service is different than the provider who will perform it, and the physician who will interpret it.

If the procedure is denied, the ordering physician can appeal that decision to a "second-line" reviewer—almost always a physician—who will review the appeal. The ordering physician can usually submit additional clinical information justifying her decision at this stage, and may talk directly to the second-line reviewer about the case.[9] If the procedure is still denied after appeal, many plan sponsors provide for at least one more level of appeal beyond the radiology benefit manager level.

It is important to note that, in addition to its direct effect of compelling physicians to justify their orders to a third party, prior authorization also has an indirect deterrent effect. Over time, ordering physicians learn which cases sail through review, and which ordering decisions turn into a major hassle. This process eventually "trains" physicians to frame orders in ways that harmonize with the review entity's criteria set.

Another sort of "training" can take place as well: over time, ordering physicians can learn how to answer the first line reviewer's questions in ways that ensure that their answers conform to the

[8] The criteria set is most commonly embedded in a software application that serves as a decision support tool for the first line reviewer.

[9] This can, in some cases, turn into a negotiating session in which the ordering physician agrees to change the order to s service the manager will immediately approve.

first line review criteria. They may learn, for example, that the order in which they present listed diagnoses can affect the first line review outcome. If they can learn which sequence produces more frequent approvals, they can improve their approval results while still fairly presenting information documented in the patient's medical records.

In the commercial sector, a substantial share of the population is subject to prior authorization of imaging services via so-called radiology benefit managers (RBMs), specialized benefits management companies that subcontract with health plans, typically for a monthly fee per member covered, to manage their imaging utilization. In addition to subjecting radiology orders to prior authorization, many RBM benefit designs restrict performance of the procedures to a selectively-contracted network of providers who offer the RBM discounts in exchange for placement in the network.

Available Evidence on Program Effectiveness

Decision Support Systems

There is an increasing body of evaluative literature on the use of decision support systems in American medicine. Because this field is new and growing, however, studies that take a broad view of this class of interventions are infrequent; the last attempt at an overview of the field of which we are aware is six years old.[10]

Much of the work that is being published focuses of the use of decision support in specific areas of physician decision making. Several articles can be found on such topics as pharmaceutical prescribing generally[11,12], with a number of studies focused on the specific question of antibiotic

[10] Garg, A. X., N. K. Adhikari, et al. (2005). "Effects of computerized clinical decision support systems on practitioner performance and patient outcomes: a systematic review." JAMA **293**(10): 1223-38.
[11] Lester, W. T., R. W. Grant, et al. (2006). "Randomized controlled trial of an informatics-based intervention to increase statin prescription for secondary prevention of coronary disease." J Gen Intern Med **21**(1): 22-9.
[12] McMullin, S. T., T. P. Lonergan, et al. (2004). "Impact of an evidence-based computerized decision support system on primary care prescription costs." Ann Fam Med **2**(5): 494-8.

prescribing.[13,14,15,16,17] Other specific clinical issues studied include venous thromboembolism,[18] red blood cell transfusion,[19] coagulation testing,[20] renal insufficiency,[21] and blood testing.[22] As in other disciplines, the application of decision support tools to the ordering of diagnostic imaging tests can be focused on specific clinical problems. A number of studies, for example, document and evaluate the use of so-called "Ottawa Rules" for diagnostic evaluation of injured joints.[23,24,25,26,27] Diagnostic evaluation of the spine has also been the subject of focused evaluation of decision support tools.[28,29]

In radiology, however, there is a rapidly growing literature on more broad-based use of decision support tools.[30] Particular attention has been focused on the "high tech" modalities such as CT and MR.[31] Part of the effort has been to steer non-radiologists away from the use of tests that are

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[13] Evans, R. S., S. L. Pestotnik, et al. (1998). "A computer-assisted management program for antibiotics and other antiinfective agents." N Engl J Med **338**(4): 232-8.
[14] McGregor, J. C., E. Weekes, et al. (2006). "Impact of a computerized clinical decision support system on reducing inappropriate antimicrobial use: a randomized controlled trial." J Am Med Inform Assoc **13**(4): 378-84.

[15] Samore, M. H., K. Bateman, et al. (2005). "Clinical decision support and appropriateness of antimicrobial prescribing: a randomized trial." JAMA **294**(18): 2305-14.
[16] Pestotnik, S. L., D. C. Classen, et al. (1996). "Implementing antibiotic practice guidelines through computer-assisted decision support: clinical and financial outcomes." Ann Intern Med **124**(10): 884-90.
[17] Thursky, K. A., K. L. Buising, et al. (2006). "Reduction of broad-spectrum antibiotic use with computerized decision support in an intensive care unit." Int J Qual Health Care **18**(3): 224-31.
[18] Durieux, P., R. Nizard, et al. (2000). "A clinical decision support system for prevention of venous thromboembolism: effect on physician behavior." JAMA **283**(21): 2816-21.
[19] Fernandez Perez, E. R., J. L. Winters, et al. (2007). "The addition of decision support into computerized physician order entry reduces red blood cell transfusion resource utilization in the intensive care unit." Am J Hematol **82**(7): 631-3.
[20] Georgiou, A., S. Lang, et al. (2011). "The use of computerized provider order entry to improve the effectiveness and efficiency of coagulation testing." Arch Pathol Lab Med **135**(4): 495-8.
[21] Terrell, K. M., A. J. Perkins, et al. (2010). "Computerized decision support for medication dosing in renal insufficiency: a randomized, controlled trial." Ann Emerg Med **56**(6): 623-9.
[22] van Wijk, M. A., J. van der Lei, et al. (2001). "Assessment of decision support for blood test ordering in primary care. a randomized trial." Ann Intern Med **134**(4): 274-81.
[23] Anis, A. H., I. G. Stiell, et al. (1995). "Cost-effectiveness analysis of the Ottawa Ankle Rules." Ann Emerg Med **26**(4): 422-8.
[24] Auleley, G. R., P. Ravaud, et al. (1997). "Implementation of the Ottawa ankle rules in France. A multicenter randomized controlled trial." JAMA **277**(24): 1935-9.
[25] Stiell, I., G. Wells, et al. (1995). "Multicentre trial to introduce the Ottawa ankle rules for use of radiography in acute ankle injuries. Multicentre Ankle Rule Study Group." BMJ **311**(7005): 594-
[26] Stiell, I. G., R. D. McKnight, et al. (1994). "Implementation of the Ottawa ankle rules." JAMA **271**(11): 827-32.
[27] Verbeek, P. R., I. G. Stiell, et al. (1997). "Ankle radiograph utilization after learning a decision rule: a 12-month follow-up." Acad Emerg Med **4**(8): 776-9.
[28] Hoffman, J. R., W. R. Mower, et al. (2000). "Validity of a set of clinical criteria to rule out injury to the cervical spine in patients with blunt trauma. National Emergency X-Radiography Utilization Study Group." N Engl J Med **343**(2): 94-9.
[29] Stiell, I. G., C. M. Clement, et al. (2009). "Implementation of the Canadian C-Spine Rule: prospective 12 centre cluster randomised trial." BMJ **339**: b4146.
[30] Blackmore, C. C., R. S. Mecklenburg, et al. (2011). "Effectiveness of clinical decision support in controlling inappropriate imaging." J Am Coll Radiol **8**(1): 19-25.
[31] Solberg, L. I., F. Wei, et al. (2010). "Effects of electronic decision support on high-tech diagnostic imaging orders and patients." Am J Manag Care **16**(2): 102-6.

known to yield little usable clinical information.[32] But radiologists are investing considerable effort to build and implement systems that will permit non-radiologists ordering these tests to select the most appropriate test at the point the ordering decision is being made.[33]

In evaluating clinical decision support as a strategy for influencing the volume of diagnostic imaging services, our sense of this literature is as follows:

- Diagnostic decision support tools have been demonstrated to influence the volume and type of imaging services ordered in the direction of more conservative use.
- To date, the most successful efforts have been in academic settings where there is greater centralized control over resource use than there is, generally, in the ambulatory care setting.
- Particular specialties with well-developed appropriateness criteria may similarly be able to a reduction in inappropriate utilization through decision support tools.
- However, while these tools could be generalized to all clinical settings, widespread diffusion is difficult to detect in the present literature.

One critical question turns on the most likely channel for broader application of clinical decision support. Will this sort of capability diffuse to the physician community as a module within a broader clinical decision support capability built around electronic health records? Or would a free-standing diagnostic decision support system diffuse more rapidly than the EHR generally if physicians were motivated to accept and use it?

Prior Authorization

Prior authorization, as a general management tool, has been ubiquitous in the U.S. health care system since the 1980s, when it was applied to inpatient hospital admissions by both managed care plans and "managed fee-for-service" arrangements. In the 1990s, State Medicaid programs began subjecting the use of certain prescription drugs to prior authorization in order to enforce so-called supplemental rebate arrangements. During this period, application of prior authorization to other types of service use has gone in and out of fashion. While many commercial plans subjected high-cost imaging modalities such as CT and MR to prior authorization through the late 1990s, many of these benefits management tools were turned off in response to the "patient's bill of rights" backlash against managed care at the end of that period. The reemergence of prior authorization of imaging services under RBM auspices in the last decade has been a visible exception to the general disappearance of prior authorization for services other than inpatient hospital services and outpatient surgery.

Given this long history, it is surprising how little work has been reported in the peer-reviewed literature assessing the efficacy of prior authorization generally, or the application of prior authorization to imaging services. Despite its 30-year track record as a mainstay strategy for

[32] Vartanians, V. M., C. L. Sistrom, et al. (2010). "Increasing the appropriateness of outpatient imaging: effects of a barrier to ordering low-yield examinations." Radiology **255**(3): 842-9.
[33] Sistrom, C. L., P. A. Dang, et al. (2009). "Effect of computerized order entry with integrated decision support on the growth of outpatient procedure volumes: seven-year time series analysis." Radiology **251**(1): 147-55.

managing inpatient hospital services, we were unable to find a single study in the peer-reviewed health economics literature that evaluated the cost-effectiveness of prior authorization of inpatient hospital services.

In the pharmacy arena, there is some evidence available from both Medicaid[34] and non-Medicaid pharmacy management programs that demonstrates cost savings from prior authorization.[35]

The literature on prior authorization of imaging services is thin. We found only one peer-reviewed article that put forward evidence of potential efficacy—while acknowledging that evidence to be anecdotal.[36] The balance of the evidence might be characterized as editorial: proponents of RBMs have published descriptive articles touting the promise of the strategy, while physicians and other affected parties have published articles cautioning about various aspects of this strategy. In both sets of literature, evidence of performance is lacking.

The Economics of Prior Authorization

While the literature on prior authorization is strangely silent on the question of effectiveness as a utilization management tool for diagnostic imaging, we believe that an analysis of the economic theory underlying prior authorization can shed light on why inpatient prior authorization has stood the test of time, while application to even "big-ticket" diagnostic imaging services has gone in and out of fashion.

The economics of prior authorization in the inpatient setting can be summarized as follows:

- In inpatient prior authorization, the question is not whether a service should or shouldn't be performed—the question turns only on *where* it will be performed.
- Thus the evidence burden that those seeking to deny admissions carry is comparatively light; the burden is in fact on the admitting physician to demonstrate that inpatient care is necessary.
- The financial payoff to a denied case is substantial, often larger than $10,000, while the cost of alternative settings is comparatively small.
- Thus even with a fairly low denial rate (e.g., 5-10%), the cost of the intervention is self-financing even if the intervention costs several hundred dollars per case.
- Application of prior authorization to a diagnostic imaging test is different than prior authorization for inpatient services on every one of these dimensions.
- In the case of a specific service, we're not arguing about where it's done: we're arguing about whether the test itself is medically necessary.
- Thus those seeking to deny the test carry a much more substantial evidence burden, implying a substantially greater level of effort may be necessary to document the case and survive appeals.

[34] Tilly, J. & L Elam, *Prior Authorization for Medicaid Prescription Drugs in Five States: Lessons for Policymakers.* (Palo Alto: Kaiser Family Foundation), April 2003.
[35] MacKinnon, N. & R. Kumar. "Prior Authorization Programs: A Critical Review of the Literature." Journal of Managed Care Pharmacy, Vol 7, No. 4, July/August 2001, pp. 297-302.
[36] Mitchell, J.M. R. LaGalia. (2009). "Controlling the Escalating Use of Advanced Imaging: The Role of Radiology Benefit Management Programs." Medical Care Research & Review 2009 66: 339.

- The financial payoff to a denial, however, is an order of magnitude smaller than in the inpatient case.
- The cost of clinical alternatives, moreover, may be more meaningful: denial of a thallium myocardial perfusion study may result in an MR or CT angiography instead.
- Criteria that require lower-cost interventions to be tried prior to the use of higher-cost studies will be cost-increasing in those instances where both studies are ultimately done.

All these factors combine to suggest that, in order to be cost-effective, prior authorization of high-cost diagnostic imaging studies may need to proceed untouched by human hands. Since the facts just cited make that impossible, it is possible that the returns from prior authorization may be meaningfully smaller than the operating costs of conducting these programs. Moreover, while our review here has focused on the utility of prior authorization from a payer perspective, the costs to physicians to comply with prior authorization requirements can be significant.[37] Concerns have also been raised by the Department of Health and Human Services that prior authorization for imaging may be difficult to implement and that savings from such programs may be significantly reduced if a high percentage of prior authorization denials are successfully appealed.[38]

Budgetary Assessment

As policymakers evaluate alternative strategies for imaging utilization management, one important question turns on the fiscal implications of various approaches to managing imaging volume. If imaging utilization management strategies are judged to lower Medicare program costs net of their administrative costs, they may be attractive to policymakers even in the face of concerns about their impact on clinical practice. Conversely, if these strategies are judged to have limited or negative budgetary effects, policymakers may decline to implement such programs even if they are judged to be of value in improving clinical practice.

At the federal level, the ultimate arbiter of this question is the Congressional Budget Office (CBO), the agency charged with "scoring" legislative proposals as they move toward enactment. CBO's judgment about the budgetary impact on such "mandatory spending" programs as Medicare is particularly important, since these programs are not subject to the fiscal discipline of annual appropriations.

To date, the only published information we have about CBO's view of the budgetary impact of diagnostic imaging management was presented in a volume of budget options related to health care that CBO published in December of 2008.[39] In that document, one option CBO proffered was to have the Medicare program engage radiology benefit managers to implement a prior

[37] E.g., Lee, D. et al. "Radiology Benefit Managers: Cost Saving or Cost Shifting?" *J Am Coll Radiol* 2011; 8:393-401.
[38] Comments made in response to Government Accountability Office (GAO) report, "Medicare Part B Imaging Services: Rapid Spending Growth and Shift to Physician Offices Indicate Need for CMS to Consider Additional Management Practices" GAO-08-452 (June 13, 2008).
[39] Congressional Budget Office. (December, 2008). Congress of the United States: *Budget Options, Volume 1, Health Care*.

authorization program for diagnostic imaging services in Medicare.[40] At that time, CBO estimated that implementing this option would lower Medicare mandatory spending by $1.1 billion over the ten year budget horizon.

In the text presenting that option, CBO noted that the budgetary effect of this policy would be a one-time (but permanent) downward level adjustment in the rate of imaging spending, after which future growth would continue to track the path of spending growth under then-current law. They also commented, in their closing discussion, that paying monthly capitation rates to radiology benefit managers might not be the optimal way for Medicare to pay for these services.

Updating the CBO View of Prior Authorization

Given the major legislative changes enacted since that CBO option was presented, we sought to determine whether CBO's thinking regarding imaging utilization had evolved. We requested and were granted a telephone interview with CBO scoring officials responsible for the Medicare program. During that interview, we asked them what they could tell us about their present thinking on prior authorization as a utilization management strategy for diagnostic imaging. Their response may be paraphrased as follows:[41]

- Given the major efforts underway under the new legislative authorities enacted since 2008 to implement evidence-based care management strategies—e.g., via electronic health records—many of the savings they previously visualized from prior authorization of imaging services would now be considered "in the baseline."

- This fact makes it far less likely that the incremental returns from mandatory prior authorization would be sufficient to cover the administrative costs.

- They explicitly indicated that the score they would now assign to a prior authorization program financed by per-member-per-month fees would be at best budget neutral—and might be scored as increasing federal mandatory spending depending on how the arrangement was structured.

Implications for Scoring of Decision Support-Based Strategies

Since CBO had not previously scored legislative proposals to manage imaging utilization via expanded efforts to implement imaging-specific decision support programs, we did not ask them to respond to a hypothetical. Given what they said about this landscape, however, it seems to us unlikely that CBO would score significant savings for a program that mandated the diffusion of decision-support tools, but did nothing more. CBO clearly expects significant efforts going forward under current law to promote the evidence base underlying medicine, and to develop and diffuse tools to bring this knowledge base into day-to-day practice. If these efforts prove to be

[40] Option 41, page 81.
[41] What follows reflects our assessment of the meaning of what was said; we hereby absolve the CBO officials we talked to from any responsibility for our characterization of their views.

cost-reducing, those gains would be assumed to be achieved under current law.[42] To the extent they do not prove to be cost-reducing, CBO would see no incremental budgetary effect from mandating them in statute.

If policymakers seek immediate budgetary effects from utilization management in diagnostic imaging, they will need to consider options that provide for explicit effects on program spending. Strategies CBO has scored as saving money in the past include programs that provide for downward payment adjustments for providers whose ordering patterns are aberrant, as judged by some form of profiling activity. Policymakers considering such strategies in imaging may wish to ensure that the payment incentives are focused on the physicians that order these tests—and not the providers that perform and interpret them.

[42] CBO did indicate that policies that gave the Secretary the authority to use such evidence in establishing coverage and reimbursement policies would be treated as changes to current policy and would score.