Utilization Management in Radiology, Part 2: Perspectives and Future Directions

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Increased utilization of medical imaging in the early part of the last decade has resulted in numerous efforts to reduce associated spending. Recent initiatives have focused on managing utilization with radiology benefits managers and real-time order entry decision support systems. Although these approaches might seem mutually exclusive and their application to radiology appears unique, the historical convergence and broad acceptance of both programs within the pharmacy sector may offer parallels for their potential future in medical imaging. In this second installment of a two-part series, anticipated trends in radiology utilization management are reviewed. Perspectives on current and future potential roles of radiologists in such initiatives are discussed, particularly in light of emerging physician payment models.

Key Words: Utilization management, benefits management, radiology benefits management companies, computerized physician order entry, decision support

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An unsustainable growth trajectory in health care spending has resulted in keen interest from numerous stakeholders in curtailing expenditures. Given the historical rapid growth in medical imaging earlier in the past decade, many cost containment initiatives have specifically targeted radiology. Previously unfamiliar to radiologists, utilization management (UM) programs, particularly radiology benefits managers (RBMs), have achieved broad market penetration. In the first segment of this two-part series [1], we reviewed the rationale, history, and current status of UM in radiology and focused on RBMs and real-time order entry decision support (DS) systems. In this second segment, we consider UM from the perspectives of other health care sectors and the health care enterprise as a whole. We suggest possible future trends and discuss potential roles for radiologists as active UM participants as physician payment systems evolve.

PERSPECTIVES FROM PHARMACY

Although UM is relatively new to radiology, specialty-specific benefits management programs are long well established within the health insurance industry. Of these, pharmacy services are perhaps best known to most readers. A brief review of trends in this domain may be helpful to radiologists seeking to understand how medical imaging UM programs may profoundly affect their specialty.

The evolution of pharmacy UM programs has been well described [2], and several clear parallels exist for radiology. For particularly expensive pharmaceuticals, preauthorization programs, not dissimilar to those of RBMs, have gained increased acceptance. Tiered patient copayments have been particularly successful in aligning payer and patient interests in containing costs and anecdotally are beginning to be implemented for radiologic services. The corresponding author's own health plan, for example, recently introduced a copayment for advanced imaging in the emergency department setting. Plain radiography, however, is exempt.

Terms such as *substitution permissible* are common on pharmaceutical prescriptions but rare on medical imaging requests. Mechanisms that increase radiologists' discretion to tailor examinations for a specific clinical question (eg, proceeding with MRI, rather than requested CT, to evaluate for a suspected pituitary microadenoma) could potentially decrease low-utility examinations. Such discretion, however, also has the potential to increase radiologist-driven utilization, through additional testing in a fee-for-service environment. This may explain, at least in part, why current Medicare ordering rules largely prohibit such practices [3].

A "medication hub" model has been implemented as a means of facilitating communication between otherwise fragmented pharmacies [4]. When armed with all net-

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work medication information, pharmacists filling prescriptions at one facility are better able to minimize drug interactions and duplications. Unnecessary repeat medical imaging is not uncommon when patients are transferred from one facility to another [5], and a similarly modeled integrated "imaging hub" might help increase awareness of previous diagnostic examinations and thus reduce duplicative services. Additionally, if radiologists had access to previous outside studies (or even their reports) through such a mechanism, recommendations for follow-up studies, although already relatively infrequent [6], might be further reduced. Current HIPAA privacy rules, however, create restrictions on the ease with which such information can be shared between facilities.

UTILIZATION MANAGEMENT PROGRAM CONVERGENCE

At first glance, RBMs and current DS tools may seem to be mutually exclusive processes. Evolving experience with pharmaceutical UM programs, however, instead suggests future complementary roles. Radiology benefits managers are currently prevalent and well accepted within the insurance industry but lack real-time interactivity during clinical encounters. Computerized physician order entry with DS systems may offer the latter but currently have limited market penetration. The recent involvement of a major RBM in Medicare's imaging DS demonstration project [7] offers promise that a converged UM solution might someday be forthcoming.

Payer preauthorization and real-time DS have already been successfully integrated in an elegantly simple paper model for expensive pharmaceuticals [8]. Payer-approved preprinted prescription forms include appropriateness criteria check boxes. Fulfillment of transparent authorization criteria is indicated by checking those boxes at the time of signature. At participating pharmacies, this documentation immediately translates to certification of medical necessity for payer coverage purposes. Parallel models in an electronic environment should be obvious.

A key hurdle to incorporating DS into insurer UM programs will be achieving payer acceptance of integrated ordering algorithms. DS criteria are currently largely institution specific and thus may or may not match the unique certification criteria of each individual health plan. To that end, DS validation currently does not necessarily translate to coverage validation. Alignment of ordering criteria with individual patient insurance coverage will ultimately be necessary to ensure that DS and preauthorization are contemporaneous and synergistic, rather than fragmented and layered, processes.

The medication hub model for pharmaceutical UM also conceptually offers such a solution. Rather than populating DS systems with institution-specific criteria, a robust integrated system would "pull" current payer-specific criteria, ideally originating in credible clinical guidelines, from a cloud-based integrated hub and thus ensure alignment of DS affirmation with coverage certification. Seamless communication among all systems at the point of service would optimize efficiencies for payers, providers, and patients alike.

PROVIDER PROFILING

Considerable interest currently exists in transforming US health care payment systems from traditional fee-for-service models, wherein compensation is based almost exclusively on volume, to value-based purchasing models, in which compensation is tied instead to specific quality or outcomes metrics [9]. Measuring value will thus become imperative if such pay-for-performance models are to be valid and durable.

At the institutional level, DS systems are easily able to identify, quantify, and characterize outlier physician ordering activity. For payers engaging RBMs, significantly more expansive data mining opportunities exist. In a radiology benefits management environment, each claim for payment and request for approval generates a data point, and under such arrangements, ordering physicians can be robustly benchmarked using patient demographics, diagnoses, sites of service, and a variety of additional parameters.

That profiling of physician ordering patterns has been advocated by the Medicare Payment Advisory Commission in a recent report to Congress [10]. Rather than mandating tedious and costly preauthorization for all Medicare advanced imaging studies, the proposed risk-stratified approach would impose precertification burdens on only those physicians whose ordering behavior is deemed excessive.

Payer claims data can also be used for more elegant economic measurements. When interventional radiologists, for example, treat peripheral arterial disease, Medicare enjoys considerable cost savings compared with vascular surgeons or interventional cardiologists [11]. Although health services researchers are restricted to the use of deidentified claims data for such analyses and can focus only on specialties or other aggregate groupings, payers are not so constrained. With appropriate goals and data mining tools, insurers can relatively easily, in near real time, identify individual physicians whose care results in statistically significant excessive downstream expenditures. That information could be used for educational purposes, or in an increasingly value-based purchasing environment, as the basis for health plan credentialing or differential fee schedule payments.

THE ROLE OF RADIOLOGISTS IN UTILIZATION MANAGEMENT

Radiologists by training focus their efforts largely on interpretation and reporting. In the Resource-Based Relative Value System lexicon, this corresponds to intraservice work [12]. Physician fee schedule payments, however, also include preservice work (such as prior image

review and protocol design) and postservice work (such as discussing findings with patients or referring physicians). When radiologists curtail important preservice and postservice work—which have historically helped determine radiologist compensation and facilitated the current integral role for radiologists in the health care enterprise—commoditization can occur [13]. Although there is common acceptance of the value of such "good citizenship" behavior, no formal model exists for uniformly defining minimal expected noninterpretive duties, nor do robust incentives exist to encourage such behavior.

Although current radiology reimbursement levels assume the performance of preservice and postservice work, the current fee-for-service system in general only mandates specific documentation of the interpretive, or intraservice, component of a radiologic service for claims payment. Inadvertently, the system thus creates an incentive to neglect preservice and postservice work. The time it takes to determine that a requested study, for example, is entirely duplicative of one just performed at another hospital, and then communicate that assessment of low utility to both patient and referring physician, is not insignificant. In fact, it may actually exceed the time it would take to interpret the unnecessary study. Paradoxically, such repeat studies are usually paid under fee-for-service, but the work required to prevent their performance and inherent costs and risks is not. To that end, current payment systems have fostered a cultural "Nike imperative" for radiologists that is contrary to UM: just do it! Future shared savings payment systems may eventually provide incentives for this important UM work [14], but whether those incentives will be forthcoming with sufficient haste or adequacy to overcome current cultural inertia remains to be seem.

Although explicit documentation of noninterpretive services is not usually required in most cases to bill under the present fee-for-service system, current payment levels assume that such work was performed. When radiologists abdicate all UM to third-party contractors (ie, RBMs) or software companies (ie, DS systems), they thus not only potentially devalue future payments under fee-for-service but also reinforce the incorrect belief, increasingly common in the era of teleradiology, that radiologists' skills and services are purely interpretive. If insurers and health systems believe that turnkey third-party solutions are as good as, or better than, radiologists themselves for controlling unnecessary utilization, professional commoditization becomes almost certain.

Although our discussion has focused on payment policy for radiology as a whole, many concepts are relevant at the individual practice level. Failure to provide important noninterpretive services has been cited as a reason for the displacement of radiology groups from their primary hospitals [15]. Noninterpretive consultative services are thus essential in maintaining secure long-term relationships necessary for radiologists' livelihood. Additionally, radiology groups that embrace institutional UM opportunities will be better poised to forge sustaining partnerships with health systems pursuing accountable care organization status [14]. Under such arrangements, a network's overall success hinges on its ability to manage costs, of which imaging utilization has previously been a major driver.

As national strategies to control health care costs evolve from historical unit cost reduction approaches to methodologies in which UM plays a larger role, radiologists will increasingly find themselves confronted with new challenges and opportunities. Their willingness and ability to embrace those changes will likely determine their fate as meaningful stakeholders in UM.

Long subject to utilization scrutiny, pharmacists now advocate UM education early in their professional training [16], and the radiology community might be wise to follow that lead and incorporate UM training in residency curricula. Prioritization of these concepts will be essential if radiologists are to successfully change cultural paradigms and view UM not as a nuisance but as a core component of their practices. The degree to which current and future radiologists embrace UM will ultimately determine whether they will lead or follow others in this arena.

TAKE-HOME POINTS

- An unsustainable national health care spending trajectory has focused considerable scrutiny on medical imaging as a potential cost driver.
- Radiology benefits managers and DS systems have both been successful in slowing imaging volume growth, but their promulgation, in the absence of active radiologist involvement in UM, risks further commoditization of radiologists' services.
- Evolving trends suggest the potential for increased convergence of these historically competing approaches to control imaging volume.
- The ultimate role of practicing radiologists in this evolution is uncertain and will likely hinge less on technological developments than the ability of radiologists to adapt to ongoing cultural and structural changes in health care payment systems.

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