

REVIEW ARTICLE

Enforcing Quality Metrics over Equipment Utilization Rates as Means to Reduce Centers for Medicare and Medicaid Services Imaging Costs and Improve Quality of Care

Amit Sura, Alexander Ho

Department of Radiology, St. Luke's-Roosevelt Hospital Center, New York, USA

Address for correspondence:

Dr. Amit Sura,
Department of Radiology,
1000 Tenth Ave. Rm 4A10,
New York 10019, USA.
E-mail: asura@chpnet.org



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ABSTRACT

Radiology has been the focus of efforts to reduce inefficiencies while attempting to lower medical costs. The 2010 Medicare Physician Fee Schedule has reduced Centers for Medicare and Medicaid Services' (CMS) reimbursements related to the technical component of imaging services. By increasing the utilization rate, the cost of equipment spreads over more studies, thus lowering the payments per procedure. Is it beneficial for CMS to focus on equipment utilization as a cost-cutting measure? Can greater financial and quality of care rewards be made by improving metrics like appropriateness criteria and pre-authorization?

On examining quality metrics, such as appropriateness criteria and pre-authorization, promising results have ensued. The development and enforcement of appropriateness criteria lowers overutilization of studies without requiring unattainable fixed rates. Pre-authorization educates ordering physicians as to when imaging is indicated.

Key words: Appropriateness criteria, pre-authorization, quality metrics, utilization rate

INTRODUCTION

Identified need to reduce imaging expenditures

March 24, 2010, marked a historical day in healthcare. The Patient Protection and Affordable Act was signed by

President Obama. The Act looked to expand healthcare coverage to the 46.6 million uninsured while controlling costs specifically related to the inefficiencies of Medicare. Procedures and tests within other specialties have been scrutinized; however, diagnostic imaging, in particular, has been the focus of such cost-cutting measures.

During 2000-06, diagnostic imaging represented the highest growth rate in Medicare expenditures compared to any other specialty. Spending on imaging studies per Medicare beneficiary nearly doubled, rising on average from \$220 to \$419 per beneficiary. In 1985, the number of MRI studies per 1000 beneficiaries was almost zero.

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By 2006, 173 MRI studies per 1000 beneficiaries were performed, resulting in an additional \$2.25 billion in costs.^[1,2] The Deficit Reduction of 2006 did slow imaging expenditures by leveling payments for studies conducted both at inpatient and outpatient imaging facilities, but physicians responded by conducting four times the volume in subsequent years.^[2] In 2008, there were 4,208 imaging procedures per 1000 beneficiaries performed at a cost to Medicare of close to \$12.1 billion dollars compared to approximately 2,897 procedures per 1000 beneficiaries and \$5.5 billion dollars in 1998.^[3] This led the American College of Radiology (ACR) to announce in 2009 its commitment to eliminate 100% of inappropriate imaging, while providing additional resources to support tracking and profiling of inappropriate ordering by the referring physicians.

Centers for Medicare and Medicaid Services' action plan: Will it work?

In addressing imaging costs, the new bill reduces Centers for Medicare and Medicaid Services' (CMS) reimbursements attributed to the technical component of advanced imaging services. Currently, reimbursements are based on equipment utilization. A relative value scale (RVS) is assigned to each test conducted, such that the cost of the equipment can be spread over time. By increasing the utilization factor, the cost of the equipment can be spread over more imaging studies conducted, thus lowering reimbursements per procedure.

Congress and the 2010 Medicare Physician Fee Schedule looked to initially adopt a 90% utilization rate. However, the average utilization rate for facilities nationwide is 25 hours per week or 48- 54%, with non-rural facilities utilizing their machines an average rate of 56%. Realizing that such expectations were not possible, the final version of the Bill established a 75% utilization rate, still higher than the 62.5% that the high performing hospitals averaged in 2009.^[4]

If the rate of imaging studies conducted during 2000-06 remained at these levels, such a utilization rate, though difficult, could hypothetically be achieved. However, imaging studies conducted since have slowed. From 2005 to 2008, there has been only a 1.8% increase in the rate of total imaging studies conducted compared to an average increase of 5.6% during 2000-06. With this has come a decline in the rate of imaging reimbursements by 0.76% during 2005-08 compared to the rise during 2000-06 by nearly 10.8%.^[1]

With such data in hand, is it beneficial for the Center of Medicare and Medicaid to focus on equipment utilization

as a cost-cutting measure, with the uncertainty of rural imaging centers meeting such standards? Will the Bill deny critical diagnostic tests to many of the underserved beneficiaries, whose care they look to improve? Alternatively, can greater financial and quality of care rewards be made by improving and enforcing discipline in the field of imaging such as: appropriateness criteria, pre-authorization to limit overutilization of imaging services, and quality metrics?

When imaging centers were questioned about how they would react if the new utilization rates were to take place and corresponding reimbursements would drop, their responses were worrisome. Of the 117 imaging centers surveyed, 4% would drop out of Medicare, 21% would limit access to Medicare beneficiaries including the closing of imaging centers, 74% would reduce the number of staff and reduce overhead, and 85% would forgo technology upgrades if faced with a 25% reduction in Medicare global service payments. If imaging centers were to experience a 50% cut, 29% would drop out of Medicare, 41% would limit access to Medicare beneficiaries, 46% would close imaging centers, 75% would reduce the number of staff and reduce overhead, and 78% would forgo technology upgrades.^[5]

With such consequences a near reality, the fear is as follows. With rural imaging centers utilizing their equipment at or below 48% of the expected time, losses become inevitable. At first, managers will choose to discontinue less profitable yet needed imaging services like mammography. Even worse, if profits do not meet operating costs, many centers will be forced to close down, denying CMS beneficiaries access to vital imaging studies. Radiologists and patients will shift to urban centers, leaving rural communities with a lack of imaging resources.

Other potential solutions

Other methods must be examined to lower costs while providing imaging services to the newly insured. Establishing quality metrics, implementing new and improved appropriateness criteria to supplement ACR's, and enforcing prior authorization through independent organizations as a means to control overutilization have been shown to be effective without compromising access to quality care. CMS must seriously consider such solutions.

For instance, in 1997, the Mammography Quality Standards Act required that all mammograms be assigned a BI-RADS category based on the findings of most concern. For the first time, a quality assurance tool, similar to pay for performance metrics in other fields of medicine, was set

as a guide to standardize breast imaging reports. Universal terminology instituted national guidelines for radiologists to follow. By establishing category 3; probably benign findings, 11% of all findings in 1999 needed no further workup, saving women from the emotional trauma and costs of additional ultrasounds, biopsies, and surgical excisions.^[6]

An additional method of adhering to and enforcing appropriateness criteria that has demonstrated success in curbing overutilization is ACR's recent evaluation of computer-based programs that provide decision support at the time of ordering an imaging test. By utilizing the ACR's appropriateness criteria within software programs, clinicians are guided not only to determine if the exam is needed but also whether the modality they are using is clinically indicated. Data can also be collected to assess peer-to-peer evaluation in adhering to the criteria as well as to identify knowledge gaps amongst physicians' perceptions of what should be ordered and where learning to order the correct test needs to be directed.

While site specific examples have shown that with implementation, the rate of increase in imaging services and costs has in fact been lowered, difficulties lie ahead in coordinating the large collaborative effort needed from public and private insurers, hospitals, and radiologists to spearhead such a program.^[7] Regardless, such computer software is being studied closely for its potential cost saving effects, most notably by the Human Health and Services, and will likely be the basis of pay-for-performance metrics.

In enforcing pre-authorization, CareCoreNational, a large radiology benefit management company has succeeded on many fronts. In a process that involves using the American College of Radiology's appropriateness criteria and evidence-based medical literature, CareCore National denies 15-20% of the four million requests from physicians each year. In a study conducted in 2008 that focuses on its Medicare beneficiaries, there was a 12.0% rejection rate for the 773 studies asked to be performed based on inappropriate indications. Rates of denial for various specialties were compared, with general surgeons incurring the highest rate of inappropriateness at 23% and orthopedists most familiar with imaging criteria and indications, representing the lowest rate of denial at 8.0%.^[2] The study demonstrated that denial can reinforce appropriate care, serve as a learning tool for physicians, and avoid superfluous tests. CMS should look to such independent bodies or enforce the restructuring of radiology departments to achieve similar results.

CONCLUSION

By implementing equipment utilization rates as a means to lower costs, CMS will limit imaging resources for the flux of new enrollees who will need such studies. An equipment utilization rate of 75% is not feasible in an environment where the rate of imaging studies conducted is decreasing. Unintended negative consequences to the quality of and access to affordable healthcare will be placed on beneficiaries. Rural imaging centers that operate close to 30% below what is to be expected will be forced to deny Medicare patients of vital tests. Patients will be forced to seek inaccessible urban hospitals, limiting the ease with which patients can be diagnosed and treated.

Instead of enforcing unattainable equipment utilization rates, CMS should focus efforts on improving quality of care and its relation to diagnostic imaging as a means to reduce costs. Just as the Mammography Quality Standards Act has prevented unwarranted additional imaging procedures and diagnostic tests in breast radiology, so too can standards develop for other imaging modalities and their indications. By enforcing and improving ACR's current appropriateness criteria as well as developing quality metrics in the manner in which imaging tests are ordered and how reports are dictated and delivered, CMS can achieve success in limiting overutilization of imaging studies, while lowering costs.

Placing importance on pre-authorization can act as a second line of defense. CareCoreNational is an example of how educating ordering physicians through the denial method can confirm when appropriate radiological imaging is indicated. Communication between radiologists and ordering physicians will be encouraged to determine what is deemed best for the patient. Even if physicians respond by trying to order more inappropriate tests to compensate for those getting denied, authorization will not be granted as the appropriate criteria are not met.

REFERENCES

1. The Moran Company. Trends in Imaging Services Billed to Part B Medicare Carriers and Paid under the Medicare Physician Fee Schedule, 1998-2008. October 2009. Available from: <http://www.acr.org/Hidden/Economics/FeaturedCategories/WhatsNew/MoranStudy.aspx>. [Last accessed on 2010 April 4].
2. Iglehart JK. Health insurers and medical imaging policy: A work in progress. *N Engl J Med* 2009;360:1030-7.
3. United States Government Accountability Office. Medicare Part B imaging services, rapid spending growth and shift to physician offices indicate need for CMS to consider additional management practices. June 2008. Available from: <http://www.gao.gov/new.items/d08452.pdf>. [Last accessed on 2010 April 4].
4. ACR Backed Amendment to Mitigate Damage to Medical Imaging Access Blocked in Senate. Available from: <http://www>.

- acr.org/SecondaryMainMenuCategories/New_Publications/FeaturedCategories/CurrentACRNews/archive/ACR-Imaging-Emendment-Fails.aspx. [Last accessed on 2010 Mar 25].
5. American College of Radiology and Radiology Business Management Association. Medicare impact survey data. Available from: <http://www.acr.org/Hidden/Economics/FeaturedCategories/WhatsNew/DRACutsFactSheet.aspx>. [Last accessed on 2010 Feb].
 6. Orel SG, Kay N, Reynolds C, Sullivan DC. BI-RADS categorization as a predictor of malignancy. *Radiology* 1999;211:845-50.
 7. Reiner BI, Siegel EL. Decommoditizing radiology. *J Am Coll Radiol* 2009;6:167-70.

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