MEDPAC Medicare Payment Advisory Commission

TESTIMONY

MedPAC recommendations on imaging services

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Statement of
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Subcommittee on Health
Committee on Energy and Commerce
U.S. House of Representatives

Chairman Deal, Ranking Member Brown, distinguished Subcommittee members, I am Glenn Hackbarth, Chairman of the Medicare Payment Advisory Commission (MedPAC). I appreciate the opportunity to be here with you this morning to discuss the quality and volume of imaging services for Medicare beneficiaries.

Technological progress in imaging over the past years, and its promise for improving diagnosis, treatments, and health outcomes are impressive. In addition, improvements in technology have made those services available outside the hospital in settings such as imaging centers and doctors' offices—with concomitant improvements in convenience for patients. However, at the same time there has been rapid and sustained growth in the volume of imaging services for Medicare beneficiaries; and there are concerns about potential overuse of imaging services, quality problems, and possible inaccuracies in Medicare payment rates. As an example of the rapid growth in imaging, according to the Wall Street Journal, there are now more magnetic resonance imaging (MRI) scanners in the Pittsburgh area than in all of Canada and, in 2003, there were over 13 computed tomography (CT) scans provided for every 100 members of the largest health plan in the area.

The Commission has investigated imaging quality and growth through data analysis, consultations with private sector experts in the management of imaging services, discussions with medical specialty societies, and a review of the available literature. After public discussion and deliberation the Commission, by a unanimous vote among those present, recommended in our March 2005 report that:

- the Secretary of HHS improve Medicare's coding edits for imaging studies,
- the Congress direct the Secretary to set standards for all providers who bill Medicare for performing and interpreting diagnostic imaging services,
- the Secretary measure physicians' use of imaging services so that physicians can compare their practice patterns with those of their peers, and
- the Secretary strengthen the rules that limit physicians' financial incentives to order more imaging services.

Taken together, these actions should help add value to the imaging services Medicare buys.

While we are pleased that some of our recommendations have been adopted by the Congress and the Centers for Medicare & Medicaid Services (CMS), we believe that it is important for all of our recommendations to be implemented. The concerns identified in our March 2005 report have not diminished.

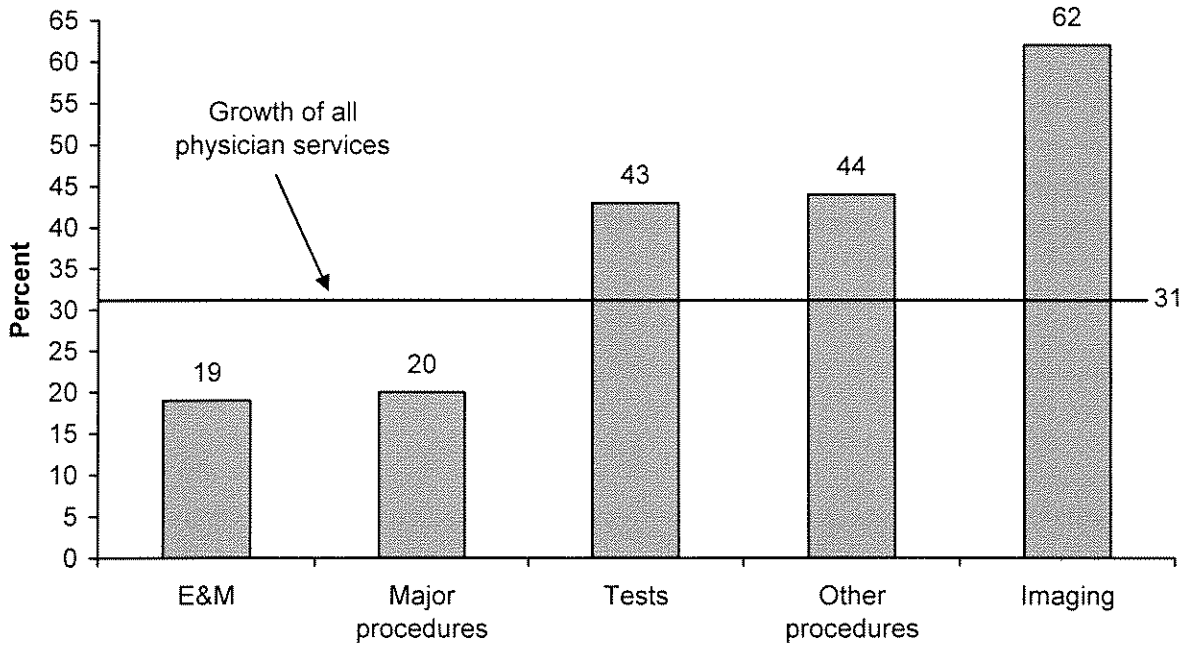
Growth has been dramatic

Diagnostic imaging services paid under Medicare's physician fee schedule grew more rapidly than any other type of physician service between 1999 and 2004. While the sum of all physician services grew 31 percent between those years, imaging services grew twice as fast, by 62 percent (Figure 1). This measure is the growth in the volume and intensity of services per beneficiary; we have removed changes resulting from increases in the number of beneficiaries and changes in prices during those years. Not all imaging services grew at this rate; some grew more slowly while some grew faster. Advanced imaging and nuclear medicine services, which are among the most expensive studies, led the way: MRI of parts of the body other than the brain grew by 140 percent; nuclear medicine grew 112 percent; and CT of parts of the body other than the head also grew 112 percent (Figure 2).

In dollar terms, Medicare spending for imaging services paid under the physician fee schedule (including beneficiaries' cost sharing) grew by nearly 90 percent, from $5.8 billion in 1999 to $10.9 billion in 2004. Increased spending on these services has also led to higher Part B premiums for beneficiaries.

FIGURE 1

Imaging shows highest cumulative growth in services per beneficiary (1999–2004)



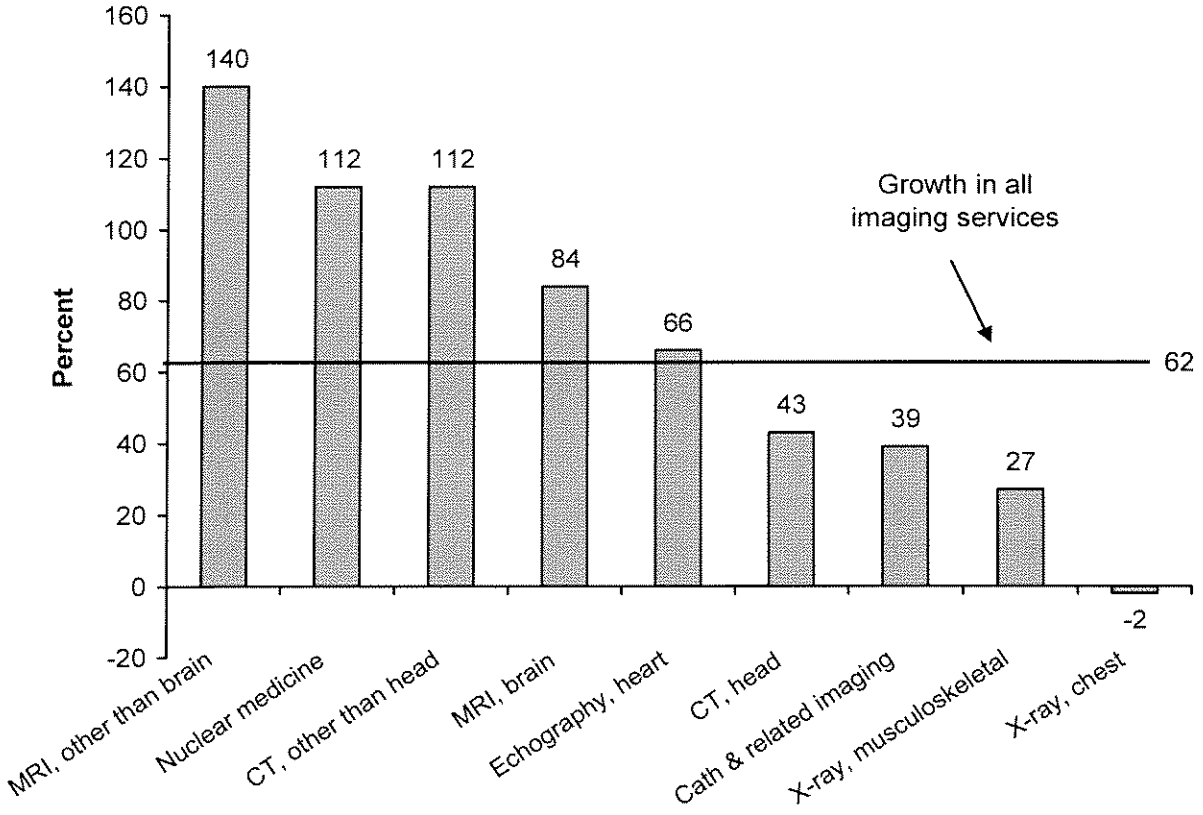
Note: E&M (evaluation and management).

Source: MedPAC analysis of Medicare claims data.

Some argue that much of this increase was attributable to the movement of imaging from hospital outpatient departments to settings paid under the physician fee schedule. However, we estimate that only about 20 percent of the growth in the volume and intensity of fee schedule imaging services between 1999 and 2002 was related to the migration of imaging from facility settings (such as hospitals) to physician offices. The remaining 80 percent of growth was related to factors other than shifts in site of care. The movement of imaging from outpatient departments to physician offices raises another concern: the institutional standards that govern the performance and interpretation of studies in hospitals are usually absent in physician offices.

FIGURE 2

Cumulative growth in imaging volume per beneficiary varies (1999–2004)



Note: MRI (magnetic resonance imaging), CT (computed tomography), cath (cardiac catheterization).

Source: MedPAC analysis of Medicare claims data.

The growth in imaging services could be driven by various factors, among them:

- technological innovation that has improved physicians' ability to diagnose disease and made it more feasible to provide imaging procedures in physician offices,
- patients' desire to receive diagnostic tests in more convenient settings,
- physicians practicing defensive medicine,
- possible misalignment of fee schedule payment rates and costs, and
- physicians' interest in supplementing their professional fees with revenues from ancillary services.

Some of these factors raise concerns that not all of the growth in the use of imaging services may be appropriate, and that quality safeguards may need to be put in place.

Are all imaging services appropriate?

The use of imaging services varies widely across the country. In fact, the average use of imaging services in one area can be three times the average use in another area. This variation is twice that seen in the use of major procedures. This finding raises a concern about the value of some of those services because geographic areas with a disproportionate use of health services in general do not have better health outcomes, according to researchers at Dartmouth Medical School (Fisher and Wennberg). Those researchers also find that wide variations in the use of discretionary services, such as imaging and diagnostic tests, are sensitive to the supply of physician and hospital resources.

In a separate study for MedPAC, Dartmouth researchers found that regions providing more imaging services do not have higher survival rates among Medicare beneficiaries. Their study examined whether long-term survival in three cohorts—patients with heart attacks, colon cancer, and hip fractures—was better in regions with higher versus lower imaging use. They found that increased use of imaging services was not associated with improved survival in any of the three study groups. Although survival is a limited measure of quality, this analysis raises questions about the value of additional imaging.

In addition, there is specific evidence that at least some imaging services are overused. According to the American College of Radiology (ACR), patients with uncomplicated low back pain (without serious risk factors or signs of serious pathology) should not receive imaging studies. However, the National Committee for Quality Assurance found that nearly one-fourth of patients with low back pain in managed care plans received unnecessary imaging services, based on the ACR standard. These unnecessary tests included plain X-rays as well as costly MRI and CT scans.

Quality varies

According to published studies and health plans we consulted, providers vary in their ability to perform quality imaging procedures. In one study, published in *Radiology* (1998), BlueCross BlueShield of Massachusetts inspected 1,000 imaging providers to evaluate the quality of their equipment, technicians, and other features. These providers offered a variety of modalities, including MRI, CT, and nuclear medicine. Nearly one-third of the providers had at least one

serious deficiency, such as film processing problems, failure to monitor radiation exposure, poor image quality, or uncalibrated equipment. Eleven percent of the providers had severe problems that could not be easily remedied, while 20 percent had deficiencies that could be remedied. Although chiropractic and podiatric offices were most likely to have had problems, many other specialties also had deficiencies.

According to a study in the *American Journal of Roentgenology* (2000), another health plan that inspected almost 100 nonradiologist offices that provided radiography services identified serious problems in 78 percent of the offices. These problems included lack of proper image identification (e.g., noting left or right side of body) and use of equipment that had not been inspected during the previous year.

In our March 2004 public meeting a panel of health plans and imaging benefit managers informed us that some providers fail to meet standards because their imaging equipment is old or not working properly. Physician offices sometimes acquire used equipment from a hospital and continue to use that equipment beyond its useful life.

Quality problems may lead to duplicative studies, inaccurate studies, missed or inaccurate diagnoses, and inappropriate treatment. A study published in the *Journal of Vascular Surgery* (2004) found that vascular ultrasound providers that were not accredited often produced inaccurate carotid ultrasound examinations. In that study, carotid ultrasound tests performed by nonaccredited labs for 174 patients were repeated by an accredited lab that followed standards for diagnostic criteria, testing protocols, and technician training. For 61 percent of the patients, findings by the accredited lab contradicted findings by the nonaccredited providers in a way that would affect patient management. The nonaccredited providers had either significantly overestimated or underestimated disease severity. Studies that overestimated severity could have led to unnecessary surgery for 88 patients and studies that underestimated severity could have resulted in no surgery for 19 patients who needed it.

There may also be problems with the quality of interpretation of imaging. For example, in one study published in the *Annals of Emergency Medicine* (1995), over 500 CT scans that were interpreted by emergency physicians were also read by radiologists. Radiologists disagreed with

the emergency physicians' interpretations in 39 percent of the cases, some of which were potentially clinically significant misinterpretations (e.g., major false negatives or positives). Another study by an imaging benefit company found physicians' interpretation reports, which are an integral part of a diagnostic examination, to be incomplete. The study found half of the reports examined lacked information on the indication for the study and many lacked information on the views taken.

Setting standards for imaging providers and interpreters

The lack of quality oversight for imaging tests provided in physician offices and rapid volume growth lead to our first recommendation: The Congress should direct the Secretary to set standards for providers who bill Medicare for performing and/or interpreting diagnostic imaging studies. To reduce the burden on CMS, the Secretary should select private sector organizations to administer the standards. As many physicians integrate imaging services into their office practices, ensuring that these studies are done by skilled technicians using appropriate equipment and interpreted by qualified physicians should improve the accuracy of diagnostic tests and reduce the need to repeat studies, thus enhancing quality of care and helping to control spending.

Requiring physicians to meet quality standards as a condition of payment for imaging services provided in their offices would represent a major change in Medicare's payment policy. Traditionally, Medicare has paid for all medically necessary services provided by physicians operating within the scope of practice for the state in which they are licensed. We believe that this policy change is warranted by the growth of imaging studies provided in physician offices and the lack of comprehensive standards for this setting. There are some limited precedents for this policy in imaging.

Current standards

Aside from a physician supervision requirement, no national Medicare standards for imaging apply to physician offices, and some imaging modalities, such as MRI, are not covered by any government standards. CMS has developed national standards for imaging provided in hospitals and independent diagnostic testing facilities. For example, hospitals that treat Medicare beneficiaries must comply with Medicare's conditions of participation, which include standards

for radiology services. In addition, several Medicare carriers have minimum standards for the quality of some types of ultrasound studies performed in either hospitals or physician offices, but these standards have not been adopted nationally.

There are also two limited cases where Medicare has set standards for imaging interpretation. First, the Medicare carrier for New York (Empire) sets standards for physicians who wish to bill for interpreting an echocardiography study. Another exception is contained in CMS's recent decision to cover positron emission tomography (PET) scans for the diagnosis of patients with mild cognitive impairment and early dementia. The coverage decision specifies that tests be interpreted by physicians only in certain specialties, such as nuclear medicine and radiology, who have expertise in reading these scans.

There is a national standard for mammography. Under the Mammography Quality Standards Act, the Food and Drug Administration (FDA) develops and enforces quality assurance standards for mammography equipment, technical staff, and the physicians who interpret mammograms. The GAO has credited the FDA standards with improving the quality of mammograms without decreasing access. Failure rates for image quality decreased from 11 percent before the Act to 2 percent after.

State radiation control boards license facilities that use radiation-producing equipment (such as X-ray and CT machines), but their primary mission is to ensure patient safety rather than the quality of images, and the standards are not always comprehensive or rigorously enforced. The state boards do not regulate MRI or ultrasound services.

Several of the private insurers we interviewed require that hospital outpatient departments, freestanding facilities, and physician offices that provide imaging services meet basic standards. These standards relate to the imaging equipment, radiology technicians, image quality, patient safety, and interpreting physicians. Plans and their vendors often require that providers become accredited by a private organization, such as the American Institute for Ultrasound in Medicine (AIUM), American College of Radiology (ACR), or the Intersocietal Accreditation Commission (IAC).

Developing standards

The Congress should grant the Secretary authority to develop standards. The Secretary should review the criteria used by private plans and accreditation organizations, and consult with accreditation organizations, physician groups, and manufacturers when developing these requirements. CMS should strongly consider setting standards for at least the following areas: the imaging equipment, qualifications of technicians, qualifications of the supervising and interpreting physicians, technical quality of the images produced, and procedures for ensuring patient safety.

Several private accreditation programs and one government agency have already developed standards for physicians who interpret certain types of imaging studies and prepare the reports. Accreditation organizations, such as the AIUM, ACR, and IAC, generally set minimum standards for some combination of professional training, experience, and education of physicians who interpret studies. The IAC has demonstrated that it is possible to forge agreement among different specialties on common standards. The IAC has convened representatives of several specialty groups to jointly develop facility and physician standards for echocardiography, nuclear medicine, and vascular ultrasound.

Although private plans sometimes base permission to bill for imaging procedures on the physician's specialty, the Commission has not recommended this approach. The practice of medicine is evolving quickly, and specialty training may change over time. Thus, CMS should develop criteria that allow physicians of different specialties to receive payment for interpreting studies. Similar to the requirements set by private accreditation organizations for interpreting physicians, Medicare's standards should be based on some combination of physician training, experience, and continuing education. Standards will vary for each major imaging modality.

To reduce CMS's administrative burden, the agency should authorize private accreditation organizations to verify that providers meet the quality standards set by the Secretary. CMS should also have the authority to change the roster of organizations that verify compliance. Private insurers often rely on accreditation programs to certify that their providers meet quality standards.

To allow CMS to implement national standards in all settings, the Congress should provide the Secretary with specific statutory authority to do so. Although CMS has set quality standards for various types of providers (such as hospitals and skilled nursing facilities), there are very few examples of federal standards that apply to physician offices (the primary exceptions are mammography and clinical laboratory tests, which are authorized by statute).

Measuring physicians' use of imaging services

The Commission also recommended: The Secretary should use Medicare claims data to measure physicians' resource use and confidentially provide information to physicians about their resource use relative to their peers. Educating physicians about their resource use should encourage those who practice significantly differently than their peers to reconsider their practice patterns. Measuring use of imaging services should be done as part of a broader initiative in which the use of a variety of types of services for episodes of care is measured. In our June 2006 report, we examined one method to achieve this—episode groupers. An episode grouper links all the care a beneficiary receives that is related to a particular spell of illness or episode and adjusts for patient characteristics. This tool could be used to provide information to physicians about their practice patterns and could also help us examine whether imaging substitutes for other types of services.

Expanding coding edits

The Commission's third recommendation was: The Secretary should improve Medicare's coding edits that detect unbundled diagnostic imaging services and reduce the technical component payment for multiple imaging services performed on contiguous body parts. We are pleased that CMS and the Congress (as part of the Deficit Reduction Act, or DRA) adopted our recommendation to reduce payments for multiple imaging services performed on contiguous body parts in the same session.

A number of private plans adjust payments when providers bill for multiple imaging services performed on contiguous body parts. Some private insurers pay the full amount for the first service but a reduced amount (usually half) for the technical component of an additional study that is of the same modality (e.g., MRI or CT). This strategy is based on the premise that savings in clerical time, preparation, and supplies occur when multiple studies of the same modality are

performed during one patient encounter. In last year's physician fee schedule final rule, CMS adopted this policy. The DRA required that savings from this policy go to the Medicare trust fund, rather than be redistributed among other physician services.

Currently, Medicare uses edits to determine whether a claim meets the program's payment rules. Some private insurers have developed their own set of coding edits that go beyond Medicare's existing edits. Some plans have implemented more rigorous policies to address unbundling of services—that is, separately billing for two procedures when one is a component of the other—and billing for mutually exclusive procedures. For example, one imaging benefit manager does not pay for both a CT of the head and CT of the maxillofacial region at the same time because the head includes the maxillofacial area. CMS should develop more extensive edits for imaging services.

Limiting financial incentives for physicians to order more imaging services

The Commission also recommended strengthening the rules that limit physicians' financial incentives to order imaging services for their patients. Specifically, we recommended that the Secretary should:

- include nuclear medicine and PET procedures as designated health services under the Ethics in Patient Referrals Act (the Stark law), and
- expand the definition of physician ownership in the Ethics in Patient Referrals Act to include interests in an entity that derives a substantial proportion of its revenue from a provider of designated health services.

These changes should reduce physicians' financial incentives to refer patients for additional imaging services, which should help control Medicare spending on imaging.

Physician ownership of health care facilities may create a financial incentive to order additional services. Studies by the GAO and others have found that physicians who invest in diagnostic imaging centers or who have imaging equipment in their offices refer their patients more frequently for MRI, CT, nuclear medicine, and ultrasound studies.

The Ethics in Patient Referrals Act prohibits physicians from referring Medicare or Medicaid patients for certain services to providers with which the physician has a financial relationship. It also prohibits those entities from submitting claims for services provided to patients referred by the physician-investor. The law applies to a set of "designated health services" (DHS), which includes radiology and certain other imaging services (MRI, CT, and ultrasound).

Until recently, CMS had excluded nuclear medicine from the Stark law's prohibitions. This decision allowed physicians to invest in freestanding centers that provide nuclear medicine procedures and refer Medicare or Medicaid patients to these facilities. The Commission recommended that CMS add nuclear medicine to the list of designated health services because of the recent rapid growth of these services and their similarity to other imaging services. In last year's physician fee schedule final rule, CMS adopted our recommendation, effective in 2007. Prohibiting physicians from referring Medicare or Medicaid patients to nuclear medicine facilities they own should reduce their financial incentives to refer patients for these services.

In a final rule issued in 2001, CMS created a narrow exception that is inconsistent with the underlying intent of the Stark law. This exception permits physicians to own entities that provide services and equipment to imaging centers and other DHS providers, as long as the physicians do not own the actual entity submitting claims to Medicare or Medicaid. For example, physicians can buy an MRI machine from a manufacturer, lease it to an imaging center, and be reimbursed a fixed amount per use. This arrangement creates a financial incentive for the physicians who lease the MRI to the center to refer patients to that center, which could lead to higher use of services. Prohibiting these arrangements should help ensure that referrals are based on clinical, rather than financial, considerations.

Assuring the accuracy of imaging payment rates

We are also concerned about the accuracy of Medicare's payment rates for imaging studies. In a recent proposed rule, CMS proposed basing payments for the technical component of imaging services on resource use (these rates are currently based primarily on historical charges). These resources include clinical staff, medical equipment, and supplies. Equipment is a large share of the cost of many imaging services, such as MRI and CT. CMS's estimate of the cost of imaging equipment per use may be too high. The agency assumes that imaging machines (and all other

types of equipment) are used 50 percent of the time a practice is open for business. We surveyed imaging providers in six markets and found they were using MRI and CT machines much more frequently, which should lead to lower costs per use. In addition, CMS assumes that providers pay an interest rate of 11 percent per year when purchasing equipment, but more recent data suggest that a lower interest rate may be more appropriate (a lower interest rate would reduce the estimated cost of equipment). CMS should revisit the assumptions it uses to price imaging equipment.

Impacts

Setting standards should increase the quality of imaging services provided to Medicare beneficiaries, not decrease access, and potentially decrease spending by reducing duplication of tests and unnecessary services. Physician resource measurement should educate physicians who have higher use, and has the potential to decrease spending in the long run. Improved coding edits should reduce inappropriate billing and thus decrease spending. Limiting financial incentives for physicians to order imaging services should also help control spending. Beneficiaries will not only experience higher quality imaging services if these recommendations are implemented, but will also benefit from reduced cost sharing and part B premiums.