

News from the ASN

Appropriate Use of Advanced Imaging Services by Providers Who Self-Refer is Saving Medicare Billions

A report by a task-force of the Practice Committee of the American Society of Neuroimaging

RESPONSE TO: *Higher Use of Advanced Imaging Services by Providers Who Self-Refer Costing Medicare Millions*—A GAO report commissioned by Sens. Max Baucus (D-Mont.) and Chuck Grassley (R-Iowa), and Reps. Henry Waxman (D-Calif.), Sander Levin (D-Mich.), and Pete Stark (D-Calif.).

Executive Summary

The GAO has recently performed a study which misrepresents and misallocates the cost of self-referred imaging. They use a radiology-based methodology which exaggerates self-referral even when scanning is appropriate. For only % % of total spending, self-referring physicians keep patients out of the expensive Hospital-ER sphere. By expediting evaluations in the office they provide timely, convenient, cost-effective healthcare. If the GAO recommendations were implemented, we estimate the cost of imaging would increase by about \$1 billion. Also, since more patients would be hospitalized, costs would rise still further. Rather than costing Medicare millions, self-referring doctors save Medicare *billions*.

Background

Imaging is an indispensable part of Medicine that saves lives, reduces the need for biopsies, and keeps patients out of hospitals. Given its enormous value to medical practice it is perhaps surprising, and therefore worth reiterating, that non-hospital imaging costs a total of 0.5% of healthcare (see below), with even this cost in decline.

In the last 20 years, highly qualified physicians have increasingly performed their own imaging studies – without using radiologists – in a practice that some radiologists have dubbed, pejoratively, as “self-referral.” In the same period of time there has been a barrage of studies, sponsored by a radiology lobby, which are critical of this practice. These studies claim that self-referral leads to overutilization, with doctors who use their own imaging equipment portrayed as greedy operators who increase costs by ordering unnecessary scans for personal gain. With a new GAO report¹ self-referring physicians have again come under fire, by the same methods and for the same reasons. Yet self-referral is tightly regulated by the professional societies, the Stark Regulations, and the insurance industry itself, including the Medicare carriers, so the report’s conclusions are incongruous.

We assert that, along with all prior radiology-sponsored studies, the GAO-report argument is incorrect, and that self-referring physicians actually contribute to a *lowering* of costs. In all prior studies on imaging “overutilization” there have been numerous methodological flaws which limit or invalidate their conclusions.²⁻⁴ The GAO unfortunately used a similar methodology⁵ in its own study,¹ with a grossly deficient measure, suggesting at least lack of familiarity with recent literature.

We assess here the inaccuracy of the two GAO-report conclusions:¹

1. In 2010, providers who self-referred likely made 400,000 more referrals for advanced imaging services than they would have if they were not self-referring.
2. Financial incentives for self-referring providers were likely a major factor driving the increase in referrals.

Methodological Flaws of the GAO Study

As we show here, there are three interrelated methodological flaws.

1. The assumption that non-self-referring physicians serve as a reliable yardstick for measuring inappropriate imaging by self-referring physicians.
2. The unforced error of excluding referrals to the Hospital-ER complex – a nexus of high costs.
3. Reliance on counting scans rather than direct costs, which leads to a misinterpretation of scan rate and a miscalculation of costs.

The GAO divides physicians into two groups. In the first, designated “self-referring,” physicians own a scanner and refer all imaging to this scanner. In the second, designated “non-self-referring,” physicians do not own scanners and refer imaging to outside entities. The GAO calculates the *relative* rate of self-referral, i.e. the rate of scanning in the first group compared with the second. Call this relative rate *R*. The GAO erroneously assumes that if $R > 1$, there is inappropriate imaging by self-referring physicians. For 9/13 specialties surveyed, $R > 1$. But in 4 specialties $R < 1$,⁶ a fact that is unexplained by the GAO, and ignored in its conclusion, but that suggests other factors at work.

We assert that *R*, as defined, is a grossly deficient measure that cannot reveal overutilization,²⁻⁴ because modern outpatient practice will usually skew *R* upwards, even though utilization is appropriate (see below). The GAO focus on *R* therefore results not only in a misrepresentation of utilization, but a misrepresentation of costs.

1. By focusing on *R* rather than costs, the GAO fails to capture the substantially higher costs associated with use of hospital equipment for both inpatient and outpatient evaluations.
2. When a physician owns a scanner he is much less likely to hospitalize patients². This is important because it is still standard of care to hospitalize patients for tests, many of which, if not most, now involve imaging. This common and expensive practice is invisible to the GAO, because the Hospital-ER complex is excluded from analysis. On the other hand, self-referring physicians can evaluate patients quickly and inexpensively in the office. As a result, patients who were previously hospitalized will now be visible, and will be scored by the GAO – correctly – as self-referral. However, even though the self-referral is entirely appropriate, there will be a corresponding rise in *R* when a physician acquires a scanner, or switches from non-self-referrer to self-referrer,⁷ and begins scanning responsibly. At the same time costs will *decrease*.

3. When a non-self-referring physician knows that a specialist operates a scanner he is more likely to send patients directly to the specialist, rather than to a radiologist.³ This will result in fewer imaging referrals by non-self-referring physicians, and more self-referrals by the specialist. R will therefore rise, *even when all scanning is appropriate*. This also explains why R rises abruptly for “switchers,”⁷ which the GAO instead naively attributes to overutilization.

To be clear, the following observation emphasizes why R is a grossly deficient measure. Consider a community where cardiologists are divided into two groups. Group A consists of non-self-referrers sending patients to the hospital for imaging, while Group B sets up a scanner. It now becomes more convenient for a busy cardiologist in Group A to send every patient who needs imaging to Group B, rather than spend the time required to order the studies himself. All scans are appropriate, costs decline dramatically, yet R is infinite.

4. When a physician operates a particular kind of scanner he is presumably less likely to use a different device deemed to give equivalent information. For example, a neck MRA may now be self-referred to his MRI scanner, rather than a CTA sent to the Hospital-ER complex, for evaluation of the vessels supplying blood to the brain. R will therefore rise even though there is no overall increase in imaging. The GAO should have looked at the total number of studies (MRI + CT) sent by individual physicians.
5. The conclusion of the GAO study is difficult to reconcile with the fact that $R < 1$ for referral of imaging studies in several physician groups,⁶ a fact that goes unexplained. We offer here a partial explanation. These groups include Family Practice and Internal Medicine, generalists who are less likely to be referred to by other physicians, and to whom point (3) does not apply. This is actually direct evidence that physicians self-refer responsibly.

The Medical and Fiscal Consequences of the GAO Report

Imaging has now insinuated itself into every aspect of patient care and has transformed Medicine in ways almost unimaginable 20 years ago. Setting aside the obvious contributions to healthcare, self-referred imaging has almost certainly contributed to cost reduction. It has greatly reduced the need for biopsies and exploratory surgeries. It has replaced some expensive and inaccurate nuclear medicine techniques, and has sharply reduced invasive studies such as angiograms. Finally, and perhaps most importantly, it has kept patients out of the Hospital-ER complex.

Yet contrary to popular opinion, and partly because of competition, imaging outside of the hospital realm is actually quite inexpensive. Indeed overall costs have been declining in recent years⁸, including the cost of self-referred imaging, which is already very low.

To be precise, *non-hospital* imaging, as surveyed by the GAO, represents just 0.5%^{9,10} of Medicare spending, and is in decline. Of this, the self-referred imaging targeted by the GAO is less than one third, or 0.16% of spending^{9,10} – *one sixth of one percent* – and is in decline.

In targeting self-referral the GAO fails to address the most important cost issue of all. We have mentioned that non-hospital outpatient imaging costs only 0.5% of healthcare. However *hospital* outpatient imaging, as shown in the GAO report,

involves 3.4 times the number of scans as the non-hospital realm.¹¹ Furthermore, hospital outpatient imaging is substantially more expensive than non-hospital imaging,^{12,13} on a per scan basis. A recent estimate put the average hospital markup at 2.41.¹⁴ It can therefore be estimated that hospital outpatient imaging costs roughly 8 times as much as nonhospital imaging, or 4% of total healthcare, often without added benefit¹³.

And this is just for MRI and CT. If all of imaging is included, hospital-based imaging may plausibly account for as much as 10% of healthcare and growing. This proportion does not include the cost of the inpatient hospital evaluations, which are excluded by the GAO. To ignore this ocean of hospital expense in the name of cost analysis is to ignore the elephant in the room while criticizing the furniture.

With the shift of physicians to hospital employment, the GAO has ignored one of the most important cost drivers of healthcare inflation. More precisely, in transferring from the office to the hospital, current office-based imaging costs would be amplified by the hospital markup of 2.41, which amounts to more than \$1 billion. There would also be much more in the way of inpatient evaluations. Far from saving Medicare millions, therefore, the GAO recommendations would accelerate this shift and end up costing Medicare billions.

Conclusion

In yet another in a long series of studies using a similarly flawed methodology, the GAO provides no evidence of overutilization of imaging by self-referring physicians. The method of analysis has already been discredited,²⁻⁴ in a critique that is amplified here. Despite its conclusions, the GAO provides information suggesting that self-referring physicians actually contribute to lowering costs, as was found recently in cardiology.¹⁵ As we show here, for MRI and CT alone, this can be expected to be in the billions of dollars.

While it can be assumed that the rationale for the study was a perception that the cost of self-referred imaging is high, the reality is quite the opposite. *Non-hospital* self-referred imaging is inexpensive, is tightly regulated, and is associated with declining costs.

Put another way, given the enormous value of imaging, the whole issue of self-referral is a radiology-inspired storm in a fiscal teacup. A typical mistake in the radiology literature, also implicit in the GAO report, is the assumption that physicians operate scanners for love of money – even though there is precious little to be made these days – rather than for love of practice. But the fact that costs have declined cannot be explained if doctors were, as the GAO gratuitously asserts, self-referring for personal gain. If doctors were only interested in personal gain, why was there not a dramatic increase in the number of self-referrals after the Deficit Reduction Act in 2008?⁸ And why did self-referred imaging decline in 2010?⁸

In summary, there are three interrelated flaws which boil down to two key problems with the study. The first problem is the use of a discredited measure which overestimates and misrepresents self-referral. The second is that in focusing on self-referral, the GAO ignores the real driver of costs. If self-referring physicians were ever denied access to office-based imaging as a result of decisions based on this study, standards would decline just as costs would increase by billions of dollars per year.

Disclosure: Michael Hutchinson, Michael Kushner, and Vernon Rowe are physicians who self-refer imaging.

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