

# Managing the Cost of Diagnosis

With diagnosis accounting for 10 percent of medical costs, there's a big opportunity to save. Did someone say 'diagnosis benefit manager'?

By Lynn Feldman  
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**T**he recession and the focus of the Obama administration on health care mean that saving money and improving health care quality are now high on everyone's "to do" list. Anything that both saves money and improves quality should be very high on the list.

Why, then, is improving medical diagnosis — a huge potential area for saving money and improving quality in medicine — still missing from such lists? Today, medical diagnosis accounts for about 10 percent of all medical costs, or \$250 billion per year in the United States, yet it is not managed as a category, even though it is expected to grow three- or four-fold over the next decade, much faster than the rest of medicine.

Normally, a growing category is in everyone's sights, reflecting the maxim "What gets measured gets done." However, the current system tracks only three categories of costs: office visits, interventions, and drugs. This system makes it difficult to tease out the costs of diagnosis. In most of the recent major reports on health care and cost management, costs relating to diagnosis are not even mentioned. Just last November, outgoing Secretary of Health and Human Services Michael Leavitt confirmed to me that the government was not yet focused on diagnosis as a cost category.

What has raised diagnosis costs from \$90 billion

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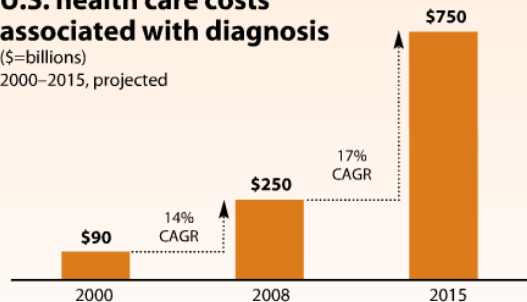
in 2000 to \$250 billion in 2008? Routine blood tests have grown in complexity and utilization, but they are not the primary driver of cost or growth. Innovations in medical imaging equipment have helped drive 14 percent growth in overall diagnosis costs per year, and innovations in genetic tests are expected to be an important additional driver of growth.

## Why doctors order diagnostic tests

Understanding how to manage costs, however, requires a better understanding of the three situations when doctors order expensive tests.

## U.S. health care costs associated with diagnosis

(\$=billions)  
2000–2015, projected



CAGR = Compound annual growth rate  
Sources: Frost and Sullivan; U.S. Census; MGI analysis; McKinsey & Co., genetic testing company interviews, SimulConsult analysis

1. *Population screening, such as mammograms.* Population screening is typically a public health-driven process, where the costs and outcomes of not screening are weighed against the benefits. In this area, there is often robust cost-management debate.

2. *Complaint-driven diagnosis, such as back pain, persistent headaches, or uncommon patterns of symptoms and observable signs.*

Clinicians overspend today on complaint-driven diagnosis, not so much for malpractice as is often assumed, nor as an unintended consequence of

payer, particularly Medicare, incentives. True complexity is the real driver.

Five decades ago, the Norman Rockwell-era doctor knew what there was to know (a few hundred common and a few hundred uncommon diseases) and could treat fewer than half those diseases. He had limited need for diagnostic support; his intuition and memory sufficed.

In contrast, the number of separate diagnoses now exceeds 8,000, having averaged 5 percent growth per year for 60 years, a pace likely to continue as genetic research subdivides existing diseases into genotypes to be treated. Recognizing this complexity, the National Institutes of Health (NIH) has established the new Undiagnosed Diseases Program, an initiative that will help drive the number of known diseases even higher.

Meanwhile, to cope with this level of complexity, subspecialists have emerged and often schedule multiple consults and tests in parallel. Part of the reason for this scattershot approach is a desire to arrive at a diagnosis in a timely way, but part is a response to incentives that reward testing, which can be measured, and discourage thinking, which is difficult to measure. The result, however, is striking. Complex workups routinely cost \$10,000–\$15,000 where \$1,000–\$2,000 would do, if only the doctors could be sure of precisely which test to order.

3. *Treatment selection, post-initial diagnosis, such as finding a cancer patient's tumor genotype to identify which treatment protocol to use.* Diabetes monitoring would also fit in this category.

There is an important trend toward “personalized medicine” using genetic and antigen tests to treat cancers and some other illnesses differently depending on the molecular subtypes.

#### Past successes

How has the U.S. health care system dealt with cost management of this sort? Perhaps the most successful approach has been benefit management. Pharmacy benefit management is the best-known example.

Twenty-five years ago, prescription drugs were a small and unmanaged category. Payers lacked the evidenced-based outcomes data and other expertise to influence drug selection and level of use. At

the time, prescription drugs accounted for only a small percent of health care costs. However, because of advances in biomedical knowledge and the realization that pharmaceuticals could lower other costs in health care, it was clear that such expenses were poised to increase, and some far-thinking executives recognized an opportunity to specialize.

You know the story — the pharmacy benefit managers (PBMs) went to employers and said that in exchange for a fee per member they would carve out and manage all costs related to prescription drugs.

Later, they also sold the services as a private label or branded part of insurers' offerings. Eventually, payers built their own PBMs.

How were PBMs able to deliver lower costs than the traditional payers? The savings came from three advantages of specialization and focus.

1. *Utilization.* They made extraordinary use of outcomes information to influence utilization. In particular, they reduced use of ineffective treatments and educated physicians to switch to generic drugs where effectiveness was equivalent.

2. *Volume discounts.* The PBMs made use of their concentrated buying power to get volume discounts, and offered those by way of mail-order pharmacies.

3. *Coverage.* The PBMs used the information on utilization and efficacy to design plan coverage.

#### Diagnosis benefit managers?

Could diagnosis benefit managers be the answer to today's diagnosis-related costs? Such costs are now managed in haphazard ways in terms of coverage, utilization management, and use of volume discounts, substitutes, and other price management measures.

Diagnosis benefit managers (DBMs) are beginning to emerge, focused on managing the costs of diagnostic tests, using PBM-like strategies. Harnessing data analysis will be essential. However, to deal with the complexities of diagnosis, DBMs will need to adopt some new types of decision support tools for the doctor (not just the office staff) to use at the point of care.

Interestingly, the team that built the extraordinarily successful PBM Merck Medco has just founded a DBM focused on genetic testing, Generation Health. Among its investors is the CEO of



**Diagnosis benefit managers** are taking pages from the development of pharmacy benefit managers 20 years ago, says Lynn Feldman of SimulConsult.

D2Hawkeye (now owned by ISO), a risk and outcomes company.

We should expect companies such as Generation Health to find self-insured employers interested in managing this cost category, just as employers were early to see the advantage of PBMs. DBMs are likely to use negotiated volume discounts to cut the costs of genetic tests. They are also likely to study outcomes data and clinical research to see which treatments are most effective for specific molecular subtypes, and then to use that data to avoid costly, ineffective treatments.

Managing radiological scan usage is ahead of such management of genetic testing. Five radiology DBMs have emerged, among them HealthHelp. Physicians must call ahead to HealthHelp to get a pre-authorization code. Routine items are handled by nurses; specialists provide expert consults for unusual cases.

NaviNet is another player in the RadDBM space. It helps support the workflow of ordering and viewing scans and has used information analysis to create clinical rules. Thus far, NaviNet has not gone all the way to a capitated carve-out model and it may elect to remain a technical supplier to DBMs or to integrate forward to capture those revenues itself.

To deal with the fact that the problem of diagnosis is much more complex than the treatment problem tackled by PBMs 20 years ago, a second type of resource will be needed: diagnostic decision support tools. With 8,000 (and rising) separate diseases, each with 15 or more distinguishing characteristics, the challenge of diagnosis has moved beyond the ability of human memory to cope on its own.

As Clay Christensen pointed out in his new book *The Innovator's Prescription*, the body has "a limited vocabulary" for expressing disease — only a couple of thousand symptoms and observable signs — something well within the ability and experience of generalist physicians to remember and assess. Thus the tool they need is one that enables them to go from a patient's specific symptoms, "signs" (observations from a clinical exam), and test results (what physicians call "findings") to a list of diseases ranked by probability (which physicians call "the patient's differential diagnosis").

The need for such a resource has been known for decades. In the 1960s, Larry Weed, MD, postulated that "problem-knowledge couplers" would be the solution. Underlying his approach was an under-

standing that diagnosis is the process of finding the best fit of the patient's findings with the patterns of findings in known diseases. And in 1994, Jerome P. Kassirer, MD, wrote a much-quoted piece, "A Report Card on Computer-Assisted Diagnosis — The Grade: C," in the *New England Journal of Medicine*, lamenting that such tools had yet to appear.

If there is only one finding on which to search, a simple text search will do the job well, whether in Google or in online like Medlink, UpToDate, and Dynamed or in the diagnosis assister Isabel. More sophisticated pattern matching is required when multiple findings must be considered, and especially when inheritance and time course data are essential to distinguishing among diseases. And it is precisely these more complex situations where physicians need help and are most likely to generate multiple referrals and high testing costs. Up-and-coming tools such as our product SimulConsult provide an easily scaled platform with proprietary, evidence-based, and peer-reviewed content for just this sort of pattern matching.

Many physicians already use such tools to make difficult diagnoses, but we imagine a day when decision support will be integrated into the DBM-physician automated workflow, replacing calls and faxes, thereby lowering physician utilization without putting the payers in the awkward situation of trying to trump the physician's expertise. It also shortens or eliminates the physician's "administrative odyssey" for authorization, and it enables DBMs to benefit from buying power to get volume discounts.

### Public policy implication

While the need to better manage costs related to diagnosis is clear, doctors, payers, and even the larger health care industry are not powerful enough to bring about such monumental changes, buy-in from health care policymakers and the U.S. government is essential. These parties must make an official change to what gets measured. The cost category of interventions should be subdivided into interventions diagnostic testing and treatment. And while a few interventions may span both, the vast majority will neatly fit in one or the other category. By doing this, it will be possible to track our progress in arresting the growth in the cost of diagnosis and perhaps even to scale it back, while simultaneously increasing quality. **MC**