The Medical Director and Insurance Laboratories: When is 'More' Not Necessarily 'Better'?

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We, as insurance medical directors, have known even before beginning our actual practice of medicine that certain disease conditions cause an increased mortality and morbidity. Since the science of life insurance involves as accurate a prediction of life expectancy as possible, it is equally obvious that the more we know about the existence of any given entity increases our chances of guessing its probable outcome correctly. In this regard, laboratory testing has been a distinct asset in allowing us to assess conditions we associate with an increased mortality and price them according to our individual risk assessment. There comes a time, however, when more is not always better. The accumulation of additional knowledge especially when variable and nonspecific only makes our understanding of a situation more vague and inexact, often at an additional cost. Such is becoming the case at this point in time with insurance laboratory testing.

The ability to offer the public life insurance at a price it can afford is key to the industry's survival. The more we know about variables in a person's mix of health and disease, the more accurately we can assess a probability. Yet the purchase of insurance may be likened to that of another service — buying a new car. Suppose a person bought a $10,000 automobile. For $1,000 extra an expert would go over the car to make sure one was getting his money's worth. That expert may have an 85% chance of being correct. Perhaps another expert with a slightly different field of expertise should be called upon. If they don't agree, should a third specialist be brought in? Who is bearing the cost of these expert opinions? The consumer, of course. And who profits? The three 'experts'.

So as the bottom line of any insurance company is to turn a profit, so it is with the insurance medical laboratories. When a useful service is provided to a company by a laboratory, it is more than happy to compensate that laboratory for its services. What happens however when the information isn't so useful? When it is nonspecific enough to provoke more questions than it answers? When a large bibliography and advertising opinion says no smart competitive insurance company should be without one? Such appears to be the case with the newly available fructosamine and PSA (Prostate Specific Antigen) assays. They remind one a lot of the television hyped 'Veg-O-Matics' of the 1960s — soon every household had one but no one knew quite what to do with it.

Fructosamine was offered by HORL as a mandatory feature in August of this year, replacing uric acid on the chemistry profile. While the loss of uric acid was not a mourned event, there were probably over 100 tests that could have replaced it. The idyllic question to be asked concerned whether fructosamine offered us information that medical directors and underwriters would request or perceive as having a significant "value-added". The practical question to be answered regarded whether the test would answer more questions than it raised and whether it offered a better alternative than what was already available to us.

Basically fructosamine offers a short-term measure of glycemic control. Because the serum proteins measured have a half life of 7 - 22 days, blood sugar control is basically being assessed 2 - 2½ weeks before the sample was drawn. The HORL bulletin that accompanied the introduction of fructosamine focused in its first paragraph on the need to discover and screen for glucose intolerance. However, since glucose intolerance is not a constant state of affairs (in fact, those with "pre-diabetes" only manifest abnormal blood sugars under abnormal conditions initially) fructosamine should be normal in most of this population. Random (or postprandial) blood sugars often give us more information on glucose intolerance; the American Diabetes Association criteria on maximal limits for postprandial/glucose tolerance testing is quite specific. While we have correctly moved away from the glucose tolerance test (GTT) as a screen for glucose intolerance, the random (or postprandial) glucose is almost a "poor-man's GTT" and probably uncovers more glucose abnormalities that are not overt diabetes than does the fructosamine.

We are in the business of assessing long-term risk. A hemoglobin A1C allows one to view glucose control over a 6-8 week period, making it a far more accurate predictor than fructosamine, which covers less than half that period. And how about accuracy? If a person controls their blood sugar for two isolated weeks, you can get a perfectly normal fructosamine and have your entire risk based on that, even if its the only two weeks in their life that occurred. On the other hand, you can be out of control for a week or two if you have the flu or a severe cold and have a fructosamine not represent at all your degree of long term control. The use of the hemoglobin A1C by insurance was to help us more accurately put into the perspective the one isolated good or bad blood sugar that either differed from or represented the norm. If we have a degree of control assessed fasting and an intermediate measure (6-8 weeks), do we need an additional test at 2-2½ weeks?

Often the hype of a new test's "added value" can obscure the amount of additional significant information it can provide.

Certainly, HbA1C is more expensive than fructosamine. How many times will you want to know a 2 week range of blood sugar when you have an immediate value and a six-eight week value? Since the insurance medical director and individual company can control when an HbA1C is triggered, it allows them an active effort at cost control while getting the information that they feel they need when they feel they need it, not automatically and at an additional cost on every applicant. What happens when a fructosamine and HbA1C substantially differ? Do we get another of each? The point is that we have accepted another test at an additional expense that in reality gives us little value-added.

Prostate specific antigen (PSA) is even a better example of another laboratory test of questionable value. The test was first brought to light in a 1987 New England Journal article on the use of PSA as a tumor marker for prostatic cancer. Elevated PSA levels were found in advanced prostatic cancer. They were also found in benign prostatic hypertrophy and after vigorous rectal examinations.

Many of us in clinical practice recall a similar exercise with CEA (carcinogenic embryonic antigen). It was found to be a marker for various gastrointestinal cancers; it was also found however to be elevated in smokers with no disease. After a GI cancer was removed, CEA was a good adjunct; a rising CEA leant suspicion to a residual tumor growth, and therapy was altered accordingly. Had we decided to screen everyone with CEA measurements from its inception, we would have diagnosed countless people with suspected GI pathology inaccurately and probably scanned and explored them from every angle possible (not to mention bankrupting the entire health system).

With PSA, the likelihood is that a sky-high level probably does indicate potentially ominous disease. How many levels are going to be that high in any population relative to its cost? PSA may prove to be a useful marker (like CEA) for urologists following post-operative cases.

But what happens when PSA is marginally or even modestly elevated in a population where benign prostatic hypertrophy is probably universal? Shall we decline them all? Or will the limit to eliminate the anticipated large degree of false-positives be so high as to diagnose almost no one? In this instance we will be paying for information that is non-specific, and worse yet often times will result in our making a poorer decision rather than a better one.

We don't always know the exact significance of a given laboratory test we request. Each company has a somewhat different view of the significance of cholesterol measurements, but most all recognize it as a risk factor at some degree and it is considered information that is cost-effective in determining a risk. The industry has not been as consistent as a whole on liver function tests as it would like, but the tests are considered important factors on which to base a rating and worthwhile. Who decided however, that fructosamine and PSA measurements were worthwhile? Is this the industry's collective opinion? Are all we know about these tests just the literature and propaganda sent to us by the laboratories?

An argument that has been advanced in defense of for-profit laboratory companies is that they do not force the insurance industry to take what it doesn't want. They merely provide a service by offering a buffet of choices. Many of these choices however are both expensive and inaccurate. It can be likened to a smorgasbord; all the food is not healthy, not economical, and no one forces you to eat it; you just seem to until you feel sick. Maybe its time to push ourselves away from the table.

Underwriters are an important part of this cycle as well. Much of laboratory advertising is aimed directly at the underwriting department, again with the perception that advanced technology has yielded exciting new information, and that such information is not only welcome but necessary in the changing environment. Are underwriters dictating to laboratories what they need? Or is it vice versa?

Additional testing can only benefit the underwriters. How many times however has it not been the case — where results conflict and the only solution is to 'order another'. Both indirect and direct underwriting costs then rise sharply. Can medical directors and underwriters as a team demand assays or direct research into what it is felt they need to know to assess a risk? Or will enterprising laboratories do it for them "in their best interests."

The industry has absorbed an additional test in fructosamine without a proportional gain in practical information. It is about to be offered a test in PSA that may cause more confusion than benefit. All this cost will be passed on to the consumer, who will ultimately walk away when he/she perceives a decrease in value added for their money. If consumers can appreciate this, why can't we as insurance medical directors apply this very principle? The bibliographies on any given test should be examined carefully; clinical specialists and pathologists should be sought out for their views of experience. Fructosamine should be obtained *when* the Insurance Medical Director feels it to be advantageous and useful, not when the laboratory producing it does. Directors and underwriters should dictate to the laboratory field which tests it wants developed as helpful and cost-effective in risk assessment, not vice-versa. Consumers should be considered at every turn in deciding when more will be better, as they are the industry's most valued resource.

Does it belabor the obvious to restate that medical directors and underwriters should demand those things that they need, and not merely accept only what a profit minded third party has decided for them? It appears that the tail is beginning to wag the dog.