POINT/COUNTERPOINT: Should Treadmill Stress ECGs Continue to be Used as an "Age/Amount" Screening Test in Life Underwriting?

YES, UNTIL ...

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Executive Summary *ON THE RISK is reintroducing a feature which last appeared during the first decade of OTR's existence – a yearly Point / Counterpoint article to encourage readers to discuss and research the different points of view that exist regarding specific underwriting topics. OTR provides this series as a forum for honest expression of differing viewpoints on issues. Hopefully, these articles will encourage independent thought regarding both medical and non-medical topics. OTR would appreciate your feedback regarding this endeavor. Also, OTR welcomes suggestions for future Point / Counterpoint articles. These topics will be limited to professional underwriting issues. They must serve OTR's educational mission by encouraging readers to examine both sides of the debate.*

I think most underwriters and medical directors would agree with the statement that treadmill EKGs provide protective mortality value. In fact, I could quote a number of studies that show the independent value of treadmill EKGs in underwriting life insurance, but this has been done a number of times and is not especially helpful at this point. For the most part, in the recent past, the use of treadmill EKGs as a general underwriting requirement has been reserved for the highest policy face amounts or was required as a reflex test based on medical history. This has resulted in fewer tests compared to the more distant past when the test was ordered more frequently and at lower face amounts. Over the past 24 months, most companies have modified their underwriting requirements to further reduce the number of treadmill EKGs they order. The reason for the reduction has not been because the chief underwriter felt they were not valuable. It was because they were becoming more and more expensive, a considerable hassle for the customer, harder to obtain and added an additional time delay to the underwriting process. Thus, the competitive environment has caused the treadmill EKG to be utilized less as companies try to underwrite quicker and at less cost. Companies do not want to be at a competitive disadvantage as sales may suffer. I did a quick survey of a number of large companies and found that on an annual basis these companies are getting less than 20 treadmills a year, even though they processed on average greater than 25,000 applications during that time period. Thus, as you can see, the number of treadmills required has dropped significantly.

Working for a reinsurance company has afforded me the opportunity to interact with a number of these companies, consulting with them to help modify their age and amount underwriting requirement grid. A critical point to remember is that as a reinsurer, we do not mandate the requirements a particular company obtains. We are in the business of sharing risk. With that in mind we price mortality, as that is the primary determinant of our profitability. Our role is to consult with the companies to determine how the changes they are requesting will impact mortality. If you are removing treadmill EKGs from your requirement grid, that's OK, but if you make that change in isolation, there is obviously some mortality protection lost in the process. Without doing something to get back

to the zero sum difference in mortality, a price adjustment will likely be necessary. If you want to hold the line on mortality, and consequently reinsurance price, you can potentially use different requirements to achieve the same mortality goals you currently have or even improve the overall performance.

Some of the work Hannover Life Re America has done recently with clients has been to find ways to offset the mortality given up by the treadmill EKG through the use of new requirements or the expanded use of cheaper and easier to obtain older ones. One of the best ways to do this, at no additional hassle, is to take advantage of the blood draw that is already required. The introduction of new additional tests to the blood profile can provide mortality savings not previously available. What is important to remember, however, is that none of these new tests have been shown quantitatively to be of equivalent value to the treadmill test regarding mortality savings in a one-to-one comparison. When it comes to pricing, the numbers matter.

Can we add additional tests that will offset the lost value of the treadmill EKG without an overall premium change? I think the answer is clearly yes, but it won't likely be by simply dropping a requirement like the treadmill and substituting one test for it. It will likely require substituting one or more tests that are more complements to rather than replacements for the treadmill, probably at different age and amount levels. We may be picking up different causes of death with these other requirements, but the end result is still the same: overall mortality experience will be preserved.

An example of this type of approach would be replacing treadmill EKGs with NTProBNP. The cost of the NTProBNP versus the treadmill EKG and the ease of obtaining this blood test make the substitution a logical opportunity. A key point to remember is that NTproBNP and treadmill EKGs don't completely overlap. The tests are really complements to rather than replacements for each other, since they measure different things. The treadmill test evaluates ischemia, but probably equally or perhaps more important, exercise tolerance which is, in effect, an overall assessment of vitality. The NTProBNP reflects cardiac dysfunction resulting from a variety of possible conditions, including coronary artery disease, heart failure, LVH, valvular disease, atrial fibrillation, COPD and pulmonary hypertension. At times both tests will be abnormal, but in the majority of situations one or the other will be outside the normal range. Thus, in terms of impairment findings, the majority of the time they pick up different causes of mortality. That said, using NTProBNP is a viable alternative to the treadmill but not on a simple substitution basis. The available data suggests that the comparative protective value is less with NTProBNP. Thus, you will need to expand the ages and face amounts where you get an NTProBNP compared to the treadmill EKG to obtain the same mortality savings. In addition, the loss of protective value from the treadmill test in the larger face amount band disproportionately affects the mortality results in the overall block. As a result, you must adjust the number of underwriting age and amount cells that collect NTproBNP beyond where GXT (graded exercise testing) is performed to obtain the same mortality offset. Other blood tests or underwriting requirements can be considered as well. These include the use of hemoglobin A1c's or use of the pharmacy database tool if it is not already being utilized. Although less protective than the treadmill, all of these are faster, cheaper and more convenient and, pieced together in the appropriate age and amount grid, should be able to achieve comparable mortality results.

Substituting one or more requirements that can be protective, but are easier to obtain and cheaper, for another established requirement is appropriate if applied carefully. I think underwriters and medical directors agree with the statement that treadmill EKGs provide value but at a price of time, money and convenience. If it is your desire to make it easier to do business with your company, it may be possible to do so with different requirements, ones that used in the right combination and age and amount application can provide you with mortality outcomes similar to those you already have. However, if your goal is to keep reinsurance pricing the same, it will be necessary to demonstrate quantitatively that the net effect on mortality results will be a zero sum.

However, in theory, a direct writer does not need reinsurance pricing to remain the same to use a new requirement package. It only needs to be able to demonstrate to itself that the increased revenue due to expense savings and increased sales will offset the cost of any increase in claims or adjustment to reinsurance pricing (a surrogate for mortality) associated with the change. As long as the net result is positive in the benefit/cost ratio, there is no reason not to do it.

So, at this point our debate may be moot as companies are moving to reduce the reliance on treadmill EKGs already. It is important to remember that you cannot just remove a requirement without replacing it with something else and expect the same mortality result.

About the Author

Kevin Oldani, Senior Vice President - Chief Underwriter, joined Hannover Life Re America in April 2009. Kevin has over 28 years of underwriting experience. His past experience includes management of ING Re's underwriting department, training and mentoring on underwriting issues, conducting client visits/audits, managing client relationships, and underwriting management of the COLI/BOLI line of business. Before Hannover, Kevin was Vice President of Underwriting for Scottish Re. Kevin's career also includes the management of new business and underwriting at a large brokerage insurance company.

Kevin is a member of AHOU and the Rocky Mountain Society of Home Office Underwriters. He is also past president of the Southeastern Home Office Underwriters Association, past chairman of the COLI Directors meeting and the executive committee for the Impaired Risk Underwriting Association.

At HLR America, Kevin is responsible for the overall management of the underwriting department.