What Do Laboratory Tests Mean? The Transamerica Approach

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Blood profile results are increasingly used as a routine screening underwriting requirement. These test results add valuable pieces of information to assess risk classification and aid in mortality determinations.

Blood tests have been used in the clinical setting to screen for general good health and to identify problem areas which need further investigation. In the past, the insurance industry has used the blood profile to investigate medical disorders which were presented by the proposed insured in their medical history or to clarify and/or update an attending physician's report. Today, like the clinical use, companies are using the blood profile to screen for general good health.

But this added information also presents new problems.

What rating guidelines are appropriate for abnormal test results? What rating, if any, is appropriate? When is a decline action appropriate? When is a postpone action appropriate?

How do current abnormal results for specific tests relate to long term mortality? At what levels do the test results alone, without a medical history of related impairment, relate to mortality? Are some test results indicative of non-medical hazards rather than medical ones?

All of these questions, and many more, have crossed the minds of medical directors and underwriters. Based on current knowledge, companies have temporarily resolved many of these questions because applications must be processed. But the long term answers are yet to come. Unlike the extensive industry studies that have been completed on build and blood pressure, no insurance industry studies have been completed on laboratory test results.

Transamerica Occidental Life has used blood profiles routinely for over 10 years. Like most other companies, we have been continually expanding the number of screening profiles with a rapid increase in the last three years. However, we have not completed extensive studies of the true impact of the blood profile. Over the last eight years, as our use of blood profiles increased, our percentage distributions of standard, rated and declined applications have fluctuated little. This, added to the limited studies we have conducted and the value of AIDS-related testing, resulted in our confidence that the blood profile was a cost effective requirement.

Since our Underwriting Research Department was reorganized in 1985, a major objective has been to develop an approach which would accomplish the following objectives relative to blood profiles:

1. Routine reports of blood profile results
2. Cost benefit studies
3. Evaluation of rating guidelines
4. Mortality studies
5. Statistical basis for justification of ratings
6. Researching relationships between various test results

The major obstacle always recurring was the vast amount of resources, personnel and time, which were required to accomplish these objectives. Manual review and abstraction of file information was the primary method we used to conduct studies. Although our underwriting and issue system is highly computerized, the Research area was not. Underwriting information was not maintained on computer for future analysis. Manual compilation and analysis of large amounts of data is not cost effective. As our number of blood profiles increased, so did our obstacles.

Furthermore, the questions being asked by medical directors and underwriters could be answered only by having the flexibility to manipulate the data in numerous and varying ways. Oftentimes the result of the answer to one question led to a second question and the addition of other factors. Flexibility was the key.

For Transamerica Occidental the solution was the personal computer and a database. The first advantage to the P.C. is the easy access to the data with immediate results available. It is relatively simple to learn the commands and basic programming necessary to complete most of the analysis. The third advantage is the ability to change the data format to suit the purpose. Small sets of data can be extracted to form a new database. New information can be added through programming or manually. Personal computers are compatible with mainframe systems and data can be uploaded to other mainframe systems or downloaded to the P.C. In this manner, information from other company systems can be used.

Routine Blood Profile Reports: Routine reports were designed to present an overview of the results on a monthly and year-to-date basis. We are receiving the numerical result of each test for all blood profiles on disk in a database format and this is loaded on a P.C. Parameters for each test were set to correspond to our rating guidelines for rateable results rather than abnormal results. This allows a very general correlation with rated and decline percentages and gives direction to the next level of inquiries.

After this routine report is reviewed and analyzed the data can be manipulated and analyzed on an ad hoc basis. Additionally, questions can be answered or investigated as they arise.

Cost Benefit Studies: The total cost of blood profiles has become a major component of the underwriting requirements budget. The total costs include the drawing fee, the administrative cost of receiving and matching the results to the application file, the underwriting time to evaluate the results, the laboratory costs, and others. Underwriting departments are being asked by upper company management for specific justification for this expense.

We feel that there are four basic areas which need to be cost justified separately: AIDS related testing; basic blood profile; testing for illegal drugs; urinalysis testing (especially nicotine testing).

Evaluation of Rating Guidelines: It is imperative to change rating guidelines if the current guidelines do not produce expected mortality. The major drawback is that all applications with abnormal test results cannot be followed as some are declined and others are not put in force; while others do not remain in force until death.

We have decided to approach the rating guideline evaluation in two ways. First, by selecting specific impairments to study. An initial assessment of the severity of the disorder is made from the rating assigned to the policy. This is then correlated with the blood profile results for analysis. Generalizations can be made from this information without file review and cases selected to review later in depth. The second evaluation involves the same procedure with specified abnormal blood test results.

At this point the data maintained on the personal computer can be uploaded to a mainframe system with all available application information or the reverse depending on the size of the database and the storage capacity of the P.C.

Mortality Studies: These studies can be conducted for specific medical impairments, as well as various test results. These can be small studies separate from the entire company mortality studies.

The appropriate issued applications need to be identified and tracked. We are establishing a mainframe system for this tracking project which will interface with a personal computer to upload data and to extract results. The mainframe will be used because of the size of the database, the length of time the data needs to be retained, and the ability to update the policy status from our inforce system.

Hopefully it should be a number of years before a claim is received, but this means that it will also be a number of years before the results are known. However, if the identification and the tracking are *not* initiated, results will never be known.

A review of early claims can illustrate areas that need immediate attention. Standard issues, as well as rated issues, can offer valuable information on rating guidelines.

Statistical Basis for Justification of Ratings: One of the results of the emergence of AIDS as a new and devastating disease has been to call national attention to the risk classification policies and practices of life and health insurers. A recent ACLI survey determined that most people did not understand the underwriting and risk classification process.

Many state legislatures, in addition to state insurance departments, have entered the arena of regulating the underwriting process. This includes dictating what tests may be used, what underwriting actions may be taken on what specific test results, what laboratories may be used, what medical and non-medical information may be asked, used, and how that information must be reported to the MIB.

Serious questions are being asked about the validity of the tests the insurance industry is using to classify insurance applicants. The industry is challenged to provide statistical (actuarial) "proof" that these tests and medical disorders are associated with an adverse mortality.

Some states have discrimination statues already in effect prohibiting adverse underwriting actions for such disorders as blindness, physical disabilities, handicaps or impairment, sickle cell trait, Tay-Sachs trait, exposure to DES, and others.

It is reasonable to assume that in the near future this regulatory method will be extended to cover other medical impairments. New tests will be available to the insurance industry, such as tumor markers, which indicate the greater possibility of future early mortality as opposed to the indication of a current disorder. It will not be surprising if these tests are also subject to regulation.

Companies have to be prepared to present statistical, actuarial proof that the underwriting actions taken are justified. Because blood tests will be a substantial part of future underwriting actions, now is the time to establish the statistical basis and analysis.

Relationships Between Various Test Results: The computer allows relationships between various test results to be evaluated in substantially shorter time and in greater depth than any manual method. With comparatively little effort, parameters can be changed and patterns evaluated for acceptance or rejection. For example, the relationships of the various liver function tests can be evaluated with each other, as well as, to other tests such as HDL cholesterol and triglycerides. Even in small comparisons we have found this exploratory process to be very valuable.

There is no doubt that the blood profile and other laboratory tests are providing us with a great amount of data. We as a company and we as an industry need to know much more about what all of this information means. The size of the task demands time and careful direction of resources. We think we are on a productive track and hope we will have results to share in the future.