The Way We Were

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Traditionally, the role of the life insurance laboratory has been to provide reliable data to Medical Directors and Underwriters to aid in risk selection, and to obtain it at minimum cost, in minimum time and as simply as possible.

Since 1827, when Dr. Richard Bright observed albuminuria, and correlated its occurrence with renal disease, clinical medicine and the life insurance industry have been relying on tests for albumin to assess renal disease. At the second annual meeting of the Association of Life Insurance Medical Directors of America in 1891, the paper presented was entitled "Albuminuria in Persons Apparently Healthy, and a Consideration of Its Relation to Life Insurance." The paper described the Heller's nitric acid test for albumin. The author concluded that persons who had albuminuria are not good risks, and do not have normal life expectancy.

Through the early years of the Association the significance of albumin and casts, when found in healthy applicants for life insurance, was discussed in depth.

Before 1900 much of the laboratory analysis of urine was performed by medical examiners. Many of these analyses were found to be unreliable with different degrees of accuracy.

By 1907, there was a plea for uniformity of tests for albumin and sugar among medical examiners. A large variety of tests were used for both. The detection of albuminuria was based upon precipitation of protein by strong acids, heat or heavy metals. Urinary sugar tests were non-specific measurement of reducing substances. Around this time, many of the life companies established their own home office laboratories. The company laboratories of note were operated by Prudential, Metropolitan, Equitable, and New York Life.

In 1916, the first urine preservative, formalin, was used to preserve casts, since specimens were now being sent to the home office for analysis. The preservation of urine specimens was a specific insurance industry problem which had to be worked out under insurance conditions.

By 1920, the complete routine urinalysis was in use with quantitation of sugar and recognition of the importance of chemical, physical and microscopic findings. In 1921, the first tests of blood for glucose were in use, the Folin test, and the Benedict's test, both of which were reducing substance tests which were non-specific and lacked sensitivity. Glucose tolerance tests were introduced at this time. Concerns about standardization of methodologies persisted. At this time, the first quantitation of albumin was developed — the sulfosalicylic acid test. The first universal electrical instrument for measuring color and turbidity was introduced — the Scopometer. Simultaneously, other chemical constituents of urine were being measured and evaluated.

In 1927, urine microscopy was performed quantitatively by the industry in a standardized fashion. Acetone was recognized as a supplement to the glucose test. The use of a capillary blood method for glucose was developed for field use.

The 1930's ushered in the era of quantitation. Improved methods were available for testing for syphilis and hemoglobin levels.

Progress in the insurance laboratory was slow through the 1940's, primarily because of World War II. The lethargy continued through the 1950's. However, in the 60's much interest was generated in drug detection for both the oral hypoglycemic agents and the antihypertensive agents. Inasmuch as interest in the detection of these drugs was restricted to the life industry, ready-made methods were not generally available and had to be devised and perfected through research in the biochemical laboratories serving the industry.

Although little had been done to simplify the urine microscopic examination, marked changes in the examination of urine by chemical tests simplified these procedures and made them faster and more sensitive.

The tentative application of modern clinical concepts to problems of medical selection became pronounced over the years. The subject of overriding interest was specialized techniques.

In the early 60's the larger companies set up sophisticated home office laboratories, and with the introduction of the first automated laboratory instrumentation, the Technicon autoanalyzer, the laboratory revolution began.

During the mid-60's, General American approached Dr. Charles Pope, owner of Blue Ridge Laboratories to provide a substitute for medical examinations which had become costly and had the additional problem of scheduling.

With the establishment by Dr. Pope of the National Insurance Underwriting Laboratory, for the first time insurance laboratory analyses were performed in a laboratory facility which was independent of the insurance company. Testing evolved from selective testing to full blood profiles.

The birth of paramedical examinations with medical exams performed by nurses was instituted by Dr. Pope at the same time.
By 1971 GIB Laboratories, Prudential’s laboratory, began to perform procedures for outside companies, and in 1972 James Osborn, a former employee of Dr. Pope, started his own laboratory, HOR Laboratory.

During the 70's and into the 80's major advances in laboratory technology and instrumentation coupled with the introduction of the computer had a profound influence upon medical underwriting. The laboratory’s end product up until this point consisted of a manually generated paper report; now test data are printed at the underwriter's office via telecommunication links. There is a continuing effort to shorten turnaround and maximize efficiency. The trend is toward greater dependence on computers, advanced technologies, instrumentation and work flow improvement.

Traditionally, the assessment of risks has been largely governed by retrospective experience with impairments and a great reliance on clinical judgement; in today's world we are moving towards prospective determinations and predictive laboratory judgement.

NOTE: This historical overview was conducted by a review of all of the annual meeting scientific papers concerning laboratory examinations presented before the Association of Life Insurance Medical Directors from 1890 through 1987.

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