SOCIETY OF ACTUARIES

Article from:

The Actuary

October 1998 – volume 32 - Issue 5

'98 Bowles Symposium

Genetic testing: What's ahead for the insurance industry?

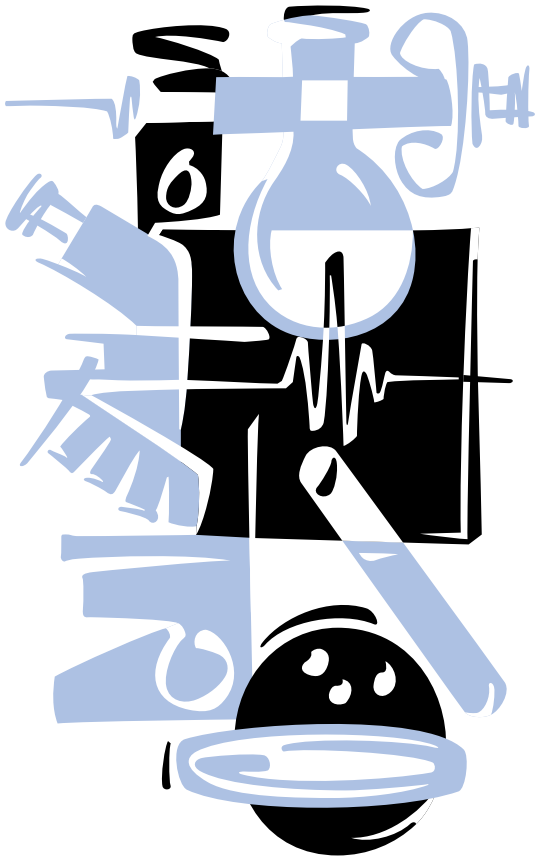
by Samuel H. Cox

An informal poll of actuaries, which a few colleagues and I conducted last spring, seemed to indicate that many do not believe genetic technology will have an impact on underwriting. Last March at the symposium hosted by the Thomas P. Bowles, Jr., Chair of Actuarial Science at Georgia State University, Atlanta, the medical doctors, legal experts, ethicists, and actuaries who presented papers and discussions disagreed with that view.

The two-day symposium, "Genetic Testing: Implications for Insurance," was organized by the 1998 Bowles chairholder, Patrick L. Brockett, director of the Risk Management and Insurance Program and Gus S. Wortham Memorial chairholder, University of Texas at Austin. The Actuarial Foundation provided a substantial grant to support the research presented at the symposium. The winners of the Anderson competition for papers on genetic technology were named at the symposium. These papers are included in the symposium proceedings. (See "Foundation to publish genetic testing presentations," *The Actuary*, November 1997, and "Winners of 3 actuarial research competitions announced," June 1998.)

The speakers' views

Charles Jones, vice president and medical director, Life Insurance Company of Georgia, explained to the 100-plus participants that emerging genetic technology will ultimately allow us to examine and alter a person's genes for disease prevention. This potential is very exciting to scientists. The public, on the other hand, is not so sure. They are concerned about whether insurers who seek access to their genetic information will use this information wisely and whether their confidentiality will be protected,



according to Donald C. Chambers, senior vice president and chief medical director, Lincoln National Corporation.

Bruce J. Holmes, associate actuary at Northwestern Mutual Life, explained that part of the public's apprehension stems from perceptions that are not grounded in reality. The American Academy of Actuaries Task Force on Genetic Testing examined several perceptions from public opinion surveys and found a number of gaps between perception and reality. For example, one poll found a strong belief that life insurance companies will cancel coverage or raise premiums if harmful medical conditions are revealed by genetic tests, while in reality, voluntary individual life insurance cannot be canceled and premium increases are either prohibited or tightly restricted.

Karen Rothenberg, director of the Law & Health Care Program at the University of Maryland School of Law, and Arnold Dicke, vice president and actuary for New York Life Asset Management, suggested that the key to progress in the genetic era is education. Rothenberg stressed that insurers need educating about public concerns. She warned that phrases such as "fair discrimination" do not make sense to the public and cause distrust. She also argued for educating the public specifically to counter erroneous perceptions of the insurance industry. Dicke focused on educating insurers about genetic technology so that the insurance industry can deal with this developing field in a creative and proactive manner.

Bowles Chairholder Brockett and Angus Macdonald, senior lecturer at Heriot-Watt University, Scotland, presented several models for underwriting and rate making in the era of genetic technology. Brockett concentrated on developing improved quantitative assessments of risk and better calculations of the actuarial present value of future loss based on the new information gained from genetic testing. Macdonald used a Markov model to show that even with extreme assumptions, adverse selection in life insurance can be controllable, and he suggested that participating contracts are suitable and simple vehicles to carry the genetic risks in life insurance.

James Hickman, emeritus professor and dean of the School of Business at the University of Wisconsin-Madison, agreed with the plans laid out by Brockett and Macdonald but warned insurance companies not to expect the benefits of an efficient insurance market

without symmetric information. He explained that in some situations, nonmarket solutions may be required to meet a societal need, and he cautioned that because of the substantial costs involved with obtaining genetic information, insurance companies might find much genetic information economically irrelevant.

Norman Fost, professor of pediatrics and director of the Program in Medical Ethics, University of Wisconsin School of Medicine, put a human face on the issue of genetic technology. He addressed misunderstandings and social stigmatization that can stem from genetic screenings, and he warned against expecting individuals and society to understand the meaning of test results when many doctors don't yet clearly understand them.

Based on the ethical and social concerns to society, Mark Hall, professor of law and public health at the Wake Forest University School of Law and Bowman Gray School of Medicine, addressed whether states should enact laws to restrict insurers' use of genetic information. Hall was critical of laws that exist or have been proposed because they are either under- or overinclusive. He emphasized that future research should focus on whether, to what extent, and in which circumstances insurers' use of genetic information has kept the genetically disadvantaged from obtaining different types of insurance. Ellwood F. Oakley, associate professor of legal studies at Georgia State University, analyzed policy developments at the national level. He asserted that some form of federal regulation is likely within the next two sessions of Congress. Oakley suggested that a utilitarian ethical perspective would likely support restrictions on genetic tests for life insurance, but not health insurance.

Derek Smith, president and CEO of ChoicePoint, Inc., the newly formed spin-off of the Insurance Services Group from Equifax, stressed that, in discussing public policy and genetic testing, it is important to differentiate between health and life insurance. Health insurance is viewed as a societal benefit, whereas life insurance is a transfer of risk between two agreeable parties.

Erle Peacock, partner in the law firm of Hollowell, Peacock & Meyer and clinical professor of surgery at the University of North Carolina School of Medicine, cautioned that at this time tests are difficult to control, the data difficult to interpret, and there is little that can be done when a mutation is discovered. Because the legal and ethical issues surrounding genetic testing are so intertwined, he suggested that genetic testing should only be used for research purposes until genetic science advances.

Since his retirement as vice president and chief medical director of Crown Life Insurance Company, J. Alexander Lowden has served as consulting medical director to LabOne and is a consultant in genetics to insurance companies. He agreed that the science of genetic testing is not yet capable of making accurate predictions. However, genetic testing can give information that the patient does not necessarily want to know, but more importantly that the patient does not want anyone else, especially an insurance company, to know. The ethical issues relating to genetic tests are multiplied because the tests have the power to provide information not only about the patient but also about the patient's family members. Lowden defined ethics as rules of conduct that society requires, and he challenged insurers to reexamine their ethical responsibilities in light of this new technology.

Ray Moseley, associate professor, Department of Community Health and Family Medicine, and director of medical ethics, law, and the humanities, University of Florida, argued that genetic testing results should not be available for use in nonmedical contexts and that insurers should not be able to initiate genetic testing. Part of the rationale for this argument came from the supposition that patients' test results will not result in adverse selection serious enough to cause substantial harm to insurance markets.

John Krinik, editor and publisher of *Underwriter ALERT*, agreed that as long as insurers can still consider lifestyle and health factors, genetic information will offer little value to mortality and morbidity pricing. However, he suggested that insurance companies should be supportive of genetic testing because a patient who undergoes testing and finds a mutation indicating a predisposition for a certain disorder can begin preventive treatment and modify behavior patterns to minimize risk and potential cost to insurers.

Staying current is crucial

As genetic technology advances, it will affect both the life and health insurance industries. Legal policies have been and will be enacted to restrict the use of genetic tests by insurers. Actuaries in the health insurance industry should be knowledgeable of the scientific and legal changes, and they should begin devloping models to ensure that regulations only enhance our managed care environment. Actuaries and insurance companies in the life and health insurance fields need to be cautious as public policies are developed. Insurers need to work toward alliances with the public and remember that an individual will undergo genetic testing because of concern for the future, not in order to defraud an insurance company.

The papers from the Bowles Symposium, combined with the Anderson Award papers, are available from Georgia State University for $50, and audiotapes of the entire symposium, including audience discussions, are available for $75. To order or to learn more about the Bowles chair, contact Anne Chamberlain at Georgia State University (phone: 404/651-0931; e-mail: *achamberlain@gsu.edu*) or visit the Bowles Chair Web page at *www.rmi.gsu.edu/bowles/b-chair.htm*.

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