



Mortality and Longevity



Aging and Retirement

# A Study Into The Impact Of Preprogrammed Genetic Health Risks In Retirement Planning



# A Study Into The Impact Of Preprogrammed Genetic Health Risks In Retirement Planning

N.V. Subramanyan

## Synopsis

A brief synopsis of items covered in this paper is given below. The narrative is in the same order as far as possible.

1. Human life expectancy and prognosis of health conditions is possible based upon the genetic profile of people which is the actual identity of who one is.
2. With the developments in genetic research, it is possible to reasonably identify preprogrammed health risk depending on a person's DNA. While this is 100 percent possible in the cases of diseases like Huntington's, in some other cases, fully developed tests are still in progress though a reasonable estimate is feasible now.
3. It can be reasonably identified how long might a person be expected to live based upon the DNA study through Genetic Scores, Disease Association Analysis, Polygenic Score Analysis and other methodologies. Polygenic disorders, involving multiple parameters and multifactorial influences makes the need of huge data imperative and for their analysis there is need for Big Data and Artificial Intelligence to be used.
4. Impact of family history with respect to health and longevity of relatives on longevity of persons is there and possible to be identified. With proper analysis it is possible to study the effect of relatives' health and heredity on the individuals.
5. There is need to have a framework of regulations to handle the situations arising from these developments. It would be advisable to have well defined regulatory frameworks in place so that all the stakeholders, viz. the customers, insurance industry, other institutions like the medical fraternity and overall society stand to benefit. The present situation is that there are three distinct groups of countries based on the stringency of regulations they enforce. A broad convergence of regulatory approach is desirable and may be expected in the future.

## About The Society of Actuaries

With roots dating back to 1889, the [Society of Actuaries](#) (SOA) is the world's largest actuarial professional organizations with more than 31,000 members. Through research and education, the SOA's mission is to advance actuarial knowledge and to enhance the ability of actuaries to provide expert advice and relevant solutions for financial, business and societal challenges. The SOA's vision is for actuaries to be the leading professionals in the measurement and management of risk.

The SOA supports actuaries and advances knowledge through research and education. As part of its work, the SOA seeks to inform public policy development and public understanding through research. The SOA aspires to be a trusted source of objective, data-driven research and analysis with an actuarial perspective for its members, industry, policymakers and the public. This distinct perspective comes from the SOA as an association of actuaries, who have a rigorous formal education and direct experience as practitioners as they perform applied research. The SOA also welcomes the opportunity to partner with other organizations in our work where appropriate.

The SOA has a history of working with public policymakers and regulators in developing historical experience studies and projection techniques as well as individual reports on health care, retirement and other topics. The SOA's research is intended to aid the work of policymakers and regulators and follow certain core principles:

**Objectivity:** The SOA's research informs and provides analysis that can be relied upon by other individuals or organizations involved in public policy discussions. The SOA does not take advocacy positions or lobby specific policy proposals.

**Quality:** The SOA aspires to the highest ethical and quality standards in all of its research and analysis. Our research process is overseen by experienced actuaries and non-actuaries from a range of industry sectors and organizations. A rigorous peer-review process ensures the quality and integrity of our work.

**Relevance:** The SOA provides timely research on public policy issues. Our research advances actuarial knowledge while providing critical insights on key policy issues, and thereby provides value to stakeholders and decision makers.

**Quantification:** The SOA leverages the diverse skill sets of actuaries to provide research and findings that are driven by the best available data and methods. Actuaries use detailed modeling to analyze financial risk and provide distinct insight and quantification. Further, actuarial standards require transparency and the disclosure of the assumptions and analytic approach underlying the work.

Society of Actuaries  
475 N. Martingale Road, Suite 600  
Schaumburg, Illinois 60173  
[www.SOA.org](http://www.SOA.org)