



# Reading the Book of Life

## *Will genetic testing hurt before it helps?*

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*Helping people achieve a lifetime of financial security*

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# Today's Message

**It isn't the thing itself, but how it is used, which matters**



“All things are poisons, for there is nothing without poisonous qualities. It is only the dose which makes a thing poison.”

**Paracelsus, 16<sup>th</sup> century**



“A cure can be poison and a poison can cure. The difference is the amount and means of administration”

**AIFA 2018**

*Paracelsus couldn't imagine today's topic, but he was still correct about the impact widespread genetic knowledge could have on life insurers*

# Regulations: Who needs to be protected?

Regulators should **expect** insurers to use genetic testing

Is **just a really good family history**, and gathering history has been routine for decades

Results are **resistant to misuse**, unlike other personally identifiable information (PII)

Genetics are **still the best** identity verification method known

Testing is **becoming mainstream** – a testing company tried to offer tests to attendees at NFL game

Insurers **need to engage** with this rapidly advancing and important area to seed future business vitality

Genetic information

Genetic test

Verification

Acceptance

Skill set

Regulator should **restrict** insurers from use of genetic test results

Is **not well** enough understood to use in underwriting

**Most illness and death is lifestyle based**, with genetics being a red herring for most

Most risky mutations which do impact mortality can be **identified in other ways**

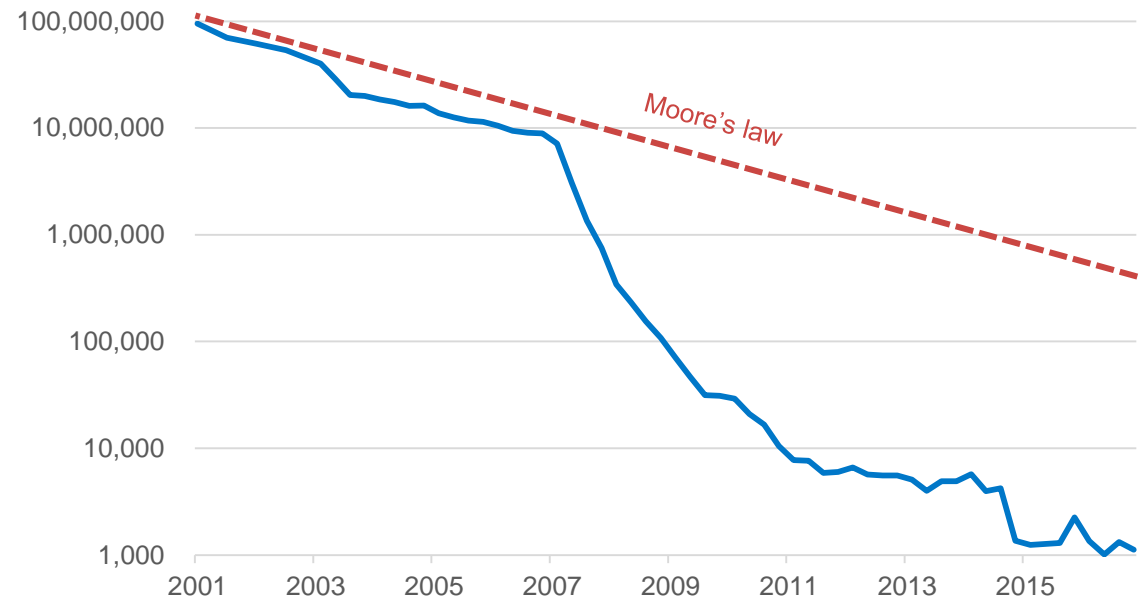
**Not standardized**, and may not be accurate or completely comparable between testing companies

Interpreting test results **requires special skills** which carriers may not possess and which are not widespread

# Falling costs of testing will change the rules of engagement

- As testing cost falls, we should assume use grows - insurers will need to use genetic testing to maintain fair risk pools
- Insurers will find ways to cover higher genetic-risk populations
- Not just about high risk: Insurers will need to attract low genetic-risk applicants too
- Behavior-sensitive products with adjustable premiums or benefits seem likely, given the growth in sensor prevalence

Costs per genome  
(in USD)



# A miracle cure is a potent poison

## The lag between knowing the challenge and mastering it

- Will genetic testing stress life products before genomic medicine lengthens lives?
  - Companies may now be issuing long-tailed business to genetically-informed applicants
  - The information differential is still small, but will grow until it potentially drives product or pricing responses



- Genetic knowledge opens door on wide range of products and treatments
  - Differentiated products allow more choice and avoid the 'many carrying the informed few'
  - Mastering protein synthesis pathways will lengthen life, slowly at first
  - Even common medications are being assessed for effect on genetic pathways
  - Insurers could consider paying for life-lengthening or potentially curative treatments

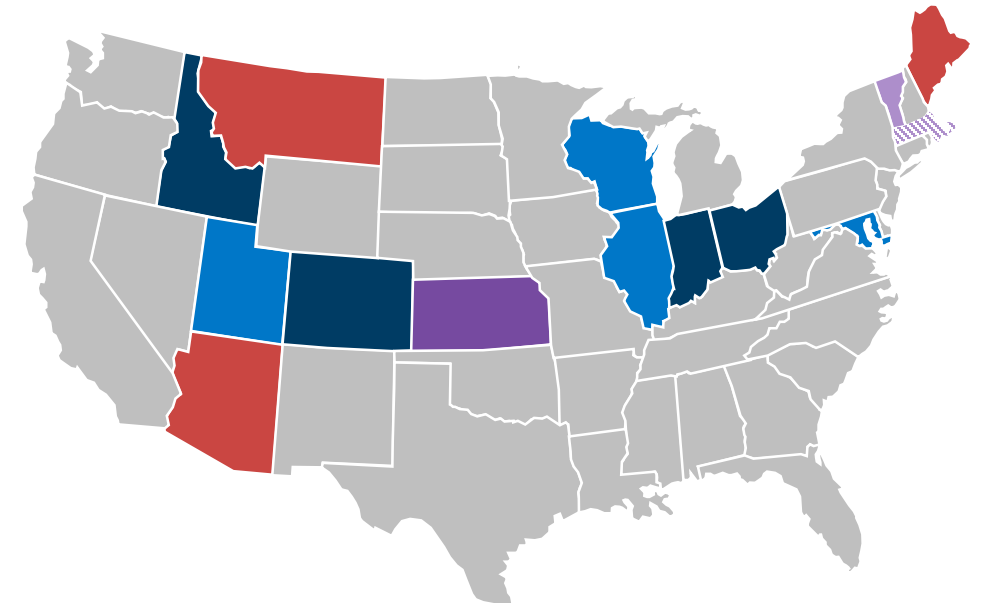
# Who lives longer, who lives *a lot* longer?

- Will the current cohort of annuitants experience radical life extension?
  - Aging is a very hard problem, but major mechanisms are being described and some interventions developed. We are likely on the early flat part of the exponential growth curve
  - Once treatments are developed, we can assume they will be expensive and so mostly available to older people who have less potential for total lifespan
  - Given time to development of significant treatments, likely expense, and disease focus, this is probably not an issue for current annuitants
- When will that reach life insurance?
  - Cheaper means younger, more widespread, and more opportunity for greater life extension
  - There is a clear opportunity for insurers to reinvent themselves as allies in longer life
  - Many of today's insureds will experience unprecedented treatments for illness and aging

# Laws vary by state, a few prohibit

## Complicated landscape for use of genetic info or test results in underwriting

- Life Insurance Genetic Testing Restrictions
  - 2 states prohibit requiring an applicant to take a genetic test, while allowing use of existing test results
  - 6 states have some form of anti-discrimination statute that permits underwriting based on genetic test results or genetic information, if the use of such information is based on sound actuarial principles or actual/reasonably anticipated experience
    - 2 say insurer cannot refuse to consider an application because of a genetic condition unless the applicant's medical condition and history and actuarial projections or claims "establish that substantial differences in claims are likely to result from the genetic condition."
  
- Long Term Care Genetic Testing Restrictions
  - 6 states prohibit requiring an applicant to take a test
  - 8 states prohibit the use of genetic test results or information for underwriting long-term care insurance



- Anti-discrimination life
- Prohibition testing LTC
- Prohibition use of genetic tests LTC
- Prohibition testing life and LTC
- Anti-discrimination (life) and prohibition use of genetic tests (LTC)
- Anti-discrimination (life) and prohibition testing (life and LTC)

# Thank you!

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