

TRENDS IN LONGEVITY AND CARRIER UNDERWRITING STANDARDS

Human beings like all mammals are bound by biological limitations imposed by nature. For example, every mammal, no matter what size, is issued in nature about 1.5 billion heartbeats. This same rule also applies to metabolism beats. Shrews that live a year will have a heart and metabolism rate of almost 100 times faster than that of a human. In mammals, each doubling of body weight leads to about a 16% increase in lifespan. Consequently, elephants, who weigh almost 4 tons, live up to 70 years.

It's obvious that despite our modest size we now live longer than elephants. Humans, at one twentieth the scale of elephants, no longer fit this model. Our ability to harness technology and medical science to treat disease and control our environment has had an enormous impact on the length and quality of human lifespan.

Thanks to ground breaking advances in medical science, the average human lifespan may potentially be even longer than we think. For the past century or so, life expectancy has been going up at a rate of six hours a day, every day. Since the mid 1940's, the average age at which a US citizen can expect to survive has risen by 10 years. In 1944 it was 70, and now it's close to 80. Currently, the world has 12,000 centenarians, four times more than in the 1960's. At present rate, the number of world centurions could rise to 100,000 by the end of the century.

Factors Impacting Lifespan

One's lifespan is a function of many factors such as family history, lifestyle, diet and exercise, the ability to make effective use of the health care system, and the discipline and education to follow the advice of the doctor. In a world of ever advancing medicine and treatments, a person capable of effectively utilizing advances in health care will have an advantage in achieving better outcomes and living longer.

Consequently for some, there may not be as much of a correlation between this generation's longevity versus the last generation. Almost imperceptibly the combination of medical breakthroughs, improvements in medical procedures and diet and exercise have all contributed to extending life spans. In 2007, New England Journal of Medicine published the results of a 20 year study on death rates from coronary heart disease, and the results were astounding. The age-adjusted death rate for coronary heart disease fell from 542.9 to 266.8 deaths per 100,000 among men, a 50% reduction in coronary heart disease deaths, same as in women. Approximately, 47% of the decrease was attributed to treatments, while about 44% was attributed to changes in risk factors, including reductions in total cholesterol (24%), systolic blood pressure (20%), and life style changes (17%). Unfortunately, these reductions were partially offset by increases in body-mass index and diabetes, which increased deaths by 8% and 10%, respectively.

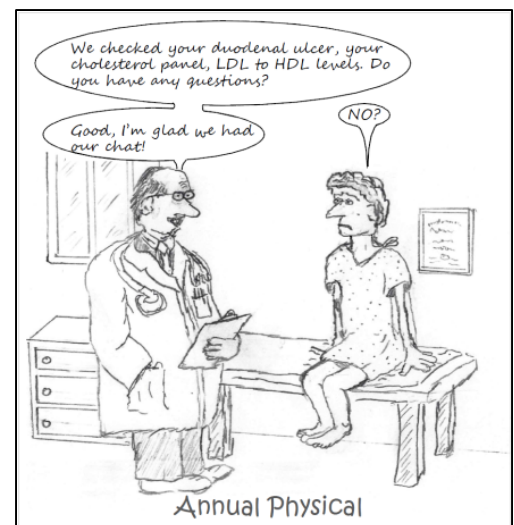
Some of those changes in risk factors can be attributed to new drugs, such as statins introduced in the mid 1980's, which lower cholesterol. Cholesterol is the main constituent of atheroma, the fatty lumps in the wall of arteries that occur in atherosclerosis and when ruptured, cause the vast majority of heart attacks. The implication is that by lowering cholesterol you could delay the onset of atherosclerosis. Other drugs available around that time frame were ACE inhibitors (relaxes blood vessels) used to manage high blood pressure. In the mid 90's, the blood thinner, Plavix was introduced to manage coronary disease risks. It works by preventing the buildup of blood-clotting agents around plaque deposits in the arteries, and unlike warfarin doesn't require testing of pro time levels (time for blood to clot).

The Human Aging Process

As people live longer, the likelihood that they will be battling chronic illnesses increases. Success in treating and preventing coronary disease has resulted in increases in congestive heart failure (CHF) cases. Even if a person succeeds in avoiding coronary disease, many will ultimately develop CHF. There are over five million cases of CHF in the US alone. CHF typically occurs in older people approaching the latter stage of life. The most common cause is change in the heart muscle causing either an enlarged heart, a weakening of the heart wall or a thickening of the heart wall. The outcome is the same, the heart becomes less efficient at pumping blood. The symptoms can range from shortness of breath, fluid retention, swelling of the legs, ankles and feet and fluid in the lungs.

The Medical Healthcare - Patient Doctor Exchange

The coronary heart study, clearly demonstrates the significant contribution of medical care in increases in longevity. This is in spite of some significant short comings in the patient



doctor exchange. Every medical, nursing student is taught the following passage: “Dogs Bite, Patients Lie”

It’s an attempt to underscore to future doctors and nurses that they can’t always accept at face value what a patient says, and they need to question the reliability of what’s being said. Deception between patient and doctor can run both ways, such as benign withholding of relevant medical information by doctors, who intentionally withhold significant information because they don’t want to worry the patient unnecessarily, and since it most likely won’t change anything. It can also be at the root of patients who sometimes disadvantage themselves when faced with the diagnosis of a major illness. Some will refuse to confront their disease and go into denial or decide to pursue alternative treatment of questionable efficacy. A classic case of this is Steve Job’s reaction to being diagnosed with pancreatic cancer. In spite of having access to one of the best medical facilities in the world, Stanford Medical, he elected to pursue alternative treatment, based on some version of Macrobiotics, a quasi-religious (metaphysical) philosophy that advocates a semi-vegetarian diet, and meditation ("Macrobiotic" means "way of long life.") Followers believe that Macrobiotic diets can maintain general health or can even prevent and "relieve" cancer and other diseases. This resulted in Job’s delaying medical treatment for nine months, while early and aggressive treatment of cancer is usually crucial in determining survivable outcomes.

The Patent Doctor Communication Gap

In a surprising report from the *Archives of Internal Medicine*, we learn that most hospitalized patients (82%) could not accurately name the physician responsible for their care and almost half of the patients did not even know their diagnosis or why they were admitted. This in spite of researchers polling results of physicians, 67% thought the patients knew their name and 77% of doctors thought the patients "understood their diagnoses at least somewhat well". Ninety percent of the patients said they received a new medication and didn't know the side effects. Although 98% of physicians thought they had discussed their patient's fears and anxieties with them, only 54% of patients thought they did.

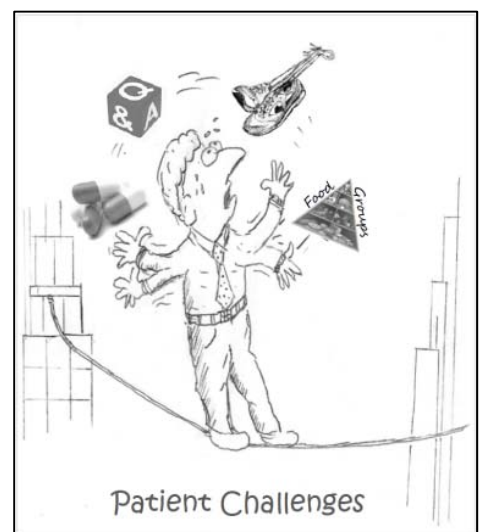
The researchers from Yale University School of Medicine and Waterbury Hospital concluded: “Significant differences exist between patients’ and physicians’ impressions about patient knowledge and inpatient care received.” Moreover, responses didn’t significantly differ by sex, age, race, language or payment source, for the patients, or level and type of training, for the doctors. From all appearances, the patient doctor exchange suffers from severe limitations. Some possible explanations are:

- Patients are stressed while hospitalized and do not remember what is said.
- Many patients are heavily medicated and that affects ability to learn and remember.
- Doctors are too rushed and deliver information too quickly to be understood.
- Hospitalized patients have too many consultants and no one is identified as the "responsible physician".
- Nurses, consultants and hospitalists don't communicate well together while patients may receive different messages from each visit.

Challenges to Achieving Better Outcomes

Evidence suggests that patients who understand their condition, are educated and have good rapport with their physician have better outcomes. Medical students are taught to do no harm which can result in doctors sometimes being too conservative in exercising preventive measures. For example, statin drugs have had a significantly impact on coronary disease outcomes, and yet most doctors historically were reluctant to prescribe statins to prevent the onset of the disease.

We take our health for granted. Many including executives in their mid to late 50’s, view their demise from cancer, heart disease or diabetes (some of which have an inherited component) at some immeasurably distant point in time. This view by patients combined with doctor’s inherent reluctance to aggressively apply preventive care can result in less than optimum long term medical outcomes. We have the medical technology that can extend human functional life span but it takes sophisticated communication and cooperation between the patient and doctor. Gaps in patient doctor exchange, can often lead to patient’s failing to implement appropriate daily living protocol that may include specialized diets, exercise, and consistent intake of medications at the appropriate times and follow-up testing to treat chronic illness.



Carrier Underwriting Standards Largely Unchanged

Insurers use life expectancies (LE) to price life policy products. Carrier mortality tables are designed to provide guidelines of LE's of cohort groups. Carrier underwriters are quick to embrace advances in diagnostic medicine to define the health status of insurance candidates, or define impairments or to better determine the clinical course of a pre-existing illness in their efforts to prognosticate the risk of candidates with known disease and impairments.

Alternatively, life insurers are not quick to embrace the impact of new therapies and treatments in their underwriting. Instead, they tend to rely on factors that have shown over time to be reasonably accurate at predicting risk.

Life expectancy mortality tables (a typical life settlement involves a policy of \$1.0 million or more in face value) clearly demonstrate that successful, highly educated people who are proactive in managing their health can achieve significant better life span outcomes. Even though we have witnessed substantial advances in medical treatment and procedures and drug therapy and that certain population cohorts are better at achieving long term wellness outcomes. As a general rule, we have not seen this reflected in carrier underwriting.

Conclusion

The carrier underwriting process is based on the law of large numbers. Alternatively, we know from various mortality tables that certain cohorts of a population can and will achieve greater longevity. Typically, highly educated successful people routinely achieve longer lifespan compared to historical social security mortality table.

Carrier underwriters are quick to exploit advances in medical testing to facilitate underwriting, but from a treatment and preventive measure perspective carriers have been slow to adopt a program of underwriting considerations, and somewhat reluctant to apply credits for preventive healthcare and its effectiveness.

Alternatively, some life insurance underwriters are transforming their underwriting perspective in determining that heart disease and several forms of cancer are no longer the "death markers" they once were. Many people with preexisting conditions who used to be uninsurable are insurable with some of these carriers.

A couple of carriers have made significant revisions in their life insurance underwriting guidelines. For example, people who have battled breast cancer, based on a review of recent medical studies can have very good long term outcomes. Consequently, more breast cancer survivors are likely to be eligible for life insurance coverage even if they have not been in remission for five years or more.

Some insurance companies realize that serious health problems that used to frequently lead to death are increasingly treatable and manageable, and they are adjusting their underwriting practices to offer coverage to previously uninsurable people. On the flip side, many people are now living much longer than they would have before advances in modern medicine, but they are not necessarily saving the additional money that will allow them to live out these extended golden years in the lifestyle to which they are accustomed.

In 2012, a major carrier announced an underwriting program that takes into account a prospective insured favorable life style factors. This proprietary program applies only to permanent life insurance products (both individual and survivorship.) Applicants with favorable health and lifestyle factors can garner improved underwriting rate classifications under the program.

Case - Male, age 64, Real Estate investor, net worth in excess of \$18MM

The client is about 6 feet tall and weighs about 195 lbs. From a physical appearance, he is relatively lean and in good shape, with great energy and conditioning. From the backyard of his home, he hikes the California Mountains three to four times a week. He visits his doctor regularly, and yet after reviewing his medical files he was borderline insurable. The client had an abnormal EKG, suggesting damage to the left ventricular region of his heart. He has a history of hyperlipidemia (high cholesterol), long term hypertension and stenosis (partial blockage) of the both the left and right carotid arteries leading to the brain.

Based on our advice, client went to a leading medical center for a heart evaluation. They performed an EKG and scan of Carotid Arteries. His EKG suggested that the client had sustained an inferior myocardial infarction of the left ventricular region of his heart. A duplex scan of his neck region showed stenosis of both his left and right carotid arteries, up to 70% blockage. The medical center effectively red flagged his condition when it had gone largely unnoticed by his primary care group.

When his primary care group was presented with the results, they conducted a Thallium Stress Test/myocardial perfusion scan, followed by a consult with a specialist brought in to review the results of the scan. They confirmed the medical center's findings. However, in their view, given his lack of symptoms and exercise tolerance, he could be medically managed, and no medical procedure was warranted.

We prepared a detailed summary of the client's medical history and marshalled arguments to counter and delineate the medical findings and to counter some medical speculation in his APS records. We directly engaged underwriters at selected carriers who were perceived to being more flexible in evaluating coronary disease impairments. The results were that the client was declined outright by some of carriers while other carriers wanted more tests done before making a determination. After several conferences, we were able to get a Table 6 underwriting from one of the carriers.

As a result of the carrier's underwriting research, they have concluded that potential applicants have access to and have adopted a broader range of health and lifestyle behaviors than ever before. Some applicants have incorporated in their daily living routine exercise, low fat diets, stress management and other preventive healthcare choices. They also have access to healthcare that places greater emphasis on preventive care.

Given the broad range in personal behaviors of clients, the carrier felt the need to incorporate in their underwriting a methodology to score the benefits of some of these healthcare choices in their underwriting.

Applicants can now directly translate the benefits of their healthcare choices into greater savings through a broader underwriting perspective.

Specifically, the new program offers potential class upgrades on Standard or better risks for clients ages 20-65, and potential upgrades on certain Substandard decisions to a maximum of Standard for clients ages 18-70. The carrier's acknowledgement of these health choices by applicants rewards to prospective insurance clients.

Given the evolving underwriting changes by some carriers, there is an opportunity to achieve better underwriting results for a client, but it also explains why there can be such divergence in underwriting results. This only serves to underscore the art and craft in getting a client properly underwritten, and why it makes sense to employ an underwriting specialist.

Case - Male, age 52, Managing Partner of a CPA Firm net worth in excess of \$5MM

The client is about 5' 10" tall and weighs about 190 lbs. He is relatively fit with a waist of 36 inches. Client suffers from hyperlipidemia. At age 48, he had two stents put in his right coronary artery. The client has a normal EKG. He visits his doctor regularly, but given his history at such an early age was viewed to be borderline insurable.

We prepared a summary of the client's medical records and history, but we also reviewed the client's daily living protocol. Studies have shown that people who suffer from hyperlipidemia can have better outcomes if they embrace a very aggressive program of low fat diet, exercise and aggressive medication treatment. In our review, we were able to conclude that the client had changed and fully adopted an aggressive daily living protocol as evidenced by very favorable blood panel results.

Again, the results were that the client was declined outright by some carriers, but after several conferences with underwriting teams, we were able to get a Table 6 underwriting from one of the carriers in spite of his impairment.