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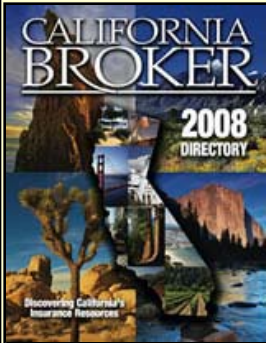
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## The Difference Between Morbidity and Mortality and Why it Matters

by Howard S. Freedland, CFA

Morbidity is defined as the state of poor health of a person from Latin morbidus: sick, unhealthy...Mortality is defined as a measure of the number of deaths in a given population.

In any evolving industry, certain business practices can lead to unintended and often disastrous consequences. An example is the traditional methodology that's used to estimate life expectancy. The viatical market arose during the early days of the AIDS epidemic in the United States. The market was dealt a severe blow when the development of new treatment regimens significantly extended the life expectancy of insureds with AIDS. It caused significant losses to investors.

The viatical market used medical underwriters who were experienced in determining the expected mortality of a terminal condition. The error of even a few months has a significant affect on viatical investors' returns. A number of companies emerged to provide these life expectancy reports.

In spite of problems in the past with the viatical market, those looking for investments that are not correlated to traditional investments, such as stocks and bonds, have been drawn to the idea of purchasing insurance from senior insureds who do not have a diagnosed terminal illness. These seniors chose to sell their insurance policies because they were no longer needed or affordable or they wanted to pay for the rising cost of healthcare, pay for long-term care insurance, purchase an annuity, or simply improve their quality of life.

Investors turned to existing providers of life expectancy reports to price these policies. These life expectancy providers used methodologies that were developed for the viatical market to predict life expectancy based on the insured's morbidity. The problem is that viatical morbidity methodologies do not necessarily transfer to the life settlement market.

Life expectancy providers typically review an insured's attending physician summaries. When available, they review current lab results and other available information to form a view of an insured's health and morbidity. This translates into a multiplier that reflects the insured's health compared to the expected health for a standard person of the insured's age and gender. This multiplier is applied to standard mortality tables, such as the 2001 CSO or the 2001 Valuation Basic Tables (VBT) developed by life insurance actuaries. The result is a single number derived from a standardized actuarial probability formula. It represents the number of months the insured is expected to live. This life expectancy became the key variable for standardized valuation software.

This multiplier method leads to two disastrous outcomes for investors. Life expectancy providers invented their own methodologies that were applied by their underwriting staffs. Often, these methodologies had little or no consistency and no clear medical underwriting or actuarial standards for translating morbidity factors into a mortality multiplier. This led to widely varying results within life expectancy providers and between life expectancy providers.

Life expectancy providers had to determine how to apply their morbidity estimates to multipliers and determine the range of the multipliers. Unfortunately, they had no data on dispersion of mortality outcomes by morbidity and life expectancy. They were left to determine the magnitude of multipliers and determine which morbidity or co-morbidity factors are associated with these multipliers.

Various providers delivered reports with widely different life expectancies for the same

insured. Investors were left to figure out which life expectancies were most accurate. Some investors used a particular life expectancy provider while others thought it was safer to average life expectancies from multiple life expectancy providers.

Since the industry is still very young, no life expectancy provider has enough data to determine whether their underwriting approach properly associates morbidity with mortality.

As institutional investors accumulated several large portfolios, the mortality experience began to diverge significantly from the expected mortality in the life expectancy reports they had purchased. In 2006, one of the oldest and largest life expectancy providers made a major change in methodology resulting in large increases in life expectancies and a reduction in the value of investor's life settlement portfolios.

This meant that investor's models had to be reworked. It may have contributed to several institutional investors' failed attempts at securitization. However, the industry recovered with the arrival of new investors and the life settlement industry continued to expand. There was also a rapid growth in newly issued premium financed policies, which were often issued based on estimates of policy value derived from life expectancy reports.

### **2008 VBT and Relative Risk**

All of this guessing by life expectancy providers should have ended in March 2008 when the Society of Actuaries published its much-anticipated revision to the 2001 VBT. The 2008 VBT is a giant leap forward in quantifying mortality associated with fully underwritten life insurance policies. The 2008 VBT is based on a study from 2002 to 2004 by the Society of Actuaries and the American Academy of Actuaries.

This study is remarkable in several respects. It is, by far, the largest sample of mortality data ever assembled from the insurance industry. The working group analyzed almost 700,000 mortality events representing \$7.4 billion in death benefits.

They accumulated data on standard and preferred policies. They spent considerable time and money establishing a uniform process to rate all policies independently using the underwriting criteria score system. This published methodology was developed to standardize policies independently from their issuance by carriers so that mortality can be measured by the morbidity of insureds at the time the policies were issued.

These results were published as new relative risk tables, which augment the primary 2008 VBT. The relative risk tables represent a giant leap forward in providing statistically reliable detail for measuring the affect of morbidity on mortality.

Remarkably, most traditional life expectancy providers have completely ignored the results of the relative risk tables. In fact, one life expectancy provider publicly announced that it had not bothered to study the results since they were new. Recently, one of the oldest and largest life expectancy providers announced yet another major change to its life expectancy methodology leading to increases of expected mortality of up to 30%. This has thrown the life settlements market into disarray yet again.

### **Industry Response**

In response to the upheaval caused by this announcement, I presented three Webinars, demystifying life expectancy reports, which were attended by over 250 members of the life settlement industry.

The conclusion of the Webinars was that investors and the life settlement industry could use the 2008 VBT relative risk tables as a standard to calculate mortality accurately and consistently for fully underwritten policies. In fact, at less than 5%, mortality among seniors has changed remarkably little since the release of the 2001 VBT.

However, the following are some significant changes in the mortality tables that will affect investors:

- Mortality rates have come down dramatically during duration periods one and two, which is the contestable period.
- Mortality rates have generally risen to offset this decline in duration periods three through five.
- Life expectancy for women has risen about 10%.

- Life expectancy for men has remained virtually unchanged.
- Life expectancy for smokers has continued to decline.

After the Webinars, several life expectancy providers announced that their life expectancy methodologies were compliant with the 2008 VBT. They relied on the primary VBTs. However, by relying on the primary tables, these life expectancy providers have clearly missed the real significance of the 2008 VBT relative risk tables. They continue to use morbidity factors to determine arbitrary multipliers. They then apply these arbitrary multipliers to the new 2008 primary VBT. This continues the industry's tradition of generating non-standardized, opaque, and arbitrary life expectancies. Simply put, multipliers make life expectancy reports inaccurate. Diagnosed illness has not correlated well with reduced mortality estimates by life expectancy providers.

### **New Life Expectancy Methodology**

In order to attract significant new capital sources, the life settlement industry needs life expectancy reports that are consistent, accurate, reliable, accountable, and transparent.

A new methodology is to use Underwriting Criteria Score as a standardized way to medically evaluate an insured's morbidity. It is used to assign the insured to a relative risk category in order to get an objective and consistent life expectancy. This new method uses a three-step approach to underwriting:

1. Each insured is rated on a standardized basis as if they were applying for new insurance. Highly experienced life insurance underwriters work from the Swiss Re underwriting manual, which is the bible of the life insurance industry. They conform to an Underwriting Criteria Score compliant rating system. The insured is placed in one of the 10 established relative risk categories for non-smokers or four categories for smokers.
2. Some insureds cannot be placed in a relative risk class because they would be declined for insurance given their current health. Their life expectancy would be based on the Social Security Administration mortality table for the general population in their gender.
3. The step 1 underwriting process identifies morbidity factors that suggest a substantial risk of short-term mortality. However, an intensive impaired risk underwriting is undertaken to determine the insured's life expectancy. This is most similar to the type of underwriting that has been done by viatical-oriented life expectancy providers.

An alternative approach is to use the carrier's initial policy rating and age the insured based on the appropriate relative risk table starting with the aged-up duration period of the policy. This usually results in a higher (more conservative) life expectancy for insureds that fall into steps two or three.

### **Age Last Birthday versus Age Nearest Birthday**

When the CSO and VBTs were created, computers were not widely available and standardized printed tables were common. Pricing to "age last birthday" or "age nearest birthday" was born. Traditional providers still generate their life expectancies based on this stair-step approach. It creates artificial short-term valuation imbalances based on how far the valuation date is from the insured's birth date.

The newer method eliminates this concept by creating a life expectancy calculator. It generates life expectancies that are accurate to the insured's current birth date month.

### **Moving Forward**

The life settlement industry has seen its growth constrained over the past several years due to poor investor experiences and failed securitization efforts. Both of these issues can be attributed to traditional life expectancy providers that projected too many mortality events. To fix this problem permanently, life expectancy providers must standardize on the actuarial and underwriting concepts imbedded in the 2008 relative risk VBTs and the companion Underwriting Criteria Score system.

Life expectancy providers should compete on their ability to provide timely, accurate, and consistent life expectancy reports as well as excellent customer service – not on

their ability to package and sell proprietary black box systems that are neither standardized nor comparable. Investors in life settlements must demand the changes rather than having life expectancy providers offer lower life expectancies that justify paying higher prices for policies or artificially marking up existing investments. In this way, investors will be able to achieve their projected rates of return and the life settlement market will be able to attract enough capital to support the rapidly growing demand among seniors to sell their unwanted or unaffordable insurance policies. The need for new sources of capital in the life settlement market is more pressing than ever given the current financial environment and the aging of the population.

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In 2007, Howard Freedland, formed Lido Ventures with James Slazas. Lido Ventures has invested in several life settlement companies. Freedland was managing general partner of September Investors Ltd., a hedge fund he formed in 1979 and September Venture Partners, Ltd., a private equity fund. In 1984, he was founder and CEO of London Freedland Inc., an NASD broker/dealer. He began his investment career in 1973 with St. Paul Advisors. Freedland was an Instructor in Finance at the University of Minnesota where he worked with Professor C. Robert Carlson to create the financial formula Net Terminal Value. He received his B.A. from the University of Minnesota and has been a Chartered Financial Analysts since 1978. For information about Global Life Underwriting, LLC or CARAT based life expectancy reports, call Howard Freedland at Global Life Underwriting, LLC at 310-295-4960, e-mail [policy@globallifeunderwriting.com](mailto:policy@globallifeunderwriting.com), or visit [www.globallifeunderwriting.com](http://www.globallifeunderwriting.com)

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