


# The cost of a life-care plan

## *The future cost of a life-care plan is not as simple as adding up the costs in today's dollars*

**By Joseph T. Crouse**

In cases of catastrophic injury, an economist should be retained to perform a present-value calculation of a life-care plan and an economic assessment of earning capacity loss. Through an integrated case study, this article, *the second of two parts* (See Plaintiff, April 2015), explains the basics underlying the cost calculation of the future health and medical needs set out in the life- care plan.

Assume an eleven-year-old child, Abigail, sustained a catastrophic injury at birth as a result of alleged medical malpractice. As a result, she suffers from hypoxic-ischemic encephalopathy, spastic quadriparesis, and profound developmental delay. Abigail is unable to sit up, stand, walk, talk and swallow. She also has no head control and requires a GJ tube.

A life-care planner is retained to assess the necessary future health and medical needs that Abigail will likely accrue through her life expectancy. The economist will take the information from the life-care planner's report to compute the present value of future health and medical needs. In addition, the economist should be retained to perform an economic assessment of earning capacity loss. An analysis of the replacement cost of household services can also be performed if the life-care planner does not include this element in his or her life-care plan.

### Present value of future health and medical care

A life-care plan identifying the future medical care costs over the plaintiff's life expectancy is a frequent component of damages sought for plaintiffs with a catastrophic disability. Typically, for cases in need of a life-care plan, the attorney hires a planner who customizes a plan for the plaintiff's specific needs and prognoses. This plan is then reviewed by an economist to determine the present value of the costs outlined by the planner. This present value considers two elements: (1) the projected cost of each item in the year it is to be incurred and also (2) the interest that can be earned on an amount of money awarded now to fund that future year expense. By recognizing the fact that the award will earn interest, the future value is reduced to present value to avoid an over-compensation.

The objective in computing the present value of future health and medical care needs is to empower the jury with the information needed to compensate the wrongfully injured individual for the future health and medical care costs he or she will likely incur. In order to accomplish this, we must consider that medical costs are a dynamic phenomenon and generally increase each year. This means that the $500 gastroenterologist follow-up this year may cost $700 in 10 years. Statistics on the rates of medical care inflation are available from the U.S. Bureau of Labor Statistics and are enormously helpful in understanding this dynamic phenomenon. In addition, we must consider that if Abigail received $5 million for future health and medical care needs, she could prudently invest this sum of money in order to gain interest. We must take these two issues into consideration. Economists term them the growth rate and the discount rate.

When calculating present value, the growth rate and discount rate must be carefully analyzed. These two factors have an opposing effect on the present value sum. Namely, an increase of the growth rate serves to increase the present- value sum and an increase of the discount rate serves to decrease the present value sum. The difference between the discount rate and the growth rate are of utmost importance.

The main goal in calculating the present value of future health and medical care needs is to provide an estimate, in terms of today's dollars, that will be sufficient to meet Abigail's long-term health and medical care needs. In performing this calculation, the interrelationship over time between the rate of medical cost changes and the rate of interest must be considered. Each item in a life care plan must be considered separately based on its classification by the U.S. Bureau of Labor Statistics. Table 1 presents the interrelationship between medical cost changes and rates of interest, stated in percentages, over various time periods.

Medical care is one of eight major groups in the Consumer Price Index (CPI) which economists use to measure the general rate of inflation (price increases) in the economy. There are two medical care classifications: medical care commodities (MCC) and medical care services (MCS), each containing several item categories. *Medical care commodities* are defined as "prescription drugs, nonprescription over-the-counter-drugs, and other medical equipment and supplies." *Medical care services* are defined as "professional medical services, hospital services, nursing home services, and health insurance imputation." *Professional services* are defined as "physicians, dentists, eye care providers, and other medical professionals." Lastly, *hospital and related services* are defined as "services provided to inpatients and outpatients. Includes emergency room visits, nursing home care and adult day care. Includes transaction prices only."

The first five columns of Table 1 entitled "General Items," "Medical Services," "Hospital & Related Services," "Medical Commodities,"

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**Table 1: Interrelationship between Medical Cost Changes & Rate of Interest (stated in %)**

| Period | General Items[1] | Medical Services[1] | Hospital & Related Services[1] | Medical Commodities[1] | Compensation[2] | Interest Rate*[3] |
|---|---|---|---|---|---|---|
| 1953—2013 | 3.7 | 5.9 | 7.5 | 3.5 | 5.1 | 4.8 |
| 1963—2013 | 4.1 | 6.3 | 8.0 | 4.1 | 5.2 | 5.2 |
| 1973—2013 | 4.2 | 6.4 | 8.2 | 5.0 | 5.0 | 5.2 |
| 1983—2013 | 2.9 | 5.1 | 6.7 | 4.1 | 3.8 | 4.1 |
| 1993—2013 | 2.4 | 4.1 | 5.7 | 2.7 | 3.4 | 2.9 |
| 2003—2013 | 2.4 | 4.0 | 5.9 | 2.5 | 2.9 | 1.5 |

1. U.S. Bureau of Labor Statistics. Consumer Price Index, All Urban Consumers (CPI-U), U.S. City Average.
2. U.S. Bureau of Labor Statistics. Major Sector Productivity and Costs Index: Hourly Compensation.
3. Federal Reserve Bank. 3-Month Treasury Bill Rate (Secondary Market), Averages of Daily Close Bid Prices.

* Ninety-one day U.S. Treasury Bill Yields

**Table 2: Short-Term & Long-Term Rates for Present Value Calculation**

| | | Short-Term | | Long-Term | |
|---|---|---|---|---|---|
| Type | | Growth | Discount | Growth | Discount |
| Commodities – Medical | MC | 2.5% | 1.5% | 3.5% | 4.8% |
| Compensation | CMP | 2.9% | 1.5% | 5.1% | 4.8% |
| General Items | CPI | 2.4% | 1.5% | 3.7% | 4.8% |
| Hospital and Related Services | HS | 5.9% | 1.5% | 7.5% | 4.8% |
| Services – Medical | MS | 4.0% | 1.5% | 5.9% | 4.8% |

and "Compensation" all represent growth rates that may be used for particular items in a life-care plan. The last column entitled "Interest Rate" represents the discount rate with the least amount of risk and the highest return. This financial instrument is the 91-day Treasury bill.

An inspection of Table 1 reveals fluctuation in both the growth and discount rates over time. However, both long-term and short-term rates of increase in medical services have exceeded the rates of increase in medical and non-medical commodities over the same time frame. A present value calculation based on historical data assumes that a similar trend will persist in the future. Table 2 presents one approach that an economist may take in computing the present value of a life-care plan.

In this case, the economist defines short-term rates as those prevailing over the last ten-year period (2003-2013), while the long-term rates are defined as those rates prevailing over the past 60-year period (1953-2013). One reasonable approach to applying these growth and discount rates to line items in a life-care plan is to use short-term rates of growth and discount for items needed for less than 10 years, and long-term rates of growth and interest for items needed for more than 10 years. Table 3 on next page presents a brief application of how the methodology discussed may be utilized in Abigail's case.

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| Table 3: Sample Present Value of a Life-Care Plan Calculation | | | | | | |
|---|---|---|---|---|---|---|
| Item | Type | Yrs. | Frequency | Annual Cost | Current Cost | Present Value |
| Gastroenterology Follow Up | CMP | 70.5 | Annually | $500 | $35,250 | $39,175 |
| Diagnostic Tests (Labs, X-rays) | MS | 70.5 | Annually | $1,000 | $70,500 | $104,783 |
| Future Hospitalizations | HS | 70.5 | Annually | $30,000 | $2,115,000 | $5,978,801 |
| Barrier Free Home | CPI | 70.5 | One Time | $3,546.10 | $250,000 | $175,462 |

Suppose that the four line items shown in Table 3 were present as part of the life-care plan and the medical doctor determined that they would be needed through the life expectancy, to age 81.5. The medical doctor states everything in Table 3 with the exception of the column entitled "Type" and the column entitled "Present Value." The role of the economist is to determine the appropriate rates of growth and discount. In order to select the appropriate rate of growth, the economist must first classify the life-care-plan item according to its type.

For example, the gastroenterology follow-up is compensation for the gastroenterologist, so it is appropriate to utilize the long-term rate of compensation increase, 5.1 percent. The long-term discount rate is 4.8 percent. Since the growth rate exceeds the discount rate, the present value is higher than the current cost ($39,175 is higher than $35,250). Similarly, if we examine the line item of future hospitalizations, we see that the present value, $5,978,801, is substantially greater than the current cost of $2,115,000. This is due to the growth rate of hospital and related services far exceeding the long-term discount rate (7.5 percent compared to 4.8 percent).

Thus, it is important that an economist consider the appropriate long-term and short-term rates of interest and medical care increases in the areas of commodities and services. It is only through appropriate application of these government statistics that these figures will be sufficient to meet Abigail's long-term health and medical-care needs.


Crouse

*Joseph T. Crouse, Ph.D., M.B.A. is a* Labor Economist with Vocational Economics, Inc. *based in the Las Vegas, NV office of the firm. He functions as an expert witness and consultant in cases involving personal injury, wrongful death, and wrongful termination. He received his Ph.D. in economics from University of Nevada, Reno, an M.B.A. from Frostburg State University, and an M.A. in Human Sciences from Hood College. He may be reached at 800-227-0198 or via email to josephc@vocecon.com.*

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