In this article, we discuss the link between financial ROI and human ROI in the health care arena. As modelers of health care ROI, we are amazed at how often good health care makes good sense - from both a financial standpoint and a human standpoint. As an illustration, we ask: Can employers reduce health care costs and improve the quality of life of employees at the same time? Our answer without hesitation is absolutely.

There are many types of health care ROI models. Some models address single disease states, while others address multiple or comorbid disease states. Some models address risk factors while others do not. Some models include specific interventions (treatment with a select drug class or particular surgical procedures) and others do not. Variety aside, health care ROI models share some common components.

Health care ROI models usually start with secondary research. For example, measuring the effects of a managed care disease management program on a condition or disease (for example, depression) begins with an intense examination of the literature on that disease. Essential questions include: Have treatment programs shown an improvement in health outcome measures such as lives saved or hospitalizations? Does the evidence show direct or indirect cost savings due to positive treatment effects? What were the costs of implementing the treatment programs?

While the above questions may appear simplistic, they are essential to the development of a valid ROI calculator. If answers to these questions are not available in peer-reviewed publications, the authenticity of the model will certainly be questioned. If it is possible to drill down even deeper into the above questions, it should improve the accuracy of model calculations. For example, data may exist that not only shows direct or indirect cost savings, but also those savings broken down by disease severity, e.g., mild vs. severe depression. It is possible that the treatment program may show the biggest bang per dollar spent only for the most severe cases of the disease.

After the secondary research is performed, development of a ROI calculator can begin in earnest. In every ROI calculator, there are inputs, throughputs and outputs (Figure 1). Although ROI calculators can be built for many audiences, here we will use an ROI calculator built for employers as our example. (Employers, after all, pay a large

Modeling health care ROI

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Figure 1: Flow Diagram of an ROI Health Care Model for Employers

Inputs are typically characteristics about an employer that are known, such as how many employees are covered by employer sponsored health care, the employer's geographic location and industry sector. With these inputs, the model can estimate the number of covered employees (and possibly dependents) that are likely to be afflicted. These calculations then become throughputs for later calculations.

Next, an intervention or treatment program must be proposed and defined. It must be specified how much it will cost, how effective it will be and what potential savings it will have on a per-person level. When this throughput information is crossed with the prior employer characteristics, the first pass of ROI results can be calculated. This includes the total program costs, expected increase/decrease in direct medical costs and impact on absenteeism and presenteeism. When these pieces are then put together, they will reveal the financial ROI for a given population.

Many details
Although calculating ROI is usually a simple equation involving only costs and savings, there are many details that can go into estimating these costs and savings. There are details that many employers may not know; for example, the prevalence of mild vs. severe depression in their workforce or the extent of absenteeism that may result from varying levels of depression. Providing default values for inputs is one way to assist those employers that lack precise knowledge about their workforce. Research and national datasets can also help to set default values. For example, an employer may not know what percentages of employees are likely to comply with a new depression treatment, but published research may provide a compliance estimate for them.

Many online ROI calculators are enhanced with “help” buttons. The better models may give documentation about their underlying secondary research. Some transparently share their assumptions, calculations and limitations. There are also many ways that calculators can drill down to specific details of an employer in order to better estimate model outputs. For example, employers may be able to provide the exact age and gender breakdown of their covered employees as well as their average salary. From there, the ultimate output for an online ROI calculator is usually a one-number net or ROI figure. In the latter case, ROI will represent the incremental dollars saved (or generated) divided by the incremental dollars spent on a treatment plan. If all works well, the culmination of the model is a positive fiscal ROI for the intended treatment program or intervention. In the case of depression, using an existing online calculator and the model’s default values, the fiscal ROIs vary from +5 percent up to +70 percent, depending on the employee population (see www.depressioncalculator.com for an example).

Hard numbers
The case for improving health care is increasingly being shown with hard numbers. The Institute of Medicine report, To Err is Human, stated that approximately 48,000 to 98,000 deaths occur each year because of medical errors.¹ Note that these are preventable errors, not random errors without remedy. The Commonwealth Fund estimates that, if the U.S. improved its health care quality and access to realistic target levels (levels already being achieved by leading states and health plans), over 100,000 lives would be saved annually and direct medical costs would be reduced by 50 to 100 billion per year.² The Dartmouth Center for Evaluative Clinical Science indicates that 20 percent to 30 percent of Medicare spending goes for procedures, visits, drugs, hospitalizations and treatments that do not improve quality or extend life. Its data shows, for example, that Medicare spending is usually higher in states where medical quality is lower.³ In all these studies, the authors believed it was reasonable to assume that quality improvements will lead to cost reductions.

Similar trends are also shown in health care ROI models. For example, a growing body of evidence shows that quality health care can reduce direct medical costs while also reducing employers’ indirect costs due to increased absenteeism and de-
creased productivity. More generally, health care ROI models usually show a sizable reduction in costs. At the same time, they also show a shortening of hospital stays and/or other quality-of-life improvements. Depending on the topic, ROI models may even predict a substantial number of lives saved.

Although the above trends are decidedly positive, there are a few caveats. First, there are occasions when health care investment does not result in positive fiscal ROI. Some medications and procedures are so expensive that they cannot be repaid or justified solely on financial grounds. Rather, such medications and procedures are justified on humanitarian grounds, e.g., we provide a transplant because it prolongs life, not because it reduces overall costs. Second, even when the positive ROI trend does hold, there are still winners and losers in the quality contest. For example, there are hospitals that score worse on medical errors, unnecessary procedures, or complications (e.g., higher nosocomial infection rates). Third, who gets the cost savings associated with improved quality of care? It depends. The benefits of cost savings are not necessarily shared equally. In some cases, the savings go to the employer. In other cases, the savings accrue to health care providers, to health insurance companies, or to the government (Medicare and Medicaid). These caveats aside, there is no denying that investments in health care quality lead to substantial quality of life benefits. Preventative care, wellness programs, disease management programs, timely screening, and appropriate drug treatment show increasing evidence that they help both employees and employers – both in the human sense that people are healthier and in the fiscal sense that health care costs are reduced.

Profitable link

For over 10 years, patient satisfaction research and now ROI modeling have shown a robust and profitable link between doing what is good for patients and bottom line financial results. Over the next 10 years, we believe that this link will become further documented by market researchers who continue to demonstrate the combined fiscal and human ROI of health care investments.

References