Making the business case for a safe patient handling and mobility program

Learn about three approaches to preparing an investment justification.

By John Celona, BS, JD

The value of a safe patient handling and mobility (SPHM) program is clear, but the benefits may be difficult for some nurse leaders to quantify. Some investment justifications are available from vendors of SPHM equipment, but even when well done, they don't give a complete picture of potential benefits—and inevitably are discounted because vendors are in the business of selling equipment. This article describes how to make an independent, unbiased business case for an SPHM program and presents a case study of a decision analysis process used at Stanford University Medical Center.

Elements of a good business case

A business case should:

- describe the proposed program, such as required equipment and training
- quantify program costs and benefits
- show the program's net benefit (benefits minus costs), expressed either as a net present value or return on investment (ROI).

A good business case considers alternative program designs and includes projections for the results if the proposed program isn't implemented (such as increased workers' compensation costs and increased pressure ulcers). Net benefits commonly are measured by subtracting costs with the program in place from costs without the program in place.

Although preparing such projections is feasible for those with a master's degree in business administration or a similar education, many SPHM program champions have clinical backgrounds. Here are some possible strategies they can use, starting with the easiest but least facility-specific.

STRATEGY 1: Refer to a published study

The easiest but least facility-specific and least accurate way to prepare an investment justification is to refer to published studies. For example, the risk-management study I undertook for Stanford, published in the April 2011 issue of *Journal of Healthcare Risk Management*, shows what a facility with all the elements of a successful SPHM program can achieve.

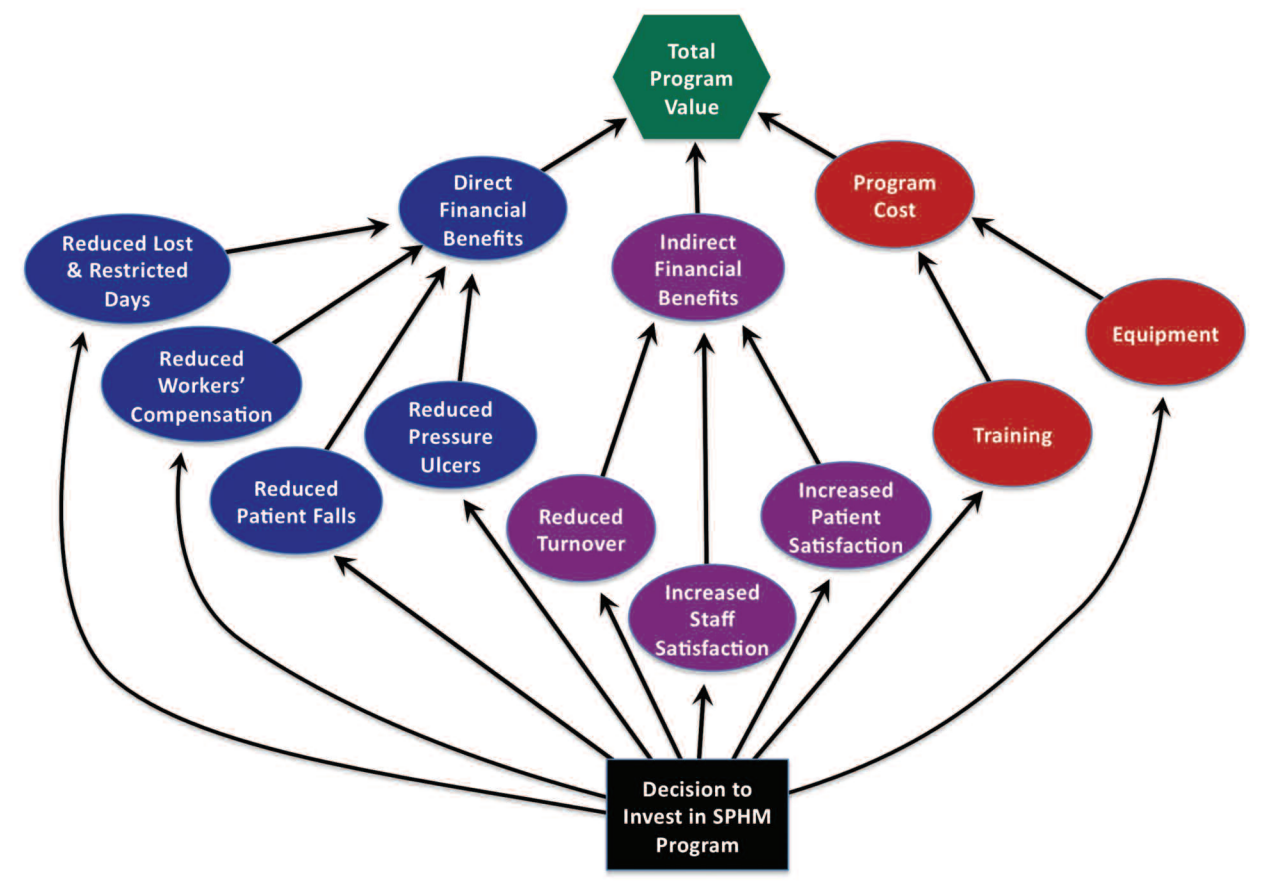
STRATEGY 2: Complete a simple template

The next most accurate way to prepare an investment justification is to fill out a simple template. Most likely, your employer's finance department or capital committee has a standard template for proposed expenditures. Most organizations require a cost-benefit projection for 5 years into the future. The cost part is fairly easy, and most people are familiar with preparing budgets for what they propose to spend. Be sure to include estimates for equipment purchases and training time.

As for benefits, the most commonly cited ones for an SPHM program are reductions in workers' compensation costs and in lost or restricted staff days due to patient handling and mobility injuries. Unless your facility already has identified these costs, you'll need to crossmatch data from the Occupational Safety and Health Administration Form 300 (listing causes of injuries and whether they led to lost or restricted duty

Influence diagram

An influence diagram is a simple, graphic way of showing all items of interest and demonstrating what's related to what. Uncertainties are shown in ovals, decisions in boxes, and the final value as a hexagon; arrows show relationships among items. This influence diagram shows all safe patient handling and mobility (SPHM) costs and benefits of interest to leaders at Stanford University Medical Center when considering whether to invest in an SPHM program.



days) against cost data in the workers' compensation system.

Typically, organizations estimate they'll save 60% to 80% of workers' compensation costs related to patient mobilization if they have an SPHM program, and will save zero to 50% of the cost of replacement staff to fill in for out-of-work or restricted-duty staff (depending on the facility's replacement staff policy). Subtracting each year's costs from the benefits yields the annual net benefit. If your facility's template hasn't built in these costs, someone from the finance department can help convert the year-by-year figures to a net present value or ROI.

STRATEGY 3: Prepare a decision analysis

Preparing a decision analysis is more difficult than referring to a published study or using a template. But it's facility-specific and thus provides the most complete and accurate picture. Of course, it must be done by someone skilled in decision analysis. But for large investments, the cost of the analysis is well worth it, because it:

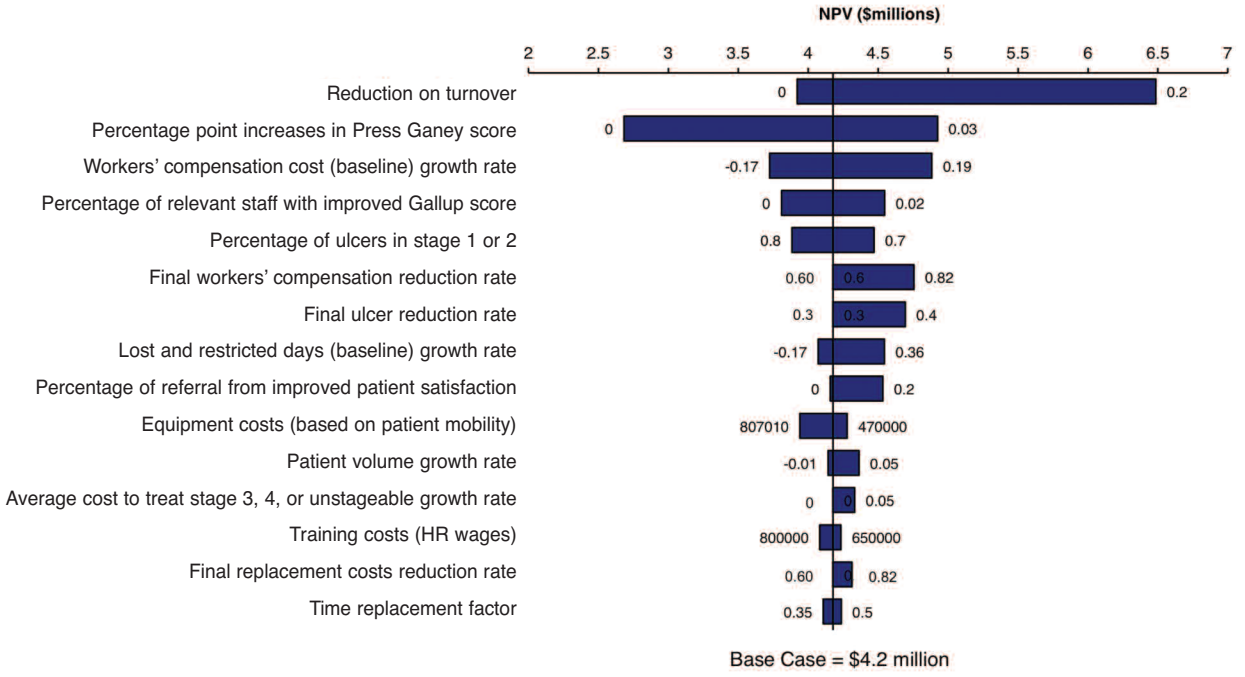
- delivers a highly accurate quantification of costs and benefits, including uncertainties
- shows worst- and best-case scenarios for costs and benefits and describes exactly how these might occur
- identifies how to get more value out of the SPHM program
- specifies which result measures should be tracked to validate that the program is working as it should be, and pinpoints what the values for those measures should be.

Generally, a decision analysis costs much less than 1% of the program cost. What's more, it produces recommendations for increasing program value, which dwarf the cost of the analysis.

I worked with Stanford on a decision analysis for its SPHM program because it became apparent that the simple-template approach

Tornado chart: Key value drivers

In this so-called tornado chart, the key value drivers for Stanford's safe patient handling and mobility (SPHM) program appear at the top. Uncertainties farther down the chart (the complete chart had 40 uncertainties) don't merit much time or attention. For example, whether 35% or 50% of restricted staff time was replaced with other staff time didn't significantly affect total program value. In reality, of course, all uncertainties are varying at the same time, rather than one at a time as shown in this chart.



initially used there missed most of the value and wouldn't justify a program in the new hospital under construction.

Case study: Standford decision analysis

At Stanford, we began by drawing an influence diagram to show all SPHM costs and benefits of interest to leaders. (See *Influence diagram*.) For each cost or benefit, more detailed work explored exactly how to quantify the results. For example, to estimate the benefits of reduced staff turnover, we needed to know:

- number of nurses mobilizing patients who would be affected by the SPHM program
- average annual staff turnover rate
- average cost to recruit and train a nurse ($60K to $80K, based on a literature search)
- estimate of how much the SPHM program would reduce staff turnover.

We did similar work for each type of cost and benefit. Unlike using a simple template or referring to a published study, the decision-analysis approach enabled us to use a range of numbers to represent uncertainty regarding how significant the future impact might be. For turnover reduction, we used a range of 0% to 20%.

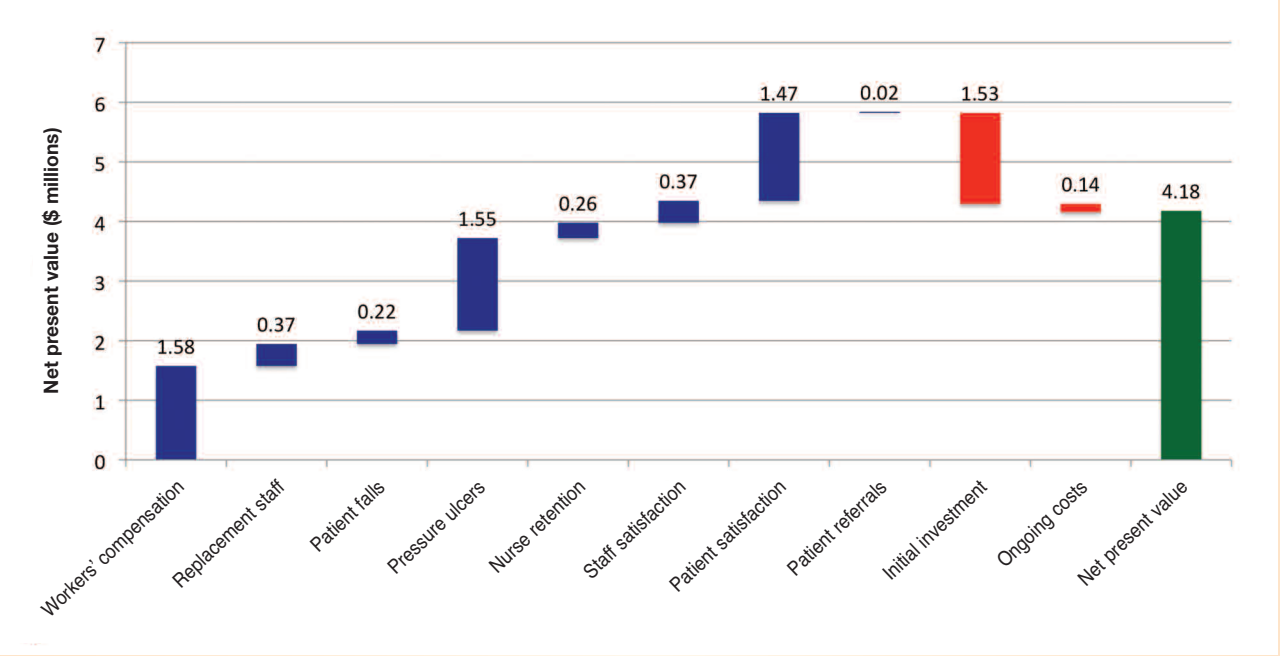
These data were then programmed into a Microsoft Excel spreadsheet. One immediate result was that the total value of an SPHM program (including hard-to-quantify benefits) would amount to more than twice the value of reduced workers' compensation costs and lost and restricted days alone.

The next step was to set each uncertainty (such as a change in the nurse turnover rate) to the low value in the range, record the total program value, set the uncertainty to the high value in the range, and record the total program value. The difference between the two program values was plotted on a bar chart. When the bars were sorted from highest to lowest impact on program value, the characteristic tornado shape resulted. (See *Tornado chart: Key value drivers*.)

Stanford leaders were surprised to learn that reduced staff turnover had the greatest potential for getting more value out of the SPHM program, possibly increasing total

Components of total SPHM program value

This "waterfall" chart shows that the largest components of value for Stanford's safe patient handling and mobility (SPHM) program are decreases in workers' compensation costs and in pressure ulcers and increased patient satisfaction. Nurse retention is a small component of total program value in the base case scenario shown here (with only a 2% reduction in turnover), although it has the largest potential for increasing program value if turnover reduction could be pushed up to 20%.



program value from about $4 million to $6.5 million. As a result, Stanford decided to inform the nursing staff that it was going to put in place the SPHM tools needed to keep them healthy and able to work. Stanford also surveyed staff satisfaction improvements resulting from the SPHM program. Combinations of all the variables produce thousands of scenarios, best shown in a probability distribution. The probability distribution for Stanford showed that the mean program value was more than double the estimate from the template approach. It also showed that in a worst-case scenario, the program would still pay for itself.

An easy way to show the components of program value is to take the overall program value from the base case (all uncertainties set to their middle value) and break these down into components of cost and value. This produces a so-called waterfall chart. (See *Components of total SPHM program value*.)

Outcome of the decision analysis

Stanford's decision analysis produced:

- a high degree of confidence that the actual value of the SPHM program and uncertainty in that value had been quantified accurately
- a deeper understanding of how the program would add value and which benefits were most important
- insight into how to get more value from the program
- identification of which value measures would need to be tracked to validate program results.

At Stanford, reductions in workers' compensation claims were on track (within the 60% to 80% range forecast), but baseline workers' compensation costs were growing faster than the maximum 19% annual increase forecast. A closer look revealed that a return-to-work program had been discontinued, sending costs skyrocketing. Stanford quickly reinstated that program.

Selected references

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