

# A New Model for Successful Safe Patient Handling Programs

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## ABSTRACT

The transport, transfer, adjustment, and general handling of hospital patients accounts for one of the most significant injury risks for healthcare workers. This is true for the general population of patients and even more so for bariatric patients. Safe Patient Handling Programs are increasingly becoming the norm for hospitals and long term care facilities. The use of lifting, transferring, and mobilizing equipment is mandated in many states in order to protect both the healthcare workers and the patients from injury due to manual lifting.

The experience with such programs for many healthcare facilities presents a cautionary tale of great promise of benefit and very difficult delivery of same. This is a major culture change for nurses and other healthcare employees. The scenario goes something like this: Everyone (or nearly everyone) is delighted with the idea and seems eager to move forward with it. Equipment is purchased and everyone is trained to some extent on how to use it. The news of the program is presented to the public with ribbon cutting or similar fanfare. Soon thereafter it becomes clear that there were several things that were not considered such as laundry for the slings, who repairs the lifts, where IS the lift, where are the repo sheets. These oversights are soon followed by, “it takes too long”, “this isn’t working”, “I liked the old way”, and so on.

Preventing this decline in the program requires dedicated “champions”. They must be able to assist other personnel with patient handling tasks, have a thorough working knowledge of all the lift equipment, and can provide the training or retraining so necessary as care givers encounter issues that were not covered in the first round of training. At Stanford Hospital and Clinics and Lucile Packard Children’s Hospital we’re moving to the “lift coach” model to provide these things. This presentation describes the model and offers data on our experience over the past year. We believe this to be the best and most workable solution for culture change and successful Safe Patient Handling Program implementation. The presentation includes a unique Return On Investment calculation that we believe will be of great interest.

**Keywords:** Safe Patient Handling, Bariatric Patients, Lift Coach Model

## INTRODUCTION

The objective of this paper is to describe an innovative solution to Safe Patient Handling and Mobility (“SPHM”) at Stanford Hospitals and Clinics (“SHC”). The program has been functional for almost 1 year and a clear pattern is emerging, such that predictions are easily made. The objectives are to support decisions regarding implementing SPHM Programs, including determining program design, justifying costs, and balancing investment in other programs. To achieve these objectives and create the greatest value for patients, staff, facilities, and communities, we first build a comprehensive program based on the unique situations at the facility. Second, we need to develop an

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understanding of the total costs and benefits for an SPH program. Finally, we use the understanding of key value drivers to create new alternatives which increase total program value. This document outlines the approach jointly developed by Strategic Decisions Group and The Risk Authority-Stanford and implemented by Atlas Lift Tech for achieving these objectives with SPH programs.

Hospitals are among the most dangerous work environments in the US. Hospitals are making patients out of their workforce. Adding to this problem of injuries to the hospital staff is the Deficit Reduction Act of 2005. CMS has recognized what are referred to as Hospital-Acquired Conditions, and placed provisions in the Inpatient Prospective Payment System (IPPS) for non-payment, if certain circumstances exist. Health planners are scrambling to find solutions to the non-reimbursable events as described by CMS. Eleven categories of Hospital-Acquired Conditions were included in the IPPS Fiscal Year 2013 Final Rule. Further, the Affordable Care Act added section 1886(q) to the Social Security Act establishing the Hospital Readmissions Reduction Program, which requires CMS to reduce payments to IPPS hospitals with excess readmissions, effective for discharges beginning on October 1, 2012. Of the eleven events at risk for non-payment, at least half were immobility-associated consequences of care.

According to reports delivered to the U.S. Senate in 2010, the size of just the nursing injury problem is significant. Ignoring the costs associated with patient injury in hospitals, or the soft costs of recruiting, reduced schedule availability, and overtime, just the workers compensation claims associated with nursing has been estimated to be \$7.4B within the United States annually. As a result, a significant cost reduction opportunity exists, implying that the addressable market need is substantial. Within the United States there are approximately 5,400 hospital facilities that would require an SPHM program of one form or another. This estimate does not include the over 17,000 long-term care, rehabilitative care or nursing homes over 17,000 in total. In discussions with the American National Nursing Association it has been estimated that of these 5,400 US hospital facilities, 11% or approximately 600 facilities, have implemented their own “successful” safe patient handling programs. Of these facilities that have SPHM programs, it is estimated that only 10% of those safe patient handling programs (roughly 60 hospitals) include in-house “lift teams” implying, some 1% of the total market has dedicated staff to lifting programs.

Historically, the nursing care staff has performed safe patient handling tasks. However, there are several significant industry developments that, in aggregate, have changed the dynamics of safe patient handling needs. These developments include the increased need for compliance, the expansion of techniques and equipment for SPHM that require specialized domain expertise, and the breadth of program requirements which now makes SPHM a cross functional or “interdisciplinary” core competency throughout the hospital. In addition to SPHM programs becoming broader and more complex, there are several other macro trends within healthcare driving the wide scale adoption of SPHM Programs:

## **PATIENT SIZE AND SPHM**

At the core of the safe patient handling challenge is the undeniable fact that patient sizes have dramatically increased. It has been estimated that there are now approximately 72.5M obese adults in the United States such that the overweight general population is quickly becoming the general patient population. These increased patient sizes have now exceeded thresholds where they can be safely and effectively mobilized by nursing staff. A new approach is required to avoid nursing injuries and ensure patient safety.

## **Danger of Manual Patient Handling**

Patient handling and movement tasks are physically demanding, performed under stressful conditions, and are often unpredictable in nature. Patients offer multiple challenges including variations in size, physical disability, cognitive function, level of cooperation, and fluctuation in condition. As a weight to be lifted, patients lack the convenience of handles, even distribution of weight, and can commonly become combative during the mobility process. Females largely perform the role of a nurse: a physically demanding and hazardous occupation. In 2008, 93.4% of America’s nurses were women.

As a result of this, a 2007 Bureau of Labor Statistics study concluded that six of the top ten most dangerous occupations for back injury are found in the hospital setting. Over 50% of all nurses complain of severe back pain, with nearly two out of five requiring time off from work for back pain. One in eight nurses leave the profession prematurely due to debilitating injuries, resulting in increased costs to facilities that average \$40K to \$60K in recruitment and training expenses. In short, hospitals are turning their staff into the very patients they serve. The jeopardy associated with lifting and moving patients has become so heightened that on several occasions, nursing

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unions have formally demanded SPHM programs be implemented as one of their fundamental demands in labor negotiations.

Not only are employees at risk by using hazardous lifting procedures, but patients are also becoming injured from drops, falls and preventable pressure ulcers, to name a few. Patients need to be mobilized or turned routinely, approximately once every two hours, otherwise they may develop pressure ulcers at the points of contact with the hospital bed. The Agency for Healthcare Research and Quality reports an average treatment cost of \$37,800 per Hospital Acquired Pressure Ulcer (HAPU). Since 2008, HAPUs have not been eligible for CMS reimbursement, relegating these costs to be incurred by the facility itself. This has created dissatisfaction for everyone involved from the patients to the staff, and finally to the administration.

## **REGULATORY CHANGE AND SPHM PROGRAMS**

Given the obvious health risks to nursing staff, and the clear benefits of SPHM programs, “minimal lift” regulation has been passed in 12 states (Texas, Washington, Rhode Island, Maryland, Minnesota, New Jersey, Illinois, Missouri, Ohio, New York, and Hawaii) including California, which passed “AB 1136” (The Hospital Patient and Health Care Worker Injury Protection Act) on October 7, 2011. This regulation mandates that nurses be suitably trained, certified, and provided with equipment that they are obligated to use. This legislation has resulted in facilities needing to recruit, screen, staff, train, manage, and oversee dedicated SPHM professionals in order to comply with these regulatory requirements.

## **SPHM PROGRAM DEFINITION**

SPHM Programs install in facilities a variety of means to assist in lifting, turning, and transporting patients. These assists are becoming more important as decreasing patient mobility places increasing demands on care givers. The benefits of these programs include:

- Reduced patient falls and the costs associated with them;
- Reduced patient ulcers and treatment costs;
- Increased patient satisfaction;
- Increased referrals from satisfied patients;
- Reduced staff injuries;
- Reduced costs from workers’ compensation and lost or restricted work days;
- Improved worker satisfaction;
- Improved worker retention and reduced turnover costs.



For some of these benefits, past studies provide data on results achieved in facilities which have implemented SPHM programs.

Numerous studies have shown the implementation resulted in an improvement of up to 95% in lost workdays, a 65% reduction in workers compensation claims, an 89% reduction in average cost per injury, and an 88% reduction in injury rates. The limited data from Atlas suggest the LC approach meets or exceeds these levels. The creation of Lift Coach role within the SPHM program promotes a culture of safety in facilities. This has a positive effect on caregiver staff morale along with providing increased patient satisfaction and safety.

However, for all of these benefits (and for the costs, as well), the critical questions are determining what the future benefits from implementing a program would be in a particular facility, the right level of investment, and how to increase total value.

Because we are dealing with future impacts (and because there is uncertainty in those impacts), it is necessary to use a proven and robust methodology for understanding uncertainty in future value and for creating alternatives to increase that value.

## **SPHM AT STANFORD HOSPITAL AND CLINICS**

In 2008 Stanford Hospital and Clinics (SHC) initiated and implemented a Safe Patient Handling (SPH) program in all nursing units and the Emergency Department. In order to ensure success, one of the key elements in the <https://openaccess.cms-conferences.org/#!/publications/book/978-1-4951-2093-0>

implementation was the hiring of a full time Nurse Manager for the program. This individual was hired and provided by the equipment manufacturer as part of the contract agreement for a period of 2 years. After the 2-year period, we had developed a succession for a new Nurse Manager to replace the previously provided FTE. The individual that assumed the SPH leader role this time had other duties, in addition to oversight and management of the SPH Program and Task Force. By 2012 some degradation of the program had become clear and SHC began looking at other management ideas to help sustain the success.

Concurrently in 2012, Assembly Bill 1136 (AB1136), requiring all acute care healthcare facilities to have a program that protects healthcare workers from injury associated with patient handling (lifting, transferring, mobilizing, etc.), was passed by the California Legislature and signed by the Governor. For the SPHM program at SHC, this meant that there needed to be around the clock support and training for the nursing staff in order to ensure that everyone who performs these tasks understands how to do them safely. Several ideas were proposed and ultimately the Nursing Administration made the decision to hire Atlas Lift Tech.

Atlas Lift Tech has been onsite with a pilot program at Stanford Hospital and Clinics since April of 2013, initially working in just 4 nursing units. In June of 2013 Atlas increased the number of units in SHC to 9 due to requests from nursing staff and outstanding results from their initial work. Additionally, on July 15, 2013, Atlas began coverage in Lucile Packard Children's Hospital (LPCH). This paper describes the Atlas program, the effectiveness of the program, and the type and level of services provided.

## **The Atlas Program**

The term heard most often whenever a new, far reaching program such as Safe Patient Handling is introduced is "culture change". The culture of nursing has long been one of self-sacrifice, which may be why nursing is among the most dangerous jobs in America. The change in the culture required for SPH means changing this model of self-sacrifice to one of protecting both self and patient from injury. This means using assistive devices to lift, carry, transfer, pull up in bed, and mobilize the patient. Reasonable as this sounds, experience has proven that getting nurses to do it is not without considerable difficulty.

The Nurse Manager for SPHM at SCH was instrumental in promoting the SPHM program. However, old work habits were difficult to change and nurses often reverted to using muscle alone to perform the patient handling tasks. The purpose of bringing Atlas in as program manager was to cultivate the use of mechanical lift equipment and reinstitute a culture of safety rather than sacrifice.

## **Tailored Approach**

To initiate the new program, Atlas came to the hospital to talk with staff, administration and the Nurse Manager for SPHM, to get a sense of the particular issues that needed to be addressed. Additionally, Atlas performed a comprehensive review the workers compensation data. This process took approximately 45 days. Staff appreciated the fact that the entire plan for implementation, including the pre-planning, was process mapped with goals and timelines for completion.

This approach had several distinct merits. First, it set expectations for both Atlas and the SHC healthcare workers who are directly responsible for patient handling. Second, this approach allowed adequate time to complete an audit of current equipment and procedures to determine where gaps existed. Finally, the familiarity engendered by having Atlas personnel seen on a daily basis during both the audit and implementation phases helped them to be viewed as part of the organization and not simply another contractor.

Atlas devised a tailored program through their staff of SPHM consultants, educators, managers, lift technicians, and researchers. It was determined early on in the SPHM program that SHC did not want the old "lift team" model. Among the reasons given were:

- Expense – Most of a lift team's time is spent NOT lifting
- Difficult to manage
- Can't cover all locations where they're needed at the same time
- Lack of training for nursing staff as mandated by AB 1136
- Employees and lift teams are still at risk of injury if not using equipment
- Nurses have the tendency to rely on the lift team for all mobility needs

- Separates the nurse from an element of patient care

While not every facility experiences these issues with lift-teams, all were concerns at SHC in part based on a prior trial of in house lift teams at the hospital. Consequently, Atlas instituted the Lift Coach Program on a fully outsourced basis.

The concept of a *Lift Coach* is very different. It employs specially trained individuals to assist the nursing staff, training them on how to use the equipment properly and to use it *every time* they perform a lift, transfer, or patient mobility. This model primarily uses training at the bedside (learning by doing), which eliminates the indirect cost of training care staff away from the bedside. This builds staff confidence and informs them of the advantage of protecting themselves and their patients by performing patient handling tasks safely. Having Lift Coaches train at the bedside empowers the care staff to utilize the “right lift, for the right patient, at the right time.”

Atlas Lift Coaches are scheduled at the hospital 24/7 to collaborate with care staff to optimize the culture of safety. This is particularly important as the program ages. Turnover has a corrosive effect on initial training efforts if tasks are not continually performed in practice. Day to day bedside training ensures that the nursing staff, both new and long term, continues to build their confidence in performing patient mobility tasks safely. Atlas Lift Coaches become an integral resource within an organization, collaborating with staff in optimizing the *culture* of safety.

Atlas also instituted their proprietary scheduling and data-gathering software, called “Lift Tracker”. This software, on handheld devices, provides floor staff real-time access to lift coaches and lets the SHC care staff schedule lifts and turns while recording their competency and compliance with procedure. It also provides management with a host of diagnostic metrics about the program and about patient safety.

## **ECONOMIC EVALUATION METHODOLOGY**

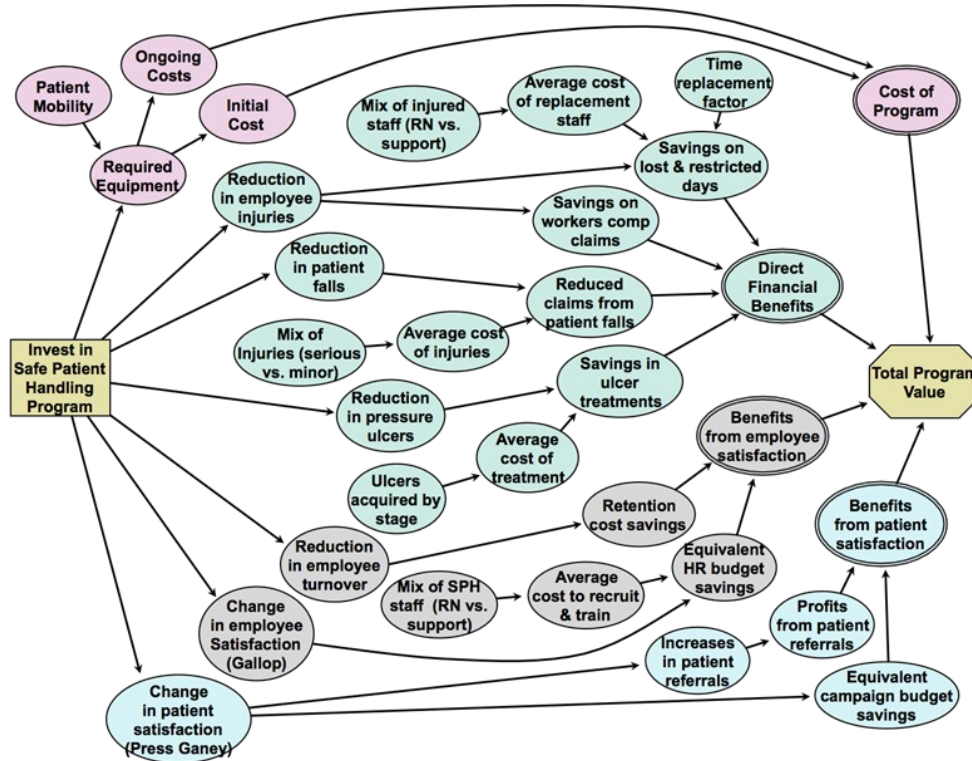
Stanford’s Strategic Decisions Group and The Risk Authority-Stanford wanted to quantify the benefit of the program and evaluate it for continuation. Decision Analysis (DA) provides a tested means of making high-quality decisions under uncertainty. Developed forty years ago, decision analysis has been applied extensively to medical decision-making and in the public policy arena. Central to its approach are identifying, structuring, and quantifying all the factors bearing on the costs and benefits of a particular decision. This understanding leads to creation of new alternatives for increasing value.

Done well, decision analysis produces a robust, transparent, and defensible understanding of total program value and a means of identifying how to increase program value. This understanding of how programs create value and the levers for increasing value can be communicated directly to decision-makers without the details of analysis.

For these reasons, decision analysis has become the standard method in a number of industries (including pharmaceuticals) of making investment and program decisions (Celona, 2010).

### **Understanding the Value**

The first step in the process is identifying and structuring all the factors, which need to be considered, including the decision(s). These are represented in an influence diagram. Below is the diagram developed by The Risk Authority-Stanford for the SPH program at Stanford Hospital and Clinics (Celona, 2010).



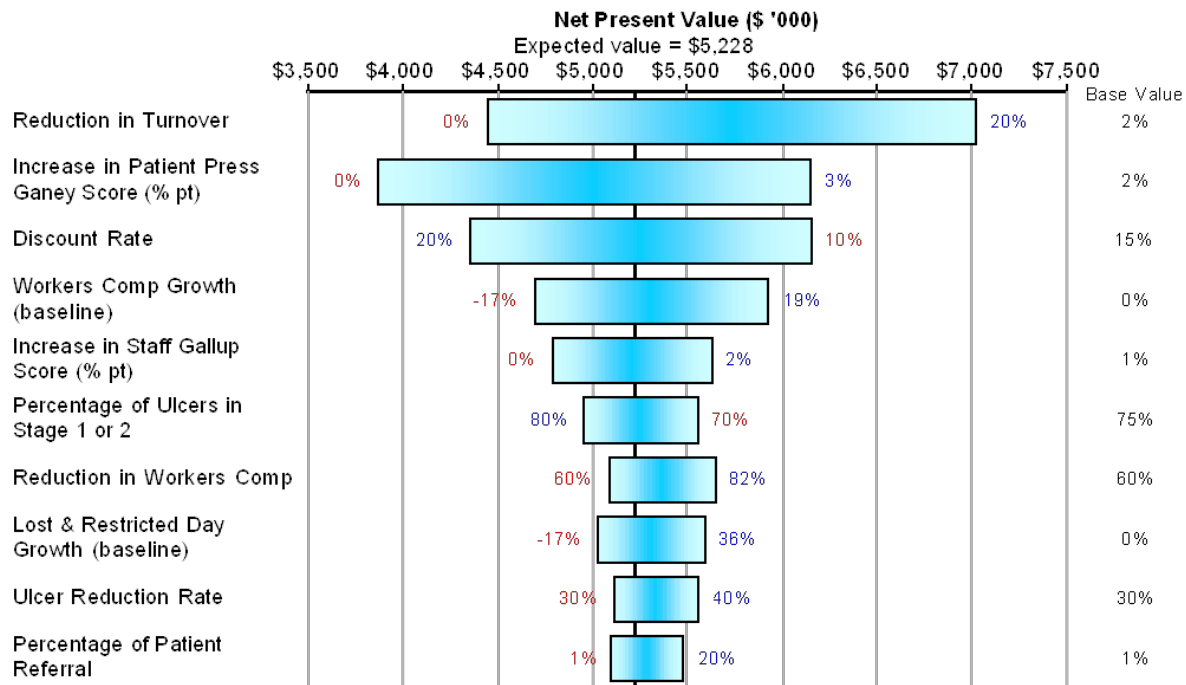
Interpreting the influence diagram is straightforward:

- Decisions are indicated by boxes;
- The ultimate net value appears in a hexagon;
- Uncertainties appear in ovals;
- Arrows indicated the relationships between factors.

The second step is to create estimates for all the input factors. One example is the reduction in staff turnover from lower physical job demands. In contrast to traditional methods using only one number as an estimate, we use a range of numbers to express the uncertainty in the actual result achieved. Using ranges for inputs achieves three purposes:

1. We can be highly confident that actual results will fall within the range assessed.
2. It enables quantification of factors, which are difficult to quantify.
3. It enables identification of which factors are the most important drivers for program value.

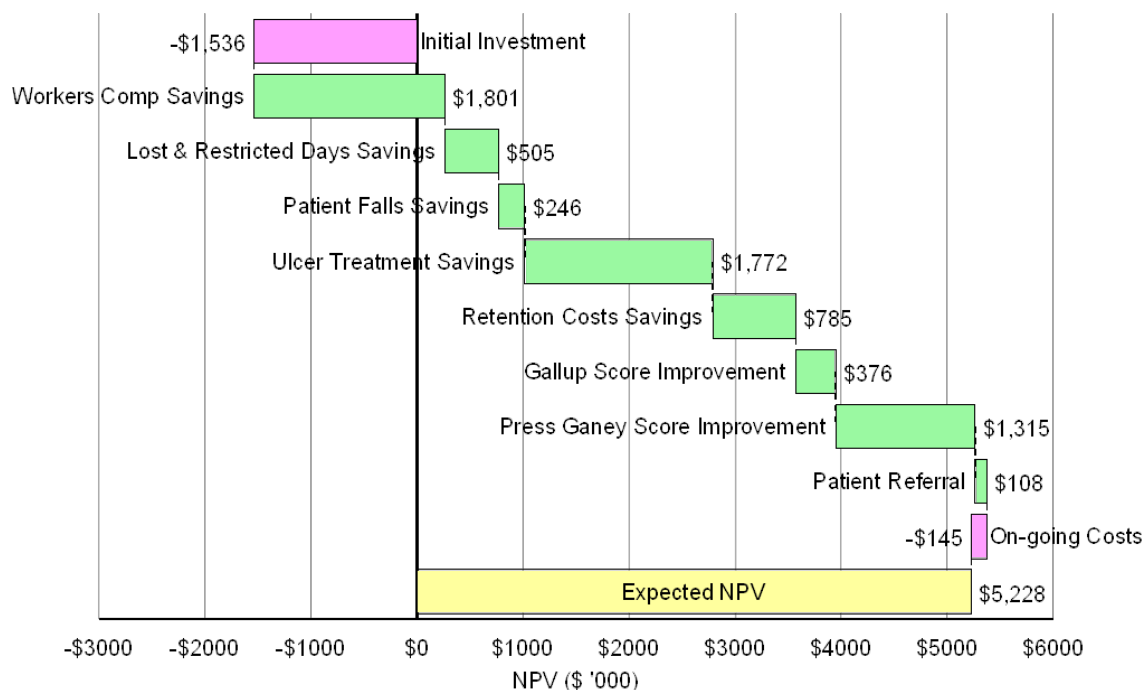
For example, for the Stanford SPH program we assessed a range of 0–20% for the reduction in turnover. Calculating the program value with each input set to its various values and then arranging these from largest value change to smallest produces the tornado diagram (Celona, 2010).



The key value drivers identified by the tornado diagram are candidates for improved estimates, either by consulting other experts or by seeking additional data. Once we are satisfied that the estimates for critical inputs are the best we can make given the data available now, we can create the breakdown of total program costs and benefits.

The ordering of benefits is arbitrary, and they can be easily reordered depending on the priorities of the decision-makers.

### Increasing the Value



The second and critical part of the process is creating new alternatives to increase program value. The comprehensive understanding of costs and benefits makes this possible.

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For example, for the SPH at Stanford, change in employee turnover is the single biggest driver of uncertainty in program value. Suppose that investing \$100k in employee communications on the benefits of the program could drive reduction in turnover from a base estimate of 2% to a 10% reduction. From the tornado diagram, we can see that would increase total program value by around \$1 million—a 10-to-1 return.

In contrast, traditional valuation methods only cover cost and benefits which have been verified by extensive studies—in this case, workers' compensation and lost and restricted days. This misses much of the total value and does not create the understanding for formulating new alternatives to increase the program value.

Follow up work includes tracking key program outcomes identified by the analysis. In doing that, one key benefit of these methods is that the results are directionally very stable, and we would not expect revisions that would change program decisions (Celona, 2010).

## **CONCLUSION**

The value of implementing the program in terms of savings of hard and soft costs was estimated to be several multiples of the cost of implementing and maintaining the program annually. Our intension is to continue working with Atlas Lift Tech over the coming three years and expanding the program to the entire facility. The goal is to firmly establish the desired culture of safety. Simple demographics dictate that establishing such a culture is imperative for Stanford Hospital and Clinics to fulfill the vision established by our CEO, Amir Dan Rubin: "Healing humanity with science and compassion, one patient at a time."

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