



# *Journey to* **safety excellence**

**PREPARING THE BUSINESS CASE  
FOR INVESTMENT IN SAFETY -  
A GUIDE FOR SAFETY PRACTITIONERS**



## THE BUSINESS CASE FOR INVESTMENT IN SAFETY – A GUIDE FOR SAFETY PRACTITIONERS

As a safety practitioner, your mission is ensuring the safety and health of your people. But that mission sometimes runs into roadblocks when presented to upper management. Sometimes, to those charged with cost cutting, safety programs may be viewed as expenditures of time and money. In other cases, safety programs vie for the same resources as other programs that provide revenue or compete with regulatory solutions that are mandatory. To overcome this, a business case can help crystalize and communicate the value and potential benefits of your plan.

A solid business case for a safety program can help you to effectively convince decision-makers that your efforts will produce a strong positive return on the investment. It can make the case that safety costs are investments, not expenses. This business case can also help to stabilize an appropriate safety budget, even in difficult economic times.

This white paper provides you with a roadmap for thinking through all the issues pertaining to building a business case – from understanding management's mindset, to the details you need to build the case. It can also serve as a framework for discussion of ideas among safety teams. Using this information and incorporating just some of these principles if you are not already doing so, will enhance your message to management and aid you in your thought process and preparation for the meeting. *(Note: For a comprehensive look at convincing your management of the value of safety, see the NSC "Investing in Safety and Health – An Executive's Guide.")*

## WHY A BUSINESS CASE?

The primary aim of your health and safety program is to ensure workforce well-being and business continuity. No business owner wants his or her people to be injured, to be cited for non-compliance or even shut down completely for days. With an increasing focus on corporate social responsibility and sustainability, executives and managers want to be assured that they've done everything they reasonably can to ensure a safe working environment and uninterrupted operations. But investment in safety and health, just as in any other investment, goes beyond just doing the right thing. It still needs to make good business sense. Understanding how your management defines "good business sense" can make all the difference in their receptivity to your health and safety agenda.

The business case is vitally important for health and safety because the cost of risk, both direct and indirect, are largely underestimated and many times obscured in a business' financial

statements. Often times this cost of risk is viewed only in terms of direct expenses, such as workers compensation, overlooking the indirect cost of business interruption, loss of production time, supervisory time to investigate and replace the injured worker, repair of damaged equipment and many other factors that contribute to the cost. You, as the safety practitioner, need to work with finance and other stakeholders to more completely and clearly define what incidents, injuries and illnesses are (or could be) costing your business.

And even if your management is wholly supportive of health and safety efforts and isn't asking for a business case, it helps to put executives at ease and reinforce their trust in you. They'll be assured in knowing you've thought through the issues, costs and potential for return on the investment in safety. The good documentation through a business case also provides your company with some protection from blame or liability, for example, a legal case resulting from a workplace fatality.<sup>1</sup>

## SAFETY MOTIVATION, ATTITUDES AND A COST-BENEFIT ANALYSIS

In a 2009 study where focus groups and interviews were conducted with health and safety practitioners from industries in the United Kingdom, four themes emerged around what motivates their attitudes toward safety.<sup>2</sup> These included:

- “Doing the right thing”
- Logical and simple reasoning that safety is good for business
- The impact of safety on the supply, cost and efficiency of labor
- The effect on business reputation, which can impact supply chain, employee engagement and commercial success (public reception)

A key component of your business case is an economic analysis, sometimes called a cost-benefit analysis (CBA). While there is research that looks at the effectiveness of adopting economic-type analyses to make a business case for safety and

health expenditures,<sup>3,4,5</sup> some studies have shown that CBAs can underestimate the benefits and exaggerate costs. It should be noted that CBAs are subject to inaccuracies unless all potential costs and benefits are identified – a task every health and safety professional knows is very difficult.

Challenges notwithstanding, well-executed CBAs are crucial since decision makers will evaluate safety investments from a number of perspectives, including economic and financial. They may tend to view safety as an expense unless you can illustrate that the investment in safety will pay future dividends. And while the methods and formulas outlined here are not foolproof, they do provide a more formal method for analyzing economic decisions than intuition or “acting on good faith.” For most businesses, a well-developed business case, using the methods outlined herein, will be sufficient to result in an informed and smart decision.

*Creating a safe workplace is becoming increasingly important to business success*

## THE LANDSCAPE

Knowing and addressing the economic and attitudinal obstacles and challenges shows you understand the pressures management faces every day in producing profitable growth. If you can show understanding of these issues and can provide a roadmap for safety success that incorporates them, your plan is more likely to be embraced.

Any good strategy anticipates potential roadblocks and prepares counterarguments. There are some general issues to be aware of when formulating your business case:

- Management views about safety and the extent to which they currently invest
- Management perceptions of you, the safety team, and the safety profession
- Your business' economic challenges, the market they compete in, current financial performance, and long-term strategic plans if available

Anticipating each of these will help you bolster your business case and prepare you for potential questions, discussions and even opposition.

### Management views

Safety and health practitioners cited four barriers to safety and health activities. Your job as a safety practitioner is to address these barriers through your business case.

- Attitudes that health and safety is not a business issue – your business case should help them see the negative impact a lack of safety is having or how better safety outcomes could have a positive impact
- Lack of interaction among stakeholders – preparation of your business case should consider a broad cadre of potential stakeholders and you should enlist their help (e.g., human resources, finance, engineering, IT, etc.)
- Translating the business case into real life – the numbers you present should be realistic and given in terms of a range of potential outcomes versus a single number
- Safety as a cost versus a value attitude within management - there is a place for both arguments in a business case<sup>2</sup>

In addition, while perhaps an unfair characterization, some engineers and scientists can be viewed by business executives as not understanding how business works. Many in the safety profession have been accused of being too idealistic and rigid in doing things “right,” versus considering viable alternatives that include financials and cost benefit.

Be aware of how you are perceived within your organization. Are you considered someone who does everything “by the book?” Or are you looked upon as someone with a “my way or the highway” attitude? Counteract these perceptions with good preparation, solid business acumen, logical arguments supported with factual information, and, most importantly, a collaborative, “win-win” mindset. Everyone, including you, will feel better using good negotiation skills and reaching a compromise versus the alternative of having your plan blocked from consideration completely because it didn’t consider alternate avenues and build to a consensus agreement.

You may also consider finding an alternative “messenger” for your business case or someone to help you in your preparation or presentation. There is a bit of business politics to finesse here, but at some organizations, the right person delivering the message can make all the difference in its reception. Consider enlisting the help of the CFO, COO, or Chief Risk Officer if your organization has one.

### **Economic obstacles and business challenges**

It should be common knowledge that shareholders demand solid, short-term and long-term financial returns. This can present a challenge for safety interventions since many of them take at least a year or two to deliver the results that include

improvements in injury rates with cost savings and other benefits. Be prepared to demonstrate with leading indicators that ongoing investments are producing the expected benefits. If your case involves a delay in ability to measure improvements, be up front about it but show the data that eventual savings will be realized.

If your business case involves business operations in developing economies, you may need to anticipate the potential effects of political or social instability, lack of government oversight to establish or enforce standards, or labor issues whether shortages or a surplus of workers willing to work at any wage.<sup>6</sup>

It’s also vital to reflect the realities of the current economy. For example, if in an economic downturn, it can be an uphill battle to justify safety and health expenditures among shrinking budgets and cost cutting. Besides justifying the cost of safety, you’ll need to remind decision makers of the ramifications when the economy does rebound. An economic recovery means your business will need to deal with inexperienced new hires, or competition to secure experienced subcontractors. In this upswing, it is even more critical to keep your experienced people free of injury and contributing by remaining on the job. If any or all of these variables apply, make sure they are mentioned in your business case.

## POSITION YOUR BUSINESS CASE FOR SUCCESS

There are some known factors in successful business case adoption. Think through each of the following options carefully and choose what will work best for your company.

### Choose the appropriate tone

When it comes to how you approach your business case, you essentially have three options. You can choose to emphasize negative outcomes, such as fatalities, OSHA injury and illness rates, workers compensation claims, production downtime, litigation expenses, labor replacement, property loss, regulatory penalties and absenteeism. You can choose to accentuate the positive, such as improved employee perceptions, morale, productivity, product quality, employee retention, recruiting, customer perception and satisfaction. Or you can take a balanced approach and include a combination of both.<sup>7</sup> While perhaps a bit more art than science, you should use careful judgment as to which tone will resonate most favorably with your leadership team.

### Be aware of management hot buttons and top priorities

It will be important to match safety and health benefits to management's hot buttons and top priorities. These may include:<sup>7</sup>

- Cost savings – show that your plan can help save dollars
- Peer pressure – taking an “everyone else is doing it” or “we’re the last ones to adopt” approach
- Industry benchmarks – showing how you currently stack up to your competition or how your plan will put you further ahead
- Company reputation – how your plan can be good for public relations, attracting and retaining employees, etc.
- Prior negative experience – if management perceives prior investments as not having delivered the expected results, you may need to do more work in presenting a solid case through thorough analysis
- Reliability and consistency – you will want to support your plan with research and show how your plan will have lasting results
- Product quality – a management team that is a stickler for quality will likely want employees who are not only safe and healthy, but contributing to quality as well
- Productivity – focus on how the problem you’re trying to solve has kept employees away from work, driven work absences, increased overtime, etc.
- Community relations – if appropriate, make the connection for management between your plan and how it benefits your corporate standing in the community
- Brand image – this angle can be effective if a past incident received negative publicity

Cover each and modify your focus based on who in the organization you are talking to. Not surprisingly, one study showed that financial executives view the top benefits of a workplace safety program to be financial in nature (increased productivity, reduced costs).<sup>8</sup> So tailoring your message for this group should include these types of metrics, as opposed to a more emotional appeal (right thing to do, better employee engagement, etc.).

### **Organize your business case**

Part of what will make management more receptive to your business case will depend on your order of reasoning. Decision makers will usually prioritize their reasoning as follows.<sup>9</sup>

1. ROI on productivity improvement
2. ROI on direct cost savings
3. ROI on direct and indirect cost savings (although indirect cost savings are often challenged)
4. Improving organizational metrics
5. Reducing financial risk
6. Improving compliance
7. Aligning with corporate values

### **Time your presentation**

The timing of your presentation is critical. While perhaps an obvious point, it's best not to present your business case after final budgets come out.<sup>10</sup> Nothing says "I'm out of touch" like requesting funds once the budgetary cycle has closed. Each company has a business planning cycle where the next fiscal year's initiatives are outlined, resources estimated, and corresponding budgets requested. Your timing needs to correspond with this budget cycle for your organization, meaning you should be developing your case beginning at least 120 days before the new budget year begins, and perhaps even sooner if you anticipate needing to do

fact-finding and research. This assumes that you fully understand where the budget dollars to be invested in safety are in the budget and what the planning and budget process is. If you don't, be sure to do your homework.

*"It is not enough to be right.  
You have to be right  
at the right time"<sup>11</sup>.*

### **Network within your company**

Do not develop or present your business case in isolation. Try to garner support from business functions that relate to safety. Seek out information from other departments that you may not normally interact with. Don't be afraid to go outside your risk management department to find out what matters to people, what alternatives might work and what range of results might be acceptable.<sup>10</sup>

Don't forget that there are financial and other business data that sit in accounting, personnel and operations departments across organizations that safety and health practitioners could use<sup>7</sup>. And, in practice, health and safety is linked to human resources, personnel development, quality management, fire and security and business (financial) risk management.<sup>12</sup> Interacting with these functions on a regular basis will help you see the bigger picture the way your leadership does. At the very least, these outreach efforts will help you see what the other functions do that may support yours. You may also identify a more appropriate person to actually present your case, with you supporting them. Finally, if workers are represented by a union, be sure to reach out to union representatives and include them in your planning to garner support.

## TYPES OF INFORMATION TO USE IN YOUR BUSINESS CASE

A good rule of thumb is to only include information and data that you can back up and feel confident in explaining. That said, the more data you have that is relevant and believable, the more persuasive your case will be.

### Cost of illness and injury

This is where you want to communicate the size and scope of the problem effectively. There are many tools available to help you calculate this. Go beyond just citing the dollar figure. Put it in terms the company management can understand. Be sure to include examples for all stakeholders to your safety plan so it “hits home” with each decision-maker.

- **As a percentage of payroll** – The poorer the safety performance a company has, the more it costs to make the product. For example, “our injury costs represent 15% of payroll.”
- **In production terms** – The poorer the safety performance a company has, the more production has to fill the gap. For example, “We need to make X number of units per month to break even from injury costs before we start to make a profit.” Put another way, you can make an argument like, “Our facility has to operate the first five days of the month just to pay for injury losses.”

- **In product cost terms** – The poorer the safety performance a company has, the higher the product costs. You might be able to state something like, “One dollar of the \$10.00 it takes to make the product goes to injury losses. That 10% markup on our product makes us less competitive and less profitable.”
- **In product sales terms** – The poorer the safety performance a company has, the harder the sales team needs to work. You could make an argument like “Out of our losses this month, we have to sell 1,000 more units than last month to pay for them.” (See sidebar for tips on calculating these figures.)
- **Per employee** – You can also create proof points by employee. For example, “This cost equates to \$300 per employee per year.”

### Sales term calculations

A calculation for “sales equivalent dollars” is financial losses or savings multiplied by 100 percent, divided by the profit margin percentage. For example, if you wanted to know what a \$10,000 injury would take in additional sales to make that money back, and your business’ profit margin was 5 percent, you’d take \$10,000 multiplied by 100 percent, divided by 5, which equals \$200,000. Once management understands how hard getting \$200,000 in sales is for your company, it can bring a whole new perspective to safety.<sup>13</sup> You can then also use a conservative indirect cost multiplier of 2, which is extremely credible and well-researched.<sup>14</sup>

For those organizations with little to no history of injury or illness, this becomes a bit more challenging. It can be hard to convince management that there “could be a problem.” Focusing on the impact a serious injury would have on interruption to the business and the financial loss that might ensue from that disruption could be a useful strategy. In addition, you could highlight areas of vulnerability where only one person performs a key job or where losing one employee may bring the business to a grinding halt or seriously compromise production or service.

Using average costs for injuries pertaining to your most frequent or hazardous risks is another approach. These averages can be translated to business terms (see “Sales term calculations” section below). Other alternatives are to use information such as absence data, retention data, insurance costs, or benchmarking data to support your case. These are discussed in more detail below.

### **Sickness absence data**

Sometimes kept by human resources departments, unplanned sickness or absence data can be used to supplement your workers compensation injury and illness data. Quantify the amount of time workers are not working due to an injury or illness (do not include vacation time). Sometimes including this data in your business case can put a magnifying glass on a basic problem – people are not there to do the work. If your business case will help with this problem, it may be worth a little extra time to dig for this information.

### **Insurance premium for workers compensation, experience modification rate (EMR) and the plan type of your organization**

Knowing your company’s insurance premium, claim experience, claim costs, experience modification rate (EMR) and the type of insurance plan, as well as any information surrounding the negotiations of these (discussions had, plans considered, etc.) will help you position your business case as accurately as possible. Premiums paid can be factored into your case if you have a good reason to suspect that premiums could be lowered with dramatic reductions in losses due to your plan. Likewise, if your company’s EMR is higher than 1.0, you will want to highlight how your plan may help lower that number by reducing losses. Even if your company’s EMR is average, you are not benefiting from discounts off the manual insurance rates used to determine premiums. Working with your risk management or finance department, you can determine through the insurance broker, agent or company what savings would be possible with fewer claims and cost.

Insurance plans can also impact how your business case is presented. The larger the company, the more apt you are to see sophisticated plans that financially benefit the company as a result of claim reductions and good safety management. Other types of plans include retrospectively rated, deductible, self-insured and captives. Do your homework with the proper stakeholders to fully understand the nature of the plan type and what the value of improved safety is in terms of lowered cost of risk.

### **Staff retention numbers**

If turnover is a particularly thorny issue for management, there are a couple points to make. The short-term argument has to do with research that shows a higher likelihood of incidents with newer employees in particular industries. Because they are new on the job, or because there is churn in even your tenured workforce, the impact can be workers who do not get adequate training and supervision their first several weeks on the job and don't benefit from more senior employees modeling the safe way to do things.

The second possible argument is that your safety plan, through reductions in losses and creation of an enhanced safety culture, can impact employee engagement and satisfaction. Research shows that higher levels of employee engagement can positively impact employee retention, thereby lowering the cost of attracting, hiring and training the workforce. This also means the company is positioned to compete for the best talent as potential workers will see the benefit of working for a company that does engage and protect them. Only you can judge whether this strongly supports your case. If not, leave this out.

### **Benchmarking**

Show how you stack up to your industry competition. Use your frequency rates, loss rates, lost day rates, or EMR to get comparison. There are several free tools available online to help you do this. You can also interview employees of former competitors about health and safety programs at the competition to help sway opinion. If applicable and relevant, include OSHA's top ten violations and show management that these areas are targets for citations and fines. This will appeal to their desire to comply with standards.<sup>15</sup> You can also take advantage of trade, professional and other associations to help with the benchmarking.

### **Definition of the problem your business case is trying to remedy**

Be sure to use straightforward and clear language. Stay away from safety industry jargon. If your executives have to ask what something in your business case means, you may be losing your audience. Explain the assessments you've done, show photos, provide details of audits (in-house or 3rd party), or highlight fines from outside agencies such as OSHA.<sup>1</sup>

### **Use financial language**

Safety practitioners are increasingly being asked to demonstrate, in business language and terms, savings generated by funded safety efforts, or show value prior to funding.

The safety terms you may be accustomed to include recordable injury rates, lost day injury rates, property loss, workers compensation costs and regulatory fines. However, these terms don't necessarily resonate with executives that may gauge financial success more in terms of earnings or earnings per share, return on investment and payback period.<sup>10</sup> Selling safety efforts may very well require a bottom-line tack. Shareholder return, profits, growth, product penetration and market share are more the language of top management.

*“We are in the business to maintain and enhance our position as number one in our market, not to be number one in safety or environment. EHS must contribute to market position and the bottom line, not substitute for it.” – a director of health and safety for a global consumer products corporation.<sup>7</sup>*

If you want to convey credibility, communicate with authority and be understood, it is critical for you to understand and master the use of the measures and terminology common to your company's business. Basic concepts might include return on investment, rate of return, the time value of money, or present value. While these terms may not be familiar to you, you should have an awareness of them since your business likely uses them to make financial decisions. It should be noted that if you do use these terms, you should be certain your calculations are correct. Enlisting the help of someone with a financial background at your company to double-check your math may be a wise approach.

Return on investment (ROI), for example, is defined as the cash flow or savings that results from an action divided by the total cost of that action. For instance, a \$1,000 investment that saves \$4,000 has a 300% return on investment (savings = \$4000 - \$1000 = \$3000 / \$1000 = 3 x 100 = 300%). Many organizations have what's commonly referred to as a “hurdle rate” or “minimum acceptable rate of return” or “MARR” against which investment decisions are judged. You need to know what this rate is prior to proposing your business case. If your ROI is below the MARR you can try to reduce the investment cost, increase the return (in cash flow or savings) or accelerate the rate of return.

Discounting future cash flows a certain percentage and calculating the present value of the return expected should be used to calculate the ROI. (There is an excellent paper by Veltri and Ramsay (2009) available in the NSC Library that describes these essential components of an economic analysis and provides a specific example of determining the cost-benefit ratio for a 1-year HazCom intervention. See also the “Putting It All Together” section below for a step-by-step process.)

Present value, represented as “PV,” is one key financial concept for all safety practitioners to understand. When making investment decisions, organizations need to determine what one dollar invested today will be worth tomorrow, how long the benefit will take to be realized, as well as what the return will be worth when it is realized. (It should be noted that in safety, the “return” is often “injuries that didn't occur” and putting a dollar value on these must be done using historical injury costs or industry averages for the types of injuries your plan is targeting.)

The formula for PV is the following:

$$PV = \$X / \sum (1+d)^n$$

Where PV is the present value of some dollar amount X in any given year, d is the discount rate raised to the power of each year of the program.

For example, let's say a company spends \$9,000 on safety equipment today, and that equipment will save \$3,000 in injury costs per year for the next three years. The return is not equal to the investment because the money saved in the future is worth less than the money spent today. If inflation is expected to be three percent in each of those years, then the net present value of the \$9,000 to be saved needs to be discounted.

- The first year's \$3,000 is discounted by 3% ( $\$3,000 / (1 + .03)^1$ ) = \$2,913.
- The second year's \$3,000 is discounted twice for a net present value of \$2,828 ( $\$3,000 / (1 + .03)^2$ ).
- The third year's \$3,000 is discounted three times for a value of \$2,745
- This brings the three-year savings total to \$8,486 – less than the original \$9,000 invested.

When you identify and monetize the benefits of an intervention program and the costs of its implementation, the ratio of the present value of the benefits to the present value of the costs is referred to as the cost-benefit ratio of the program. In this scenario, the ratio is \$1 to \$.94, perhaps not the most favorable result.

The cost of capital is another important concept and could include dividends, interest rates and bond premiums. Money needed to fund projects is often borrowed. Just as we borrow money to fund a mortgage or buy a car and pay an interest rate on that loan, companies must also pay a price

to secure capital to fund investments. To generate a profit, the aim is to keep the cost of borrowing money low and the investment returns high.

A common practice is to use estimates in financial analyses. Because so many assumptions go into estimates, it is a good idea to provide a range of values for each parameter. For example, you could choose a high and low estimate of the discount rate. Or you could use different values of the cost of capital for each year of the program, if you believe these may change. This process of using a range of values is called sensitivity analysis. The result you're trying to achieve is demonstration of the best-case and worst-case scenario of your plan. You may find it beneficial to ask your financial team what discount rates are commonly used in your organization.

All these financial variables are important to include, but don't neglect any tax ramifications as well. Tax laws regarding expense deductibility, depreciation and other factors also affect the financial payback<sup>16</sup>. Because of this complexity, you should work with financial and legal staff to prepare these estimates.

Finally, bear in mind what Thomas Cecich calls the safety paradox: "The better your safety and health performance, the more difficulty you'll have justifying additional safety and health investments."<sup>9</sup> So, while speaking the financial language of management detailed here is important, don't focus exclusively on financial returns. Providing a balanced picture is a better long-term approach.

## WHAT TO INCLUDE IN THE BUSINESS CASE

There are specific components you should make sure are part of your business case. They include:

- **Definition of the problem and desired outcome** – Describe what issues you want to solve, the evidence showing the problem exists, what it is costing the business, and what the desired outcome is you are trying to achieve with your plan
- **Both direct costs or benefits of a project** (medical costs, workers compensation claims cost, property damage) and the hidden costs or benefits (legal expenses, production downtime, product quality, employee morale, customer image)<sup>10</sup>
- **Specific ideas for practical implementation of your ideas** -- Examples include making it a part of individual employee performance objectives or supervisor objectives, training employees on new processes, or integrating safety into supply chain management to raise the overall bar for safety performance<sup>6</sup>
- **Budget** – include start-up funding, operations money, and any ongoing or maintenance costs
- **Program elements** – estimate time, equipment and other resource drains
- **Comparisons to other companies** undertaking efforts similar to yours, as well as their costs and results
- **Consequences for non-action, non-compliance**
- **Discussion of alternative solutions** considered, and why they are not ideal
- **List of constraints** that limited your ability to gather and analyze data, as well as an explanation of your calculations and assumptions underlying the calculations

## PUTTING IT ALL TOGETHER

Now that we've reviewed the considerations around building a business case, let's translate this into a step-by-step process.

### 1. Identify the exposure or risk to be targeted by the planned safety program.

Describe who is exposed (department, number of employees), the nature of the exposure and the degree of their exposure (frequency of exposure, hours per day exposed). Write it into a statement such as, "Sixty nurses caring for physically-dependent patients are exposed to back, neck and shoulder injuries from lifting, transferring and moving patients manually. Nurses, on average, do these tasks 30 times per day."

**2. Calculate the cost of the exposure or risk targeted by the program.** Include direct costs (actual or industry averages) including medical, indemnity, claims administration fees and legal costs. You may also choose to include workers compensation premiums expressed as dollars per hour worked, using a percentage similar to the percentage of overall cost represented by the target exposure. If you are using actual costs, use median (midpoint) costs versus average costs. Averages can be wildly biased toward large claims and will inflate your estimate, giving management a reason to question your whole analysis. You'll also want to factor in an indirect cost multiplier, using a range. To be conservative, a range of 2-4 would work well. In our nurse example, "The median cost of a back, neck, or shoulder injury

has a direct cost of \$18,000 (industry average for nursing is \$25,000) and an indirect cost of between \$36,000 and \$100,000 (achieved by multiplying the low estimate \$18,000 by the low indirect cost multiplier of 2 and the high estimate of \$25,000 by the high indirect cost multiplier of 4). Our organization has averaged 12 incidents per year for the past 5 years. This equates to a per injury estimate of between \$54,000 and \$125,000 for a total of \$648,000 (\$10,800 per nurse exposed) and \$1,500,000 (\$25,000 per nurse exposed) per year cost."

**3. Calculate the present value of the programs costs.** For this, you'll need to determine the direct and indirect costs of the program, including labor, external expenses and other factors such as production downtime. Also, determine the time period of the program. Again, with sensitivity analysis in mind, high and low estimates are necessary. Sum the costs over the implementation timeframe and then apply a high and low estimate for the discount rate to arrive at the present value of the annualized costs of a multi-year program. One study suggests using the risk-free rate on U.S. T-bills as one discount rate and having your management recommend the second rate based on actual cost of capital to the organization<sup>5</sup>. In our example, "Cost for training a dedicated lift team, and purchase, installation and maintenance of lift equipment is between \$200,000 and \$300,000."

**4. Project anticipated reductions in exposure or risk as a result of your program.** Each benefit should have an associated dollar value. You can include reduction in exposure (either number of employees or frequency of exposure, for example), decreases in workers compensation claim costs, decreased experience modification rate, reduction in number of injuries or cost of those injuries or reduction in lost days. Be sure to include estimates of indirect benefits, such as decreased absenteeism, increased satisfaction (employee or customer) or enhanced company image. In our example, “Similar interventions at hospitals across the country have reported between 35-65% reduction in number of claims, 60-80% reduction in lost work days, and 70-85% reduction in medical costs. By training a lift team, we are reducing our exposure from 60 nurses to 14 who are now doing no manual lifting, transferring or moving. This equates to a reduction of 4-8 injuries per year.”

**5. Calculate the present value of each benefit using high and low estimates for each benefit.** You will also need to determine when the benefit will be realized, discounting future savings to equate to today's dollars. In our example, “This reduction in number of injuries will equate to saving between \$216,000 (four fewer injuries at \$54,000 each) and \$1,000,000 (eight fewer injuries at \$120,000 each) per year.” Using our formula for present value, using two years for length of the program and a discount rate of 5%, our present value is between \$401,632 and \$1,785,033. You would do the same calculation with an alternative discount rate. Using a 10% rate, our present value numbers drop to between \$374,875 and \$1,666,115.

**6. Calculate the cost-benefit ratios** by dividing the high benefit by the low cost and dividing the low benefit by the high cost. In our scenario, “The range of cost-benefit ratio is \$1 to \$1.34 up to \$1 to \$8.93, using the 5% discount rate, and \$1 to \$1.25 up to \$1 to \$8.33 using the 10% discount rate.”

## CONCLUSION

As one author put it, “the finest environment, health and safety program in creation does nobody any good if it stays on the wish list.” Your job as a safety practitioner is to ensure the health and safety of your company’s employees. The best way to do that is to be sure your plans are adopted and implemented. And the most effective way to accomplish that is to build a smart, factual and convincing business case based on the methods and strategies outlined here.

Now that you’ve demonstrated the financial impact of your plan, build your business case using all the other great information found in this white paper. To learn more, visit us at [nsc.org/journey](https://nsc.org/journey).

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