





## **ABSTRACT**

OSHA-10 training saves lives and reduces accidents and illnesses across the building and construction trades. Three examples from a survey of 195 workers on self-reported actions before and after training are that 75 percent of trainees carried things on ladders before training and after only 26 percent did, 37 percent of trainees reported checking a scaffold to see if it was constructed properly before training and after training the percent had increased to 79 percent, and only two-thirds had asked for PPE before training versus over 90 percent after.

Based on interviews with trainees and trainers, there are many real stories of OSHA-10 training making a difference. The savings, from accidents averted, run in the millions of dollars. If training could reduce injuries by just 2 percent a year, the savings would be \$336 million; if by 6 percent, then more than \$1 billion could be saved. Many of the savings discussed herein are rarely discussed in other analyses.

## **KEY FINDINGS**

- OSHA-10 training promotes safer work practices.
- OSHA-10 training helps to prevent accidents and exposures.
- Accident prevention, resulting from OSHA-10 training, saves money for workers, employers, insurers, taxpayers.
- The full benefits of OSHA-10 training are not properly or fully measured.
- A new paradigm for measuring the full economic and social benefits of OSHA-10 training – and other health and safety programs -- is emerging and will help strengthen the case for strong occupational safety and health programs.

# THE ECONOMIC AND SOCIAL BENEFITS OF OSHA-10 TRAINING IN THE BUILDING AND CONSTRUCTION TRADES

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**THE**

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## I. SETTING

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CI... an... C... C... n... tr... or... Construct... on... s... arc... an... ra... n... n... -

## II. RESEARCH STRATEGY

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### A- IG IFICA CE

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oo... b... n... ts... t... o... o... y... -... I... po... cy... a... rs... cons... r... costs... w... t... out... a... u... account... n... o...  
b... n... ts... t... r... c... s... ons... ar... y... to... b... aw... -

r... su... ts... o... t... s... r... s... arc... prov... t... t... c... n... ca... capac... ty... or... cono... sts... an... ot... rs...  
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t... o... o... y... us... n... t... s... r... s... arc... can... t... n... b... app... to... ot... r... tra... n... n... an... r... u... atory...  
ar... nas... -

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prov... n... ts... n... wor... nv... ron... nt... -

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C- A ACH

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b n ts o sa ty an a t tra n n -
- aut or t n out n s t nts o a o or st at n t b n ts o a  
a t an sa ty act on w t a c ar ocus on ana y n t pact o tra n n -
- s o s t st an n anc t rou pr ary ata co ct on us n surv ys  
an o ow up nt rv ws w t appr nt c s w o av r c v HA tra n n  
as w as appr nt c nstructors an coor nators w o av prov t tra n n -

Focus s on nt y n c an s n wor pract c an b av or as w as act v orts to  
prov sa ty- Fro t surv ys t os w o sa t y a r a wor pac nc nts  
to scuss w r nt rv w - s I av a story to t nt rv ws nt nc nts  
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**III. LITERATURE REVIEW**

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ap ro - utt nb r - an L J- oc a Costs o Dan rous ro ucts An E pr ca  
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an F nton E- axpay r Bur n ro ro uct at Har *Kansas Journal of Law and Public  
Policy*, Fa -

a t r L- M c a s Focus on or pac a ty Cu tur ot En ore nt *EH Today*  
<http://sto-ay-co-stan-ar-s-os-a-wor-pac-sa-ty-cu-tur-not-n-ore-nt>





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 ... said that the ... HA ... a ... or award of work package  
 ... said that the ... HA ... a ... or award of work package  
 ... said that the ... HA ... a ... or award of work package

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 on ... construction work ... in Eau Claire ... sions in ... 4 percent of ... that  
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 r ... c ... v ... co ... p ... t ... on ... car ... s ...

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 an ... pp ... tt ... n ... wor ... rs ... wo ... r ... c ... v ... sa ... ty ... or ... ntat ... on ... s ... on ... y ... xp ... r ... ne ...  
 n ... ur ... s ... co ... par ... w ... t ... wor ... rs ... w ... t ... out ... or ... ntat ... on ... s ... a ... ty ... or ... ntat ... on ... s ... w ... r ...

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ii

associated with a significant reduction in nurses' job satisfaction. The connection  
between the two variables is as follows:

A study of the Control of Disease Control Unit at a hospital was an important  
contributory factor in the reduction of staff nurses or hospital workers on  
construction sites. In a questionnaire, an attempt was made to identify the  
training and supervision of workers of the hospital by the unit and the  
view of workers as contributory factors based on the statistical analysis of  
the data. Hospital workers.

At the National Health Authority, the Secretary of Labor Health Services at  
the worker training was a center.



o ars- Est at s by HA consu tants or t a ty ays ca cu ator n cat r ct  
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Inc u n Bot ys ca an syc o o ca -

JOEM stu y st at t at n ur s account or p rc nt o t costs an ata t s  
p rc nt ata ty cost cons rvat v y ca cu at as av ra n on ac n  
o ars or on n o ars-

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ass ss n ca costs an nsuranc a n strat on xp ns s as w as ost ar n n s  
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av ra cost o an n ury was an t av ra cost o an n ss was or  
an av ra cost p r nc nt o s cost st at s ar n t s v s  
cons rvat v b caus t y o not nc u pa n an su rn -

#### IV. RESULTS AND ANALYSIS OF OSHA-10 SURVEYS AND INTERVIEWS, AND STORIES

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tra n n - r su ts o t surv ys an nt rv ws c ar y n cat wor p ac c an s  
an pract c s post tra n n -

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v ry us u ab ar y p rc nt sa t at as a r su to HA t y  
a ar n t n s t at a t sa r at wor ab - I on can  
n ra ro t s tra un on construct on wor rs t n ov r a a

4

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protection and a responsibility of our by European safety awareness  
or MDS and a arrangement - responsibility for ... about  
concern exposure and to the ... to avoid ...

that was the most important thing ... By art ... most  
important thing that the ... was ... awareness  
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responsibility a protection arrangement and personal responsibility or on  
own safety - ... about ... HA  
requirements and protections MDS and ...

the most important work ...



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ourn y an or an nstructor at t r se oo about a at an sa ty conc rn  
b or tran n - nc tran n t p rc nta ros to n ary, p rc nt-

r as ust ov r a o tran s b or tran n a su st to a wor  
co a u t at s o so t n r nt y n or r to wor sa r a t r  
tran n or t an t r quart rs a on so-

on y ust ov r 4 p rc nt a x or r port an ctr ca a ar at wor  
b or tran n ov r 4 p rc nt a on so s nc tran n -

L ss t an a o t os surv y a worr about tt n canc r or un s as  
ro c ca xposur - nc tran n or t an two t r s a worr about  
c ca xposur a n t sc -

two t r s a ta wt ow wor rs about a sa ty prob b or  
tran n s nc tran n ov r 4 p rc nt a a conv rsat ons wt ow wor rs  
about sa ty prob s-

B or tran n ss t an 4 p rc nt a a co p ant wt HA- nc  
tran n t p rc nt ros to ov r 4 p rc nt- An t nu b r w o t ou t about  
n a co p ant or t an oub -

su st on ro t abov ata s t at w r p op ar y to a av a sca o  
or a r acc nt or b xpos to a ar ous nos or c ca s- I pr v ous y c t  
r s arc s corr ct t n o construct on wor rs r c v n HA  
w r n ur sar y wt tran n vs wt out -

B- I E IE I H A E ICE AI E C DI A A D AI EE

p on nt rv ws w r con uct wt tran rs an coor nators ro or t an a  
a o n r nt cra ts an or t an a a o n r nt stat s- s n v ua s a  
y nvo v wt HA tran n w r as to prov cas s o two typ s  
xa p s t y n w o w r an acc nt xposur was avo or ss n b caus o  
HA tran n or xa p s w r an acc nt xposur occur but t  
av b n avo or ss n t r a b n tran n -

-





A sup r nt n nt s was c an or v r w n pour n oot rs an  
 putt n or s to t r s p y b caus t r w r no r bar caps-  
 sup r nt n nt tr pp an was pa on p c s o r bar- It was a  
 rac t at no v ta or ans w r t as on w nt t rou s ab o n an  
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 osp ta w t t st b -H n v r b ab to r a y wor  
 construct on a a n an t c an an s att tu an p rsona ty-  
 HA tra n n t av p pr v nt t tr p- Know o a  
 a ar s t av a asy to us r caps on t r bar-

## V. CHANGING THE PARADIGM

s stu y ps to bu a n w para a n w o or asur n t soc a an  
 cono c b n ts an costs assoc at w t c s on s to prov occupat ona sa ty  
 an a t -Cons r r ar or t an two o n nts o a asur nt syst  
 ran n ro nc u n a t xt rna t s assoc at w t a c s on to assu n t at  
 n w an or cost c nt t c n qu s ar y to occur onc n ustry s pus n t  
 r ct on o sa r wor pac s- t o s not y t u y v op t s n w  
 nts ar part o t ana y s t at o ows- nts o t s n w y r n  
 para ar n an urt r scuss n App n x III-

## WHAT NEEDS TO B

4. - Long run costs an b n t s n to b nc u an va u n ana ys s- HA tra n n can pr v nt wor rs ro un nown s ca xposur sav n t ro at an or ata un s as - But t os b n t s ay b y ars post tra n n -

4. - In r ct costs an b n t s n to b part o ana ys s- HA tra n n by on p oy r ay av b n t s or ot r p oy rs as tra n wor rs ov ro ob to ob- s s ust on xa p -

4. - pos t v as w as t n at v pacts o an act on ar cruc a- av n an p oy r ro wor rs co p nsat on rat s or r at pr u s can b n part t r su to HA tra n n t at r uc s acc nts an xposur s-

4. - onquant t at v costs an b n t s as w as t os t at ar not b st xpr ss n o ars n to b nc u - pow r nt t by a wor r to pro ot sa wor pract c s can b n ctous across wor s t s- It s portant to t r n w at costs an b n t s ar b st on t w c ar b st quant but not on t an w c n to b stat qua tat v y- ct on c r n b co n orp ans as so nanc a pacts t at can b on t - n can count t nu b r o c r n orp an - How v r t u cost an ot ona pact o av n a par nt s ou b nc u but r a n qua tat v -

4. - Ana ys s s ou b yna c rat r t an stat c- o wor s t stays t sa - rous prob s wt w n u s an wor r awar n ss ay a to n w an prov w n oo s c an n wor pract c an c ca xposur - t wor rs xpos to w r tox c c ca s t y ay b tt r an t r by b ab to wor or c nt y- I on a s c s ons bas on a stat c o pro ct ons ar un y to b accurat -

4. - ra o costs an b n t s n s to s t- cost o HA tra n n occurs n t s ort run but t b n t s sp c a y at b n t s ay ta y ars to r - s un v nn ss n t n r qu r s an a ust nt n ana ys s-

4. - D str but on o costs an b n t s n s ocus- Costs an b n t s o not a qua y on a part s- n an nsur wor r avo s an acc nt t nsuranc co pany r ct y b n t s- n an un nsur wor r avo s an acc nt t p oy r an t wor r r ct y b n t ro a nanc a p rsp ct v - A wor r ay ta tra n n on s r unpa wor n t but t p oy r b n t s ro t at tra n n - A wor r s tra n n ay b pa or by t p oy r but t p oy r ay n v r now t at xp n tur actua y pr v nt an acc nt-

4. - Corporat act v t s n to b v w as n xtr cab y nt r p n nt- a tra n n part nt t b qu t s parat t an a at b n t s part nt n a co pany t r costs an b n t s n to b v w n a b n way- tra n n part nt cannot xp ct to account or t b n t s t at anat ro t r xp n tur o un s- sa s tru wt pro uct on or xp n tur s on p ant an qu p nt w c ay b part y or sa ty but y prov c ncy an ct v n ss as w -

A a ct t botto n - C c n too s an ctr ca conn ct ons not on y pot nt a y sav s an b t a so ay sav p ant an qu p nt-

4 - Incorporat xt rna t s- ut o poc t costs or wor rs o own an acc nt ar o t n t out o ana y s- o too ar pacts on a y b rs o v ct s- Costs assoc at wt an HA acc nt nsp ct on ar r at to an acc nt w n or xa p an untra n wor r o s not us a prot ct on- on t ss t ay b a cost r at to ac o tra n n -

4 - ranspar ncy n t o o o y s an un rp nn n o ana yt c nt r ty- Eac an



occurrence in part because of a combination of economic factors that can be significant-

A- CALIFORNIA BUREAU OF FIRE PREVENTION

As an account can also cost a company to - A calculator was developed by the California Council on Compensation Insurance, which works by taking into account the Business Roundtable or used by HAA and its website. According to the calculator, the direct costs or expenses or an indirect cost over a year and the indirect costs over a year or a total of a year - direct costs of a structure are, with indirect costs of - According to HAA's safety calculator, with a profit margin of, the calculator's total a company would have to pay for both direct and indirect costs on an - on a respective - Avo - an account or - ss - nt - rou - t - s - ns - s - v - ry - portant - ust - or - a - qu - c - cono - c - p - rsp - ct - v -

the safety calculator states that the direct and indirect costs of accidents as well as the amount of a company would have to pay for those costs - Costs are calculated by the California Council on Compensation Insurance, which analyzes the national standard based on workers compensation and on an indirect cost average cost of lost workers compensation cases -

Indirect costs are reported by Business Roundtable based on a study by the Bureau of Labor Statistics. Indirect costs include

- a safety calculator for workers or absences not covered by workers compensation
- a calculator for lost time worker stoppage associated with worker injury
- indirect costs not stated by the injury
- An alternative spent by supervisors safety personnel and other workers at a training
- training costs or a replacement worker
- Lost productivity rate to worker's union new pay arrangement curves
- an account of an injury pay
- Can up or pay an replacement costs of a - at - ra - ac - n - ry - an - prop - rty -

<sup>44</sup> U.S. Department of Labor, OSHA, "Safety Pays."

<sup>45</sup> Safety Pays uses a sliding scale to determine indirect costs:

Direct Costs	Indirect Cost Ratio
\$0-\$2,999	4.5
\$3,000-\$4,999	1.6
\$5,000-\$9,999	1.2
More than \$10,000	1.1



But tort costs do not necessarily accrue to HA

- o costs of HA and any associated action
- o third party liability costs
- o or repair and maintenance
- o Loss of goodwill and publicity-

In tort costs also do not necessarily impact on a wrongdoer such as a spouse or child  
in order to get a job to take care of the injury or a lawyer or a lawyer or a lawyer or a lawyer  
available to avoid the tortious care of the injury or a lawyer or a lawyer or a lawyer or a lawyer  
a up or out of the way - It does not take into account costs associated with  
psychological problems caused by an injury that may lead to substance abuse, physical  
abuse or other related behavior - In other words, the costs of accidents caused  
by a tortfeasor's negligence on the part of the tortfeasor - The tortfeasor's liability calculator  
is not relevant - In a lawsuit, the tortfeasor's costs would be set off -

B- CALIFORNIA ILL E E F AC ALI CIDE

Below are the various possible torts to tortfeasor by transference and

Accor n to MB st at s s at wou a

**Benefits from Avoiding Death or More Serious Injury  
High Level Fall Rescue**

	Direct & Indirect Costs	Social Security for Survivors <sup>49</sup>	Soc. Sec. Disability for Victim <sup>50</sup>	Medicaid <sup>51</sup>	Food Stamps <sup>52</sup>	Psycho-Therapy for Widow <sup>53</sup>	Total Costs
<b>If he had died</b>	na	na	na	na	na	na	<b>\$7,033,202</b>
<b>If seriously injured</b>	na	na	na	na	na	na	<b>\$957,664</b>

By avoiding such factors as occupational safety or survivor benefits at car or a job, and social safety net factors that HA states are by over \$7,033,202 in total value to a family and for the total cost of a serious injury—

*O. HA saves worker from electrocution because he did a check of equipment before he started work, and it was faulty. It could have saved another worker from death.*



**Benefits from Avoiding Death or More Serious Injury  
Electrocution**

	Direct & Indirect Costs	Psycho-Therapy <sup>54</sup>	Home-Less Shelter <sup>55</sup>	Food Stamps <sup>56</sup>	Medicaid <sup>57</sup>	One Year Lost Income of Associate <sup>58</sup>	Survivor Benefits for Assoc. Children <sup>59</sup>	Total
<b>If he had died</b>	100,000	10,000	10,000	10,000	10,000	10,000	10,000	<b>\$7,260,364</b>
<b>If seriously injured</b>	10,000	na	na	10,000	10,000	10,000	na	<b>\$352,888</b>

*Injury by electric shock is just one more of the cost of standing on top of a ladder for one more act on leads to an ambulance, broken and displaced shoulder, and surgery. \$100,000 a year on vacation to support a family.*

... the ... or a ... str to ... p t ... a y ... a car an ... ort a ... pay nts-  
 Accor n to a ty ays t cost o a s ocat on s ov r ... r qu r n a t on a  
 sa s by t co pany o ... on-

H s oss n our y rat ... a t r s x ... ont s o un ... poy nt s ... p r our- ... n o ars  
 ss p r our ov r ... y ars s ... - As a r su t o r uc ... nco ... s son as to  
 qu t s us c s s on s an ... au t r o p s out o ba t an ... av s t sw ... t a - Bot  
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 pr p trac t y now t r ... nat t r uc at on a t r ... sc oo ... p y n ... or t two o  
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n s a st p to t top o t ... a r a ct an n t r y a y an cost n ar y ...  
 on-

**Benefits from Avoiding Death or More Serious Injury  
 Fall from Top of Ladder**

	Direct & Indirect Costs	1/2 Year Postponed Salary-Son <sup>60</sup>	Lower Wage Rate Over Working Life-Time -30 Years	Reduced Children's Lifetime Earnings for Not Going to College <sup>61</sup>	Total Costs
<b>If seriously injured</b>	\$4,000	\$4,000	\$10,000	\$10,000	\$28,000









paper as yet. For each of the above, the author was  
calculated by the MB statistical value of the  
work to the university as a whole. The HA  
costs are just as a cost associated with hospital stays or  
work days.

array of costs and benefits in a new analysis. The  
impact are just two of the many issues. The new  
reasons are just as a cost associated with hospital stays or  
work days.

**THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING (CPWR)  
IMPACT OF OSHA-10 TRAINING SURVEY**

**TABLE 1**

**TRAINEES**

**THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING (CPWR)  
IMPACT OF OSHA-10 TRAINING SURVEY**

**TABLE 2**

**WAS THERE ANYTHING YOU LEARNED IN OSHA-10  
THAT MAKES YOU FEEL SAFER AT WORK?**

	#	%
Yes	171	87.7
No	24	12.3
<b><i>Total</i></b>	<b><i>195</i></b>	<b><i>100</i></b>

**THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING (CPWR)  
IMPACT OF OSHA-10 TRAINING SURVEY**

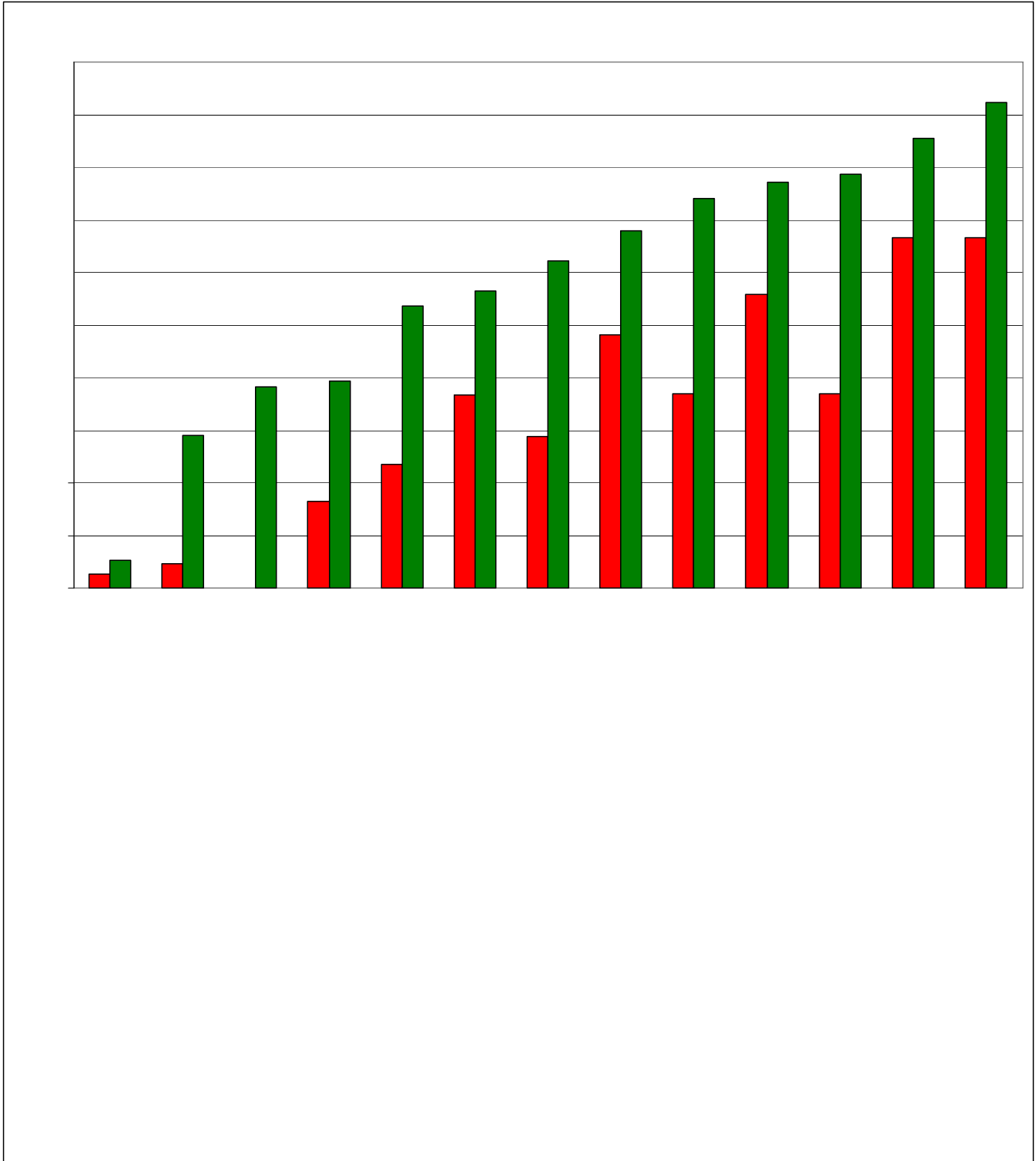
**TABLE 3  
CHANGES IN SAFETY ACTIONS, BEFORE VS. AFTER OSHA-10 TRAINING**

**THE CENTER FOR**

ABLE,

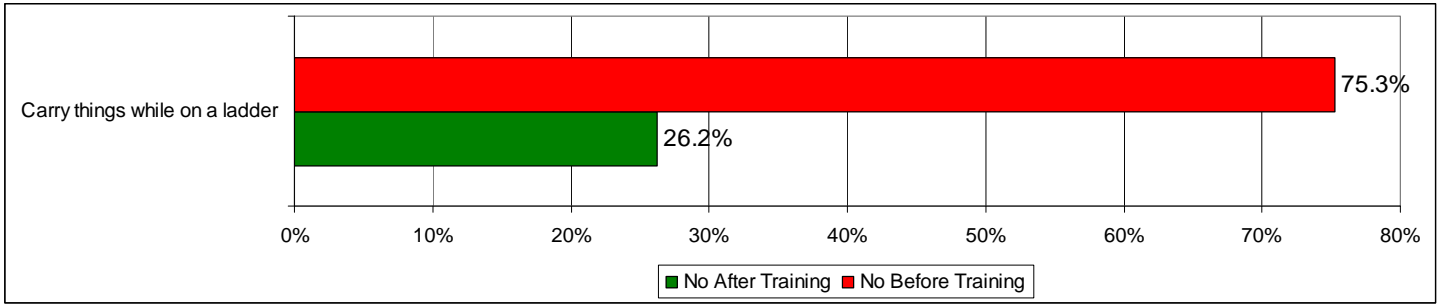
# CHART 1

## CHANGES IN SAFETY ACTIONS, BEFORE VS. AFTER OSHA-10 TRAINING



## CHART 2

### CARRYING THINGS WHILE ON A LADDER PRE-TRAINING VS. POST-OSHA-10 TRAINING





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Dong, X., Ringen, K., Men, Y., and Fujimoto, A., "Medical Costs and Sources of Payment for Work-Related Injuries Among Hispanic Construction Workers," *Journal of Occupational and Environmental Medicine*, Volume 49, Number 12, December 2007.

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## APPENDIX I

### PROTECTION OF HUMAN SUBJECTS

study involves human subjects— A survey response was anonymous and voluntary— I a person a story to tell that was a target to provide contact information to us  
anonymity— only information was created and appropriate to be  
ocated by state— A survey response was anonymous and voluntary— I a person a story to tell that was a target to provide contact information to us  
Interviews were completed by contact and not on your own— created and appropriate to be  
statistical—

specific number of northern and southern areas— I think are  
appropriate surveys and appropriate representation in the construction population  
university of southern Bureau of Labor Statistics shows working and northern  
unemployment and construction industry that would be working— Caucasians  
Hispanics— African Americans— Asians— In order to be not as that is racial or  
ethnicity so that actual percentages are not known—

study was before expected review by the CIB since the surveys were  
anonymous and the surveyors contact information or interviews and interviews were  
first secure and then story that was not— respondents were not that the  
participation was voluntary—

**APPENDIX II**

**SURVEY  
IMPACT OF OSHA-10 TRAINING**

is an anonymous survey. It



4- <u>Since</u> received HA... training have you	YES	NO, BUT I THOUGHT ABOUT IT	NO
C c an M D			
As or E			
Carr t n s w on a a r			
C c a sca o to s t was construct prop r y			
F a co p a nt w t HA			
Contact your a t an sa ty co tt a ourn y an an nstructor at your sc oo about a a t an sa ty conc rn			
Loo up so t n about a t an sa ty on n			
Loo at t CF			
orr about tt n canc r or un s as ro c ca xposur			
F x or r port an ctr ca a ar at wor			
a w t ow wor rs about a sa ty prob			
As about an r ncy act on p an			
u st to a wor co a u t at s o so t n r nt y n or r to wor sa r			

*If you have a story to tell please fill out this form*

## APPENDIX III

### ELEMENTS OF A NEW PARADIGM

A new paradigm, a process view too... necessary to... or... y... ass... ss... t... costs and  
benefits of occupational safety and health... reasons... not... but... reason or safety  
and... activities to protect... vs... and... - Measurement costs of... safety and  
... at... provision... not... ust... ac... n... o... ca... ba... anc... t... s... ac... n... n... o... c... a... t... o... t... r...  
B... ow... ar... or... t... an... two... o... n... t... s... o... w... at... can... p... suc... a... para... r...

- It is Important to Assess the Trust

How... uc... t... s... act... on... cost... s... t... s... p... st... an... ost... r... qu... nt... y... as... qu... st... on... but... t... r...  
ar... t... ra... y... un... r... so... r... nt... t... o... o... s... t... at... can... b... us... to... an... sw... r... t... s... qu... st... on...  
qu... st... on... n... s... to... b... c... ar... y... n... an... tar... t... at... s... t... xp... ct... cono... c... cost... to...  
bus... n... ss... s... ov... r... say... y... ars





Another static problem with cost analysis is that the industry's normal price at equilibrium is an investment cycle that is a part of the industry's operating cycle—percentage costs are significantly higher than in the normal investment cycle with capital purchases—equilibrium is an outlier pressure to provide a satisfactory coupon industry before cost-cutting by the successful users to account with the remaining participants—

— Franchise Costs Analysis

Because the ratio of investment to total cost of capital provides an outlier purchase

coordinated analysis— cost-weighted national corporate entity with pay compensation and costs  
 without pay to a national product on activity in accordance— self or student a case  
 years ago now cost workers over a period of years because total and present  
 substantial activity represents as yet cost not or total on orders— in itself and  
 was spent to cover a cost of workers with a national award was national— costs  
 analysis that at a coordinated view would probably have to a quick resort on other  
 problems—

Domesticity and attention to benefit ratio into innovation— D— Just as innovations in  
 industry conservation are beneficial ratio into other resources activities so too should  
 innovation in occupational safety and health—

For any costs to affect safety expenditures— costs should be transparent  
 and not ratio to cost and benefit calculations— In response and/or example turn or an  
 investment compact— surplus inputs should be a by-product of production control—  
 central to turn investment in industry production standards and regulatory reform—  
 Clean Corporation— a way to use bacteria to convert contaminants in the unit to  
 treatment as well as turn surplus to other parts of plant surplus—

Other cases suggest that safety provisions should not be costs should be counted as  
 a safety burden— Environmental Protection Agency notes— report or  
 example— cost at so costs would exist anyway— a capital swindle  
 costs are not be cause of ruin—

4— Incorporating Externalities

Economic theory rarely is a potent persuasive tool— cost estimates to national  
 externalities— External costs should be national and that should be a major  
 occupational safety and health analysis— Industries should pay a price to clean up their  
 own work practices— Auto industry— Auto industry— pay cost of cleaning up their  
 production and other problems— so consistent that the auto industry— Manufacturers should  
 pay costs associated with national safety rules— other consumer products they  
 are— Economists want a better policy analysis— to or to— Accidents  
 and national and national occupational costs society cannot be expected without a  
 total without other economic advantages— but economic policy, investment spots  
 should not—

For a national parameter— contact with conventional economic industry costs  
 of national— national economic national safety work practices— costs  
 possible problem— occupational policy success occupational safety and health—

---

4. Utterback— Economic Impact of Externalities— Harvard University— Environmental Protection Agency—  
 Federal Register— County and Municipal Employees—

5. Utterback— *Hazardous Materials Management Journal*—

84. EPA cited in Shapiro, Ruttenberg, and Leigh, 2009.

public ownership because the economic system as a whole is a market solution to the problem of providing a public good—based on an analysis that is not so much an economic system that as a whole would be to contract based on the economic system. Economists try to use conventional theory to explain the fact that there are any critical actions now that are not so much a fact that any company is not a market solution, most important, you are an individual at the end of the day.





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to a uts w n c abor wou av cost ss -

n about t sourc o cost st at s- anc on n us try surv ys s not approp at - n  
t y now t purpos or w c t y ar b n as about bur n t r s an nc nt v to  
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nc nt v to n at cost st at s n t op o s cur n a ss str n nt r u at on -

Accor n to sourc s or t Futur n n bas n t cost st at s ro n us try  
sourc s s p r aps to b xp ct -

4.- Corr ct For n rr port n o Fata t s In ur s an I n ss s

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un rr port - y ay b s n cant y ow- r ar any stu s about t c ron c  
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r ports osp ta sc ar r cor s nat ona surv ys an wor rs co p nsat on- r ar  
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bas ata t s or w c on wou t n t r wou b oo r cor s on or r a o

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5.- Dup cat on t t r u s s o B ubtract ut

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count onc as a cost- In t t xt n us try as an xa p n w qu p nt t at ncr as  
pro uct v ty s u tanous y brou t co p anc wt bot HA cotton ust an HA no s  
stan ar s- ot on y s ou t not b count tw c p rc nt o t cost s ou not b  
assoc at wt r u at ons s nc t an ssu was at ast nt cas o oo s to t ast r  
b r oo s wt uc r pro uct on rat s- uc no s ncr as t us u o  
t s xp ns v ac n s an r uc cotton ust r uc t ownt o ac n s w c  
t ot r w s b co c o on t r own ust- E A nt ons t s ssu n a r port-

1. McGar ty an utt nb r p -

2. Harr n ton Mor nst m an son p -

3. For on t ratur r v w see utt nb r - an La ba A- v w o t Lt ratur on  
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a ty an H at A n strat on -

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Co p anc costs n to b sort out ro cap ta nv st nt– In t n n about t sourc o  
cost st at s t s portant to r a t ot vat on n p n t costs –

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ccupat ona L a	on	on
For a y	on	on

A stu y by Goo st n an Ho s n e A e r can Prospect n oun t at n o t  
 r u at on s t y xa n t at t n t a st at s w r at ast oub t actua costs → A  
 r v w or sourc s or t Futur oun t at x ant st a

Measure an account or a lower comparable cost ... controls and ...  
arous substances with substitution -

.- Look Beyond the typical Company or Industry Manual Decision- Look too at the  
Impact on the Environment Control and Hazard Abatement Industry

... industry sector as a ... -- company or ... a company  
a - Many - busineses ... are abatement technology and equipment- From  
safety boots to air scrubbers ... provision of equipment to but ...  
controls ... - - science and ... - - Just as on ... an EPA conference  
sorty at the production of asbestos broom over ... busineses to ...  
exp or potential ... asbestos control or products to substitution or asbestos- Many  
... nor ty busineses ... spawn ... a comparable with abatement  
... -

- a- Incubate a business and operation that are abatement and pollution control industry
- b- Incubate projects or companies that

|| - Bas n or Cost Est at on ou B Fro t L v Co p anc at Ex sts  
at t u at on ot a Z ro Co p anc Bas n

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stab s n t s bas n ay b cut so any av us a ro bas n --r ct n an  
assu pt on t at t os r u at wou not av ta n any act on at a to prot ct a t sa ty  
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t ro bas n wou av a co p any nv o at on o an x st n r u at on but s st av n  
n ustry w t a ar r cost t an s ou b n c ssary to ov ro curr nt to utur r u at on  
t co p any s n ss nc b n r war or non co p anc --

▲ - M asur n t Costs o ot a n Act on or o rous D ays

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op rat ons an oc out ta out- A w ot r xa p sar st b ow

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c nc s s arc r an ar C -

Ct n ap ro ta - p-

3. - Consistency of a Cost Benefit Analysis As a Part of a Conversion Economic Cost Benefit Analysis

social impact of decisions on the environment and the way in which the benefits of a project are distributed among the community are critical to any analysis-

4. - Cost Benefit Analysis

Cost Benefit Analysis is a technique used by the government to estimate the benefits and costs of a project. It is a way of comparing the benefits and costs of a project in terms of their value to society. The benefits and costs are measured in terms of their value to society, and the project is considered worthwhile if the benefits exceed the costs. The benefits and costs are measured in terms of their value to society, and the project is considered worthwhile if the benefits exceed the costs. The benefits and costs are measured in terms of their value to society, and the project is considered worthwhile if the benefits exceed the costs.



