Data & Methodology Note

Supporting documentation · U.S. benchmarks (NSC, BLS), figures in USD

This note accompanies the CFO article at action-cards.com/en/for-us-cfos-financial-logic/ and documents the sources, assumptions and calculations behind every figure in it. The figures are illustrative benchmarks, not product-specific guarantees: actual results depend on a company's starting point, implementation quality and workforce profile. Nothing here is financial, legal or insurance advice.

Scope – U.S. operations. This note documents the cost model for the U.S. market and draws solely on U.S. sources (the National Safety Council and the U.S. Bureau of Labor Statistics). All figures are U.S. dollars and describe U.S. conditions – U.S. wages, injury rates and prices. For Danish operations, a separate note applies, based on Danish sources (Statistics Denmark, the Danish Working Environment Authority and others).

1 Purpose and scope

The CFO article presents rounded, directional figures so that the argument stays readable. This note is where the exact arithmetic lives, so a reader can audit every number back to a named source. Where the article shows a rounded range, the derivation below shows the underlying calculation.

2 Sources

- **National Safety Council — Injury Facts 2024** (average cost of a work injury).
- **OSHA SafetyPays and NSC** (evidence that indirect costs are substantial).
- **U.S. Bureau of Labor Statistics (BLS)** — SOII / TRIR sector data 2024 (published January 2026) and Employer Costs for Employee Compensation (ECEC), Q2 2025.
- **Peer-reviewed skill-retention literature:** Anderson, Gaetz & Masse (2011); Smith et al. (2008); Arriaga et al. (2013).
- **Peer-reviewed safety-ROI literature:** Verbeek et al. (2009); Fabius et al. (2013); Institute for Work & Health (2023); Thonon et al. (2023); Bautista-Bernal et al. (2024).

3 The average cost of a workplace injury

Average cost per incident — ~$52,800. NSC Injury Facts 2024 reports an average cost of about $48,000 per medically consulted work injury. That figure already includes wage losses, medical expenses, administrative expenses and employer costs, and is an average across a wide range: minor cases cost far less, serious ones far more.

On top of this we therefore add a conservative 10% uplift for **some of** the indirect effects not included in NSC's figure — co-workers' lost productivity and overtime, supervisor and investigation time, higher insurance premiums at renewal, and fines — giving about $52,800 per incident ($48,000 × 1.1). Other, equally real costs we have deliberately left out altogether: hiring and retraining a replacement, downtime and lost production beyond the overtime already counted, lost contracts and pre-qualification, litigation beyond workers' compensation, and long-term effects on morale and turnover. How the 10% is derived — and why it is set this low — is shown in the appendix; the real figure is likely higher, and even without any uplift the economic case still holds.

The 10% uplift is an Action-cards estimate, not a public statistic, and is kept separate from the NSC figure. It is open to debate; see the appendix.

4 The illustrative company (300-employee model)

The article's worked example uses a single, explicit company profile. All downstream figures scale directly from these assumptions.

Assumption	Value
Employees	300
Sector	Industrial production / logistics
Baseline TRIR	~3.0 (between BLS manufacturing 2.7 and transport & warehousing 4.5)
Recordable incidents / year	~9 (TRIR 3.0 = 3 per 100 workers × 300)
Total cost per incident	~$52,800 (NSC $48,000 + 10% uplift)
Baseline annual incident cost	**~$475,200 (9 × $52,800)**

5 Training-time saving (production)

BLS ECEC Q2 2025 puts total employer compensation at **$46.30/hour.** A single 6-hour annual course therefore costs about $278 per employee in lost production time alone (6 × $46.30), or **$83,340 for 300 employees** (6 × $46.30 × 300) — before an instructor is paid (a further $40–55 per person). Action-cards® micro-sessions attach to existing meetings, bringing this figure close to zero.

This ~$83,000/year is a safe saving: it follows from the model regardless of whether the incident rate moves.

6 The return scenarios

Risk-dependent return = percentage reduction in incidents × baseline annual cost ($475,200), plus the $83,340 safe saving. The three scenarios below span the reduction range documented in the safety-ROI literature.

Scenario	Incident reduction	TRIR	Risk-dependent return	Safe saving	Total / year
Strong result	60%	3.0 → ~1.2	$285,120	$83,340	**~$368,000**
Middle scenario	40%	3.0 → ~1.8	$190,080	$83,340	**~$273,000**
Conservative	20%	3.0 → ~2.4	$95,040	$83,340	**~$178,000**

Rounded for the article: for this profile the total return is in the order of **$0.2 million to $0.4 million per year**, of which about $83,000 is independent of the incident rate — roughly half of the return in the conservative scenario. Reduction percentages are consistent with peer-reviewed literature but are not product-specific guarantees.

7 Market price benchmark (comparable EHS tooling, without Action-cards®)

This is a separate question from the return above: not what a company avoids, but what equivalent functionality costs to buy. Figures are based on publicly available market data for EHS software.

Comparable digital safety system — without Action-cards®	Annual cost
EHS incident-management platform (10 admin users)	$18,000–36,000
Safety LMS with gamification, video and quizzes (300 users)	$30,000–50,000
Implementation and setup (amortised over 3 years)	$3,000–7,000
Manual incident reporting to insurers / authorities	$5,000–15,000
Comparable system, total	**~$56,000–108,000 / year**

8 The depreciation problem: why one-off training loses its value

The reduction percentages in section 6 assume that skills decay without reinforcement. The evidence:

- **Anderson, Gaetz & Masse (2011)** — observational study of 257 certified first-aiders in industrial and service workplaces. Measurable decline in practical skills within 30 days; authors recommend refresher training as often as every 90 days.
- **Smith et al. (2008)** — among nurses, 63% passed the practical BLS test at 3 months (58% at 12 months); only 30% passed the more advanced ACLS test at 3 months, falling to 14% at 12 months.
- **Arriaga et al. (2013), NEJM** — cognitive aids (checklists) removed roughly 75% of omission errors during simulated crises.

9 Currency, rounding and precision

Cited source figures (NSC $48,000; BLS $46.30/hour; BLS TRIR 2.7 and 4.5) are reproduced at the precision the source reports. Derived figures are rounded in the article to reflect the uncertainty they carry — a modelled estimate built on an average cost, a modest 10% uplift and an assumed incident count does not warrant three significant figures. This note shows the exact arithmetic so the chain remains auditable; the article quotes the rounded form.

All amounts are U.S. benchmarks stated in their original currency, U.S. dollars. A Danish edition of this note converts them to DKK at **6.65 DKK per USD (18 October 2026).**

10 Limitations

The figures describe a representative pattern across implementations, not any single customer. This note documents reasoning and sources; it is not a guarantee of outcome, and it is not financial or legal advice.

— References

- 1 NSC Injury Facts 2024: ~$48,000 average cost per medically consulted injury, including wage losses, medical, administrative and employer costs. Plus a conservative 10% Action-cards uplift for selected knock-on costs (co-worker productivity, overtime, supervisor/investigation time, premiums, fines) — ~$52,800 per incident in total; see appendix.
- 2 LTIR / TRIR per OSHA standard: (incidents × 200,000) ÷ total hours worked. BLS SOII, published January 2026 (2024 data).
- 3 BLS ECEC Q2 2025: $46.30/hour total employer compensation. 6 × $46.30 × 300 = $83,340. Instructor fee $40–55 per person in addition.
- 4 Verbeek et al. (2009); Fabius et al. (2013); Institute for Work & Health (2023); Thonon et al. (2023); Bautista-Bernal et al. (2024).
- 5 Anderson GS, Gaetz M, Masse J. First aid skill retention of first responders within the workplace. Scand J Trauma Resusc Emerg Med. 2011;19:11. Observational study of 257 certified first-aiders.
- 6 Smith KK et al. Evaluation of staff's retention of ACLS and BLS skills. Resuscitation. 2008. Also: Arriaga AF et al., N Engl J Med 2013;368:246-53.

Appendix How the 10% uplift was derived

The 10% is an estimate, not a measured figure, and is open to debate. The basis is set out here so the reader can judge it. We estimated each component the uplift covers as a share of NSC's $48,000 average:

Component	Rough contribution (share of $48,000)
Supervisor and investigation time	~2–3%
Co-workers' lost productivity	~1.5–3%
Overtime during absence	~2–5%
Higher insurance premium (experience rating)	~2–6%
Fines (expected value)	~0.5–1%
Total	**~8–18% (centre ~12%)**

We have placed ourselves at **the low end — 10%** — to be explicitly conservative. These are averages across the full severity mix behind NSC's figure: near zero for minor cases, larger for serious ones.

That these knock-on costs are real and material is well documented: OSHA SafetyPays, the Stanford/Business Roundtable study and the critical review in Manuele (2011) all put indirect costs at least on a par with direct costs. They rest on a narrower cost base (workers' compensation only) than NSC's, so we deliberately do not transfer their multipliers — they serve only to confirm that the components exist.

The uplift does not change the conclusion. **Remove it entirely** and use NSC's $48,000 as-is, and the total return is still ~$170,000–343,000 per year, with the ~$83,000 safe saving there regardless. The economic case holds even without the uplift.

Appendix sources: OSHA Safety Pays (osha.gov/safetypays/background); Manuele F., Professional Safety (ASSP), Jan 2011; Business Roundtable / Stanford University (1981).