



Global  
Safety  
Evidence  
Centre

# Valuing Global Safety Topic Note #1: Building the Framework



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Resource

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## About the Lloyd's Register Foundation Global Safety Evidence Centre

The Lloyd's Register Foundation Global Safety Evidence Centre is a hub for anyone who needs to know 'what works' to make people safer. The Centre collates, creates and communicates the best available safety evidence from the Foundation, our partners and other sources on both the nature and scale of global safety challenges, and what works to address them. It works with partners to identify and fill gaps in the evidence, and to use the evidence for action.

To find out more about the Global Safety Evidence Centre, visit [gsec.lrfoundation.org.uk](https://gsec.lrfoundation.org.uk)

## About Lloyd's Register Foundation

Lloyd's Register Foundation is an independent global safety charity that supports research, innovation, and education to make the world a safer place. Its mission is to use the best evidence and insight to help the global community focus on tackling the world's most pressing safety and risk challenges.

To find out more about Lloyd's Register Foundation, visit [lrfoundation.org.uk](https://lrfoundation.org.uk)

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## Summary

Value for Money (VfM) evidence can help us make better decisions about how to engineer a safer world. Resources for improving safety are limited. Funders, practitioners and researchers therefore need to understand not only whether an intervention improves safety, but whether it represents a good use of scarce resources compared with the alternatives.

Lloyd's Register Foundation has committed £15 million over the next decade to establish the [Global Safety Evidence Centre](#): a hub for building and sharing knowledge about what works to make people safer. A practical framework for assessing VfM will be central to that mission.

This is the first in a series of three topic notes exploring how to measure and value global safety. Commissioned and published by Lloyd's Register Foundation, the series sets out a framework for using economic evidence to support decisions about safety interventions — before funding is committed, through appraisal, and after implementation, through evaluation.

The focus of this note is monetary valuation: how to identify credible values for safety outcomes and express them, where appropriate, in monetary-equivalent terms. These values can support social cost-benefit analysis, cost-effectiveness analysis and lighter-touch approaches such as breakeven or scenario analysis. The aim is not to reduce safety to pounds and pence, but to make trade-offs more transparent.

The framework recognises that VfM is always a balanced judgement. Many important safety outcomes cannot be credibly monetised. Others can be valued only with uncertainty. Used carefully, however, monetary valuation can bring discipline, consistency and comparability to decisions about how resources are allocated.

The approach draws on established appraisal frameworks, including the [New Zealand Treasury's CBAX tool](#), the [Netherlands Bureau for Economic Policy](#) and the [UK Treasury's Green Book](#), as well as international practice in welfare economics. The principles are broadly transferable, but their application requires care — particularly in global contexts where evidence, income levels and institutional conditions differ.

This note establishes the overarching VfM framework. Topic Note 2 examines how safety outcomes can be valued using health and wellbeing approaches. Topic Note 3 addresses how these values can be applied across borders, recognising the ethical and practical challenges that arise when valuation evidence is drawn largely from high-income countries.

Together, the notes provide the intellectual foundation for the [Global Safety Value Bank](#): an experimental digital tool that gives users access to a core set of safety-relevant values, alongside guidance on how those values should — and should not — be used.

## Introduction: Why does valuation matter for global safety?

Lloyd's Register Foundation's [2024–2029 Strategy](#) commits the organisation to being a trusted voice in safety: finding, sharing and commissioning the best evidence on what works.

Across its priority areas — Safer Maritime Systems, Safer Sustainable Infrastructure, and Skilled People for Safer Engineering — the Foundation supports interventions that produce very different kinds of benefit. Some save lives. Some prevent injury or illness. Some strengthen infrastructure, improve skills, reduce environmental damage or help people feel safer in their daily lives.

These are not challenges for the Foundation alone. Governments, funders, regulators, businesses, researchers and civil society organisations all face choices about how to invest in safety. A maritime safety intervention, a food safety programme, an infrastructure standard or an engineering skills initiative may all be worthwhile, but they do not generate the same kinds of benefit. Nor can they always be compared using simple output measures such as the number of people trained, pieces of equipment provided or reports published.

With limited resources available, choices and trade-offs are unavoidable. The key question for decision-makers is therefore not simply: **does this intervention work?** It is also: **does this intervention represent a good use of resources compared with the alternatives?**

That is where valuation can help. By expressing some safety outcomes in monetary-equivalent terms, valuation can make benefits more visible, more comparable and easier to weigh against costs. It can support appraisal before decisions are made, evaluation after interventions have been delivered, and wider evidence-building about what works to improve safety.

But valuation has limits. Some safety outcomes are hard to quantify. Some are ethically sensitive. Some depend heavily on local context. A credible framework must therefore distinguish between what can be monetised confidently, what can be monetised only with caution, and what should remain outside the monetary calculation altogether.

This note sets out that framework. It is designed to support the Foundation's own work and the development of the Global Safety Value Bank, but its relevance is wider: to any organisation seeking a more disciplined, transparent and proportionate way to assess the value of safety interventions.

## What is value for money?

Value for money is not the same as spending less, or making financial savings. It requires a balanced judgement about the optimal use of resources to improve welfare and wellbeing. That judgement takes account of social costs and benefits, but also non-monetised impacts, equity and risk.

We have already set out this broader approach in [Evidence for a Safer World: A practical framework for value-driven grantmaking](#). That report explains how value for money can be built into the full grantmaking cycle, drawing on the 4Es: economy, efficiency, effectiveness and equity.

This topic note builds on that foundation. Its focus is narrower: the role of monetary valuation in assessing the benefits of safety interventions. Monetary valuation can strengthen value for money analysis, but it is not the whole value for money judgement.

## When is monetary valuation useful (and when is it not)?

Monetary valuation is most useful when decisions involve real trade-offs. Costs are usually expressed in money; benefits often are not. Expressing some safety benefits in monetary-equivalent terms can therefore help decision-makers compare unlike outcomes: lives saved, injuries avoided, emissions reduced, productivity protected or wellbeing improved.

This is especially valuable when interventions produce several types of benefit at once. A safer workplace may reduce injuries, improve productivity, lower public costs and make workers feel more secure. A common monetary unit can help show the scale of these benefits and how they compare with the resources required.

But monetary valuation is not always appropriate. Oxford Policy Management's [Value for Investment framework](#) (King et al., 2024) identifies four conditions for monetary cost-benefit analysis:

1. the decision at hand genuinely requires comparing social costs and benefits;
2. outcomes can be credibly quantified and valued;
3. the analytical capacity exists to do so well;
4. the exercise is ethically defensible and responsive to stakeholders.

These conditions are important because monetary valuation can easily give a misleading impression of certainty. This is a particular risk where evidence is thin, causal pathways are long, or the affected communities have not been properly involved in defining what matters.

In global safety, those challenges are common. Some interventions will support full monetisation. Others will call for lighter-touch approaches, such as breakeven analysis, scenario testing, cost-effectiveness analysis, or a qualitative VfM judgement supported by a clear theory of change.

The point is not to monetise everything. It is to use monetary valuation where it improves the decision, and to be clear where it does not.

## Many outcomes with three value types

Safety interventions can create value in several ways. For the Global Safety Value Bank, we group these into three 'Tiers', of 'what gets valued' to help to signpost to the relevant outcome:

- Tier 1: Core Health and Safety
- Tier 2: Wellbeing
- Tier 3: Environment and Natural Capital

These categories and the list of items included within the Global Safety Value Bank are not exhaustive of the potential benefits of safety interventions.

The second step is the value of these outcomes. The value of these outcomes can be expressed as three broad types: social, economic and fiscal. These types classify who pays or benefits: society, the economy, the government.

**Social value** captures changes in people's welfare and wellbeing. This includes the value of lives saved, injuries avoided, health improved, anxiety reduced, confidence increased or quality of life protected. Social value is usually the largest and most important part of the case for safety investment, because safety ultimately matters for people.

**Economic value** captures wider effects on the economy. Improved safety can reduce lost working days, protect productivity, support skills and employability, avoid disruption to firms and supply chains, or reduce damage to productive assets. These effects matter, but they should be kept distinct from social value to avoid double counting.

**Fiscal value** captures costs and savings to the public sector. This might include reduced healthcare spending, fewer emergency responses, lower welfare payments or changes in tax receipts. Fiscal values are useful for understanding budgetary effects, but they are not the same as social value. A safety intervention can be highly valuable even where the fiscal saving is small.

Many safety interventions generate all three types of value. A workplace injury prevented may improve the worker's quality of life (social), reduce productivity losses for an employer (economic) and avoid some public healthcare costs (fiscal). An environmental intervention may improve the quality of air (a social value, since individuals receive value but will not specifically pay for this in the market), others may increase the revenues from fishing or a national park (economic), other green infrastructure may reduce government costs of recovery after a storm (fiscal). Separating these categories helps users understand where benefits fall, which values can be monetised, and which assumptions need most care.

## Ways to use monetary values for safety outcomes

The Global Safety Value Bank provides unit values for a range of safety outcomes. These are designed to support two main activities: appraisal and evaluation.

**Appraisal** takes place before a decision is made. It asks whether an intervention is likely to be a good use of resources, based on the expected costs, benefits, risks and uncertainties.

**Evaluation** takes place after implementation. It asks whether the intervention achieved its intended outcomes, whether the benefits justified the costs, and what can be learned for future decisions.

There are three common ways to use these values.

### Cost-benefit analysis (CBA)

Cost-benefit analysis (CBA) monetises the main costs and benefits of an intervention. This allows decision-makers to estimate whether society gains overall. For global safety, CBA can be especially useful because many interventions create more than one kind of benefit. A safer transport system, for example, may reduce deaths and injuries, protect productivity, lower emergency response costs and improve people's sense of security.

### Cost-Effectiveness Analysis (CEA)

Cost-effectiveness analysis (CEA) compares the cost of achieving a single defined outcome.

This approach is often used in health economics, where outcomes can be expressed using a single measure of health-related quality of life. In the UK, this is typically the quality-adjusted life year, or QALY, which combines length of life and quality of life into one measure. Internationally, the World Health Organization and others more often use a similar measure, the disability-adjusted life year.

Cost effectiveness can also be applied to the WELLBY. The calculation estimates the cost of achieving one WELLBY, which is a 1 point change in life satisfaction per person per year.

Its limitation is that it works best when safety interventions aim to improve one core outcome. Many safety interventions generate several social, economic and financial benefits at once. Where the benefits are varied, CBA provides a fuller picture.

## Scenario-based analysis

Full cost-benefit or cost-effectiveness analysis will not always be possible. In many safety contexts, particularly for early-stage innovation, research, standards or capability-building, there may be good reasons to expect benefits but limited evidence on their scale.

In these cases, lighter-touch approaches can still be useful.

- **Breakeven analysis** asks: what level of impact would be needed for the intervention to justify its cost?
- **Scenario analysis** asks: if the intervention achieved a given level of impact, what would the monetised benefits be?

These approaches are often more honest about uncertainties than a full CBA built on weak assumptions. They do not claim to know the impact of an intervention. They help decision-makers judge whether the impact needed for value for money is plausible.

## Example: scenario-based analysis for safer pilot transfer

The following example illustrates how values from the Global Safety Value Bank can be used in a proportionate way.

Lloyd's Register Foundation awarded a £10,000 grant to Helm Innovation Ltd for the innovation and design engineering of a new pilot embarkation system. The grant was awarded in July 2020 and ran for 12 months. The funding supported the manufacture and stress-testing of marine safety designs, with the aim of making pilot transfers safer at sea and helping the company move towards further development.

Pilot transfer is a high-risk activity. Ships' pilots may need to climb between moving vessels, often in poor weather, rough seas or darkness, using conventional pilot ladders. A safer embarkation system therefore has a plausible route to reducing fatalities and non-fatal injuries in maritime work.

A full social cost-benefit analysis would require an estimate of the additional number of fatalities, injuries and cases of work-related ill-health prevented by the grant, compared with what would have happened otherwise. For a small innovation grant, that level of evidence is unlikely to be available in advance and may still be hard to establish afterwards.

This is where breakeven analysis is useful. Rather than claiming a precise impact, it asks what level of safety improvement would need to occur for the grant to justify its cost.

The values below relate to three workplace safety outcomes. They draw on UK Health and Safety Executive (HSE) estimates, as made available through the Global Safety Value Bank, and are shown in 2025/26 prices. In this case, HSE estimates the costs associated with fatality, injury and ill-health – these can be interpreted as benefits where such outcomes are avoided.

Outcome prevented	Fiscal value	Economic value	Social value	Unit benefit
Workplace fatality	£157,208	£483,160	£1,779,052	<b>£2,419,420</b>
Non-fatal workplace injury, any length of absence	£3,167	£2,104	£8,030	<b>£13,301</b>
Work-related ill-health absence, any length of absence	£5,429	£5,847	£13,006	<b>£24,282</b>

The fiscal value captures costs falling to the government and the public sector, including healthcare and administration costs. The economic value captures productivity and employer costs. The social value captures the human cost, including the loss of quality of life.

The breakeven point is simply the grant cost divided by the unit benefit.

Outcome prevented	Unit benefit <sup>1</sup>	Breakeven point: £10,000 grant cost ÷ unit benefit
Workplace fatality	£2,419,420	0.004 fatalities avoided
Non-fatal workplace injury	£13,301	0.75 injuries avoided
Work-related ill-health absence	£24,282	0.41 cases avoided

The next step is to assess whether this prevented outcome is realistic. For pilot embarkation systems, [UK data](#) from the International Cargo Handling Coordination Association estimated that there were around 400 incidents across 96,000 pilot transfers in 2022, though not all resulted in an injury. [Industry sources](#) suggest a small number of fatalities (a few per year) globally. While uncertain, it is plausible for there to be around 0.75 injuries or 0.0004 fatalities prevented at some point in the future, stemming from this initial project.

<sup>1</sup> As above: where the unit benefit is the costs avoided when this outcome doesn't take place. The benefit of preventing a workplace injury is the absence of the costs which would have otherwise fallen to society, the economy and government, i.e. a positive value.

A second use of the same values is scenario analysis. Suppose, illustratively, that the grant ultimately contributed to preventing 10 non-fatal workplace injuries over the useful life of the innovation. The monetised benefit would be:

$$10 \times \text{£}13,301 = \text{£}133,010$$

Against a £10,000 grant, every £1 of grant funding would generate around £13.30 of monetised benefits under that scenario.

This should not be read as a final estimate of impact. It is a scenario. Its purpose is to test whether a plausible safety improvement could justify the original investment.

The example also illustrates the limits of the calculation. Safer pilot transfer could generate wider benefits that are not captured in the injury figures alone. Pilots may feel safer, experience less anxiety around high-risk transfers, or have greater confidence in their work. These wellbeing effects matter, even where no accident occurs. Topic Note 2 considers how such effects might be valued.

This example uses UK values because the grant and available evidence are UK-based. Similar calculations can be applied in other countries, but this raises questions about transferability, equity and currency adjustment. Topic Note 3 addresses those issues.

## Looking Ahead

This note has set out the role of monetary valuation within the Foundation's wider value for money framework. It has explained the distinction between social, economic and fiscal value, described the main ways values can be used, and shown how even simple breakeven or scenario analysis can support more transparent decision-making.

The central message is that monetary valuation can improve safety decisions, but only when used with care. It is most useful when outcomes can be credibly quantified and when the calculation helps inform a real choice. It is least useful when it creates false precision, obscures uncertainty, or turns a broader value for money judgement into a single number.

Two further questions follow.

**Topic Note 2** asks how safety outcomes should be valued, particularly where interventions affect health, wellbeing, or both.

**Topic Note 3** asks how these values should be used internationally. Many monetary values are derived from evidence in the UK and other high-income countries. Applying them globally requires extra care, particularly where income differences, institutional conditions and equity concerns affect the interpretation of value.

Together, the three notes provide the intellectual foundation for the Global Safety Value Bank: an experimental tool to help the Foundation and its partners use monetary values in decisions about global safety.

# Key terms

Term	Definition
Appraisal	Assessment of options before a decision is made, to estimate which represents the best value for money.
Benefit-cost ratio (BCR)	The ratio of monetised social benefits to monetised social costs. A BCR above 1 indicates that benefits exceed costs.
Breakeven analysis	An analysis that asks what level of impact would be needed for an intervention to justify its cost. Useful when the scale of impact is uncertain.
Cost-benefit analysis (CBA)	A method of appraisal that estimates the main social costs and social benefits of options in monetary terms, allowing them to be compared directly.
Cost-effectiveness analysis (CEA)	A method of appraisal that compares the cost of achieving a defined unit of benefit (such as a QALY gained or a life saved) across options.
Economic value	Wider effects on the economy, such as productivity protected, lost working days avoided, or damage to productive assets reduced.
Evaluation	Assessment of an intervention after implementation, to judge whether it achieved its intended outcomes and whether the benefits justified the costs.
Fiscal value	Costs and savings to the public sector, such as reduced healthcare spending, fewer emergency responses, or changes in tax receipts.
Global Safety Value Bank	An experimental digital tool published alongside this series, providing unit values for safety-relevant outcomes.

Term	Definition
Green Book	The UK Government's central guidance on appraisal and evaluation, published by HM Treasury. The methodological anchor for much of this series, alongside other international frameworks.
Net present social value (NPSV)	The difference between the present value of monetisable social benefits and the present value of monetisable social costs.
Quality-adjusted life year (QALY)	A measure that combines length of life and health-related quality of life into a single unit. One QALY equals one year of life in perfect health.
Scenario analysis	An analysis that asks what the monetised benefits would be if an intervention achieved a given level of impact.
Social value	Changes in people's welfare and wellbeing, including the value of lives saved, injuries avoided, health improved or wellbeing increased. Usually the largest part of the case for safety investment.
Theory of change	An explanation of how and why a proposal is expected to lead to its intended outcomes. It links inputs, outputs and outcomes. A good theory of change evidences each of these links and is clear about the strength of the evidence and uncertainties.
Value for money (VfM)	A balanced judgement about the optimal use of resources to achieve a proposal's objectives. Draws on monetisable social costs and benefits, but also on unmonetisable impacts, equity, risk and the public sector financial impact.

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## Annex 1: Choosing the right analysis

The Global Safety Value Bank is useful where there is a credible link between an intervention and a safety outcome that can be valued, in monetary terms. It should not be the starting point for appraisal. The starting point should be the decision being made, the theory of change, and the evidence available on outcomes. The table below provides a simple guide to choosing the most appropriate approach.

Question	Evidence available	Suggested approach
Are the benefits of one intervention likely to justify its costs?	Quantified estimates of outcomes, such as injuries prevented, fatalities avoided, emissions reduced or wellbeing improved.	Cost-benefit analysis, alongside assessment of non-monetised impacts.
Are the benefits of one intervention likely to justify its costs?	The types of outcome are known, but the likely scale is uncertain.	Breakeven analysis or scenario analysis, alongside assessment of non-monetised impacts.
Which option offers better value where outcomes are similar?	Options can be compared using the same main outcome, such as cost per injury prevented, cost per life saved or cost per QALY gained.	Cost-effectiveness analysis, alongside assessment of non-monetised impacts.
Which option offers better value where outcomes differ?	Quantified estimates are available for the main outcomes of each option.	Cost-benefit analysis, alongside assessment of non-monetised impacts.
Any of the above	There is no clear link between activities, outputs and final outcomes.	Do not monetise yet. Develop the theory of change and outcome evidence first.

This table should be applied proportionately. A major strategic programme may justify detailed cost-benefit analysis. A small exploratory grant may only justify a breakeven calculation or a short scenario test.

The quality of evidence matters as much as the calculation. A high benefit-cost ratio based on weak assumptions may be less useful than a more modest result based on strong evidence. Where impacts cannot be credibly quantified, they should be described qualitatively rather than forced into a monetary estimate.