



Global
Safety
Evidence
Centre

What occupational
safety and health
practitioners
need from an
evidence centre



Safe
Work



Sector
Perspective



Briefing

1. The quick read

The experiences and voices of practitioners are essential to understanding what matters and what works in occupational safety and health (OSH). Evidence needs to be accessible and useful to practitioners in supporting safe and healthy workplaces, especially in high-risk sectors.

In interviews with 29 OSH practitioners from around the world, researchers drew out the following messages:

1. Practitioners used their own expert knowledge and that of their networks
2. Safety and health are priorities but require different types of evidence and skills
3. Evidence can help build cultures of safety, but more evidence is needed to know what makes them effective
4. Practitioners use a wide range of evidence for different purposes
5. There is no single source of accessible and trusted information for practitioners
6. Practitioners need support to access and use evidence
7. The local context matters for evidence access and use
8. Emerging evidence gaps need to be filled, especially in relation to climate change and new technologies

Our new Global Safety Evidence Centre will work with practitioners to ensure that research and insights are as relevant and useful as possible.

2. Why this is important

We wanted to understand how OSH practitioners in high-risk industries used evidence in their work, and what additional knowledge they considered important to do their jobs well. In this context, a practitioner is someone “who ensures that employees are safe and healthy in the workplace and that employers adhere to safety requirements and standards.”

We commissioned researchers at RAND Europe to interview practitioners and ask them about the evidence that they may need from a range of sources, including formal research, data, analysis, expert advice, and peer knowledge. They also explored how practitioners wanted to access this evidence.

We wanted to hear the experience of practitioners who worked in sectors with a “higher incidence of workplace-related accidents, illnesses, and fatalities among workers”, including:

- agriculture
- forestry and fishing
- construction
- mining and quarrying
- transportation and storage
- electricity, gas, steam, and air conditioning supply (energy sector)
- water supply, sewage, waste management and remediation services
- manufacturing

What do we mean by ‘evidence’?

Evidence isn't just research that has been published in academic journals. It's also data and analysis from industry, government or independent sources, charities, expert insights or recommendations, case studies, reports and tacit knowledge.

What do we mean by tacit knowledge?

This is the practical knowledge and insight that OSH practitioners gain by experience through their work. It includes personal understanding or judgement based on dealing with risks, challenges and solutions on the ground, and is seldom captured in formal policies or guidelines. Tacit knowledge often includes more formal evidence, but this is filtered through practical application in different settings or contexts.

3. The research

The researchers interviewed 29 practitioners working in industry, government, training organisations, and as independent consultants. They worked for large organisations across the UK, USA, Europe, Africa, Asia, the Middle East and the Pacific Region, with several of them operating globally.

The practitioners' roles and responsibilities included senior leadership and safety strategy, safety specialists and consultants, safety managers, safety trainers and advisors, industry regulators and researchers.

Most of the practitioners interviewed had roles in upper management, so we can't say what frontline or technical practitioners would need. The people interviewed were primarily responsible for setting the occupational safety culture of an organisation, for ensuring compliance with regulations or standards, and developing strategies to mitigate safety risks.

The researchers asked the practitioners about:

- Their role and the industries and settings they worked in
- How evidence is generated and used in their sector
- The way they used evidence in their own work
- The challenges and barriers to accessing and using evidence
- What would help them in using evidence

The researchers also conducted a literature review to bring together the research on practitioner evidence needs more widely.

4. What practitioners said

The following important messages emerged from across the practitioner interviews.

4.1. Practitioners used their own expert knowledge and that of their networks

The practitioners, especially those from industry, relied extensively on the experience and learning gained during their work. This tacit knowledge varies between individuals and is often lost when people move between roles.

Practitioners make use of their experience in several ways, for example when interpreting government guidelines for their specific settings, or in knowing where to go to find the evidence they needed. Practitioners also relied on the tacit knowledge of peers or experienced individuals in their networks, especially when they needed further evidence beyond their own localised knowledge.

Measuring the hidden tacit knowledge used in everyday work settings is important but difficult, such as when incident or near-miss data relies on self-reporting.

Practitioners expressed a need for a central evidence platform that supported their work and helped them supplement their tacit knowledge and their evidence skills.

4.2. Safety and health are priorities but require different types of evidence and skills

Practitioners emphasised that safety and health were priorities across their sectors, but that there was not always sufficient or timely evidence to embed policies or initiatives.

Safety and health were seen as closely interconnected. Practitioners find it difficult to distinguish between evidence needed to support safety and health, since worker health can influence safety outcomes and vice versa.

“...A decision might lead to a safety incident, a quality issue, or even stress-related occupational diseases. It is all interconnected”

They also pointed out that, although worker safety and health are best addressed together, different expertise was needed in the two areas, and evidence came from different sources and was of different quality. Occupational health relies more on longitudinal data, while safety evidence is more time-bound.

It's also often more difficult to link health outcomes directly to workplaces, especially when they occur after retirement or after moving jobs. Employers were perceived to place less value on occupational health where evidence for workplace effects was muddier and returns on investment less clear.

“While there is a lot of data on safety incidents, there is less comprehensive data on health-related issues, which can take years to manifest and are harder to attribute directly to workplace conditions”

There was some concern that only sectors with high fatalities or accidents are considered high risk, whereas those with longer term effects were not counted as such. Some occupational diseases may only emerge after many years of exposure to hazards, and some work practices may result in cumulative health implications. There is a need to collect data that explains the interconnections between safety and health, and especially on how leading indicators are linked to longer-term outcomes.

4.3. Evidence can help build cultures of safety

Practitioners pointed out that there are multiple influences on safety cultures, including regulation and reporting requirements, economic factors, leadership and communication between industries, organisations and individuals.

What do we mean by a 'culture of safety'?

The researchers define a culture of safety as one where “institutional knowledge and ways of working around safety are both formally and tacitly learned. Organisations choose to promote safety through support of OSH practitioners and active consideration of safety in budget and planning. A good culture of safety is when an OSH practitioner has the knowledge to promote safety effectively and workers are aware of safety personnel, policies and practice.”

Evidence can help inform and improve safety culture, especially in those areas of influence where it is less used. Some suggestions raised by practitioners include:

- Evidence on the importance of safety culture and how it can be implemented so that practitioners can develop local cultures and support leaders.
- Regulatory influence to encourage safety culture (for example through a set of global safety culture KPIs) can kick-start the process or remove barriers.
- Encouraging a culture of openness and transparency where negative outcomes or mistakes are acknowledged and acted on.

Safety cultures can have influence beyond short-term safety outcomes. One practitioner highlighted that people and organisations that plan meticulously for safety tend to 'plan for everything else' which can contribute to wider success.

Several practitioners emphasised the cost implications of implementing and maintaining health and safety cultures. Where costs are prohibitive, employers may default to meeting the bare minimums of standards and reporting and treating those requirements as a tick box exercise rather than building a culture around them.

Practitioners also emphasised that safety cultures were connected to wider cultural differences. For example, in some low and middle-income contexts, such as Sub-Saharan Africa, there is a sense of duty to workers' families and a belief that employers are responsible for returning workers to their communities in good health at retirement.

Evidence which accounts for different cultural contexts would help practitioners develop cultures of safety that work in different settings.

4.4. Practitioners use a wide range of evidence for different uses

Practitioners described different ways they accessed and used evidence in their work:

- Practitioners from government agencies and regulators commissioned primary research to inform the design of policies and interventions.
- Those from low- and middle-income countries often relied on administrative data, population surveys, and organisational statistics to develop interventions.
- A regulatory practitioner relied on self-reported accidents and incidents when deciding where to conduct inspections.
- Some practitioners gathered witness accounts to support accident investigations, while another used grey literature and a systems thinking approach (looking at how procedures, equipment, communications, training, decisions and other factors interact in a situation) for the same purpose.
- Practitioners with academic backgrounds tended to use literature reviews and syntheses.

Additionally, different industries and industry bodies gather different types of evidence to identify risks before incidents happen. These include HR data including workplace surveys, guidelines, quality assurance, finance and productivity data, as well as data on related outcomes such as staff wellbeing.

Some types of evidence were harder to access and make use of than others, including academic papers which were behind paywalls, self-reported incidents or accidents data, protected data, and proprietary or business sensitive data.

“When I was working in the academic setting, it was easier for me to get access to evidence based articles. However, if you work in industry, that is only limited. When I am working in an industry, I am more reliant on publicly available information. On the contrary, I am working as a regulator now and can access more information”

4.5. There is no single source of accessible and trusted information for practitioners

The provision and access of evidence was experienced differently by the practitioners, and they agreed that there was no single 'go to' source of evidence for them.

Different practitioners used different evidence sources depending on their role or experience. Some referred to academic journals, others to government or industry data and reports which were convenient because they contained analysis and interpretation.

Regulators and policymakers also determined the types of evidence that were generated, such as accident reporting or trials. These sources all have different challenges in access, usefulness and reliability for practitioners.

The three challenges highlighted by practitioners to a reliable evidence base were:

- **Limited and outdated primary data**, such as self-reported data on accidents. In some sectors, like construction or energy this data is incomplete, while in sectors affected by emerging technologies or climate change the data is not relevant.
- **Lack of trusted or relevant evidence sources**, such as those from places with less developed research infrastructure or less mature monitoring systems. Some evidence from high-income countries was less applicable to settings in low and medium-income countries, where local data was less available.
- **Outdated approaches to using or analysing data**, such as focusing on incident data without looking at the context or neglecting tacit knowledge or safety culture factors.

There was a sense that access to a clear and trusted platform of evidence sources would be helpful.

4.6. Practitioners need support to access and use evidence

Evidence needs to be applicable to the different uses and contexts practitioners operate in. Practitioners agreed that local approaches could provide valuable data for global learning, but they also emphasised that knowledge of local regulation or culture was essential for transferring learning effectively.

Practitioners reported relying on on-the-job learning to understand how evidence should be interpreted and used, and they often lacked the time or resources to develop these skills. They also relied on guidance from peers and networks, which is accessible and relevant but may contain bias and rely on outdated information.

While some practitioners noted gaps in the evidence, others suggested there was a saturation of research in the field of occupational safety and health. The issue was not so much the lack of evidence, as the communication of the evidence and the skills to implement it.

Supporting practitioners to use evidence was seen as important, and this should consider the differences in evidence infrastructure, language and use in different countries.

4.7. The local context matters for evidence access and use

Practitioners sought out local data first, preferring it to regional or cross-sector aggregates which obscure workplace-specific context and factors.

This was especially the case in low- and middle-income countries where language and local culture were factors in accessing useful evidence. In countries where evidence is limited, practitioners rely on tacit knowledge or experienced and trusted local networks.

Practitioners from low- and middle-income countries also expressed a need to improve data collection to fill essential evidence gaps, such as those relating to workplaces using hazardous chemicals.

There was a need for more, and transparent, localised data from the same subsectors or geographies. This was seen as more relevant, trustworthy and applicable.

4.8. Emerging evidence gaps need to be filled

Many practitioners highlighted emerging areas of their work where evidence was particularly lacking, mainly because of rapidly changing technologies or contexts.

Some of these emerging or rapidly evolving topics are:

- The effects of climate change on occupational safety and health, as well as the emerging industries involved in renewable energy
- The rapid energy transition and its impact on workplaces and communities, especially in low- and middle-income countries
- The growth of new technologies in settings that unfamiliar with them, such as artificial intelligence, and lithium-ion batteries or new telecoms construction in rural areas

Practitioners acknowledged that changes to working environments and new technologies required being open to new approaches to support safety.

If future evidence is to be useful to occupational safety and health practitioners, they must be included in identifying emerging topics or questions and testing the findings in their work.

5. The Wider Evidence on Practitioner Needs

A rapid review of the literature found 24 articles and reports that explored the needs of OSH practitioners through interviews, modelling, data mining and case studies. The researchers identified three themes:

Accessing and using knowledge

- Accessing the right knowledge can depend on organisational memory. That is, how well individuals in an organisation remember and apply past experiences to new contexts.
- Not all knowledge is recorded or shared, for example the tacit knowledge of individuals in an organisation, such as information on near misses or individual cases.
- Data quality varies and this affects practitioner use. For example, quantitative data may be more convenient to use in reporting, but is not always collected or analysed accurately. In depth case studies may provide important information about context but is time consuming to collect and harder to use in reporting.
- Continuous learning and skills are important to ensure practitioners have access to and use the latest and best evidence, especially in changing contexts. How practitioners learn safety information, and their ability to interpret or analyse data are two different and connected challenges.

A culture of safety

- Individuals and relationships both matter in safety culture, including the age profile of the workforce, behavioural and personality traits. Individuals rely on those around them for awareness of safety in different situations, and to learn and enforce safety practices.
- Organisational funding, the prioritisation of health and safety, and the treatment of whistleblowers set the attitude and scope of safety culture and determine how they respond to challenges.

Physical environment

- Practitioners must have broad and specialised knowledge depending on the workplace setting, types of risks and people involved. For example, construction sites vary widely and so does the knowledge of how to work safely within them.

6. What Needs to Happen Next

The Global Safety Evidence Centre can help fill some of the needs identified by practitioners in the following ways:

1. **Working with practitioners** to understand their evidence needs in different places and roles. Understanding the role of organisational memory in the context of a changing workforce.
2. **Understanding the tacit knowledge** of practitioners to map it against existing evidence to identify commonalities and gaps. For example, common practice that hasn't been researched fully, or well-established findings that aren't implemented in practice.
3. **Bringing together the best evidence** on priority topics and communicating the findings in accessible and timely ways.
4. **Developing supporting materials** on how to use evidence effectively in different settings, sectors and places.
5. **Valuing all types of knowledge**, and helping practitioners understand which is useful for different decisions. Signposting to relevant expertise across professions, sectors and disciplines.
6. Supporting evidence of intervention **effectiveness and cost effectiveness**.
7. Understanding the key **elements of effective safety cultures**, including testing theories of change and developing common measures.
8. Encouraging **learning collaborations** between practitioners, policymakers and researchers.

About 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

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

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