

Science and Evidence Strategy 2016-2022



Foreword

Great Britain's record on work-related safety and health is one of the best in the world. High-quality science, evidence and analysis underpin Great Britain's risk-based, goal-setting regulatory regime and are vital for ensuring effective and proportionate risk management that protects workers and safeguards the public while enabling productivity, innovation and growth.

For over a hundred years, HSE (and its forerunners) has invested in science, evidence and analysis to understand risks to health and safety and how to control them. The lessons we learn from investigating major incidents, the cutting-edge evidence we generate and synthesise from applied health and safety research, and our work to address challenges from new working practices and to develop the evidence base to enable safe introduction of new technologies, are a vital contribution to the health and safety system. We rigorously prioritise our scientific investment to maximise our impact on work-related health and safety and ensure that we use robust, best available evidence to underpin our regulatory policy and operations.

We use networks and strategic partnerships - including those with industry, academia, international research institutes, and co-regulators - to develop and synthesise evidence. The breadth of our scientific and analytical capability and the benefits of our inter-disciplinary approach are widely appreciated. Our specialists undertake a wide range of investigation, research, services and advice that is directly funded by industry and other regulators across government and overseas. The case studies of HSE science in our [annual science reviews](#) illustrate its impact and quality: enabling innovation and growth, securing justice, and transferring knowledge to the health and safety system.

HSE's science and evidence strategy is predicated on the use and development of practical, solution-oriented science, maximising the synergies from our regulatory work and our investment in science, and the science we undertake with direct funding from industry and other stakeholders. We uphold the highest standards of scientific ethics and are committed to peer-review and open access to research outcomes. In our strategy we set out our 'science and evidence cycle': anticipating challenges to health and safety; providing robust evidence for effective risk control; underpinning regulatory policy and operational decisions; protecting workers and safeguarding the public by developing interventions; and catalysing engagement within the health and safety system and improving performance.

During the COVID pandemic, we have had to deliver our work differently: the pace, the collaboration required to be efficient and effective and the application of our knowledge to new and emerging issues has been a valuable learning experience which we will take forward into a full strategy review. Because of this and the planned refresh of the HSE strategy, we have decided that now is not the time to undertake a full review of our approach. Therefore, this document presents a refresh of our existing strategy to cover the period up to 2022. Science and evidence remains at the heart of HSE's work. Our refreshed science and evidence strategy aims to maximise its contribution to delivering the wider strategy for the health and safety system.

Professor Andrew Curran, *Chief Scientific Adviser and Director of Research*



Our Science and Evidence Cycle – Purpose and impact

We anticipate new, and appraise existing challenges through foresight, research, and synthesis of existing evidence

We develop, synthesise and use evidence on existing, new and emerging health and safety challenges that come with social, economic and technological change. We combine the outputs of structured horizon scanning with our knowledge and insights from engagement with industry and other stakeholders - along with the expressed interests of our end-users – to develop the evidence needed to enable the health and safety system to respond to existing challenges and anticipate and prepare for the workplace challenges of tomorrow.

We provide evidence to ensure risks resulting from work activities are effectively controlled

We generate robust evidence on risks to health and safety and how to control them to provide the evidence base that in turn supports [HSE's prioritised plan](#) of effective health and safety interventions. This includes developing an understanding of why things fail through our forensic investigation of workplace accidents and ill health issues. We synthesise the available evidence base and create new evidence through solution-oriented, applied scientific and analytic research and incident investigation.

We underpin operational and policy activities

We use our scientific and technical capability and the results of our scientific research

and analyses to provide the evidence base to help HSE:

- lead and engage with others to improve workplace health and safety
- provide an effective regulatory framework
- secure effective and proportionate management and control of risk and
- reduce the likelihood of low-frequency, high-impact catastrophic incidents.

We protect workers and safeguard the public

We develop our knowledge, understanding and insight about effective health and safety interventions by:

- ensuring that proposed interventions are informed and prioritised by using evidence, analysis and insight;
- applying new evidence, analyses and insight to test proposed interventions; and
- evaluating the impact of our scientific research and analyses on the health and safety outcomes for workers and the public.

We support engagement with others to improve performance of the health and safety system

We evaluate the impact of our work in the shorter and longer terms, initially by assessing:

- the effectiveness of how we disseminate and transfer our knowledge e.g. through publications, presentations, training, standards, social media etc.; and
- how we have influenced the improved performance of others in the health and safety system with our evidence- and knowledge-based interventions.

In turn, these assessments identify lessons to be learned, new challenges for improving the health and safety system and opportunities to work with others through joint investment in research to solve shared problems.

Our Science and Evidence cycle - Science at the heart of HSE's work

Our science has relevance, impact and value to HSE:

- it provides a challenge to, and has a positive impact on, decisions made in HSE;
- our scientists are trusted team members, responsive to the needs of their users; and
- we can demonstrate the impact of science's contribution to HSE's work.

Our science has relevance, impact and value to society:

- it is credible because it delivers solutions relevant to users and their needs;
- it is insightful about current and future work; and

- we can demonstrate the impact of science's wider contribution, in the knowledge transferred through interventions.

Our [priority areas of scientific research and technical support](#) for HSE will be identified through active engagement with the whole organisation, with research programmes managed through a small number of priority research hubs.

We apply the scientific method and ensure:

- our experts focus on what works, through robust analytical techniques and experimental rigour, and through developing evidence bases by using quality systems and applying their professional integrity;
- our work is subject to ethical scrutiny, peer review, and external evaluation; and
- our scientific capabilities and facilities enable us to take an interdisciplinary approach to solving problems that can have multiple factors, enabling innovative solutions.

We manage and develop the capabilities of our staff and facilities we invest in:

- scientists, in their knowledge and skills to ensure we have the capability to meet current and emerging science and evidence needs;
- new facilities, techniques and technologies, and maintain facilities unique to HSE to meet the current and emerging needs of the organisation; and
- information and knowledge management to ensure the full value of this important asset can be released.

Our scientists demonstrate important values and behaviours. They:

- keep up to date, anticipating new challenges from workplaces and research;
- are innovative, ethical, professional, methodical, focus on quality and demonstrate curiosity; and
- use their knowledge and skills to solve problems for end-users in the real world of work both in the UK and overseas.

We address the application of science across a range of HSE activities through:

- assuring the quality of scientific advice provided by specialists in other parts of HSE; and
- addressing professional issues through our heads of profession.

In working with others, we:

- demonstrate openness and integrity;
- develop credibility by being engaged with users, building and maintaining networks and strategic partnerships, and formally communicating the results of our work through peer-reviewed channels;

- collaborate and communicate with other researchers and organisations in shared research programmes; and
- conduct international research, applying our world class expertise.

Conclusion

HSE has:

- access to scientific knowledge and capability;
- a forensic health and safety capability that supports our investigations into dutyholders' compliance with the law;
- scientific evidence that helps us to be more effective;
- support for its policy approach with real world science;
- ready access to science to evaluate the impact of our work and to challenge our approach;
- assurance that our science is accessible to the end-user and visible to all stakeholders; and
- confidence that the knowledge we generate can be used to enable dutyholders to improve their performance and stimulate economic growth whilst protecting the health and safety of their employees and the public.

Further information

For information about health and safety, or to report inconsistencies or inaccuracies in this document, visit www.hse.gov.uk/. You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.

This document is available at: <https://www.hse.gov.uk/research/index.htm>.

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