

Bridging innovation and safety:

Communicating risk in modern healthcare



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We live in a world saturated with risk, yet we often struggle to talk about it. This paradox becomes particularly acute in sectors like healthcare and medtech, where uncertainty can have life-altering consequences, and public understanding is critical to trust and uptake

Why risk communication matters more than ever

As engineers and scientists, we deal in evidence, probabilities, and protocols but for policymakers and the public, risk is more than numbers, it is emotion, context, and consequence. The challenge therefore, lies not just in managing risk, but in communicating it.

The COVID-19 pandemic laid bare the consequences of communication gone awry: a torrent of information, some of it conflicting, eroded public trust. In the race to make sense of the science, nuance was sacrificed for certainty. The very people most in need of clarity - policymakers and the public - were often left navigating a fog of statistics, speculation, and sensationalism.

This is not a new problem, but it is a growing one. Advances in medical technology, from AI diagnostics to gene

editing, bring enormous promise, but they also introduce new layers of complexity and uncertainty. As these innovations reach the front lines of patient care, the role of parliamentarians becomes ever more critical. They are the interpreters of science to society; the bridge between the technical community and the people they serve.

So how can we get better at this? How do we talk about risk in a way that is honest, accessible, and empowering?

Breaking the barrier of technical language

Engineers and scientists are, by necessity, immersed in technical language, but when we talk to policymakers or the public, that precision can become a barrier. Effective communication means simplifying without distorting. Rather than quoting probabilities as percentages, we might say: "This

treatment carries a one-in-a-thousand chance of causing harm." Visual aids, analogies, and relatable examples all help bridge the comprehension gap.

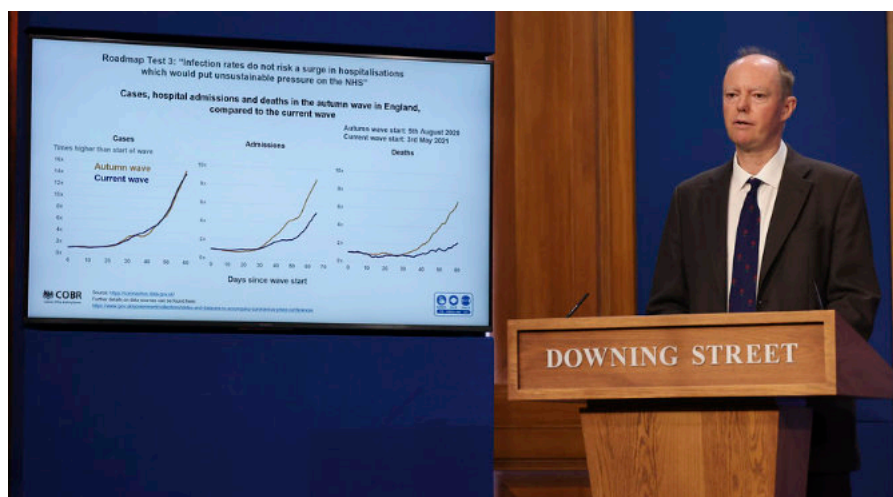
But clarity isn't just about language, it's about context. If we tell people that a medical device carries a risk of failure, we must explain what that means in the real world. How does that risk compare to crossing the road or flying in an aeroplane? What happens if the device does fail? And perhaps most importantly, what are we doing to reduce that risk?

We must also be transparent about uncertainty. In emerging fields like AI diagnostics or novel vaccines, there are often more unknowns than knowns. Acknowledging this does not undermine confidence; it builds trust. Phrases like "we are still learning" or "ongoing studies suggest" signal openness and caution, not weakness.

Clear, balanced communication empowers the public to make informed decisions. It also helps prevent the polarisation that can occur when technical messages are reduced to binary positions; safe versus unsafe, success versus failure, when the reality is more nuanced.

Empowering parliamentarians as informed interpreters

Parliamentarians occupy a unique position. They must interpret complex evidence and convey it to a broad audience without losing meaning. To do this effectively, they must be equipped





with the right questions. When faced with a new technology or public health measure, an MP should be asking:

- What is the magnitude of the risk?
- Who or what is affected?
- How uncertain is the data?
- What mitigation measures are in place?
- How does this fit within existing legal or ethical frameworks?

These questions are not just about due diligence, they are about responsible leadership. For instance, during debates over new vaccines, it is not enough to say, “The vaccine is safe”. It is more accurate and more powerful to say, “Clinical trials show a 1-in-100,000 risk of severe side effects, far lower than the risk posed by the disease itself.”

Avoiding sensationalism is equally important. Emotional narratives may grab headlines, but they can distort reality and damage trust. When ICU occupancy hits 85%, we can frame the situation constructively: “The system is under strain, but contingency measures are in place.” Facts must be presented with

empathy but without alarmism.

Equally, politicians should avoid amplifying extreme views that lack an evidence base. Social media can distort perceived public consensus and give disproportionate visibility to fringe opinions. Policymakers have a duty to engage responsibly with scientific expertise and to ensure that public discussion is anchored in fact.

Navigating the realities of clinical decision-making

In healthcare, risk is rarely straightforward. It often involves trade-offs between dissimilar options with different timeframes and consequences. Nowhere is this more apparent than in intensive care units (ICUs), where clinicians make split-second decisions about who receives critical care. These choices are not simply medical they are ethical, logistical, and deeply human.

For example, discharging a patient early to make room for someone in more acute need may increase the former’s risk of mortality by up to 39%. Yet failing to make space might result in a preventable

death. These dilemmas highlight the importance of acknowledging the reality of finite resources and the complexity of prioritisation.

Policymakers must recognise that decisions are often shaped by institutional norms and personal experience. For example, a junior clinician may focus on clinical parameters but a more senior doctor might weigh broader ethical considerations. This variability demands a consistent, transparent framework for risk communication, one that accounts for context and complexity.

Trade-offs must also be communicated openly to the public. Rather than shielding people from difficult truths, we should explain the reasoning behind decisions. Doing so affirms the legitimacy of the process and fosters greater resilience and understanding.

Understanding the distinction between risk and uncertainty

One of the most common misunderstandings in public discourse is the conflation of risk with uncertainty. Risk involves known probabilities: “there

is a 5% chance of this outcome.” Uncertainty, by contrast, means the probabilities are unknown, often due to limited data or the introduction of a novel technology.

In medtech, uncertainty is unavoidable. New devices, therapies, and AI tools may have limited track records, but that doesn’t mean it is being used recklessly. Regulatory bodies such as the MHRA and NICE, as well as international standards

such as ISO 13485, are in place to manage uncertainty through rigorous testing, post-market surveillance, and continuous improvement.

By explaining these systems, we help the public understand that safety is not a static label but a process; an ongoing commitment to quality improvement. Policy should support agile regulation that adapts to new risks without undermining public safety or innovation.

Dispelling the myth of absolute safety

There is no such thing as zero risk. This is a difficult message, especially when lives are at stake, nevertheless we do ourselves no favours by pretending otherwise. Every surgery, every drug, every diagnostic tool carries some potential for harm.

The goal is not to eliminate all risk but to reduce it to acceptable levels. That means defining what “acceptable” looks like and who gets to decide. It also means being honest about the limitations of science. Even in high-income countries, one-in-ten patients is harmed while receiving hospital care, yet half of these incidents are preventable; none are entirely avoidable.

When we say a medical device is “safe,” we should clarify that it meets stringent regulatory standards, that known risks have been mitigated, and that its benefits outweigh its harms. This language respects the intelligence of the public and the integrity of the science.

A more mature public understanding of risk allows for better conversations about cost-effectiveness, innovation, and access – conversations that are vital for shaping sustainable healthcare systems.

Bridging the gap between public fear and actual threat

Public perception of risk is not always proportional to the actual threat. People tend to fear so-called “dread risks” – those involving death or irreversible harm – more than familiar hazards, even when the statistical risk is lower. For example, a rare but severe side effect from a vaccine may spark outrage, while far more common risks, like falling at home, barely register.

Effective risk communication must account for these psychological responses. This means not only presenting the data but engaging with the emotion. Community consultations, public forums and targeted education campaigns can help align expert assessments with public values. Trust is built not just through information, but through empathy, respect, and participation.

If we want the public to trust emerging technologies like AI in diagnostics or wearable health devices, we must invite them into the conversation early, long before the technology reaches market. Policymakers have an essential role to play in fostering these dialogues and funding the institutions that support them.

Parliament’s role in shaping trust and transparency

As parliamentarians, you are not just lawmakers; you are communicators. Your role in shaping public understanding of healthcare risks cannot be overstated. Risk communication is then, not a one-off message, it is a relationship and you have an obligation to build it on a foundation of truth, empathy, and mutual respect.

In the coming years, as technologies become more sophisticated and healthcare systems face increasing pressures, your voice will be critical in guiding public discourse.

With this in mind, I urge you to:

- Demand clarity and context from experts.
- Resist the temptation of sensational narratives.
- Support regulatory frameworks that adapt to innovation without compromising safety.
- Invest in public engagement strategies that build trust and understanding.
- Foster a culture where risk is discussed openly, honestly, and constructively.

The tools of innovation are only as good as our ability to explain them and the time to strengthen that bridge is now.

