the last word:
Evaluating the impact of medical research

I’M NOT SURE there can be a ‘last word’ on evaluating the impact of medical research. Impact is not static, at least not in medical research as knowledge evolves and opportunities to do something with that knowledge expand. That said, monitoring and evaluation (M&E) of the progress, outputs and products of research (elements of ‘impact’ in its broadest sense) are important components of the research funding process.

In essence, the rationale for a research funder to conduct M&E is to understand and support the progress made by those who have been funded, while also trying to decipher which types of funding work best and therefore inform future strategy. Although there has been some progress among funders and research institutions on the former, there has been much less progress on the undoubtedly more tricky latter – learning and evaluation to support strategy.

SIGNOS OF SUCCESS
Over the last decade, we have become rather good at capturing, counting and describing the outputs emerging from biomedical research. This has been made easier through the increasing use of online reporting systems among funders, and because many biomedical research outputs are related to the production of knowledge and discoveries where there are obvious, growing and open sources of data to draw upon. New products and innovations are burgeoning onto the market that aim to provide insight into who’s funding, publishing, reading, citing and talking about which research, where and when. And to complement this, and where there aren’t obvious datasets to draw upon, case studies and research stories are increasingly used as currency to evidence impact; indeed ‘impact case studies’ are now an accepted part of a research institution’s submission of quality and impact evidence to the UK’s Research Excellence Framework (REF), used to determine future government research funding.

However, while knowledge-based metrics and case study stories are powerful, offering insight into the impact of specific pieces of research, both are caveat-laden and need to be used with care. An ‘indicator’ is precisely that: it indicates. And a ‘case’ is exactly that: a case. The choice of which pieces of research make it to case study status is typically highly selective. Importantly, much of the data currently being used to represent ‘impact’ are essentially descriptive-rich but analytical-poor; and funders, where resource permits, still rely on experts and peers to provide a judgement on whether the information presented paints a positive picture.

THE SCIENCE OF SCIENCE
As a research evaluator whose job is to provide intelligence on what works and what doesn’t, I’d like to see more research on the ‘science of science’.

As described, we now have more data and information, yielded through a combination of monitoring activity and growth of output-focused databases. This presents new opportunities for us to provide insight into what outputs and impacts are being generated where and when; whether variations in how we fund research influence the types of outputs and impacts generated; and, perhaps the Holy Grail for research funders, the most effective ways to achieve maximum impact and minimise any wasted efforts and investments into research.

There is more to do and impact is certainly not all about ‘data’ and things we can count. Although funders should take a lead, to bring more rigour and enable high quality research on the science of science requires collaboration between all stakeholders in research: collaboration to make valuable data on what works and what doesn’t openly available, and collaboration to connect all the outputs-related information we are busily collecting and linking to our funding. If we want to learn from previous successes and failures and conduct research and science more effectively, we need to share information on the research process alongside research outputs and impacts. Right now, research funders need to collaborate with the flourishing industry of providers of innovative research outputs-related databases and tools, to ensure that our requirements to understand how to support research to best effect and yield maximum impact are considered.

A HARD BUT NECESSARY TASK
Maybe it isn’t possible to predict the outcomes of research and what will work for a given funding investment or input. We know that research moves, for the most part, in incremental steps, with each new discovery laying the foundations for future work and what comes next. Serendipity has been a characteristic of some of the most important scientific breakthroughs.
And it is not easy to tease out the precise contributions of individuals or teams associated with specific breakthroughs or impacts, nor isolate the prior knowledge or influences that brought this about. But faced with the increasing evidence of progress from those we fund, our expanded access to information on research outputs and their use and re-use, and the chance to do more insightful analysis – and incidentally, facing a time of austerity – we now have both the opportunity and duty to try harder.