THE INNOVATION JOURNEY: ESCAPING THE VALLEY OF DEATH

Chair in Technology and Innovation Management at Imperial College Business School Professor James Barlow discusses the barriers to the adoption and implementation of healthcare innovations

IN HEALTHCARE INNOVATION there is no shortage of scientific development, with potential new technologies continually emerging from the pipeline. However, these tend to fall down when it comes to adoption; only a tiny proportion of the original research and inventions that stem from these developments are taken up in mainstream practice. This is the case on a global scale and is especially so when it comes to complex innovations that involve combinations of technology and organisational change.

INNOVATION ADOPTION IN HEALTHCARE SYSTEMS While we understand the science and technology development side, adoption in healthcare has been less well researched until fairly recently. Only in the last decade or so has the focus on adoption and diffusion increased. Rather than relying with technology, problems are usually linked to factors such as organisational leadership, the balance between costs and benefits and how they are shared between health and social care organisations, the way payment and reimbursement models work, and professional and financial silos.

Another challenge is providing evidence of the benefits of the innovation. Different groups in healthcare services, such as clinicians, managers, GPs and nurses, have different views of what constitutes good quality evidence, and aligning all of these perspectives is often very difficult. As a result, pilot trials can be carried out again and again on the same innovation, as even though it may already have been deployed somewhere, another health organisation might wish to conduct their own pilot project and gather their own evidence.

COMMON BARRIERS The adoption and implementation of innovation is often influenced by two variables: firstly, the perceived benefit, ie. the payoff for the adopting organisation or individual healthcare professional. Secondly, the degree of change – whether organisational or behavioural – that is needed to make the innovation happen, at either an individual or organisational level. Ultimately, implementation therefore depends on how aligned everything is in those two dimensions.

If it’s a clear cut innovation: for example, a new drug or medical device that is not vastly expensive and has a strong evidence base, then the process is relatively straightforward. However, if it’s something like telehealth, involving a combination of ICT, sensors, big data and organisational change, that’s a different ball game.

INVESTIGATING NEW TECHNOLOGIES More than 15 years ago, I was involved in work on ‘smart homes’, ie. introducing information technology into the home to improve its functions and support the residents; commonly elderly or disabled people. This, in turn, led me to explore telehealth and telecare, which in theory is a good idea but in practice is one that has proven to be hard to adopt.

We found that complex innovations such as telehealth are often in flux – the technology is new but evolving – and are being deployed in the real world and tweaked by whoever is implementing them. At the same time, healthcare services are always being reformed by governments. All this change means it is difficult to definitively work out what the effectiveness of the innovation is and makes the pathways to mainstream adoption difficult.

At the other end of the healthcare innovation spectrum, when it comes to companies creating and commercialising new products, the innovation journey is also challenging. With medical devices, you often find that the innovation reaches a certain point where it has been prototyped and piloted, yet companies are unable to then conduct a large enough trial to create the evidence to persuade adopters, or banks and venture capitalists, to fund the next stage of development on a larger scale; what is known as the ‘valley of death’.

So while there is a huge amount of science and technological development work in healthcare – which we need to cope with the mounting demands from an ageing population – the innovation journey is by no mean an easy one.