Galvanised to innovate: the COVID legacy

Since March 2020, the global healthcare ecosystem, united around a common purpose, has achieved the unimaginable – and with so many other challenges ahead of us, from climate change to antimicrobial resistance, imagine what we could do if we kept that momentum going. If COVID-19 has taught us anything, it is just how much we, as a sector, can achieve when we tear down barriers and work together.

The innovation we have witnessed is nothing short of astounding. Together, we have developed a multitude of vaccines and trialed, tested and approved efficacious treatments, all while accelerating regulatory pathways, expanding pharmaceutical manufacturing and diagnostic capabilities exponentially. At the same time, we have generated mass interest in the process of medical research, educated the general public on everything from R rates to *P* values, and presided over a wholesale shift to more patient-centred, decentralised clinical trials and remote healthcare delivery.

The common threads running through all these triumphs have been innovation and collaboration. The impossible was made possible by previously disparate silos coming together to identify problems, remove roadblocks, and implement solutions. Just imagine what we could achieve if we applied the same principles to challenges such as sustainability or antimicrobial resistance (AMR).

At its heart, innovation is about finding and applying the most appropriate tool to solve the problem at hand. That might be as simple as reducing the packaging on laboratory supplies to boost sustainability or as high-tech as investing in rapid antibiotic susceptibility testing (rAST) to help slow AMR.

When customers told us they needed to improve efficiency while reducing waste and costs, for example, the answer was deceptively simple – taking media deliveries out of cardboard boxes. We developed the Tailored Delivery System (TDS) by working with laboratory teams on the ground. They explained that their staff were often pulled away from their work to process incoming deliveries, that lifting and unpacking the boxes put staff at unnecessary risk of injury, and that disposing of all the boxes was both time-consuming and unsustainable.

The solution was TDS, which removes cardboard from the equation. The service delivers crates or trolleys of media directly to where they need to be in the laboratory, allowing microbiologists to carry on working, meaning no more backlogs or potential injuries. Scan labels on the outside of the crates and trolleys ease the process of quality control, and the eradication of outer packaging considerably reduces waste, and enables quick, visual stock counts. In addition, TDS also helps laboratory partners meet their regulatory requirements by delivering the quality control media in a separate box, meaning no more wasted time searching for new batches. The TDS is such a simple idea, but it has the potential to make a huge difference to a laboratory's productivity, safety and sustainability. What's more, it demonstrates that innovation comes from collaboration to understand a problem and implement a solution.

Sometimes the right solution is more involved than simply swapping out the cardboard. If we choose the defeat of AMR as our next big project, for example, we will need to embrace the COVID-era ethos of thinking ecosystem-wide.

Many commentators have described AMR as one of the biggest threats to human health in generations. Unabated, the impact could dwarf that of SARS-CoV-2. Antibiotic-resistant bacteria and 'superbugs' such as MRSA, *Clostridium difficile* and extended-spectrum β-lactamase (ESBL)-producing Enterobacterales already kill 700,000 people annually.[1] Many a global initiative has been launched to address this problem. For a number of reasons, though, most have failed to 'cut through' on a level necessary to effect serious change. A lack of general knowledge on the appropriate use of antibiotics, for example, has hampered efforts, but we now have a receptive audience for healthcare information and education.

There has also been a tendency for a siloed approach – with interested groups such as microbiologists leading the charge without the capacity to join the dots between diagnostics, individual outcomes, and global threat reduction. The biomarker procalcitonin (PCT), for instance, can help clinicians to detect sepsis, a condition so serious and complex that doctors often prescribe antibiotics to people with symptoms 'just in case'. Testing for PCT, which is upregulated by the cytokines released in response to bacterial infection, means more accurate diagnosis. In turn, that results in more accurate treatment, which reduces the unnecessary use of antibiotics, leads to better individual health outcomes, and reduces overall healthcare costs.

To date, convincing healthcare systems to invest in such technology has been challenging because of competing priorities and blinkered cost siloes – the benefits of additional spending in diagnostics are seen much further along the patient pathway, making business cases difficult. But things have changed. As the global health ecosystem united against the common threat of COVID-19, the landscape shifted. Barriers have come down, networks have been formed, and 'big picture thinking' is the real new normal. Healthcare systems worldwide are experiencing the same challenges, including AMR, rising costs and increased demand. Fortunately, as has been demonstrated, the sector has everything it needs to overcome them all.

Obviously, the pandemic is not over. We still have much work to do in ensuring the whole world gets access to the treatment and care it needs to defeat this virus. But that doesn't mean we should not be looking to our next challenge. Two years ago, it would have been unimaginable to think that we had so drastically reorganised and realigned to meet the global threat of SARS-CoV-2. Imagine where we could be in another two years. All that remains is to decide our next shared goal – and unite.

Ian Hill

About Ian Hill

Ian Hill has more than 30 years' experience as a marketing and commercial strategy leader. Ian's role as Senior Global Market Development Manager at Thermo Fisher Scientific Microbiology business sees him launching innovative solutions that address some of the big challenges in the clinical microbiology laboratory. Prior to this, he was Senior Vice President, Stratec Biomedical, where he built commercial partnerships with leading global diagnostic companies and start-up enterprises to develop and manufacture some of the most innovative and successful solutions in clinical laboratories.

Reference

1 O'Neill J; The Review on Antimicrobial Resistance. *Antimicrobial Resistance: Tackling a crisis for the health and wealth of nations* (https://amr-review.org/sites/default/files/AMR%20Review%20Paper%20-%20Tackling%20a%20crisis%20for%20the%20health%20and%20wealth%20of%20nations_1.pdf).