BRITISH JOURNAL OF HOSPITAL MEDICINE

EDITORIAL

Adopting medical technology: the case for a fast-tracked approach

The NHS has always struggled to effectively adopt innovative medical technologies. A report by The Medical Technology Group argues that a new system for the widespread adoption of technology is needed. The report argues that, considering the growing backlog of procedures caused by the COVID-19 pandemic, medical technology can increase efficiency and deliver better outcomes for patients, while helping the NHS to recover.

Barbara Harpham[1]

Author details can be found at the end of this article

Correspondence to:
Colin Hallmark;
colin@3nine.co.uk

Introduction

Medical technology has delivered benefits to patients and clinicians for centuries. Imaging has evolved from simple X-rays to advanced magnetic resonance imaging techniques, and treatments that once required patients to undergo intensive surgery have been replaced by minimally invasive techniques such as endoscopy, microsurgery, keyhole surgery and robotics.

Research by the Work Foundation (Bevan et al, 2011) concluded that medical technology contributes to society in three ways:

1. By delivering improvements in healthcare, in the form of higher quality, greater efficiency and the empowerment of patients
2. By improving quality of life and independent living, reducing patients' fears and anxiety, increasing flexibility, and reducing the need for informal care and the burden on informal caregivers
3. By increasing labour market participation, retaining skills and improving productivity.

A study by the Medical Technology Group (2017) quantified some of the potential societal and financial benefits, examining eight technologies: hip replacements, implantable cardiac defibrillators, insulin pumps, diagnostics (including technology to diagnose sepsis), fibroid embolisation, pain management, wound care and coronary angioplasty. The study estimated that £476 million in savings per year could be generated in reduced long-term health costs and benefit payments from the use of these eight technologies alone.

Despite multiple initiatives and the recent acceleration of innovation adoption during the COVID-19 pandemic, the NHS has wrestled with the challenge of creating a system to encourage the systematic uptake of new medical technology.

Attempts to encourage adoption of technology

In his review *Securing Good Health for the Whole Population*, Derek Wanless described the NHS as a 'late and slow adopter of innovation' (Wanless, 2004). Multiple taskforces, reviews and initiatives followed, including the Innovation, Health and Wealth report (Department of Health and Social Care, 2011). This report contained 30 recommendations ranging from measures such as establishing additional NHS infrastructure (the Academic Health Science Networks), to promoting individual technologies such as intraoperative fluid management. Other initiatives that have been developed include the Innovation Scorecard for National Institute for Health and Care Excellence technology appraisals to report on the use, within the NHS in England, of medicines and medical devices which have been positively appraised by the National Institute for Health and Care Excellence.

By 2016, a total of 17 different organisations or initiatives existed that were aimed at promoting the uptake of medical technology in the NHS. This included six which are now defunct like the National Institute for Innovation and Improvement and the Health Innovation Centre.

How to cite this article:
Harpham B. Adopting medical technology: the case for a fast-tracked approach. Br J Hosp Med. 2021. https://doi.org/10.12968/hmed.2021.0311

A lack of unified system for technology adoption

While some recent initiatives, such as the Accelerated Access Collaborative and the Academic Health Science Networks, are beginning to show signs of progress, until now, the NHS has struggled to find effective ways of pulling through innovative products.

For innovators, the system remains complex, and difficult to navigate. Current NHS mechanisms are limited in scope and are focused on picking winners rather than a broad system-wide adoption of new technology. For example, the Accelerated Access Pathway (overseen by the Accelerated Access Collaborative) supports fewer than ten technologies per year.

With patchy or non-existent uptake of new technology and no national commissioning policy to support widespread adoption, many parts of the health service are missing out on valuable innovations that can improve efficiency and deliver better outcomes for patients.

A pharmaceutical-style fast-track system is needed

By contrast, the system for the adoption of pharmaceuticals is significantly more advanced. New medicines can be fast-tracked through mechanisms such as the Early Access to Medicines Schemes and the Cancer Drugs Fund, while the majority of National Institute for Health and Care Excellence technology assessments, which lead to mandatory funding, involve medicines. Treatments supported by a device follow the interventional procedure guideline, which does not benefit from the same automatic financial support.

Putting funding for medical technology on an equal footing with pharmaceuticals would be a significant step towards widespread uptake of beneficial technology. The Medical Technology Group (2021) highlighted this in its report *Medical Technology Access Accelerator*, in which it defined 11 core elements for an effective accelerated access programme.

1. A single front door: one of the challenges faced by innovators is 'where to go?'. A single pathway should have a single entry point that allows for effective triage of devices. The single front door should not simply signpost innovators, but work with them to establish what the most effective route to patients looks like and which agencies and processes are best placed to support them.
2. A single model: the system needs to be clearly defined and understood by innovators and the NHS. It will require flexibility around eligibility criteria and processes undertaken, but there should be a well-defined model in operation that gives innovators clarity on when to engage and the likely outcomes.
3. A comprehensive system approach: any system that is limited to a handful of technologies will not be able to make a system-wide impact. The model developed should be comprehensive and cover a large number of technologies each year.
4. Clarity on timelines: for innovators, establishing a route to patients is complex. Currently, there are uptake mechanisms that could prove damaging to a technology's use through lack of impact and lost time. The system should have a clear process, providing clarity on timelines around initial funding commitments and an eventual decision-making process.
5. Guaranteed funding and commissioning: the system should support temporary commissioning during evidence development then permanent commissioning once a final decision is made. All technologies coming through the proposed access accelerator should get mandatory funding and coverage by commissioners while any additional evidence is being developed. Where there is a clear benefit to using a technology, funding should be made available to all NHS organisations.
6. A single responsible agency: at present there is no single decision maker in the NHS with oversight of the uptake and use of recommended technology. The system should have a single executive agency responsible for overseeing the system and ensuring that patients are able to access technology.
7. Rapid pathway to decision making: assessment and commissioning of devices is a complex process and at present it can take many years to achieve a positive commissioning policy. Previous NHS initiatives have seen technologies used temporarily and then stopped while a decision is made. The pathway should ensure continuous usage throughout any evidence development phase and into the permanent decision phase.
8. A clear role for patients: patients are often the last to be consulted on the technology that is available to them. Decisions on the technology available and the true impact should always

Key points

- The NHS has always wrestled with the challenge of creating a system to encourage the systematic uptake of new medical technology.
- By 2016, there had been 17 different organisations or initiatives aimed at promoting the uptake of medical technology, including six which are now defunct.
- Some more recent initiatives, such as the Accelerated Access Collaborative and the Academic Health Science Networks, are beginning to show signs of progress.
- The system remains complex and difficult to navigate. Current NHS mechanisms are limited in scope and focus on picking winners rather than a broad system-wide adoption of new technology.
- Medical technology is key to helping the NHS recover from the pandemic: there were around 5 million people on the waiting list for elective care at the end of March 2021.
- Putting funding for medical technology on an equal footing with pharmaceuticals, which benefit from mechanisms to fast-track approval and funding, would be a significant step towards widespread uptake of beneficial technology.
- The Medical Technology Group recommends a new structure for supporting the adoption and uptake of innovation, including a single model and process, guaranteed funding and commissioning, and a clear role for patients.

include a clear patient voice. Awareness of technology among patients has increased, but patient groups report that they are frustrated with regional variation and limited availability.

9. Fast-tracked value-based procurement process: decisions on technology should support effective commissioning decisions. This, in turn should be supported by an effective procurement team that procure for value (looking at the impact of tangible patient outcomes, value for the tax-paying public and a better return on investment for the wider economy), not just focusing on unit cost.
10. Capturing outcomes: the ultimate aim of any medical device is to improve patient outcomes. Too often metrics have looked at capturing raw numbers of devices used. If the NHS wants to create a better system for tracking outcomes, this should be linked to the treatment provided.
11. Clear understandable information in plain English: relevant information on technologies and treatments available to patients should be easy to access and in plain English, including data on where treatment is available.

The role of medical technology in the NHS recovery

The NHS faces significant challenges in the years ahead. The number of patients awaiting treatment has hit record highs, with 4.95 million on the waiting list for elective care at the end of March 2021 with 436 000 waiting over 52 weeks (NHS England, 2021). Restoring waiting time standards and tackling the backlog for electives by 2023/24 is expected to cost an additional £1.9 billion in each of the next 3 years (Thorlby et al, 2020).

A clear, systematic approach to the evaluation, commissioning, and uptake of medical technology will be key to its recovery.

Author details

[1]Medical Technology Group, London, UK

Conflicts of interest

Barbara Harpham is Chair of the Medical Technology Group, a not-for-profit organisation that is funded by industry members with the aim of improving patient access to effective medical technologies. Ms Harpham holds the role in a voluntary capacity and receives no remuneration.

References

Bevan S, Zheltoukhova K, McGee R. Adding value: the economic and societal benefits of medical technology. 2011. https://mtg.org.uk/wp-content/uploads/2017/01/Adding-Value-The-Economic-and-Societal-Benefits-of-Medical-Technology.pdf (accessed 24 June 2021)

Department of Health and Social Care. Innovation health and wealth: accelerating adoption and diffusion in the NHS. 2011. https://www.gov.uk/government/news/accelerating-adoption-of-innovation-in-the-nhs (accessed 24 June 2021)

Medical Technology Group. Keeping Britain working – how medical technology can help reduce the cost of ill health to the UK economy. 2017. https://mtg.org.uk/wp-content/uploads/2017/11/Keeping-Britain-Working-Report-web.pdf (accessed 24 June 2021)

Medical Technology Group. Medical technology access accelerator. 2021. https://mtg.org.uk/wp-content/uploads/2021/03/Medical-Technology-Access-Accelerator-Final.pdf (accessed 24 June 2021)

NHS England. Consultant-led referral to treatment waiting times data 2020-21. 2021. https://www.england.nhs.uk/statistics/statistical-work-areas/rtt-waiting-times/rtt-data-2020-21/#Mar21 (accessed 24 June 2021)

Thorlby R, Tallack C, Finch D et al. Spending review 2020: priorities for the NHS, social care and the nation's health. 2020. https://www.health.org.uk/publications/long-reads/spending-review-2020 (accessed 24 June 2021)

Wanless D. Securing good health for the whole population. 2004. https://webarchive.nationalarchives.gov.uk/+/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4074426 (accessed 24 June 2021)