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Falling short: Why the NHS is still struggling to make the most of new innovations

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The idea that the NHS is slow to adopt seemingly well-evidenced innovations is not new and, for the most part, is accepted as fact. The reasons for this have been extensively studied. Last year, the Accelerated Access Review[1] set out the barriers once again – proposing a number of useful solutions that, if implemented as envisaged, could go a long way to improving the situation.

But when asked by the Association of British Healthcare Industries to look at why the NHS has struggled to adopt new innovations (with a particular focus on medical technology or 'MedTech') for so long, we found that fundamental issues remain unresolved and, in some cases, perhaps overlooked.

We feel that the most important of these are as follows:

- There is an overly supply-driven and top-down approach to innovation. Shifts towards the co-production of solutions between clinicians and industry are encouraging, but initiatives such as the Innovation and Technology Tariff (while useful in some regards) do little to move the NHS away from a supply-driven approach, which starts with products first.
- Identifying the most pressing problems and looking for solutions is rarely built into anyone's day job – least of all clinicians. This is further compounded by a lack of clarity around how far chief executives should be involved in adopting innovation. Chief innovation officers with board oversight of the innovation process could make a fundamental difference.

- Evidence generation (and the bodies that support it such as NIHR) are often not conducive to assessing real-world innovations in a timely way – particularly where there is a focus on cost effectiveness (rather than cost benefit).
- Too often procurement departments and organisations as a whole look to innovations to produce short-term cash-releasing savings, rather than identifying where innovations can transform care pathways and lead to more efficient services. This requires adaptive leadership that can work across boundaries.
- There is a tension between the policy push towards large-scale organisations (such as accountable care systems) and the capacity of SMEs to fulfil the needs of large contracts.

To be clear, the research and development that takes place in the NHS every day is world leading, and its value in the NHS and beyond should not be underestimated. But until these issues are acknowledged and addressed, either nationally or locally, the NHS is unlikely to become the cutting-edge system we have long wished to see.

Introduction

In recent years significant energy and resource has gone into understanding why the NHS can be slow to adopt seemingly well-evidenced innovations. Most recently, the Accelerated Access Review (AAR) set out the barriers once again, and proposed a series of local and national solutions. These have been largely accepted by the Government.[2]

The majority of the obstacles to adopting innovation in the NHS have been investigated in several national reviews in the last 20 years and are well understood. Budget silos make some parts of the system unwilling to invest in innovations that produce savings elsewhere; innovations are often judged on a least-cost basis or are expected to yield a positive return on investment in the first year; for suppliers, the routes to market are often unclear; and innovation is too often viewed as a luxury rather than a routine part of operational management.

But despite the fact that so many of the obstacles are well documented, the NHS is still struggling to overcome them at scale. We were commissioned by the Association of British Healthcare Industries to understand why that is, to inform their input to the national industrial strategy. We focused on MedTech as opposed to pharmaceuticals or service improvement – so 'innovation' should be read as 'MedTech innovation' throughout, although many of the lessons are more broadly applicable.

We started with a few simple questions:

- Why aren't all well-evidenced innovations adopted at scale?
- Are the solutions proposed in the AAR enough to overcome the obstacles?
- What is needed to implement the AAR – including for national bodies like the Academic Health Science Networks (AHSNs) and the Innovation National Networks (INNs) to fulfil the ambitions set out for them?

To address these questions we held a roundtable with representatives from industry, AHSNs, NHS procurement departments, clinicians and policy

organisations. The conversation at the session was informed, in part, by a high-level literature scan; interviews with key stakeholders and two case studies of innovations that have failed to spread – namely the oesophageal Doppler monitor and the S-Cath suprapubic catheter. Here we present the key findings from all of our work.

1. The solutions proposed in the AAR are strong and could go a long way towards improving innovation adoption

Solutions in the AAR acknowledged some of the fundamental barriers to adopting innovation. They include simpler local and national procurement pathways, new flexible approaches to evaluation, and incentives to adopt innovation at the organisational and individual level.

But in order to implement the many and varied solutions in the review, the role of AHSNs needs to change significantly. For example, the review suggested a new mandate for AHSNs that supports the local spread of innovation and enables a standard framework for local evaluation. It also proposed that AHSNs should be responsible for supporting effective change management in NHS organisations and help identify areas of unmet need.

There was broad consensus that the new ambitions for AHSNs would be possible if they are properly resourced. The AAR suggested significant funding to carry out these new roles: an additional £10–20 million into AHSN baselines and up to £30 million per annum for change management support. However, the money promised from the Government falls significantly short of this – just £39 million in total for AHSNs to improve how innovative medical technologies are adopted and taken up locally.

What's more, the broad remit assigned to AHSNs when they were established means they are incredibly diverse in the skills, relationships and infrastructure they have in place to support adopting innovation. While some have focused on supporting innovation, and have built up clinical and operational networks to this end, others have invested their energies elsewhere. The re-licensing process aims to provide clearer objectives and metrics for innovation. But enabling these AHSNs to carry out the intended role will not only require greater resource and clearer objectives, but also time and energy to create the necessary networks.

2. But for some, the AAR and the wider approach to innovation in the NHS is too supply-focused

While most agreed the AAR has many strengths, some felt it put too much emphasis on encouraging NHS organisations to adopt existing innovations, rather than enabling those in the NHS to identify their most pressing problems and find solutions for them.

"The idea that we have a small number of nationally accredited innovations (i.e. the Innovation and Technology Tariff) that we add to, feeds into the (supply-side) narrative and the simplistic change model. It pretends there is a change model that requires a national body to pull a lever to facilitate innovation, which is wrong. The transactional model is broken in this complex innovation space."

Axel Heitmueller,
Imperial College Health Partners

While the AAR did recommend the establishment of an Accelerated Access Partnership to help innovators understand the NHS's key priorities, this will be realised as the Accelerated Access Collaborative (AAC) – whose primary responsibility appears to be identifying products for the Accelerated Access Pathway. There appears to have been a shift from how the group was initially intended – which, in part, was to help the NHS to become more problem-driven in its approach to innovation – and how it will be realised in practice. It will be important to see how the AAC operates when it is fully functioning.

The AAR also suggested co-development between clinicians and technology companies, and many at the seminar thought this may prove the most fruitful way to match problems with solutions. But much depends on clinicians being able to think about innovation within NHS organisations. For most, delivering stretched services means there is little time to reflect on where improvements could be made (see point 6 below). In the private sector, it is the role of chief innovation officers to neatly define problems and where possible match them with solutions. Many felt this function is also needed within NHS organisations (see point 3).

3. It is unclear who should be responsible for adopting innovation

One of the biggest barriers to adopting innovation is that too often it is not embedded in routine processes and operational management decisions. It is frequently seen as a luxury, only to be attempted when everything else is going well rather than as a core part of improving quality and efficiency.

Again, the AAR recognised this issue and proposed a series of incentives to make innovation more mainstream. At the organisational or department level this meant budgetary incentives such as centralised procurement, gain-share arrangements, pooled budgets and outcome-based payments. At the department or individual level it was financial incentives such as a best practice tariff or CQUIN payments and, at the individual level, professional or reputational incentives such as promoting innovation through clinical excellence awards.

But these do not speak to the heart of the problem. In fact financial incentives are symptomatic of the supply-side, top-down approach that many seminar participants felt impeded innovation adoption. A more pressing issue is that it is not clear who is responsible for innovation, and until that is clear and actively built into job descriptions, it is unlikely to become business as usual.

For example, it is not clear how far chief executives should be involved in the innovation process. Where innovations do not effect patient pathways or wider service delivery, some feel that chief executives do not need to be involved.

> **"I don't think it's necessary for companies to see chief execs directly to get their product adopted. More commonly the support comes from medical directors, clinical directors, chief clinical information officers and operational managers."**
>
> Tara Donnelly,
> Health Innovation Network, South London AHSN

But where innovations require significant service transformation in order to realise savings (for example, moving a procedure usually performed by a consultant in a hospital setting to a specialist nurse in a day clinic), involvement of leaders with oversight of the whole system and budget is often necessary.

What's more, some seminar participants felt that if chief executives are not committed to fostering the right culture for innovation and rewarding innovative behaviours, it is unlikely to take off.

> **"If it is not the chief exec's responsibility, it isn't going to happen."**
>
> Seminar participant

4. Adapting is just as important as adopting

It is not a new idea that to make the most of innovation often requires significant transformational change to work processes beyond the impact of the new product itself – and that this is where the benefit really comes from. In fact, Doblin's '10 types of innovation' model[3] recommends de-emphasising reliance on products and technology in favour of changing the customer experience and the operating or business model.

But this requires adaptive leadership and processes, usually across departments and sectors. Essentially it is the organisation's 'absorptive capacity'[4] to use the innovation effectively. In the NHS, siloed working has eroded the ability for leaders to effectively 'boundary span' and to change pathways across departments and organisations. (This does not apply where simple innovations are implemented, for example those that simply replace an existing product already in use. Where this is the case, adaption is not required and the incentives outlined in point 3 above are likely to be successful.)

There is also disproportionate effort and investment on development versus adopting and implementing. A review conducted by the AHSN Network found that innovative companies in the private sector (such as Apple, GE Healthcare, Johnson & Johnson) typically spend two to three times as much on disseminating an innovation than its development. In the NHS it is the reverse

– it spends over £1.2 billion on research and development funding via the NIHR,[5] and only a tiny fraction of that on dedicated spread activity. While we are not suggesting research funding should be reduced, it is clear development is disproportionately supported over adoption.

Given that AHSNs will not receive the suggested funding for their new change management function, there may also be a bigger role for the private sector to play in embedding innovations in routine practice – by supporting training, for example.

5. Evidence needs to be generated and applied differently

There will always be a tension between implementing cutting-edge innovations and waiting until there is a robust evidence base to underpin them, which often takes several years to develop and may become out of date very quickly.

The Accelerated Access Pathway – which will support the generation of real-world evidence in addition to clinical trials data – may go some way towards addressing this issue. Some of those in the seminar also pointed out the potential of national initiatives such as 'Getting It Right First Time' (GIRFT) to support systematic data collection and measure the impact of innovations or new interventions on the ground. Both initiatives may fulfil the need that some have to evaluate new innovations in their particular setting.

However, a lot of this is not about whether the evidence is actually good enough, but how it is perceived by different stakeholders. As long as the NIHR prioritises funding randomised control trials (RCTs) and as long as academics are rewarded for academic publications in high-quality journals, RCTs are likely to be the evidence that clinicians and academics want to see. Clinicians and others need to be willing to look at different types of evidence and understand how to interpret evidence that has not come from an RCT.

> **"Evidence is part of the NHS culture. Anything new is viewed with suspicion."**
>
> Seminar participant

There may also be a mismatch between how industry perceives the role and impact of evidence and how it is viewed by clinicians on the ground. One of our case studies – on the Oesophageal Doppler Monitor (ODM) – highlighted how industry assumed their product would be adopted at scale after its inclusion in a NICE guideline, which was not the case. In fact, there are several contrasting views among clinicians, NHS England and industry about how the ODM evidence should be interpreted, much of which comes from RCTs. Therefore, even when evidence is generated via traditional means, it will not necessarily be enough to help stakeholders reach a consensus.

Many of the participants also highlighted the problems with using cost effectiveness as a measure to evaluate innovations. Savings are often calculated without taking into account overhead or fixed costs in the system, which cannot be changed. What's more, cost effectiveness often relies on de-commissioning services or significantly reshaping the workforce, which, when taken into account, can significantly reduce how cost effective something is. Far more useful is cost benefit. NICE is starting to use this approach in a minority of cases, but it is not widespread.

6. System barriers play a significant role

Behavioural and cultural barriers are often cited as significant reasons for the lack of innovation adoption in the NHS. And these are undoubtedly important: how evidence is perceived and the need to adapt are obvious cultural problems. In addition to the cultural factors already highlighted, we heard from industry that, at the organisation or department level, the fact that a particular product has not been developed or evaluated within their organisation can be enough to prevent adoption. For others, the fact that a prestigious organisation is using a particular innovation means they want to, too.

At the individual level, we heard from industry that evidence is only useful when clinicians have identified a problem and are looking for a solution to it. Where they have not identified a particular problem, approaching them with evidence of something that works better than traditional methods can be perceived as a threat to their professional judgement and autonomy (also a problem with top-down policy approaches to innovation, as highlighted in

point 2). The literature also highlights risk aversion, resistance to change and the lack of entrepreneurial culture as important individual cultural barriers to change.

That said, many in the group felt that barriers imposed by the system are just as (or even more) important than cultural factors. These include:

- Clinicians' lack of time to prioritise innovation or the identification of problems, combined with a lack of incentives in the system to make time (often exacerbated by operational turmoil such as changes in management)
- Judging procurement departments on short-term cash-releasing savings
- The fact that the tariff does not keep up with new innovations. Additionally, large multi-year service contracts can stifle competition and the taking up of innovation.

Essentially, the NHS has a short-term approach to adopting innovation with an ultimate ambition to release cash from the system. But the real opportunities to create efficiencies come from long-term transformational projects, with appropriate funding to support them. There needs to be a shift from focusing on cost to focusing on value, but there are strong cultural and system issues that make this very difficult to achieve.

7. SMEs are not doing a lot wrong, although there are opportunities they could better exploit

We hypothesised that industry behaviour might be a barrier to adopting innovation – particularly where small companies are competing for a share of the market, with the ultimate ambition of being acquired by a larger company. Despite identifying strained relationships between particular SMEs and NHS clinicians through our case study work, those at the seminar felt that SMEs were not doing much wrong, and in general have good relationships with the NHS.

That said, the group did have ideas on how industry could better exploit some opportunities. First, industry could take novel approaches to collaboration in order to grow the entire market, rather than focusing on their own market share. This is already starting to happen in places.

Second, SMEs should exploit their agility to explore the potential of 'disruptive innovations' that are often too complex and expensive for large companies to pursue. Some felt the fact that the NHS can usually only offer small contract sizes due to decisions being made at a departmental or organisational level was a challenge for industry, since it means several separate contracts need to be negotiated with multiple leaders. However, others saw it as an opportunity for SMEs to flourish, given that small companies are likely to struggle to meet the demands of big contracts. This is something that policy-makers should bear in mind as contract sizes expand via accountable care systems and sustainability and transformation partnerships. It also reduces the risk of monopolies developing (as we have seen in the electronic health record market, for example).

8. Consolidate what we have before introducing new policy

Finally, there was consensus that what the NHS needs to do now is focus on implementing the AAR and ensuring that the infrastructure already in place works to best effect. That said, given the complexity of the landscape it may be beneficial to better define and articulate the role of each body (AHSNs, NHS Improvement, NICE, clinical research networks and so on) to industry specifically in relation to adopting innovation, to help them get the support they need to enter the NHS.

Final reflections

Despite the fact that innovation adoption in the NHS has been studied comprehensively and the majority of the obstacles are well understood, there remain fundamental issues that have not been addressed by either national policy recommendations or NHS organisations.

It will be very hard to solve all of these issues at once. The Government has committed to a number of the solutions in the AAR, but it has not fully financed the recommendations. Given that standard policy instruments have had limited impact on encouraging innovation adoption to date, supportive bodies such as the AHSNs and Innovation National Networks will play a fundamental role in creating a system where the NHS is allowed to be a receptive market for useful innovations.

Notes and references

1. Accelerated Access Review (2016) Accelerated Access Review: Final Report. Review of innovative medicines and medical technologies. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/565072/AAR_final.pdf

2. Department of Health and Department for Business, Energy and Industrial Strategy (2017) Making a reality of the Accelerated Access Review. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/656870/17-11-02_AAR_Response_FINAL.pdf

3. Doblin (no date) Ten types of innovation: The discipline of building breakthroughs. Web resource. https://www.doblin.com/ten-types

4. Absorptive capacity is an organisation's ability to value and assimilate new external knowledge, and is largely a function of the organisation's level of prior related knowledge. The concept comes from innovation theory by Cohen and Levinthal. See Cohen WM and Levinthal DA (1990) Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, pp.128–152.

5. National Institute for Health Research (2016) NIHR annual report 2015/16. https://www.nihr.ac.uk/about-us/documents/NIHR-Annual-Report-2015-16.pdf

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