No time for gut feelings

To safeguard its future, the NHS must find a credible way to achieve financial balance. However, just like their counterparts in other sectors, health leaders won't act on a hunch. They need to develop fully costed long term plans which are based on detailed evidence. In this article we look at how a strategy, developed with data-driven modelling at its core can help health leaders choose the right path to sustainability. However, the concepts are equally relevant to many other sectors as well.

The case for change at the National Health Service is not breaking news. Long-term underfunding has put all aspects of the health service and its workforce under severe strain. An aging and growing population is causing the cracks to widen. This beloved institution – one of the world's largest organisations – faces the need for significant reform unless the central funding model is going to change. Key to reform is solid evidence and insight from the significant volumes of data the NHS generates on a daily basis.

Whilst the challenges are well known, so too is the prevailing wisdom for best addressing them. By promoting proactive care in the community and driving activity away from the acute care setting, hospital trusts can free up beds and speed up the flow of patients through the system. Patients will receive the right care in the right setting at the right point of time – and before their condition becomes critical. Importantly, the frail and elderly, as well as those with long-term conditions, will receive a joined-up service. At the moment, they are too often left with nowhere to turn but A&E, especially out of hours. Get this in place, and the NHS will start to close its funding and capacity gap.

Developing a strategy that creates more multidisciplinary teams, 24-hour care and specialist clinics is an important step in solving this national problem. However, with no time to lose, it's vital that decision-makers gain real confidence that their interventions will deliver the right results, before it's too late.

Linking modelling with strategy

At Berkeley, we believe in developing evidence-based strategies. The key to an effective strategy in the NHS, whether shaping the local health economy or developing a digital roadmap, is to have data modelling at its core. Issues often arise when the modelling is separated from the strategy or bolted on as an after-thought.

So, when developing a strategy, we typically base it around three core components:

1. **Why** - the value proposition for the health economy?

2. **Who** - the priority patients to focus the strategy around?

3. **How** - the operating model (model of care) required to deliver the change?

Addressing these components whilst utilising an understanding of complex health data to develop a narrative is a key differentiating factor in developing a strategy which is likely to have a meaningful impact for patients.

'What if?' scenarios

Modelling several scenarios means we can predict, with a high degree of certainty, where the strains will appear and intensify if we do nothing, against a rising and aging population. We can also model how interventions will impact other areas of the service. These 'what if?' scenarios are critical for proving the validity of an intervention. Or for picking the most effective intervention when funds are scarce.

For example, what if cardiology gets 10% more efficient so we don't need as many bed days? What if improvements in proactive technology (such as wearable monitors) mean that 3% of those patients who visit A&E four times a month are now cared for in the community? Yes, it makes sense for the patient end to end. But is it a better strategic result for the whole system in operational and therefore monetary terms?

Developing a geographical picture is equally critical. If you close an A&E or maternity unit in one patch, then you will clearly make local savings. But frontline teams could then become overwhelmed in the neighbouring hospital. Again, having the figures at hand to make a balanced decision can mean the difference between longer-term success and failure.

The value of models like this is that you can change parameters and assumptions, with a view to forecasting the future potential impact. However, a quick word of caution. Your model must be robust and suitably scoped. By trusting what appears to be obvious at first sight, you can risk overlooking adverse consequences on another part of the system.

Forecasting the impact of an aging population can prove especially revealing. We know that the demand for services that the elderly will consume will grow at a faster rate than other services. Similarly, as the elderly tend to have longer lengths of stay, the bed day demand will also increase. So, the hospital won't have beds to do the operations that generate the income. Before you can start devising care-in-the-community strategies, you need to identify the right cohort of patients who will best respond to more proactive community treatment. Moreover, you need to treat them in a way that won't destabilise the finances of the hospital or the commissioner.
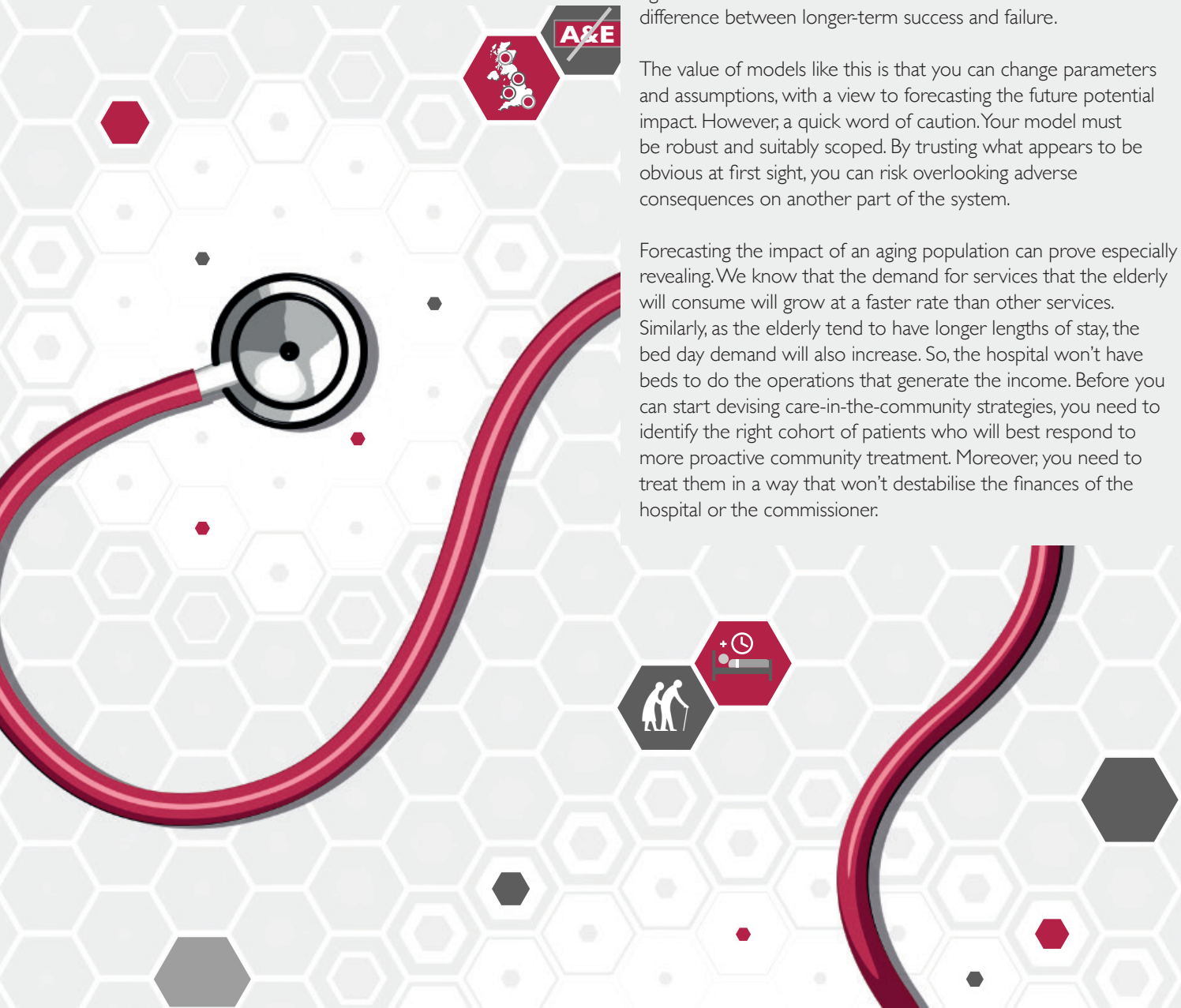
Putting the theory into practice

Our recent work with Sustainability and Transformation Partnerships (STPs), collaborating with a number of NHS organisations within the same footprint, put these skills to the test in a pressurised environment. We modelled several scenarios with their teams that would help them gain insight for finding financial balance in the next five years. When people hear 'financial balance', they often think of service closures. But the watchword in STP is 'sustainability'. How could their organisations work together in a more integrated way – i.e. doing things better, avoiding wastage and repeating unnecessary steps?

By designing a model using the NHS' digital repository for healthcare data, we were able to help identify a number of activity groups from across the local geography that could potentially be moved out from the acute setting. Working closely with their input, our model extrapolated historical data into the future, using granular population growth data and historical trends.

Against each opportunity, we identified the extent to which acute activity could be reduced, and what it would cost to either reduce or re-provision the activity in a community or primary care setting, often using evidence from pilot schemes to help validate and confirm the financial assumptions. The before and after data forecasts were then compared to understand the impact of the opportunities in terms of bed days, spells and total spend to make a series of recommendations for the STP.

Top of the triangle

The modelling also aids 'risk stratification' by using data to accurately profile different types of at-risk patients. By modelling the impact of caring for specific patient groups outside the hospital system, in a more appropriate setting, NHS partners are able to choose the best care packages for both clinical and financial success, based on the data.

The same applies to local population growth, which can create an exponential growth of demand on the service. Five per cent population growth does not always mean 5% more resources for the hospital. It can mean nearer 10-15% given the fact we're living longer. Nor is this growth spread evenly across all services.

For our clients, this data-driven approach offers real credibility. To get buy-in for a strategy, they often need endorsement from a very senior set of stakeholders from a whole range of organisations. It's a big ask to collaborate despite a wide variety of benefits, dis-benefits, responsibilities and accountabilities that will impact their individual organisation to a greater or lesser extent. They may be willing to work together, but it's that much harder to get consensus if the projections aren't credible.

Looking forward, the NHS is not going to be able to continue delivering what it does today in 10 years' time, even with more money and nurses. The system needs to do much better with what it already has. As a nation, we have a duty to do the right thing for our frail and elderly population. Any transformation strategy will rely on strong conviction. In partnership with our clients, we have shown that robust evidence and targeted insight is the key to unlocking a door that everybody wants to enter.

1. All research was completed by using fully anonymised data. Any sophisticated analysis that needed identifiers (e.g. joining to primary care data) was done within the confines of the NHS in collaboration.

The Berkeley Partnership

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