



Data-orientated decision making

Actively choosing to make decisions informed by data is the way forward for healthcare, say Simon Swift and Richard Oakley of Methods Analytics

We generate so much data in healthcare, but we haven't reached the stage yet where we appreciate its richness and derive value fully. The benefits of data-orientated decision making are clearly obvious in healthcare settings, yet data is too often relegated to examination by interested experts in a corner rather than using it to inform strategy and operations. So how as an organisation do you

become data-orientated - actively choosing to make decisions using data at all levels? Our approach is to ensure three questions are answered before looking to use data to inform a decision:

1. Why are we going to do this? Why do we need a data driven approach for this project or purpose and what is the benefit? Understanding the why and really scoping it down is key, otherwise

- the business can't drive forward accurately and cleanly.
2. The second thing is how? And that's the technical question. You don't do the how until you really know your why. What data do we have? How do we bring it together? How do we make sure it's valid and accurate, and how are we going to analyse it and present it? It's also making sure there's a shared understanding of what numbers mean and having a very strict definition.
3. Once we have our data analysed and presented, so what? Do we know how to apply this to our problem or our purpose? So we have to define our goal and how we know we have got there. Then, are the management levers available so that these decisions actually impact the organisation. Otherwise, it's a waste of time.

Starting at the top

Healthcare organisations actually make a lot of data-orientated decisions. A high blood pressure reading will lead to action. When you work at this level, people can understand the concept, but it needs to be ingrained in the organisation's culture and has to start from the top to really see the impact. Yet it's really easy to transition into those data-led activities if you use examples like this to help people understand what being data-orientated means.

You can engage with data-orientated decision making at all levels in a business, the strategic level, the operational level and the tactical level. To inspire the move towards data-orientated decision-making, the way the boardroom uses data has to fundamentally change. They have to value the expertise of their data analysts - people whose expertise is data - and bring them

into meetings to present that data, not deal with data from a management perspective, presented by those whose expertise is management. In healthcare, in particular, we undervalue that expertise. We wouldn't have the same attitude towards an expert whose field is clinical.

In a hospital, for example, if there are 56 stranded patients, (those who have been in for longer than two weeks), the



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director of nursing, the site manager and the medical director will all have a slightly different sense of what 56 stranded patients means to their organisation. They need to have a shared understanding to be able to agree on a common solution and a set of actions, so there needs to be someone who deeply understands the data who can frame this for all of them and facilitate that shared understanding of what it means.

Understanding why

Decision makers must be clear about why they are looking at data; ideally it is for insight into a problem where clear actions can be taken; too often it is in the hope of finding a magic easy fix or to look to validate a decision that is already made. For example, measuring the number and timing of patients attending the Emergency Room could be useful for forecasting, but if you can't adjust staffing or increase discharges to accommodate that demand there is little point operationally. Knowing you will be overwhelmed is something the people on the ground will have identified anyway, so it's probably only useful for building a business case at a strategic level.

Equally, at a tactical level, using data to evaluate whether everything is in place for a patient to receive a particular care bundle on a given day could make the difference between, for example, 10 or 15 patients receiving treatment or slots being reallocated just because the data was consulted and anomalies corrected in advance. So that is an exercise where data-orientated decisions have a direct impact.

Understanding how

Within data-orientated organisations there should be a team for exploratory analysis, another that concentrates on operational reporting and a platform that allows them to do both. The areas of expertise should be separated to ensure their effectiveness, so the organisation of the data teams is important. This is true at the top level as well. The data team under the Director of Finance, for example, will be very different from the data team under the organisational vertical that reports into the medical director. The first will think about money and efficiency, while the other will consider quality, outcomes and safety.

In healthcare, your technical "how" is unlikely to be impacted by this choice, but your organisational feeling of

what is important shapes this. Thus it's really important to have a centralised data function in large organisations. Otherwise there are competing aims. It should be designed in a way that serves the needs of the entire organisation, not just one specific niche, because otherwise data will be repurposed for something inappropriate. This is a pitfall that every organisation finds at some point, so it is key to centralise data function under one body and ideally professionalise it as much as possible. A data-orientated organisation should have a Chief Data Officer whose remit includes data use as well as just storage and governance.

Understanding what

A clear data strategy enables an organisation to understand and so deliver what the board intends; it should enable an organisation to deliver its business strategy better i.e. faster and cheaper. To execute a data strategy however, requires people in the organisation to be literate in the use of data, particularly C-suite and managers - anybody who is expected to use data to inform the decision or to be able to interpret data needs to have the requisite skills. Therefore, there is a training requirement and skills analysis to be undertaken. Data literacy is like any form of literacy - knowing when to use your own expertise and when to defer to others.

As an example of this literacy, if you set a target, you have to think about the unintended consequences of driving to performance against target. It's helpful to know about examples such as the Cobra effect of perverse incentive, where a government concerned about the number of cobras in the area started offering a bounty. Initially, the numbers went down; then people started breeding snakes for money. In the same way, if you clamp down too hard on targets to discharge patients from hospital, you will start seeing suboptimal care.

However, data alone cannot be used to eliminate unintended consequences. It's vital to get people psychologically in the right place so that they don't start using inappropriate action in order to deliver. It's also important to ensure you design companion metrics to look broadly at impacts and not be too narrow in your surveillance, ideally thinking in terms of driving overall behaviours primarily rather than numerical objectives. This is particularly important in human-



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centric processes like healthcare where the complexity and individuality of the problems to be examined far exceeds the data collected or used.

Conclusion

Most data projects fail because the strategic goals are not tightly defined and the problem is not easily measurable. Data is turned to in hope rather than reasonable expectation, which is fine if the ambition is to explore what is possible. Often though the Why, the How or the What are missing, be that scope, timelines or other determinants. There need to be really hard

and measurable definitions, so it's clear what will be delivered and how it can be done and when by. Once this is in place, of all things, data projects should be best able to prove benefit and return on investment.

Methods Analytics' particular expertise is with an open problem. We start at the strategy point, helping people understand how to use data to deliver business benefit. We analyse the data and present our findings anywhere along the data lifecycle. In healthcare no two patients are the same, so you need big numbers with meaningful data before you start to draw conclusions. But if you start to use data to directly influence decisions there is a virtuous circle in reach, one where the data-informed decision then has its impact evidenced by that same data in future and results in that most elusive thing in healthcare transformation - the change that sticks. ●

Contact Information

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