

Innovation Partnerships

"Without data, you're just another person with an opinion." – W. Edwards Deming

The NHS data problem

At Decision Data, we believe that Innovation Partnerships are the solution for resolving the many of the problems with data in the NHS highlighted by the Sudlow Review (2024). The key problems we aim to solve with Innovation Partnerships are as follows:



- NHS staff spend huge amounts of time gathering a wealth of data, of which little is never used.
- Similar data is siloed in separate databases in different trusts that don't talk to each other.
- There isn't the time, money or data-science expertise within the NHS to make effective use of the data.
- What data-science and innovation is done takes a top-down view focusing on business-intelligence rather than supporting daily clinical decisions.
- When private companies are involved costs can spiral stifling innovation to only those trusts that can afford it.

A new model

The Innovation Partnership model works as follows:

- 1) **Identify a clinical-intelligence problem:** A Trust, or possibly a group of Trusts, are facing a clinical problem that could be resolved by analysing their data. A suitable problem is

one that likely affects all Trusts in the NHS but one that has significant technical barriers. For example, perhaps the problem needs data to be combined from different data sources and requires advanced statistical modelling or artificial intelligence to work.

- 2) **Build a solution:** The Trust(s) pays an Innovation Partnership Fee to engage Decision Data to build the models and infrastructure to extract the insights from the data, creating a data-science “toolkit” that can solve their clinical problem. This toolkit is hosted by Decision Data and accessible via our web-based interface.
- 3) **Distribute via our marketplace:** Since we host all the infrastructure and models for the toolkit ourselves, we can share the innovation extremely cost-efficiently with other Trusts through our marketplace.
- 4) **Revenue share:** A percentage of the revenue generated from the marketplace sales is returned to the original innovator Trust(s). In doing so, they can recoup their initial costs and if the idea is good enough and used by enough trusts, it could even provide them with an additional annual revenue stream.

The future

We see Innovation Partnerships as a solution to many of the clinical-intelligence problems the NHS faces. Our toolkits aim to finally make use of the wealth data held by the NHS to solve every-day clinical problems. By hosting the infrastructure ourselves, we can keep costs down while at the same time combining fragment, siloed, data sources into a unified NHS-wide data resource. The marketplace helps to rapidly and cost-effectively spread innovation across NHS Trusts reducing the postcode lottery of care. Finally, the revenue-sharing scheme not only helps recoup the Innovation Partner’s initial costs, it rewards and motivates clinicians with innovative ideas hidden within the NHS who are trying to make real change to clinical practice.

References

Sudlow, C. (2024). Uniting the UK's Health Data: A Huge Opportunity for Society. Zenodo.
<https://doi.org/10.5281/zenodo.13353747>

FAQs

What do you mean by (bottom-up) clinical intelligence?

A lot of use of data in the NHS is what we term top-down or business-intelligence analysis. To over-simplify, the top tiers of NHS management are very interested in money and deaths and less interested in the results of Mrs. Jones 20-week antenatal scan. Clinicians on the front line make daily decisions that could be informed by data and we believe the NHS fails to make effective use of its resources. Our aim is to take a bottom-up approach, and to try to solve these clinical-intelligence problems. A good example is our Antenatal Sonography Toolkit (AST) which aims to solve the problems of “how accurate are antenatal sonographers?” and “what factors affect this accuracy?”. It is these sorts of problems that are particularly difficult for the NHS to solve on their own due to the issues highlighted by the Sudlow Report (2024) and it is where we believe that Innovation Partnerships can make a real difference to every day clinical practice.

What about patient data privacy?

We take data privacy extremely seriously. Which is why, as a rule, we only access anonymised data. While other companies also do this, there are some practical reasons why things might not be as safe as they seem. Asking the IT department or a clinician to anonymise data creates additional workload on often stretched teams and there may be technical reasons why it cannot easily be done. As a partial solution, some Trusts will share non-anonymised data with the private company and just trust that the company will do the anonymisation process properly. We felt this was not good enough and in response we developed our *Secure File Uploader* technology to do all the anonymisation automatically.

How does the Secure File Uploader work?

Using the latest web-technology, we built a web application that does all the hard work itself. All the clinician has to do is to login to our upload tool and add the file. The uploader tool then provides some smart suggestions for anonymisation which the clinician can check or adjust as necessary. This all happens within the browser without any data leaving the clinician's computer. They then click a single button which will anonymise the file, encrypt it and send it securely to

our servers. This makes it extremely simple for the clinician, while at the same time ensuring that we never received non-anonymised patient data.

Attempts to unify IT systems in the NHS in the past have mostly failed, what makes this different?

The solutions in the past have all been top-down attempts to change the NHS IT infrastructure and make it centralised. This fails because the NHS systems are too fragmented for this to be economically and practically viable. While it would be a good thing, we are not even attempting to fix that problem. Data storage has become very cheap over the years and so our solution is not to change the NHS IT systems but just to build a new data resource on top of it. This means the NHS can continue as it always has and different trusts can use different data systems, but any anonymised data we gather from those systems will be unified into a single format. Think of Decision Data as an extra clinical-intelligence layer built on top of the current fragmented system.

Could this solve other problems within the NHS?

Innovation Partnerships are particularly effective in the data domain because the most significant costs are incurred during the innovation stage. Developing the models and infrastructure to tackle a data-science problem is expensive, but once these systems are in place, the primary variable when applying them to a new trust is the data itself. In essence, if the problem involves high development costs but low distribution costs, Innovation Partnerships are an ideal solution. However, when both development and distribution costs are high, Innovation Partnerships are less suitable.