



The Patient Continuum

Problem statement

Metro North Hospital and Health Service (MNHHS) is seeking a solution to link related patient data in disparate systems to create a longitudinal, time-series dataset of patient journeys through the health service (The Patient Continuum). The project is not looking for systems integration, rather integration or linking of datasets extracted from systems.

This project involves linking data on a regular basis using extracts (e.g. comma-separated value files) that are currently generated daily from different systems.

While there are dozens of systems producing data across MNHHS, the focus of this project is to link three datasets: inpatient data; emergency data; and outpatient data. Further inclusion of other datasets beyond those listed above as well as visualising the data will be the focus in the future.

Overview of the problem

MNHHS captures large volumes of patient data across a myriad of systems. Data extracts from these systems can be linked together using record identifiers. These are aggregated to derive insights about the performance of the health service from a patient-journey perspective.

In this way a more robust and sophisticated approach can be developed to derive insights about what has happened in the past and what might happen again in the future from a patient and operational perspective. For example:

If patient cohort A comes in with X condition(s) and they are aged 47, are female and have previously come in with conditions Y and Z, when will they:

Present again?

If yes, when? and

How often?

At present, high-level insights have been gained by analysing manually linked data in business intelligence software, however the volume and diversity of data has meant traditional office software – such as Microsoft Excel – is not able to cope with the size of the datasets making it necessary for MNHHS to acquire a solution that can cope with its data and information demands.

Opportunity for applicants

The Testing Within Government (TWiG) Program aims to help Small to Medium Enterprises (SMEs) to improve the positioning of their products for government and large enterprise markets by working collaboratively with Queensland Government on a range of problems.

Applicants are invited to propose ICT solutions to these problems, and if selected, receive funding to test their product in collaboration with Queensland Government.

Being selected as part of the program will offer the opportunity to develop knowledge, skills and experience improving the potential to access broader commercial opportunities in Queensland, Australia and abroad.

At the end of the program, the applicants will have an opportunity to showcase their products and their TWiG program experience to a wide group of government representatives, which could lead to a procurement activity in Queensland Government.



Why is it important

With an ageing population and increasing demand on healthcare services, having a data-driven, analytical approach to healthcare decision making can enable more effective management and improve patient outcomes.

MNHHS is the largest of the hospital and health services (HHS's) across Queensland, other HHSs across the State look to MNHHS to lead and innovate in the healthcare landscape. The outcomes of this project have the potential to elevate the way that health data is used in Queensland and nationally.

Problem context

The customer

Metro North HHS, Queensland Health and healthcare stakeholders from a planning and reporting perspective.

How the problem is currently being solved

At present, linking of patient data across disparate systems is a time-consuming and manual process done in Excel and more recently business intelligence tools. It is undertaken on ad-hoc basis in response to a specific business question or need. The results are generally well received and lead to more linked data requests arising. Some human resource growth has occurred, but this is neither sustainable nor affordable in the medium/long term.

Technical constraints

- Offered as a service
- Internet/mobile accessible
- Large volumes of data required to be processed
- Maintenance of patient confidentiality through use of de-identified data

Benefits sought

The benefit of this project is to derive data insights from health data at a 'system level' rather than at episodic or in treatment specific silos. This will enable more effective planning, provide enhanced decision making information and aim to ultimately improve patient outcomes in MNHHS. It will also provide the tools for ongoing analysis within the HHS as more data becomes available.