The DATATHON — Engaging clinicians and data scientists for rapid research development

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Background

Datathons are events where data scientists, statisticians and clinicians access data repositories over brief periods of time (typically 48 hours), to answer research questions which inform health policy and practice. They have evolved from computer science "hackathons".

Objective

To describe the development and achievements of the Critical Care Datathon in Brisbane, in June 2019.

Method

Legal and ethical requirements were identified (and in some cases developed de-novo) by data custodians. A secure on-line working environment was created in collaboration with Servian and Google Cloud Platform. Available analytic tools included Google Big Query, R and Python, accessible via Jupyter and Colab notebooks. The event was advertised to clinical communities, research groups, mathematics and science departments, and hosted by Queensland University of Technology.

Results

Six datasets were available incorporating 1.4 million adult and paediatric admissions to 191 Intensive Care Units (ICUs) in Australia and New Zealand, and 240,000 admissions to over 200 ICUs in the United States. Included were 12,000 patients with comprehensive rehabilitation information and over 3000 patients from Queensland ICUs with 'whole-of-hospital' data.

104 participants were assigned to 16 balanced teams comprising senior and junior clinicians, health-services researchers, data scientists and statisticians. Teams delivered findings in brief presentations at the end of two days' collaborative work. Feedback indicated high levels of engagement and collaboration, with 85% of participants intending to continue projects afterwards. Subjective measures of 'fun had' were also through the roof.

Conclusions

A Datathon can deliver rapid collaborative research projects using 'big data' to inform healthcare practice.

(Word count = 250 — maximum 250 words)