The research commercialisation office of the University of Oxford, previously called **Isis Innovation**, has been renamed **Oxford University Innovation**

All documents and other materials will be updated accordingly. In the meantime the remaining content of this Isis Innovation document is still valid.
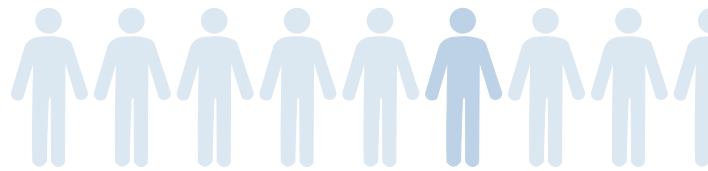
URLs beginning www.isis-innovation.com/... are automatically redirected to our new domain, www.innovation.ox.ac.uk/...

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Big problem, big data, big solution?
Data repurposing for dementia research

Alzheimer's disease represents one of the biggest challenges facing health services today. Given the costs involved, 'it could have a bigger impact on the economy in the future. Making progress towards prevention will necessitate new ways of working and Big Data platforms that have been established in Europe with this in mind will be described
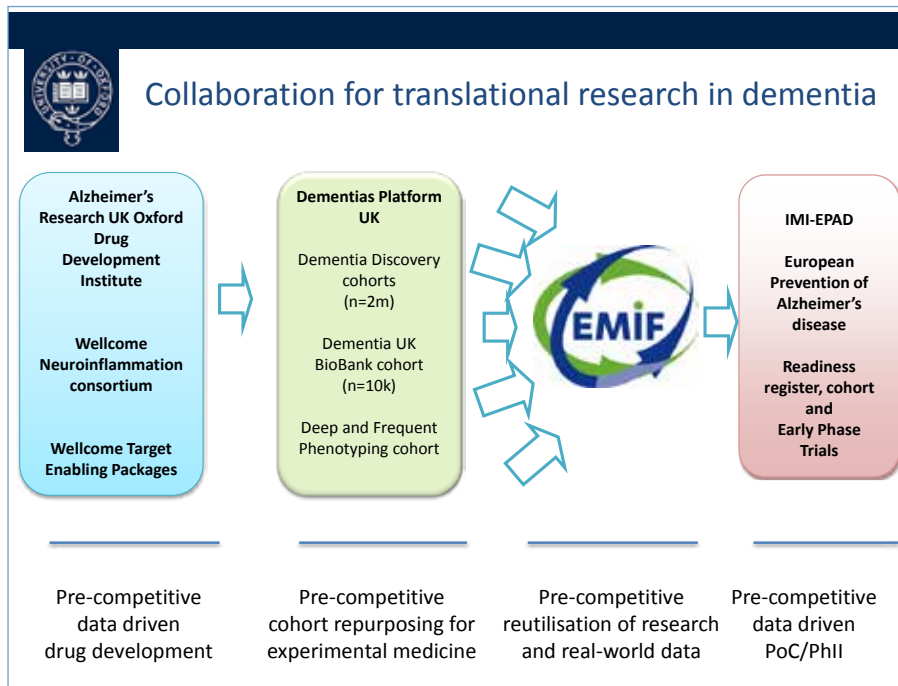
The growing numbers of people with dementia, Alzheimer's disease in particular, presents challenges not only to older people, and to their families, but also to health services and indeed to economies. It's no wonder politicians have made this a priority area for development. Yet, after many years of under-funding, attention is focussed on neurodegeneration. The first trials of putative disease modification therapeutics have reported negative results and drug development looks increasingly difficult in these diseases.

This is a very big problem. Might Big Data provide something of a solution or is it a big, albeit fashionable, distraction?

Some evidence suggests that Big Data – whether derived from biological or from clinical datasets might help progress the search for therapeutic interventions in dementia. Research using informatics as a core component will be described both in the field of molecular biomarkers for clinical trial utility and in turning mechanistic understanding into drug development programmes. Platforms for dementia research utilising large variable datasets – essentially Big Data platforms – will be described including in drug discovery, the Dementias Platform UK and the Innovative Medicines Initiatives – the European Medical Information Framework and the European Prevention of Alzheimer's Disease programme.

Collaboration for translational research in dementia

| Alzheimer's Research UK Oxford Drug Development Institute

Wellcome Neuroinflammation consortium

Wellcome Target Enabling Packages | Dementias Platform UK

Dementia Discovery cohorts (n=2m)

Dementia UK BioBank cohort (n=10k)

Deep and Frequent Phenotyping cohort | EMIF | IMI-EPAD

European Prevention of Alzheimer's disease

Readiness register, cohort and Early Phase Trials |
|---|---|---|---|
| Pre-competitive data driven drug development | Pre-competitive cohort repurposing for experimental medicine | Pre-competitive reutilisation of research and real-world data | Pre-competitive data driven PoC/PhII |

Professor Simon Lovestone
Translational Neuroscience,
University of Oxford
simon.lovestone@psych.ox.ac.uk