Use of health data for research and development

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What is health data research?

Health data comes from a variety of sources, but all relates to peoples' interaction with the health and care system in some way – for example as an **NHS patient, a participant in a clinical trial, being involved in a genomics initiative or as a blood donor.**

It is used for research and development to find patterns and links, to improve people's lives through better public health and healthcare to:

1. better **predict** disease, as early as possible

2. **prevent** disease

3. better predict the **right treatment for the right person at the right time**

4. develop **new treatments and cures** for disease

Who does health data research?

Academics
in universities and research institutes

Fatemeh Torabi, university researcher, Swansea
Analyses health data of millions of people at a time, to identify the most effective prescription patterns for treating heart disease

Doctors
in NHS health centres, GP surgeries and hospitals

Liz Sapey, medical doctor, Birmingham Hospital
Uses data to develop, test and deliver new ways of caring for acutely unwell people who are admitted to hospital in an emergency

Innovators
in companies

Eoin Hyde, founder of Innersight Labs
Uses data from medical scans to create 3D models that surgeons can use to improve the safety of surgery

Why health data research is important

Prediction

- Research to improve disease detection ➔ Early diagnosis leads to better outcomes for patients

Prevention

- Research to better predict susceptibility to disease & customised disease-prevention strategies ➔ Many diseases are preventable: a shift in emphasis from reaction to prevention is key

Better use of existing care and treatments

- Research to better predict the right treatment for the right person at the right time ➔ Existing treatments are not effective for everyone

- Research on large scale linked health data to better tailor treatments and care ➔ Reduce inefficiencies that inflate health care costs and undermine patient care

New treatments

- Research to develop new treatments ➔ Many diseases are still either incurable or untreatable

Why linked data offers a new type of opportunity for research

Findings of health research using linked datasets that can improve people's lives:

- **Sunlight is good for pregnancy**
  UVB in daylight shown to be linked to lower chances of children developing learning difficulties. This lays the groundwork for public health advice to be given out by midwives. *Used data from schools, maternity records, weather stations and satellites*

- **Antibiotics to avoid**
  A certain type of antibiotics, called macrolides, have been found to be associated with heart and genital malformations in babies when given to their mother during pregnancy. *Used data from GP practices, prescriptions and maternity records*

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