



Moderator



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Second Plenary Session



Harnessing the Power of Big Data to Make Better Health Care Decisions in the Asia-Pacific Region



Christopher Chute, MD, DrPH
Bloomberg Distinguished Professor of
Health Informatics, Professor of
Medicine, Public Health, and Nursing
Chief Health Research Information
Officer, Johns Hopkins Medicine
Johns Hopkins University
Baltimore, MD, USA



Trish Williams, PhD
Professor & Chair of Digital
Health Technologies
Flinders University
Adelaide, Australia



Yoke Sin Chong, PhD
Chief Executive Officer
Integrated Health Information
Systems Pte Ltd
Singapore



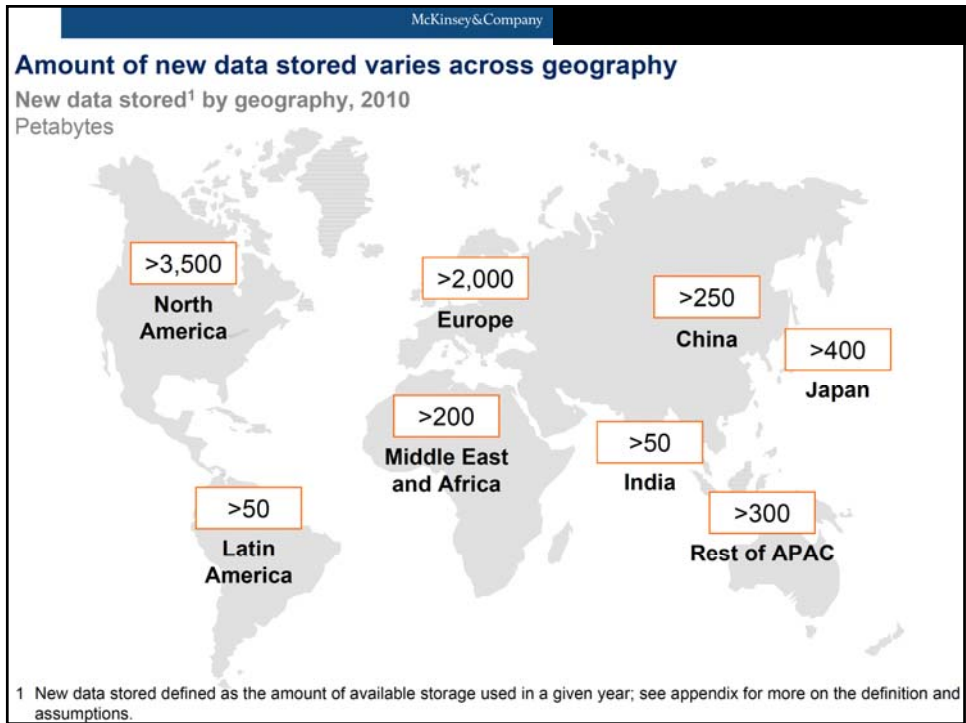
Big data in Asia-Pacific health care

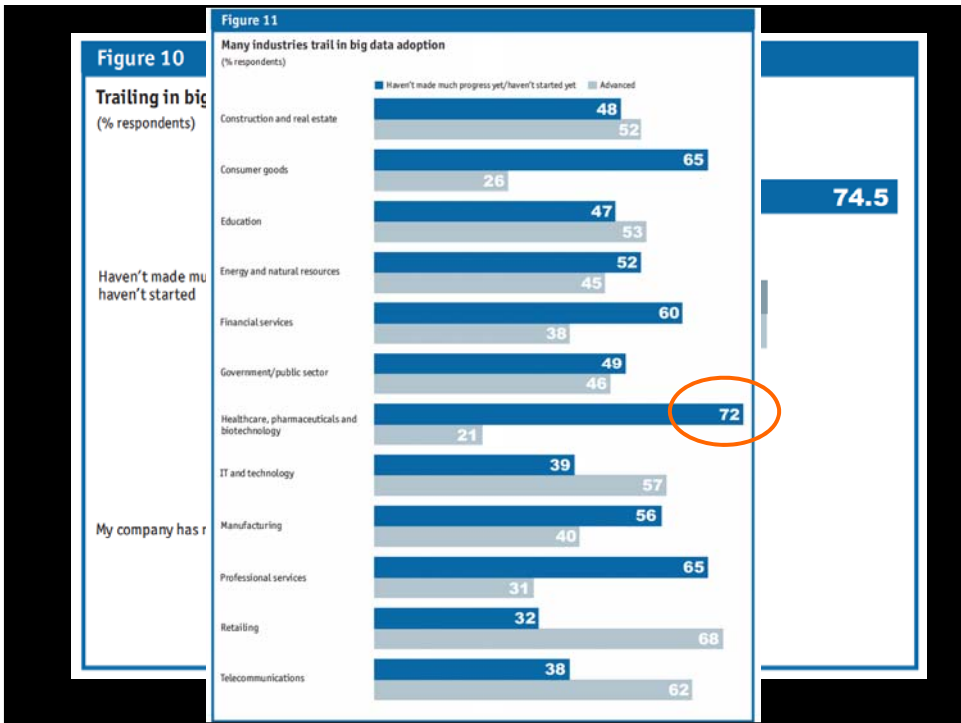
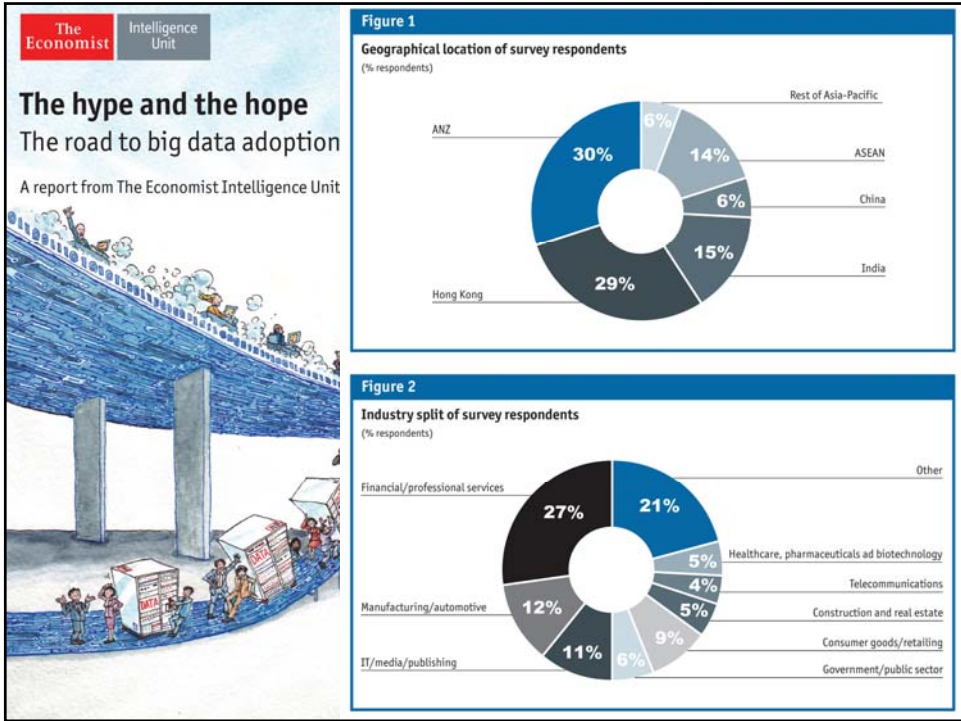
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Louisa Jorm 5 September 2016

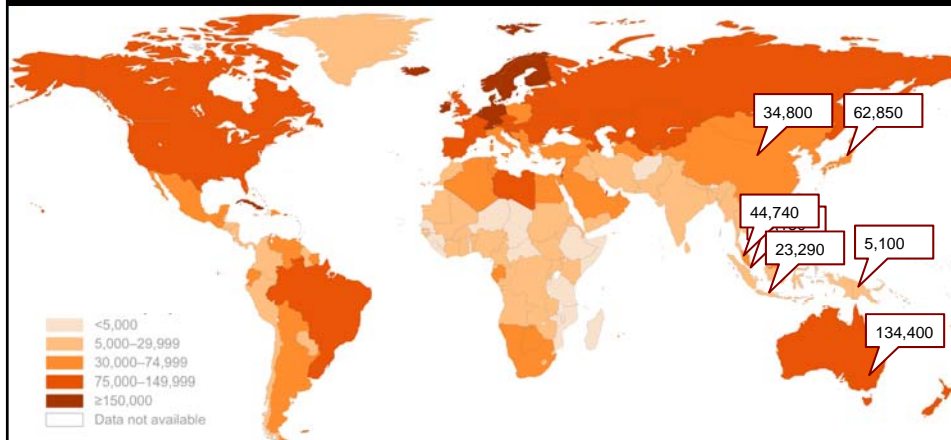
Never Stand Still Medicine Centre for Big Data Research in Health

CENTRE FOR BIG DATA RESEARCH IN HEALTH



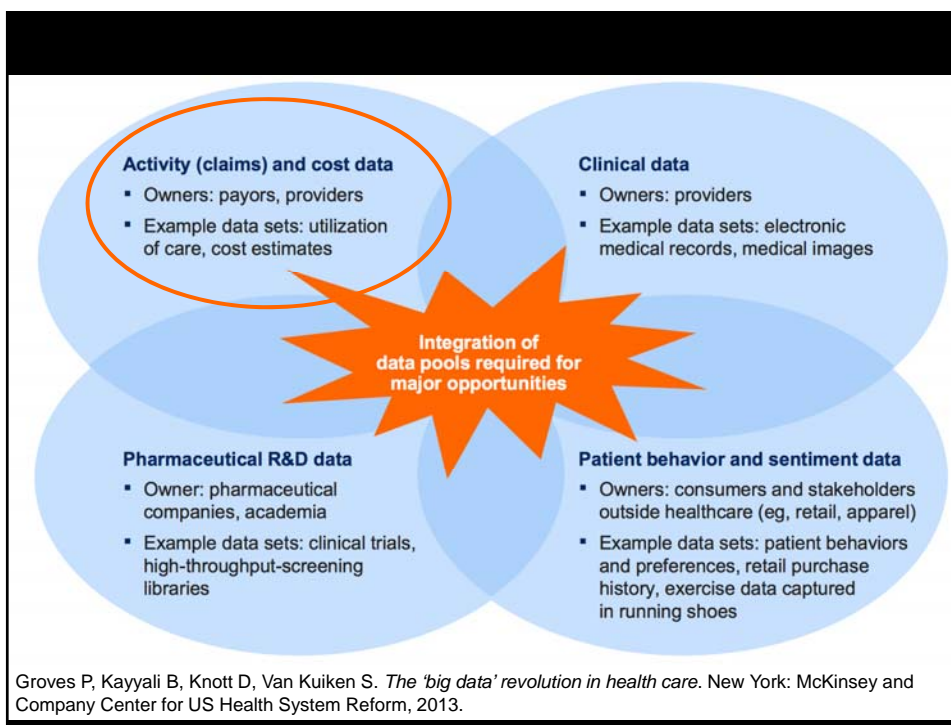


Doctors, Nurses, and Midwives per 10 Million Population, 2011.



Crisp N, Chen L. N Engl J Med 2014;370:950-957

THE NEW ENGLAND
JOURNAL of MEDICINE

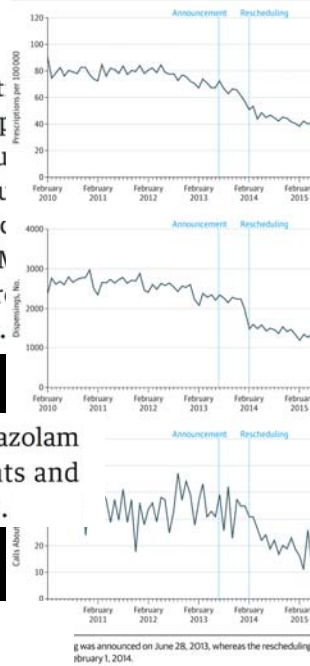


Groves P, Kayyali B, Knott D, Van Kuiken S. *The 'big data' revolution in health care*. New York: McKinsey and Company Center for US Health System Reform, 2013.

Interrupted Time Series Analysis of the Effect of Rescheduling Alprazolam in Australia: Taking Control of Prescription Drug Use

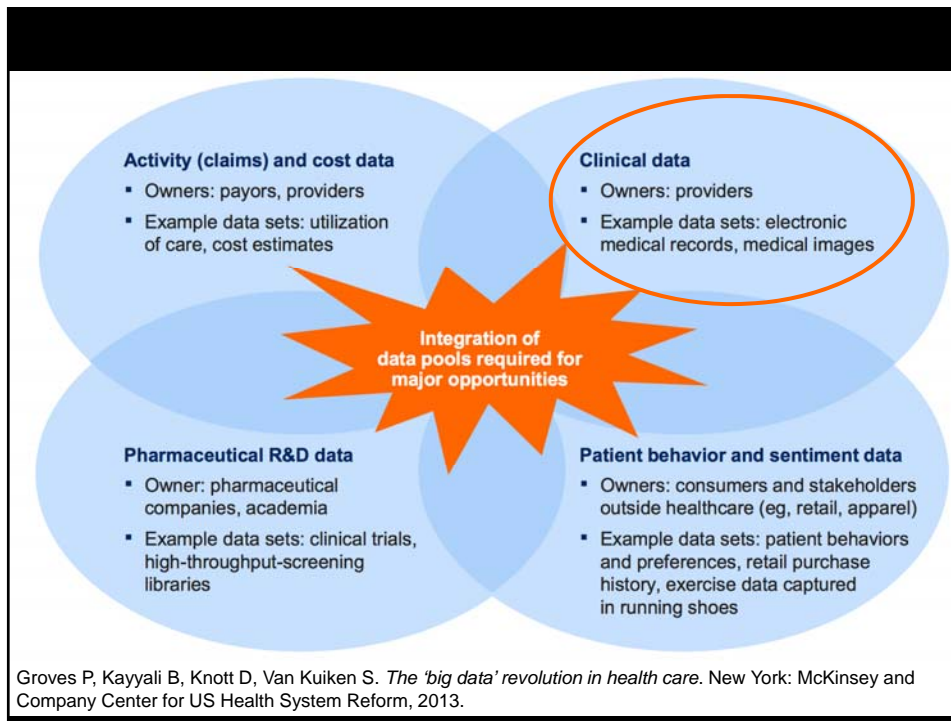
Alprazolam is significantly more toxic, has no additive therapeutic benefit, and is increasingly misused compared with other benzodiazepines.¹⁻³ Due to concerns about increasing use of alprazolam, in February 2014, the Australian Therapeutic Goods Administration selectively rescheduled alprazolam from Schedule 4 (Prescription Only Medicine) of the Poisons Standard to Schedule 8 (Controlled Drug), equivalent to Schedule II in the United States.

Figure. Monthly Time Series of Alprazolam Prescriptions per 100 000 Population, Dispensings, and Calls to Poisons Information Centre



Discussion | In Australia, selectively rescheduling alprazolam led to a reduction in overall use and adverse events and increased switching to less toxic benzodiazepines.

Schaffer AL, Buckley NL, Cairns R, Pearson S. JAMA Intern Med. Published online July 05, 2016. doi:10.1001/jamainternmed.2016.2992



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TECHNOLOGY NEWS 29 April 2016

Revealed: Google AI has access to huge haul of NHS patient data

A data-sharing agreement obtained by **New Scientist** shows that Google DeepMind's collaboration with the NHS goes far beyond what it has publicly announced

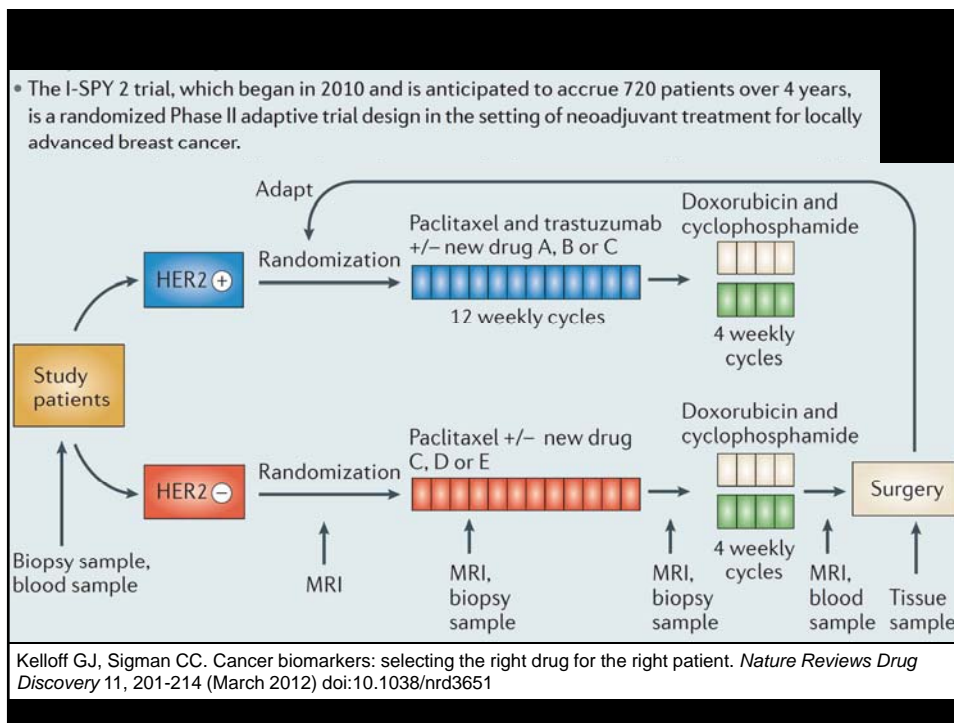
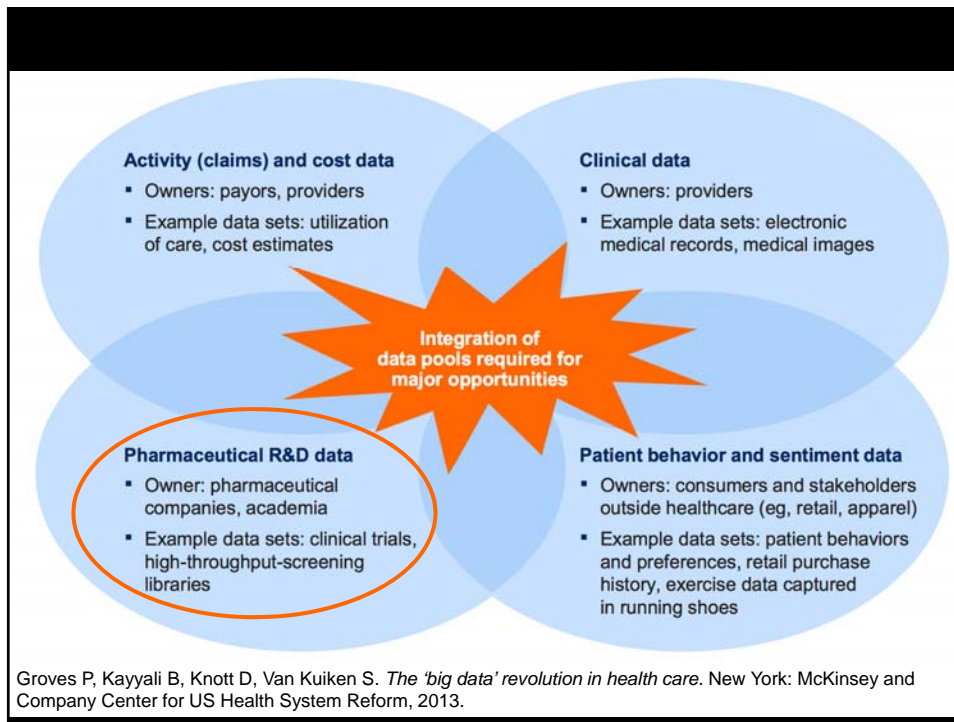
Gathering Information
Oil Scarr/AP/Getty Images

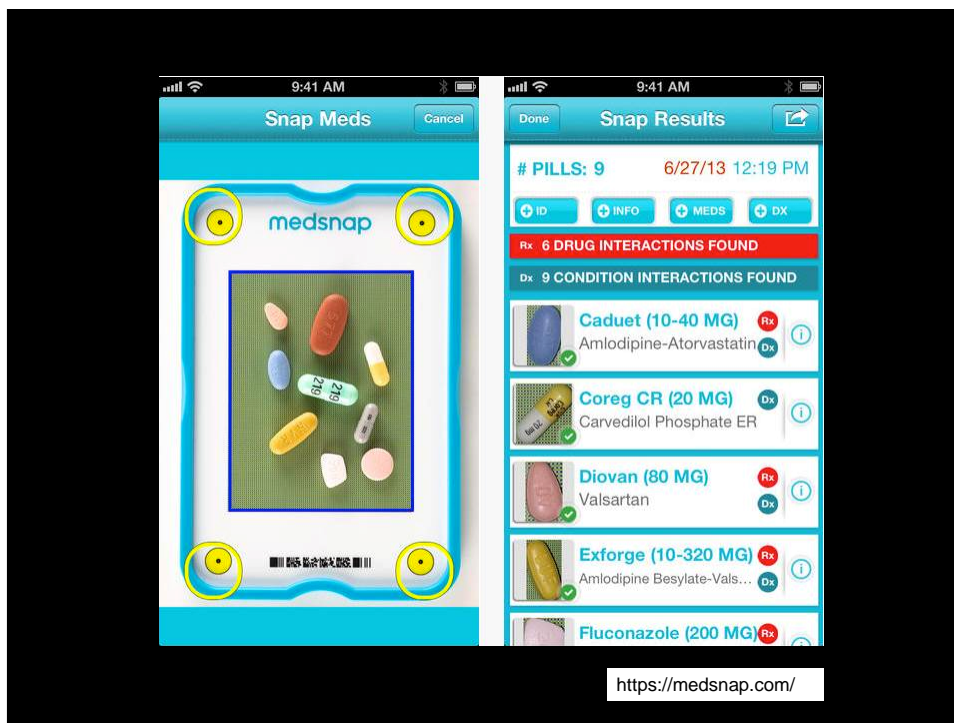
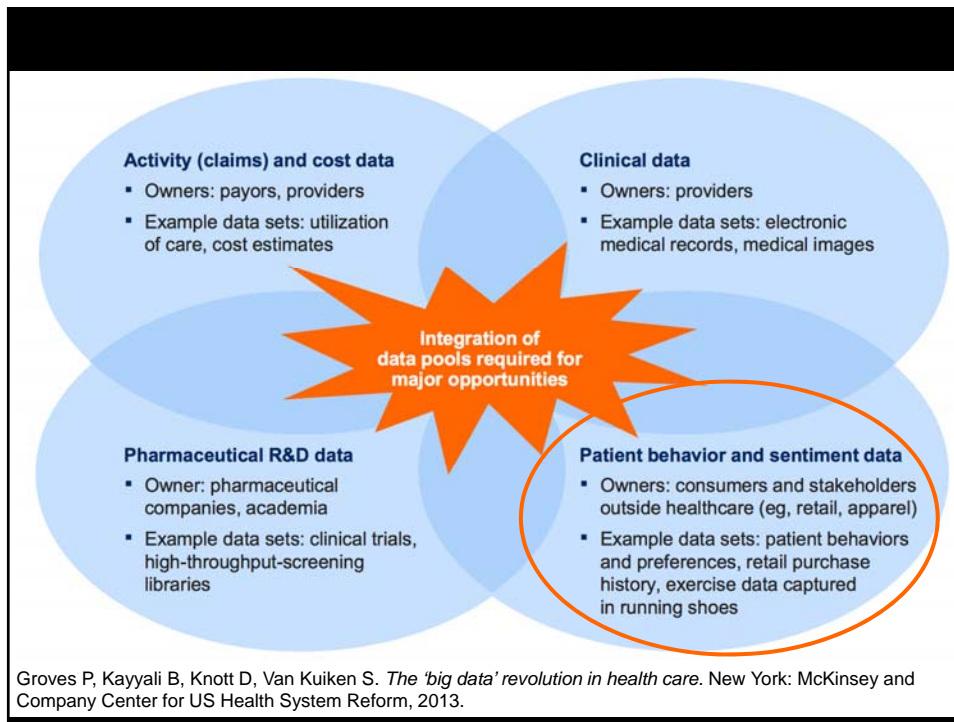
By Hal Hodson

It's no secret that Google has broad ambitions in healthcare. But a document obtained by New Scientist reveals that the tech giant's collaboration with the UK's National Health Service goes far beyond what has been publicly announced.

The agreement gives DeepMind access to a wide range of healthcare data on the 1.6 million patients who pass through three London hospitals run by the Royal Free NHS Trust – Barnet, Chase Farm and the Royal Free – each year. The agreement also includes access to patient data from the last five years.

<https://www.newscientist.com/article/2086454-revealed-google-ai-has-access-to-huge-haul-of-nhs-patient-data>





Technology

The Proteus Digital Health™ Feedback System

Integrating wearable and ingestible sensor technologies to detect your medication intake and physiologic data, our digital health feedback system stores information in a secure database accessible from a variety of devices. By correlating objective data and providing actionable insights, you can take control and better manage your health, communicating with caregivers and clinicians to optimize treatment and stay well, **all powered by you.**



The **ingestible sensor** is technology you swallow. Integrated into the medications you take and the products you use, it's made entirely of ingredients found in food and activated upon ingestion. Today, the sensor aids in capturing the time, identity and characteristics of what you swallow. Tomorrow, the sensor will bring critical bodily measurements from the inside, out.

Your body powers the ingestible sensor. With no battery and no antenna, your stomach fluids complete the power source and your body transmits the digital heart beat generated with the sensor.

The **patch**, body-worn and disposable, captures and relays your body's physiological response and behaviors. It receives information from the ingestible sensor, detects heart rate, activity, and rest, and sends information to your mobile device.

Using the mobile device you already carry in your pocket or purse, you can access secure **applications** that display your data in context and support care in a variety of different ways.

Powered by you

<http://www.proteus.com/>

At e-commerce site operator Etsy Inc., a biostatistics Ph.D. who spent years mining medical records for early signs of breast cancer now writes statistical models to figure out the terms people use when they search Etsy for a new fashion they saw on the street.

Another 28-year-old at Yelp, with a Ph.D. in applied mathematics, turned his dissertation research on genome mapping into a product used by the company's advertising team. The same genome-mapping algorithm is now used to measure the effect on consumers when multiple small changes are made to online ads.

<http://www.wsj.com/articles/academic-researchers-find-lucrative-work-as-big-data-scientists-1407543088>

**Harvard
Business
Review**



DATA

Data Scientist: The Sexiest Job of the 21st Century

by Thomas H. Davenport and D.J. Patil

FROM THE OCTOBER 2012 ISSUE