Future developments in personalised medicine and the role of the commercial sector

DAVID SIBBALD, CEO & FOUNDER | ARIDHIA INFORMATICS LTD

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By 2030, The World Economic Forum estimates that chronic diseases will cost the world economy $47 trillion – 75% of global GDP

**Diabetes**
- Affects 366 million
- 2010 annual cost: $500 billion
- 2030 annual cost: $6.0 trillion

**Cancer**
- 13.3 million new cases/year
- 2010 annual cost: $290 billion
- 2030 annual cost: $458 billion

**Cardiovascular disease**
- 32 million MIs & CVAs/year
- 2010 annual cost: $863 billion
- 2030 annual cost: $1.04 trillion

**COPD**
- Affects 210 million
- 2010 annual cost: $2.1 trillion
- 2030 annual cost: $4.8 trillion
DATA SCIENCE – CENTRAL TO IMPROVING HEALTHCARE

MEDICINE, BIOLOGY & HEALTHCARE ARE BECOMING INFORMATION SCIENCES
THE INTERNET HAS TAUGHT US SOMETHING ABOUT CHOICE
The answer is 17 years, what is the question: understanding time lags in translational research

Zoë Slote Morris¹
Steven Wooding²
Jonathan Grant²¹

¹Institute of Public Health, University of Cambridge, Cambridge CB2 0SR,
²RAND Europe, Cambridge CB4 1YG, UK
Pollution (particulate matter) levels over time

- PM 10
- PM 2.5
Glasgow - Hospital Respiratory Disease Admission Rate (per 100,000) by data zone
DATA DRIVEN: MATURITY MODELS

Source: Gartner (September 2013)
One size fits all

Personalised approach

Adapted version of: Bayer Healthcare’s, Personalised Medicine diagram
HEALTHCARE NEEDS INNOVATION AS WELL AS CARE

Accelerate Translation

Wealth Creation

Collaborative
47 year old woman with abdominal distension and family history of breast cancer is referred with suspicion of cancer

Patient sees specialist, blood sample taken & sent for WGS analysis

WGS analysis and primary analysis performed on patient sample

VCF analysed & mined for actionable variants. Report generated. Data archived as part of medical record for future use & research.

Classification score and report integrated into clinical record. Key information promoted to patient profile view alongside phenotype data (with access to supporting evidence). MDT meeting held, treatment options discussed and recommendations agreed.
THANK YOU!

For more information, please contact:

David Sibbald  david.sibbald@aridhia.com

http://www.aridhia.com

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