



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

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Clinically led, technology enabled

CHALLENGE: CHRONIC DISEASE IMPACT



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



Cardiovascular disease

32 million MIs & CVAs/year

2010 annual cost: \$863 billion

2030 annual cost: \$1.04 trillion



Cancer

13.3 million new cases/year

2010 annual cost: \$290 billion

2030 annual cost: \$458 billion



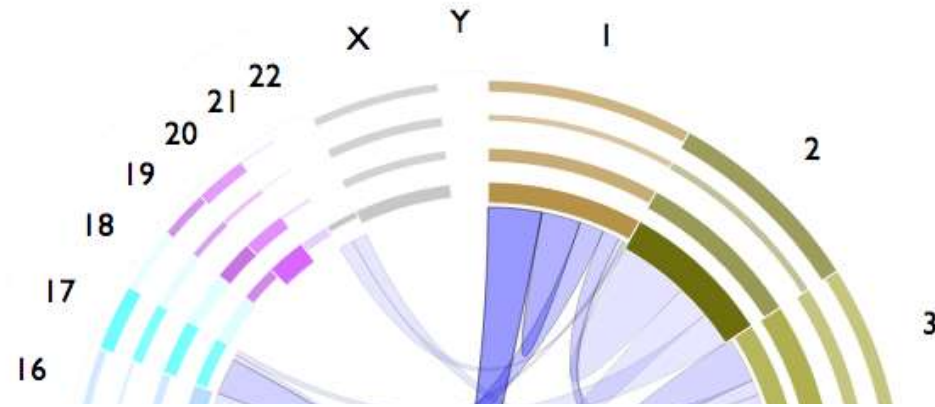
COPD

Affects 210 million

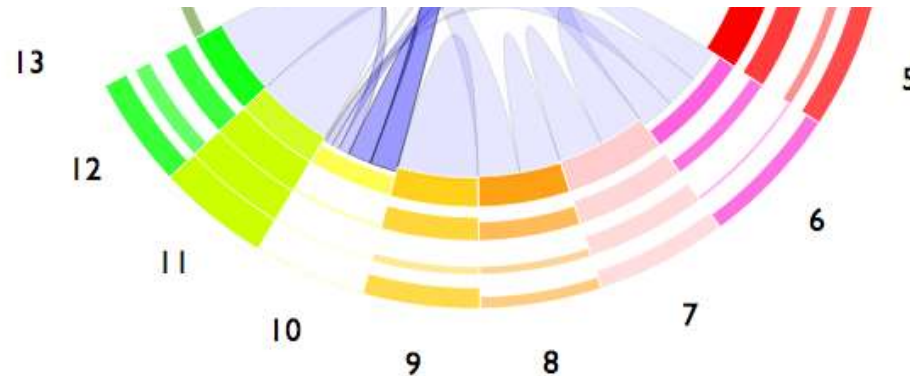
2010 annual cost: \$2.1 trillion

2030 annual cost: \$4.8 trillion

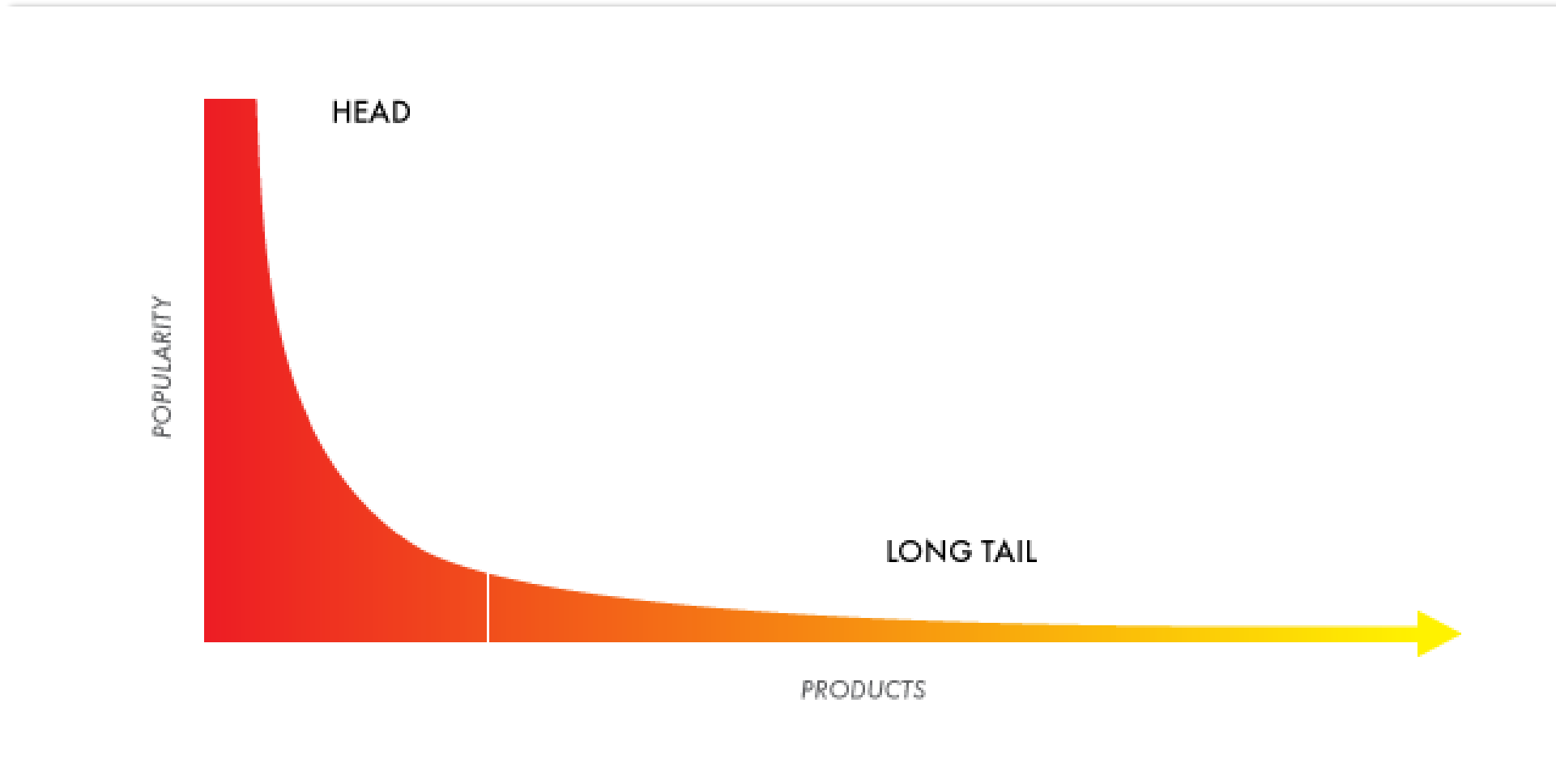
DATA SCIENCE – CENTRAL TO IMPROVING HEALTHCARE



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

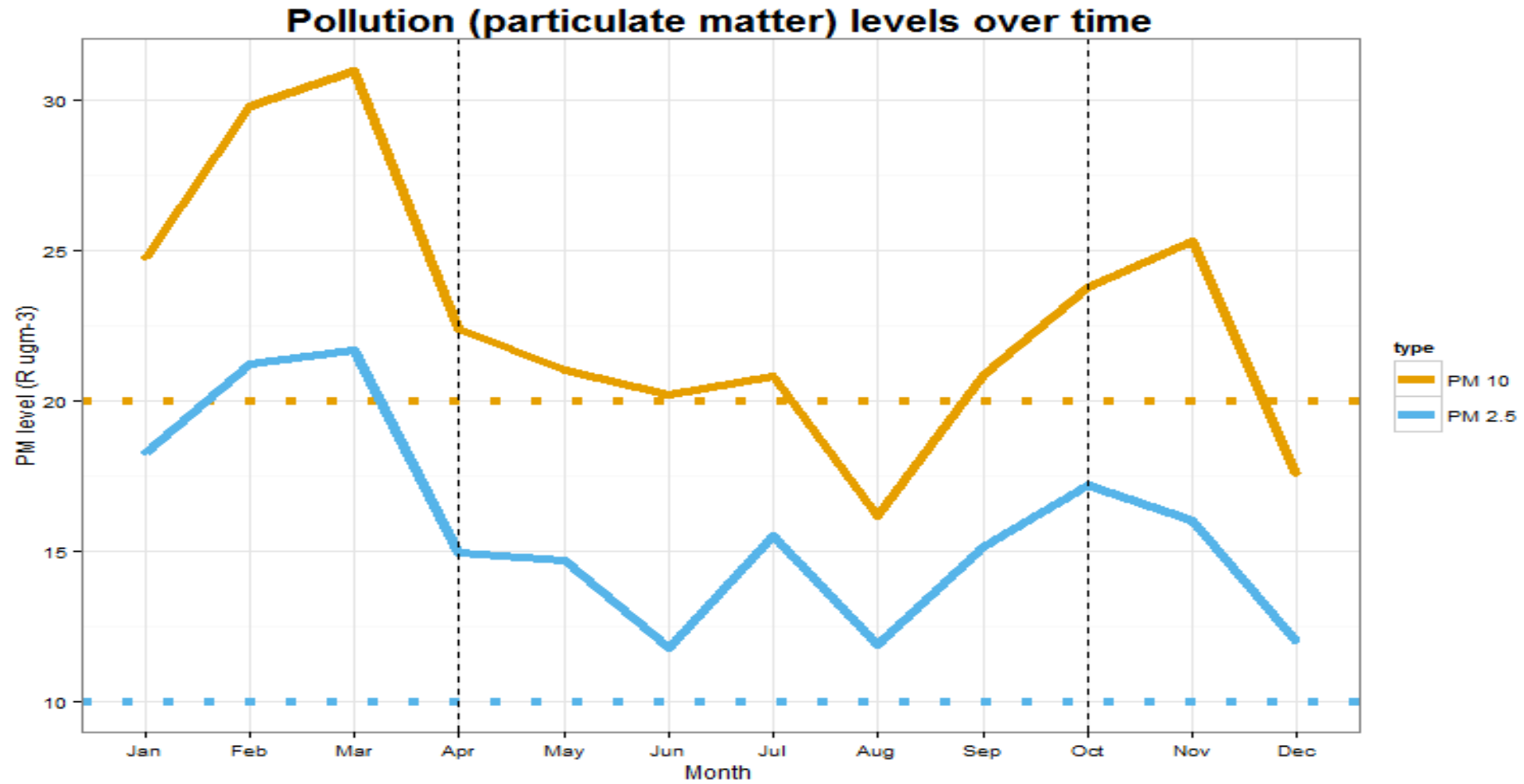
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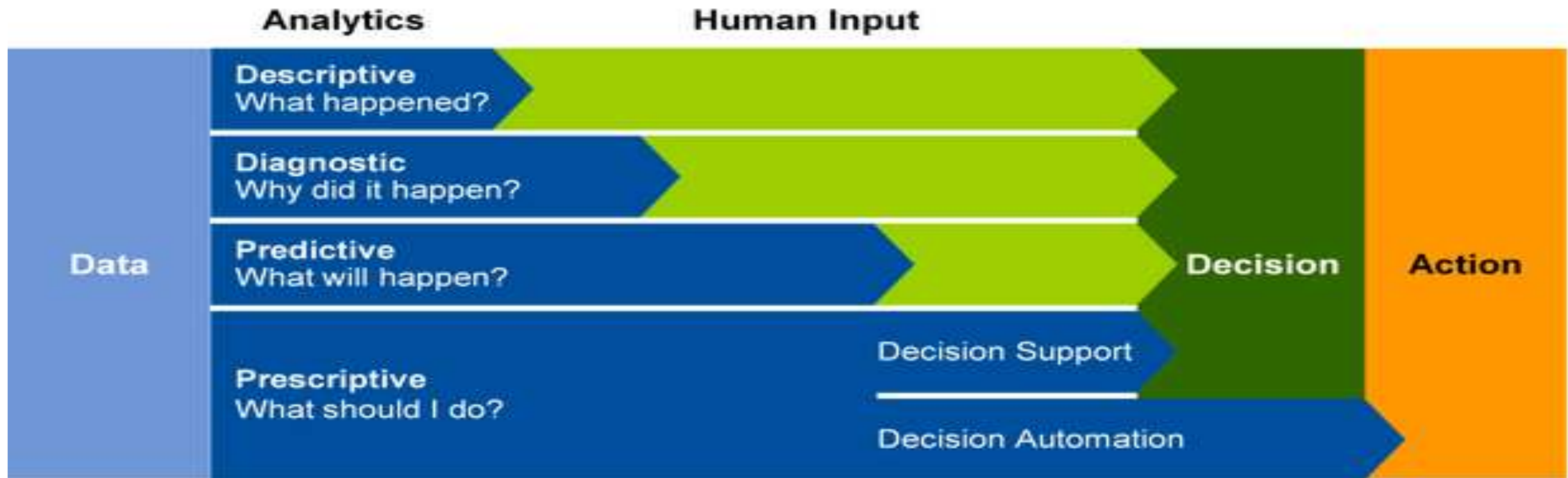




Glasgow - Hospital Respiratory Disease Admission Rate (per 100,000) by data zone

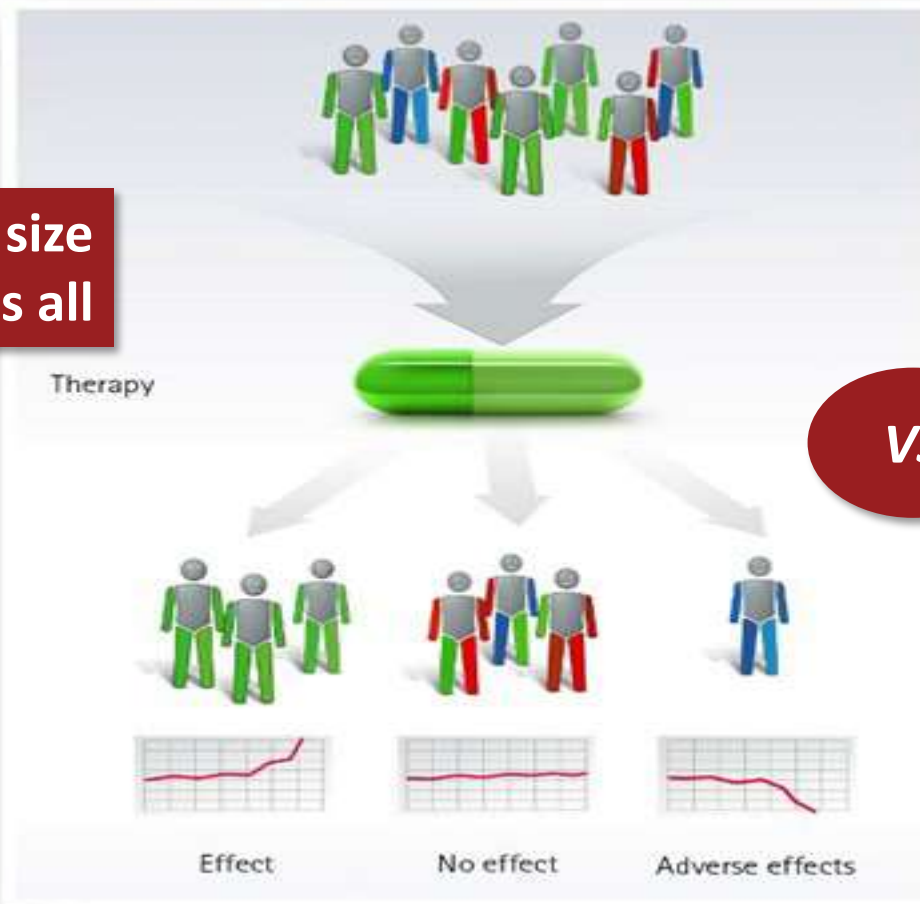


DATA DRIVEN: MATURITY MODELS

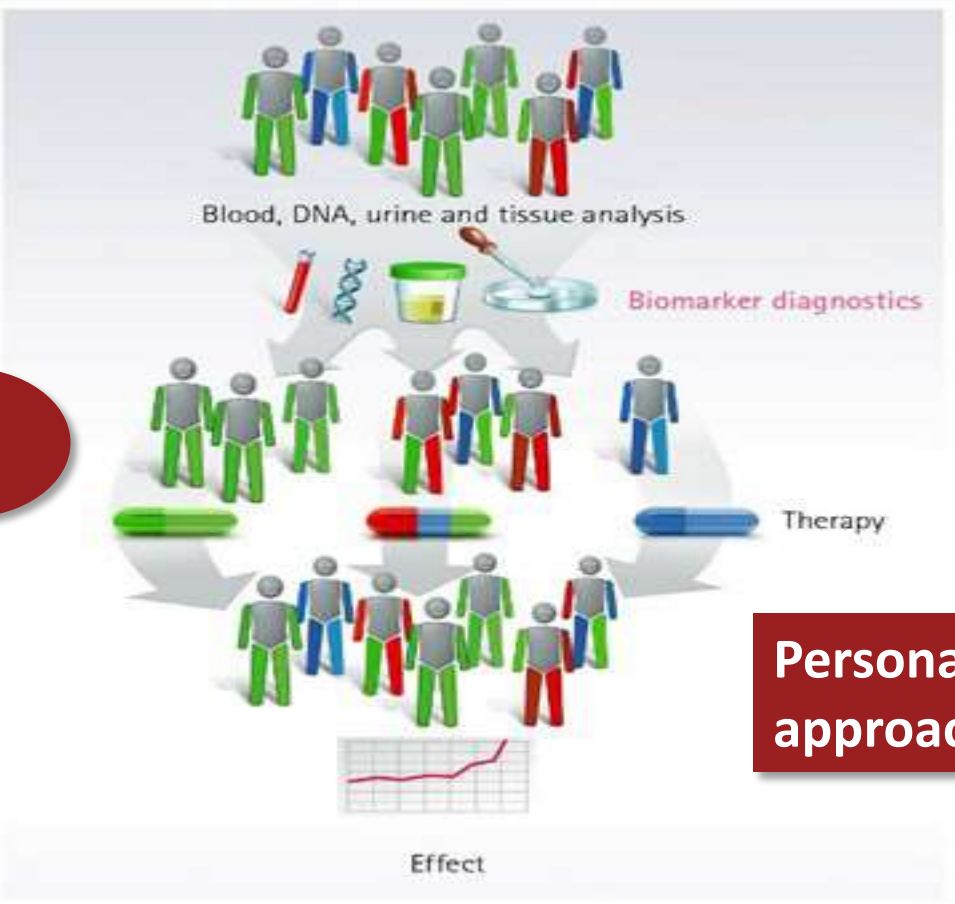


Source: Gartner (September 2013)

One size fits all



VS



Personalised approach

Adapted version of: Bayer Healthcare's, Personalised Medicine diagram
<http://www.bayerpharma.com/en/research-and-development/research-focus/oncology/personalized-medicine/index.php>

Accelerate Translation

Wealth Creation

Collaborative

STRATIFIED MEDICINE SCOTLAND – INNOVATION CENTRE

Primary care appointment



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



Secondary care appointment



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



Actionable insights fed to Patient Profile



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



NGS Lab

WGS analysis and primary analysis performed on patient sample



Annotation & interpretation



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

THANK YOU!



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