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'Personalised Medicine and the Big Bata Challenge'

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Providing the Evidence Base through Big Data

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New Value Frameworks, could be applicable to Big Data?

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Without data you are just another person with an opinion

W. Edwards Deming
What are talking about?

- Value frameworks? New...
- Big data...
Big data is data sets that are so voluminous and complex that traditional data-processing application software are inadequate to deal with them.
Big data challenges

- capturing data,
- data storage,
- data analysis,
- search,
- sharing,
- transfer,
- visualization,
- querying,
- updating,
- information privacy and
- data source.
The five v

- volume,
- variety,
- velocity,
- veracity,
- value
What are we talking about?

- Supercomputers
- Hipervelocity
- Hipervariety
- Trustworthiness
- ...

- Superhumans
New value frameworks

• So, what happened to the old ones?
• Safety and efficacy
• Balance between benefit and risk
• Budget impact
• Cost-effectiveness
• Others…
In real life...?
Efficiency... it depends on
In real life…?

- Who drives the car
- How the roads are
- When we drive the car (timetable)
- How much money we have
- Infrastructure of energy suppliers
- Ethical issues (climate change, …)
- Legal issues
Value depends on the technology and where it will be implemented.
Cost-effectiveness paradigm for diagnostics. Why it fails...

Lack of measures of efficacy in most medical devices / diagnostics
  No trials
Lack of measurement of the complexity of medical diagnostics and their value framework
  Costs (not all costs measured)
  Benefits (surrogated outcomes)
MCDA
(Multi Criteria Decision Analysis)

- Multicriteria decision analysis (MCDA) and stochastic multicriteria acceptability analysis (SMAA) are useful tools to assess the benefit-risk ratio
- Preferences of the decision makers regarding the relative importance of these criteria
- MCDA requires the weights of the criteria by the decision makers
INTEGRATE-HTA framework

INTEGRATE-HTA is an innovative, three-year FP7 project that ended in December 2015.

Aimed to develop concepts and methods that enable a patient-centred, comprehensive assessment of complex health technologies

The INTEGRATE-HTA Model helps to assess complex technologies which take context, implementation issues, and patient characteristics into account.
How could big data be integrated?

All models are wrong, but some are useful.

George E. P. Box
Data is better than flipping a coin,…to make a decision

Or not?
Which is the future of professionals?