

PATH Symposium

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HTA & Micro-costing Diagnostics in Oncology

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Outline

HTA

- Update WP5 Economic evaluation
- Collaboration TANGO-PATH

Micro-costing Diagnostics in Oncology

- Background
- Goal
- Method
- Preliminary results



Economic evaluation in PATH

Task 1: DEA: Organizational efficacy

- Relative efficiency measures of all pathology departments.
- Identify discriminating features contributing to efficiency of pathology departments in delivering a predictive diagnosis-based therapy advice.

• Task 2: CEA: Cost-effectiveness of predictive diagnostics

- Estimate average additional costs spent
 - 1) per additional advice for targeted treatment
 - 2) per targeted therapy advice that is followed on patient level.
- Comparison: NGS (PATH and other panel-based NGS analyses) versus single gene tests.



Data Envelopment Analysis (DEA)

	Input	Output (quality)
DEA	Costs of diagnostics (personel, consumables, equipment)	Number of test results within <10 days Number of tests with actionable marker Number of tests leading to therapy decision

Aim:

1. To benchmark efficiency

- (aim to be close to the most efficient within the group)

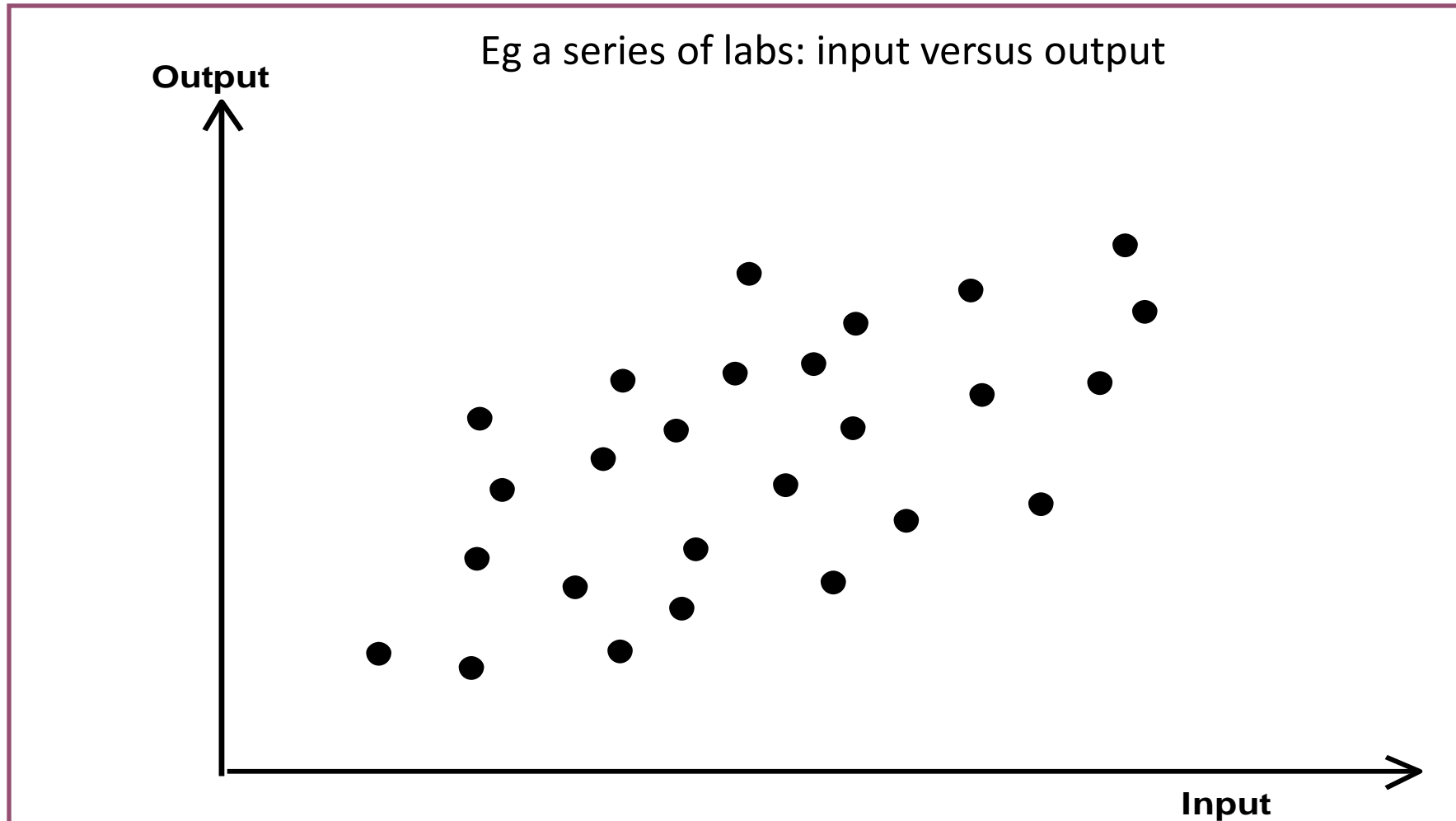
2. Optimisation of efficiency:

- Minimise input (costs) for given output (quality)
- Maximize output at given input

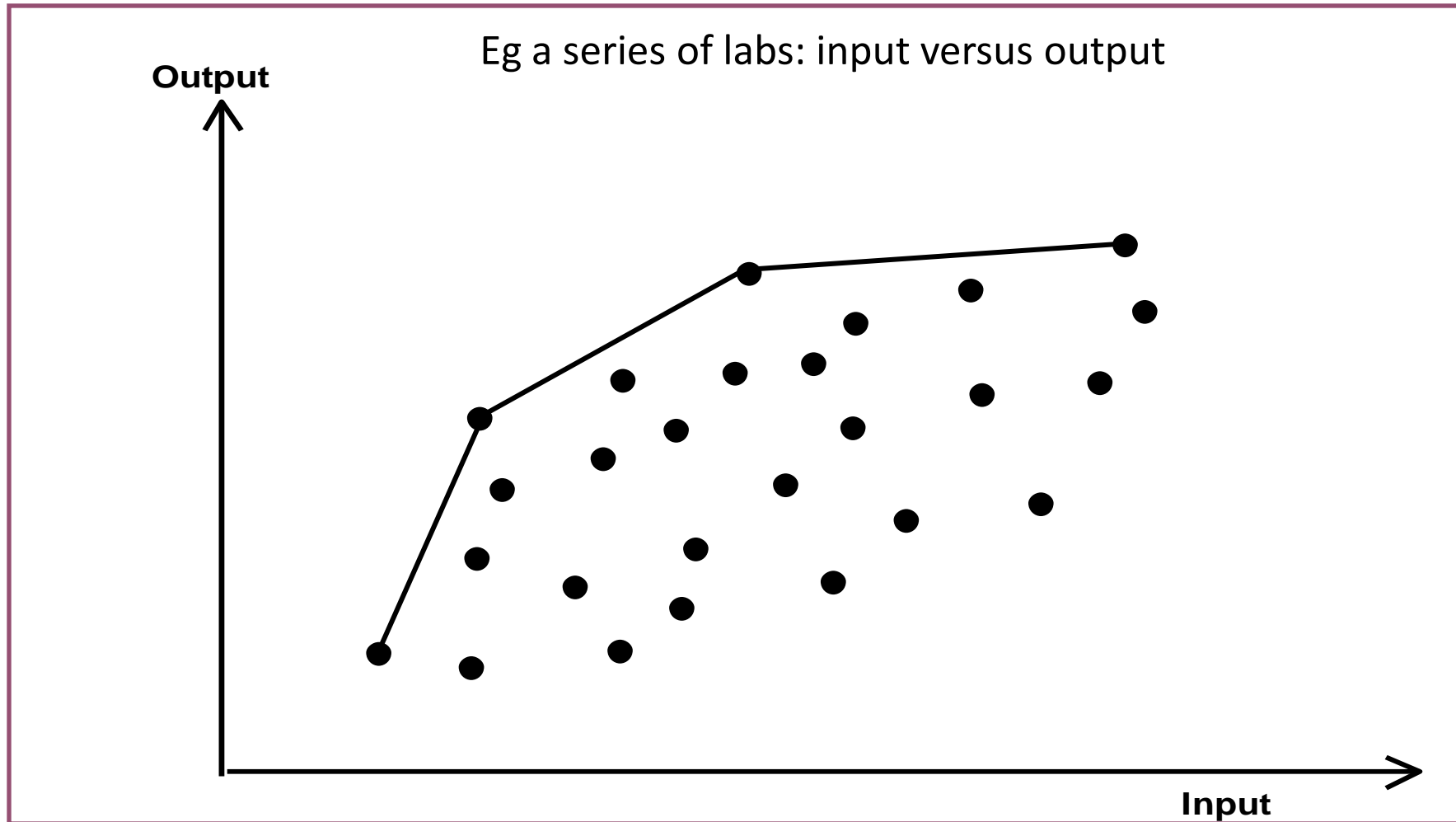
3. Which factors explain differences in efficiency



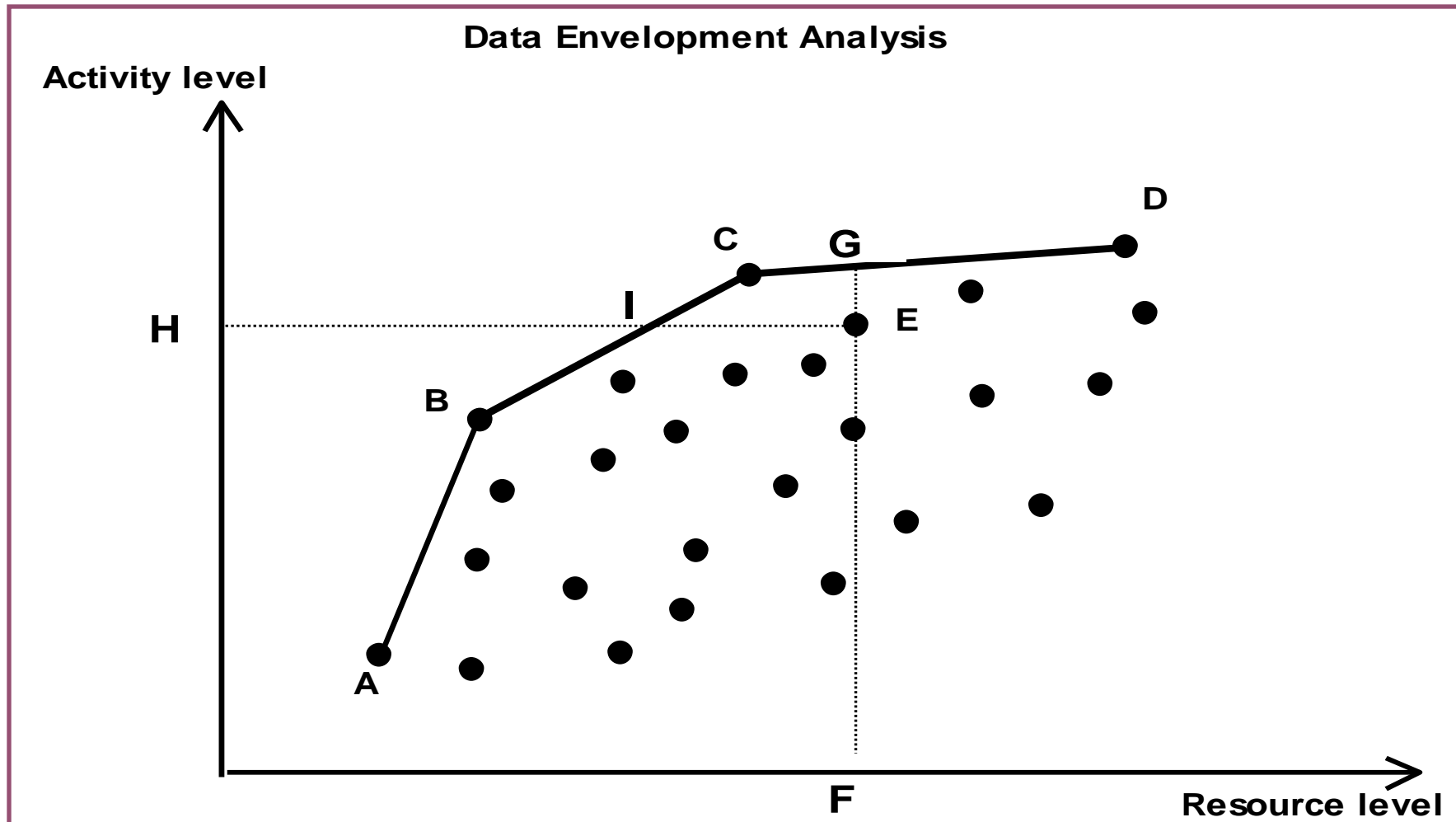
Data Envelopment Analysis (DEA)



Data Envelopment Analysis (DEA)



Data Envelopment Analysis (DEA)



Output efficiency E: FE/FG
Input efficiency E: IH/EH



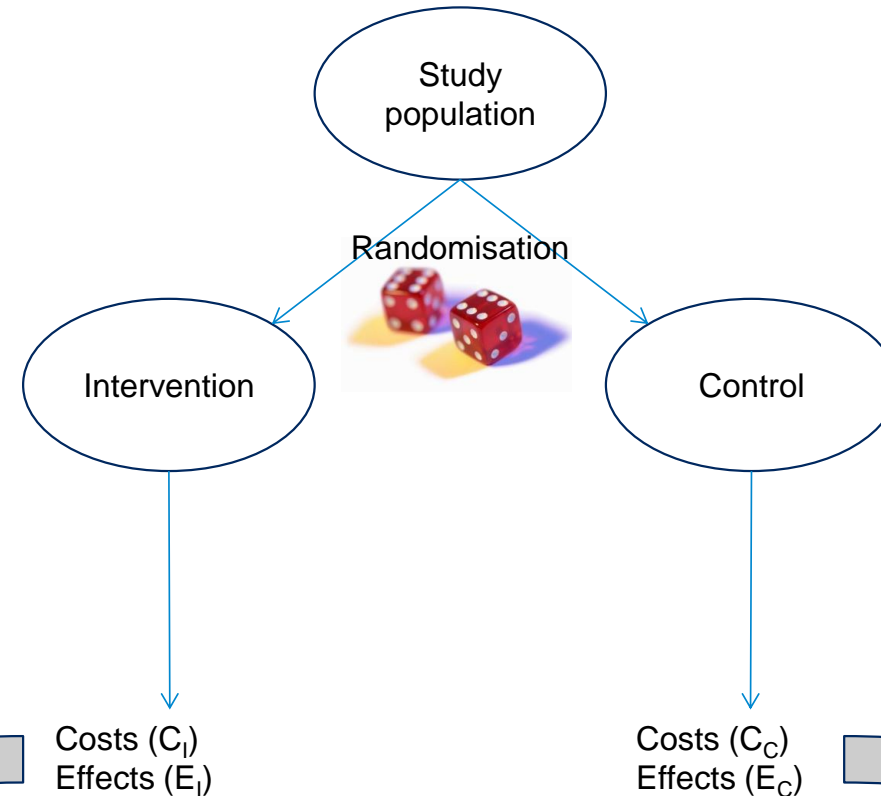
Cost-effectiveness analysis (CEA): why?

- ➔
- Limited budgets available for health care requires difficult choices
 - We want to **maximize outcomes** and **minimize costs**.
 - Economic evaluations provide the information needed to make these decisions



Classical CEA

- Comparison of costs and effects of two or more medical interventions
- Often performed alongside a randomized clinical trial
- Allows for collection of patient-level stochastic data and estimation of statistical uncertainty



$$\text{ICER} = \frac{C_I - C_C}{E_I - E_C} = \frac{\Delta C}{\Delta E}$$



CEA in PATH

	Input	Output
CEA	Total costs per person (diagnostics, treatment, follow-up)	Ideally: LYs gained, QALYs gained Suboptimal: incremental number of targeted treatments recommended and followed.

'Real-world' data:

- High external validity
- Real-life resource use
- True dosing & compliance

But: high-quality databases with long-term outcomes, patient and tumor characteristics, medical histories, quality of life and comorbidities = RARE !



Collaboration PATH - TANGO

Harmonisation of cost estimation

⇒ using the same measurement plan

Exchange of outcome data?

Collaboration to assess long-term cost-effectiveness?



Background

- Predictive diagnostics in cancer treatment
- Type of techniques:
 - Single-gene, targeted gene panels (NGS), WGS
- Sequential testing / targeted testing
- Literature – gap:
 - Up to date cost price of WGS
 - Comparison WGS with current diagnostics using same measurement method
 - Focus on cancer treatment



Goal

To calculate and compare the total cost of **WGS** and of various **standard diagnostic techniques** used in treatment of specific cancer types



Method

- Data availability
 - Dutch labs, Hartwig Medical Foundation (HMF)
- Micro-costing design
 - Measurement plan, consultations
- Cost characteristics
 - Standard case perspective
 - Average lab practice and suggested list prices supplier
- Allocation of costs
 - Capital, maintenance, software and operational costs



Due to confidential information, the slides containing the cost prices were removed

Questions?



PAT
Predictieve Analyse voor Therapie

