Integrating Financial Risk Protection into Economic Evaluation

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Cost-Effectiveness Analysis

- **Widely used method in health economic evaluation**
  - Estimates the economic value of a new healthcare intervention
  - Supports policy decisions, such as insurance coverage

$$ICER = \frac{Cost_{new} - Cost_{usual\ care}}{QALY_{new} - QALY_{usual\ care}}$$

Cost Components in Economic Evaluation

- **What types of costs from societal perspective?**
- **Health-related costs**
  - Out-of-pocket costs
  - Insurer-covered costs
- **Non-healthcare costs**
  - Income loss
  - Transportation costs
  - …

Cost Components in Economic Evaluation

- Some argue that CEA from a societal perspective is **comprehensive in capturing economic costs**
- However, important limitations remain

Limitations of CEA (1)

- **Does not explicitly capture the financial risks faced by individuals**
  - Stylized example:
    - New treatment A: $1K costs, fully covered by insurance
    - New treatment B: $1K costs, entirely out-of-pocket (OOP)

Limitations of CEA (1)

- **Does not explicitly capture the financial risks faced by individuals**
  - Stylized example:
    - New treatment A: $1K costs, fully covered by insurance
    - New treatment B: $1K costs, entirely out-of-pocket (OOP)
  - In standard CEA, A and B are assigned the same cost → no distinction
  - But social welfare differs: financial burden on individuals receiving B

Limitations of CEA (2)

- **Focuses on treatment level, not insurance policy level**
  - Stylized example:
    - New treatment A: $1K costs, fully covered by insurance
    - New treatment B: $1K costs, entirely OOP
  - Both may be deemed "cost-effective" in CEA

Limitations of CEA (2)

- **Focuses on treatment level, not insurance policy level**
  - Stylized example:
    - New treatment A: $1K costs, fully covered by insurance
    - New treatment B: $1K costs, entirely OOP
  - Both may be deemed "cost-effective" in CEA
  - But if insurance coverage is limited for B, it could:
    - Impose financial risk on patients: reducing the value
    - Lower uptake, diminishing the intervention's value at the population level

Keyword: Financial Risk Protection

- **Financial risk protection (FRP):** the extent to which **health systems** shield individuals from financial hardship caused by illness
  - Includes out-of-pocket healthcare/non-health costs

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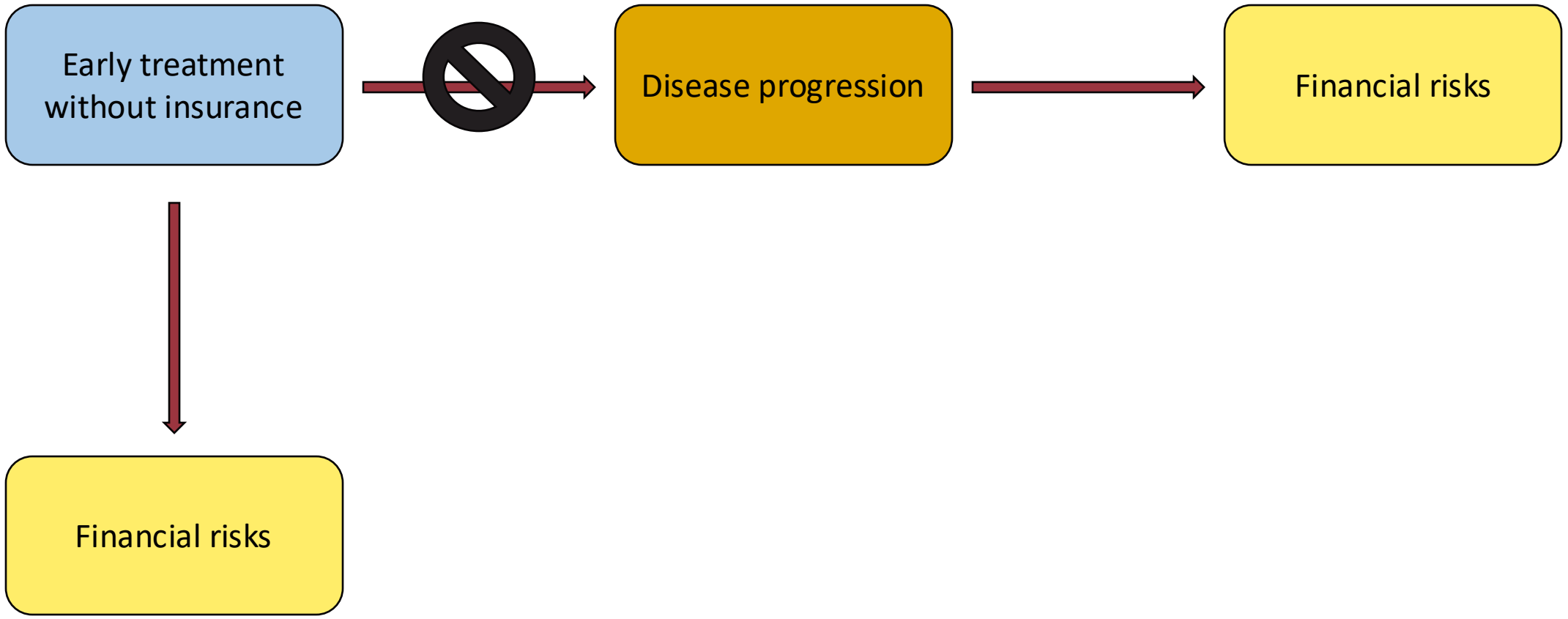
- **Financial risk protection (FRP):** the extent to which **health systems** shield individuals from financial hardship caused by illness
  - Includes out-of-pocket healthcare/non-health costs
- In some contexts: the extent to which **both medical intervention and health systems** shield individuals from financial hardship caused by illness

Typical Example

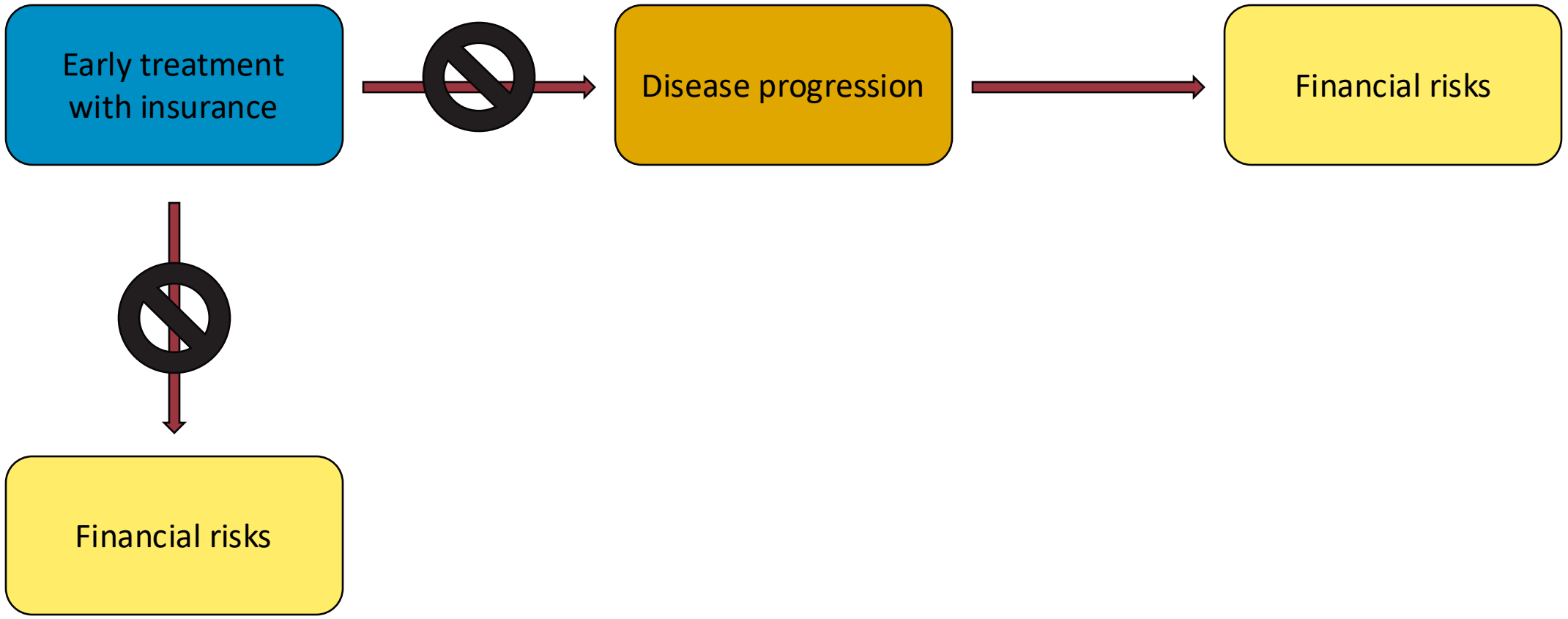
- **Effective early intervention**
- Examples:
  - Direct-acting antivirals for hepatitis C
  - Anti-obesity medications
  - Cancer screening
  - …
- **Goal:** Prevent progression to late-stage, severe disease

Early Treatment for Prevention

Early Treatment for Prevention



Early Treatment for Prevention



FRP Measures

- **Catastrophic health expenditure (CHE)**
  - When costs exceed thresholds (10%, 25%, 40%) of household income/consumption
- **Impoverishing health expenditure (IHE)**
  - Costs that push households below the poverty line or deepen existing poverty
- **Insurance value**
  - How risk-averse individuals value protection from the financial risk of uncertain events

Equity Implications

Applied Health Economics and Health Policy
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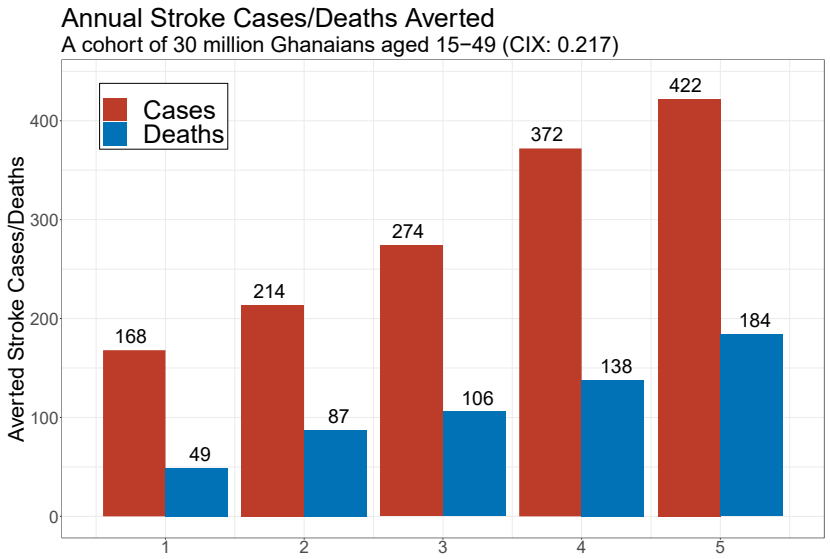
ORIGINAL RESEARCH ARTICLE

Health Interventions May Have Divergent Impacts on Health and Economic Equity: A Case Study of the Community-Based Hypertension Improvement Project in Ghana

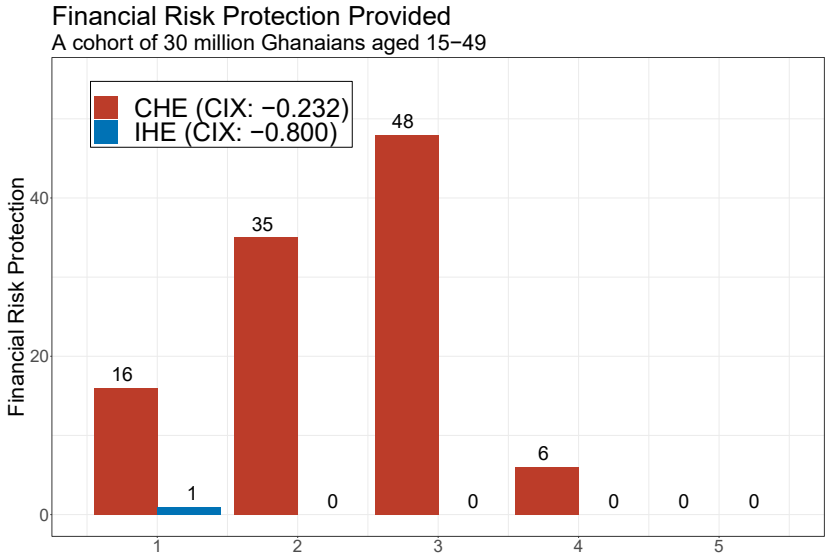
Yizhi Liang[1] · Yuqian Lin[1] · Boshen Jiao[1]

Health equity



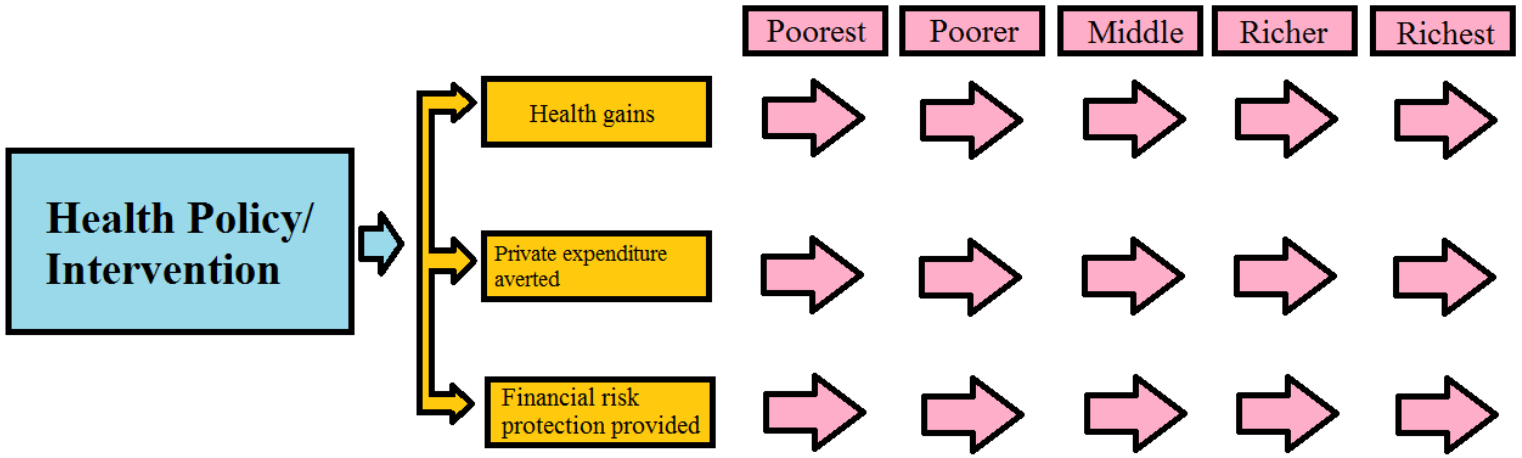
Wealth quintile: Poorest → Richest

Economic equity



Assessment Approach

- **Extended cost-effectiveness analysis (ECEA)**
  - **<u>Disaggregated analysis</u>**
    - Traditional cost-effectiveness
    - FRP
    - Equity



Source: Verguet, *Harvard T.H. Chan School of Public Health's Official Website*

Assessment Approach

- How about aggregated analysis?
- **Insurance value approach**

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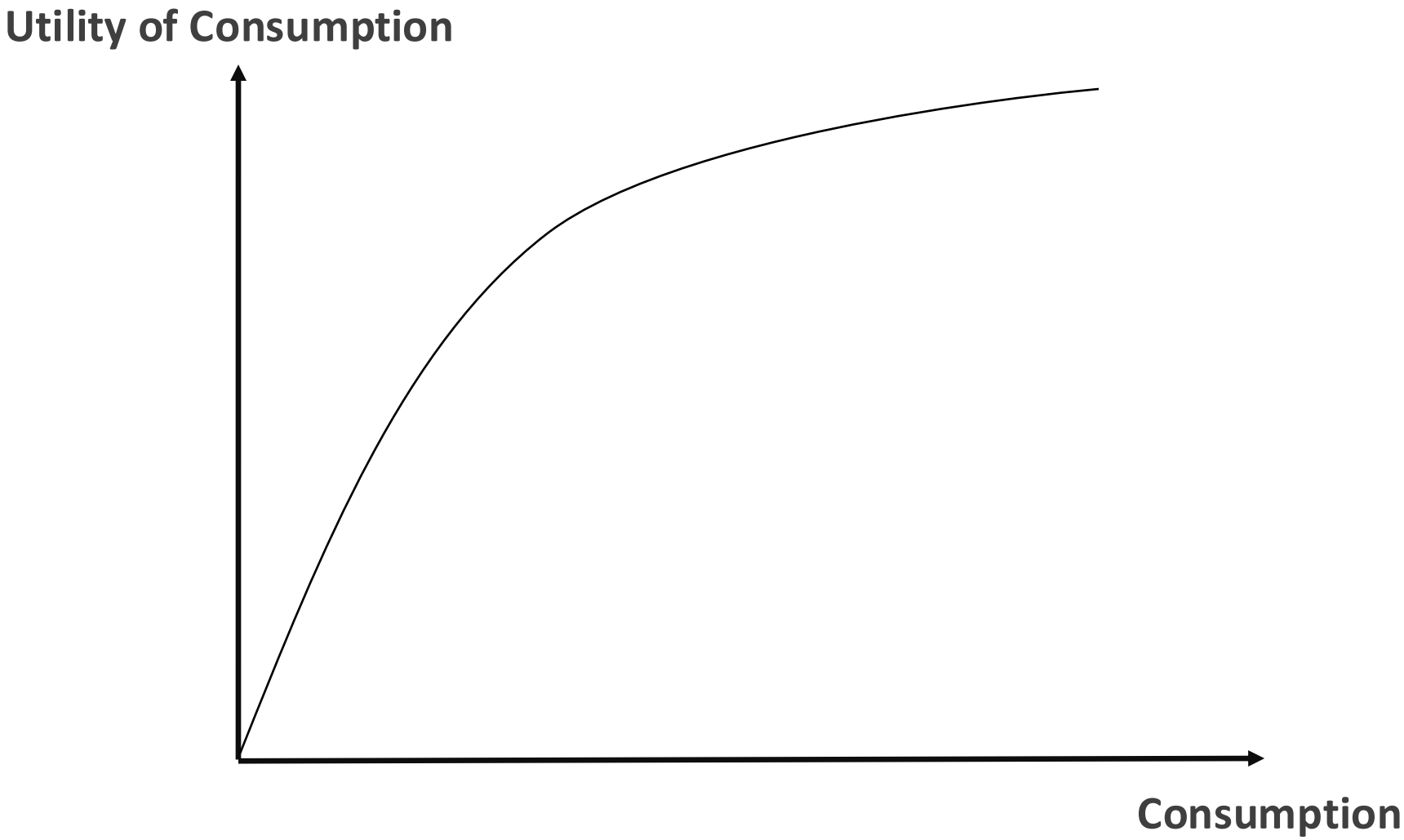
Insurance Value



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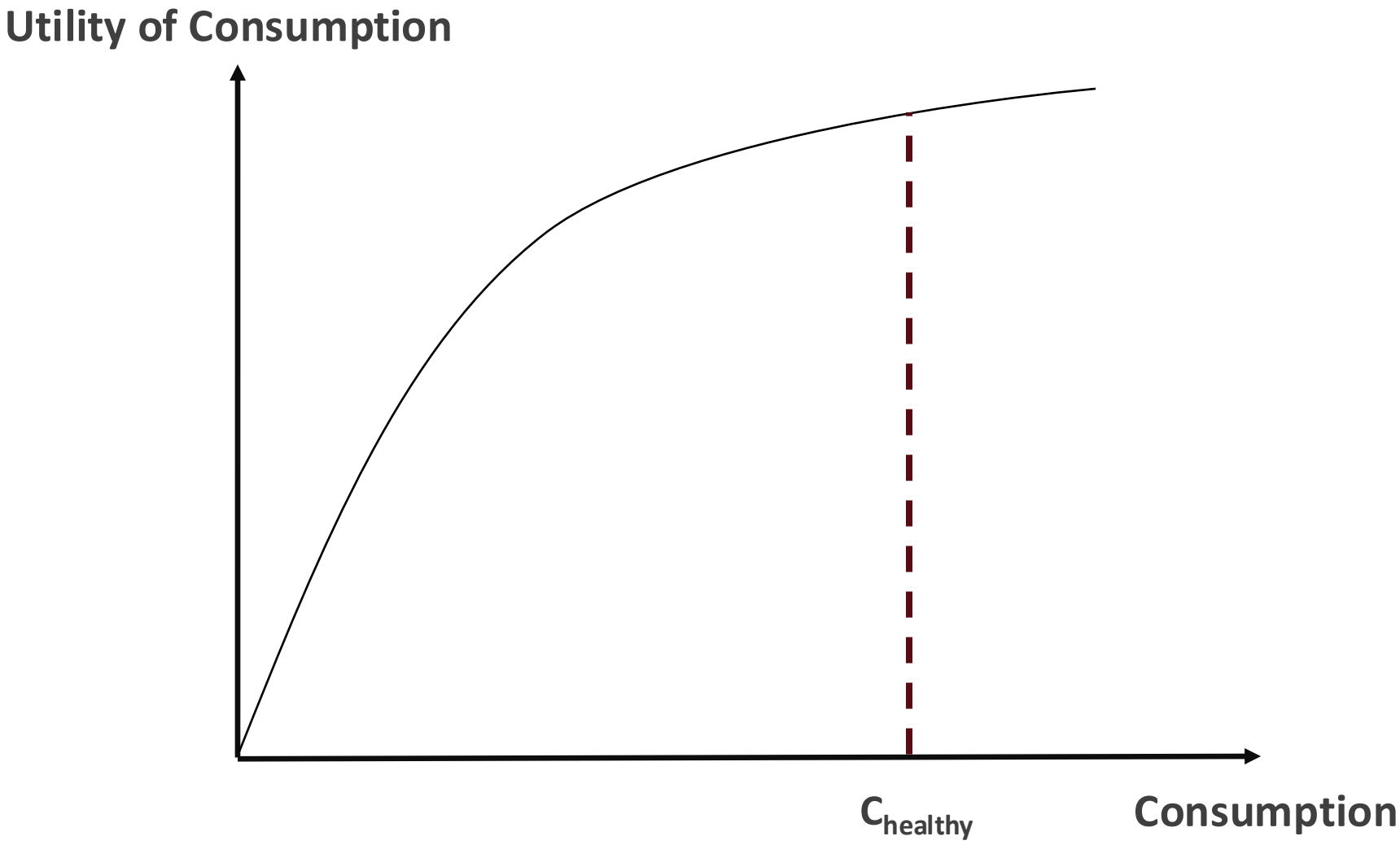

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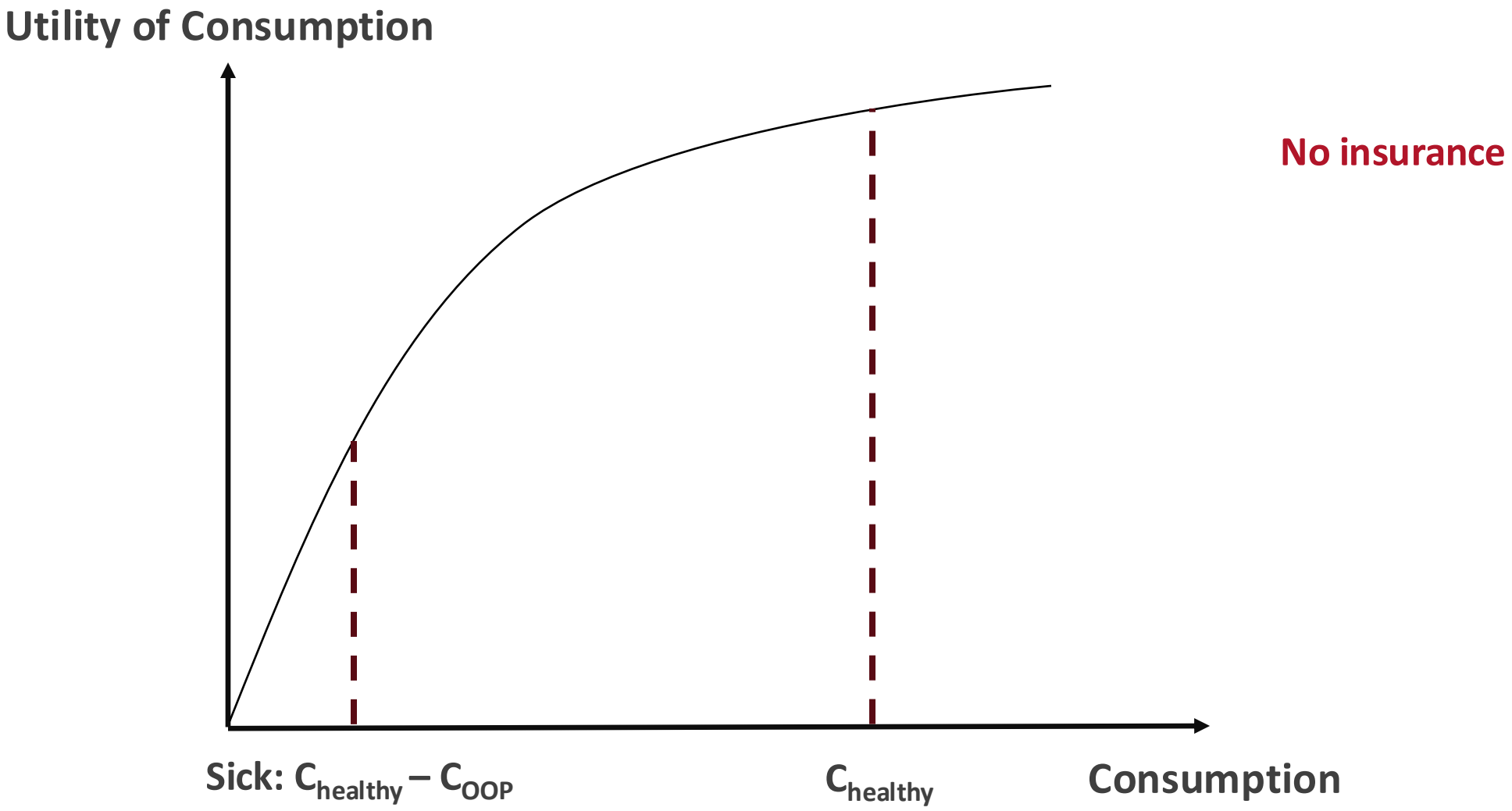

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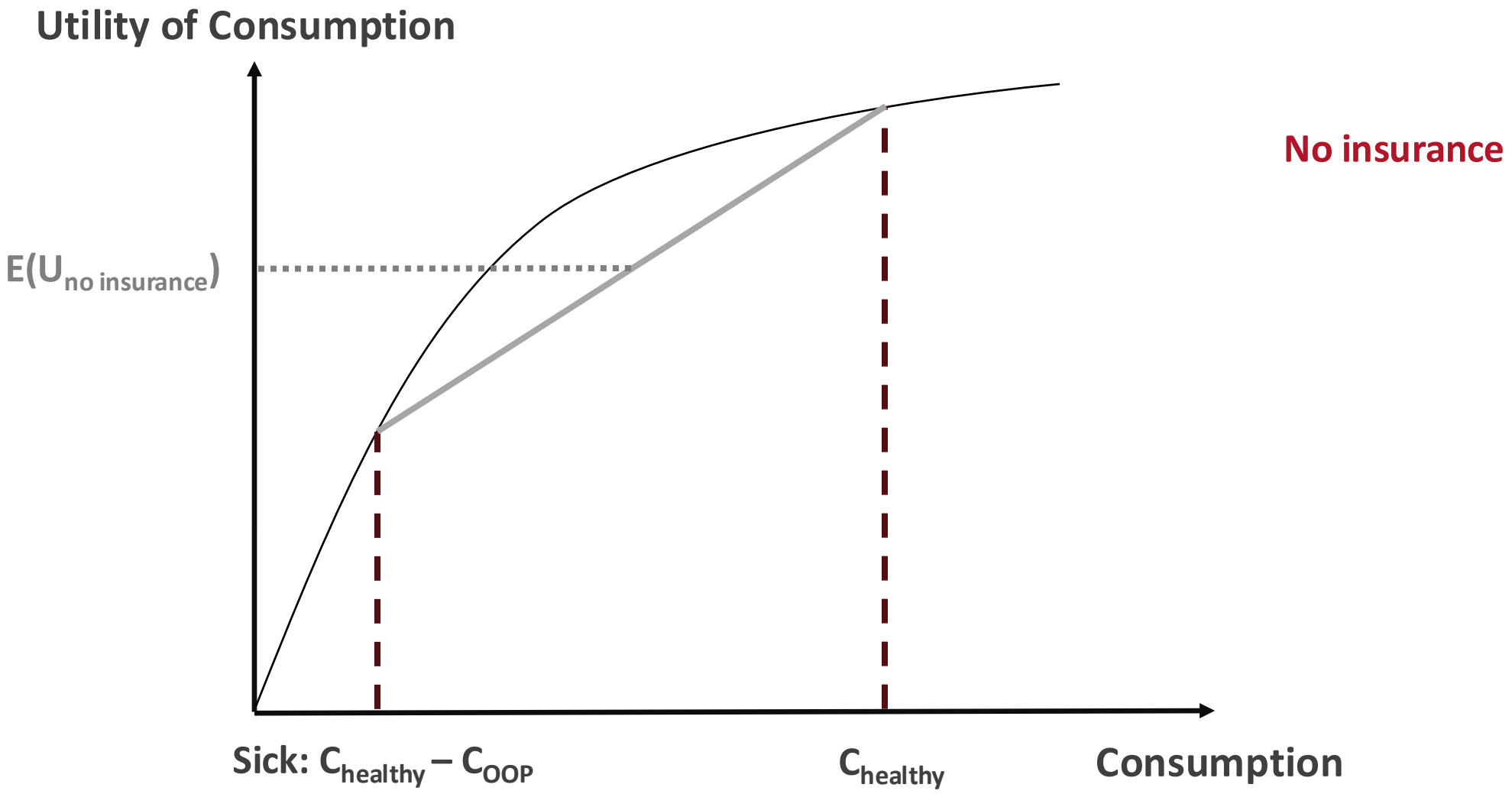

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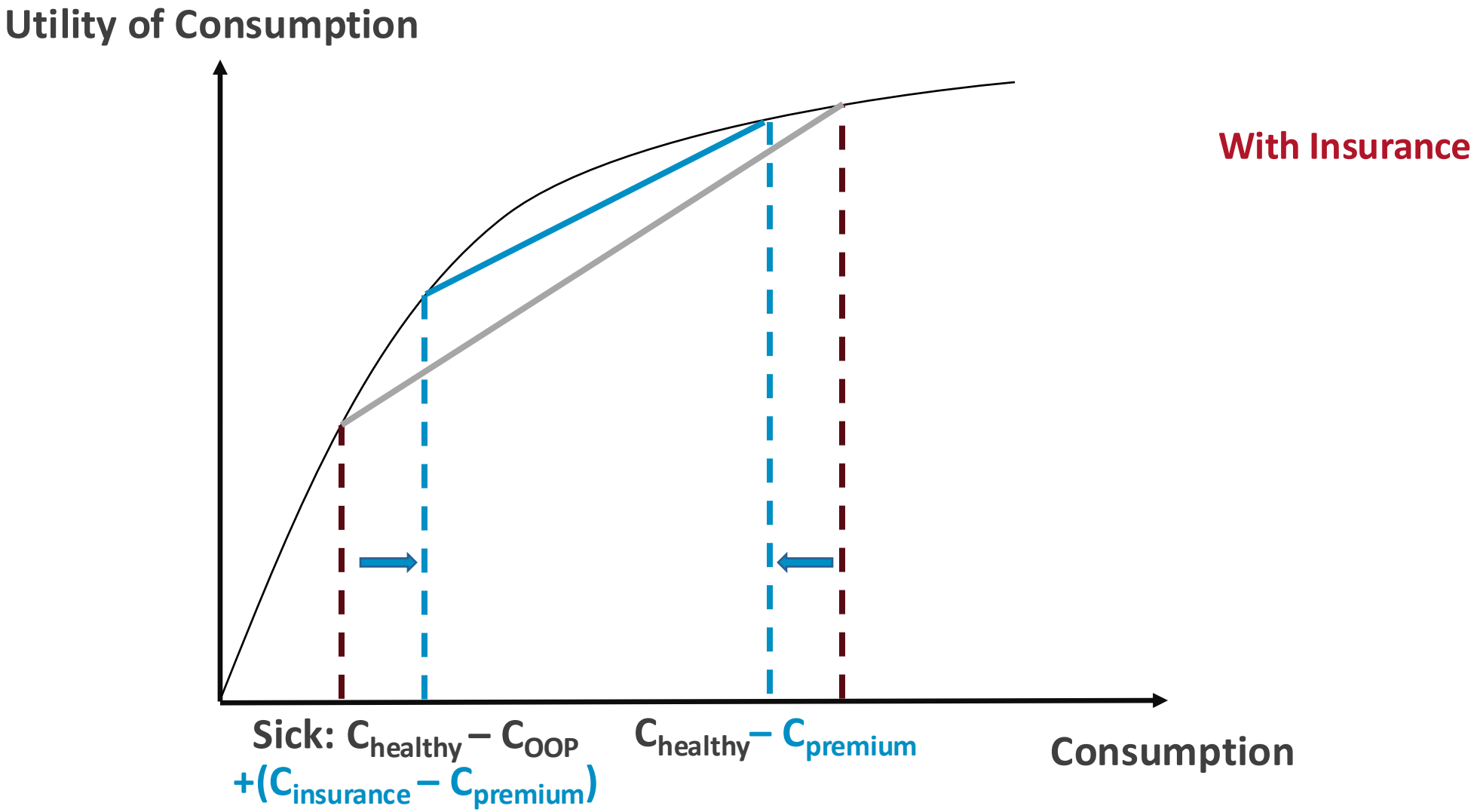

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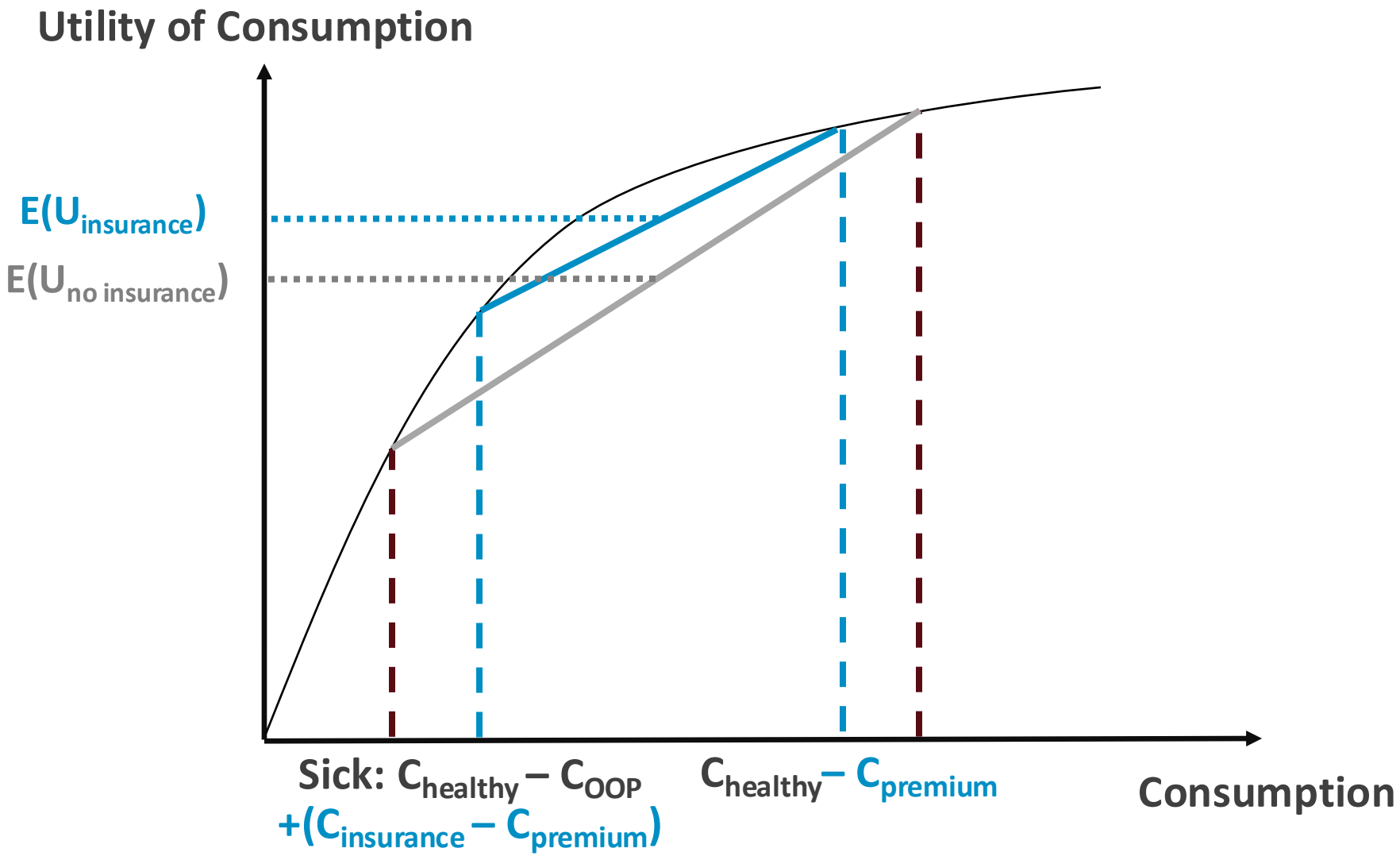

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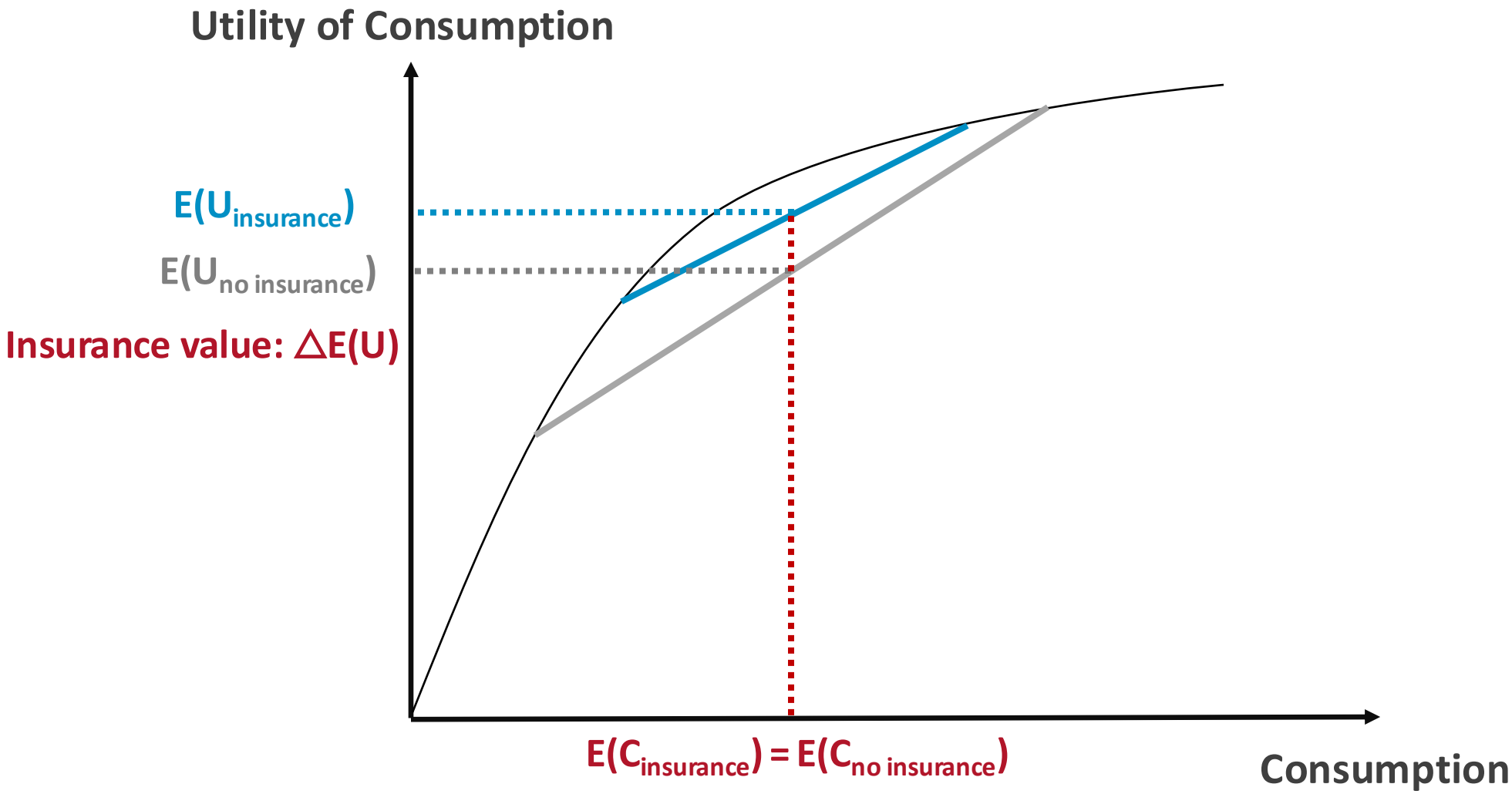

Take-Aways

- CEA, even from a societal perspective, often misses the **welfare implications of financial risk**
- **Effective early interventions paired with adequate insurance coverage** can deliver FRP value
- **ECEA** (disaggregated analysis) or **incorporating insurance value** can account for FRP in economic evaluation

Thank You

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