Measurement and valuation of productivity in health economic evaluations

Perspectives, methods and challenges

PRM49

Claudio Schiener (WifOR GmbH), Sarah Hofmann (WifOR GmbH), Malina Müller (WifOR GmbH)

Background, objectives & methods

- Productivity costs are "costs associated with production loss and replacement costs due to illness, disability and death of persons both paid and unpaid" [1].
- Differences in economic evaluations & cost of illness studies concerning pharmacoeconomic guidelines, study perspective & valuation [2].
- Study objective: Identify, analyze, categorize and compare existing methodologies and upcoming challenges of measuring productivity.

Pubmed (english) literature search:
Keywords: "Productivity, economic evaluation, indirect costs" →N=181
Additional desk research: N=13

69 articles removed

N=125 economic evaluations

18 articles removed

N=107 including productivity costs

5 articles removed

N=102 studies describing valuation method

Results: Overview over methodological aspects

Methodological aspects in health economic evaluation

Perspective [7]

Societal (direct & indirect costs)
- Foundation in welfare economics
- Resource usage & effects outside the health care sector (welfare maximization / utilitarianism)

Payer (direct costs)
- Foundation in cost-effectiveness analysis
- Cost determination in health care sector as primary objective

Cost dimension

Paid work
- All productive activities on the official labor market
- Reliable valuation estimates, but vary (see below)

Unpaid work
- "…productive activities outside the official labour market done by individuals for their own households or for others" [8]

Productivity type

Absenteeism, presenteeism & multiplier / compensation effects
- Absenteeism: absence from productive activities due to illness, disability or premature death (number of sick days)
- Presenteeism: reduced ability to perform productive task while at work
- Multiplier/compensation effects: Spillover effects to coworkers [3]

Monetarization

Monetarization figures

Reported wage	Average wage	Minimum wage	GDP per capita
Precise but rarely reported	Less precise but commonly available and can be stratified by industries or occupations		

Time dimension

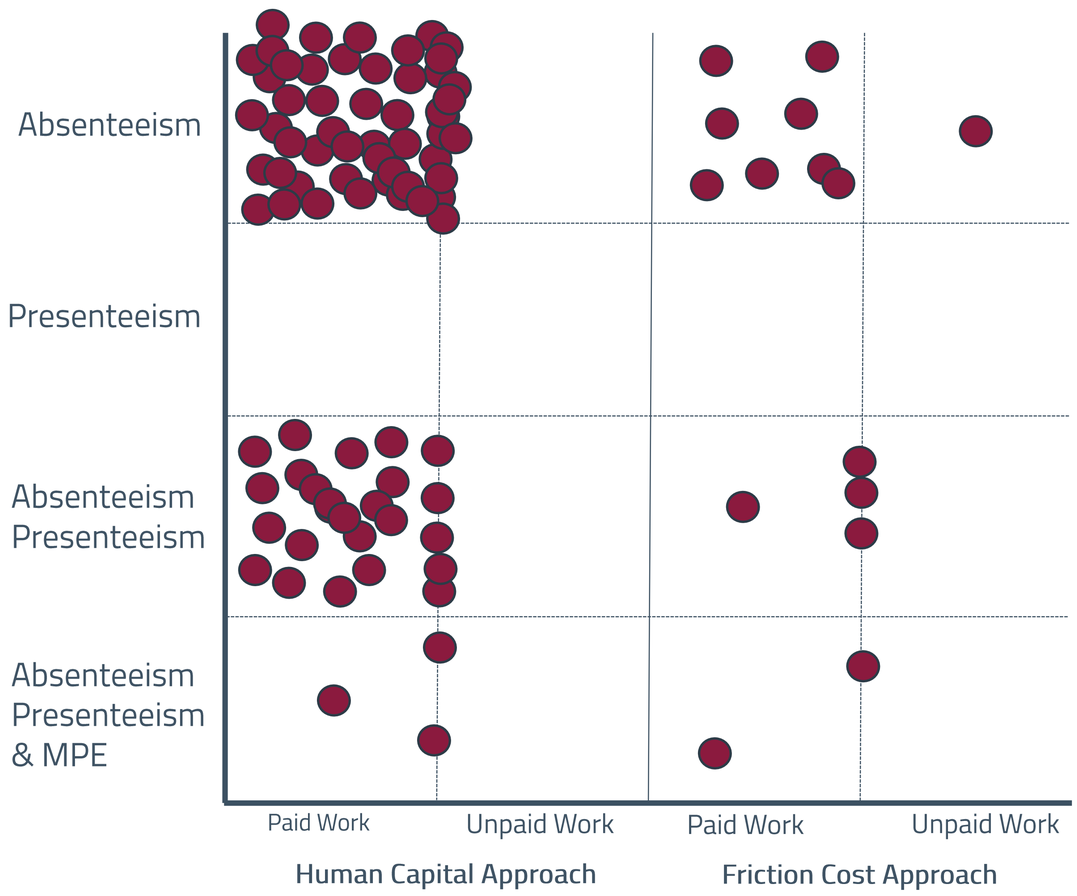
Human capital approach
- Present value (PV) of lost wage
- Full employment

Friction cost approach
- PV of lost wage till replaced by (un)employed

Replacement cost approach
- Uses wage rate of a corresponding market activity

Opportunity cost approach
- Lost production valued by (potential) wage

Results : Methodological categorization of identified studies



Conclusion & future challenges

Conclusions

- This study summarizes methodological aspects concerning the inclusion of productivity costs used in current health economic studies
- Most study apply human capital method for monetarization of lost absenteeism (presenteeism), despite broad critique in the literature
- Heterogeneous wage estimates: reported wages → GDP/capita
- Results are (partly) incomparable between countries and diseases

  ➔International standardized pharmacoeconomic guidelines needed [4]

Future challenges

- Standardization of pharmacoeconomic guidelines
- Renunciation of the assumption of 1:1 productivity losses (multiplier & compensation effects) & precise estimations (and regular updating) of the friction period differentiated by countries, industries etc. [3]
- Greater consideration of presenteeism and unpaid work especially for treatments of elderly [4] and methodologies of including unpaid labor [3]
- Comparison of employee vs. employer productivity estimates [5]
- Including family spillover effects [6]
- Determining the feasibility of including presenteeism intensity

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Contact:
claudio.schiener@wifor.com
sarah.hofmann@wifor.com
malina.mueller@wifor.com
wifor.com