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# Should Indirect Cost of Illness be Included in Pharmacoeconomic Analysis: Survey Among Polish Decision Makers and Experts

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## Abstract

**OBJECTIVES:** The indirect costs seem to be a relevant part of a total cost of illness, although there is no consensus whether they should be included in pharmacoeconomic analysis and which methods of calculations should be used. The aim of the survey was to collect data on practice and preferences of decision-makers and experts in health economics concerning the role and methods of calculating indirect costs in Poland.

**METHODS:** The questionnaire contained 18 questions covering the need for indirect costs (both presenteeism and absenteeism) calculation in economic evaluations, measures used to calculate indirect cost and difficulties while performing indirect costs estimation. Questionnaires were handed out to participants of the 3<sup>rd</sup> International Symposium Evidence-Based Health Care in Cracow, mailed to the Polish Pharmacoeconomic Society members and distributed directly to experts.

**RESULTS:** Fifty four pharmacoeconomists, health economists and decision-makers returned completed questionnaires. Mean age of respondents was 33,3±7,6 years; mean experience in health economics was 4,7±5,2 years. 43% (23/54) of responders had non-economic background, 41% (22/54) reported government as a work environment; 30% were each users and doers of health technology assessment reports. All responders (excluding one) indicated that indirect costs should be calculated in pharmacoeconomic studies (strongly agree 58%, agree 40%). Experts pointed out that indirect cost were calculated only in 24% of reports and represented on average 22% of total costs. Twenty three (i.e. 43%) responders indicated a human capital approach as the best method to estimate cost from societal perspective; a friction cost method came second best 11% (6/53); 42% (22/53) respondents had no opinion. The doers of economics evaluations pointed to GDP per capita (61%, 11/18), average salary (61%, 11/18), and costs of sick pay or injury benefit (61%, 11/18) as measures which should be used to assess production losses.

**CONCLUSIONS:** Indirect costs are considered important component of economic evaluations of healthcare interventions in Poland. The lack of consensus and widely accepted methods for indirect cost evaluation support further research.

## Background and objectives

Indirect costs reflect the reductions in productivity in market and household work due to morbidity and mortality [1]. The inclusion of indirect costs of illness in pharmacoeconomic studies is still a subject of considerable debate and the attitude towards indirect costs is likely to vary in each country [2]. Also there is no consensus which methods of calculations indirect costs should be used – human capital approach (HCA) or friction cost (FCM) or Washington panel method. According to Polish HTA guidelines analysis taken from social perspective can be only additional to the ones of the entity financing health care services (public payer, patient, other payers) [3]. The aim of the survey was to collect data on practice and preferences of decision-makers, experts in health economics, doers and users of economic evaluation of health technology concerning the role and methods of calculating indirect costs in Poland.

## Methods

The questionnaire contained questions covering the need for indirect costs (both presenteeism and absenteeism) calculation in economic evaluations, measures used to calculate indirect cost and difficulties while performing indirect costs estimation. During the pilot study (taken during the 11<sup>th</sup> ISPOR Annual European Congress 2008) it emerged that the questionnaire was complex and time consuming. Final version was shortened from 25 to 18 questions. Questionnaires were handed out to participants of the 3<sup>rd</sup> International Symposium Evidence-Based Health Care in Cracow (October 2008), mailed to the Polish Pharmacoeconomic Society members (January – February 2009) and distributed directly to experts from Polish HTA agency, the National Institute of Hygiene, pharmaceutical and consulting companies (January – April 2009). The questionnaire contained following questions:

- Education/Organisation/Number of years of experience.
- What is your role in health technology assessment process?
- Do you think that indirect costs should be incorporated into economic analysis?
- In how many percent of reports done/used by you were indirect costs of illness incorporated?
- Which method of measuring indirect costs is the best?
- What kind of difficulties do you find during indirect costs estimation?
- Which element should be used to calculate indirect costs of illness?
- What is the burden of absenteeism caused by one of the employees in the company?
- Which aspects of productivity losses caused by illness should be incorporated into indirect costs calculation?

Data were collected and encoded. Records with the same answers to all questions and no answer in the main section were excluded. Descriptive statistics were performed with Microsoft Excel 2007.

## Results

Fifty eight questionnaires were completed from more than 300 handouts or mailed versions (response rate <20%). Four questionnaires with no response in main section were excluded from final analysis. 14 (26%) of the 54 responders were economists and 40 (74%) were non-economists. Doers and users were equally represented, 18 and 19 responders respectively. Characteristics of the study participants are shown in table 1.

Table 1. Participants characteristics.

Participants, n	54
Age, years (sd)	33,3 (7,6)
Education, n (%)*:	
- economic	14 (25,9)
- medical	23 (42,6)
- pharmaceutical	15 (27,8)
- other	10 (18,5)

\*9 participants with double educational background.

Organisation, n (%):	
- academia	16 (29,6)
- government	22 (40,7)
- pharmaceutical industry	10 (18,5)
- consulting	7 (13,0)
- other	4 (7,4)
Role in HTA process, n (%):	
- doer	18 (33,3)
- user	19 (35,2)
- both	4 (7,4)
- other	19 (35,2)
Experience in health economic, years (sd)	5,2 (4,7)

\*5 participants with double affiliation.

## Conclusions

The costs from social perspective are considered important component of economic evaluations of healthcare interventions in Poland. However, indirect costs are rarely included in the economic analyses in Poland. Methodological differences, pointed inconsistencies, lack of consensus on methods for indirect cost evaluation support further research, the development of robust and widely accepted methodology, and popularization of this approach to the cost analysis.

## Results c.d.

All responders (except for one) indicated that indirect costs should be calculated in pharmacoeconomic studies (strongly agree 58%, agree 40%) – figure 1. However, experts pointed out that indirect costs were calculated only in 24% of reports done or used and represented on average 22% of total costs. Indirect costs were calculated by doers of HTA with HCA method (65%) – figure 4.

Figure 1.

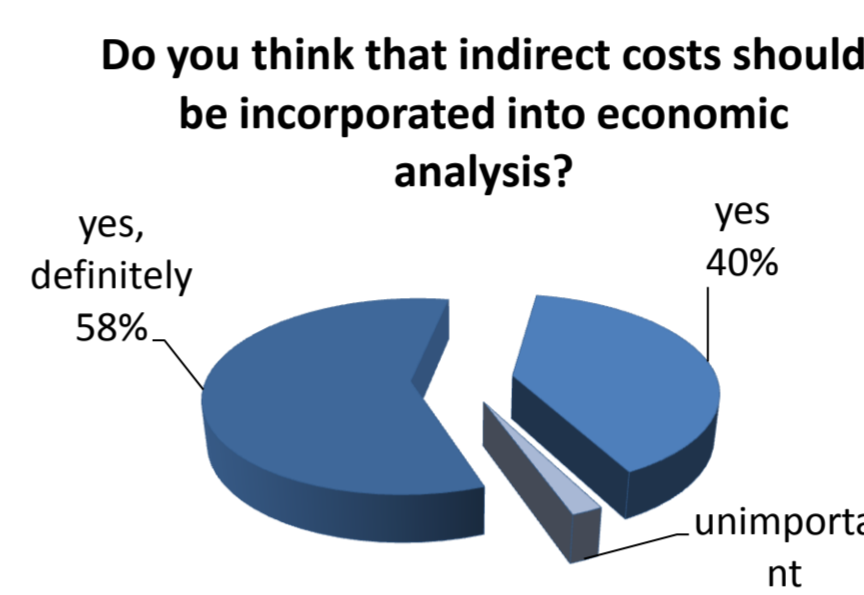


Figure 3.

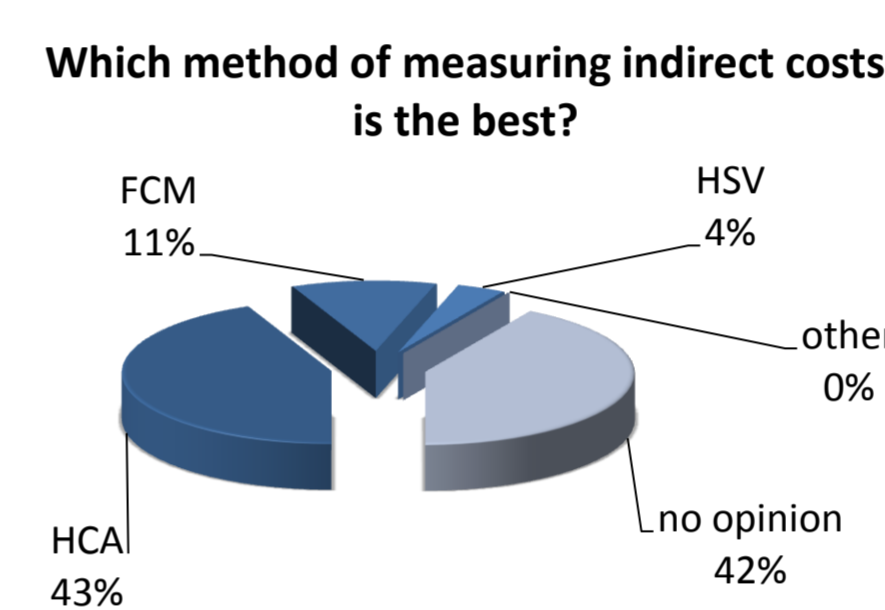


Figure 5.

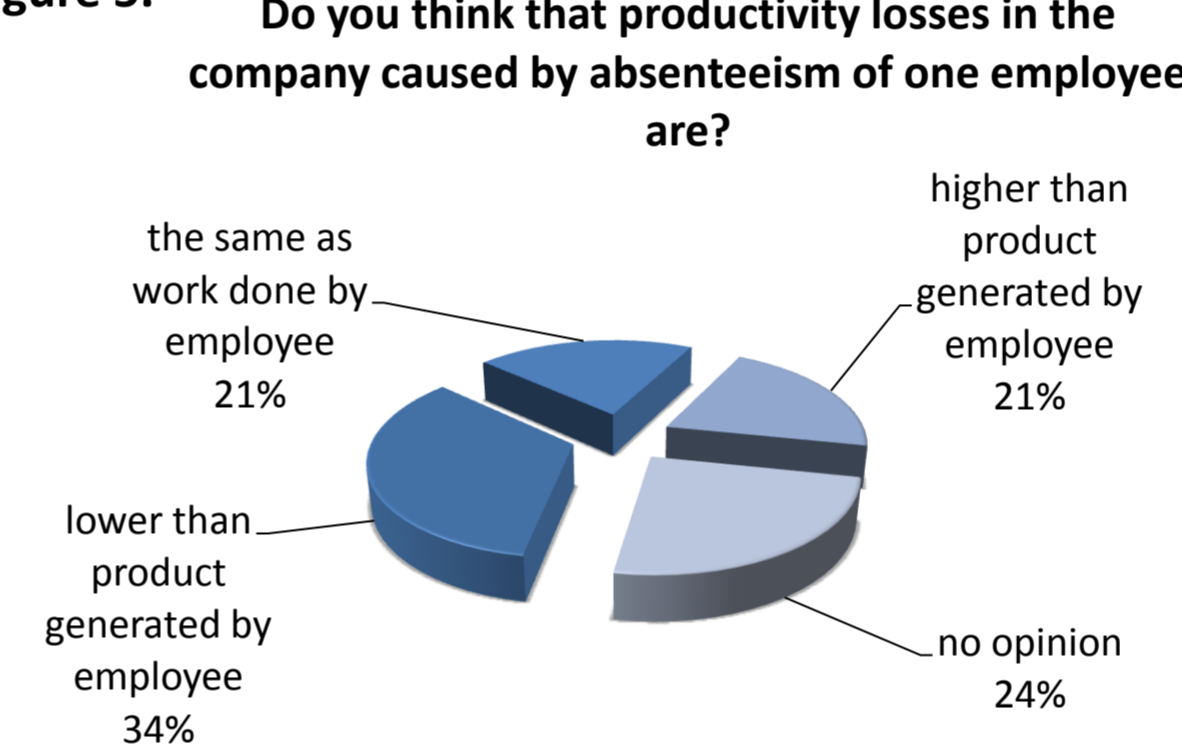


Figure 6.

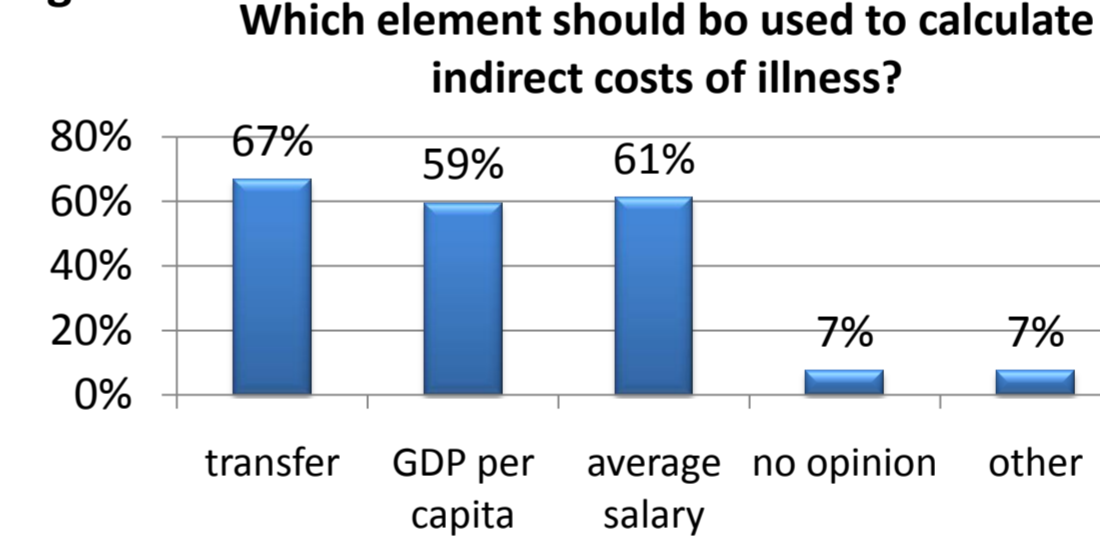


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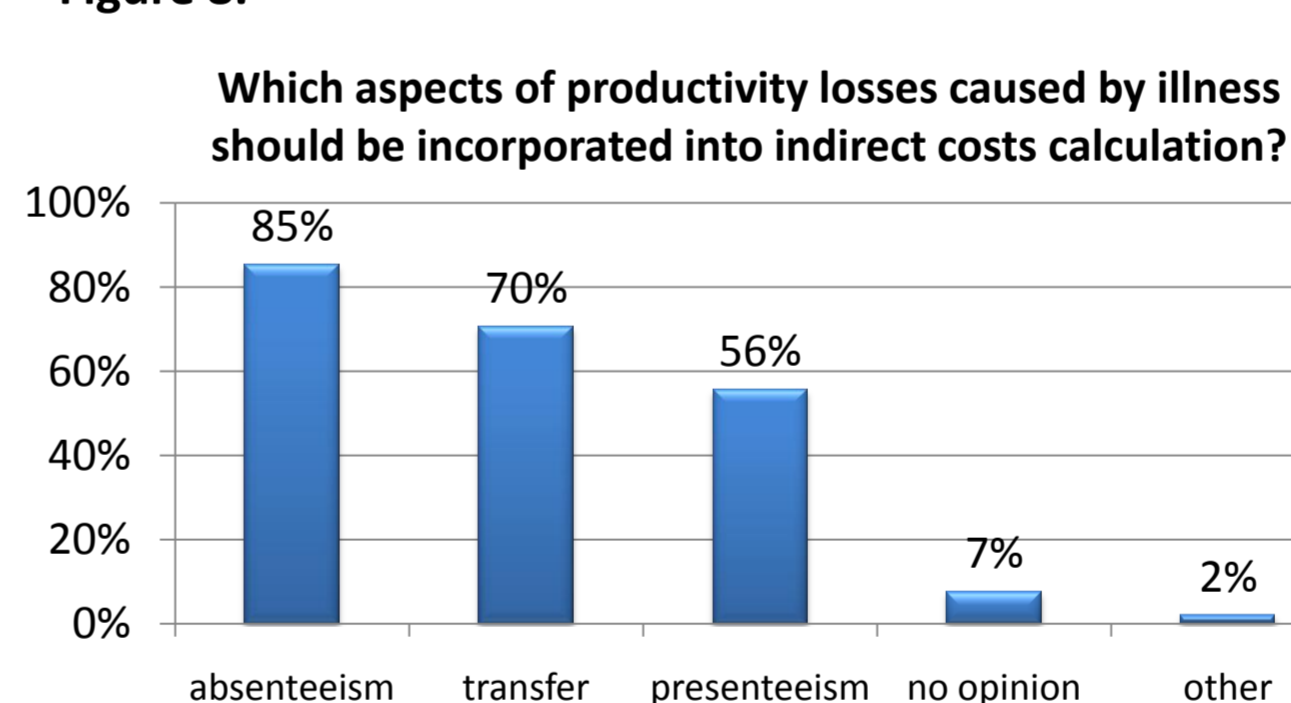


Figure 2.

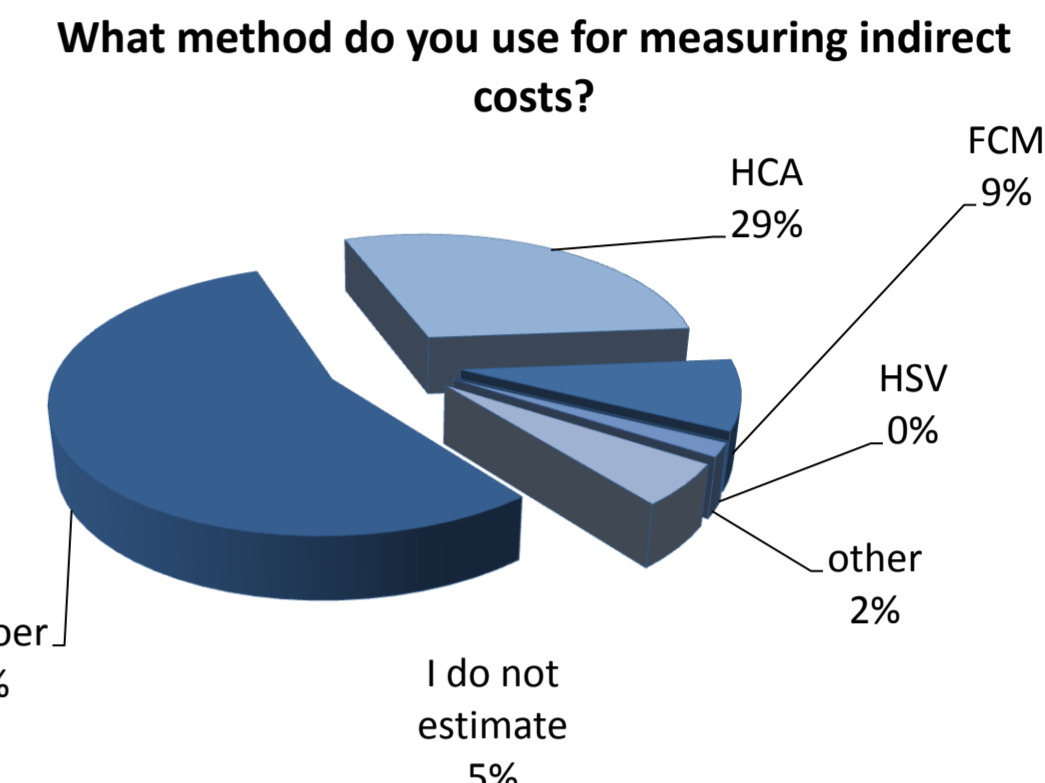
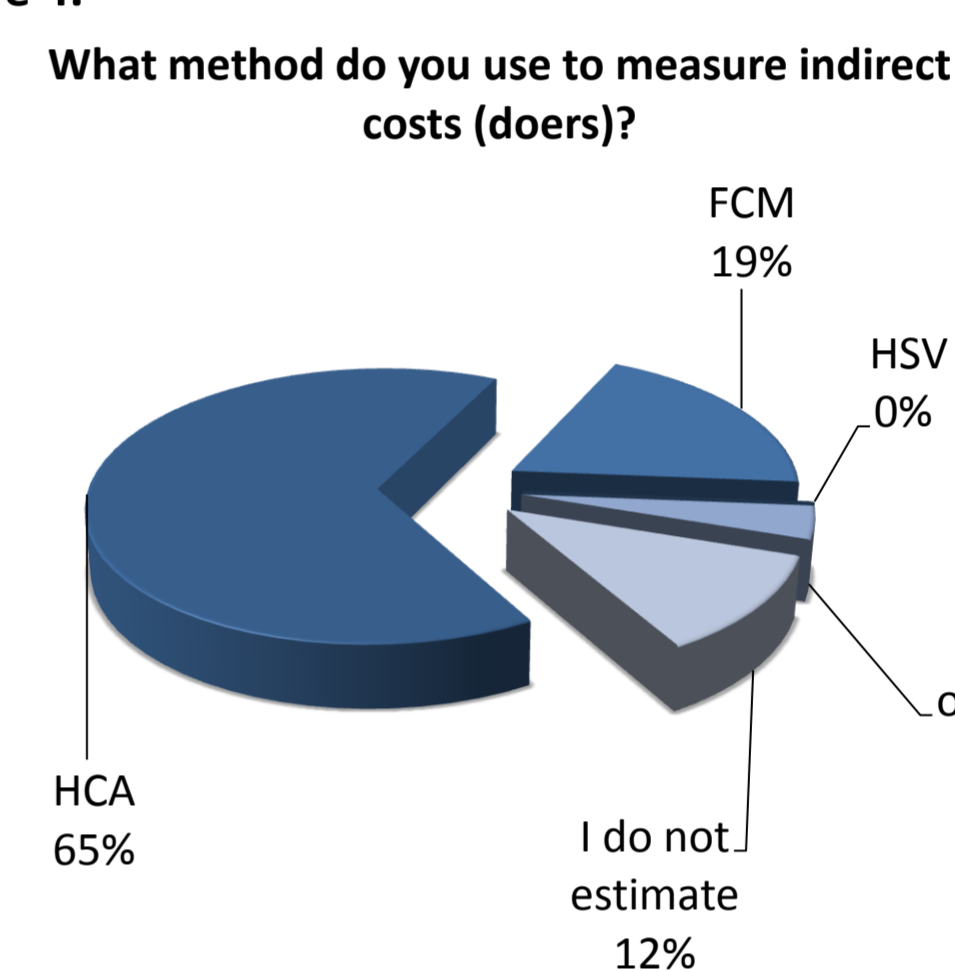


Figure 4.



## HTA DOERS

Figure 7.

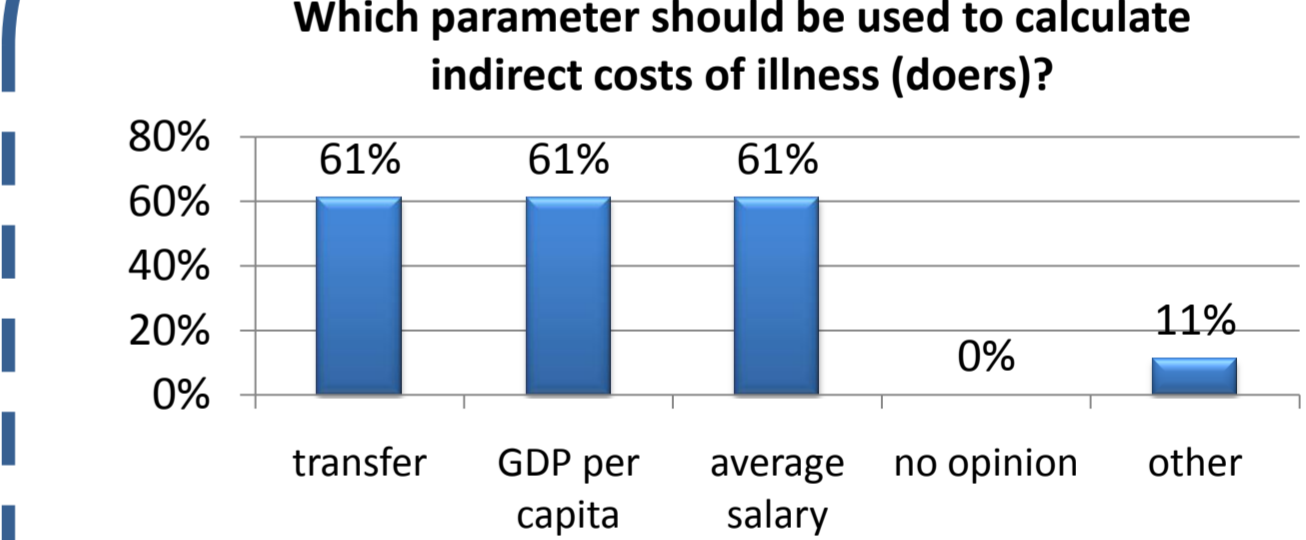
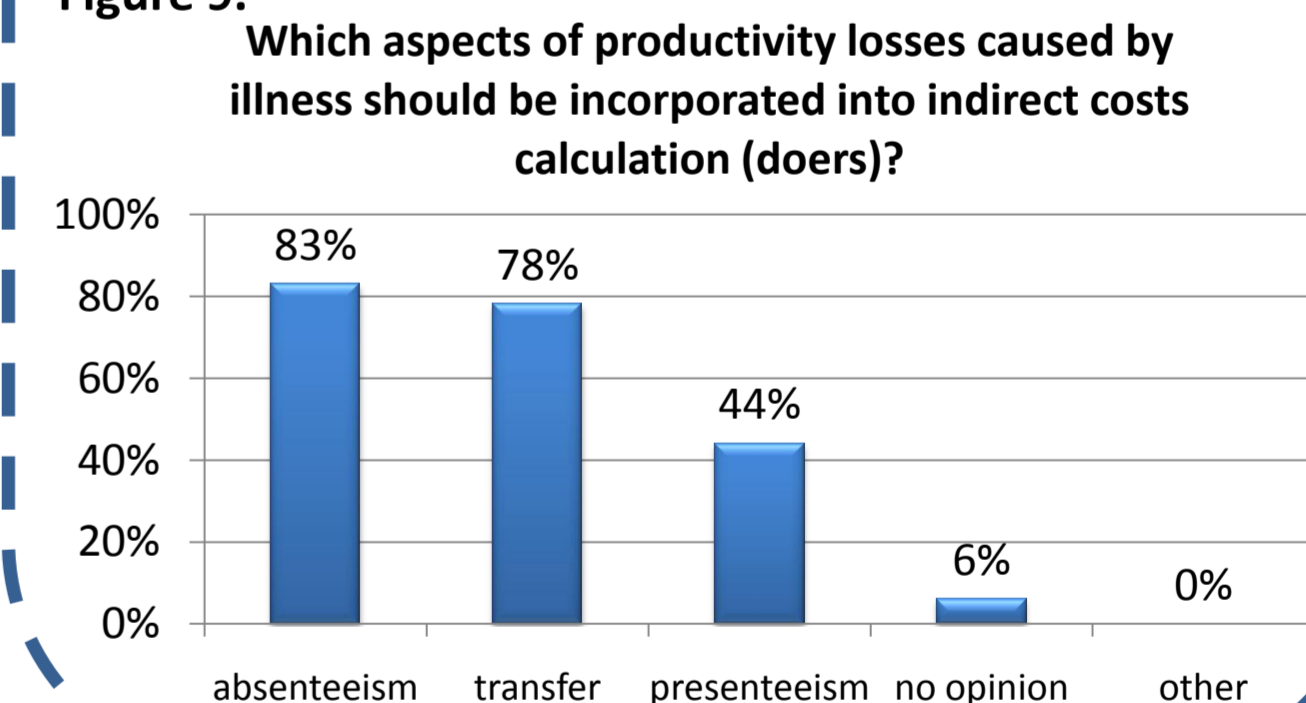


Figure 9.



Twenty three (i.e. 43%) responders indicated a human capital approach as the best method to estimate costs from societal perspective; a friction cost method came second best 11% (6/53); 42% (22/53) respondents had no opinion – figure 3. The doers of economic evaluations pointed to GDP per capita (61%, 11/18), average salary (61%, 11/18), and costs of sick pay or injury benefit (61%, 11/18) as measures which should be used to assess production losses – figure 7.

Absenteeism, sick pay/injury benefit and presenteeism were the aspects which should be included into indirect costs calculation, respectively 83% (15/18), 78% (14/18) i 44% (8/18) of doers of HTA reports – figure 9. Similar results were obtained in a whole population that took part in the study – figure 6 and figure 8. Other people's productivity losses incorporated into calculation of indirect costs (i.e. taking care of an ill person by a family member) were considered important by 91% of responders.

Productivity losses in the company caused by absenteeism of one employee were pointed to be lower than product generated by this employee before the illness (other employees take over some responsibilities) – 33% (18/54), the same 20% (11/54) and higher 20% (11/54) due to work disorganization in company – figure 5.

Identified inconsistencies:

- Recognition of human capital approach as the best method to estimate indirect costs with productivity losses in the company caused by absenteeism of one employee on lower level than product generated by this employee (approach closer to friction cost method).
- Consideration of a sick pay/injury benefit (67% of responders) as aspects which should be included into indirect costs calculation (according to definition of indirect cost, transfer cost should not be included).

## References

- [1] Gold M, Siegel J, Russell L, Weinstein M. Cost-effectiveness in health and medicine. Oxford University Press. New York 1996
- [2] International Society For Pharmacoeconomics and Outcomes Research. Pharmacoeconomic Guidelines Around the World. www.ispor.org [accessed September 2009].
- [3] Agency for Health Technology Assessment. Guidelines for conducting Health Technology Assessment (HTA) April 2009. (Preliminary). www.aotm.gov.pl [accessed September 2009].

## Acknowledgments

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