

# What does it cost the patient to see the doctor?

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## SUMMARY

*Against a background of increasing demands on limited resources, there will be an emphasis on undertaking studies that relate benefits of an intervention to the costs that are incurred in their production. Patient costs are an important, but often overlooked, part of an economic exercise and include transport costs, loss of employment, and loss of leisure time. This paper highlights the theoretical difficulties inherent in deriving patient costs and suggests a pragmatic framework to derive unit costs in these areas. We demonstrate that these costs are not inconsiderable when compared with the cost of a general practitioner consultation.*

**Keywords:** *general practice; economic evaluation; patient costs.*

## Introduction

AGAINST a background of increasing demands on limited resources, evidence-based medicine seeks to direct interventions into areas where there is sound evidence of benefit,<sup>1</sup> while health economics facilitates the optimum utilisation of proven health resources between effective interventions.<sup>2</sup> A health economic evaluation relates health outputs (benefits) of a medical intervention to its inputs (costs) in order to assist purchasing decisions. With an increasing emphasis on a primary care-led National Health Service, the costs incurred in general practice will be an important part of any exercise. The perspective of an exercise — who is asking the question and why — will determine which costs to count.<sup>3</sup> Health economists usually advocate a societal viewpoint, which attempts to capture all relevant costs whoever bears them. If a costing exercise is to be comprehensive, patient costs should be included in considering the cost of a medical consultation. However, this is rarely the case. Including this element can lead to a higher estimate of a consultation cost, which may affect the conclusion of a study.

Direct costs represent the resources consumed by an intervention and associated events. Direct costs associated with primary care include general practitioner (GP) time, practice nurse costs, drugs, community services, and hospital care. Indirect costs incorporate the patient's experience and can be tangible: productivity losses (waged time) or activities that do not attract a direct remuneration (non-waged time), such as loss of leisure time, undertaking activities that do not attract a remuneration, or time of those unemployed. Excluding non-waged time from a study not only discriminates against those not in employment or those in retirement but overlooks the contribution of activities, such as child-rearing, which have an economic contribution but receive no payment. Intangible costs are costs associated with pain, anxiety,

suffering, or loss of life. It is difficult to ascribe a monetary value to these elements, which are rarely considered in an economic analysis.

Despite representing the largest group of decision makers, the patient's perspective is seldom represented in an economic analysis. This is primarily due to difficulties in the estimation of indirect costs and the cost of obtaining this data. Clearly, local costs should be used wherever possible to reflect local circumstances but there will be resource implications in obtaining this data. In order to decide whether resources should be invested in collecting such data it is helpful to have an indication of the level of costs that could be expected.

In this article, we identify some of the problems in identifying and allocating costs incurred by patients visiting the doctor and suggest a simple framework to identify the costs of waged time and non-waged time. We describe a range of costs incurred by patients in the Exeter area attending their GP and local hospital. In some cases patients were accompanied by a carer and there will be additional lost opportunities for the carer; however, we have not considered this level of detail here.

## Direct patient costs

The primary direct costs associated with attending a consultation will be transport costs associated with the activity. In some cases other costs, such as child-minding, may be relevant.

## Indirect patient costs

### *Problems with deriving loss of waged activity*

Costs associated with loss of economic activity are likely to form the major component of indirect costs but there remains a lack of consensus over how they should be derived.<sup>4</sup> From a societal viewpoint, work loss may have a direct effect on gross national product, although the contribution towards economic performance will vary between patients. Attributing full economic costs assumes that the economy is working at maximum efficiency but in many cases the loss of a productive unit will have no effect on output. Losses may be made up when returning from short-term absence and for longer periods as the patient can be replaced by an unemployed worker, in which case only the training costs are relevant.

The perspective of a costing exercise will dictate which costs to count. From a patient perspective the relevant cost will be loss of net income. From a societal perspective a relevant approach would be to cost the gross income of each patient to reflect loss of production. Here we cost lost waged time on the basis of the United Kingdom average wage, uplifted by 12% to reflect employers' National Insurance and superannuation contributions. As we are focusing on short periods of time, we assume that the work cannot be undertaken by an unemployed worker so no adjustment is made to reflect the employment rate.

However, in many cases, leisure and work time may overlap and difficulty may arise in separating these elements when illness and medical interventions have implications for both loss of work and leisure. For example, a patient attending a hospital outpatient department in the afternoon may make up his or her lost employment by staying extra time on return to work, in which case the cost of his or her attendance is unwaged time.

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### Problems with non-waged costs

Greater difficulties arise when evaluating non-waged costs.<sup>5</sup> One approach is to cost leisure time at 25% of wage cost<sup>6</sup> but this figure is derived from transport economics and is of doubtful relevance to medical interventions. In view of the lack of consensus on how non-waged costs should be derived, we suggest a pragmatic approach based on the principle of opportunity cost; that is, when resources are limited, resources directed into one activity will be at the expense of a lost opportunity in another and that the cost of the primary activity should be measured in terms of the lost opportunity of the activity that is being replaced. Ideally, the input of each type of activity foregone would be costed separately but this presents theoretical and practical problems. Again, we take a pragmatic approach and propose that loss of non-waged time is at the expense of lost domestic activity and value this lost opportunity as the average cost of domestic labour.<sup>7</sup> The shadow price for this activity is the domestic wage rate.

### A local study to derive patient attendance costs

#### Method

Transport costs, time incurred, and type of activity loss of 510 adults attending their GP at the author's practice, 100 local hospital medical outpatient attendances, and 100 casualty attendances were determined by interview. Demographic details of source data are shown in Table 1. As the time of day may determine the characteristics of consulting patients, interviews were spread equally across the day. As a first approximation for transport and loss of employment costs it was assumed that the point of final destination was the point of departure.

Work loss was costed at the average gross earnings of £8.71 per hour uplifted by 12% to reflect National Insurance and superannuation. Loss of non-waged time was taken as the lost opportunity of domestic activity, costed at £4.57 per hour (the average domestic wage).<sup>8</sup> Patients were allocated loss of waged or non-

waged time irrespective of age. Car costs were 39.8p per mile (based on AA recommended rates, 1000–1500cc car, 10 000 miles per year). When public transport was used direct expenditure was identified.

### Results

Disaggregated data is shown in Table 2. The average costs (waged, non-waged, and transport) incurred by patients attending a GP surgery were £4.84 if aged over 65 years and £5.45 for patients under 65 years of age. Medical outpatients and A&E attendances incurred costs of £15.13 and £22.68 respectively.

### Discussion

Wherever possible, costs that are based on local studies, and that reflect the context of the costing exercise being undertaken, should be used. Caution should be used in generalising from our data. The proportion of the study population that did not own a car and who did not live in local authority accommodation was lower than the national average, which may be reflected in wage and transport costs. However, this study does provide us with a starting point in considering the impact of including patient costs of receiving medical care.

There is no gold standard for evaluating costs in many areas of health care and some problems in deriving costs incurred by patients have been described. An alternative view is that changes in waged and non-waged costs are captured by changes in quality of life, when this is measured as an outcome, so that including them among the costs would result in double counting.<sup>9</sup> However, in this paper we consider only the cost element of an economic evaluation.

In view of the practical difficulties and lack of consensus in this area among health economists we have proposed a simple, pragmatic approach and suggest that the gross wage is used as a proxy for loss of patient waged time and the domestic wage rate

**Table 1.** Demographic characteristics of St Thomas Medical Group and local providers compared with England and Wales.<sup>a</sup>

	St Thomas Medical Group <sup>b</sup> (%)	Community and Hospital Trust catchment areas (%)	England and Wales (%)
Households with dependent children	27.0	26.0	30.0
Lone parents as percentage of population	1.2	1.2	1.5
Population of pensionable age	17.8	24.0	17.9
Males >75 years	2.4	1.9	2.6
Females >75 years	4.6	7.7	5.2
Houses rented from local authority	12.5	13.5	20.0
Houses rented unfurnished	6.5	4.1	3.5
Households with no car	28.0	26.0	32.0
Population with long-term illness, all ages	10.7	12.2	12.1

<sup>a</sup>Census data from the Office of Population, Census and Surveys 1991. <sup>b</sup>Practice area covers a population of 38 898, of which 86% are urban and 14% rural; 75% of the practice area population are registered with the group. Jarman index = 5.

**Table 2.** Disaggregated data for patients' costs when attending a GP surgery, hospital medical outpatients, and A&E.

Activity	Sample size	Average transport cost (£)	Average time (origin to origin)	Patients taking time off work (%)	Average costs incurred by patient (£)
GP surgery (>65 years)	92	0.64	55 minutes	0.0	4.84
GP surgery (0–65 years)	418	0.49	55 minutes	14.7	5.45
Medical outpatients	100	3.30	1 hour 54 minutes	32	15.13
A&E	100	2.75	3 hours 03 minutes	40	22.68

Average A&E time taken as 2 hours; emergencies via ambulance not included. Average hospital outpatient time taken as 1 hour. Child attendance data obtained from accompanying adult.

for non-waged time. Not all individuals will have given up time spent on productive activity. However, we can assume that they have given up something that they would have preferred to do and there is an opportunity cost. Economic theory is based on the assumption that individuals spend time in a way that generates the most utility or benefit. In order to do this, individuals will spend time on one activity until the last unit of utility (the marginal utility) from another activity exceeds the benefit from the activity they were undertaking. Where there are no restrictions on time use, at the margin (when there is a change from one activity to another) the value of each use of time is the same. Therefore, if individuals would not have spent time on domestic activities we can assume that the marginal value of other activities, such as leisure, is the same.

Although our approximations are necessarily crude, we feel that they will be both acceptable and accessible to end users of economic information rather than more complex alternative constructs. We have demonstrated that these costs are not inconsiderable. The inclusion of patient costs would raise the total cost of a GP consultation by about one-quarter, from £18 to approximately £23.

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