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Crisis: what crisis?

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Abstract There is a large economic cost associated with low back pain. In 1994 its cost to the United Kingdom (UK) was estimated by the UK Clinical Standards Advisory Group report to be nearly £6,000 million (ECU 8,350 million) annually. This principally consists of the indirect costs of lost production and disability payments rather than direct health service costs. A re-examination of the assumptions in the report shows

that these costs appear to overestimate the economic cost of back pain by an unquantified, but possibly large, amount. This may restrict the benefit of introducing more effective treatments for back pain.

Key words Back pain · Health economics

Introduction

The United Kingdom (UK) Clinical Standards Advisory Group (CSAG) is "an independent source of expert advice to Health Ministers and to the NHS [National Health Service] on the standards of clinical care for, and access to and availability of services to, NHS patients" [2] financed by the Department of Health. Its membership is drawn from leaders of the medical nursing and dental professions. One of the first reports it commissioned was into the cost and management of back pain. This report and an accompanying epidemiological review [3] were published in 1994. They recommended a "revolution" [5] in back pain management with an increased availability of physical therapy early in the course of the disease to prevent the development of chronic disability.

That back pain is a common and important clinical problem is well documented. However, its large economic cost is not as well documented. The CSAG report estimated the cost of back pain to the UK based on existing data and some specially commissioned studies. Their best estimate of the cost of back pain to the UK in 1993 was around £5,878 million (ECU 8,350 million), this is just under 1% of the UK's Gross Domestic Product. Based on this estimate it has been suggested that a successful treatment for back pain would

save £52 million (ECU 77 million) in lost production and disability benefits for every 1% reduction in disability [5]. This large potential benefit is used to justify further investment in back pain treatment and research.

The difficulties involved in estimating the economic cost of back pain are shown by the wide range of the CSAG's estimate, from £4,037 million to £7,792 million. Some items, such as the number of individuals in receipt of invalidity benefit payments, are routinely collected centrally and easily available. However, for most costs it was necessary to make indirect estimates. Depending on the nature of the cost, either the mid-point of the estimate or the most plausible set of assumptions were used for the best estimate figure. The best and worst case assumptions were used to define the lower and upper estimates. How realistic were these estimates?

The overall estimate is made up of three elements (Table 1).

1. Health care costs, including both NHS and non-NHS health costs.
2. Department of Social Security (DSS) payments and
3. Lost production.

Each will be considered separately.

Table 1 Components of the costs of back pain [3] (DSS Department of Social Security)

	Best estimate (£ million)	Range (£ million)	Proportion of best estimate
1. Health care costs	678	537–892	12%
<i>NHS costs</i>	481	356–649	8%
<i>Non-NHS Health costs</i>	197	181–243	4%
2. DSS benefits	1,400	900–1,800	24%
3. Lost production	3,800	2,600–5,100	65%
Total	5,878	4,037–7,792	100%

Health care costs

The estimate of health care costs for back pain is largely based on a specially commissioned report. The authors of this report comment that these costs are difficult to measure precisely.

Systems to collect comprehensive activity and cost data from the NHS do not exist. The largest component of NHS costs are general practitioner (GP) consultations, which were estimated to cost £130 million, with minimum and maximum estimates of £89 and £173 million respectively. The wide range for the cost of GP consultations for back pain, a common event that might be expected to be easily measurable, illustrates the difficulties in making these cost estimates.

The non-NHS cost is derived principally from the physical therapy professional bodies' estimates of how many back pain patients their members see. Although a range for costs is not given, it is difficult to assess the reliability of the data and hence the accuracy of the non-NHS cost estimate.

However, the combined NHS and non-NHS health care costs only make up 12% of the total, so even a large error in these estimates will have comparatively little impact on the overall estimate. For this reason, only DSS payments and lost production costs will be considered in detail.

Department of Social Security (DSS) costs

The DSS cost is derived from the estimated number of days of invalidity and sickness benefit paid – 106 million days – multiplied by the average daily payment of invalidity benefit (IB) for a married man with two young children (£13.50, ECU 20.1) [3]. Both elements of this may be overestimates.

Sickness benefit costs for short periods of sickness absence are usually met by the individual's employer. DSS invalidity and sickness benefit payments for back pain are mainly received by individuals who have been absent

Table 2 Sickness and invalidity benefit paid for spinal disorders (DSS figures)

	1983/4 (million days)	1993/4 (million days)	Increase
All	28.9	105.8	266%
Men	21.5	69.4	223%
Women	7.4	36.4	392%

from work for more than 6 months. In common with other industrialised countries, the number of UK individuals receiving benefits for disability caused by chronic back pain has increased dramatically over recent decades [18]. The figures for the 10 years to 1993/4, are summarised in Table 2. However, there is no evidence that the prevalence of back pain is increasing.

Methodological differences between prevalence studies mean that reliable observations cannot be made on any temporal trends; however, the rates have remained broadly similar [3]. GP consultation rate data for back pain from each of the four National Morbidity Surveys [4, 10, 13, 14] cannot be compared because they are based on different versions of the International Classification of Diseases. A Finnish study using the same method for 14 successive years did not show an increase in the prevalence of back pain [8].

Many factors other than the severity of an individual's back pain may contribute to them drawing invalidity benefit (IB). The changes in number of days of invalidity and sickness benefit payment rates for all conditions are compared with those for back pain in Fig. 1. Although the rate of increase is greater for back pain, the two follow a broadly similar pattern suggesting that the increase in back pain disability is part of a broader trend.

Looking for possible reasons for this trend produces some interesting data. For all conditions, 53% of new IB claimants have more than one illness [6], 45% are unemployed and 40% are aged between 55 and 65 at the start of their claim (DSS figures). In a group of claimants whose main diagnosis was "musculoskeletal", principally individuals with back pain, who were used to evaluate the medical assessment of incapacity benefit, which replaced IB in 1995, 54% were considered fit for work after taking into account both physical and mental factors [16]. There appears to be a relationship between long-term unemployment rates and consultation rates with GPs. In Table 3 the rates of back pain consultation with GPs, corrected for age and social class, in eight areas of the UK [19] are compared with long-term unemployment rates, derived from the 1993 census [12], in the nearest equivalent local authority districts. Although these data are not directly comparable, they suggest that GPs in areas of higher long-term unemployment see more patients with back pain. One possible explanation for this is that there are additional consultations for certification purposes.

Fig. 1 Days of invalidity and sickness benefit paid 1983/4–1994/5 (log scale; DSS figures)

Table 3 Regional variation in general practitioner (GP) consultation rates and unemployment rates [12, 19] ($r = 0.79$; $P = 0.02$)

	Relative risk of consulting GP with back pain	Long-term unemployment
St Austell	1	0.72%
Dorking	1.2	0.16%
Wisbech	1.5	0.90%
Radnor	1.9	0.30%
Darwen	2.1	1.80%
Ilkeston	2.2	1.16%
Arbroath	3.6	1.38%
Peterlee	4.2	2.45%

Individuals of lower social class [19] and those who are less happy in their work [1] or have low mood [15] are more likely to be absent from work because of their back pain. The increase in IB payments has been greater for women than for men (390% vs 225%).

These data suggest that for many IB claimants back pain is no more than a label legitimising an inability, or unwillingness, to work that has more to do with advancing age, unemployment rates, job dissatisfaction, lack of qualifications or other domestic circumstances than the severity of their back pain. If this is so then the best that a satisfactory treatment for their back pain will achieve is to either change the diagnostic label for which they receive IB or to move them to another part of the social security budget, such as Job Seeker's Allowance (unemployment benefit).

Basing the cost of IB payments on the rate for a married man with two children may also overestimate the

cost. Many older claimants, and the one-third of claimants who are women, will have different family commitments and receive a lower rate of benefit payment.

Lost production

The cost of lost production was calculated, using the gross human capital approach, by multiplying the estimated number of days lost from work with back pain (52 million) by the average daily wage including employers' costs (£73.85, ECU 110).

The number of days lost from work with short sickness absences was derived from the OPCS omnibus study [9]. In this population survey of 6029 people, 68 individuals were identified who had a job and had lost time from it because of back pain in the preceding 4 weeks. The number of days that these 68 individuals reported losing from work in the preceding 4 weeks was used to calculate the number of days of lost production. Although indirect supportive evidence for this figure was provided from a study of industrial injuries, the number of individuals in the OPCS study is too small for reliable conclusions to be made, and retrospective reporting may be subject to recall bias. As with IB, many social and economic factors may affect a worker's decision to temporarily adopt the sick role because of their back pain. Individuals in manual, usually less well paid, jobs are more likely to be absent from work with back pain than those in skilled or professional jobs [3]. Using the average daily labour cost will therefore overestimate the cost.

In practice it is unlikely that all of an absent worker's production will be lost, either because adequate staff will already exist to cover for them or, for a prolonged absence, additional staff can be employed who would otherwise be drawing unemployment benefit. The more accurate friction period method, that estimates the production losses in the period required to replace a sick worker, would produce a lower estimate. In a Dutch study, the cost of work absence due to cardiovascular disease was found to be Dfl 624 million (ECU 289 million) by the gross human capital approach and Dfl 353 million (ECU 161 million), 48% less, by the friction method [7]. If these results were replicated with back pain, the true cost of lost production would be much less.

Conclusions

Both of the main components of the CSAG's estimate for the cost of back pain appear to overestimate the economic cost of back pain by an un-quantified, but possibly large, amount. If this is so then the potential economic benefit to the UK from identifying a successful back pain treatment will not be as large as has been suggested. The most recent figures of IB claimants show a small fall (Fig. 1). If

this fall continues it will be impossible to know whether this is due to an increase in the current poor level of services for the treatment of back pain [17], the change to an all-work test to determine inability to work, or other socio-economic changes. There is a need for large community-based studies that will accurately measure the health and

social impact of low back pain in the community. Only then will it be possible to estimate the potential financial benefits of re-organising or improving back pain services.

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