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The Welfare Economics of Public Sector Targets: Towards an 'Expenditure Constitution'

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ABSTRACT

With the advent of New Labour, numerical targets have become ubiquitous in the public sector. They are used to monitor and assess performance by government agencies; but how helpful are targets if couched only in numerical terms? In this paper the proposition is that targets must be set in context: targets must be set with reference to a social welfare function. Pressures in 'political markets' are quite different to incentive structures that ensure that targets will maximise welfare. If targets are inappropriate in Paretian terms, welfare loss might be magnified, the more 'successfully' government agencies hit targets. Misallocation of resources is gauged against a Paretian benchmark and illustrated with reference to waiting in the NHS. Analysis of a welfare critique of target-setting suggests a policy rule capable of mitigating distortion.

1. INTRODUCTION

THE UK LABOUR PARTY came to power in 1997 with the title of 'New Labour'. Considerable debate has centred on what is 'new' about New Labour. One prominent commentator answered the question by noting that: 'Targets are what New Labour has turned to in order to counter charges that it is no more than a political soufflé' (Hutton 2002: 26). He goes on to describe them as a 'brilliant economic and political device'. As noted in Cullis and Jones (2006), the target to reduce child poverty by 50 per cent by 2010 and eliminate it within a generation; and the target to reduce traffic congestion by 2010 by six per cent below the 2000 level were two such targets. Hutton argues that targets define 'the agenda whilst simultaneously depoliticising it'. After all, what political opponent or citizen 'could be against such obviously worthy and objective goals'?

While all might agree that waiting in the NHS should be reduced, would all agree that waiting in the NHS should be reduced regardless of cost? If there were no cost, waiting lists might be eliminated entirely. But if there are costs, is the optimum waiting list zero? If not, what is the optimum target? These questions can only be answered when they are set in context. Focusing more generally on decision making in the NHS, Wailoo, Roberts, Brazier and McCabe (2004, p.536) note that: 'For individual patients the right decision is that which maximises their wellbeing, and this is properly the concern of the clinician. Yet in resource constrained healthcare systems this will not always coincide with the right decisions for patients in general or society as a whole thereby leading to some understandable tensions'.

The right decision is, however, sensitive to the chosen criteria. The question addressed in this paper is whether incentives faced by politicians ensure that targets meet appropriate criteria. Sassi, Le Grand and Archard (2001, p.262) argue that 'The equity versus efficiency dilemma has been virtually ignored in the *political debate,* often leading to inconsistent judgements in the development of health policies' (emphasis added). Optimum targets and policies are only optimal when set in context. With reference to waiting lists that would be optimal in Paretian terms, the first objective of this paper is to focus on the process by which costs of waiting are made visible to politicians. Downs (1957) argued that politicians pursue personal career objectives. But if targets are likely to be set to maximise votes, the same targets are unlikely to achieve efficiency and equity. Targets set in one context are likely to be lacking when assessed against different criteria. For politicians, the visible costs of waiting are the number of individuals waiting. Votes are at risk the greater the number of voters waiting; political support atrophies the longer voters wait. Targets set to reduce visible political costs differ from targets that should be set to mitigate the, less visible, social costs.

If politicians set electoral targets that deviate from targets that would achieve (Paretian) efficiency, distortions also occur in pursuit of electoral targets. A second concern is whether, in theory, a policy rule might be applied to ensure a better allocation of resources dedicated to achieving targets. Public choice scholars have set rules to offset distortions when taxpayers experience distortion. Can expenditure rules be set, just as analysts have set tax constitutions to constrain misallocation? Brennan and Buchanan (1980) describe tax rules that would constrain politicians if they are intent on excessive taxation.[2] In this paper an expenditure constitution is considered that would constrain the loss of welfare if politicians' only concern was waiting-list targets that maximise votes. Later sections of the paper consider the extent to which an expenditure rule might constrain welfare losses if politicians are motivated to set targets only to win votes.

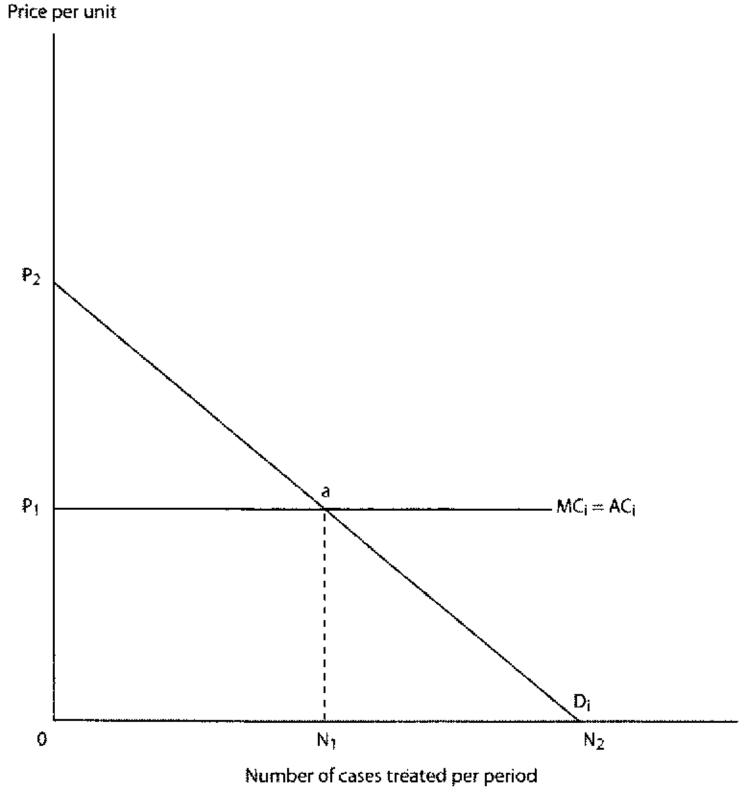
2. The Welfare Economics of Waiting Lists as Targets: A Paretian Analysis

This section of the paper focuses on the welfare loss experienced if targets are set within a 'political debate'. Analysis of decision-making processes suggests that waiting lists will deviate systematically from targets that would maximise welfare.

a) The ' optimum' waiting list

In Figure 1, demand for treatment for a particular cohort of patients (case-type i) is *Di*. For ease of exposition, it has been assumed that treatment for this condition is available at constant marginal cost (as shown by *MCi = ACi*).
If markets are competitive (with no trace of market failure), 0N1 patients purchase treatment. In the absence of any distortion, this allocation of resources is Pareto-efficient.

Figure 1: Waiting lists - a problem with visibility



If patients were prioritised in the NHS as in the market and if a budget of OP_1aN_1 was made available, the same patients would be entitled to treatment free of charge at the point of delivery within the NHS. But in this institutional arrangement, there would be a waiting list of N_1N_2 in the NHS. In this static (one-period) analysis, those who wait are those who do not value the treatment as much as the social cost of treatment. If the NHS treated ON_1 at a price of OP_1 per patient, the NHS apes an efficient market solution. Consumer surplus is P_1P_2a. But, even though Pareto-efficiency is achieved, there is dissatisfaction.

The voters who wait (N_1N_2) have the expectation that they will be treated 'free of charge' at the point of delivery. In Figure 1, it is evident that N_1N_2 patients are not willing to pay the marginal social cost of treatment but the perception is that there is under-supply (because patients feel an automatic entitlement to treatment). If treatment is not available in this time period, politicians appear culpable (because politicians direct the management and finances of the NHS). Receipt of medical care seems to be an area where nearly all actors have an incentive to deny the principle of scarcity. The solution at point *a* in Figure 1 is Pareto-efficient but, with tax-financed health provision, patients wait. There appears to be a (visible) problem as N_2 the non-scarcity equilibrium is not achieved. This apparent failure is a problem that politicians must address.

In a competitive market, individuals N_1N_2 have no expectation of treatment because they are not prepared to pay the costs. In such a market, these prospective patients do not present themselves for treatment. Cullis (1993) estimated that if 62 per cent of the uninsured in the state of California in 1985 had been ineligible for public assistance (and been too poor to undertake medical expenses themselves), California's implicit waiting list would have been proportionately the same as that in England. Similarly, Feldman (1994) estimated the cost of waiting that would arise if the US health care system was replaced by a US-NHS, funded by taxation. The social cost per family of rationing by lists was estimated at \$541-\$828, equivalent to 0.9-1.4 per cent of 1984 US GDP).

Lindsay's (1976) theory of government enterprise points to the distortions that occur if excessive attention is paid to problems that are relatively more visible. In the NHS, the waiting list problem is visible. The implication appears to be that medical care is under resourced or inefficient. Within a tax-financed service, receipt of medical care is divorced from payment. There is evidence that individuals are inclined to support greater public expenditure than they would choose if public sector services were priced. Questionnaire analysis reveals that individuals press for further expenditure if the tax implications are not considered. They continue to press for further expenditure if they are told that tax must rise because each respondent anticipates that this implies an increase for someone else (Hall *et al* 1997).

The waiting list problem is an electoral problem because there is no other forum in which it can be properly addressed:

(i) The problem cannot be resolved in the market. While Figure 1 illustrates the case in which N_1N_2 include those who do not benefit sufficiently to pay a market price, a constrained budget would mean that the list might remain even if some patients waiting valued treatment at more than the social costs of treatment.[3] The creation of a waiting list brings with it a different set of incentives. Shmanske (1996) identifies the free rider problem. The movement of one person from a waiting list provides benefits to all who remain on the list. Each

individual has an incentive to let others bear the costs of moving to the private sector. Moreover, in the absence of this free rider problem, experimental economics confirms that individuals are affected by historic costs (Thaler 1994): patients are not prepared to pay again for medical care if they believe that they have already paid via taxation, or if they feel treatment is a right. The process of waiting for treatment in the NHS does not entail the same compliance costs as waiting in-line. Individuals wait in absentia, on lists. When waiting is not deterred, the perception of under-supply is heightened. Despite this perception, only between 14 and 17 per cent of British households turn to private health insurance (Besley et al 1999). With reference to Hirschman (1970), there is no exit via a market mechanism.

(ii) The problem cannot be resolved within the NHS. If exit is difficult, internal voice within the NHS is likely to be muted (Hirschman 1970). Patients who wait for treatment are a large group and difficult to mobilise (Olson 1965). Moreover, those who move to the private sector are at least partly motivated by waiting in the NHS and this removes the more articulate and generally higher income malcontents. Besley and Gouveia (1994) note that a small migration of the better off means that the more vociferous taxpayers have left. Exit may not be substantial but it serves to reduce disproportionately the effectiveness of lobbying.

(iii) The problem must be addressed at the ballot box. In the absence of other solutions, politicians are presented with the waiting list as votes at risk. Buchanan and Tullock (1962) note there is little scope in electoral processes for intensity of preference. Mechanisms (such as the sale of votes, or logrolling) are insufficient to admit intensity of preference.[4] It is raw numbers that matter. Numbers waiting may be a poor proxy for welfare costs, but they are a relevant proxy for political costs. This is especially so when allowance is made for the snowball effect (noted by Musgrave 1981), whereby the votes of family and friends of those waiting are additionally at risk. Also, in an ageing population, the number of people who have, at some time, experienced waiting for treatment will increase and electoral costs become more, rather than less, salient.

This sequence of arguments explains why NHS waiting is a visible cost and why it is addressed as a political cost. Expenditure illusion is perpetuated because vote-maximising politicians' incentive is simply to target a reduction of lists without consideration of social cost. In the UK, voters have long regarded additional expenditure on medical care as a first priority.[5] Vote-maximising politicians have incentives to make expenditure promises and to discount less visible tax costs (e.g. Tullock 1959; Buchanan and Wagner 1977).

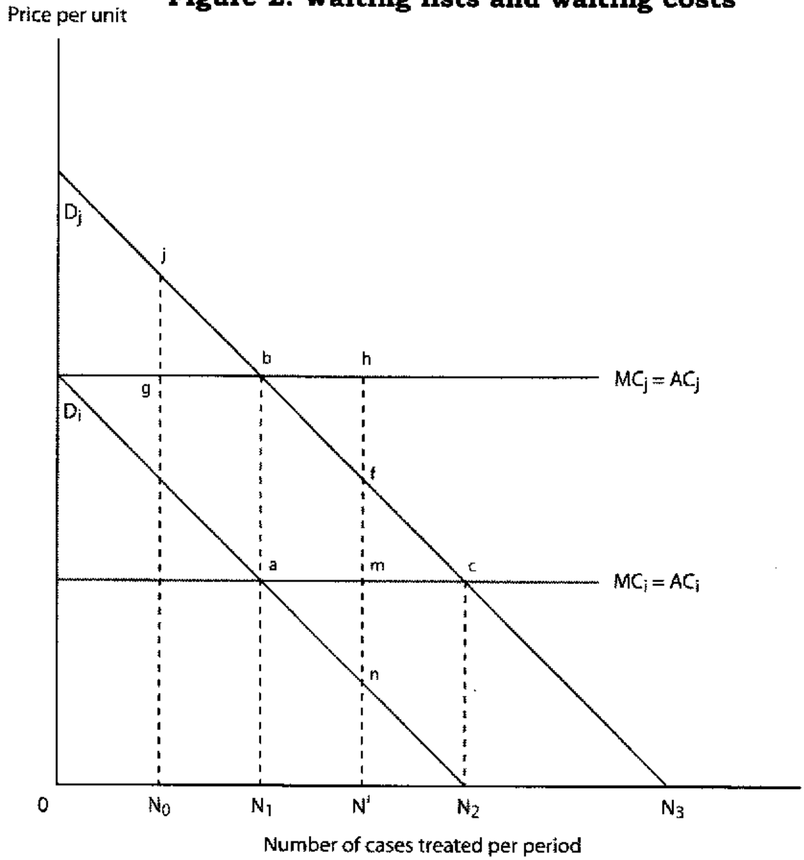
b) Waiting Lists and Priorities

If the waiting list target is unlikely to be set optimally, there is also growing concern that targets are pursued sub-optimally. Pre-occupation with numbers waiting creates incentives to assign expenditure disproportionately to low-cost treatments. The Chairman of the British Medical Association commented that

'The Government is obsessed with waiting list targets that distort clinical priorities to the detriment of patient care.' (*The Mirror*, July 6 1999:2).

In Figure 2, the costs of waiting are reported in terms of patients' willingness to pay for treatment in the current period. The demand curve *Di* identifies willingness to pay for case-type *i* patients, with the cost of waiting per period for patients not treated in this cohort shown by triangle N_1aN_2. In comparison, case-type *j* patients' demand is *Dj*. Once again, for ease of exposition, constant marginal costs (= average cost) of treatment are shown by *MCj* (= *ACj*). Using a common reference point, the waiting list for this patient cohort is N_1N_3 and the costs of waiting are shown as triangle N_1bN_3.

Figure 2: Waiting lists and waiting costs



If governments' benchmark of success (or failure) is set in terms of the overall list, there is an incentive to allocate more resources to low-cost treatments. Once again, recent evidence supports this prediction. Following the Labour Government's initiative there was criticism that patients facing more costly surgery (e.g. in areas of gynaecology or orthopaedics) were left waiting even longer before seeing a consultant. Two problems can be illustrated with reference to Figure 2.

(i) The first relates to the way in which additional finance can be used to reduce the waiting list. The strategy of reducing waiting lists for case-type i is a cheaper response than reducing lists equally between the two case-types. Additional expenditure, equal to N_1acN_2, will reduce the waiting list for case-type i patients by twice as much as it would reduce the waiting list for case type j patients (i.e. $N_1\ N' = ½\ \{N_1N_2\}$).

Following Downs (1957), vote-maximising politicians will prefer the greatest possible reduction of numbers waiting, irrespective of the effects on waiting costs. Although numbers waiting for treatment for condition j are twice as great as those waiting for treatment for condition i, the costs of waiting for patients in cohort j (N_1bN_3) are four times the cost of waiting in cohort i (N_1aN_2). There is no efficiency or equity rationale for emphasis on case type i patients. While the eradication of the waiting list for treatment i reduces waiting costs by N_1aN_2, the same expenditure (equal to N_1bhN') would reduce waiting costs by N_1bfN' ($> N_1aN_2$). The problem for political parties is that this allocation would only reduce the length of the NHS list by N_1N' ($< N_1N_2$). If expenditure were assigned to cohort j, remaining waiting costs would be only $N'fN_3 + N_1aN_2$ — far less than N_1bN_3 (which represents the remaining waiting costs when expenditure is allocated only to the low-cost treatment).[6]

(ii) The second distortion arises if there are incentives to reallocate existing expenditure. For example, in Figure 2 it can be seen that a reduction of expenditure equal to N_0gbN_1 on case type j treatment will increase the waiting list. However, N_0gbN_1 is equal to area N_1acN_2 and by switching expenditure to case-type i treatment, the list for case-type i can be reduced by N_1N_2 ($= 2\{N_0N_1\}$) so that the overall list in the NHS is reduced. The costs of this misallocation can be estimated as the sum of the deadweight loss triangles gjb and acN_2.

This example indicates how much depends on the current situation. For example if, in Figure 1, distorted incentives have allocated inpatient numbers to ON_0 j-type cases and ON_2 i-type cases, then the appropriate policy response is to create allocation at ON_1 for both types of cases. In this instance it would be efficient to increase numbers waiting because the reduction in waiting lists for case j-type patients (N_1N_0) is less than the increase in waiting lists for case i-type patients (N_2N_1). This policy would, however, be unthinkable *politically*, as an electoral pledge to increase waiting lists!

4. Towards an expenditure constitution

In both instances (i.e. setting and pursuing optimum targets) there are systematic differences if the objective is to win votes rather than to achieve efficiency. If tax constitutions restrain politicians' pursuit of revenue (Brennan and Buchanan 1980), can policy rules be designed (as an expenditure constitution) to mitigate the welfare loss that arises when targets are premised on electoral objectives?

If votes are secured by reducing waiting lists below the optimum, the loss of welfare can be estimated with reference to deadweight loss. At the optimum level in Figure 2, there is no deadweight loss when N_1 case type-*i* and ON_1 case type-*j* patients are treated. Inefficiency occurs when the target set to win votes means that additional resources are allocated to case *i*-type and case-*j* type treatments.

As noted in section two of the paper, the temptation is to achieve targets by using additional resources to treat those who wait for low-cost treatment. In this way, pursuit of the target distorts resource allocation. But if those who execute policy were constrained by a policy rule, might such resource misallocation be minimised? The policy rule to be considered is that additional resources must be allocated across different medical specialties to equate weighted expenditure across specialties (with weights for each type of specialty set in terms of the proportionate change in the waiting list). The rule is attractive because it relies on indicators that are easily visible (there is no suggestion that policy-makers must invest resources identifying waiting costs: waiting lists are visible).

If welfare losses of increasing treatment beyond the optimum level are to be minimised, marginal welfare loss must be set equal across specialties. In Figure 2, ON_1 admissions per period for both *i* and *j*-type cases prove optimal because the marginal cost of inpatient treatment is equal to the marginal social value of treatment. A commitment to decrease waiting lists (to win votes) will reduce the number of patients waiting. In each specialty marginal benefit of treatment will fall below the marginal cost of treatment.

In Figure 2 the marginal benefit of treatment for case type-*i* patients will fall to $N'n$ when the waiting list is reduced by N_1N'. The marginal benefit of treatment for case type-*j* patients will fall to $N'f$ when the waiting list is reduced by N_1N'. The deadweight losses of additional treatment for each case type patient equal $\Delta bhf + \Delta amn$ when expenditure increases, by (N_1bhN') and (N_1amN') respectively.

The deadweight loss associated with output levels that differ from the optimum can be estimated with reference to the area of a triangle. The area of a triangle is equal to ½$dp.dq$. Policy makers will know dq (the change in numbers treated) but they are unlikely to know dp (the change in willingness to pay for treatment). However, it is possible to rewrite the expression for dp:

$$dp = \frac{dq.p}{q\eta} \tag{1}$$

where h is the price elasticity of demand for treatment. The price elasticity of demand h can be written as WL/q (where WL is the waiting list and q is the number of patients treated). By substitution:

$$DWL = \frac{1}{2}(dq.p)\frac{dq}{WL} \tag{2}$$

where DWL is deadweight loss (equal to $\frac{1}{2}dp.dq$).

The change in the number of patients waiting is dq and $dq=dWL$. The deadweight loss can therefore be estimated as:

$$DWL = \frac{1}{2}(dq.p)\frac{dWL}{WL} \tag{3}$$

Policy makers know the existing waiting list (WL) and the change in numbers treated (dWL). The price of treatment for any case type patient is available or can be proxied (either with reference to estimates of the average cost of treating a particular medical complaint — or with reference to prices charged in the private sector). In essence, all that is required is information on additional expenditure ($dq.p$).

If policy makers are content with the existing allocation of resources (ON_1 in each speciality), then any further spending across specialties should be allocated according to the rule that additional expenditure (weighted by the proportionate change in the waiting list) should be equal across specialties. The deadweight loss associated with output *levels that differ from the Pareto optimal levels are minimised if* $(dq.p)(dWL/WL)$ is equal for each case-type speciality.

In Figure 2 the deadweight loss is equal when Δamn is equal to Δbhf. The area of Δamn depends on the ratio N_1N'/N_1N_2 multiplied by area $N_1am N'$. The area of Δbhf depends on the ratio N_1N'/N_1N_3 multiplied by area N_1bhN'. As $N_1N_3= 2(N_1N_2)$ and area $N_1bhN' =2(N_1amN')$, area Δamn is equal to area Δbhf. If all of the additional expenditure were spent on case type i patients, it would be possible to eradicate waiting on this list, but the deadweight loss would be ΔacN_2. This deadweight loss falls by $nmcN_2$-Δbhf when the additional expenditure is allocated so that the weighted expenditure in each specialty is equal. If the allocation of resources across different case type patients is initially deemed optimal, a political initiative to decrease numbers waiting can be implemented. An expenditure-rule mitigates welfare losses that arise if policy focused only on maximising the reduction of numbers waiting.

The rule that weighted expenditure for each case type patient should be equal is a variant of the 'Ramsey Rule' of optimal commodity taxation (see Cullis and Jones 1998; Myles 1995). The rule is quite general (e.g. it does not depend on knowledge of the slopes of D_i and D_j) and, as will be shown in the following section, it is applicable whatever the policy maximand. If politicians have an incentive to promise a reduction in the NHS one response to minimise distortion is to apply an expenditure rule capable of mitigating misallocation of resources between lists.

4.1 An assessment of the expenditure rule

As noted at the outset, rules to increase wellbeing are inevitably context-based and there has been no clear statement of a maximand that informs NHS policy. It is usual to assess outcomes with reference to a Paretian optimum. However, analysis assessed with reference to outcomes that occur in efficient markets might be criticised if the rationale for the NHS is to eschew market welfare criteria. If a Paretian benchmark is used, willingness to pay is relevant. Deadweight losses are not minimised when the difference between marginal benefit of treatment and marginal cost of treatment are not equalised across alternative resource allocations. But what if NHS goals are not defined in terms of efficiency?

Proponents of the NHS might argue that need, rather than willingness to pay, is the relevant consideration. The definition of need depends on the maximand. In Paretian welfare economics, those in need are those who experience greatest marginal benefit of treatment (in their own estimation). However, if the maximand were health, need might be operationalised in terms of Quality Adjusted Life Years (QALYs). QALYs are estimated by reference to a uni-dimensional scale, ranging from 0 (death) to 1 (perfect health) where the impact of treatment is estimated by the extent to which any individual's condition is increased towards 1 (see Cullis and Jones 1998). Those who need treatment most are those for whom treatment will produce the highest additional QALYs and deadweight loss arises if marginal QALYs per pound spent are not equalised across specialties. In this case, D_i and D_j in Figure 1 are the marginal social valuation of QALY curves; patients are prioritised according to the QALY return on their treatment.

This does not exhaust interpretations of need. Other social welfare maximands might equally be applied. Even more generally, D_i and D_j can be interpreted as the marginal benefit of treatment for patients, estimated against a broader social welfare maximand (which includes consideration of both equity and efficiency). For an early example, see Culyer and Cullis (1976). It is still the case that patients can be prioritised according to this estimate of need and deadweight losses arise if the difference between marginal benefit (in these terms) and marginal cost is not equalised.

The expenditure rule (that additional expenditure is weighted by proportionate change in the waiting list) is quite robust. While there are alternative maximands, distortion is always measured by the extent to which allocation fails to equate marginal valuation with reference to the maximand and marginal cost. For example, if need were defined in terms of QALYs then patients can be ordered in terms of priority D_i and D_j. The functions are downward sloping (as in Figure 2) even though valuation is in terms of QALYs (Williams,1988, proposed that patients in different specialties might be ranked with reference to QALYs).[7] If need were measured with reference to a different maximand, patients might again be ordered: D_i and D_j would again reflect diminishing marginal need. An expenditure-rule capable of mitigating distortion applies if social valuation can be compared with the costs of treatment.[8] If within any treatment cohort, patients are ordered so that those in greater need (those who benefit most with reference to a chosen maximand) are treated before others, the same rule is applicable.

In this context, it is important to acknowledge that there are other distortions. Critics have argued that one strategy to hit targets is to delay offering prospective inpatients an appointment with a consultant. The expenditure-rule presented in this paper is not designed to mitigate this distortion (which implies problems in ensuring that patients are ordered in terms of priority because they can only be ordered after assessment by a consultant).

However, in the absence of information concerning those yet to be admitted as in-patients, the rule to equalise weighted additional expenditure across treatments mitigates welfare loss if politically correct targets ignore consideration of efficient outcomes.

5. Conclusion

Robinson (1999, p.13) argues that 'politicians, health care professionals and local people attach importance to other factors besides allocative efficiency... (and) ... if economic approaches are to have more impact in the future ...health economists need to adopt a wider research agenda'. This paper helps set such an agenda. It examines the implications when politicians pursue other factors besides allocative efficiency. It explores rules designed to maintain allocative efficiency when a non-scarcity equilibrium is sought.

When medical care is tax-financed (free at the point of delivery) there are incentives to focus on visible problems (visible in terms of numbers waiting) and to ignore less visible concerns (less visible in terms of the costs of waiting in absentia). Such problems cannot be alleviated by recourse to the market (exit) or by expression of dissatisfaction within the NHS (voice). Disenchantment spills over to the political market and costs are viewed as votes at risk. Politicians set targets to maximise votes, rather than seek to rationalise targets in terms of allocative efficiency.

If targets set in political processes will not achieve efficiency, can the welfare loss they create be mitigated by an expenditure rule? Just as tax rules (tax constitutions) can be designed to mitigate political distortions when revenue is raised (Brennan and Buchanan 1980), expenditure rules can be designed to mitigate welfare loss when tax revenue is allocated. Focussing on the NHS, if those who administer waiting lists are bound by the rule that weighted additional expenditure should be equalised across specialties (with weights set in terms of proportionate change in waiting lists), the costs of distortion are mitigated.

The absence of full information and the incentive to focus on indicators simply because they are more visible, explains why targets are not set with reference to welfare maximisation. In this second best world a simple administration rule compensates for full information. In the absence of full visibility, rules must be set in terms of variables that are visible. While the paper focuses on waiting lists in the NHS, the principle applies equally across targets (if targets are set with reference to other factors besides allocative efficiency).

Distortions across targets are mitigated when an expenditure constitution restrains unbridled incentives to hit targets with no regard for social cost. In the absence of such policy rules, targets will not function as a 'brilliant economic or political device'.

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ENDNOTES

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2. Public choice scholars argue that political promises are often premised on fiscal illusion. Following the early work of Puviani (1903), scholars argue that fiscal illusion occurs when voters underestimate the tax that they pay (for a survey of empirical studies see Dollery and Worthington1996). If tax is less visible to voters than spending, politicians tax and spend excessively because votes can be won by increasing public expenditure. Government then appears a Leviathan. Analysts have designed tax constitutions to restrain these excesses.

3. As shown by, amongst others, Martin and Smith (1998), the decision to turn to the private sector would apply only for those individuals whose benefit from treatment exceeded the price involved. If, for example, patients in the range $0N_1$ were denied treatment in the NHS they would have an incentive to 'go private'. However, this does not apply to those on the waiting list N_1N_2.

4. While logrolling offers scope for vote trading, this mechanism cannot be relied upon to achieve efficient solutions (Buchanan and Tullock 1962).

5. Jones (1993) discusses the annual reports of the British Attitudes Survey in the UK.

6. The initiative of the Conservative Government in the Patient's Charter of April 1991 looked at waiting time. It stated that there was to be guaranteed admission for treatment no later than two years from the date when the consultant placed the patient on a waiting list. In 1995 the Patients' Charter promised a waiting time guarantee of 18 months for all (Mullen 1993). However, while the Charter took into account the length of time waited, it is clear from Figure 1 that to promise all who wait the same wait makes no allowance for difference in costs of waiting.

7. As Williams (1988, p.240) notes, a clinical specialty with a small list of people waiting a short time for very beneficial treatment may still have priority over a specialty with a long list of patients who have waited a long time. Yet, as Edwards (1994) comments, patients have the same opportunity of being treated, given their expected total health gain per pound of treatment, regardless of which clinical specialty they required.

8. QALYS have been employed. For example, Gudex *et al* 1990 calculated the QALY gain from treatment versus no treatment and the QALY gain from treatment now versus treatment one year later for 22 common medical conditions on Guy's Hospital's general surgical waiting list.

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