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# Assessing the Economic Cost of a Community Unit:

The case of

Dr. Barnardo's Intensive Support Unit

by

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# **DISCUSSION PAPER 31**



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## ABSTRACT

The number of children resident in large mental handicap hospitals has fallen substantially in recent years but those that remain tend to be amongst the most profoundly handicapped. If the benefits of community care are to be extended to this group of children then new residential facilities will have to be sufficiently resourced to cater for their special needs.

In this discussion paper we report on the economic costs of one such unit, the Dr. Barnardo's Intensive Support Unit (ISU) in Liverpool, which was established especially to accommodate severely mentally handicapped young children. The paper begins with a brief description of the concept of economic cost and a discussion of how the general methodology was applied in practice. The costs of care in the ISU are then compared to the costs of caring for children with similar high levels of disability in an NHS community unit.

Although the ISU is found to be initially more expensive per child than the larger NHS unit it has succeeded in its policy of finding foster homes for its children. This success is not only likely to improve the welfare of the children but also reduces the long-term costs of their care.

The unit has not been in operation for long enough to ensure that all the costs of foster care are included. However, after three years, it does appear that ISU based care is no more expensive than care in a larger NHS community unit.

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## (1) INTRODUCTION

The number of children resident in mental handicap hospitals has fallen substantially in recent years from 3,900 in 1977 to under 600 in 1985. However, the children that remain in hospital tend to be profoundly handicapped with associated health problems or severely disturbed and difficult to manage (DHSS, 1979). If the benefits of community care are to be extended to these groups of children then it is clear that new residential arrangements will have to be able to cater for their very special needs.

The Dr. Barnardo's Intensive Support Unit (ISU) in Liverpool is one such unit, designed to accommodate children with profound and severe mental handicap. Its objective is to take these children out of hospital and provide an intensely therapeutic environment which prepares each child for placement with a foster family. The unit is located in four bungalows each providing a home for two children. The bungalows are situated in two pairs some distance from each other on a modern housing estate.

Funding for the first six years of the unit was provided by the DHSS who also agreed to support a three year evaluation of the unit's development and operation. The research project was co-ordinated by Dr. A. Alaszewski of the Department of Social Policy and Professional Studies at the University of Hull and used a multidisciplinary approach which included inputs from Psychology, Social Policy, Sociology as well as Health Economics. The project involved intensive fieldwork at the ISU to evaluate the processes involved in the unit's establishment and operation and special attention was paid to the psychological development of the children and the economic costs of the unit.

In this paper we describe the evaluation of the economic cost of the unit. The concept of economic cost and its relationship to the general

evaluation of the ISU is described in section (2). The economic approach is outlined in section (3) and expanded in section (4) which also discusses the relevance of the decision-context of the ISU. An economic costing focuses on the physical resources or inputs to a service and those required by the ISU are identified in section (5). The results of the costing exercise are presented in section (6) and the costs of ISU-based care compared with the costs of alternative residential provision. These results are discussed and summarised in section (7) which concludes the report.

The results from the rest of the project will be described in a series of University of Hull, Department of Social Policy, discussion papers collectively entitled "The Evaluation of Dr. Barnardo's Intensive Support Unit for Profoundly Mentally Handicapped Children in Liverpool".

## **(2) THE CONCEPT OF ECONOMIC COST**

No evaluation of new developments in community care can ever be complete without an assessment of the economic costs. Resources are always scarce in relation to unlimited human wants and choices have to be made about their best possible use. In deciding to employ resources in one activity we effectively deny ourselves the opportunity of enjoying the benefits offered by alternative uses. The value of the forgone benefits is a measure of the economic or opportunity cost of the chosen option.

However, if society is to make the most efficient use of its scarce resources a thorough assessment is also required of the benefits of alternative policy options. This makes it possible to identify the project which maximises the gain in benefits in relation to its cost. The costs and benefits of different options can be brought together by the technique of economic appraisal which provides a systematic framework in which they can be measured and compared (Drummond, 1980). In cost-benefit analysis (CBA)



each is valued in commensurate terms, usually money, so that one may be directly offset against the other. However, the obvious difficulties of valuing the intangible benefits of social care limits the applicability of this approach.

The difficulty of valuing the benefits of social care programmes can be avoided if either the effects or the costs of alternative policy options are expected to be identical. Cost-effectiveness analysis (CEA) can then be used to identify the least cost/most effective option. Unfortunately alternative social care programmes will rarely have the same effects and different policies may yield, in differing amounts, a variety of benefits measured along a number of different dimensions. In this case a variant of cost-effectiveness analysis, sometimes called the balance sheet approach, can be used. This method values in monetary terms the resource costs of each option and quantifies, but leaves unvalued, the benefits. It has the advantage of making both the costs and benefits of each programme explicit but leaves the difficult job of trading one off against the other to the decision-maker. Obviously a programme is efficient if it is both more effective and less costly than its alternatives. However, an option which is more expensive may still be considered efficient provided that it is both more effective and the additional benefits it offers are adjudged to be worth the extra costs.

The effectiveness of the ISU is being assessed in terms of the quality of care and its impact on the psychological development of the children. As yet the results of these studies have not been completed but they will be reported in a series of discussion papers to be published by the Department of Social Policy, University of Hull. In the remainder of this paper we address the problem of the economic costs of the unit.

### **(3) METHOD**

The economic approach to costing a new development such as the ISU, focuses on the physical resources or inputs which are required to provide the service. Once these have been identified they can be costed in a manner which reflects the benefits of using the resources in their next most valued activity. This contrasts with the approach of the accountant which tends to concentrate on the financial transactions or expenditures of his or her employing authority.

In general the workings of labour and commodity markets will tend to ensure that the price paid for a resource reflects its economic cost. To this extent the cost accounts of the unit provide a useful initial source of data. However, there are some common exceptions to the rule relating price to resource cost which prevent the accounts from showing an accurate picture of economic cost. In some cases a price may be paid for a resource which has no alternative use and therefore no economic cost. In others the prevailing price may include elements of taxation or subsidy. These often represent methods of redistributing income from one group of society to another and are not in themselves payment for resource use.

Additional inputs into the service provided by the ISU will also be provided by other agencies or individuals. Health and personal social services, education and the contribution made by the children and their relatives all need to be considered to ensure that all costs are included.

### **(4) THE DECISION CONTEXT OF THE ISU**

The importance of the decision context stems from the definition of cost as the value of forgone alternatives. If the resource usage of a new initiative such as the ISU is to be estimated it is necessary to know what net extra resources are employed in the construction, development and operation of the unit so that these can be valued according to their

opportunity cost. This means identifying all resources used by the children being cared for in the unit and all the resources saved in other sectors because the new unit replaced care which would have been given elsewhere. To identify final net resource use thus requires a full specification of the alternative methods of support which would have been given if the ISU had not been established.

As each of the eight children living in the unit were previously in long-stay hospital care it would be simplest to assume that this is the most likely alternative. In this case the scope to make savings is heavily dependent on the scale of ISU provision. The bulk of hospital resources such as heating, lighting, medical, supervisory nursing and remedial staffs are shared by a number of patients. The provision of one new Intensive Support Unit, which would allow eight children to be discharged from hospital, is unlikely to allow many savings in these shared resources (Normand and Taylor, 1987).

The number of children resident in mental handicap hospitals has fallen rapidly over the past few years and the hospitals are running down and some are planned to close as a consequence of the plan to move from hospital to community. The National Development Group have also advised that no child should be admitted to a hospital for mentally handicapped people unless there are clear medical indications (National Development Group, 1977). A more likely alternative to care in the ISU therefore might be a place in a small NHS or local authority community unit. These generally have less than 25 beds and tend to be situated nearer the community they serve. The problem of releasing shared resources will still arise but will not be so significant. With smaller, discrete units the expansion of ISU facilities does not have to be so great before substantial savings can be made in alternative methods of care.

A simplified costing exercise might therefore compare the costs of care in the ISU against the costs of a place in an equivalent community unit.

Two issues then arise. The first relates to the basis on which costs will be calculated. Rather than focus on the cost of the unit there would be advantages in identifying the individual resource use of each resident. The estimates of costs would then be sensitive to changes in the mix of residents over time. For two reasons this proposal is rejected. For practical purposes the allocation of resource use to individuals is extremely difficult because the time of some staff members will be shared simultaneously by several children. To measure the amount of staff time devoted to each child would require close observation of the working day. This 'work study' approach is time-consuming, disconcerting for the staff and may be regarded as an unwelcome intrusion into a house which is trying to provide a normal home-like environment. There are also theoretical grounds for rejecting the individual costing approach. Short-term changes in the needs of the children are, by their nature, regarded as temporary and are not matched by changes in staffing. In the long-term the unit has been established to cater for a certain group of children and by and large this group will have similar characteristics despite changes in the resident population over time. Therefore, it is unlikely that individual resource use within the ISU has any meaning or methodological justification.

A further consideration is the question of occupancy. It may take up to eight weeks to prepare a child for transfer from hospital into a vacancy in the ISU. During this time the unit is underoccupied but few, if any, resources are saved. Staff work intensively with the child in hospital introducing him/her to the unit which still needs to be kept operational for the one remaining resident. Attributing the total costs of the unit only to the children resident within it would increase the average cost of care per

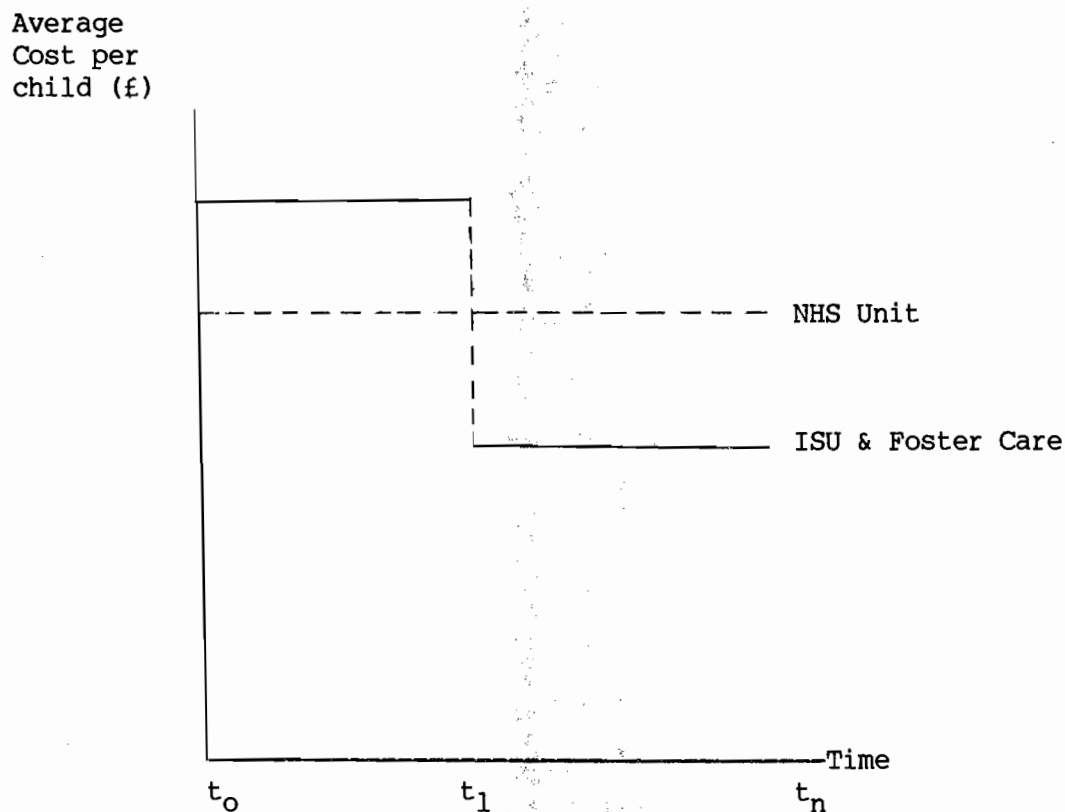
child. This may be considered inappropriate. Once selected for transfer the child in hospital is considered part of the unit even though he or she does not reside there. Full occupancy has been assumed because during the period under review, from April 1984 to November 1985, there was never a time when a child was not either living in the unit or living in hospital but being prepared to move to the unit.

The second issue concerns the time horizon over which the cost should be evaluated. The simple costing exercise effectively assumes that continuing care within the ISU is a long-term alternative to a place in a larger residential unit. However, this assumption is unrealistic. A stated objective of the unit is to prepare the children for long-term foster-care. Long-term costing problems arise as soon as the unit becomes successful in this objective because the cost basis shifts from the unit itself to the costs of caring for each child over time.

The following comparative time trend of costs per child might be hypothesised (see Figure 1). In this case the higher costs of care in the ISU over the period  $0-t_1$ , (where  $t_1$  represents the time of successful placement in a foster home) are offset by the lower costs of foster care incurred in period  $t_1-t_n$ .

Figure 1

Hypothetical Comparative Time-Trend of Costs



Key:  $t_0$ : time of placement in ISU  
 $t_1$ : time of placement in foster care  
 $t_n$ : period of evaluation

If the individual values of  $t_1$  and  $t_n$  were known then the total costs of care for each child could be calculated. However, the length of time a child needs to spend in the unit in preparation for fostering ( $t_1$ ) and the likelihood that a successful placement will be found will, in many cases, depend on factors that are beyond the control of the unit's staff. These conditions would not determine whether or not a place in the unit was offered to a child and no child would be returned to institutional care if a foster home could not be found. The focus of interest is not whether it is more costly to care for one child rather than another in the unit so much as

whether over a number of years it is less costly to care for children in one way or another. The long-term costing question now becomes: for a given group of children; how do the costs of an initial stay in the ISU plus any long-term foster care compare to the costs of long-term care in a community unit?

This raises the additional question of over what period of time should the comparative costs be assessed; i.e., what is the appropriate value of  $t_n$ ? For some children the cost profile will initially follow the trend hypothesised in Figure 1. Amongst this group will be an unknown number of children who are successfully placed in foster care but for whom it becomes apparent that the arrangement can only be maintained with increased levels of social support. This may increase the costs of foster care above the level implied in Figure 1, perhaps significantly if occasional (or indeed permanent) readmission to residential care is eventually required. For other children the prospect of foster care is improbable and the ISU is likely to become their permanent place of residence.

Setting  $t_n$  too short will bias the results of the costing exercise one way or the other, either by excluding the savings made possible by foster care or, subsequently, by overestimating their magnitude. Ideally,  $t_n$  should be set sufficiently high to capture each of the long-run effects.

The ISU has been in operation for three years, during which time six children have been placed in foster homes. This may not be sufficient time for all the costs of foster care to become apparent and therefore the costs reported here might best be regarded as a medium-term assessment of the impact fostering has on the costs of ISU-based care, to be revised in the future as experience of the operation of the unit is gained.

**(5) IDENTIFICATION OF RESOURCE USE**

The main real resources used in the development and operation of the ISU and subsequent foster care can be categorised as follows:

- (a) Capital - buildings and adaptations,  
- fixtures and fittings.
- (b) Development costs - staff training and recruitment.
- (c) Revenue resources - current running costs.
- (d) Personal and family expenditures.
- (e) Use of other facilities:
  - hospital in-patient stays,
  - hospital out-patient visits,
  - primary care,
  - education,
  - social services,
  - voluntary support.
- (f) Long-term foster care:
  - preparation for and placement in foster home,
  - supervision,
  - effects on family income expenditure and leisure time,
  - continuing use of health, education and personal social services.

**(a) Capital Cost**

The unit is housed in four bungalows purchased and adapted specifically for the purpose. The market price of the bungalows and cost of adaptations has been revalued to 1984/85 prices and has been made comparable with the recurrent revenue expenditure by converting the total capital cost into a notional economic rent. If paid annually over the life of the building the rent would be considered as just equivalent to the initial capital cost. The formula used to convert a capital sum into an annual equivalent rent is:

$$cv \times \frac{r}{1 - \frac{1}{(1+r)^n}}$$



Where:  $cv$  is the capital value,  
 $r$  is the discount rate,  
 $n$  is the expected lifespan of the asset.

In this example the Treasury Discount Rate (TDR) of 5% has been used. The expected life of the building is assumed to be 60 years and for fixture and fittings, 10 years.

#### **(b) Staff Development Costs**

The model of care practised by the ISU is considered so innovative and demanding that all residential staff were required to undergo a period of five weeks training and eight weeks working with the children in hospital prior to opening the unit. This represents a large investment in staff development at significant cost before any children may be admitted.

It is difficult to estimate the cost of the development programme precisely because much of the training is done by Barnardo's own staff on a sessional basis. The cost estimate reported in the text is based on an analysis of the training programme for the second phase of the project. It includes all costs such as catering and lecture fees which can be directly attributed to the training programme, the salaries of those staff involved full-time in the programme and a proxied cost per session for those staff whose involvement was intermittent.

The cost of this initial period of training is a one-off expense and should, in theory, be treated in the same way as capital expenditure. If the total cost of this period of training and development is amortised over the lifetime of the project the annual equivalent cost becomes insignificant. For example, if the project is assumed to last for sixty years then the annual cost is less than £1,500 representing about £0.49 per child per day. Obviously the actual lifespan of the project is unknown but

the resulting cost is not highly sensitive to different assumptions about expected life. Extending the estimate from sixty years to infinity only reduces the annual cost from £0.49 to £0.47.

The size of this initial investment is related more to the innovative nature of the ISU rather than to its current uniqueness. It is unlikely to diminish until many more similar units are open. For policy purposes it is important to recognise the need to invest in staff development before a new unit can become operational.

Two further sources of training cost should be noted although neither could be quantified in this study. Replacement staff will not undergo the development programme but will receive in-service training in the unit. If staff turnover is high then these costs may become significant. In addition, all residential staff will participate in a continuing programme of education or training. In contrast to the initial development programme, this activity is not related to a particular type of residential care and should also be a feature of alternative residential settings although qualitative differences in the programmes may affect the relative costs.

**(c) Annual running costs**

The annual cost of operating the ISU has been taken from the revenue accounts for 1984/85. Staff costs make up 87 per cent of the annual expenditure and another 7 per cent is spent on food and travelling expenses.

**(d) Personal and family expenditure**

Each child is entitled to receive Mobility Allowance which is paid directly to most of the children in the unit and paid to the parents of the others. The allowance is technically a transfer payment and not a resource cost, however, it is spent on transport for visits and outings or used to

purchase other personal items. This expenditure is an important component of the cost of residential care which is difficult to estimate directly but which may be proxied by the Mobility Allowance. As payment of the allowance is not dependent on the child's place of residence and would also be paid to similar children in alternative residential settings the costs will cancel out when comparing different modes of care.

Some families still maintain contact with their children and contribute to their care by taking them home for weekends or by purchasing toys or clothes. For completeness these costs should also be considered but, unfortunately, data on these items are not available.

**(e) Use of other facilities**

As the ISU is a residential unit it needs to make extensive use of the statutory services for health, education and social work support (see Table 1). Costing the use of these services raises interesting methodological issues but, in terms of cost, the use of these facilities should not be overemphasised. It could be argued that the development of one new ISU would place no significant extra demand on these services and would therefore incur no significant additional costs. This argument is analogous to the earlier discussion about the scope to make savings in the shared resources of alternative methods of care. Few, if any, additional resources would be used if a child was admitted to hospital from the ISU for a period of acute medical care. A marginal analysis becomes less relevant and the additional costs more significant as the scale of provision of ISU facilities is expanded.

Second, for policy purposes, information on cost is most pertinent where it might influence decision about alternative methods of care. This focuses attention on differences in the level and type of provision of

services within each alternative and their likely resource implications. Irrespective of their place of residence the children currently resident in the ISU would still need special education and access to acute inpatient and outpatient medical facilities. For comparative purposes, therefore, some of these cost categories and the resulting problems of distinguishing between marginal and average costs can be ignored.

Table 1

Use of Medical and Education Facilities

<u>Medical</u>	Number <sup>1</sup>	Average cost <sup>2</sup>
Inpatient days	169	£126.73
Outpatients attendances	35	£23.49
Accident and Emergency attendances	4	£11.00
G.P. contact	17	n.a.

<u>Education</u>	No. of Children	Annual cost <sup>3</sup> per child
School A	7	£6427.20
School B	1	£4523.52

Notes:

- 1 : July 1984-June 1985.
- 2 : April 1984-March 1985: Merseyside Regional Health Authority Regional Cost Statistics.
- 3 : Refers to April 1984-March 1985 provided by Liverpool Education Office.

For example, the ISU's primary care needs are met by a local group practice of General Practitioners in much the same way as a normal household. The same arrangement will also prevail in other community units. In general the demands made on the Family Practitioner Service will tend to be unrelated to the place of residence and therefore the expected costs will

be the same and will cancel each other out.

Personal Social Services are an exception to this. Traditionally, social work is provided by the local authority and the costs borne by the Social Services Department. In the Intensive Support Unit, a social work service is provided by a part-time member of Barnardo's own staff, assisted at times by the Project Leader. The same Social Worker is also responsible for organising the foster care programme for children in the unit. The total cost, equivalent to the part-time salary plus employers on-costs, has been apportioned between the fostering service and social work support on the basis of an estimate of the amount of time spent in each activity.

The unit also tries to make use of volunteers both to increase variety in the children's relationship and to facilitate integration with the community. Obviously voluntary services are given free or with minimal reimbursement of expenses but a valuable resource cost may be incurred if the unit's use of a volunteer's time denies another health or social service. The size of this cost depends upon the alternatives. Time given up specifically for one purpose has no alternative use and therefore no resource cost.

There is no general agreement amongst economists about how to impute a notional or shadow cost for volunteers' time and it may range from zero to the salary cost of replacement staff. The practical problems associated with valuing this resource makes the effort difficult and for this reason we have not attempted to impute a value.

**(f) Long-term foster care**

The successful placement of children into long-term foster homes incurs two distinct types of cost. The first relates to the use of social worker's time to identify, assess and prepare prospective foster-parents for the

acceptance of a child into foster care. The second category of costs arises once a child is successfully placed in foster care. This includes the costs of supervision, the effects on family income expenditure and leisure time, the need for respite care and the continuing use made by the child of health, education and personal social services.

The foster-parents of children currently resident in the ISU will be recruited from a common fostering-programme which also aims to recruit parents for other children in care. Although there is some input into this programme by the Social Worker responsible for the children in the ISU, the number of children subsequently placed is not dependent on this and, therefore, it is not possible to attribute in any meaningful sense an appropriate share of the fostering programme to each child.

To cover the costs of supervision, foster parents are entitled each week to a professional fee of £70, an Attendance Allowance of £20.45 and a Board and Lodgings Payment which ranges from £28 to £48 depending upon the age of the child. The child may also be entitled to a Mobility Allowance of £21.40 which, as mentioned earlier, is technically a transfer payment but which can be used to proxy the final expenditures which it may finance.

To the extent that these payments are inadequate to cover the costs of supervision some family expenditure will also be redirected to support the fostered child. Opportunities for earning income may also be restricted as a result of taking on the responsibility of foster parenthood (Baldwin, 1985). In addition to these financial costs a significant proportion of the family's leisure time may have to be given over to caring for the child's physical and other needs. The problems of valuing such "informal" care have been discussed by Wright (1987), who concludes that no single valuation method is appropriate in all circumstances and that social survey techniques are essential to elicit the relative's individual attitudes to the care they

provide.

The problem of valuing these costs can be avoided if it can be assumed that taking a child into foster-care generates some psycho-social benefits for the family. As the decision whether or not to apply to be a foster-parent is taken voluntarily, it seems reasonable to assume, in the short-term, that the benefits compensate the family for the additional costs and lost income. In this case the net cost to the family is zero.

However, foster-parenthood represents a long-term undertaking, during which real costs may become apparent at any time. Once into the process foster-parents may find it difficult to withdraw if the costs to them became higher than originally anticipated. Thus it would be important to test the assumption of zero net costs to the family as the period of evaluation is extended beyond three years to ensure that this category of economic cost is not understated. To minimise the burden felt by foster families, each is entitled to twenty-eight days respite care. This is provided by other foster families known to the child, at a cost of £400 per annum.

Evaluating the use made of medical and education services by each child raises the problems of identifying the marginal or additional costs discussed earlier. As a result the problem can be dealt with in much the same way. If it is assumed that the use of these services will not depend upon the place of residence then it can be ignored when comparing the costs of alternative residential settings. While this assumption seems reasonable in the case of a child's schooling it is conceivably less valid in the case of health services where it is possible that a child's need for acute medical services will change slightly as a result of his or her discharge into a foster home. Unfortunately, it has not been possible to assess the changing needs for acute medical treatment as children move between the alternative forms of care. The possibility of long-term readmission to

residential care for some children was also discussed earlier. However, after three years, this situation has not occurred and therefore the question of what it might cost has not arisen.

For the personal social services the amount of support required by a child (and his family) is likely to change substantially after fostering. This is currently provided by the Social Worker who also provides an input into the common fostering-programme. The amount of support required by each of the foster families varies between children and for the same child over time. In the first three years of the unit's operation six children had been found foster homes and the degree of variation in the amount of social-support each had required prevented an accurate assessment of the costs of this service. An upper limit to the costs of a share in the common fostering-programme plus subsequent social support is provided by the relevant Social Worker's gross salary. Rather than try to ascribe this to each child on the basis of their use of the service the cost has been apportioned in one of two ways. The first is a crude average, sharing the costs of the social work support equally between each child in foster care. The second calculates a range of costs which, at the minimum, assumes a family requires no social support and at the maximum assumes that all of the social work resource is demanded by one family. The actual cost of this service for each family will fall somewhere between these two extremes.

#### **(6) EVALUATION OF RESOURCE USE**

It should now be apparent that there is no easy answer to the question; "what is the cost of caring for a child in the ISU?" The answer will depend upon the policy context in which the question is asked and the time horizon under consideration. Table 2 abstracts from these features and indicates the totality of resources expended on the children resident in the ISU.



To begin to put this figure into a policy context Table 3 presents an estimate of the short-term comparative costs of residential accommodation for children who are severely and profoundly handicapped. The availability of comparative cost data is limited and so it is assumed that if the Intensive Support Unit were not available then the children resident there would otherwise be cared for in a 24-bedded NHS community unit. Cost information for a number of such units is contained in a report by Wright and Haycox (1985). Direct comparison of the ISU with many of these is ruled out because they differ in so many respects, particularly in the degree of disability experienced by the resident children. However, in the opinion of one of its authors (KGW), the closest comparison which could be made was with an NHS unit included in the Wright and Haycox study which appeared to cater for children with similarly high levels of disability. This unit, located in the Trent Region, has 23 beds divided into four individually staffed and semi-autonomous groups. At the time of the costing (1985) all of the children living there exhibited a high degree of dependency. Sixteen were doubly incontinent, ten were aggressive to themselves or to others and ten were non-ambulant.

Table 2

Cost of Continuing Care in the ISU

	<u>Initial cost</u>	<u>AER<sup>1</sup></u>	
A) Capital	£	£	
i) buildings and adaptations	194,880	10,290	
ii) fixtures and fittings	56,900	7,360	
iii) staff development	27,063	1,429	
TOTALS	<u>278,843</u>	<u>19,079</u>	<u>19,079</u>

B) Recurrent		Annual expenditure	
i) running costs		167,279	
ii) personal and family expenditure <sup>2</sup>		8,902	
iii) use of other facilities			
- health 3:	Inpatient	21,417	
	Outpatient	822	
	A/E	44	
- education:	School A	43,730	
	School B	1,484	
TOTALS		<u>248,202</u>	<u>248,202</u>

Total annual cost	£267,281.00
Average cost per child per annum	£ 33,410.13
Average cost per child per day	£ 91.53

- 1 AER = Annual Equivalent Rent: An annual rent which, paid over the lifetime of the building, would be considered as equivalent to the initial capital cost.
- 2 Proxied by Mobility Allowance.
- 3 Total use valued at the average cost per inpatient day/outpatient attendance: Hospital Cost Statistics, Liverpool Health Authority..

The revenue costs of the health service unit, supplemented by the expenditures of other agencies, has been revalued to 1984/85 prices using an index provided by the Finance Division, DHSS. A capital cost has been estimated using the cost guidelines for residential accommodation issued by the Works Division, DHSS, converted to an annual rent in the same way as for

the ISU. This includes the cost of site preparation but excludes the cost of land.

Table 3

Comparative Average Costs of Continuing Care

	<u>ISU</u>	<u>NHS Unit</u>
	£	£
Running costs	57.23	49.22
Capital rent <sup>1</sup>	6.04	3.40
Unit cost	<u>63.27</u>	<u>52.62</u>
Personal expenditure <sup>2</sup>	3.06	3.06
Social work	0.51	0.70
Education	16.53	8.09
	<u>20.10</u>	<u>11.85</u>
Average Daily Cost of continuing care <sup>3</sup>	<u>83.37</u>	<u>64.47</u>

1984/85 prices

- 1 Annual equivalent rent for NHS unit excludes the cost of land.
- 2 Proxied by mobility allowance.
- 3 Excludes health care expenses of £7.68 per day as equivalent figures are unavailable for the alternative community unit.

Assuming that expenditure on health care would be the same wherever a child's place of residence, the Intensive Support Unit costs nearly £19.00 more per child per day. A large proportion of the difference in cost can be attributed to the education service. We have no evidence on the qualitative aspects of this service which might explain part of the difference in cost and, as with health care, there are no reasons to believe that the cost of

education will be influenced by which type of unit a child lives in. If, for these reasons, the costs of education are excluded, then the cost difference falls to almost £10.50 per day.

The difference in costs can also be qualified on other grounds. Although a relatively new development, some health and local authorities are beginning to question the suitability of 24-bed units. The Jay report (DHSS, 1979) noted that views on the optimum size of residential facilities have followed a consistent trend in favour of 'smallness' and that "...many people now think of 'small' as meaning a maximum of six children in a house". This trend has certainly continued since the publication of the Jay report in 1979 and many authorities are developing a residential service based on ordinary housing. Information on the costs of such schemes is extremely limited. In Wales the evidence from the Nimrod project (Nimrod, 1983) suggests that the costs of staffed houses for adults ranges from £39.00 to £58.00 per day (1984/85 prices) depending on whether four or six people can be accommodated in each house. To this needs to be added the residents contribution to the running costs of the home, of £6.50 per day plus the costs of full-time education or day-services. A four-place unit would therefore cost at least £64.50 per person per day.

Finally, care in the ISU might be expected to cost more than a community unit because of the intensity of work required to prepare a child for placement in foster care. We have stressed that a full comparison would also need to consider how the costs alter once children are successfully placed in foster homes. An estimate of the effect foster care has on the

costs of ISU-based care in the medium term is presented in Table 4.\*

As a result of the difficulties, both in apportioning a share of the fixed costs of the foster-programme and in attributing the costs of social work support to each child, the table presents two figures. The first is an average cost per child in which the costs of preparation and placement and continuing personal social support have been divided equally amongst the four children found foster homes during the second year of the ISU's operation. The second figure presents a range of costs which assume that, at the minimum, no contribution is made to the fixed costs of the foster programme and no social support is required and, at the maximum, that all these costs are attributed to one child. The actual costs for each child placed in foster care will be somewhere between these two extremes. Excluded from this is consideration of the long-term impact on personal and family costs plus an estimate of the additional costs of any health or residential care which may be required.

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\* Since this project was completed, Dr. Barnardo's have computed their own estimate of the average costs of foster care. The result, £155 per week (equivalent to £22.15 per day) is similar to the figure presented here. the Dr. Barnardo's estimate also includes an allowance for educational psychology, central administration and a holiday for the child.

Table 4

Average Costs of Foster Care

	£ <u>per child per day</u>
Preparation, placement and continuing social support (1)	4.07
Supervision <sup>2</sup> per child	21.18
Personal and family costs	0
Family based respite care	1.10
-----	-----
Cost of foster care	26.35
-----	-----
Education <sup>3</sup>	17.12
-----	-----
TOTAL	£43.47
-----	-----

Range of cost per child per day:                   £39.39 - £55.65  
Average cost per child per day:                   £43.47  
Comparative cost per child per day in ISU = £83.37

Notes

- (1) Represents a portion of the responsible social workers time.
- (2) The families are entitled to a fixed professional fee, attendance allowance and mobility allowance. A boarding out allowance is payable which varies according to the age of the child. The reported figure represents an average of all the allowances paid to each child.
- (3) Average cost at School A.

**(7) DISCUSSION**

The cost data presented in Section (5) appears to substantiate the hypothesis that care in the ISU is initially more expensive than a place in a larger community unit but that these costs can be reduced in the longer term as children are placed in foster care. Excluding the costs of education and health care, as these are believed to be marginal or common to all residential settings, the ISU costs approximately £66.80 per child per day. Subsequent foster care for the average child costs at least £26.35 per day, subject to the qualifications noted in the text. By comparison the health service unit costs £56.40 per child per day with the prospect of future savings unlikely.

It will be recalled from Figure 1 that, given the time horizon over which costs will be counted ( $t_n$ ), the savings resulting from the ISU's success in placing children in foster care will depend principally on the time required to prepare each child for placement ( $t_1$ ). Generally the savings will be larger the longer the period  $t_n$  and the shorter the period  $t_1$  provided that the unit maintains its past success and no child currently in foster care requires readmittance to residential care.

This concept can be made more tangible by following the experiences of the first eight children to be admitted to the unit to identify the appropriate values of  $t_1$  and by constraining  $t_n$  to three years; the length of time that the unit has been in operation. During this period six children were placed in foster care; two after thirteen months, two after twenty-three months, one after thirty-two months and one after thirty-three months. The two remaining children have stayed in the unit since it first opened. With this information it is easy to calculate the totality of resources expended on the care of these children over the period of three years and to compare this to the cost of a hypothetical stay for an equal number of children in the NHS unit.

However, before these costs can be compared an allowance has to be made for the difference in the timing of the two expenditure flows. In the health service unit costs are incurred at a uniform rate throughout the three years. In the ISU higher initial costs are offset by lower expenditures towards the end of the period. The payment of interest on loans is evidence that £1 today is not valued the same as £1 in three years time and so costs of the same nominal magnitude which are incurred at different times cannot be considered equivalent.

The process of adjusting alternative streams of costs to allow for differences in their timing is called discounting. This involves applying a

weighting factor, determined by the discount rate, to costs occurring in the future so that they may be compared as if they had all occurred at the same time.

Table 5 presents an estimate of the three year costs of caring for the eight children first admitted to the ISU, both in total and discounted using the Treasury's recommended rate of 5 per cent, with equivalent figures for the costs of a hypothetical stay in the NHS unit.

Table 5

	<u>Total Expenditure over Three Years</u>	
<u>Mode of Care</u>	<u>Unadjusted</u>	<u>Discounted at 5 per cent</u>
ISU and foster care	£488,100	£457,220
NHS unit	£493,920	£459,150

In Section (3) it was stated that the reason for calculating the long-term economic cost of the ISU and comparing this with the cost of alternative residential settings was to ascertain whether, over a number of years, it was cheaper to care for children in one way or another. The table shows that after the relatively short period of three years the ISU's success in placing children in foster care is having a financial effect. The relative cost advantage of the ISU over long-term institutional care will continue to increase as the time horizon is extended beyond three years provided that children in foster-homes do not need to be readmitted to residential care.

Although the central theme of this paper has been the cost of the ISU, the need to consider the efficiency of the unit and not just its costs was stressed in the introduction. This requires that the relative costs of care



be compared to the relative outcomes so as to ascertain whether the ISU is more cost-effective.

It may be that, for some children, care in the ISU will always be relatively more expensive than a permanent place in a larger unit, even allowing for subsequent foster care. However, the ISU may still be the most efficient option for these children if it can also be shown to be relatively more effective in improving their welfare.

#### (8) CONCLUSIONS

It is hard to draw any firm conclusions from the results of this single study except the usual one that further research is needed to test the assumptions that have been made. For example, is the childrens' use of health service facilities independent of their place of residence and if it is not, can the cost consequences be ignored as marginal? Do the costs to foster parents, particularly in terms of lost leisure time, continue to be offset by the psychosocial benefits of foster parenthood in the longer term? Finally and, most importantly, can the ISU maintain its success and continue to find foster homes for its children?

Without wanting to deny the importance of these questions, it does appear that over the first three years of its operation the ISU was generally no more expensive than long-term care in a larger residential unit. If this experience can be maintained beyond three years then the overall efficiency of the unit depends upon the relative effectiveness of care in the different settings. Measured simply by its success in placing children in foster homes, the ISU does appear significantly more effective and therefore more efficient than alternative living arrangements.

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