

The costs of intermediate care schemes

Anita Patel, Judy Foster and Finbarr Martin

Background

Intermediate care (IC) services are now an established component of health services for older people in England. They are hoped to provide 'added value' to the whole system of health and social care, particularly for older people, by cost-effectively enabling more appropriate use of hospital facilities and providing a safe alternative to hospital. However, models of IC vary between areas. Evaluations of effectiveness and cost-effectiveness compared to conventional care have produced inconsistent results and no specific model has been demonstrated to be the most effective way of achieving the benefits. Three borough-based IC schemes have evolved within Lambeth, Southwark & Lewisham in south London. Each provides a combination of two types of support: supported discharge (rehabilitative support for patients discharged from local hospitals after disabling acute illness, injury or surgery) and rapid response (taking referrals directly from Accident & Emergency departments or occasionally from home in order to avoid an acute hospital admission). An earlier study showed differences between them in organisational details, and patient case-mix, outcomes and length of time on the scheme (Foster, 2001). We recently carried out a cost-effectiveness evaluation of these services (Patel *et al.*, 2003). This paper illustrates the influence of between-scheme variations on the estimation of unit costs for the three services.

General approach to unit cost estimation

In order to estimate the costs of patient contacts for different types of scheme staff, we set out to measure the total cost of each staff member and the way in which they used their working time. Three elements of time consumption were considered: first, the duration of face-to-face contacts; second, time spent on patient-specific activities that did not actually involve contact with the patient e.g. telephone calls to co-ordinate care and travel time; and finally, time spent on activities that did not concern specific patients, but that were essential to the overall running of the service e.g. team meetings and general administration.

Data collection

In order to estimate the time spent on these different types of activities, we devised a Patient Event Record (PER) that was completed by each individual staff member during all shifts worked over a 7-day monitoring period during the course of the study. The PER recorded any activity that was carried out related to a specific patient (i.e. excluding any general activities that could not be attributed to any specific patient). For each patient-related activity, staff were asked to record its location, type, duration and travelling time. It was assumed that any remaining working time not recorded on the PERs was spent on non-patient-specific activities. The working patterns recorded during this monitoring week were assumed to represent annual working patterns.

Costs were estimated from schemes' revenue expenditure accounts for the financial year 2000/01. We aimed to include the following types of costs in the unit cost estimations:

- salaries and salary on-costs;
- direct overheads, e.g. stationery, equipment, travel and clerical support;

- indirect overheads, e.g. support departments in the organisation (personnel, finance etc.), maintenance and electricity;
- capital overheads, e.g. physical land and premises.

It was necessary to make some assumptions and adjustments where any schemes' expenditure information was not consistent or complete. As unit costs were calculated only for those staff providing direct patient-specific services, costs of other scheme staff (i.e. clerical workers and team co-ordinators) were allocated in the form of direct overheads. For the Lambeth and Southwark schemes, revenue expenditure information did not include physiotherapists and occupational therapists that were located within hospitals, and specifically funded by the local Health Authority to carry out tasks related to rapid response/supported discharge. (Therapists carrying out the equivalent activities in Lewisham were already included in the Lewisham scheme accounts). To ensure that cost data were comparable across the schemes, and to include the full costs of the schemes, a separate estimation was made for the costs of these Lambeth and Southwark hospital-based therapists.

Staff working patterns and unit costs

In terms of budget allocation for different types of staff, rehabilitation support workers (RSWs) constituted the bulk of staffing in each of the schemes - 18 of 24 whole time equivalents (w.t.e.) in Lambeth, 14 of 19 in Southwark but only 5 of 11 in Lewisham. The other major difference was that Lewisham had a higher proportion of therapists (3.5 w.t.e., 33%) and only one nurse (the RSW team leader), whereas in Lambeth and Southwark the qualified professional input was predominantly nursing (5 nurses including the team leader and 1 w.t.e. therapist in Lambeth, and 3 nurses and 2.7 therapists in Southwark).

There were also major differences between the three schemes in the patterns of staff activities recorded during the monitoring week. A much greater proportion of the contracted time of Lambeth RSWs was ascribed to direct face-to-face contacts (34%) and to total patient-specific activities in general (54%) than in Southwark (12% and 20% respectively) or Lewisham (10% and 32%). Within this, the time ascribed to travel also varied - 18%, 8% and 13% in Lambeth, Southwark and Lewisham respectively. The team leader in Lewisham spent far more time with patients (18%) than the team leaders in Lambeth (1.3%) and Southwark (4%). This reflected their differing roles in each scheme. In Lewisham, the team leader was the 'nurse' for the team, whereas in Lambeth the role was more managerial. The proportion of physiotherapist time spent with patients or on total patient-specific activities in Lambeth (38% and 53%) was much higher than the average for the 2 Southwark therapists (13% and 26%) or the 5 Lewisham therapists (9% and 20%). These differences are at least partly explained by the broader role of the team therapy input in Lewisham, as explained above.

These differences in staffing and staff activity patterns resulted in quite large differences in unit costs (Table 1). Notably, the RSW unit cost in Southwark was twice that in Lambeth and the scheme therapist costs were considerably high in Lewisham compared with the other two schemes (although the difference narrowed when the costs of hospital-based therapists were accounted for).

Comment

It was necessary to assume that PERs were completed accurately and consistently between the three schemes, and that the monitoring week accurately reflected usual working patterns. It is also possible that the schemes were operating below potential maximum capacity and that the unit costs

were therefore inflated (particularly in Lewisham where activity levels were reported to be higher after the study period, with no staffing changes). There is a lack of similar data in the available published literature so benchmarking the local services against others is not possible, but the proportion of non-contact time by RSWs in Southwark, and therapists generally, is surprising. In order to explore the potential impact of increased activity, Table 1 also reports direct:indirect time ratios and unit costs under the assumption of an additional 20% of time spent on face-to-face contacts by each staff type.

The overall study highlighted substantial differences between the three schemes, many of which should be considered in the historical context of their evolution. Nevertheless, the study illustrated how the differences translate through to unit cost estimation and subsequently, the ability to compare the schemes' relative cost-effectiveness. However, the information is useful to guide the continuing development of these relatively new and innovative services.

Acknowledgements

We are grateful to the Lambeth Southwark and Lewisham Health Authority for funding this study; Marilyn Peters for administrative support; and all staff in each of the schemes for supporting the study, their input into the planning of the study and their data collection efforts.

References

- Foster, J. (2001) *Lambeth, Southark and Lewisham's Rapid Response and Supported Discharge Teams: Analysis of 6 Months' Data*, Immediate Access Project, King's College London.
- Patel, A., Foster, J. and Martin, F. (2003) *Economic Evaluation of Intermediate Care Schemes in Lambeth, Southwark and Lewisham*, Immediate Access Project, King's College London.

Table 1: Contact time and unit costs (2000/1 prices) of service inputs from the schemes, by staff type^{1,2}

	Lambeth		Southwark		Lewisham	
	Ratio of direct: indirect time on face-to-face contacts	Cost per hour of face-to-face contact (£)	Ratio of direct: indirect time on face-to-face contacts	Cost per hour of face-to-face contact (£)	Ratio of direct: indirect time on face-to-face contacts	Cost per hour of face-to-face contact (£)
Team leader/nurse	1:8.69 (1:7.08)	242.34 (202.07)	1:7.45 (1:6.04)	168.63 (140.49)	1:4.42 (1:3.52)	133.06 (110.96)
RSW	1:1.95 (1:1.46)	48.76 (40.66)	1:7.03 (1:5.69)	108.31 (90.24)	1:4.36 (1:3.46)	78.61 (65.41)
Physiotherapist	1: 2.54 (1:1.95)	96.42 (80.35)	1:6.89 (1:5.58)	201.52 (168.06)	1:14.24 (1:11.71)	425.278 (354.68)
Occupational therapist	1: 2.54 (1:1.95)	96.42 (80.35)	1:6.50 (1:5.25)	169.28 (141.06)	1:9.08 (1:7.4)	272.82 (227.35)
Social worker	n/a	n/a	n/a	n/a	1:4.77 (1:3.81)	169.58 (141.36)
Hospital-based physiotherapist	1:4.0	91.32	1:4.00	91.32	n/a	n/a
Hospital-based occupational therapist	1:2.0	63.06	1:2.00	63.06	n/a	n/a

Notes

1. Where there was more than one of a particular type of staff in a scheme, average ratios and unit costs for those staff are reported.
 2. Figures in brackets show direct:indirect contact time ratios and costs, under the assumption of an additional 20% of working time spent on face-to-face contacts. These sensitivity analyses were only carried out for staff directly employed by the schemes, i.e. not for the hospital-based physiotherapists and occupational therapists.
- n/a: Staff type did not exist in the scheme.