RESEARCH NOTE

A comparison of costs in Australian public teaching, public non-teaching and private hospitals

JAMES S LAWSON

James Lawson is a Professor in the School of Health Services Management at the University of New South Wales.

Abstract

This paper compares costs for caring for patients according to common diagnosis groups in Australian public teaching, public non-teaching and private hospitals. Generally, the costs for general surgical procedures are highest in public teaching hospitals, followed by public non-teaching hospitals, and are lowest in private hospitals. However, the private sector is more expensive than the public sector for obstetric activities. The reasons for the differences appear to be the much higher 'overheads' in the public sector than in the private sector, and the longer hospital stay for obstetric patients in private hospitals. Managers of individual hospitals should examine the data in detail to determine if alternative approaches are appropriate.

Introduction

For the first time, costs of caring for patients in public teaching, public non-teaching and private hospitals have become available based on Australian national diagnosis related groups (AN-DRGs).

The Commonwealth Department of Health and Community Services contracted the accounting firm KPMG Peat Marwick (KPMG) to develop and apply AN-DRG cost weights to a sample of Australian hospitals. While these data are in the public domain, they are not readily available in a usable form for health service managers and clinicians. Accordingly these data have been analysed and presented in a form which allows some

comparisons to be made between the three hospital sectors in Australia. Such comparisons offer useful insights, which in turn should lead to more detailed analyses and action in the field.

Methods

The selection of hospitals for participation in the KPMG study was carried out by a mixture of random sampling and selection so as to include several specialist obstetric and paediatric hospitals, plus the seven hospitals operating services under the Nationally Funded Centres Program. Ninety seven hospitals were included in the study, all with 50 beds or more. All States and Territories were included.

The costs by specific diagnosis related group (DRG) for all 97 hospitals were estimated for a six-month period during 1992 and 1993. This was done by using a 'top down' cost modelling approach based on a New South Wales Department of Health refinement of the initial United States-based Yale Cost Model. In essence, this method distributes the total running costs of a particular hospital, firstly, to major cost centres, then to the groups of patients classified into DRGs. Capital costs for public hospitals have been excluded.

Direct teaching and research costs were estimated according to a formula and were excluded from the cost estimates per DRG. The rigour with which such definitions can be applied varies between hospitals. Indirect teaching and research costs have not been estimated and therefore have not been excluded.

Details of the methodology have been published by KPMG (KPMG Peat Marwick 1993). The comparisons presented in this paper are wholly based on the KPMG survey. Twelve DRGs have been selected for comparison. These 12 DRGs have the following characteristics:

- they represent high-volume hospital activities, with all exceeding 100 separations for each of the three hospital categories
- each contains one or more clearly defined procedures which are readily comparable.

The selection of high-volume DRGs aims to reduce the element of chance and extremes which may distort the averages because of the few patients whose hospital stay may be prolonged.

The KPMG study estimated the costs of medical services by DRG for public but not private hospitals. Therefore, for purposes of comparisons,

costs of medical services have been subtracted from the average cost of each DRG in public hospitals.

Overhead costs are defined to include approximately 20 to 30 per cent of the total operating costs of hospitals. These costs include administrative, planning and development staff, staff health clinics, mail, transport, hotel and food services, stores, supplies, maintenance staff and power (Palmer et al. 1992).

Results

Tables 1, 2, 3 and 4 show the results. As shown in table 1, the average cost for all DRGs in public teaching hospitals is much greater than for public non-teaching and private hospitals. The reason is of course because public teaching hospitals undertake the most complex and therefore expensive work. Such comparisons of overall costs between teaching and non-teaching costs are not valid.

Table 1: Average costs of all separations in Australian public teaching, public non-teaching and private hospitals (97 hospitals), 1992–93

	$
Public teaching	2807
Public non-teaching	2088
Private	1571

As shown in table 2, the cost for general surgical procedures such as carpal tunnel release, tonsillectomy, vein ligation, hernia repair, appendicectomy, cholecystectomy, mastectomy and transurethral prostatectomy is consistently higher in public teaching than in public non-teaching hospitals. These procedures generally cost less in the private hospital sector. However, the cost for obstetric procedures, including normal birth and caesarean section, is highest in the private sector and lowest in the public teaching hospitals.

Table 2: Costs for Australian public teaching, public non-teaching and private hospitals (97 hospitals), 1992–93

DRG	Procedure	Separations	Cost per DRG ($)		
			Public teaching	Public non-teaching	Private
27	Carpal tunnel release	733	1361	1049	996
714	Tonsillectomy<10 years	714	1137	1257	915
610	Myringotomy< 10 years	610	739	996	820
743	Vein ligation	743	1658	1515	1399
314	Hernia repair	1551	1836	1654	1506
317	Appendicectomy —no complications	1665	1929	1521	1600
367	Cholecystectomy —no complications	1880	2717	2359	2010
495	Mastectomy—major	207	3148	2958	2750
603	Transurethral prostatectomy —no complications	739	2313	2146	1903
673	Caesarean —no complications	1146	4049	3683	4189
675	Vaginal delivery —no complications	8857	1736	1854	2255
683	Abortion plus dilatation & curettage	2512	1334	901	800

Table 3: Inpatient length of stay, ward nursing costs, overhead costs, operating theatre costs for Australian public teaching, public non-teaching and private hospitals (97 hospitals), 1992–93

	Length of stay (days)			Ward nursing (%)			Overheads (%)		
	T	Non-T	Priv.	T	Non-T	Priv.	T	Non-T	Priv.
Carpal tunnel release	1.7	1.6	1.4	15.6	17.3	15.9	33.3	36.0	27.2
Tonsillectomy <10 years	1.6	1.6	1.3	26.2	30.7	26.3	26.2	32.5	26.3
Myringotomy <10 years	1.1	1.1	1.1	16.6	15.9	17.3	33.3	39.5	30.0
Vein ligation	3.1	3.1	2.9	17.4	19.6	19.4	35.6	34.4	28.7
Hernia repair >9 years	3.7	3.8	3.3	19.2	23.4	23.4	36.4	36.1	25.8
Appendicectomy —no complications	3.7	3.5	3.6	19.8	25.0	23.7	36.1	34.6	25.0
Cholecystectomy —no complications	5.7	5.2	4.1	22.9	25.6	25.4	32.3	31.5	23.0
Mastectomy —major	8.9	9.3	7.7	27.7	32.3	34.3	37.2	37.0	27.3
Transurethral prostatectomy —no complications	5.8	5.6	5.2	25.8	29.0	32.9	6.7	38.0	27.0
Caesarean —no complications	10.8	8.7	9.1	38.3	40.9	45.6	35.5	33.5	27.9
Vaginal delivery —no complications	4.4	4.0	6.1	43.5	44.7	49.0	38.3	35.6	29.5
Abortion plus dilatation & curettage	1.2	1.2	1.2	16.4	17.6	14.1	33.0	35.5	27.1

T Public teaching hospital
Non-T Public non-teaching hospital
Priv. Private hospital

Table 4: Comparison of operating theatre costs by selected DRG for Australian public teaching, public non-teaching and private hospitals (97 hospitals), 1992–93

	Public teaching ($)	Public non-teaching ($)	Private ($)
Carpal tunnel release	408	301	370
Tonsillectomy <10 years	250	260	241
Myringotomy <10 years	192	285	251
Vein ligation	451	364	418
Hernia repair >10 year	464	352	348
Appendicectomy—no complications	499	274	412
Cholecystectomy—no complications	602	462	522
Mastectomy—major	514	426	516
Transurethral prostatectomy—no complications	493	328	367
Caesarean—no complications	293	418	394
Vaginal delivery—no complications	59	150	122
Abortion plus dilatation & curettage	237	192	238

Comparisons of operating theatre costs indicate that for all but 2 of the 12 procedures the costs are very similar (see table 4). The major exception is normal deliveries which are much less expensive in the public teaching hospitals.

Discussion

The data suggest that there may be two reasons for the above findings.

1. The overhead costs are consistently and substantially higher in the public teaching and non-teaching hospitals than in the private hospitals.
2. The lower costs of births in the public teaching and non-teaching hospitals appear to be mainly because of the shorter length of inpatient stay in the public sector.

The data presented require more detailed analyses on a hospital-by-hospital basis before they can be used as a basis for action. For example, the high cost per DRG of overheads in the public sector needs detailed analysis. The higher costs may or may not be justified, however, as overheads comprise 20 per cent to 30 per cent of total costs, the question of justification is an important one.

With respect to 9 of the 12 DRGs selected for comparison, the length of stay in hospital is remarkably consistent between the three hospital groups. The most important exception (important because of the volume of separations) is normal vaginal delivery, where the length of stay in the two public hospital sectors is on average two days less (33 per cent) than the private sector.

The question of hospital length of stay for obstetric patients following normal births has been examined in detail many times, but most recently in this journal (Shorten 1995). It is clear that there is no association between length of stay and maternal or infant morbidity, including breastfeeding rates. One Australian report (Scott et al. 1992) suggests that shorter lengths of stay in hospital do not necessarily result in lower costs. This view is rigorously challenged by Shorten, whose view is supported by the KPMG data presented in this report. This is an important matter as it seems likely that the considerable resources used to maintain obstetric patients in hospital unnecessarily longer in the private sector represent resources that are not available for other health-related activities.

Acknowledgements

KPMG Peat Marwick, Professor George Palmer, and officers of the Commonwealth Department of Human Services and Health have offered invaluable information and advice.

References

KPMG Peat Marwick 1993, *National Costing Study. Production of cost weights for AN-DRGs Version one*, Summary report, KPMG Peat Marwick, Adelaide.

Palmer G, Aisbett C, Fetter R, Winchester L, Reid B & Rigby E 1992, *Casemix costs and casemix accounting in seven major Sydney teaching hospitals*, Centre for Hospital Management and Information Systems Research, University of New South Wales.

Scott A, Cameron S, Kenny P, King M & Shiell A 1992, *Evaluation of obstetric early discharge: economic evaluation*, CHERE Discussion Paper Series 12.

Shorten A 1995, 'Obstetric early discharge versus traditional hospital stay', *Australian Health Review*, vol 18, no 2, pp 19–39.