Health Economics Research Unit

Research Report 4

Labour Costs in Victorian Public Hospitals

P. Michael Tatchell

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Labour Costs in Victorian Public Hospitals

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CHAPTER 1

INTRODUCTION

This report presents the results of a major study of labour costs in Victorian public general hospitals. The main purpose of the research has been to examine the determinants of labour cost increases in hospitals. Particular attention has been given to separating the effects of changes in the unit cost of labour - either directly through money wage changes or indirectly through improved employment conditions and allowances - and of changes in the quantity and quality of labour inputs. An understanding of these effects is important in determining appropriate policies for cost containment and in projecting possible cost trends. It is, for example, important to determine whether the large increase in labour cost during the 1970's was due to technological factors which might be expected to continue, or to special circumstances - relating particularly to changing wage relativities - which may no longer exert the same influence on costs.

The decision to focus attention on the rising cost of hospital labour as against other important aspects of hospital activity was prompted by two considerations. First, it is clear from previous studies of the hospital sector in Australia [1] that labour costs, by far the largest component of hospital expenditures, appear also to have contributed most to the rapid rise in those expenditures in recent years. Despite its obvious importance, however, there have been no detailed studies (until recently) [2] of the underlying determinants of labour cost inflation. The present paper reports on one attempt to fill this gap in knowledge.

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1 See, for example Abelson (1977 and 1980), Deeble (1978) and Dewdney (1977).

2 A similar study to the present one has been undertaken by Paul Schapper using hospitals in Western Australia. See Schapper and Hobbs (1979) and Schapper (1980).

The second reason for our interest in labour costs relates to data availability. The Health Economics Research Unit has been fortunate in having access to the data created by HOSPOWER - a centralised computer-based payroll system for hospital employees first introduced into hospitals in Victoria in the early 1970s. The availability of this information provided a unique opportunity for a detailed analysis of changes in hospital wage rates, workforce composition, conditions and allowances and productivity which hitherto has not been possible.

THE CAUSES OF RISING HOSPITAL EXPENDITURE

Explanations of rising hospital expenditures have generally been attributed to rising costs or to the pressures of a growth in demand. Proponents of the former argue that expenditure growth can largely be attributed to changes in the unit prices or in the quantities of the inputs (particularly labour) used by hospitals. Price changes may be economy-wide or specific to particular inputs used by hospitals, but they are exogenous to the hospitals themselves. Quantitative changes emanate mainly from technology which may or may not be associated with qualitative improvements in care. Proponents of the latter explanation blame the rise in expenditure on the pressures of demand brought about by population growth, rising insurance coverage, accelerating urbanisation and changes in population composition and disease patterns (lower mortality, higher morbidity and an ageing population). A substantial literature on the subject has emerged since the early 1970s, particularly in the United States. This has been characterised by attempts, using a variety of techniques of varying degrees of sophistication, to establish the main cause or causes of rising hospital expenditure.

The explanation that has probably received the most widespread acceptance in the United States has been that proposed by Martin Feldstein. In a number of publications [3] Feldstein has argued that rising demand for hospital services has been the 'driving force' behind hospital 'cost' inflation. Demand has increased for a variety of reasons, chief among which are a rapid increase in insurance coverage and rising incomes. As Feldstein points out (1974, p.395), insurance coverage has grown to such an extent that while average gross costs rose

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3 See, for example, Feldstein M.S. (1971a, 1971b, 1974 and 1977).

significantly the real net cost per patient day (net of insurance and government payments and deflated by the consumer price index) remained nearly unchanged from 1950 to 1970. At the same time there was little increase in the supply of hospital beds per capita. (Under these conditions, traditional economic analysis explains hospital 'cost' inflation in terms of a rapid growth in demand and an inelastic supply). Feldstein argues that price per day has risen in response to increasing demand because the supply of higher quality services is very elastic. The pressure of rising demand has been channeled into the provision of more and better quality inputs per inpatient day rather than into increasing the number of bed days of care. Rising average costs per inpatient day are therefore the result of a growth in the quantity and quality of resource inputs per inpatient day which in turn is the hospital's response to the rising demand for hospital services.

Empirical support for this proposition has been provided by Feldstein himself (1971b), Davis (1972 and 1974) and Salkever (1972), though both Davis and Salkever present evidence of a substantial inflationary impact from supply-side factors as well. Apart from these studies, and other work by the same authors, little attention has been paid to the underlying determinants of rising hospital expenditure. Most work has sought merely to document how expenditure has risen. [4] The consensus of opinion from these descriptive studies is that most of the expenditure growth in recent years has been associated with factor price increases. Increased utilisation of hospital services, in contrast, has accounted for only a small part of the increase (one study puts the ratio of the impact of these two components at 8:1). [5] Other contributing factors are changes in technology and in case-mix, changes in the amount of labour and materials provided per unit of service, changes in the number of services performed per bed day, changes in the average length of patient stay, and a shift toward a more highly skilled and better trained hospital staff.

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4 See, for example: Andersen and May (1972), Baron (1974) Chester (1972), Feldstein P. (1977), Fortin (1972) and Klarman (1970).

5 Andersen and May (1972).

RISING HOSPITAL EXPENDITURE IN VICTORIA

Much can be learnt about the process of rising hospital expenditure in Australia by examining some basic utilisation and expenditure statistics for Victorian hospitals for the period 1970 to 1980. There were 147 public general hospitals in Victoria in 1980 providing a population of some 3.9 million people with almost 14 thousand beds - a ratio of 3.56 beds per 1000 population (Table 1.1). Comparison with earlier years shows that bed numbers have not kept pace with the growth in population - there were 3.99 public beds per 1000 population in 1970. At the same time there has been a 21 percent increase in the admission rate (inpatient admissions per 1000 population) with the number of inpatients treated growing from 365,257 in 1970 to 503,434 in 1980. Outpatients (numbers treated) more than doubled during the period. A shorter length of stay, however, combined with a more intensive use of hospital facilities - the occupancy rate rose from 71.9 percent to 74.4 percent - has led to a fall in the number of inpatient bed days per 1000 population (from 1.05 in 1970 to 0.97 in 1980).

These changes were due, in part, to certain alterations in statistical recording procedures, the most significant of which relates to one-day patients. It was not until 1975 that Victorian hospitals were required to record one-day patients as inpatients. Prior to that (before 1970 they were not recorded at all) one-day patients were progressively included in the inpatient statistics, though far from consistently across all hospitals. The significance of this change is shown by the fact that one-day patients accounted for 1 percent of all inpatient bed days and 10.2 percent of inpatient admissions in 1976 (Health Commission of Victoria, 1980a).

Even allowing for changes in recording procedures the statistics presented in Table 1.1 suggest a marked change in the nature of hospital care in Victoria. The 'average' hospital inpatient now spends less time in hospital but receives more in the way of diagnostic and therapeutic services than his or her counterpart in the early 1970s. This is borne out by Deeble, in his study of Victorian nospital

Table 1.1: Utilisation Statistics, Victorian Public General Hospitals[1], 1970 to 1980

Year (ending 30 June)	Population of Victoria m	Total Available Beds	Beds per 1000 Population	Total Inpatients Treated ('000)	Inpatients per 1000 Population	Total Inpatients Bed Days ('000)	Inpatient Bed Days per Head of Population	Total Outpatients Treated ('000)	Total Adjusted Bed Days ('000)	Average Length Of Stay (in days)	Percent Occupancy %
1970	3.42	13,664	3.99	365.3	106.8	3,586.7	1.05	910.2	3989.5	9.8	71.9
1975	3.70	14,474	3.91	432.6	116.9	3,862.1	1.04	1,356.2	4410.9	8.9	73.1
1980	3.90	13,887[2]	3.56	503.4	129.2	3,781.2	0.97	2,064.7	4598.4	7.5	74.4
% change 1970-80	14.0	1.6	-10.8	37.8	21.0	5.4	-7.6	120.2	15.3	-21.4	—

Source: Derived from the Annual Reports of the Hospitals and Charities Commission of Victoria (1970 and 1975), and from the Annual Report of the Health Commission of Victoria, 1981.

1. The statistics presented relate to all 'general' and 'special' hospitals listed in the above reports. They exclude hospitals for the aged, the Cancer Institute and parts of Heatherton and Fairfield hospitals.

2. A large part of the fall in bed numbers since 1975 is due to the reclassification of 200 hospital beds as nursing home beds in 1978-79.

costs, who states that: 'admission to hospital no longer implies the presence of serious, disabling illness.... The modal length of stay is one day and nearly sixty percent of patients stay less than six days for treatment in which diagnostic procedures and minor elective surgery play an increasing part' (1980, p.50). Table 1.1 also shows that proportionately more services are now being offered in outpatient clinics reflecting not only a substitution of outpatient for inpatient care, but also substitution of outpatient services for ambulatory care provided by general practitioners.

The changes in hospital utilisation evident in Table 1.1 in no way match the substantial increases that have taken place, during the same period, in hospital expenditures and unit costs (see Table 1.2). Expenditure on hospital care in Victoria rose more than six-fold (545.2 percent) from $101.6m to $655.2m. At the same time expenditure on salaries and wages increased by 599.1 percent ($71.2m to $479.9m) resulting in a growth in the salaries and wages component of total hospital expenditure from 70.1 percent to 76.0 percent. This was accompanied by a corresponding proportionate fall in expenditure on non-labour items from 29.9 percent to 24.0 percent.

The unit cost figures presented in Table 1.2 suggest a marked increase in average costs per unit of output, whether measured in terms of inpatient bed days or inpatient admissions. Measurement of unit costs in this manner presupposes that the unit of output has remained unchanged during the period under study. The evidence already presented on utilisation patterns, however, suggests that considerable changes have occurred in the nature of hospital output since 1970, particularly with regard to the intensity of care being provided. Moreover, a rising admission rate coupled with an increase in short stay admissions indicates a change in the mix of cases being treated, although the absence of morbidity data for Victorian hospitals in that period does not allow more rigorous analysis of the proposition.

More significant, perhaps, is the growth in outpatient services, which represent a marked change in the pattern of hospital service delivery. An output measure that includes an allowance for outpatients can be constructed either by treating outpatients separately and relating them to the expenditure on outpatient services, or by combining them in some way with inpatients or

Table 1.2: Expenditure and Unit Cost Statistics, Victorian Public General Hospitals, 1970 to 1980

Year (ending 30 June)	TOTAL EXPENDITURES			UNIT COSTS		
	Total Hospital Operating Expenditure (1) $m	Expenditure on Salaries and Wages $m	Expenditure on Salaries and Wages as % of Total %	Average Cost per Inpatient Admission $	Average Cost per Inpatient Bed Day $	Average Cost per Adjusted Bed Day $
1970	101.6	71.2	70.1	278.05	28.32	25.46
1975	296.9	232.0	78.1	686.32	76.88	67.31
1980	655.2 (2)	497.9 (3)	76.0	1301.53	173.29	142.49
% change 1970-80	545.2	599.1	---	368.1	511.9	459.7

Source: As Table 1.1

1. These figures include payments for board and lodging
2. For comparison with earlier years this figure is net of 'Ambulance' and 'Other Cost Sharing Payments'
3. This figure includes payments to Sessionals and Contract VMO's

inpatient bed days. The former approach is not possible in Victoria because of a lack of separate accounting for outpatient costs. [6] Derivation of a composite measure, on the other hand, can be achieved by using the HASAC formula of 5.75 outpatient attendances as equivalent to one inpatient bed day. [7] The resulting measure - the 'adjusted bed day' - is a more accurate reflection of the output of Victoria's hospitals as it takes into account the rapid growth in the number of services being provided to ambulant patients in emergency departments and outpatient clinics. Table 1.1 shows that adjusted bed days increased by 15.3 percent between 1970 and 1980; at the same time average cost per adjusted bed day rose by 459.7 percent (Table 1.2) from $25.46 to $142.49.

The relative contribution to rising hospital expenditure of changes in hospital output and changes in costs per unit of output can be estimated, more rigorously, in percentage terms. [8] Using adjusted bed days as the measure of hospital output, Table 1.3 (last column) shows that over the period 1970-80 almost all the growth in hospital expenditure was due to the increase in unit costs (94.05 percent) the remaining 5.95 percent being attributed to the rise in hospital output. A further breakdown of unit cost increases into wage and non-wage components shows that nearly three quarters of the rise in hospital expenditure was due to the rising unit cost of labour while about one fifth can be attributed to the rising unit cost of non-labour inputs.

Subdivision of the period into shorter 2 year intervals reveals a considerable variation in the contribution of these components to rising hospital expenditures

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6 Hospitals in Victoria are required, in their annual returns to the Victorian Health Commission, to allocate their total maintenance expenditures into inpatient and outpatient categories. It appears, however, that the amounts reported (and subsequently recorded in the Commission's Annual Reports) bear little relationship to the actual expenditures incurred, as they are not based on detailed costings but rather on an 'ad hoc' percentage breakdown.

7 See the Hospital and Allied Services Advisory Councils (1971). An alternative approach to the HASAC formula, based on the relative cost of inpatients, inpatient bed days, and outpatients treated, is described and tested in Chapter 4 of this report.

8 See Appendix A for details of the calculations.

Table 1.3: Percentage of Total Increases in Hospital Operating Expenditure Attributed to Various Factors, Victorian Public General Hospitals, 1970 to 1980

Factor to which Increased Expenditure is Attributed	Percent of Total Increase Attributed to Factor					
	1970-72 %	1972-74 %	1974-76 %	1976-78 %	1978-80 %	1970-80 %
Number of Adjusted Bed Days	14.27	6.46	12.71	- 2.02	- 2.15	5.09
Wage Cost per Adjusted Bed Day	71.18	80.03	70.68	77.89	67.17	73.17
Non-Wage Cost per Adjusted Bed Day	14.55	13.51	16.61	24.13	34.98	21.74
Average Total Cost per Adjusted Bed Day	85.73	93.54	87.29	102.02	102.15	94.91
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00

Source: Derived from Tables 1.1 and 1.2 (see Appendix A for details of calculation)

(Table 1.3). The impact of rising output, for example, was greater during 1970-72 (14.27 percent) and 1974-76 (12.71 percent) than in the other three periods - indeed the fall in adjusted bed days since 1976 shows up as negative contribution to rising hospital expenditures in the periods 1976-78 and 1978-80. The impact of rising wage costs was greatest in 1972-74, a time when substantial wage and salary increases were granted in most sectors of the economy including the hospital sector. Finally, the rising cost of non-labour inputs was greatest in the latter two periods, when wage and salary increases were being held down by the indexation policies of the federal government and the level of hospital output was declining.

This analysis has shown that, in common with the American experience of recent years, rising unit costs, particularly wage costs, have been the primary determinant of the growth in expenditure on Victorian hospitals in the 1970s. What is not apparent from these statistics is the underlying cause of the unit cost increase. Are they the result of demand pressures as they appear to be in the United States, or are supply-side factors to blame? The evidence from this study as well as from the work of Schapper and Hobbs (1979) and Abelson (1977) is that supply-side factors are the more important determinants of rising hospital expenditure in Australia. A number of reasons for this can be given. In the first place public ownership and the predominance of government funding of hospitals in Australia [9] serves to upset the causal link between increased demand and expanded hospital capacity that appears to exist in America. Constitutional responsibility for hospital matters is vested largely with individual State Governments in Australia. This means that the various health and hospital commissions exert direct control over both the operating and capital expenditures of public hospitals. Moreover, government funds are provided on a budget-review basis and not on an individual patient or daily rate basis. Any increase in demand for hospital services, therefore, need not necessarily result in a growth in hospital revenue.

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9 Deeble (1982) has shown that following the introduction of Medibank in 1975 the ratio of government to private payments for general hospital care has remained at about 3 to 1, despite the various financing changes that have been made since.

An interesting explanation of the relationship between demand and hospital costs in Australia has been proposed by Palmer (1978). He argues that the link between the two is a political one - 'an increased community demand for health services gives rise to an increased willingness of governments to meet the costs of this care'. The question arises though as to whether governments are responding to community pressures or, as is more likely, to pressures from provider groups. Certainly, as Palmer points out (after Marmor, et al., 1976), the provider groups stand to gain more directly than the general population from increased expenditure on health services. They will therefore be motivated to exert pressure on governments to increase expenditure (or at least to maintain it in real terms) and, conversely, to oppose any measures that may be taken to contain the growth in costs as this might adversely affect their incomes and employment opportunities.

Additional support for the supply side explanation of hospital expenditure growth in Australia arises from its wage fixing system. Under the current arrangements changes in wages and salaries are determined by statutory authorities (Wages Boards in Victoria) which are independent of both government and employer groups. This has resulted in the granting of wage and salary increases to hospital staff which have been largely beyond the control of hospital managements. [10] Hospitals have no option but to accept the decisions of the Wages Boards (or the Arbitration Commission in the case of indexation changes since 1976) and to pay the higher rates. The only avenues through which hospitals can attempt to control labour cost rises are either by reducing staff numbers or hours (e.g. through a reduction in overtime), or by substituting lower paid for higher paid staff (e.g. nurse aides for registered nurses).

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10 This conclusion is borne out and further illustrated by evidence presented later in this paper and by the work of Abelson (1977) and Schapper and Hobbs (1979).

OUTLINE OF THE REPORT

The forgoing has been by way of introduction to the main body of this report which describes, in detail, the research methodology employed and the results obtained. As stated at the outset the main purpose of the study has been to examine the determinants of labour cost increases in hospitals.

Three principle determinants are examined: rising wage rates (chapter 2), changing conditions of employment (chapter 3), and changes in staff numbers, staff composition and 'quality' (chapter 4). The final Chapter summarises the report, reviews the results, discusses the range of factors responsible for the observed changes, and draws a number of conclusions as to the nature of past changes in hospital labour costs and possible future trends.

CHAPTER 2

RISING WAGE COSTS IN VICTORIAN HOSPITALS [11]

The aim of this chapter is to analyse, in detail, the wage rates of Victorian hospital staff during the period 1969 to 1979. Using indexes of the wage rates and average earnings of both hospital staff and the Victorian workforce as a whole, answers to a number of questions are sought:

- What was the extent of wage rate and earnings increases for hospital staff during the period 1969 to 1979?
- Were there any significant changes in wage relativities amongst the various groups of hospital staff?
- Did the increases vary according to the size and function of the hospitals?
- How did increases compare with those experienced by the wider Victorian workforce?
- Was there any evidence of a 'catching-up' of the wages and earnings of hospital staff with those of the working population as a whole?
- How were wages affected by the introduction of equal pay for women?
- How did the predominance of female staff in the hospital sector affect wage levels?
- How did the introduction of wage indexation affect the rate of change in wages?
- What effect did economy-wide labour market trends have on the wages of hospital staff?

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11 An earlier version of this chapter was published in Tatchell (1979).

HOSPITAL WAGE RATES AND WAGE RATE INDEXES

The first stage in the analysis of hospital wage rates was the construction of a base year quantity weighted set of quarterly indexes of award wage rates for the period September 1969 to September 1979. 'Wage rates' in this context refer to the payments made to the various staff groups for a 'basic week's work'. The length of a 'basic week' varies from occupation to occupation, though most awards were for a 40 hour week during the period being examined. The data on which the wage indexes were based were:

(i) the award rates of pay for each hospital staff category taken from the determinations of the various State Wages Boards from mid-1969 onwards; [12]

(ii) staff numbers in Victorian public general hospitals for each occupational grouping derived from the staff summaries returned to the Hospitals and Charities Commission of Victoria by each individual hospital in 1969-70.

Wage rates for a total of 253 occupational categories were recorded along with details of the dates on which newly negotiated settlements became operational. Average quarterly rates were then calculated allowing for any wage increases that might have occurred in each quarter and the number of days they had been in force. This information was subsequently aggregated by quarters into average rates for four main staff groups - nursing, medical, medical ancillary, and general - and 23 subgroups.

Two sets of wage rates indexes were then calculated, [13] the first unweighted and derived simply by dividing the average wage rate for each subgroup in each quarter (p_{ni} ; n = 0, 1, ..., 40) by the wage rate for that subgroup in the base

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12 The determinations of a majority of the relevant Wages Boards were considered, including: The Registered Nurses Board, The Hospital Senior Medical Officers Board, The Hospital Resident Medical Officers Board, The Hospital Scientists Board, The Hospital and Benevolent Homes Board, The Hospital Medical Ancillary Services Board, The Hospital Managers Board, The Hospital Administrative Officers Board, The Hospital Pharmacists Board, The Social Workers Board, and various Boards relating to Trades - Plumbers, Electricians, Painters, Carpenters, Metal Trades and so on.

13 Full details of the occupational categories examined, and the methodology employed in aggregating them into 23 subgroups and ultimately into 4 main groupings, are given in Appendix B. Calculation of the indexes is also described.

quarter (p_{oi} = September 1969). The second was a base year quantity weighted Laspeyre's index defined as follows:

$$\frac{\Sigma\ p_{ni}\ q_{oi}}{\Sigma\ p_{oi}\ q_{oi}}$$

where p refers to the wage rate of a given occupational group i, and q_o refers to the number of staff in that occupational group in the base year. The subscript n refers to the particular quarterly period being considered, (n = 0, 1, ..., 40); and the subscript o denotes the base quarter, September 1969.

Tables 2.1 and 2.2 show the quarterly wage rates and the corresponding wage rate indexes for Victorian hospital staff for September quarters 1969 to 1979. The largest increases occurred in the female dominated nursing groups. The wage rates of student nurses, for example, increased by 340.8 percent from $26.36 per week in September 1969 to $116.19 in September 1979. Other predominantly female occupations to receive substantial increases included clerical staff (335.5 percent), student nurse aides (312.4 percent) sisters and midwives (311.2 percent) nurse aides (307.7 percent) and linen and laundry staff (306.8 percent). Administrative staff also registered a more than four fold increase in wage rates during the period though, as the tables show, a large part of this growth occurred in the first year. This was due mainly to a substantial salary rise granted to hospital managers at that time. Since 1970, the rate of change in wage rates for administrative staff has actually been below the average for all hospital staff (12.6 percent compound per annum compared to 13.5 percent for all staff).

By and large the staff groups receiving the largest percentage wage increases during the ten year period were also the lowest paid groups. Student nurses, linen and laundry staff, student nurse aides, nurse aides and clerical staff typify this trend. Despite receiving higher than average increases in wage rates, however, they remained the lowest paid occupations at the end of the period.

Table 2.1: Average Award Wage Rates of Hospital Staff, All Victorian Public General Hospitals, September Quarters 1969 to 1979

Staff Group	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
	$	$	$	$	$	$	$	$	$	$	$
Nursing											
Matrons	82.87	97.89	108.85	123.13	144.44	179.38	207.66	254.66	273.47	288.54	309.71
Charge & Night Sisters	67.59	79.89	87.36	94.70	109.47	136.61	158.15	194.65	211.32	223.67	240.06
Sisters & Midwives	50.08	59.23	65.86	80.02	92.55	115.90	134.13	165.55	180.87	191.89	205.95
Student Nurses	26.36	31.29	35.23	44.70	51.84	65.01	75.22	93.01	101.92	108.23	116.19
Nurse Aides	34.85	42.90	45.50	50.90	67.00	81.00	89.85	111.14	124.73	132.40	142.10
Student Nurse Aides	33.85	38.00	40.30	45.30	63.96	78.80	87.50	108.96	122.49	130.10	139.60
Nurse Attendants	38.35	42.53	45.10	50.47	63.91	78.66	87.35	108.81	122.33	129.93	139.41
Supervisory Sisters	70.15	82.92	93.34	110.00	126.20	157.10	181.88	223.41	241.22	254.80	273.45
Teachers	73.89	87.31	96.27	112.83	132.88	165.22	191.28	234.81	253.05	267.08	286.63
All Nursing	42.05	49.70	54.79	64.88	77.08	95.87	110.09	135.95	149.11	158.15	169.71
Medical [(a)]											
Resident Medical Officers	98.90	101.84	127.88	136.72	183.12	242.72	246.83	266.38	287.64	303.27	325.50
Specialists	216.25	223.00	258.38	283.63	323.84	431.09	473.22	525.21	558.48	584.53	627.35
Other Medical	179.60	184.97	215.50	241.36	275.97	402.43	443.38	493.62	525.43	550.26	590.61
All Medical	126.77	130.57	158.84	171.77	216.40	288.78	302.35	329.98	354.20	372.32	399.71
Medical Ancillary											
Technicians	63.61	69.53	86.16	91.96	104.92	126.02	145.41	167.14	182.72	193.19	207.36
Therapists	73.15	75.66	89.92	93.19	111.84	141.20	162.19	186.95	204.59	216.59	232.52
Pharmacists	83.50	88.14	105.12	113.54	127.17	150.51	178.66	199.69	218.89	231.43	248.42
Other Medical Ancillary	65.09	77.11	82.82	102.70	124.84	155.62	179.21	205.34	223.72	236.49	253.78
All Medical Ancillary	66.52	72.71	87.54	95.19	110.16	133.90	154.73	177.41	193.91	205.08	220.11
General											
Administration	122.70	181.69	214.21	225.45	253.00	333.57	392.20	440.92	470.47	493.13	529.27
Dietary	46.53	52.13	55.46	61.90	70.12	85.98	95.86	117.57	131.54	139.56	149.77
Cleaning	36.75	41.65	44.45	49.80	62.60	75.95	84.93	106.85	120.18	127.55	136.85
Housekeeping	36.23	44.30	47.00	52.50	68.70	83.10	92.10	113.31	127.10	134.90	144.80
Linen & Laundry	33.21	38.25	40.55	45.59	61.90	75.20	83.64	105.56	118.72	125.90	135.10
Trades	62.33	67.57	73.37	82.38	94.42	114.94	135.07	155.80	171.16	181.97	195.30
Clerical	39.35	45.35	52.73	59.23	62.96	79.22	104.25	136.79	150.40	159.68	171.36
All General	45.51	52.47	57.34	63.76	74.09	92.07	105.81	129.98	144.27	152.96	164.15
All Hospital Staff	48.45	55.62	62.36	71.27	84.40	105.48	120.06	145.20	159.45	168.90	181.25

Sources: The various Determinations of the Registered Nurses Board, the Hospital Medical Ancillary Services Board, the Hospital and Benevolent Homes Board, the Social Workers Board, and so on for years 1969 to 1979.

The base year quantity weights were derived from the Hospital Charities Commission Form No. 9, Summary Staff Returns, for each hospital in Victoria.

(a) Full-time Medical Staff only.

Table 2.2: Award Rate Indexes of Hospital Staff, All Victorian Public General Hospitals, September Quarters 1969 to 1979

Staff Group	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Nursing											
Matrons	1000	1181	1314	1486	1743	2165	2506	3073	3300	3482	3737
Charge & Night Sisters	1000	1182	1293	1401	1620	2021	2340	2880	3127	3309	3552
Sisters & Midwives	1000	1183	1315	1598	1848	2314	2678	3306	3612	3832	4112
Student Nurses	1000	1187	1336	1695	1967	2466	2853	3528	3866	4105	4408
Nurse Aides	1000	1231	1306	1461	1923	2324	2578	3189	3579	3799	4077
Student Nurse Aides	1000	1123	1191	1338	1890	2328	2585	3219	3619	3843	4124
Nurse Attendants	1000	1109	1176	1316	1667	2051	2278	2837	3190	3388	3635
Supervisory Sisters	1000	1182	1331	1568	1799	2239	2593	3185	3439	3632	3898
Teachers	1000	1182	1303	1527	1798	2236	2589	3178	3425	3615	3879
All Nursing	1000	1182	1303	1543	1833	2280	2618	3233	3546	3761	4036
Medical (a)											
Resident Medical Officers	1000	1030	1293	1382	1852	2454	2496	2693	2908	3066	3291
Specialists	1000	1031	1195	1312	1498	1993	2188	2429	2583	2703	2901
Other Medical	1000	1030	1200	1344	1537	2241	2469	2749	2926	3064	3289
All Medical	1000	1030	1253	1355	1707	2278	2385	2603	2794	2937	3153
Medical Ancillary											
Technicians	1000	1093	1354	1446	1649	1981	2286	2627	2872	3037	3260
Therapists	1000	1034	1229	1274	1529	1930	2217	2556	2797	2961	3178
Pharmacists	1000	1056	1259	1360	1523	1802	2140	2392	2621	2772	2975
Other Medical Ancillary	1000	1185	1272	1578	1918	2391	2753	3155	3437	3633	3899
All Medical Ancillary	1000	1093	1316	1431	1656	2013	2326	2667	2915	3083	3309
General											
Administration	1000	1481	1746	1837	2062	2719	3197	3594	3834	4019	4314
Dietary	1000	1120	1192	1330	1507	1848	2060	2527	2827	3000	3219
Cleaning	1000	1133	1210	1355	1703	2067	2311	2907	3270	3471	3724
Housekeeping	1000	1223	1297	1449	1896	2294	2542	3128	3508	3723	3997
Linen and Laundry	1000	1152	1221	1373	1864	2265	2519	3179	3575	3791	4068
Trades	1000	1084	1177	1322	1515	1844	2167	2499	2746	2919	3133
Clerical	1000	1152	1340	1505	1600	2013	2649	3477	3822	4058	4355
All General	1000	1153	1260	1401	1628	2010	2325	2856	3170	3361	3607
All Hospital Staff	1000	1148	1287	1471	1742	2173	2478	2997	3291	3486	3741

Source: As Table 2.1

Much of the 'catching up' experienced by these groups resulted from the phasing in of equal pay for women between 1969 and 1972. [14] The impact of the formal equal pay changes - that is, those that actually appeared in the determinations - varied by occupation. Nursing for example, which is predominantly a female profession, benefited most - the average award wage rates of nurses were 14.3 percent higher, following the phasing in of equal pay, than they would have been in its absence (see Table 2.3). This figure was calculated by assuming that the differences that existed between the wages of male and female staff for each occupational group prior to the introduction of equal pay were maintained throughout the phasing in period. For some occupations this period extended beyond the January 1972 deadline through into 1973. The equivalent margins for the other main staff groups were less substantial, partly because they comprised a higher ratio of men to women and partly because proportionately fewer of the determinations for these groups differentiated between male and female staff in their wage structures in the late sixties. All medical staff, for example, were paid on the same scales regardless of sex.

Overall the introduction of equal pay raised the average award wage rates of staff in Victorian hospitals to a level 8.1 percent above that which would have been reached had equal pay not been introduced (Table 2.3). This appears insignificant when compared to the 274.1 percent increase that took place in the average award wages of all hospital staff in the period 1969 to 1979 (Table 2.2). During the time of its introduction, however, the impact of equal pay was more substantial. On average, award wage rates rose by 74.2 percent during the period September 1969 to September 1973; the equivalent rise, assuming no equal pay, would have been 61.1 percent.

In addition to the changes in award wages resulting from the formal provisions of the equal pay legislation there may well have been some less obvious informal effects. The wage rates of a number of predominantly female occupations not directly subject to the equal pay changes (that is those occupations which did

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14 The steps towards the introduction of equal pay for women were:

1. October 1969, 85 percent of male rate
2. July 1970, 90 percent of male rate
3. January 1971, 95 percent of male rate
4. January 1972, 100 percent of male rate

not differentiate between males and females in their wage structure) rose at rates similar to those that were subject to those changes. Examples, amongst the nurses, include Matrons, Supervisory Sisters and Teachers. It may be that some of the wage increases arising from equal pay filtered through to other related occupational groups, though there is no way of quantifying this. Certainly, even allowing for the impact of equal pay, there has been a general 'catching up' of the wages of lower paid occupations with those on higher wages and salaries.

Table 2.3: The Contribution of Equal Pay for Women to the Average Award Wage Rates of Hospital Staff, 1969 to 1979

Staff Group	Average Award Wage Rates (September Quarters)			% Difference in Wage Rates in 1979 Attributable to Equal Pay
	1969	1979 Actual	1979 Excluding Equal Pay Additions	
	$	$	$	
Nursing	42.05	169.71	148.51	14.3
Medical	126.77	399.71	399.71	-
Medical Ancillary	66.52	220.11	213.04	3.3
General	45.52	164.15	160.49	2.3
All Staff	48.45	181.25	167.63	8.1

Source: Table 2.1 and calculations based on rates of pay for individual classifications taken from the various award determinations.

Comparison between the four main staff categories (Tables 2.1 and 2.2) shows that, as a group, nurses have received the largest increase in award wage rates (303.6 percent), followed by general staff (260.7 percent), medical ancillaries (230.9 percent) and medical staff (215.3 percent). The increase for all hospital staff was 274.1 percent over the 10 year period, an average annual (compound) growth rate of 14.1 percent. Graphical comparison of these wage rate indexes (Figure 2.1) gives an indication of the difference in rates of increase between the four groups. At the end of the period, the percentage difference between the highest and the lowest indexes was a sizeable 28 percent.

The lower relative change in the award wage rates of medical staff was partly due to an alteration in the way in which doctors were remunerated for out of hours work. From early 1973 to mid 1975 compensation for all on-call and recall duty was included in their award rates of pay, whereas separate allowances have been paid for these items since September 1975. Figure 2.1 illustrates clearly the effect of these changes as a faster than average increase in the index of medical wage rates during the period 1973 to mid 1975 and a comparatively slow rate of increase since.

WAGE RELATIVITIES

Differential increases in the wage rates of the various hospital staff groups during the period have altered their relativities (Table 2.4). The wage rates of medical staff, for example, fell relative to the weighted average for all hospital staff from a ratio of 2.62 in 1969 to 2.21 in 1979. On the other hand wage rates for nurses rose relative to the average for all staff from 0.87 (1969) to 0.94 (1979). The introduction of wage indexation, which effectively ruled out the granting of wage rate increases beyond those handed down by the Australian Conciliation and Arbitration Commission each quarter (and more recently each six months), resulted in a period of comparative stability in wage relativities between the staff groups; there were very few changes in relativities after 1976. Finally, the dispersion in wage rates across all occupational groups appears to have become less marked during the period judging by the values for the coefficient of variation given in Table 2.4. These show a fall from 64.5 percent in 1969 to 56.2 percent in 1979. The jump in values in the mid 70's - the variation was greater in 1974 (65.5 percent) than in any other year - was due largely to the change in the award for medical staff.

Figure 2.1: Award Wage Rate Indexes, Victorian Hospital Staff, 1969 to 1979

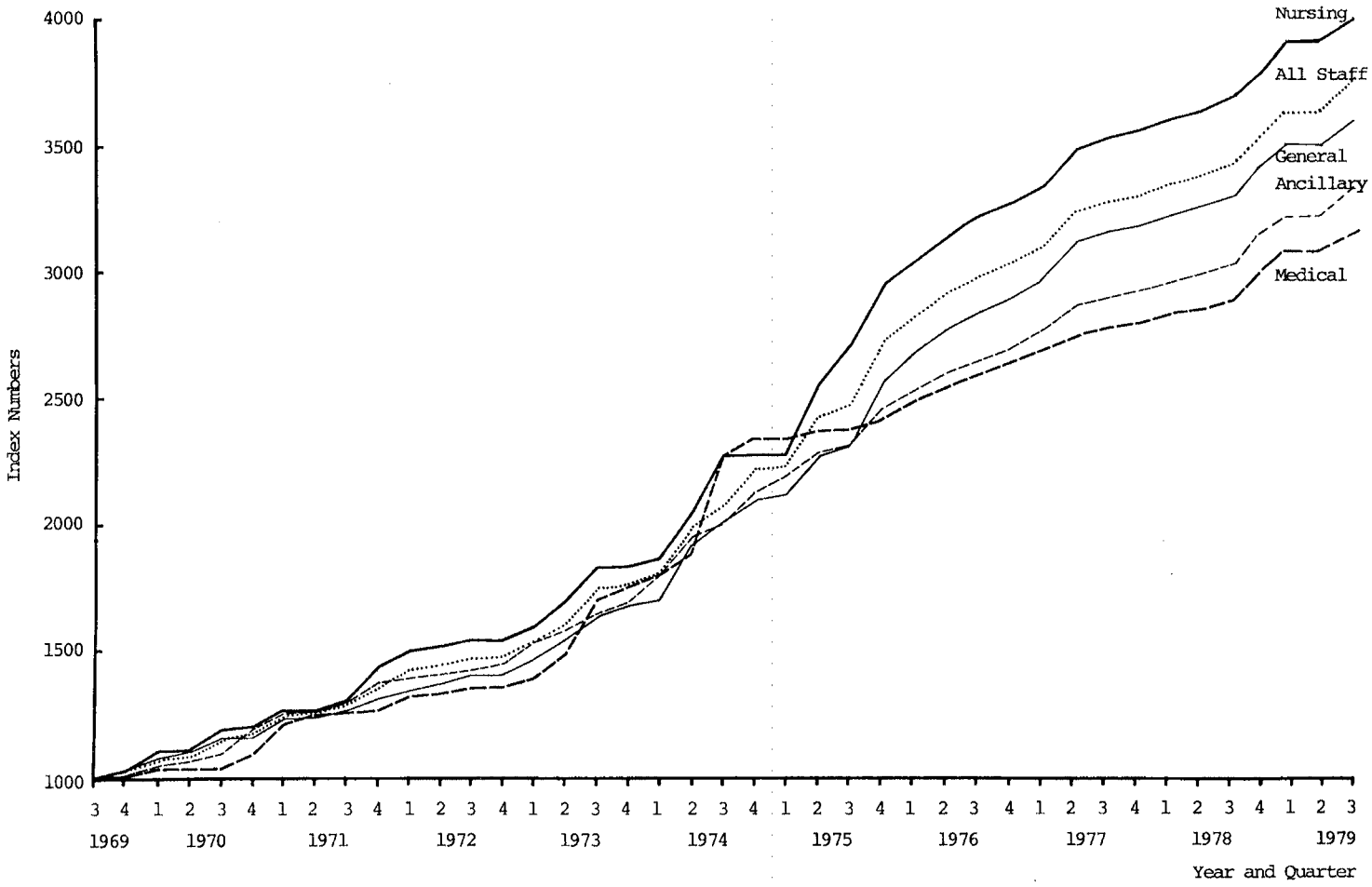

Table 2.4: Changing Wage Relativities: The Award Wage Rates of Hospital Staff Groups Relative to the Weighted Average Wage Rate for All Hospital Staff, September Quarters 1969 to 1979

Staff Group	1969 Ratio	1970 Ratio	1971 Ratio	1972 Ratio	1973 Ratio	1974 Ratio	1975 Ratio	1976 Ratio	1977 Ratio	1978 Ratio	1979 Ratio
Nursing	0.868	0.894	0.879	0.910	0.913	0.909	0.917	0.936	0.935	0.936	0.936
Medical	2.617	2.348	2.547	2.410	2.564	2.738	2.518	2.273	2.221	2.204	2.205
Medical Ancillary	1.373	1.307	1.404	1.336	1.305	1.269	1.289	1.222	1.216	1.214	1.214
General	0.939	0.943	0.919	0.895	0.878	0.873	0.881	0.895	0.905	0.906	0.906
Coefficient of Variation (1) (%)	64.5	61.7	64.6	62.6	59.6	65.5	63.7	58.8	56.8	56.2	56.2

Source: Derived from table 2.1

(1) The coefficient of variation is a relative measure of dispersion obtained by expressing the standard deviation (an absolute measure of dispersion) as a percentage of the arithmetic mean.

INTER-HOSPITAL COMPARISONS

The determinations of the Victorian Wages Boards apply to hospital staff employed throughout the entire state. This means that staff in the same occupational classification and scale can expect to receive the same wages for a basic week's work regardless of which hospital employs them. Similarly there will be no difference between hospitals in the rates of increase in wages granted by the Wages Boards to each occupational classification. There may be inter-hospital differences, however, in the overall rates of increases in wage rates for broad occupational groups such as nursing and medical staff. These differences will depend on the composition of the staff employed in each hospital which in turn is dependent on its size and function.

Victoria's public general hospitals vary widely in size, range of services and utilisation patterns. Three groups of hospitals can be identified (Table 2.5): a Teaching group averaging 478.2 beds in 1969; [15] a Metropolitan and Country Base group averaging 240.3 beds; and a group comprised mainly of Country hospitals whose average size was 29.3 beds. [16] Larger size is generally associated with the availability of a more comprehensive range of facilities and services. Table 2.5 shows that teaching hospitals provided an average of 36.9 of a possible 49 facilities/services, metropolitan and country base 32.4 and all other 17.0.

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15 1969 is chosen here as this is the base year used in calculating the wage rate indexes given in Tables 2.2, 2.7, 2.8 and 2.9.

16 A full list of the hospitals in each group is given in Appendix C.

Table 2.5: Capacity and Utilisation Statistics, 3 Hospital Groups, Victoria 1969-70

Capacity/Utilisation Measure	Teaching Hospitals	Metropolitan and Country Base Hospitals	All Other Hospitals	All Victorian Hospitals
Number of Hospitals	9	20	116	145
Number of Beds	4304	4806	4554	13664
Average Beds per Hospital	478.2	240.3	29.3	94.2
Average Number of Facilities/ Services Available	36.9	32.4	17.0	20.5
Number of Inpatients	124,811	122,084	118,362	365,257
Number of Bed Days	1,232,313	1,253,416	1,101,003	3,586,732
Average Length of Stay	9.9	10.3	9.3	9.8
Total Occupied Bed Days	3376.2	3433.9	3016.2	9826.3
Occupancy Rate (%)	78.4	71.5	66.2	71.9

Source: Annual Report of the Victorian Hospital and Charities Commission for year ended 30th June, 1970 and the Australian and New Zealand Hospital and Health Services Year book, 1973.

Length of stay appears to vary little between the three groups whereas capacity utilisation, as measured by the occupancy rate, varies markedly with an average of 78.4 percent occupancy in the teaching hospitals compared to 71.5 percent in the metropolitan and 66.2 percent in the remainder.

These differences in hospital characteristics are reflected in the staff composition of each hospital group (Table 2.6). Teaching hospitals, for example, employed significantly larger numbers of medical and medical ancillary staff than their metropolitan and country counterparts in 1969-70: nearly 20 percent of the staff of teaching hospitals compared with 8.6 percent in the metropolitan and country base hospitals and 4.1 percent in the remainder.

Table 2.6: Proportionate Staff Numbers*, 3 Hospital Groups, Victoria 1969-70

Staff Group	Teaching Hospitals %	Metropolitan and Country Base Hospitals %	All Other Hospitals %	All Hospitals %
Nursing	54.3	61.8	59.1	57.7
Medical	6.2	2.9	0.8	3.9
Medical Ancillary	13.0	5.7	3.3	8.4
General	26.5	29.6	36.8	30.0
All Staff	100.0	100.0	100.0	100.0

Source: Form No. 9, Summary Staff Returns, for all Victorian hospitals, 1969-70

* Full-Time-Equivalent Staff Numbers expressed as proportions of total staff

Despite the varying nature and function of the three hospital groups there was no significant difference in the rate of change in the wage rates of their staff during the ten year period. [17] Calculation of separate wage rate indexes for each hospital group (Tables 2.7, 2.8 and 2.9) suggests that overall the wages of staff in 'all other' hospitals rose 0.3 percent more than those in metropolitan

17 Analysis of variance was employed to test for the significance of the difference among the three sets of indexes. The resulting F value (0.015) is well below even the 10 percent level of significance.

hospitals and 3.2 percent more than staff in teaching hospitals.[18] This slight difference can be explained by the fact that the smaller hospitals in the 'other' group employ a higher proportion of staff whose wages have risen more rapidly than average, particularly the lower paid nursing and general occupational groups.

The important conclusion to arise from this finding is that the construction of indexes of rising hospital wage rates does not require consideration of all hospitals in the state. The differing staff composition apparent in hospitals of varying size and character has not influenced the rate of change in the average rates of pay of the major staff groups - nursing, medical and so on.

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18 An analysis of wage and salary movements in a sample of Victorian public hospitals since 1980 has produced results broadly in line with these (see Davenport, Duckett and Price, 1982).

Table 2.7: Award Wage Rate Indexes, Teaching Hospitals, Victoria, September Quarters 1969 to 1979

Staff Group	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Nursing											
Matrons	1000	1178	1330	1554	1863	2309	2673	3273	3503	3688	3958
Charge and Night Sisters	1000	1182	1294	1410	1628	2031	2351	2894	3142	3325	3569
Sisters and Midwives	1000	1183	1314	1595	1845	2310	2673	3300	3606	3826	4107
Student Nurses	1000	1187	1336	1695	1966	2465	2852	3526	3864	4103	4405
Nurse Aides	1000	1231	1306	1461	1923	2324	2578	3189	3579	3799	4077
Student Nurse Aides	1000	1123	1191	1338	1890	2328	2585	3219	3619	3843	4124
Nurse Attendants	1000	1120	1187	1333	1819	2238	2486	3097	3481	3697	3967
Supervisory Sisters	1000	1182	1331	1568	1799	2239	2593	3185	3439	3632	3898
Teachers	1000	1182	1303	1527	1798	2236	2589	3178	3425	3615	3879
All Nursing	1000	1180	1305	1564	1854	2312	2659	3284	3600	3819	4099
Medical [a]											
Resident Medical Officers	1000	1030	1279	1368	1872	2470	2510	2693	2905	3062	3286
Specialists	1000	1031	1195	1312	1498	1993	2188	2429	2583	2703	2901
Other Medical	1000	1031	1201	1352	1544	2128	2337	2596	2760	2889	3101
All Medical	1000	1030	1248	1349	1734	2297	2396	2602	2793	2936	3151
Medical Ancillary											
Technicians	1000	1065	1360	1452	1660	1985	2306	2662	2914	3084	3310
Therapists	1000	1034	1226	1271	1520	1926	2211	2549	2790	2953	3171
Pharmacists	1000	1056	1259	1360	1523	1802	2140	2392	2621	2722	2975
Other Medical Ancillary	1000	1186	1273	1582	1934	2407	2772	3177	3462	3660	3927
All Medical Ancillary	1000	1081	1317	1442	1677	2036	2361	2714	2968	3141	3371
General											
Administration	1000	1349	1533	1701	1922	2486	2905	3289	3524	3701	3972
Dietary	1000	1120	1192	1329	1507	1849	2063	2527	2826	2998	3218
Cleaning	1000	1133	1210	1355	1703	2067	2311	2907	3270	3471	3724
Housekeeping	1000	1223	1297	1449	1896	2294	2542	3128	3508	3723	3997
Linen and Laundry	1000	1150	1219	1369	1826	2218	2467	3114	3502	3714	3985
Trades	1000	1075	1171	1307	1500	1927	2141	2474	2728	2905	3118
Clerical	1000	1152	1339	1502	1596	2002	2629	3449	3792	4026	4320
All General	1000	1131	1231	1376	1591	1972	2272	2809	3124	3315	3558
All Hospital Staff	1000	1128	1280	1465	1743	2183	2475	2968	3253	3446	3698

Source: As Table 2.1

Table 2.8: Award Wage Rate Indexes, Metropolitan Hospitals, Victoria, September Quarters 1969 to 1979

Staff Group	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Nursing											
Matrons	1000	1181	1318	1501	1816	2255	2610	3200	3437	3623	3889
Charge and Night Sisters	1000	1181	1295	1413	1644	2052	2375	2922	3170	3355	3600
Sisters and Midwives	1000	1183	1315	1598	1848	2314	2678	3306	3612	3832	4112
Student Nurses	1000	1188	1337	1698	1970	2470	2858	3534	3872	4112	4415
Nurse Aides	1000	1231	1306	1461	1923	2324	2578	3189	3579	3799	4077
Student Nurse Aides	1000	1123	1191	1338	1890	2328	2585	3219	3619	3843	4124
Nurse Attendants	1000	1120	1188	1333	1828	2250	2498	3112	3499	3716	3987
Supervisory Sisters	1000	1182	1331	1568	1799	2239	2593	3185	3439	3632	3898
Teachers	1000	1182	1303	1527	1798	2236	2589	3178	3425	3615	3879
All Nursing	1000	1184	1305	1551	1856	2308	2648	3270	3589	3806	4085
Medical [a]											
Resident Medical Officers	1000	1030	1351	1441	1765	2385	2434	2693	2919	3084	3310
Specialists	1000	1031	1195	1312	1498	1993	2188	2429	2583	2703	2901
Other Medical	1000	1030	1203	1358	1552	2238	2465	2744	2921	3059	3283
All Medical	1000	1030	1274	1382	1638	2218	2343	2598	2790	2935	3150
Medical Ancillary											
Technicians	1000	1059	1361	1453	1663	1989	2315	2675	2930	3101	3328
Therapists	1000	1034	1230	1274	1535	1933	2221	2560	2801	2966	3184
Pharmacists	1000	1056	1259	1360	1523	1802	2140	2392	2621	2722	2975
Other Medical Ancillary	1000	1177	1266	1550	1828	2300	2650	3032	3302	3490	3745
All Medical Ancillary	1000	1063	1309	1407	1629	1978	2299	2642	2891	3060	3284
General											
Administration	1000	1410	1632	1755	1976	2584	3030	3418	3658	3839	4120
Dietary	1000	1125	1198	1342	1518	1862	2076	2544	2844	3017	3238
Cleaning	1000	1133	1210	1355	1703	2067	2311	2907	3270	3471	3724
Housekeeping	1000	1223	1297	1449	1896	2294	2542	3128	3508	3723	3997
Linen and Laundry	1000	1152	1222	1373	1870	2271	2526	3188	3586	3803	4080
Trades	1000	1081	1174	1315	1508	1939	2160	2488	2736	2911	3124
Clerical	1000	1152	1340	1505	1600	2013	2649	3477	3822	4058	4355
All General	1000	1144	1244	1389	1622	2013	2304	2833	3149	3340	3584
All Hospital Staff	1000	1151	1285	1480	1753	2190	2497	3042	3345	3545	3805

Source: As Table 2.1

Table 2.9: Award Wage Rate Indexes, All Other Hospitals, Victoria, September Quarters 1969 to 1979

Staff Group	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Nursing											
Matrons	1000	1182	1306	1453	1664	2068	2394	2939	3160	3339	3584
Charge and Night Sisters	1000	1183	1289	1383	1592	1987	2300	2832	3077	3258	3497
Sisters and Midwives	1000	1183	1316	1602	1853	2320	2685	3313	3619	3839	4120
Student Nurses	1000	1189	1338	1705	1977	2479	2869	3547	3887	4128	4432
Nurse Aides	1000	1231	1306	1461	1923	2324	2578	3189	3579	3799	4077
Student Nurse Aides	1000	1123	1191	1338	1890	2328	2585	3219	3619	3843	4124
Nurse Attendants	1000	1120	1187	1333	1838	2264	2514	3131	3519	3738	4011
Supervisory Sisters	1000	1182	1331	1568	1799	2239	2593	3185	3439	3632	3898
Teachers	1000	1182	1303	1527	1798	2236	2589	3178	3425	3615	3879
All Nursing	1000	1187	1300	1509	1807	2243	2569	3172	3481	3691	3961
Medical [a]											
Resident Medical Officers	1000	1030	1305	1397	1848	2450	2491	2685	2897	3053	3277
Specialists	1000	1031	1195	1312	1498	1993	2188	2429	2583	2703	2901
Other Medical	1000	1028	1200	1321	1512	2415	2671	2982	3177	3328	3572
All Medical	1000	1030	1234	1343	1623	2195	2341	2572	2750	2886	3098
Medical Ancillary											
Technicians	1000	1059	1361	1453	1663	1989	2315	2675	2930	3101	3328
Therapists	1000	1034	1230	1274	1535	1933	2221	2560	2801	2966	3184
Pharmacists	1000	1056	1259	1360	1523	1802	2140	2392	2621	2772	2975
Other Medical Ancillary	1000	1136	1220	1458	1644	2156	2502	2845	3101	3278	3518
All Medical Ancillary	1000	1058	1327	1418	1632	1973	2295	2643	2894	3063	3287
General											
Administration	1000	1550	1858	1913	2141	2846	3355	3760	4003	4191	4498
Dietary	1000	1125	1198	1342	1518	1862	2076	2544	2844	3017	3238
Cleaning	1000	1133	1210	1355	1703	2067	2311	2907	3270	3471	3724
Housekeeping	1000	1223	1297	1449	1896	2294	2542	3128	3508	3723	3997
Linen and Laundry	1000	1153	1223	1376	1892	2299	2557	3227	3629	3848	4130
Trades	1000	1107	1194	1360	1557	1970	2230	2571	2801	2964	3181
Clerical	1000	1154	1343	1511	1607	2034	2687	3526	3877	4116	4417
All General	1000	1195	1318	1453	1687	2109	2426	2950	3260	3450	3703
All Hospital Staff	1000	1180	1306	1481	1752	2182	2500	3055	3359	3558	3818

Source: As Table 2.1

HOSPITAL-STATE COMPARISONS OF AWARD WAGE RATES

The extent to which changing award wage rates in the hospital sector are a reflection of changes in the wider Victorian labour force can be determined by comparing the award wages of hospital staff with those of 'all Victorian adults' (Table 2.10). Figures for the latter are a weighted average of the male and female rates published by the ABS, the weights being the proportions of males and females in the Victorian labour force as a whole in 1969. This procedure was adopted as no composite adult measure is published by the ABS for award wage rates as it is for average earnings (that is, per employed male unit). The percentage increases in the wage rates of the two groups over the 10 year period were remarkably similar: 274.1 percent (all hospital staff) compared with 260.0 percent (all Victorian adults). In absolute terms the average weekly award wage rates of hospital staff were somewhat higher than for the Victorian workforce generally, and the percentage difference increased slightly during the 10 years.

This pattern is also evident when one examines the wage rates of the four hospital staff groups. Rates for nurses, for example, were consistently higher than those for all Victorian females, although the rate of increase was higher for the latter group. The wage rates of general staff followed closely those for all Victorian adults and showed an almost identical increase over the period. Rates for medical and medical ancillary staff were, as one would expect, considerably higher than average though in both cases their growth was relatively slow over the period.

One problem with comparisons of this nature is that they ignore the considerable difference in the sex composition of the hospital and Victorian labour forces - the ratio of males to females in Victorian hospitals is approximately 25:75 as against 69:31 in the whole state. We can correct for this by recalculating the Victorian adult wage rates using as weights the sex ratio of the hospital workforce rather than that of the Victorian workforce generally.

Table 2.10: Average Weekly Award Wage Rates, Victorian Hospital Staff and All Victorian Adults

September Quarters 1969 to 1979

Year (September quarter)	Hospital Staff					Victorian Adults			
	Nursing	Medical	Medical Ancillary	General	All Staff	Males	Females	All Adults [a] (Workforce Weights)	All Adults [b] (Hospital Weights)
	$	$	$	$	$	$	$	$	$
1969	42.05	126.77	66.52	45.51	48.45	49.64	34.90	45.07	38.59
1970	49.70	130.57	72.71	52.47	55.62	52.97	38.11	48.36	41.83
1971	54.79	158.84	87.54	57.34	62.36	59.65	44.20	54.86	48.06
1972	64.88	171.77	95.19	63.76	71.27	65.83	50.33	61.03	54.21
1973	77.08	216.40	110.16	74.09	84.40	75.76	59.24	70.64	63.37
1974	95.87	288.78	133.90	91.48	105.28	99.80	85.47	95.36	89.05
1975	110.09	302.35	154.73	105.81	120.06	114.47	106.40	111.97	108.42
1976	135.95	329.98	177.41	129.98	145.20	130.36	122.43	127.90	124.41
1977	149.11	354.20	193.91	144.27	159.45	144.36	136.03	141.78	138.11
1978	158.15	372.32	205.08	152.96	168.90	153.10	143.08	150.00	145.59
1979	169.71	399.71	220.11	164.15	181.25	165.98	153.93	162.24	156.94
% increase	303.6	215.3	230.9	260.7	274.1	234.4	341.1	260.0	306.7

Sources: Hospital Staff - State Wages Board Determinations and Table 2.1

Victorian Adults - Derived from

(i) Wage Rates Indexes, June 1968 to June 1972, CBCS November 1973
(ii) Wage Rates and Earnings, CBCS and ABS, 1974 to 1977
(iii) Wage Rates, ABS, August, 1977 to November 1979
(iv) The Labour Force, ABS, 1969

(a) Base weighted by the ratio of males to females (69:31) in the Victorian labour force in 1969-70

(b) Base weighted by the ratio of males to females (25:75) in the Victorian Hospital labour force in 1969-70

Reweighting in this manner produces a set of amended wage rates for Victorian adults (see the final column of Table 2.10). The important conclusion is that hospital wage rates increased less than would be expected from the sex composition of the hospital workforce - 274.1 percent compared with 306.7 percent. The female 'bias' in the hospital workforce thus led to a higher than average increase in wage rates, but because female rates in the hospital sector - nurses, for example - were higher and increased slower than those of females in the workforce generally, the effects were less than they might otherwise they have been.

Much of the difference in the rates of growth in the wages of these two female groups appears to have taken place in the middle years of the period. Table 2.11, which gives the annual rates of change in award wage rates, shows female rates, generally, to have increased by 44.3 percent and 24.5 percent in 1973 and 1974 while equivalent changes in nursing rates were only 24.4 percent and 14.8 percent; some of this disparity, however, was corrected in the following year when nursing rates rose by 23.5 percent compared with 15.1 percent increase generally.

Table 2.11 also reveals a pattern of accelerating rates of increase in the wage rates of all groups up to 1973-74 and, apart from a further peak in 1975-76, of steady deceleration since then. The various changes in award wage rates are a combination of general statewide increases of which there was 18 during the period under study (see Appendix D), and award determination increases negotiated through the various State Wages Boards (nine additional increases in award wage rates, for example, were granted by the Registered Nurses Board during that time). The impact of the introduction of indexation early in 1975 shows up clearly in Table 2.11. Few increases in award wage rates were granted in addition to indexation, whereas prior to 1975 almost all award increases were negotiated apart from the regular Australia-wide changes.

Table 2.11: Percentage Changes in Award Wage Rates, Victorian Hospital Staff and All Victorian Adults, 1969-70 to 1978-79

Year	Hospital Staff					Victorian Adults			
	Nursing %	Medical %	Medical Ancillary %	General %	All %	Males %	Females %	All Persons (Workforce Weights) %	All Persons (Hospital Weights) %
1969-70	18.2	3.0	9.3	15.3	14.8	6.7	9.2	7.3	8.4
1970-71	10.2	21.7	20.4	9.3	12.1	12.6	16.0	13.4	14.9
1971-72	18.4	8.1	8.7	11.2	14.3	10.4	13.9	11.2	12.8
1972-73	18.8	26.0	15.7	16.2	18.4	15.1	17.7	15.7	16.9
1973-74	24.4	33.4	21.6	23.5	24.7	31.8	44.3	35.0	40.5
1974-75	14.8	4.7	15.6	15.7	14.0	14.7	24.5	17.4	21.8
1975-76	23.5	9.1	14.7	22.8	20.9	13.9	15.1	14.2	14.7
1976-77	9.7	7.3	9.3	11.0	9.8	10.7	11.1	10.9	11.0
1977-78	6.1	5.1	5.8	6.0	5.9	6.1	5.2	5.8	5.4
1978-79	7.3	7.4	7.3	7.3	7.3	8.4	7.6	8.2	7.8

Source: Table 2.10

HOSPITAL-STATE COMPARISONS OF AVERAGE EARNINGS

It now remains to compare the average earnings of hospital staff and Victorian adults during the period 1969 to 1979. Table 2.12 indicates a faster rate of growth in the earnings of hospital employees (326.8 percent) compared with those of Victorian adults (252.1 percent). Correction for differences in sex composition, however, using the same hospital staffing weights as were applied to the Victorian adult wage rates above, produces an index (Index 2 in Table 2.12) which corresponds closely to that for hospital staff earnings. Figure 2.2 shows the earnings indexes for hospital staff and Victorian adults using both the workforce and the 'hospital' sex ratios.

The conclusion - and it is an important one - is that the faster rise in the average earnings of employees in the Victorian hospital sector was almost entirely due to the predominantly female composition of its labour force. This female 'bias' explains both the absolute level of average hospital employee earnings and their more rapid rate of growth. Hospitals do not appear to have allowed employee earnings to rise uncontrollably. On the contrary, the factors underlying the increase seem to have been outside the hospitals' control: the changing relativity of female to male earnings in the community generally (in which formal equal pay determinations played a part but not a dominating one), and the method of wage fixation in the state. The higher femineity of the hospital workforce compared with that of the workforce generally, has served to reinforce these effects.

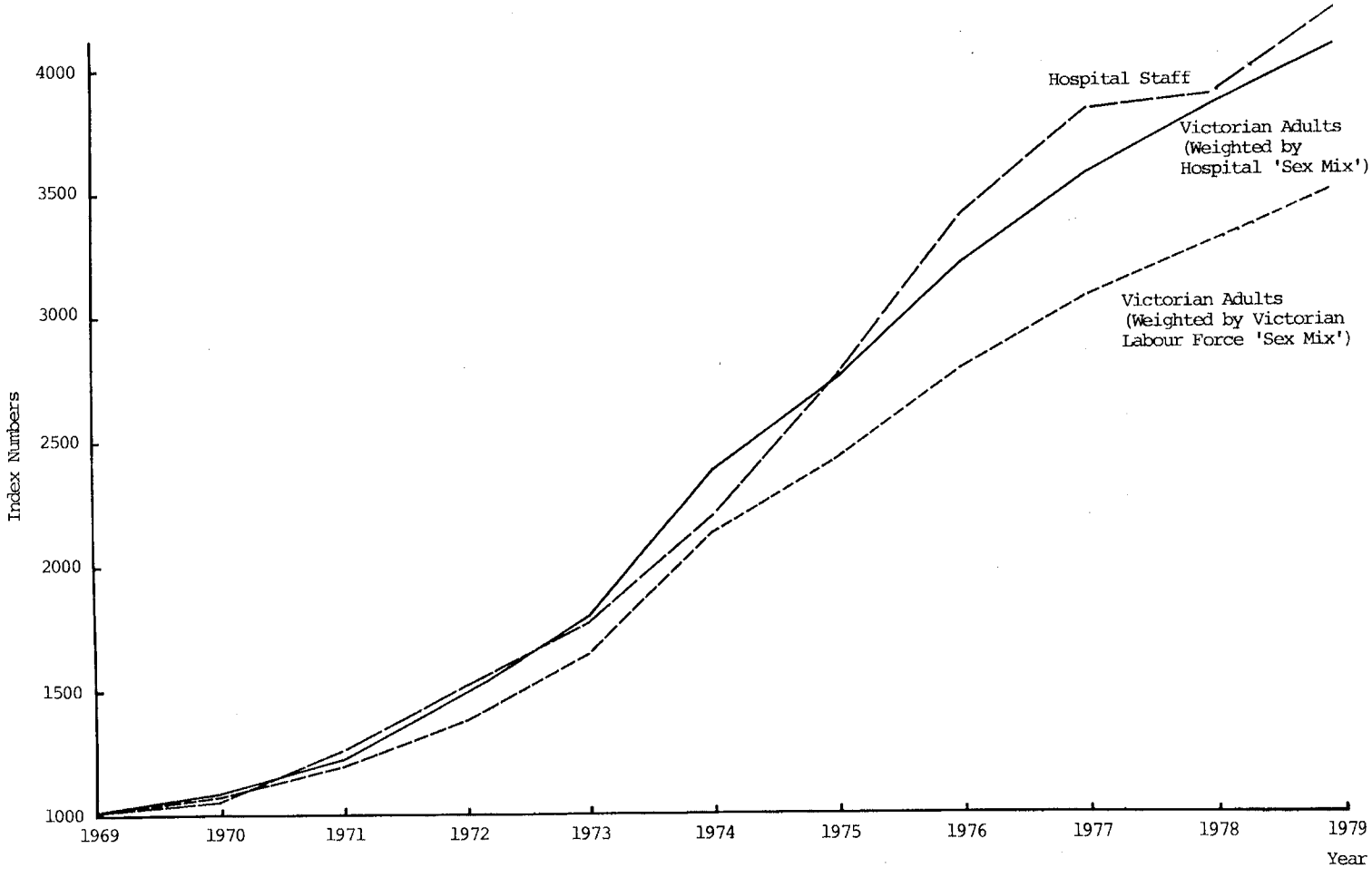
Table 2.12: Average Weekly Earnings, Victorian Hospital Staff and All Victorian Adults, 1969 to 1979

Year	Hospital Staff		Victorian Adults			
	Average Weekly Earnings (a) $	Index	Average Weekly Earnings (Workforce weights) (b) $	Index 1	Average Weekly Earnings (Hospital weights) (c) $	Index 2
1969	51.05	1000	63.96	1000	50.28	1000
1970	54.00	1058	68.96	1078	54.58	1086
1971	64.68	1267	76.87	1202	61.65	1226
1972	77.57	1519	88.45	1383	74.90	1490
1973	90.11	1765	104.64	1636	89.50	1780
1974	111.96	2193	135.74	2122	119.20	2371
1975	139.58	2734	153.92	2407	137.20	2729
1976	172.71	3383	176.63	2762	160.35	3189
1977	190.72	3736	194.93	3048	177.95	3539
1978	196.95	3858	208.40	3258	191.38	3806
1979	217.90	4268	225.18	3521	206.00	4097

Sources: For hospitals, Hospital and Charities Commission of Victoria, and Health Commission of Victoria, Annual Reports 1969 to 1979.
For Victorian Adults, Surveys of Weekly Earnings 1969-1978 contained in Wage Rates Indexes, CBCS; and Wage Rates and Earnings, CBCS and ABS.

(a) Calculated as follows: Total salary and wage payments to hospital staff ÷ equivalent full-time staff numbers ÷ 52 weeks. Payments to, and EFT numbers of, sessional staff have been deducted from these calculations for years 1976 to 1979.
(b) Base weighted by the ratio of males to females (69:31) in the Victorian Labour Force in 1969.
(c) Base weighted by the ratio of males to females (25:75) in the Victorian Hospital Labour Force in 1969.

Figure 2.2: Average Earnings Indexes, Hospital Staff and All Victorian Adults, 1969 to 1979



THE EFFECT OF CHANGING CONDITIONS AND ALLOWANCES: A FIRST APPROXIMATION

Derivation of the average weekly earnings of hospital staff over the 10 year period being studied allows comparison to be made between earnings and wage rates. This comparison, for which figures are given in Table 2.13, shows clearly the influence that the introduction and/or improvement of conditions and allowances had on average weekly earnings. From a relatively modest 6 percent of earnings in 1969 these additional payments had grown to 23 percent of earnings in 1976 and stood at 20.7 percent in 1979. While a comprehensive analysis of these changes and their impact on the earnings of specific occupational categories is the subject of the next chapter, a cursory examination of the conditions and allowances of certain staff groups provides some examples of the sort of changes that occurred during the 1970s:

1. Nursing Staff

Overtime payments - 1969 - time and a half for all hours exceeding 40.

By 1974: on week days, time and a half for first three hours exceeding 40 and double time thereafter; on Saturdays and Sundays excess hours all at double time.

Shift Allowance - first introduced January 1971.

Allowance for Saturday and Sunday work - first introduced January 1971 at the rate of time and a half.

2. Resident Medical Officers

Annual leave - 1969: 5 weeks
1973: 6 weeks
1975: 7 weeks plus 17.5 percent loading

'On Call' and 'Call Back' Allowances - introduced in 1975
On Call: 2.5 percent of basic wage
Call Back: 125 percent of one fifth of weekly salary.

3. Social Workers

Overtime payments - first introduced in 1974: on weekdays time and a half for hours exceeding 40; double time on Saturdays, Sundays and Public Holidays.

4. Hospital Scientists

Shift Allowances - 1969: plus $1 per rostered period of duty

1974: plus $5.50 per rostered period of duty

1976: plus $12.50 per rostered period of duty

1978: plus 2.5 percent of basic wage of Grade 1 Scientists; plus 4 percent if work finishes on day after commencing duty; plus 5 percent if on permanent shift.

Table 2.13: Average Award Wage Rates and Average Gross Earnings, Victorian Hospital Staff, 1969 to 1979

Year (ending 30 June)	Average Award Wage Rates (a) $/Week	Average Gross Earnings $/Week	Gross as a Percentage of Award %
1969	48.00 (b)	51.05	106.4
1970	50.70	54.00	106.5
1971	58.40	64.68	110.8
1972	67.02	77.57	115.7
1973	73.64	90.11	122.4
1974	88.51	111.96	126.5
1975	109.73	139.58	127.2
1976	132.97	172.71	129.9
1977	150.32	190.72	126.9
1978	161.81	196.95	121.7
1979	172.70	217.90	126.2

Source: Tables 2.1 and 2.12

(a) Average of four quarters September to June

(b) Estimate

The list is potentially a very long one as most awards contain, in addition to those already mentioned, a wide variety of conditions and allowances including those covering higher duties, compassionate leave, sick leave, long service leave, travel uniforms, extra qualifications, meals, and so on, many of which were first introduced or amended during the period 1969 to 1979.

Comparison of the trends for hospital staff and the wider Victorian workforce again leads to some interesting conclusions. The figures in Table 2.14 suggest that the proportion of gross earnings accounted for by the conditions and allowances payable to all Victorian adults, in contrast to that for hospital staff (Table 2.13), remained fairly constant during the period. On average, gross earnings were 30.3 percent above the average award wage rate for all Victorian adults in 1969. The comparable figure for hospital staff was 6.4 percent. By the end of the decade the difference for hospital staff had widened considerably to 26.2 percent above the award rates. This was much closer to the figure of 31.3 percent for all Victorian adults at that time.

It appears, then, that improvements in the conditions and allowances of hospital staff, particularly during the early 1970s, brought them more into line with the payments being made to employees in the wider State workforce. This conclusion is borne out by the two earlier findings that:

(a) the average earnings of hospital employees increased <u>no faster</u> than would have been expected from wage movements in the workforce generally; while

(b) the average award wage rates of hospital employees increased <u>more slowly</u>.

The implication is that improvements in the conditions and allowances of hospital staff contributed <u>more</u> to increased hospital earnings than in the wider economy. However, while there has been some realignment of conditions and allowances between the two sectors these results do not indicate any significant 'catch up' - the process observed elsewhere whereby the wages of staff in the hospital sector have been catching up those of staff in similar jobs in other industries (see, for example, Feldstein, M. 1971a). Since most hospital employees work in jobs unique to the hospital sector, with whom should comparisons be made? In other countries wages for similar tasks can vary widely

by industry, but the whole thrust of the Australian wage-fixing system is to prevent such divergencies occuring.

Table 2.14: Average Award Wage Rates and Average Gross Earnings*, All Victorian Adults, 1969 to 1979

Year (ending 30 June)	Average Award Wage Rates $/Week	Average Gross Earnings $/Week	Gross as a Percentage of Award %
1969	38.59	50.28	130.3
1970	41.83	54.58	130.5
1971	48.06	61.65	128.3
1972	54.21	74.90	138.2
1973	63.37	89.50	141.2
1974	89.05	119.20	133.9
1975	108.42	137.20	126.5
1976	124.41	160.35	128.9
1977	138.11	177.95	128.8
1978	145.59	191.38	131.5
1979	156.94	206.00	131.3

Source: Tables 2.10 and 2.12

* Base weighted by hospital workforce weights i.e. males 0.25: females 0.75

SUMMARY

Construction of indexes of award wage rates and earnings for Victorian hospital staff and adults in the wider State workforce has enabled answers to be provided to the questions posed at the beginning of this chapter. Briefly the results suggest the following: [19]

- The award wage rates of hospital staff increased, on average, more than three-fold during the ten year period at an annual compound growth rate of 14.1 percent.

- The largest increases in award wage rates were experienced by the lower paid and predominantly female occupational groups. The phasing in of equal pay in the early 70's contributed substantially to these relative gains.

- There appears to have been some contraction in the range of wage rates payable across all occupations with nurse wage rates rising relative to the average and those of medical staff falling.

- Hospital size and function appear to have no significant bearing on the rate of change in the wage rates of the major staff groupings employed by those hospitals.

- The award rates of hospital staff and all Victorian adults (workforce weights) grew at much the same pace although, in absolute terms, the wages of hospital staff were somewhat higher on average than those of the Victorian workforce as a whole.

- The predominance of female staff in the hospital workforce led to a higher than average growth in wage rates. This was partly due to the introduction of equal pay during the early seventies which raised the average award wage rates of staff in Victorian hospitals to a level 8.1 percent above that which would have resulted had equal pay not been enacted.

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19 Unless otherwise stated the results relate to the period 1969 to 1979 and to staff employed in Victoria's public general hospitals.

- Wage indexation (from 1975 onwards) effectively:
  - (i) limited wage increases to those granted by the Conciliation and Arbitration Commission;
  - (ii) prevented any significant changes in wage relativities amongst occupational groups; and
  - (iii) slowed the rate of increase in wage rates.
- The faster rise in the average earnings of hospital staff compared with those of the workforce as a whole can largely be attributed to the predominance of female employees in the hospital workforce.
- There does not appear to have been any significant catching-up of the wages or earnings of hospital staff with those of the workforce generally. There has, however, been some realignment of conditions and allowances between the two groups for those of hospital staff improved substantially particularly during the early 1970's.

The most important conclusions of this chapter arise from comparisons of wage rates and earnings between the hospital and State-wide workforces in Victoria. The slower rate of increase observed in the average wage rates of hospital staff compared with those of the Victorian labour force appears to have been compensated for by the greater contribution that improvements in conditions and allowances have made to hospital earnings. The average earnings of the two workforces - hospital and State - increased at much the same rate over the 10 year period when allowance is made for the widely differing sex composition of the two groups. It appears, therefore, that the faster growth in the earnings of hospital staff compared with all Victorian adults has been largely due to the predominance of female labour in the hospital sector, a finding that belies the widely held belief that rising hospital wage costs have been fuelled by uncontrollable increases in earnings. Statewide influences over which the hospitals have little control appear to have been the significant factors in the wage cost increases; and the female bias of the hospital workforce compared with that of the workforce generally has reinforced these effects.

Examination of award rates of pay is the first step in building up a picture of the dynamics of rising labour costs in Victorian hospitals. The focus of attention now turns towards the other contributing factors, namely to an examination of the effect on labour costs of changes in conditions and allowances and of changes in the quantity (hours of work) and quality (skill mix) of hospital staff.

CHAPTER 3

THE EFFECT OF CHANGES IN CONDITIONS AND ALLOWANCES ON LABOUR COSTS[20]

The results presented in Chapter two have suggested considerable improvements in the conditions and allowances of hospital staff during the ten years 1969 to 1979. An indication of the nature and extent of these improvements was obtained through an examination of the determinations of the relevant State Wages Boards. However, their contribution to the weekly pay packets of hospital staff could not be guaged accurately from an examination of the determinations alone. An information source was required giving details of the amounts actually paid to individual employees for each particular condition/allowance included in their award. HOSPOWER - the Victorian Health Commission's computerised personnel payroll system - provided this source and enabled the detailed analysis of the contribution of conditions and allowances to the cost of labour in Victoria's hospitals to be undertaken. The results of this analysis constitute the main subject matter of this Chapter.

THE HOSPOWER DATA BASE

Development of a computerised personnel/payroll system for Victoria's public general hospitals was undertaken in the late 1960's and early 1970's as part of the former Victorian Hospitals and Charities Commission's policy of improving hospital management reporting systems.[21] The system has now been operational since 1972 and currently services all the major metropolitan hospitals and base hospitals in Victoria, as well as a number of the smaller country hospitals.

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20 An earlier version of this Chapter was published in Tatchell (1981a).

21 Two other computer systems, relating to patient reporting and general ledger, were established at the same time.

Information is collected on two principle files:

(i) the '52-week' file - containing data for each individual employee on the number of hours worked and the payments made during each pay period of the year. Both hours and payments are classified according to the relevant 'variation code', that is, the type of hours worked (basic, overtime, public holidays and so on) and the allowances payable (both variable and fixed).

(ii) the 'master' file - containing personal and work history information for individual employees on date of birth, marital status, employment status, salary, method of pay, salary bank code and so on. This file is continually updated as each employee's status and circumstances change.

Apart from the obvious day to day function of facilitating the payment of staff, these files are used by the Victorian Health Commission to calculate a number of monthly management statistics for individual hospitals and for groups of hospitals of similar size and staff composition. These include statistics on the number of productive manhours per inpatient day (referred to as man-effort indexes); sick leave by department and staff group; labour turnover; and workforce composition. Each hospital is provided with regular statistical reports, based on the Hospower files, which enable it to compare its performance with that of its group and with its own past figures. [22]

The 52-week file provided the basis for this analysis, although the recent introduction of Hospower, and its application in the early 70s to only a handful of hospitals, restricted the number of hospitals for which data were available over a number of years. Twelve hospitals were 'on line' in 1973, though it was later found that data tapes for three of these hospitals were either unobtainable or unreadable in 1973 and 1974. On the other hand, their records also included data for a number of additional hospitals (small country hospitals) administered by them. Continuous statistical series were therefore available for 9 hospitals from 1973 to 1979, for 10 from 1974 to 1979, and for 19 from 1975 to the end of the study period. The total number of hospital-years available for analysis was 134. [23]

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[22] See Health Commission of Victoria (1979a and 1980a).

Lack of choice in determining the 'survey' hospitals prevented any attempt that might have been made to procure a random sample of hospitals in the State. Those obtained were reasonably representative of the state as a whole, although some differences can be demonstrated (Table 3.1). While representing some 18.4 percent of all hospitals in the State in 1979, the survey hospitals accounted for 32.1 percent of the total salary and wage bill, 28.6 percent of all beds available and 28.6 percent of all inpatients treated. On average, therefore, the survey hospitals were larger (148 beds compared with 95 beds) and treated more inpatients per year (5300 vs 3407) than the average for all hospitals.

Grouping of the hospitals reveals some variation in coverage with metropolitan special and country hospitals having the lowest representation, and teaching hospitals the highest. It also shows that the tendency for the survey hospitals to be larger (on average) than all hospitals holds true for all groups except the country hospitals (38 compared with 40 beds and 900 as against 1222 inpatients per year).

Finally it should be noted that while the survey hospitals are broadly representative of the wider population of hospitals in the <u>later</u> years of the period being studied, this is less true of the <u>earlier</u> years. The sample of country hospitals, in particular, numbered only 1 in 1973 and 1974, growing to 8 in 1975 and 1976, 14 in 1977, and 15 in 1978 and 1979.

23

Hospower files for the following hospitals were made available for this analysis: After Care, Bacchus Marsh, Ballarat, Bendigo, Boort, Box Hill, Central Gippsland, Dimboola, Dunolly, Elmore, Heathcote, Inglewood, Jeparit, Kaniva, Minyip, Murtoa, Nhill, Queen Victoria, Royal Melbourne, Royal Victoria, Rupanyup, St. Georges, St. Vincents, Stawell, Warracknabeal, Western General, Wimmera.

Table 3.1: Comparative Statistics for the 27 Survey Hospitals and All Victorian Hospitals (for year ending 30 June 1979)

Hospital Group	Hospital Numbers			Total Salary and Wage Payments			Total Beds			Number of Inpatients Treated		
	Survey No.	Total No.	Survey as % of Total %	Survey $'000	Total $'000	Survey as % of Total %	Survey No.	Total No.	Survey as % of Total %	Survey No.	Total No.	Survey as % of Total %
Teaching	3	8	37.5	73,023	183,555	39.8	1,708	4,193	40.7	64,582	159,148	40.6
Metropolitan Special	1	9	11.0	5,625	26,396	21.3	134	937	14.3	7,291	28,329	25.7
Metropolitan General	4	20	20.0	27,739	78,436	35.4	848	2,590	32.7	32,101	106,682	30.1
Country Base	3	10	30.0	18,788	60,672	31.0	702	2,250	31.2	24,700	84,405	29.3
Country	16	100	16.0	10,059	72,704	13.8	605	4,023	15.0	14,411	122,224	11.8
TOTAL	27	147	18.4	135,234	421,763	32.1	3,997	13,993	28.6	143,085	500,788	28.6

Source: The First Annual Report of the Health Commission of Victoria, 1978/79 Tables 2 and 9

THE CONTRIBUTION OF CONDITIONS AND ALLOWANCES

Analysis of the structure of hospital employee earnings, and the contribution of conditions and allowances to rising wages, has been undertaken using the considerable detail afforded by the 52 week file. In its most disaggregated form the basic computer record on the file contains - for each employee and for every pay period in the year - the following information:

Variation code

Pay year

Pay type (whether weekly or fortnightly)

Pay number (pay period in year)

Current hours paid

Current amount paid

Base wage rate

Base hours (usually 40 or 80)

Hospital department code

Job classification code

Generation of a separate employee-pay record for each applicable variation code (that is, one record for basic hours paid, another for any overtime payments, and one for each of the various penalties and allowances that may be paid) creates a file of considerable dimensions over a full year, particularly in the larger hospitals. [24] Data for individual hospital years are therefore routinely collected on separate computer tapes, copies of 79 of which were obtained by the Health Economics Research Unit from the Health Computer Services of Victoria located at Monash University.

Reduction of this data base into a more manageable form was achieved firstly by aggregating the information on an annual basis and secondly by grouping it according to a number of variation code and job classification categories. [25] A large number of summary cross-tabulations were then generated giving breakdowns

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24 For example, more than 266,000 records in one large survey hospital in 1979.

25 A complete listing of these items is given in Appendix E (Variation Codes) and Appendix F (Job Classifications).

of payments (and hours) for each hospital and group of hospitals year by year classified by variation code and job classification.

Broadly the variation codes have been classified as follows. Payment for base hours relates to the basic 40-hour week whereas penalties are the additional payments made for such things as weekend and public holiday work. Variable allowances (by definition those that can vary from pay period to pay period) include such items as shift allowances, on call allowances, long service leave and termination pay. Fixed allowances, on the other hand, are regular additions to basic weekly pay which include, for example, certificate and higher qualification allowances, uniform allowance, higher duties allowance, and some roster and on call allowances. Payment for annual holidays and sick leave are largely self-explanatory although the former includes a 17.5 percent loading. Finally, other allowances include payments for special leave, training leave, public holiday hours (not worked) and accident pay.

Some explanation is also required of the treatment of payments to medical staff. No problems arose with resident medical officers, medical administrators or full-time salaried staff for whom salary and other payments were recorded consistently. However, in most hospitals a substantial volume of medical services was provided by visiting medical officers who, until 1975-76, were unpaid for their public work in all but a very few cases. Since then they have been paid either by sessional payments in the larger metropolitan hospitals or by modified fee-for-service in country institutions. Sessional payments are treated as salaries and wages in the Hospower system but fee-for-service contract payments are not. Records for the smaller country hospitals are therefore not directly comparable with those of others. Moreover the introduction of payment to doctors previously 'honorary' introduces some problems in compiling comparable index numbers. Ideally, sessional payments ought to be removed in measuring changes in medical staff pay rates but the Hospower system does not consistently distinguish these payments from full-time salaries in all hospitals. Our indexes are therefore based on an imputation of sessional payments to honoraries prior to 1976 at rates bearing a fixed relationship to full-time salaries (which is in fact the way in which they were subsequently decided).

The major results of this analysis are presented in Tables 3.2 to 3.4 and Figures 3.1 to 3.3. These give details, in percentage terms, of the amounts paid (over and above payments for basic hours worked) for the various conditions and allowances (i) over time (ii) by hospital type and (iii) by staff group.

(i) Trends over time

Several clear patterns emerge from Table 3.2 and its accompanying Figure 3.1. First, and most obvious, is that the 'premium' for conditions and allowances has risen, relative to the payment for basic hours worked, from nearly 28 percent to over 39 percent since 1973. The introduction of a 17.5 percent annual leave loading for most categories of hospital staff led to a proportionate increase in annual leave payments from 6.15 percent (1973) to 9.05 percent of base rate payments (1979). In addition, the change in the award for medical officers and specialists in the mid 1970s substantially increased the amounts paid for on-call, call-back and roster duties (included here as part of both variable and fixed allowances).[26] Prior to September 1975, when the changes were introduced, compensation for these duties was included in the basic hourly rates of the medical staff.

The other feature of the results presented in Table 3.2 and Figure 3.1 is the relative stability of the overtime and sick leave proportions. Overtime payments contributed on average an additional 4.5 percent to basic weekly pay (range 4.08 to 4.79 percent) during the period. Sick leave (including sick absence) was similarly constant during the period adding an average of some 2.75 percent to basic pay.

(ii) Differences by Hospital Type

Comparisons between the percentage premiums for conditions and allowances payable to staff in the various hospital groups in 1979 (Table 3.3 and Figure 3.2) reveal some interesting inter-group differences:[27]

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26 The effect of these changes on the earnings of medical staff is illustrated later in the paper (Figure 3.4).

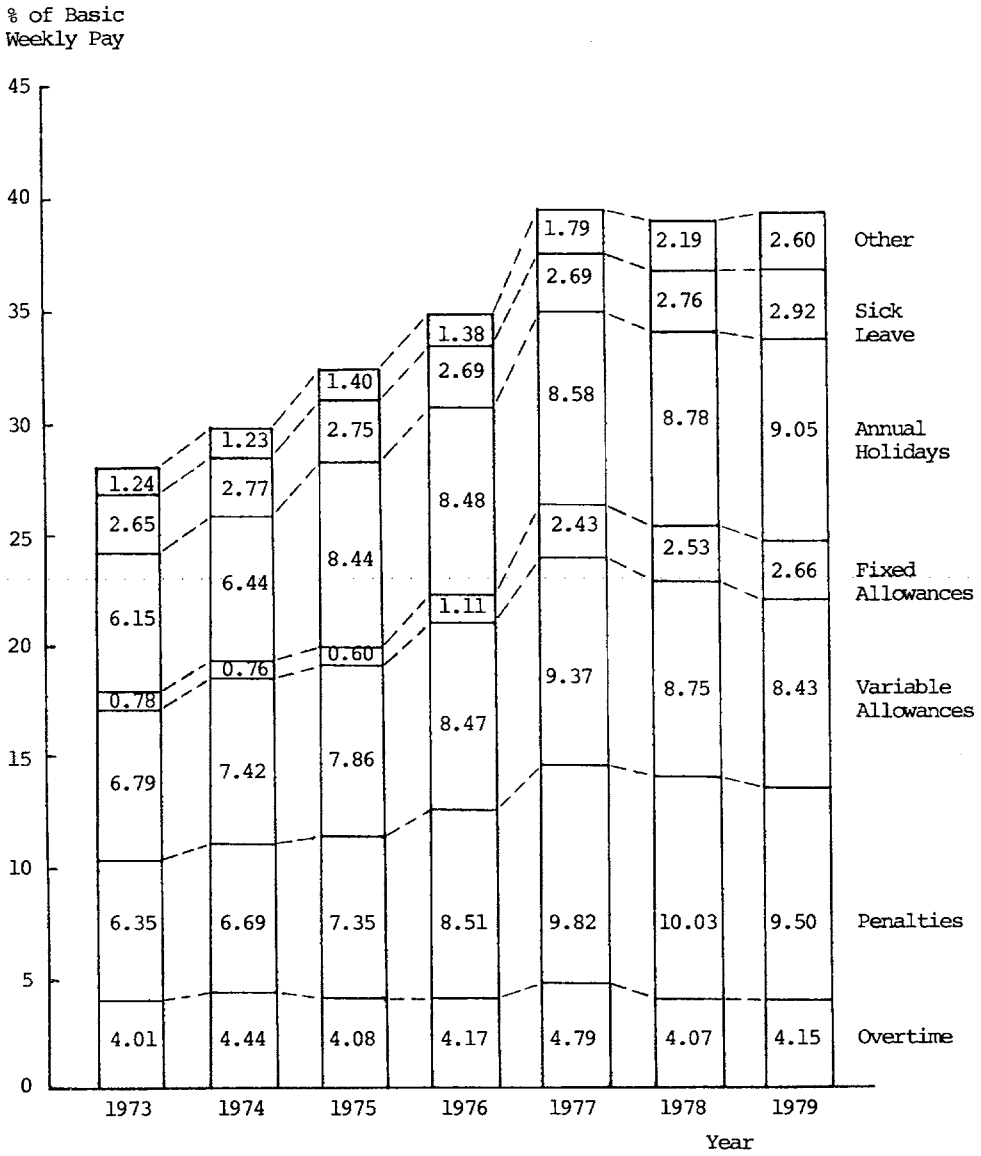
27 Tables giving results for the years 1973 to 1978 inclusive can be found in Appendix G.

Table 3.2: Payments for Conditions and Allowances*, as a Percentage of Basic Weekly Pay, Survey Hospitals 1973 to 1979

Payment for \ Year	1973 (N=9) %	1974 (N=10) %	1975 (N=19) %	1976 (N=19) %	1977 (N=25) %	1978 (N=26) %	1979 (N=26) %
Overtime	4.01	4.44	4.08	4.17	4.79	4.07	4.15
Penalties	6.35	6.69	7.35	8.51	9.82	10.03	9.50
Variable Allowances	6.79	7.42	7.86	8.47	9.37	8.75	8.43
Fixed Allowances	0.78	0.76	0.60	1.11	2.43	2.53	2.66
Annual Holidays	6.15	6.44	8.44	8.48	8.58	8.78	9.05
Sick Leave	2.65	2.77	2.75	2.69	2.69	2.76	2.92
Other	1.24	1.23	1.40	1.38	1.79	2.19	2.60
Total	27.97	29.75	32.48	34.81	39.47	39.11	39.31

* See Appendix E for the detailed composition of these 'variation codes'.

Figure 3.1: Payments for Conditions and Allowances, as a Percentage of Basic Weekly Pay, Survey Hospitals, 1973 to 1979



- overall, staff in teaching hospitals received the largest premium for conditions and allowances (41.54 percent) and those in country hospitals the lowest (35.27 percent). The average premium for all hospitals was 39.31 percent in 1979;

- more overtime was worked in teaching hospitals (5.38 percent of payments compared with 4.15 percent for all hospitals). This is largely due to the considerable amounts of overtime worked by resident medical staff in those hospitals - 48 percent of the overtime payments for staff in teaching hospitals were to medical staff compared with 39 percent in metropolitan general and 41 percent in all non-teaching hospitals;

- penalty payments varied markedly between hospital groups particularly when one compares the proportions for metropolitan special (6.33 percent) and country hospitals (11.86 percent). The reason for these differences is not clear but may reflect the greater flexibility of rostering and staffing available in larger hospitals; [28]

- higher percentages of fixed allowances were paid in teaching and metropolitan special hospitals largely because they employ greater numbers of resident medical staff than the other hospital groups;

- there was little substantial variation between hospital groups in the percentages for annual holiday payments or variable allowances;

- more sick leave was taken in the metropolitan special hospital than average, particularly by some of the lower paid nursing and general staff;

- intergroup variations in the percentages for the 'other' allowances were largely due to the provision of training leave in the teaching, metropolitan general and country base hospitals.

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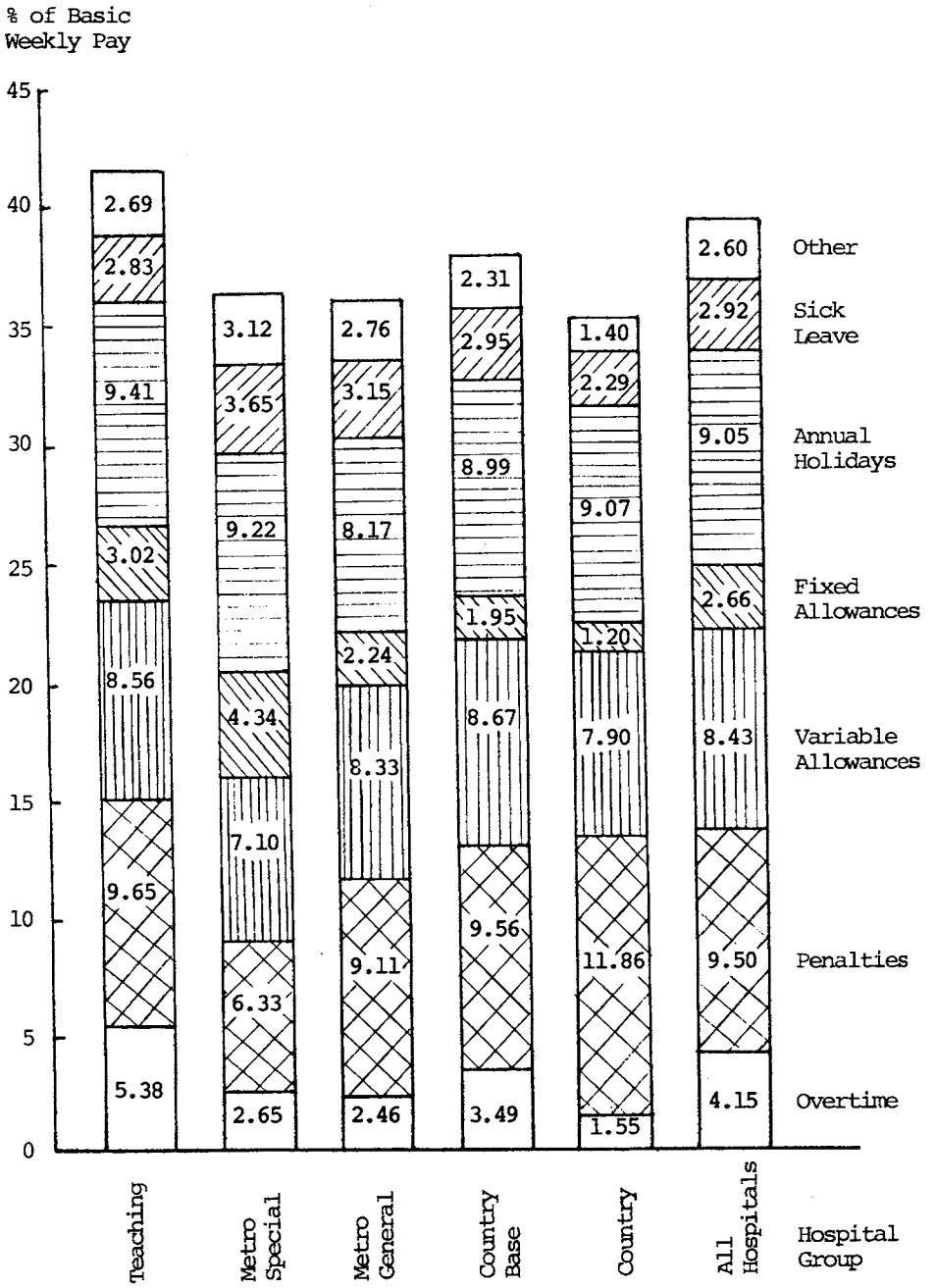
28 One possible explanation may lie with the penalties for weekend work for which nurses in particular are eligible. Since nurses constitute nearly 60 percent of the staff in the country hospital group (compared with 48 percent in all hospitals) weekend penalty payments are likely to constitute a greater proportion of total payments than that for all hospitals.

Table 3.3: Payments for Conditions and Allowances, by Hospital Group, as a Percentage of Basic Weekly Pay, Survey Hospitals, 1979

Payments for \ Hospital Group	Teaching (N=3) %	Metropolitan Special (N=1) %	Metropolitan General (N=4) %	Country Base (N=3) %	Country (N=15) %	All Hospitals (N=26) %
Overtime	5.38	2.65	2.46	3.49	1.55	4.15
Penalties	9.65	6.33	9.11	9.56	11.86	9.50
Variable Allowances	8.56	7.10	8.33	8.67	7.90	8.43
Fixed Allowances	3.02	4.34	2.24	1.95	1.20	2.66
Annual Holidays	9.41	9.22	8.17	8.99	9.07	9.05
Sick Leave	2.83	3.65	3.15	2.95	2.29	2.92
Other	2.69	3.12	2.76	2.31	1.40	2.60
Total	41.54	36.41	36.22	37.92	35.27	39.31

Figure 3.2: Payments for Conditions and Allowances, by Hospital Type, as a Percentage of Basic Weekly Pay, Survey Hospitals, 1979



(iii) Differences by Staff Classification

The premiums for conditions and allowances in 1979 varied markedly between staff groupings on most variation codes (Table 3.4 and Figure 3.3): [29]

- medical staff received the highest premium - 51.01 percent - relative to basic pay in 1979; the principal components of this were overtime (11.56 percent), penalties (10.20 percent), fixed allowances (10 percent) and annual holidays (9.26 percent); comparative premiums for the other staff groups were 40.04 percent for nursing, 35.41 percent for general and 30.89 percent for medical ancillary staff;

- overtime for nursing staff represented a significantly smaller addition to basic pay (0.77 percent) than average (4.15 percent);

- compared with the other groups, medical ancillary staff received relatively little of their extra payments in penalties (1.97 percent compared with 9.50 percent for all staff);

- the addition for variable allowances was highest for nursing staff (10.82 percent) and lowest for medical ancillary staff (6.02 percent);

- fixed allowances constituted a much higher proportion of payments to medical staff than the other staff groups; the greater part of this difference is explained by the payments for roster and on call allowances received by doctors (9.3 percent in 1979);

- medical staff apparently took far less sick leave than the other staff groups (0.73 percent of payments compared with 2.92 for all hospital staff), although this may simply reflect under-recording.

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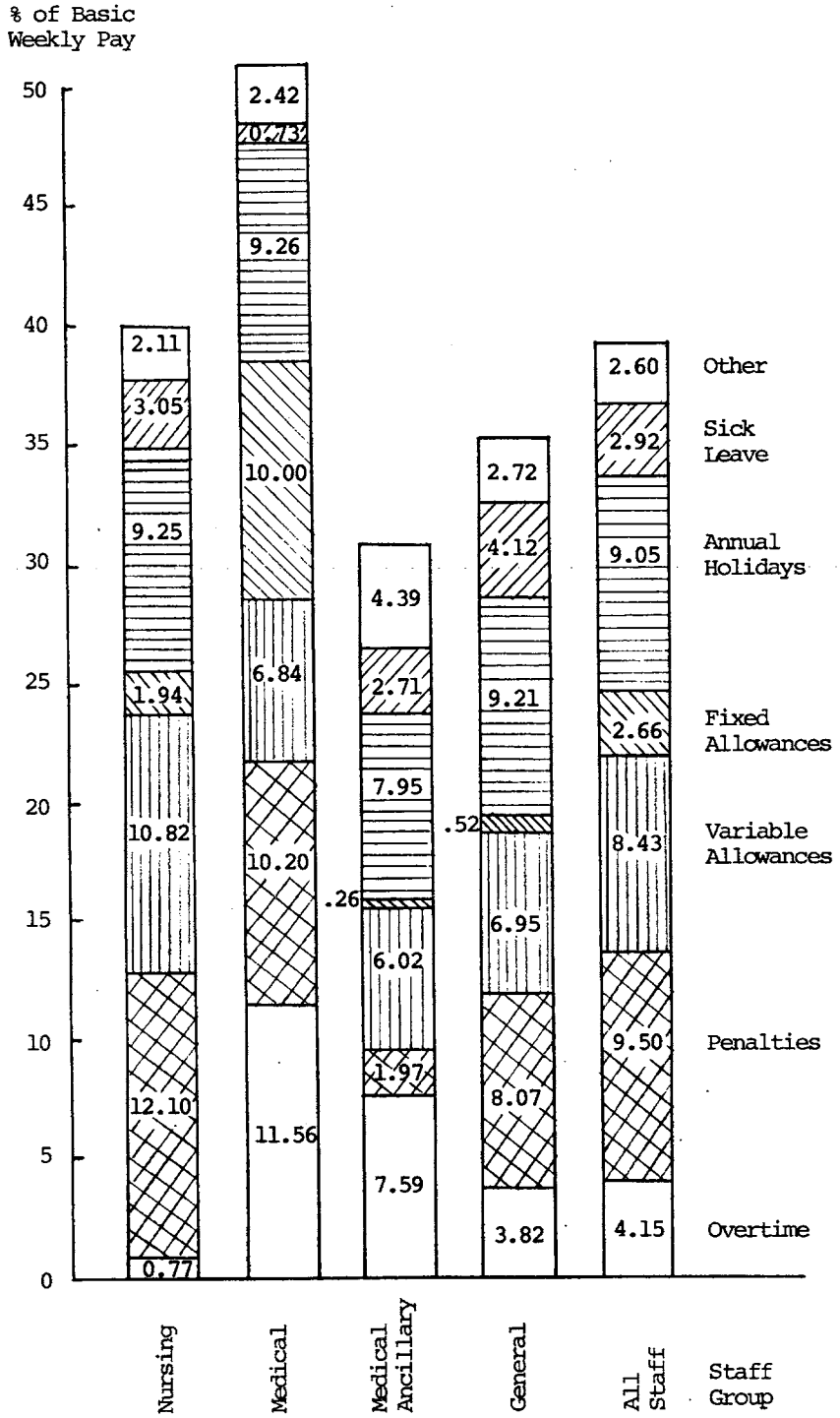
29 Tables giving results for the years 1973 to 1978 inclusive can be found in Appendix H.

Table 3.4: Payments for Conditions and Allowances, by Staff Classification, as a Percentage of Basic Weekly Pay, Survey Hospitals, 1979

Payments for \ Staff Group	Nursing %	Medical %	Medical Ancillary %	General %	All Staff %
Overtime	0.77	11.56	7.59	3.82	4.15
Penalties	12.10	10.20	1.97	8.07	9.50
Variable Allowances	10.82	6.84	6.02	6.95	8.43
Fixed Allowances	1.94	10.00	0.26	0.52	2.66
Annual Holidays	9.25	9.26	7.95	9.21	9.05
Sick Leave	3.05	0.73	2.71	4.12	2.92
Other	2.11	2.42	4.39	2.72	2.60
Total	40.04	51.01	30.89	35.41	39.31

Figure 3.3: Payments for Conditions and Allowances, by Staff Classification, as a Percentage of Basic Weekly Pay, Survey Hospitals, 1979



The monetary values of the conditions and allowances are shown in Table 3.5 and Figure 3.4. For all staff groups conditions and allowances assumed greater importance in the total earnings structure over the 7 year period. Thus, on average, nurses earned an additional $70 a week on top of their average basic payment of $173.20 in 1979, equivalent to 29 percent of their gross earnings or to a 40 percent premium on their basic weekly rate. The largest premium went to medical staff who received an additional 51 percent on top of their basic pay raising it by over $220 to an average of $659 a week. As Figure 3.4 shows, however, conditions and allowances played a much less prominent role in medical earnings in the early part of the period. In 1973, for example, they comprised 12.4 percent of the gross earnings of medical staff, equivalent to a premium on the basic weekly rate of 14 percent. The reason for this dramatic change, already alluded to above, derives from the 1975 changes to the award for medical staff.

The other feature of Table 3.5 is the intergroup difference in rates of change over the period. Examination of the percentage increase in average basic payments shows nurses to have gained most (167.3 percent) followed by general (142 percent) medical (136.1 percent) and medical ancillary staff (129.5 percent). The percentage increase in average gross payments, however, shows medical staff earnings to have increased fastest followed by nursing, general and ancillary staff. Clearly, in order to be comprehensive, analysis of rising labour costs requires examination of both base and gross rates of payment. Examination of either one in isolation is likely to generate false conclusions not only about the rate of change in wage rates but also about the reasons for those changes.

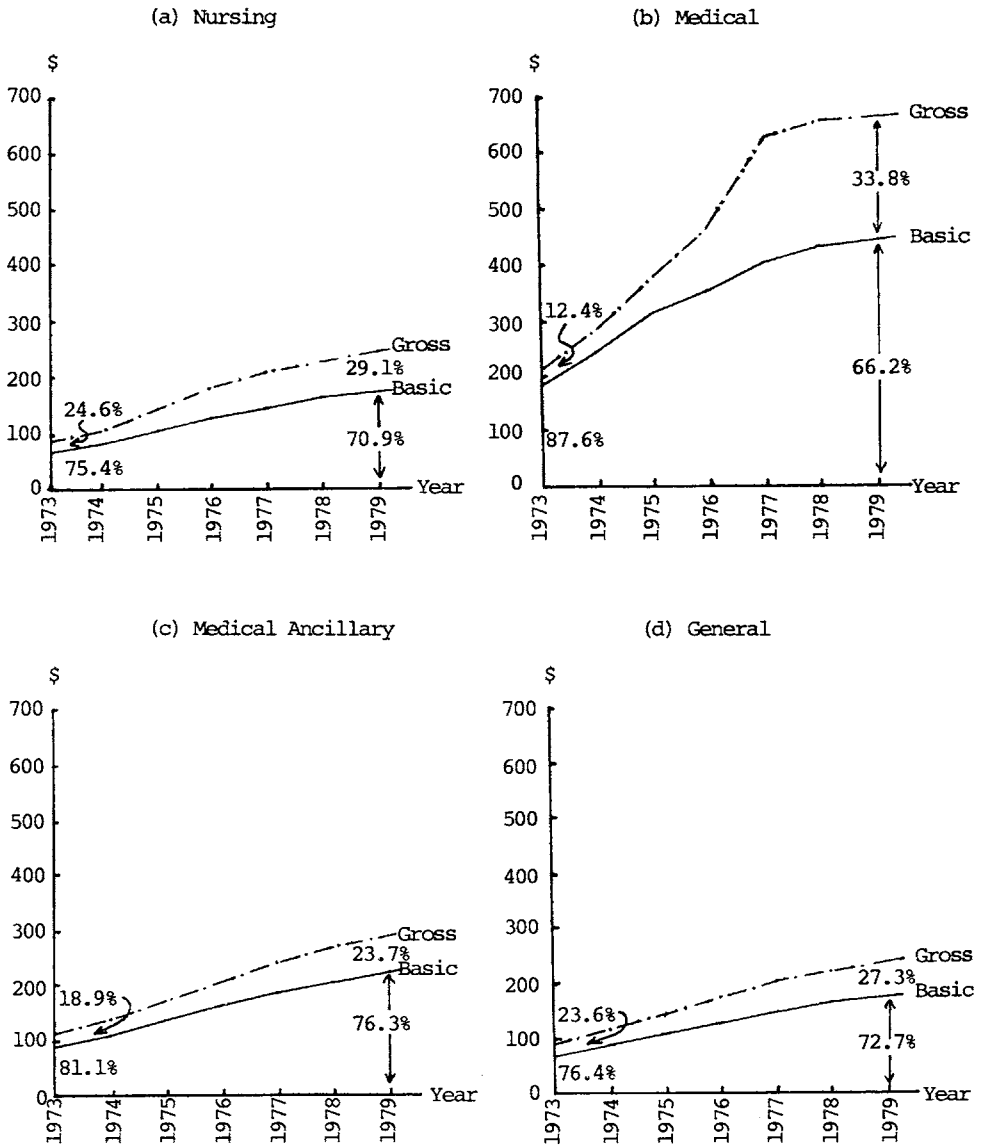
Table 3.5: Actual Basic Weekly Payments* and Actual Gross Weekly Earnings,** Survey Hospitals, 1973 to 1979

Year	Nursing		Medical		Medical Ancillary		General		All Staff	
	Basic $	Gross $	Basic $	Gross $	Basic $	Gross $	Basic $	Gross $	Basic $	Gross $
1973	64.80	85.92	184.80	210.90	97.60	120.34	70.40	92.15	78.40	100.35
1974	78.80	105.99	239.40	282.01	116.80	144.48	88.40	116.60	95.20	123.57
1975	101.20	142.19	314.10	376.92	144.40	180.50	110.00	146.85	120.40	160.13
1976	132.00	183.61	350.80	463.10	170.80	215.89	130.80	176.97	148.80	201.48
1977	148.00	206.61	405.60	624.22	190.40	245.62	147.20	201.37	171.60	240.75
1978	162.40	225.90	425.60	652.44	206.80	268.43	159.60	218.49	185.60	259.84
1979	173.20	244.04	436.40	658.96	224.00	293.44	170.40	234.47	197.20	277.26
% change	167.3	184.0	136.1	212.5	129.5	143.8	142.0	154.4	151.5	176.3

* Basic Pay ÷ Basic Hours

** Actual basic weekly wage payments x the ratio of the payment for basic hours (in percentage terms) to total payments (i.e. 100 per cent). The amounts therefore include payments for conditions and allowances.

Figure 3.4: Actual Basic Weekly Payments and Actual Gross Weekly Earnings, Survey Hospitals, Four Staff Groups, 1973 to 1979



SUMMARY

The forgoing analysis of the earnings of hospital staff in twenty-seven hospitals in Victoria has confirmed one of the results obtained earlier, namely that conditions and allowances have come to represent an increasing proportion of the weekly earnings of all categories of hospital staff.

The greater detail inherent in the Hospower statistics has permitted a more accurate assessment to be made of the impact of these changes on average earnings. The analysis has shown that the magnitude of the change was more substantial than the earlier findings (based on full-time-equivalent staff numbers) suggested. In particular it has been shown that:

- relative to the payment for basic hours worked, payments to all hospital staff for conditions and allowances have risen from nearly 28 percent to over 39 percent since 1973;
- payments for conditions and allowances were higher, proportionately, for staff in the larger hospitals (particularly the teaching hospitals) compared with the smaller country hospitals;
- medical staff, particularly in the later part of the period, received considerably more of their total earnings in payments for conditions and allowances than non-medical staff.

These changes were the result of a combination of changes to the awards of staff groups either through the introduction of new allowances or through alterations to existing allowances. Questions as to the underlying causes of these events are held over until Chapter 5 following consideration of the impact of changing staff composition and productivity in Chapter 4.

Chapter 4

CHANGES IN STAFF NUMBERS AND SKILLS AND THEIR RELATIONSHIP TO HOSPITAL OUTPUT

The third major component of rising labour costs, additional to changes in the unit costs and conditions and allowances of hospital staff, is changes in the numbers and skills of the labour employed. Any significant change in the overall mix of staff employed over time is likely to have an effect on average earnings. A proportionate increase in the number of relatively lower paid and less skilled occupations, for example, would result in a level of average earnings below that which one would expect if the staff mix had remained unchanged. Conversely a proportionate increase in the number of relatively higher paid and more skilled occupations would result in a level of average earnings above that which one would expect if the staff mix had remained unchanged. This chapter examines the changing numbers and composition of staff in Victorian hospitals during the 1970s and their relationship to changing levels of output.

STAFF NUMBERS AND COMPOSITION

As indicated in Chapter 3 there are two possible sources of information on staff numbers: the published statistics and internal reports of the Hospitals and Charities Commission of Victoria; and Hospower. The main published source is the Annual Report of the Hospital and Charities Commission of Victoria which, prior to 1976, listed the numbers of paid staff employed in each hospital in three main groups: medical, nursing and all other. These were expressed as full-time equivalents only during the 3 years 1973 to 1975 inclusive. Since 1976 the Commission's Reports have omitted all manpower statistics save some aggregate nursing figures. It has therefore been necessary to supplement the published statistics with more detailed information from unpublished sources, principally the Staff Returns (Form 9) which public hospitals in Victoria are required to forward to the Commission each August. This form provides details of the numbers of staff employed in each occupational group in each hospital (expressed as full timers, part timers and full-time-equivalents) as at 30 June each year. Use of

these sources to construct a time series of information on hospital manpower, however, is problematical due to changes in recording procedures and in the classification of occupational groups during the 1970s.

The composition of the three main staff groups has been defined as follows: [30]

Medical - all medical practitioners paid by hospitals; including medical superintendants, specialists, resident medical officers and other medical officers; excluding visiting medical officers who were 'honoraries' prior to 1975 and were employed on a sessional or contractual basis subsequently. [31]

Nursing - includes all nursing staff except nurses employed in clerical or primarily non-nursing duties.

General - includes all persons not defined as medical or nursing; medical ancillary staff are therefore included under this heading.

Table 4.1 shows the total numbers of paid full-time-equivalent staff employed in these three groupings in selected years from 1970 to 1980. The figures suggest that little change took place in the relative importance of the groups. Nursing staff represented around 51 percent of all staff, medical staff between 4 and 5 percent and general staff between 43 and 46 percent. Of the three groups the medical staff increased most rapidly (60.3 percent) followed by general staff (52.5 percent) and nursing staff (45.2 percent). Overall numbers grew by almost 50 percent in the 11 year period.

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30 The definitions given are those used by the Health Commission of Victoria (1980a).

31 A total of 348.4 full-time-equivalent sessional doctors were employed in Victoria's public general hospitals in 1978; they were paid some $25.2m.

Table 4.1: Full-Time-Equivalent Staff Numbers, All Victorian Public General Hospitals, 1970 to 1980

Year (ending 30 June)	Nursing		Medical*		General**		All Staff	
	No.	%	No.	%	No.	%	No.	%
1970***	13,156.0	51.88	1,085.9	4.28	11,116.0	43.84	25,357.9	100.0
1973	14,890.7	51.29	1,430.5	4.93	12,710.8	43.78	29,032.0	100.0
1974	15,447.2	51.01	1,420.0	4.69	13,417.3	44.30	30,284.5	100.0
1975	16,241.2	50.81	1,494.3	4.68	14,226.7	44.51	31,962.2	100.0
1977	17,880.1	51.35	1,615.7	4.64	15,324.1	44.01	34,819.9	100.0
1978	18,617.0	52.39	1,528.4	4.30	15,387.5	43.30	35,532.9	100.0
1979	18,143.6	49.08	1,606.3	4.35	17,216.4	46.57	36,966.3	100.0
1980	19,107.0	50.55	1,740.9	4.61	16,947.2	44.84	37,795.5	100.0
% increase 1970-80	45.2	-	60.3	-	52.5	-	49.0	-

* Excluding sessional medical staff

** Including medical ancillary staff who comprised some 8.9 percent of all staff in 1970. These groups have been combined because of changes in recording procedures during the period.

*** Comparable data for 1971, 1972 and 1976 were unavailable. Prior to 1973 no statistics of equivalent full-time staff were recorded in the Commission's Annual Reports.

Sources: Apart from the 1970 figures (which are based on the author's own examination of Health Commission records) the figures in this table have been taken from table 2.5 of the Victorian Health Commission's submission to the Jamison Inquiry, this being the most up-to-date and accurate time series available. The sources used by the Commission were: 1973-75, Hospital and Charities Commission Annual Reports; 1977 to 1980, Internal Reports.

Hospower data, the second source of staffing information, allow comparison to be made between a greater number of staff classifications, though over a shorter period of time (1973 to 1979) and for a varying number of hospitals (from 9 in 1973 to 26 in 1979). The occupational breakdown of staff in those hospitals (Table 4.2) shows that while there has been little proportionate change in the broad staff groupings since 1973, within each group some staff categories have experienced marked changes. [32] The composition of nursing staff in 1979, for example, is quite different to that of 1973. Substantial proportionate increases in the numbers of sisters and midwives (13.17 percent to 19.59 percent) and of nurse aides (3.49 percent to 5.78 percent) have been balanced by proportionate decreases in student nurses (21.91 percent to 13.74 percent) and charge and night sisters (3.92 percent to 2.89 percent). Other staff groups to have increased proportionately since 1973 include RMOs (4.80 to 5.76 percent), specialists [33] (1.48 to 2.27 percent) administration (1.16 to 1.68 percent) and cleaning staff (6.05 to 8.13 percent); at the same time proportionate decreases in numbers have been registered by dietary (13.51 to 9.74 percent), housekeeping (1.65 to 0.69 percent) and linen and laundry staff (1.33 to 0.70 percent).

The change in the composition of staff hours towards more highly skilled professional labour (medical, scientific and trained nursing staff) and of the least skilled professional group, nurse aides, at the expense of the training of nurses suggests an 'output' change in the direction of more patient care and less education. This could be interpreted as a rational response to the very rapid increase in the cost of patient care provided by student nurses resulting from the disproportionately large wage increases granted to junior female staff generally; and the increased paid study time allowed to student nurses in particular. However, the shift was also greatest in the period when hospitals were under the greatest budgetary pressure, so that similar changes in output might well be expected of similar restraints on hospital funding in the future.

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32 The 23 staff groups listed and the many staff classifications included in each are identical to those used in Chapter 2 and listed in Appendix F.

33 Including sessionals from 1976 onwards.

Table 4.2: Staff Composition* (%), Survey Hospitals, 1973 to 1979

Staff Group	1973	1974	1975	1976	1977	1978	1979
Matrons	0.46	0.52	0.59	0.74	0.71	0.71	0.67
Charge & Night Sisters	3.92	3.90	3.38	3.27	3.14	3.06	2.89
Sisters & Midwives	13.17	13.50	16.32	17.21	17.87	19.08	19.59
Student Nurses	21.91	21.31	17.57	16.09	15.17	14.38	13.74
Nurse Aides	3.49	4.06	4.61	5.17	5.65	5.94	5.78
Student Nurse Aides	1.30	1.18	1.57	1.69	1.64	1.53	1.38
Nurse Attendants	3.25	3.20	3.31	3.26	3.29	3.25	3.16
Supervisory Sisters	0.73	0.62	0.66	0.66	0.68	0.71	0.73
Teachers	0.56	0.65	0.71	0.79	0.87	0.88	0.98
All Nurses	48.79	48.95	48.72	48.82	49.01	49.55	48.92
RMO's	4.80	6.34	6.65	6.25	5.69	5.52	5.76
Specialists	1.48	1.40	1.37	1.79	2.46	2.35	2.27
Other Medical	0.26	0.21	0.21	0.21	0.22	0.21	0.23
All Medical	6.53	7.95	8.23	8.25	8.37	8.08	8.26
Technicians	6.07	5.67	5.39	5.42	5.40	5.41	5.28
Therapists	1.04	1.04	1.02	1.11	1.21	1.20	1.30
Pharmacists	0.97	0.87	0.95	1.00	1.00	1.03	1.11
Other Med. Ancillary	0.70	0.72	0.70	0.72	0.79	0.85	0.96
All Med. Ancillary	8.79	8.30	8.07	8.25	8.40	8.49	8.65
Administration	1.16	1.34	1.54	1.59	1.58	1.62	1.68
Dietary	13.51	12.96	11.99	11.24	11.04	10.94	9.74
Cleaning	6.05	6.99	6.84	7.31	7.40	7.11	8.13
Housekeeping	1.65	1.37	1.18	1.15	0.79	0.68	0.69
Linen & Laundry	1.33	1.32	1.04	0.92	0.84	0.78	0.70
Trades	3.01	3.01	2.85	2.87	2.94	3.04	3.12
Clerical	9.17	8.81	9.54	9.60	9.64	9.70	10.11
All General	35.89	34.80	34.98	34.68	34.22	33.87	34.17
All Staff**	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Based on the sum of basic, overtime and casual hours worked by each staff group.

** Errors in total and sub-totals are due to rounding

In general the staff-mix changes evident in Table 4.2 confirm those suggested by the aggregate data presented in Table 4.1, though the proportions differ somewhat due to the greater representation in the sample of teaching hospitals and the larger metropolitan and country base hospitals.

Cursory examination of the proportionate changes in staff composition in this manner gives little clue as to the possible impact the changes might have had on average wages. A more rigorous test can be undertaken by comparing, through the use of index numbers, the actual levels of average weekly payments paid during the period with those that one would have expected had the composition of the hospital workforce remained unchanged since 1973. [34]

Two indexes are defined. The first is an unweighted wage index (I_1) which makes no attempt to adjust for changing staff composition during the period and is simply derived by dividing the average basic weekly payment for each staff group by the equivalent payment in the base year (1973):

$$I_1 = \frac{\sum_{i=1}^{k} W_{it} N_{it} \Big/ \sum_{i=1}^{k} N_{it}}{\sum_{i=1}^{k} W_{i73} N_{i73} \Big/ \sum_{i=1}^{k} N_{i73}} \cdot 1000$$

where:

W_{it} = the average basic weekly payment to staff group i in year t

W_{i73} = the average basic weekly payment to staff group i in 1973

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34 A similar approach has been used, in the United States context, by Feldstein M. (1971a).

N_{it} = the average number of basic weekly hours worked by staff group i in year t

N_{i73} = the average number of basic weekly hours worked by staff group i in 1973

and i = 1.....k

The second index (I_2) is a weighted wage index which gives an indication of the amount by which average basic weekly payments would have risen over the 7 year period had the composition of the hospital workforce remained the same as in 1973:

$$I_2 = \frac{\sum_{i=1}^{k} W_{it} N_{i73} / \sum_{i=1}^{k} N_{i73}}{\sum_{i=1}^{k} W_{i73} N_{i73} / \sum_{i=1}^{k} N_{i73}} \cdot 1000$$

$$\text{i.e. } I_2 = \frac{\sum_{i=1}^{k} W_{it} N_{i73}}{\sum_{i=1}^{k} W_{i73} N_{i73}}$$

A more rapid increase in I_1 compared to I_2 implies a move toward a higher paid, more skilled and possibly better trained hospital workforce. Comparison between the two indexes (Table 4.3) indicates the estimated effects since 1973. Overall, the level of actual basic weekly payments was 6.5 percent higher in 1979 than could be expected given the 1973 staff-mix. Changing staff composition, however, appears to have been experienced to any significant extent by only two of the four main staff groups - average payments for nursing staff were 7.4 percent higher in 1979 and for medical staff 7.2 percent as a result of 'enriched' staff-mixes.

In some instances the reasons for these changes in staff-mix are obvious. The sharp proportionate reduction in student nurse numbers, for example, may have been a response to their relatively rising cost, particularly since 1974. Not clear, however, is the extent to which improvements in the 'skills' or 'quality' of existing staff have affected levels of earnings. The only direct indicator - payments for certificate and higher qualification allowances -

Table 4.3: Unweighted and Weighted Indexes for Actual Basic Weekly Payments*, Survey Hospitals, 1973 to 1979

Year	Nursing		Medical		Medical Ancillary		General		All Staff	
	I_1	I_2	I_1	I_2	I_1	I_2	I_1	I_2	I_1	I_2
1973	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1974	1216	1210	1295	1283	1197	1197	1256	1250	1214	1204
1975	1562	1506	1699	1672	1480	1475	1563	1545	1536	1499
1976	2037	1938	1898	1811	1750	1742	1858	1835	1898	1908
1977	2284	2160	2194	2002	1951	1939	2091	2068	2189	2056
1978	2506	2347	2303	2121	2119	2098	2267	2250	2367	2230
1979	2673	2488	2361	2203	2295	2279	2420	2398	2515	2362
% difference in 1979 attributable to changing staff composition	7.4		7.2		0.7		0.9		6.5	

* The unweighted index (I_1) makes no attempt to adjust for changing staff composition, while the weighted index (I_2) assumes the 1973 composition throughout the period. See text for fuller explanation and formulae.

suggests very little change. These payments grew only marginally from 0.39 percent in 1977 to 0.52 percent of all payments in 1979; (the equivalent percentages for nursing staff, who benefit most from these allowances, are 0.92 and 1.02 percent). Clearly this is a far from satisfactory indicator of skill mix change amongst hospital staff. Moreover the period during which such information was recorded in Hospower (since 1977) is too short to be a reliable indicator of any long term trend.

Absence of a satisfactory direct measure of staff quality improvement suggests the use of alternative indirect indicators such as improvements in staff training programmes. There is some evidence of this having occurred during the 1970s. Medical Ancillary staff, particularly Physiotherapists, Occupational Therapists and Speech Pathologists, have had their training (at the Lincoln Institute of Health Sciences) extended by a further 6 months, and expanded from a diploma to a degree course. Medical Technologists and Radiographers, who had previously attended courses at the Royal Melbourne Institute of Technology on a part-time basis, now undertake full-time study at the Institute and visit hospitals as part of the course. The major change in the training of nurses has been the introduction of College-based courses at the Lincoln Institute and at the Preston (now the Philip) Institute of Technology. Finally, in-service staff training courses offered at the Mayfield Centre have expanded considerably both in scope and number during the 1970s. These improvements in staff training and qualifications are likely to result in a higher level of skills (and earnings) for those occupations affected by the changes. Once again, though, the extent of their impact on average earnings is not quantifiable.

A more sophisticated approach to measuring the changing quality and quantity of hospital labour was employed recently by Connors (1981) using techniques developed in earlier work by Schwarztman (1968) and Denison (1974). Connors develops a number of indexes with which to measure changes in the quantity and quality of the United States hospital labour force from 1950 to 1976.

His index of the changing quantity of hospital labour is the product of two separate indexes: one for the number of persons employed; the other to account for the fall in the average length of the working week. The index of changing quality is estimated by measuring changes in the educational level and experience

of the hospital labour force. The 'educational index' compares the composition of the hospital labour force by educational levels and corresponding average hourly wage rates, over time. The average hourly wage rate is used as a weight to permit the addition of employees with different levels of education by converting each educational group from units of employees to monetary units. The 'experience index' is based on changes in the age-sex composition of the hospital labour force and is calculated by multiplying the proportion of average annual hours worked by employees in a number of age-sex groups in each year times an index of average hourly wages in 1960; the results are converted to index numbers with the base year set at 1960. Connors is then able to define an overall index of labour input as the product of the three indexes: quantity, education and experience.

His results are interesting. The index of labour inputs for U.S. Community Hospitals grew at an average annual rate of 4.9 percent from 1950 to 1976. Most of this growth was the result of quantity changes (4.73 percent), with only 0.16 percent being due to improved staff quality achieved mainly through increased education; the changing 'experience' of the hospital workforce appeared to have no effect on the overall labour input index. Unfortunately similar procedures could not be employed in this study due to a lack of suitable data, particularly on the education, qualifications and work experience of hospital staff in Victoria. The potential does exist, though, for information on these aspects of the hospital workforce to be recorded and collected systematically - through Hospower's 'Master File'. This file is intended to contain detailed personal and work history information on every hospital employee. To date, however, this has not included particulars of the employee's qualifications and work experience.

HOSPITAL OUTPUT MEASURES

From the evidence presented in the previous section it would appear that staff employed in Victoria's public general hospitals have increased in number by nearly 50 percent in the period 1970 to 1980. Hospital employees represented over 21 percent of the State's labour force in 1980 compared with about 17 percent a decade earlier. [35] What has caused this increase? Several explanations can be given including the general observation that the growth in hospital employment is part of an economy-wide expansion in service sector employment which has been

occurring in Australia during the last two decades. It also has been argued that more staff are required to provide the higher quality of care and comfort that patients expect from their hospitals; although this is balanced, to some degree, by the introduction of labour-saving innovations such as those in hospital laboratories, laundries and kitchens. The third explanation is that staff numbers have needed to increase simply to keep pace with the increasing numbers of patients being treated, particularly in hospital outpatient departments. Evidence presented earlier (Table 1.1 in Chapter 1) has shown that the numbers of inpatients, inpatient bed days and outpatients treated increased by 37.8 percent, 5.4 percent and 120.2 percent respectively during the period 1970 to 1980.

Before examining more closely the relationship between the supply of labour and the output of the hospital sector in Victoria it is worthwhile pausing to consider the perennial problem of defining and measuring hospital output. Ideally one should be seeking to develop measures which reflect what is believed to be the ultimate objective of the hospital - the improvement of the overall health status of the population being served. Unfortunately no such measures are available [36]; and the problems inherent in their development have led most researchers to adopt the more accessible, though in many ways 'second-best', intermediate measures of output: the treated case and the inpatient bed day. [37]

Adoption of these measures, however, gives rise to a further problem - the need to take into account the increasing numbers of patients being treated in hospital outpatient clinics, a problem further complicated by the fact that the relevant statistics on staff numbers do not distinguish between staff working in inpatient and outpatient departments. The solution most frequently used to

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Derived from statistics given in the ABS (Victorian Office) Monthly Summary of Statistics for the relevant years; and Table 4.1 above.

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An approach that goes some way towards achieving the above objective is that proposed by Roemer et al. (1968) and later adapted (in the Australian context) by Duckett and Kristofferson (1978). Both studies develop measures of 'hospital performance' based on hospital death rates adjusted for case severity (variously measured).

37

For a detailed review of the issues and techniques involved in defining and measuring hospital output see Tatchell (1980, 1983) and Hornbrook (1982a, 1982b).

overcome this problem has been to express the number of outpatient occasions of service in terms of some 'equivalent' number of inpatient bed days. Typically the formula employed (since its introduction in 1971) has been that proposed by the Hospital and Allied Services Advisory Council (HASAC) which equates 2100 outpatient occasions of service to one occupied bed-year, or equivalently 5.75 outpatient occasions of service to one bed-day (HASAC, 1971). HASAC also proposed that a figure of three occasions of service per outpatient registration be regarded as an acceptable average for calculating an 'adjusted daily average' of inpatients being treated.

Application of the HASAC formula to Victoria's hospital utilisation statistics gives rise to two sets of 'adjusted' output figures: adjusted bed days and adjusted inpatients. These are shown in Table 4.4. Both series have grown during the period, though the substantial fall in average length of stay (from 9.8 days in 1970 to 7.5 in 1980) has resulted in a slower growth (15.3 percent) in adjusted bed days than in adjusted inpatients (50.7 percent). The relatively rapid increase in outpatient attendances (which have more than doubled since 1970) compared with the growth in bed days and inpatient numbers during the same period, is reflected in the growing contribution that 'adjusted' outpatient attendances have made to the two sets of adjusted utilisation statistics. The outpatient component now comprises 17.8 percent of the total compared with only 10.1 percent in 1970.

However, the HASAC formula may not be appropriate for adjusting the Victorian outpatient statistics. In the first place, the outpatient statistics recorded by Victoria's hospitals relate to numbers of 'persons treated' and numbers of 'attendances'. The HASAC formula, in contrast, refers to outpatient 'registrations' and 'occasions of service'. While one can reasonably assume that a 'person treated' is equivalent to an 'outpatient registration', it is less likely that an outpatient attendance and an occasion of service coincide. There may be instances, for example, when an outpatient attendance generates more than

Table 4.4: Adjusted Utilisation Statistics (HASAC Method) for Victorian Public General Hospitals, 1970 to 1980

Year (ending 30 June)	Adjusted Bed Days (1) ('000)	Adjusted Inpatients (2) ('000)	Adjusted Outpatients as a Percentage of Adjusted Totals (%)
1970	3,989.5	406.3	10.1
1971	4,080.5	426.1	10.4
1972	4,229.0	453.8	10.5
1973	4,311.1	472.1	11.0
1974	4,343.1	472.7	11.7
1975	4,410.9	494.2	12.5
1976	4,634.8	532.5	14.4
1977	4,686.8	547.3	14.6
1978	4,616.6	575.0	15.7
1979	4,604.9	600.0	16.5
1980	4,598.4	612.2	17.8
% increase 1970-80	15.3	50.7	-

1. Total Inpatient Bed Days + [Total Outpatient Attendancies/5.75]

2. Total Inpatients Treated + [Total Outpatient Attendances/(5.75 X Average Length of Stay) for each year]

one occasion of service. The 3:1 ratio of occasions of service to registrations suggested by HASAC, is likely, therefore, to overstate the Victorian ratio of attendances to persons treated. Examination of the actual Victorian ratios during the period 1970 to 1980 confirms this suspicion (Table 4.5). The ratio has been consistently below the 3:1 suggested by HASAC - following a peak of 2.58 :1 in 1971 it had fallen to 2.28:1 in 1980.

Table 4.5: Outpatient Attendances per Outpatient Treated, All Victorian Public General Hospitals, 1970 to 1980

Year	Ratio
1970	2.54
1971	2.58
1972	2.51
1973	2.44
1974	2.34
1975	2.33
1976	2.35
1977	2.26
1978	2.29
1979	2.19
1980	2.28

Source: Annual Reports of the Hospitals and Charities Commission of Victoria and Health Commission of Victoria for years 1970 to 1980.

A second reason for doubting the appropriateness of the HASAC formula for Victoria's outpatient statistics is the atypical pattern of hospital utilisation in Victoria compared with most other states in Australia. Table 4.6 shows that per capita utilisation of hospital outpatient facilities in Victoria has been considerably below the average since 1970-71 and is higher only than South Australia. Part of the reason for this may lie with the definitional problem already alluded to above, that is that 'outpatient attendances' and 'occasions of service' are not necessarily equivalent. [38]

An alternative means of deriving adjusted utilisation statistics, more appropriate to Victoria's hospital system, is that based on the relative average costs of treating inpatients and outpatients. Outpatient numbers (however recorded) are adjusted and expressed as equivalent bed days or inpatients according to the average cost of an outpatient relative to that of an inpatient bed day or inpatient. [39] The resulting adjustment is therefore resource based, that is, inpatient and outpatient numbers are combined according to the resources devoted to each, as represented by their respective average costs.

The main problem with this approach is that the division of hospital maintenance expenditure into inpatient and outpatient allocations (as reported in the Victorian Hospital and Charities Commission Annual Reports) is not based on the actual expenditure incurred in those areas. Rather, the 'split' seems to be based on an arbitrary percentage allocation which, though varying from hospital to hospital, has evened out consistently over time and over all hospitals at 15 percent for outpatients and 85 percent for inpatients. [40] Certainly the static pattern of hospital resource allocation suggested by these

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38 Underlying both these arguments is the fact that the HASAC formula, when originally conceived, was based largely on statistical information for hospitals in New South Wales.

39 Calculation of Hospower's 'Factor Y' - productive manhours per equivalent inpatient day - involves the use of a similar technique for adjusting outpatient numbers. This procedure superseded an earlier approach which equated five outpatient attendances to one inpatient day.

40 These percentages have applied at least from 1965 to 1975. No inpatient/outpatient expenditure division has been recorded in the Commission's Annual Reports since 1975.

percentages is in no way consistent with the more rapid growth in outpatient numbers relative to inpatients and bed days already noted above. The implication of the published figures is that the average cost of treating an outpatient relative to an inpatient has fallen substantially in recent years - an unlikely event, though difficult to disprove given the absence of accurate costings for inpatients and outpatients.

Table 4.6: Outpatient Occasions of Service per 1000 Population, All Hospitals, by States and Territories, 1970-71 and 1978-79

State or Territory	Year 1970-71	1978-79
NSW	1,078	1,785
VIC	667	1,111
QLD	1,169	2,176
SA	569	1,025
WA	754	2,073
TAS	1,125	1,289
ACT	902	1,489
NT	1,988	1,902
Repatriation	23	50
Australia	934	1,653

Source: Jamison (1981) V.2, Appendix 2A, Table 13.

In the absence of any accurate costing, it has been assumed that the relative costs of inpatients and outpatients in 1969 were 'correct' for the purposes of this study. No real justification can be given for having chosen this particular year (or indeed, any other year) except that 1969 falls outside and immediately prior to the period being examined. The recorded average costs per inpatient, per inpatient bed day and per outpatient in that year are given in Table 4.7. They indicate that on average:

1 inpatient bed day = 1.408 outpatients treated

1 inpatient = 14.16 outpatients treated

In contrast, the equivalent HASAC figures are:

1 inpatient bed day = 1.918 outpatients treated (i.e. 5.75 3)

1 inpatient = 19.37 outpatients treated

(i.e. 1.918 X average length of stay in 1969)

The relative cost method therefore places a higher value on outpatients relative to inpatients and bed days than the HASAC approach (Table 4.8), so that the contributions of 'adjusted outpatients' to the two sets of adjusted utilisation statistics are substantially more than those derived from the HASAC approach in Table 4.4. In 1980 for example, the outpatient component comprised nearly 28 percent of the adjusted figures compared with 17.8 percent by the HASAC formula.

Table 4.7: Average Costs per Inpatient, Inpatient Bed Day and Outpatient, and Their Ratios, All Victorian Public General Hospitals, 1969

Average Cost	per Inpatient (1)	$ 210.48
	per Inpatient Bed Day (2)	$ 20.93
	per Outpatient Treated (3)	$ 14.87
Ratios	Cost per Outpatient: / Cost per Inpatient	0.0706
	Cost per Outpatient: / Cost per Bed Day	0.710

1. Total inpatient maintenance allocation/Total number of inpatients treated.
2. Total inpatient maintenance allocation/Total number of inpatient bed days.
3. Total outpatient maintenance allocation/Total number of outpatients treated.

Table 4.8: Adjusted Utilisation Statistics (Relative Cost Method) for Victorian Public General Hospitals, 1970 to 1980.

Year (ending 30 June)	Adjusted Bed Days (1) ('000)	Adjusted Inpatients (2) ('000)	Adjusted Outpatients as a Percentage of Adjusted Totals %
1970	4,233.0	431.2	15.3
1971	4,329.1	452.0	15.6
1972	4,506.7	483.8	16.0
1973	4,629.7	507.1	17.1
1974	4,719.9	513.8	18.7
1975	4,825.0	540.8	20.0
1976	5,112.4	587.4	22.4
1977	5,232.8	610.9	23.6
1978	5,182.2	645.8	24.8
1979	5,263.3	685.7	27.0
1980	5,247.2	699.0	27.9
% increase 1970-80	24.0	62.1	-

1. Total Inpatient Bed Days + [Total Outpatients/1.408]
2. Total Inpatients Treated + [Total Outpatients/(1.408 X Average Length of Stay) for each year]

STAFF PRODUCTIVITY

It now remains to relate these two measures of hospital output to the labour input measures already derived, that is, to the number of hospital staff employed in Victoria's public general hospitals (from Table 4.1). The following results emerge (Table 4.9 and Figure 4.1). Labour input per 1000 adjusted bed days has risen by some 20 percent during the period 1970 to 1980, while labour input per 1000 adjusted inpatients has fallen by 8 percent. Hospitals thus appear to have achieved some small productivity gains during the 1970s, though without a more detailed knowledge of the nature of the output being produced and the possibility of some change in that output over time, this conclusion cannot be quantified more precisely. On the input side it has already been shown that the quality or 'skill mix' of the staff employed in Victoria's hospitals appears to have improved in recent years. Given these advances, the productivity gain suggested in Table 4.9 is probably understated as no allowance has been made in the calculations for changes in staff quality.

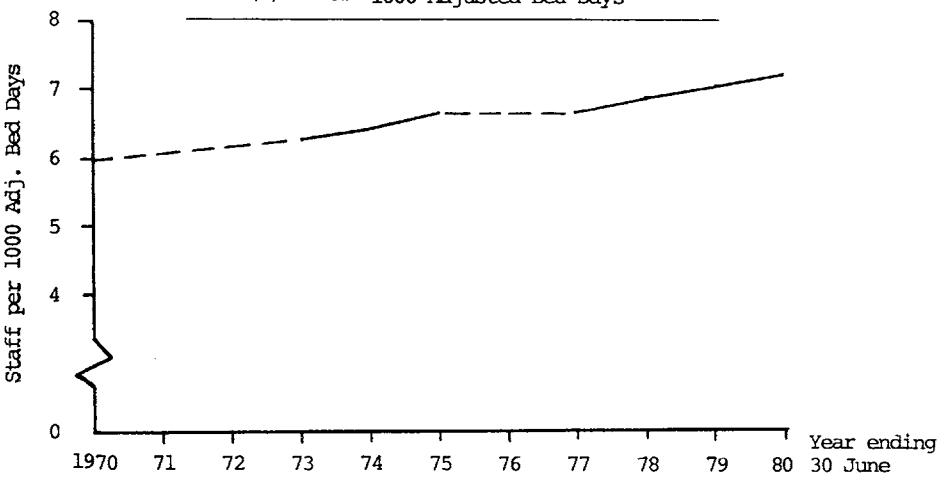
Table 4.9: Full-Time-Equivalent Staff per Adjusted Bed Day and Adjusted Inpatient, all Victorian Public General Hospitals, Selected Years 1970 to 1980

Year (ending 30 June)	Full-Time-Equivalent Staff	
	Per 1000 Adjusted Bed Days	Per 1000 Adjusted Inpatients
1970	5.99	58.8
1973	6.27	57.3
1974	6.42	58.9
1975	6.62	59.1
1977	6.65	57.0
1978	6.86	55.0
1979	7.02	53.9
1980	7.20	54.1
% change 1970-80	20.2	-8.0

FIGURE 4.1: Full-Time-Equivalent Staff per Unit of Output, All Victorian Hospitals, 1970 to 1980

(a) Per 1000 Adjusted Inpatients

(b) Per 1000 Adjusted Bed Days



Analysis of the Hospower data can provide a useful check on these results particularly as the labour inputs are recorded in hours rather than as full time equivalents. Moreover the extra detail afforded by Hospower allows productivity comparisons to be made between staff groups and between hospital types. Data for eleven survey hospitals are considered - the country hospitals had to be omitted due to a lack of information on staff hours worked during the early part of the period being studied. Some estimation of hours was required for two of the eleven remaining hospitals which were not brought 'on line' until 1975. Only 'productive' hours were considered, being the sum of basic, overtime and casual hours worked.

Calculation of adjusted output statistics for the survey hospitals was undertaken using the 'relative cost' method described above. The relevant average costs and resulting cost ratios for the survey hospitals in 1969 are given in Table 4.10. Compared with the equivalent figures for all Victorian hospitals, the average costs are somewhat higher, reflecting the larger size of the survey hospitals. The smaller difference between the cost of treating an outpatient and that of an inpatient or an inpatient bed day has also generated larger cost ratios in the survey hospitals. In other words outpatient numbers in the survey hospitals receive a higher weighting in the calculation of adjusted output statistics than they did for all Victorian hospitals.

Table 4.10: Average Costs per Inpatient, Inpatient Bed Day and Outpatient, and Their Ratios, 11 Survey Hospitals, 1969

Average Cost	per Inpatient	$ 236.41
	per Inpatient Bed Day	$ 22.83
	per Outpatient Treated	$ 20.03
Ratios	Cost per Outpatient: Cost per Inpatient	0.085
	Cost per Outpatient: Cost per Bed Day	0.877

Utilisation statistics for the eleven survey hospitals, covering the years 1973 to 1979, are shown in Table 4.11. They indicate a 20.1 percent growth in inpatient numbers, a substantial (58.6 percent) increase in the number of outpatients treated and a slight fall (2.5 percent) in bed days due to the decline in length of stay (from 9.5 to 7.7 days on average). Both adjusted output measures increased during the period at rates similar to those for all Victorian hospitals - adjusted inpatients grew by 37.7 percent and adjusted bed days by 11.2 percent. The equivalent rates for all hospitals during the period 1973 to 1979 were 35.2 and 13.7 percent respectively (see Table 4.8).

Productive hours per unit of adjusted output for the four staff groups are shown in Tables 4.12 (adjusted inpatients) and 4.13 (adjusted bed days). The results confirm those reported above. Labour input per adjusted inpatient has fallen (by 10.6 percent overall) during the period, while labour input per adjusted bed day has risen (by the same percentage amount). In both cases the extent of these changes would have been greater but for the initial rise in hours per adjusted inpatient (1973-1974) and the late fall in hours per adjusted bed day (1978-79), both of which were movements against the prevailing trends of the period. Figure 4.2 depicts these changes quite clearly, and demonstrates that the productivity trends for the individual staff groups reflect those for all staff. The diagrams also suggest that a patient admitted to a Victorian hospital in 1979 stayed, on average, nearly 2 days less than his or her 1973 counterpart, and received more hours of 'staff attention' on a daily basis, though less throughout the whole period of his or her hospital stay. [41]

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41 'Hours of staff attention' does not refer to the hours of direct contact between staff and patient, but is simply an average figure derived by dividing the number of hours worked by the number of patients or days of care. Information on actual hours of staff-patient contact is not available.

Table 4.11: Utilisation Statistics, 11 Survey Hospitals, 1973 to 1979

Year	Inpatients ('000)	Inpatient Bed Days ('000)	Outpatients Treated ('000)	Average Length of Stay (Days)	Adjusted Inpatients ('000)	Adjusted Bed Days ('000)
1973	107.2	1,014.5	367.8	9.5	139.7	1,306.4
1974	105.3	928.8	404.8	8.8	140.7	1,329.9
1975	107.4	986.3	455.0	9.2	148.1	1,345.8
1976	114.8	999.4	503.8	8.7	163.4	1,400.6
1977	120.6	997.4	527.6	8.3	174.7	1,414.9
1978	124.7	995.2	538.0	8.0	181.8	1,422.7
1979	128.7	989.0	583.4	7.7	192.4	1,452.4
% Change	20.1	-2.5	58.6	-18.9	37.7	11.2

Source: Annual Reports of the Hospital and Charities Commission and Health Commission of Victoria.

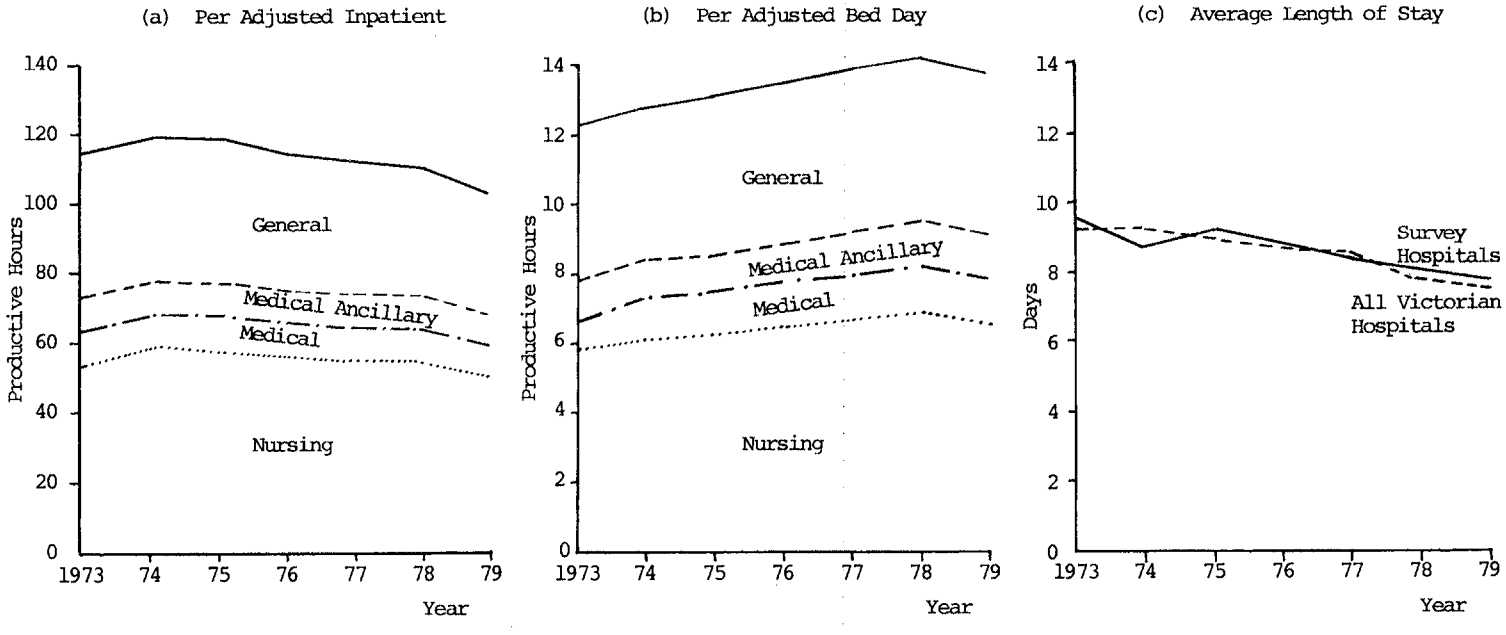
Table 4.12: Productive Hours per Adjusted Inpatient, 11 Survey Hospitals, 1973 to 1979

Staff Group	1973	1974	1975	1976	1977	1978	1979	% Change
Nursing	54.3	58.0	57.8	56.2	54.5	54.1	49.7	- 8.5
Medical	9.4	10.0	10.1	9.8	9.7	9.3	9.0	- 3.9
Medical Ancillary	9.6	9.9	9.9	9.8	9.7	9.7	9.2	- 4.2
General	41.8	42.0	41.7	40.1	38.4	37.4	35.0	- 16.3
All Staff	115.1	119.9	119.5	115.9	112.3	110.5	102.9	- 10.6

Table 4.13: Productive Hours per Adjusted Bed Day, 11 Survey Hospitals, 1973 to 1979

Staff Group	1973	1974	1975	1976	1977	1978	1979	% Change
Nursing	5.8	6.1	6.4	6.6	6.7	6.9	6.6	13.8
Medical	1.0	1.1	1.1	1.2	1.2	1.2	1.2	20.0
Medical Ancillary	1.0	1.1	1.1	1.1	1.2	1.2	1.2	20.0
General	4.5	4.5	4.6	4.7	4.7	4.8	4.6	2.2
All Staff	12.3	12.8	13.2	13.6	13.8	14.1	13.6	10.6

Figure 4.2: Productive Hours per Unit of Output, 4 Staff Groups, 11 Survey Hospitals, 1973 to 1979



Finally, comparison is made between the productivity of staff working in the different types of hospital - teaching, metropolitan special, metropolitan general and country base (Table 4.14). Here again the predominant trend is for productive hours per adjusted inpatient to fall and for productive hours per adjusted bed day to rise. There are, however, some inconsistencies between the hospital groups. Results for the metropolitan special hospital, for example, indicate a fall in productive hours per adjusted bed day of 9.3 percent. This compares with the upward trend for all the survey hospitals of 10.6 percent during the period. Likewise there appears to have been a slight rise (0.5 percent) in productive hours per inpatient of staff in metropolitan general hospitals compared with the overall trend of a fall of 10.6 percent. Both these findings have resulted from changes on the output side. In the case of the metropolitan special hospital the fall in productive hours per adjusted bed day is due to the higher than average increase in the number of adjusted bed days recorded during the period (40 percent compared to 11.2 percent for all survey hospitals). Similarly, the rise in productive hours per inpatient of staff in the metropolitan general hospitals stems from the slower than average growth in the number of adjusted inpatients treated (24.8 percent compared to 37.7 percent). [42]

The other differences worth noting in Table 4.14 are in the actual numbers of productive hours worked, per unit of output, in each type of hospital. As one might expect, a greater quantity of hours per unit of output are worked in teaching hospitals than in the other hospital groups. On an adjusted inpatient basis this can partly be explained by the longer than average length of stay of patients treated in teaching hospitals (8.2 days compared to the average of 7.7 days). However it is clear from the higher number of productive hours worked per bed day that patients in teaching hospitals tend to receive a higher than average level of staff 'attention' on a daily basis as well.

42

See Appendix I, Tables 4 and 5, for detailed statistics on adjusted inpatients and bed days for each hospital grouping. The remaining tables in Appendix I provided a statistical breakdown of the productive hours of each staff group by hospital type per adjusted inpatient and per adjusted inpatient bed day (for the 11 survey hospitals, 1973 to 1979).

Table 4.14: Productive Hours per Unit of Output, 11 Survey Hospitals by Type, 1973 and 1979

Hospital Group	Productive Hours Per Adjusted Inpatient			Productive Hours Per Adjusted Bed Day		
	1973	1979	% Change	1973	1979	% Change
Teaching	137.8	117.6	- 14.7	13.7	14.5	5.8
Metropolitan Special	60.1	47.6	- 20.8	11.8	10.7	- 9.3
Metropolitan General	99.7	100.2	0.5	11.2	13.0	16.1
Country Base	96.8	93.3	- 3.6	9.8	12.6	28.6
All Hospitals	115.1	102.9	- 10.6	12.3	13.6	10.6

Measurement of staff productivity in this manner provides no more than a first approximation of the actual productivity changes that have taken place in hospitals during the 1970s. A number of factors, not specifically accounted for in the simple productivity measure developed above, serve to complicate the picture.[43] On the input side little is known about the effect of possible changes in staff 'quality' and/or skills beyond the crude estimtes given earlier in this Chapter. Likewise no estimates have been made of the likely effect on productivity of changing medical technology or of improvements in diagnostic and treatment techniques. On the output side, while some allowance has been made for both inpatient and outpatient services, no account has been taken of the other 'products' of the hospital - notably education and research - or of the possible changes that may have taken place over time in hospital casemix, that is, in the nature and extent of the disorders present in the patients being treated.

SUMMARY

This chapter has examined the nature and extent of changes in the quantity, quality and productivity of staff in Victoria's public general hospitals. Briefly the results obtained are as follows:

- Staff numbers have grown substantially during the period 1970 to 1980 both in absolute terms and relative to the wider State workforce. This growth stems from an economy-wide expansion in service sector employment, from a greater emphasis on high quality patient care, and from the growth in the numbers of patients being treated.
- The composition of the hospital workforce has changed during the 1970s and now comprises a higher proportion of more highly skilled professional labour than previously. Analysis using index numbers suggests that the effect of this change in staff 'skill mix' (or quality) has been to raise average basic weekly pay to a level 6.5 percent above that expected had staff composition remained unchanged. Improvements in staff training programmes serve to reinforce this finding.

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43 Some of these issues are discussed in detail in Hadley (1974) and Tatchell (1980).

- Absence of an ideal measure of hospital output has led to the adoption of intermediate measures based on the treated case and the inpatient bed day. By using the relative average costs of treating inpatients and outpatients (in preference to the HASAC formula), two adjusted measures of output were obtained which take into account the growing numbers of patients now being treated in hospital outpatient departments. The results suggest a 24 percent growth in adjusted bed days and a 62.1 percent growth in adjusted inpatients during the years 1970 to 1980.

- There appear to have been some gains in labour productivity during the 1970s when measured using both Hospower hourly data and the Health Commission's information on full-time-equivalent staff numbers. Given that it was not possible to account for improvements in staff quality in these calculations the productivity gains obtained are probably understated.

The picture, then, that emerges from the analysis and results presented in this Chapter is of a hospital workforce expanding in size, improving in quality and gaining in productivity. The extent to which these changes have influenced the growth in labour costs in the hospital sector in combination with the impact of rising wage rates and changing conditions and allowances already documented, is the subject of the final Chapter.

CHAPTER 5

SUMMARY AND CONCLUSIONS

Three primary determinants of labour cost increases in Victorian's public hospitals have been examined in this report: rising wage rates, changing conditions of employment, and changing staff numbers, composition and quality. A convenient starting point for this final chapter is to examine the relative impact of these three factors on staff earnings. This can be achieved by comparing four of the wage and earnings series calculated in earlier chapters:

- Average weekly award wage rates, base weighted to exclude the effect of changing staff composition (see Appendix J).
- Average weekly payments for ordinary hours worked, derived from Hospower and base weighted as above (see Appendix J).
- Average weekly payments for ordinary hours worked, unweighted to capture the effect of changing staff composition (source - Hospower).
- Average weekly gross payments, including payments for conditions and allowances (source - Hospower).

Of necessity this comparison is restricted to the years for which Hospower information was available, that is, 1973 to 1979 inclusive. However, one advantage of not having data for earlier years is that the effects on labour costs of the introduction of equal pay had been fully realised by late 1972.

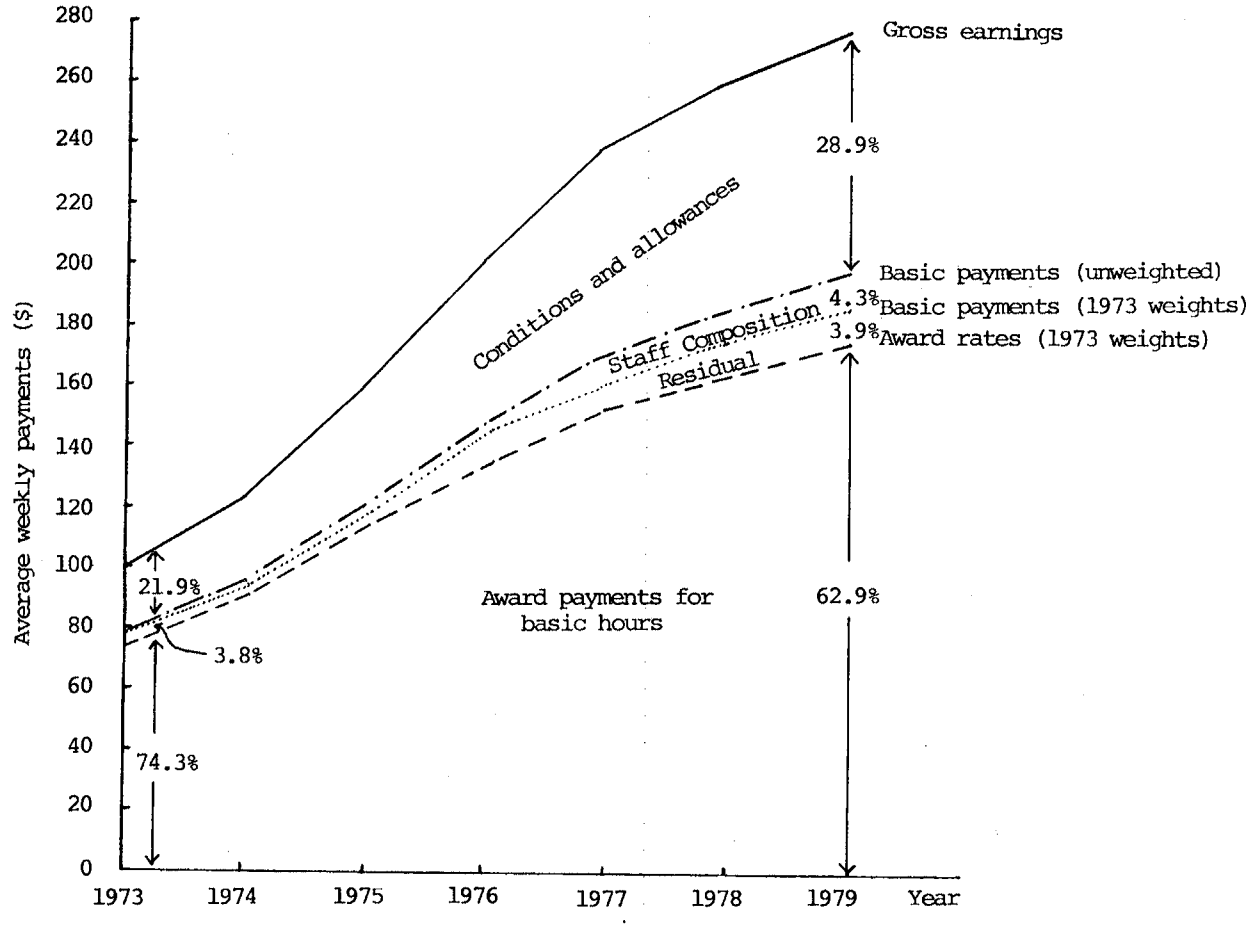
The changing 'structure' of average weekly earnings during the 1970's becomes apparent through the comparisons shown in Table 5.1 and Figure 5.1. The average pay packet in 1979 comprised a larger proportion of payments for conditions and allowances than its 1973 equivalent (28.9 percent compared to 21.9 percent) and a smaller proportion of award wages (62.9 percent compared to 74.3 percent). Overall, average weekly gross earnings increased by 176.3 percent from $100.35 in 1973 to $277.26 in 1979.

Table 5.1: The Structure of Average Weekly Earnings, Survey Hospitals, 1973 to 1979

Year	Average Award Wage Rates (1973 Weights) $/Week	Average Basic Payments (1973 Weights) $/Week	Average Basic Payments (Unweighted) $/Week	Average Gross Payments (incl. Conditions and Allowances) $/Week
1973	74.58	78.40	78.40	100.35
1974	89.88	94.40	95.20	123.57
1975	112.04	117.60	120.40	160.13
1976	134.65	145.20	148.80	201.48
1977	152.04	161.20	171.60	240.75
1978	163.51	174.80	185.60	259.84
1979	174.51	185.20	197.20	277.26
% Increase	134.0	136.2	151.5	176.3

Source: Table 3.5 and Appendix J

Figure 5.1: The Changing Structure of Average Weekly Earnings, Survey Hospitals, 1973 to 1979



Despite the growing contribution of conditions and allowances to this rise (evident in Figure 5.1), the largest single factor remained the lift in award wage levels. Table 5.2 shows that:

- increases in average award wage rates accounted for 76 percent of the rise in average gross earnings;
- changing staff mix was responsible for 8.7 percent of the rise;
- more generous conditions and allowances contributed about 14 percent (leaving an unexplained residual of some 1.2 percent).

Table 5.2 also indicates that the impact of these changes varied between staff groups. The earnings of medical staff, for example, were given a considerable boost by improvements to their conditions of employment, while the effects of changing composition only appear to have been felt, to any large extent, by nursing and medical staff. The relatively high unexplained component recorded against medical ancillaries is probably due to the difficulty encountered in matching the staff classified as ancillary by Hospower, by the hospitals in their Form 9 staff returns to the Victorian Health Commission, and by the Wages Boards in the various awards. [44]

The results suggest that the contributions of changing staff-mix and conditions were relatively small. However, they were superimposed on a rapidly rising base rate structure. Moreover, the measures employed do not cover <u>all</u> of the conditions which enter the cost of labour as distinct form the wages actually received by employees. Workers compensation premiums are obvious examples. Similarly entitlement to superannuation is both a labour cost to the employer and a benefit of real value to staff. Employer contributions to superannuation funds were not included as wage and salary costs in public hospital accounts and they were not included here. However there is some evidence of higher take-up rates in recent years, and even though their effect is likely to be small, a comprehensive account of labour cost changes ideally should include them all.

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The problem manifests itself in the wide variance found to exist between the average weekly award wages of medical ancillaries and the average weekly payments they actually received as recorded by Hospower - two series one would expect to be little different from one another (see Appendix K, Table 3).

Table 5.2: The Components of Rising Labour Costs : The Percentage Contribution of Changes in Award Wage Rates, Staff Skills and Conditions and Allowances to the Rise in Average Weekly Earnings, Survey Hospitals, 1973 to 1979

Staff Group	Changing Award Wage Rates %	Changing Staff Composition %	Changes in Conditions and Allowances %	Other Factors : Residual %
Nursing	77.7	10.0	9.1	3.2
Medical	54.0	7.4	36.0	2.6
Medical Ancillary	77.7	1.1	9.9	11.3
General	89.6	1.4	8.0	1.0
All Staff	76.0	8.7	14.1	1.2

Source: Table 5.1 and Appendix K

RISING LABOUR COSTS - A SUMMARY

The foregoing discussion has served to identify the relative impact on the earnings of hospital staff in Victoria of changing wages, conditions, and staff mix. At the same time it has been possible to examine the changing structure of the average pay packet of those employees during the 1970s. What has not been revealed are the underlying reasons for the various changes. This section seeks to remedy that omission drawing on many of the results and conclusions made in earlier chapters.

Two groups of factors can be identified as having been responsible for the rising cost of labour in Victoria's public hospitals during the 1970s. These can conveniently be referred to as:

- exogenous factors - those economy-wide influences which lie largely beyond the control of hospital managers; and
- endogenous factors - those elements which are more amenable to manipulation and control by hospital management.

Exogenous Factors

(i) The Economy

The decade 1970-79 was one of mixed fortune for Australian economy. The years of sustained real growth and low levels of unemployment and inflation which characterised the early years of the decade gave way, quite rapidly, to a prolonged period of slower growth, sharply rising prices and growing levels of unemployment. Gross Domestic Product at constant prices, for example, grew at an average annual (compound) rate of 4.6 percent during the period 1969-70 to 1973-74 compared with an average of 2.5 percent per year between 1974-75 and 1978-79. At the same time, unemployment averaged 1.9 percent and 5.4 percent of the workforce in the two periods, while the corresponding rates of change in consumer prices were 7.6 percent and 11.1 percent respectively. [45]

The upward move in consumer prices was accompanied by substantial increases in wages and salaries, particularly, as we have seen, in the early and middle years of the decade. [46] By and large the wage and salary increases that took place in

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45 See Norton and Brodie (1980) Tables 4.3, 5.2 and 5.16b.

the wider Victorian economy were matched by similar changes in the hospital sector, despite there being few comparable occupations, in terms of the skills and job content, in the two sectors. Clearly, the more closely a particular hospital job resembles that in other industries, the easier it would be for workers to transfer to those industries in the event that their wages failed to keep pace. Such transfers, if they occur, are likely to be restricted to the non-professional occupations - such as the clerical and housekeeping staff, skilled tradesmen and unskilled workers.

The wages and salaries of the professional nursing, paramedical, scientific and medical staff are less closely tied to the general labour market. Slower increases in wage levels for these occupations, relative to the average in the wider economy, would be less likely to result in a loss of personnel to other industries. Changing relativities of this nature would tend, rather, to restrict the numbers of new persons entering those occupations. The results of this research suggest, though, that no substantial differential existed between the average levels of earnings of hospital employees and staff in the wider economy, nor in the rates of change in those earnings.

(ii) Wage Indexation

One important exogenous factor which served to prevent any significant changes in wage relativities amongst occupations from taking place (both within and outside the hospital sector), at least in the latter half of the 1970s, was wage indexation. Introduced in 1975, this system of centralised wage fixing was effective in slowing the rate of increase in wage rates by limiting adjustments to those granted at set intervals by the Conciliation and Arbitration Commission. In contrast to the free bargaining environment of early 1970s when growth in wages generally outstripped growth in prices, the years of indexation brougnt the rates of change in these two aggregates to much the same levels. [47] Very few increases in award wage rates were granted in addition to the indexation

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46 See, for example, Table 2.11 in Chapter 2.

47 Consumer Prices in Melbourne rose, on average, by 11.1 percent per annum between 1974-75 and 1978-79; the equivalent change in the average award wage rates of hospital staff was 12 percent per annum.

decisions, whereas prior to 1975 almost all award increases were negotiated separately from the sporadic Australia-wide changes (see Apendix D).

(iii) Wages Boards

It is worth considering, for a moment, the nature of the wage fixing process in Victoria's hospital sector, particularly during the early 1970s when most increases in the earnings of hospital employees were determined by the various State Wages Boards. Examination of the deliberations of some of these Boards on a number of wage claims and appeals provides a useful guide to the criteria most often employed to justify the granting of wage and salary increases. [48]

The dominant justification for most of the wage adjustments examined in the early 1970s was restoration of wage relativities. This related both to relativities between occupational groups within the hospital sector and between hospital-based occupations and similar groups in the wider economy. Examples of successful claims made on this basis include the 8 percent increase granted to medical technologists (operative on 28 May 1973) by the Hospital Medical Ancillary Services Board which restored established relativity with hospital scientists. The same Wages Board also granted wage increases to several medical ancillary categories (including physiotherapists, speech therapists, occupational therapists and dieticians) so as to bring them into line with Commonwealth rates for similar occupations (operative on 25 February 1974).

The granting of a shift allowance to nurses early in 1971, as well as penalty payments for weekend work, represented the first step in the realignment of wages and allowances for that group with most of the rest of the workforce. Nursing staff in Victoria, at that time, were the only shift employees in Australia who were not receiving penalty payments. Incidentally, this is one of the few occasions when the 'scarcity of labour relative to demand' argument was put forward by the employee representatives in support of their submission. [49] In this case it was argued that delays in settling the nurses' wage and penalty

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48 The Wages Board System, which operates only in Victoria, is not a court system. Consequently the deliberations of the various Wages Boards are not available to the public. The information on which this section is based is contained in selections from the minutes of the meetings of a number of the Wages Boards, copies of which were obtained from the Industrial Relations Division of the Victorian Hospitals' Association.

claims was exacerbating the nursing shortage - potential recruits were being attracted to other professions, such as teaching, wehre the rewards were seen to be greater. Significantly, no evidence was tabled to support this assertion, and it appears that the Nurses Wages Board based their decision rather on the arguments relating to 'comparative wage justice', that is, to the disadvantaged position that nurses found themselves in relative to the rest of the workforce at that time.

Another commonly used argument in support of wage claims was the concept of 'work value'. In an appeal heard by Justice Leckie in the Industrial Appeals Court on 25 June 1975, for example, the Royal Australian Nursing Federation argued successfully that the 12 percent increase in award wage rates granted by the Registered Nurses Board (on 3 April 1975) was insufficient on three grounds:

(a) work value;

(b) relativity with community movements; and

(c) relativity with other professions, particularly primary school teachers. [50]

Justice Leckie concluded that, as far as work value was concerned, nursing sisters should be placed at least on the same level as physiotherapists and other paramedical staff. Comparisons with the teaching profession he felt were less appropriate. He also argued that "the nurse, even as a student, had experience of the acceptance of responsibility which soon extended to being in immediate charge of a ward on night duty, to the exercise of judgement in summoning help in an emergency and to initiating emergency procedures on her own initiative". In these and other attributes the Court found the nurses' contribution to the ultimate objective of total patient care to be "highly significant". The Court upheld the Nursing Federation's appeal and granted all nurses a further 9 percent on top of the 12 percent already given.

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Abelson (1980) also found few occasions on which this argument was a factor in the wage decisions of the New South Wales Arbitration System as they related to the earnings of hospital employees between 1968 and 1975.

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Details of this appeal can be found in the Australian Industrial Law Review, V.17, No.20, August 1, 1975.

The issue of wage relativity was central to many of the wage increases granted to Resident Medical Officers (RMOs) and Senior Medical Officers (SMOs) in the early 1970s. Employee representatives on the Hospital Resident Medical Officers Board, for example, based a number of their claims for increased wages and improved conditions on comparisons between wage rates for Year 1 and 2 RMOs and other hospital and public service occupations (notably scientists). Conditions and allowances granted to RMOs under the New South Wales award were also taken as a benchmark in Victoria. This was certainly the case during the December 1975 dispute which followed the decision of the Industrial Appeals Court to quash a 25 percent wage increase granted earlier to RMOs (4 August 1975) as it breached the recently introduced indexation guidelines. Final agreement between the parties combined a modest increase in wages with substantial changes in conditions which were similar, in many respects, to the NSW award. The package included provision for a 48 hour week plus a guarantee of 12 hours overtime, penalty payments for oncall and callback duties, and additional payments for rostered extra duty and duty in excess of 60 hours a week. The effect of these changes on the earnings of RMOs, as we have seen, has been considerable - payment for conditions and allowances now constitutes a sizeable proportion of hospital doctors' average weekly earnings; and, as Table 5.2 has demonstrated, more than one third of the rise in the average weekly earnings of medical staff between 1973 and 1979 was due to improvements in their conditions and allowances.

Finally, restoration of historical relativities' formed the basis of the SMOs claims before the Senior Medical Officers Wages Board in 1973 and 1974. In particular, the employee representatives were concerned that "the universally accepted differential of 14 percent between the top rate for a Registrar and the lowest rate for an Assistant Specialist" had been eroded. An Assistant Specialist, they argued, "is worth more than a Registrar largely because of training requirements"; moreover "SMOs generally had more responsibility than RMOs". It took some time for this argument to be accepted by the Board - it was not until 5 August 1974 that a 6 percent differential between a 6th year RMO and a 1st year Specialist was agreed upon.

(iv) Equal Pay Legislation

The final exogenous influence on the level of hospital staff earnings was the phasing in of equal pay for female employees during the period October 1969 to January 1972. This had the effect not only of changing the relativity of female to male earnings in the hospital sector but also it resulted in those occupations which are predominantly female (notably nurses and clerical staff) receiving higher than average wage increases, particularly during the phasing in period. The evidence presented in Chapter 2 indicates that the introduction of equal pay raised the average award wage rates of staff in Victorian hospitals to a level 8.1 percent above that which would have applied had equal pay not been introduced. The equivalent percentage for nurses was 14.3 percent.

Endogenous Factors

In contrast to the exogenous influences on labour costs over which hospital management has little control there are a number of endogenous factors which are more amenable to manipulation.

(i) Staff Numbers

An important determinant of the level of hospital expenditure on labour is the number of staff employed. Overall responsibility for staff establishment levels and actual numbers of staff employed in each hospital rests with the Health Commission of Victoria. The extent of its control has tightened considerably since August 1977 when, with few exceptions, staff levels were frozen by the State Government at the actual levels of employment in each hospital at that time. Any subsequent increases on top of 'approved' levels have been subject to Health Commission and State Treasury clearance and, until 1981, were funded from the expansion component of the cost-sharing budget.

Full-time-equivalent (FTE) staff numbers in Victoria's public general hospitals grew by nearly half (49 percent) between 1970 and 1980 (Table 5.3). This increase was due, first, to the economy-wide expansion in service sector employment which took place during the 1960s and 70s. Hospital staff represented more than 2.1 percent of the State's labour force in 1980 compared with about 1.7 percent in 1970. Second, provision of the high quality of care and comfort that patients have come to expect in their hospitals more often than not requires more

Table 5.3: Annual Percentage Increases in Full Time Equivalent Staff Numbers, Bed Days (Adjusted) and Inpatients (Adjusted), All Victorian Hospitals, Selected Periods 1970 to 1980

Period		Full Time Equivalent Staff Numbers (1) %	Adjusted Bed Days (2) %	Adjusted Inpatients (2) %
Annual Percentage Change	1970-77	4.63	3.08	6.4
	1977-80	2.77	0.09	5.7
	1970-80	4.07	2.17	6.2
Overall % Increase, 1970 - 80		49.0	24.0	62.1

Sources: 1. Table 4.1

2. Table 4.8

rather than less staff, though this is balanced to some degree by the introduction of labour saving technology in some hospital departments.

The third reason for a larger hospital workforce is to keep pace with the growth in patient numbers. Substantial increases in outpatient attendances and inpatients since 1970 has been offset, to some extent, by a marked fall in average length of stay. As a consequence, adjusted patient bed days (the composite measure of hospital output combining outpatient attendances and inpatient bed days) have risen at a slower rate than the growth in FTE staff (24 percent between 1970 and 190), while adjusted inpatients grew at a faster rate (62.1 percent).

Division of the decade into the periods 1970-77 and 1977-80 provides an interesting comparison of the years before and after the tightening of controls over hospital staffing (Table 5.3). Staff numbers continued to grow after 1977, though at a slower annual average rate (2.77 percent, 1977-80, compared with 4.63 percent, 1970-77). The interesting feature of the figures in Table 5.3 is that hospital output also increased less quickly in the latter years of the decade. This is the case not only with the adjusted bed day statistics reported here, but also with the numbers of inpatients, inpatient bed days (which actually fell in absolute number between 1977 and 1980) and outpatient attendances. It is as well to point out, though, that total available bed numbers in Victoria's public general hospitals also began to fall from 1977 onwards, partly as a result of a reclassification of some hospital beds as nursing home beds, and partly as a result of Health Comission policy to control the numbers of both private and public beds in the state. It is well known that the Victorian public hospital system functions with a supply of public hospital beds, relative to population, which is significantly below that of other states. [51]

(ii) Staff Productivity

The productivity of hospital employees is a second component of labour costs over which the hospital sector can exercise some control. Defined in Chapter 4 as the quantity of labor input required to produce one unit of hospital output (either an adjusted bed day or an adjusted inpatient), the results suggested some improvement in productivity during the 1970s. Doubt as to the accuracy of these

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51 See Health Commission of Victoria (1980a).

results arises on both sides of the equation. On the output side it was not possible to incorporate possible changes that may have occurred in the nature of hospital output over time. The implicit assumption has therefore been that the 'average' patient or the 'typical' day of patient care remained unchanged during the 1970s. On the input side no allowance was made for improvements in staff quality which earlier results suggest took place during the period. Given the not unreasonable assumption that staff quality improvements would have a positive impact on staff productivity, the productivity gains actually found are likely to be understated.

What other potential sources of staff productivity growth are there in the hospital sector? The principle ones worth mentioning are input substitution and technological changes. Input substitution encompasses both substitution amongst the various occupational groups as well as the replacement of manpower inputs by capital equipment. In both cases the potential for productivity change depends upon whether the technical possibilities for input substitution exist and, if they do, on whether they are economically feasible. Technical feasibility is implied when output (measured in physical terms) per unit of input increases. Economic feasibility, in contrast, requires that the value of the increased output exceeds the cost of introducing and maintaining the proposed input substitution. Input substitution in Victoria's public hospitals appears to have been restricted, in most instances, to the substitution of better qualified and higher paid personnel for their less skilled and lower paid colleagues. Thus, compared with its counterpart in the early 1970s, the hospital labour force in 1980 comprised a larger proportion of professional 'treatment' staff (medical, ancillary and trained nursing staff) and a smaller proportion of unskilled 'non-treatment' staff. No information is available on the direction and impact of any capital-labour substitution during the same period.

Technological change, whether of the kind referred to by Hadley (1974) as 'process innovation' (an alteration in the nature of the relationship between inputs and outputs), or 'product innovation' (the development of new outputs and inputs) also can be expected to increase productivity, although there have as yet been no rigorous attempts to quantify the relationship between such changes and the level of manpower productivity, in particular.

(iii) Staff Quality

One further component of a hospital's labour costs amenable to a degree of control by management is the quality of the staff employed. Staff quality, as we have seen, is a slippery concept to define and measure. Certainly, the approach adopted in Chapter 4 which used changes in staff composition as an indicator of quality change is far from ideal. However, improvement in the quality of hospital personnel is a desirable goal for hospital administrators if it can lead to greater productivity, better patient care and improved treatment outcomes.

Possible avenues for improving the quality of hospital personnel include alterations to the content and structure of courses for all grades and types of staff, and closer monitoring of existing diagnostic and treatment practises through peer review and quality control. Both approaches have been pursued during the 1970s, though little objective evidence of consequential improvements in the quality of care have been forthcoming. Results presented earlier in this Chapter suggested that staff quality betterment - represented as an 'enrichment' in the mix of staff skills - accounted for less than one tenth of the rise in earnings during the years 1973 to 1979.

INFORMATION SYSTEMS AND BUDGETARY CONTROL

It has been argued that a variety of factors has been responsible for the rising cost of labour in Victorian hospitals during the 1970s, some of which were amenable to manipulation and control by hospital management, while others were largely beyond such influence. Before concluding this report, it is important to focus attention on certain developments that have taken place during that time to improve the hospitals' information and budgeting systems. These developments - specifically Hospower, and cost centre budgeting and reporting - have gone a long way towards providing the Victorian Health Commission with information with which to plan and monitor activity in the hospital sector, and so assist in its attempts to allocate its limited resources more efficiently and effectively.

(i) Hospower

In essence, the primary objective of the Victorian Health Commission's computer-based labour analysis, Hospower, is to measure the relative efficiency

of staff employed in different hospitals in the State. Using the detailed information provided by the personnel/payroll system, Hospower collates the total productive man-hours used in each hospital and relates them to three alternative measures of hospital output. The resulting 'man-effort indices' for each hospital are as follows:

Factor X - Productive hours per inpatient bed day;

Factor Y - Productive hours per equivalent inpatient bed day; [52] and

Factor Z - Productive hours per inpatient bed day adjusted for length of stay. [53]

In addition, Hospower collates information on sick leave, manpower structure and staff turnover.

Following construction of the various man-effort indices and other performance statistics, comparisons of relative efficiency are made between hospitals grouped together largely on the basis of similarities in size and patient mix. Regular reports, compiled by the Health Commission, are forwarded to each hospital detailing its own performance and comparing it with the average figures for its group. Hospitals found to be performing poorly relative to others in their group are then encouraged to take steps to increase the efficiency of their labour usage.

The basic components of Hospower have remained largely unaltered since its introduction in the early 1970s. What changes have been made have been aimed at improving the data base, refining the definitions, and ensuring the appropriateness of the hospital groupings. It has been necessary, for example, to introduce a standard method of collecting and reporting outpatient statistics to replace the somewhat inconsistent reports that existed previously. The

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52 A hospital's equivalent inpatient bed days are derived by summing the number of inpatient bed days and weighted outpatient attendances, the weights being based on the ratio of the average costs of a bed day to an outpatient attendance.

53 Adjustment for length of stay is undertaken following calculation of group average lengths of stay for a number of hospital groups. The difference between each hospital's average and that for its group is multiplied by its patient numbers, and the result is added to (or subtracted from) the number of inpatient bed days for that hospital.

introduction of cost centre accounting has also enabled more accurate inpatient/outpatient cost weights to be derived for the calculation of Factor Y. Health Commission working parties are now working on improving the length of stay adjustment for Factor Z by the introduction of either a relative stay index or an index which weights each hospital's casemix by its expected resource cost. Both proposals make use of the hospital morbidity data now being collected from all public hospitals in Victoria.

Other problems with Hospower are less amenable to solution. By its very nature, Hospower is a measure of relative not absolute efficiency. In other words, while the performance of individual hospitals can be compared with others within its group and with the group's average, no established standard exists beyond the group with which comparisons can be made. Hence it is possible that none of the hospitals in a given group is efficient by objective standards derived elsewhere. Needless to say the development of such standards against which all hospitals within the State can be compared is an objective well worth pursuing.

A further limitation to the capacity of Hospower to measure relative efficiency derives from its focus on labour utilisation. As a consequence, comparisons cannot be made between hospitals concerning their usage of non-labour items - food, drugs, appliances, power, and so on - as the system is based on the personnel/payroll files. This limitation will be overcome with the introduction of cost centre accounting which incorporates all the costs incurred by the individual cost centres as well as all the outputs specific to each.

Finally, use of inpatient days (adjusted or unadjusted) as the measure of hospital output can never be more than an imperfect proxy for outputs defined in terms of health outcomes, as the Health Commission itself has pointed out (1980a, p.60). However, considerable scope exists for the measures to be improved, particularly given the availability of hospital morbidity data for the majority of Victoria's public general hospitals. A casemix adjusted output measure would add significantly to the reliability and validity of the three 'man-effort indices' derived in the Hospower analysis.

Despite these shortcomings, Hospower's strengths and advantages have often been highlighted in various reports and submissions. Among the more significant are claims that Hospower:

- is adaptable to most hospitals in Victoria (Health Commission of Victoria, 1980a, p.59);
- does not require a separate expensive and complicated information system (ibid., p.59);
- offers an approach to output measurement and the comparative assessment of hospital productivity which is sufficiently objective and sensitive to add powerfully to management systems and budgetary control (ibid., p.60);
- overcomes objections regarding the variability of hospitals by the grouping of 'like' hospitals in which case mix, staff workload and so on, could be expected to be similar (ibid., p.60);
- is an excellent management tool which can be used as a basis for the determination of labour budget allocations (Health Commission of Victoria, 1979b, p.3);
- provides a powerful method for highlighting possible inefficiencies which may require further investigation (Parkhill, et al., 1979, p.6); and
- is a major and important advance in hospital management information which has the potential to exert a powerful influence on hospital efficiency (ibid., p.7).

(ii) Cost Centres

The importance of Hospower as a tool of management has been considerably enhanced by the development of a new budgeting and reporting system for Victoria's public hospitals based on functional cost centres. Through its introduction, which commenced in July 1981, the Health Commission has provided itself, and the State's hospitals, with an improved set of management information with which to plan and monitor performance. The system supplements the existing financial reports which are based on a subjective classification of total hospital expenditures under generic headings such as salaries, food supplies,

medical and surgical supplies, fuel, light and power, repairs and maintenance and so on. Despite the simplicity of this approach and its usefulness in providing a reasonable indication of each hospital's overall financial wellbeing, it became clear in the late 1970s that such information is not sufficiently detailed to provide an adequate basis for the rational allocation of the limited resources available to the Health Commission. Hence the development and introduction of cost centre reporting.

The basic component of the new system is the cost centre, defined as "an entity within a hospital (normally a department) with a specifically defined function or activity" (Health Commission of Victoria, 1980b, p.2). A uniform set of cost centres has been defined for use by all public hospitals in Victoria, though the number of categories actually used by each institution varies according to its size. The larger teaching hospitals employ between 25 and 30 of the major reporting categories (or cost centres) while the smaller institutions employ somewhat fewer in number. [54] By following a set of standard definitions as to the types of costs to be included in each cost centre, hospitals are able to report their income and expenditure on a functional basis, that is, according to a number of uniformly defined activities that generate the income or incur the expense. Meaningful comparisons can then be made between the performance of hospitals in similar 'peer' groups, and between that of individual hospitals over time.

Uniformity in measurement, recording and reporting is one of the significant strengths of the new accounting system. It represents a considerable improvement on the departmental systems operated by a number of hospitals during the 1970s. Comparison between the performance of these departments proved difficult first, because of interhospital differences in the departmental codes and accounts being used, and second, because there were no standard definitions to ensure comparability between the activities of those departments being compared. In contrast, the cost centre structure is uniform across all hospitals and, furthermore, is now common to the Payroll, Payroll Budget and General Ledger Systems operated by the Health Computing Services of Victoria. This not only

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54 See Appendix L for a listing and description of all the major reporting categories or cost centres.

ensures uniform reporting within each system but also facilitates the collection of data for uniform reporting purposes based upon standard costing techniques.

Two years have now elapsed since the introduction of cost centre accounting to Victoria's public hospital sector, sufficient time for some comment to be made on the system and its performance to date. On the credit side the transition to the new system has proceeded smoothly and without major disruption either at the individual hospital level or in the Health Commission. Hospital managers now receive regular reports detailing the costs of operating their hospital's major departments and comparing them with those of other similar hospitals. The greater detail and accuracy of this information as well as its more appropriate functional basis has greatly improved the degree of control that managers have over the labour, supplies and other materials used by their hospitals.

On the debit side the main criticism of the system as it now operates is that it has yet to realise its full potential. As it stands the system is little more than an information reporting process, albeit one of considerable detail, uniformity and comprehensiveness. Admittedly it is early days yet, and the fact that the system's function is currently restricted to information gathering and dissemination does not mean that further developments are not being considered.

Two, in particular, should be mentioned. The first, canvassed initially by the Jamison Commission of Inquiry (1980) and more recently by consultants to the Health Commission of Victoria (Fradkin, 1983), envisages expansion in the role of cost centres from convenient accounting entities to 'responsibility' centres. A closer link between financial and clinical accountability is proposed whereby individual cost centres assume responsibility for, and are charged for, the controllable costs they incur through their use of labour, material and capital resources. Devolution of the responsibility for managing financial resources to the individual cost centres is seen as the only effective means of encouraging a more efficient utilisation of resources. It is argued that improvements in performance can only be achieved by making each cost centre responsible and accountable for its expenditures.

The main obstacle to the successful implementation of such a scheme is the adjustment in roles that it implies. Doctors, for example, as the Jamison report points out:

"rightly see their role as being to treat their patients so as to ameliorate their condition, and the function of the hospital to provide them with the means to do this effectively and safely. Neither their training nor their perceived role direct them towards questions of cost-accountability" (1981, V.2, p.322).

A similar conflict in roles also would be encountered by nurses, paramedics and other treatment staff more accustomed to treating patients than managing budgets. Nevertheless, given the central part that doctors, in particular, play in determining the quantity of hospital resources used in treating their patients, effective cost control is unlikely to be achieved without an acceptance by doctors of the need for some form of financial accountability. [55]

The other important (and related) application proposed for the new accounting system is in the allocation of funds between hospitals. A productivity-based allocation process is envisaged which will give specific recognition to the more efficient hospitals, where efficiency is defined in terms of a number of cost-output ratios. The exact means by which the more efficient hospitals would be 'rewarded' for their success in controlling or reducing their costs per unit of output has yet to be determined. [56] Needless to say the introduction of any form of incentive reimbursement to a publicly owned and funded hospital system would be fraught with some awkward problems, not least of which would be the concern that State Treasury officials could be expected to have that incentive arrangements may be in conflict with efficient budgetary control. The challenge, then, is to devise incentives: "which are sufficiently strong to be effective but do not significantly undermine existing methods of budgetary control" (Health Commission of Victoria, 1982a, p.63).

An essential prerequisite for the implementation of both proposals is a comprehensive and reliable data base/information system which can accurately assess hospital performance on a variety of objective criteria. Any developments, such as the incorporation of morbidity data into the measurement of

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55 The case for increasing the financial accountability of doctors for the consequences of their clinical decisions is argued, in the British context, by Elwood (1976).

56 One possibility, recently canvassed by the Victorian Health Commission (1980a), would be to allow hospitals to allocate part of any savings achieved on their operating budget to a capital fund for use in approved minor works projects.

output, which can in any way enhance the reliability and validity of these criteria are to be encouraged. It also goes without saying that the success (or otherwise) of any proposed management and resource allocation scheme depends on their acceptance by hospital managements. Given that considerable time is required for the necessary consultations and discussions to take place, future implementation of such schemes is likely to be gradual and evolutionary.

CONCLUSIONS

The main purpose of this research has been to examine the determinants of labour cost increases in Victoria's public general hospitals. For the most part this objective has been realised, and the early part of this final chapter has already summarised and discussed the major contributing elements. Many of the results provide confirmation for some of the widely held beliefs concerning the process of hospital cost inflation during the 1970s - the predominant influence of rising wage costs in explaining the growth in hospital expenditures, for example, has been confirmed, as has the significance for labour costs of the predominantly female composition of the hospital labour force. Other results have enabled us to say with greater accuracy what effect the introduction of equal pay for women has had on the level of hospital staff earnings; how changes in conditions and allowances have influenced labour costs; and what has been the relative impact on labour costs of changes in unit costs, staff numbers and staff quality. Just as important, too, are those results which contradict prevailing notions about the dynamics of hospital cost inflation. For example, while rates of growth in the average earnings of hospital staff were substantial, particularly during the early and mid 1970s, they were in fact no greater than the rates of change experienced by employees in the wider Victorian economy (following adjustment for the differing sex composition of the two groups). Furthermore, what 'catch-up' there was between the two groups was restricted mainly to improvements in the conditions and allowances of hospital staff. The popular impression that hospital managements have allowed employee earnings to rise uncontrollably has also been allayed - the centralised wage-fixing system that operates in Victoria leaves little scope for hospital managers to control the wages bill except through staff ceilings and other restrictions on staff numbers.

On a wider scale, there is broad agreement between the results of this research with Schapper's analysis of hospital expenditures in Western Australia, although differences in methodology, in data sources and in the period studied make it difficult to render direct comparisons. [57] It is tempting, on this basis, to be confident about the relevance of the Victorian results to other states. Certainly a number of factors - notably national wage indexation, comparative wage justice, wage parity between states and interstate staff mobility - combine to ensure a degree of nationwide uniformity in wage and salary levels. Nevertheless one cannot rule out the possibility that there may be some special factors unique to a particular state which may give rise to interstate differences in levels of hospital staff earnings. Only an extension of this research to other states could show whether or not this is the case.

Finally, it is worth considering the place of this research as a basis for future work in the field of hospital economics in Australia. I believe the significance of the project lies as much in its methodology as in its results. This is the first study of its kind in Australia to have tapped the immense wealth of data contained in a computerised payroll system of the sort that is now being introduced in a number of other States. Hopefully the study may become a useful model on which future research, both in Victoria and elsewhere, can be based.

There also is considerable scope for more rigorous economic analyses to be conducted than that attempted here. One logical extension of the work already completed would be the specification and analysis of hospital production functions based largely on the Hospower data. Detailed econometric analysis of the relationship between various combinations of inputs (both labour and non-labouur) and the resulting output levels would allow closer examination to be made of issues such as input substitution, output elasticity, productivity and the existence of any scale effects. Research of this nature also would have to grapple with the problems that arise from the special characteristics of non-profit general hospitals which set them apart from the more 'conventional' productive units encountered in the economics literature - problems such as the definition and measurement of output, the measurement of capital inputs and the multiproduct nature of the hospital.

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57 See Schapper (1980), Schapper and Hobbs (1979) and Tatchell (1980b and 1981b).

A second possible application of the results of this research would be in the development of a hospital input price index for Victorian general hospitals. Such an index would enable one to separate out price changes for a fixed basket of hospital inputs from the other factors that contribute to the growth in hospital expenditures such as changes in the quality of care provided, changes in case mix and utilisation, and changes in operating efficiency and in the mix of services provided. A detailed assessment of changing input prices in the hospital sector also would provide important information to the Victorian Health Commission on which it could base its hospital funding decisions. Attempts have been made to construct such an index both at the State level (Schapper and Hobbs, 1979; Tatchell, 1981b) and nationally (Schapper, 1981). Little has come of these reports, however, as we have yet to see a State Health Commission or, indeed, the Commonwealth Department of Health, develop and publish on a regular basis a price index for hospital inputs. [58] The information on which this report is based, together with similar material from other states, would provide the basis on which an Australia-wide hospital input price index could be developed and maintained on a regular basis.

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One exception is a 'partial' input price index - an index of hospital wage and salary movements - developed by Davenport, et al. (1982) which is now being compiled and published quarterly by the Planning Division of the Health Commission of Victoria.

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APPENDIX A

THE COMPONENTS OF RISING HOSPITAL EXPENDITURE

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THE COMPONENTS OF RISING HOSPITAL EXPENDITURE

The contribution to rising hospital expenditure of changes in output (adjusted bed days) and costs per unit of output can be calculated as follows.[1]

We know that the total hospital expenditure (E) is the product of the number of adjusted bed days (X) and the cost per adjusted bed day (Y). The identity for base year t-1 is therefore:

(1) $E_{t-1} = X_{t-1}Y_{t-1}$

and the year t:

(2) $E_t = X_tY_t$

If we assume $e_t = E_t - E_{t-1}$

$y_t = Y_t - Y_{t-1}$

$x_t = X_t - X_{t-1}$

then equation (2) can be rewritten as:

$$E_{t-1}\,{}_te_t = (X_{t-1} + x_t) \quad (Y_{t-1} + y_t)$$

which becomes: $E_{t-1} + e_t = X_{t-1}\,Y_{t-1} + x_t\,Y_{t-1} + y_t\,X_{t-1} + x_t\,y_t$

Since we are only interested in the change in hospital expenditure between the two periods the base year amounts can be omitted which leaves:

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(1) See Fortin (1972) and Klarman (1970) for similar methodologies

(3) $e_t = x_t y_{t-1} + y_{t-1} + x_t y_t$

The third term on the right of equation (3) is the interaction term which can be arbitrarily divided between the other two terms on the RHS by assigning half to each as follows:

(4) $e_t = (x_t y_{t-1} + \frac{1}{2} x_t y_t) + (y_t X_{t-1} + \frac{1}{2} x_t y_t)$

The term $(x_t Y_{t-1} + \frac{1}{2} x_t y_t)$ represents the increase in hospital expenditure (in dollars) due to the increase in adjusted bed days.

The term $(y_t x_{t-1} + \frac{1}{2} x_t y_t)$ represents the increase in hospital expenditure (in dollars) due to the increase in average costs per adjusted bed days.

The percentage contribution of each component to rising hospital expenditure is therefore:

(5) $\dfrac{(x_t Y_{t-1} + \frac{1}{2} x_t y_t)}{e_t} \cdot 100$ for % contribution of adjusted bed day numbers

(6) $\dfrac{(y_t X_{t-1} + \frac{1}{2} x_t y_t)}{e_t} \cdot 100$ for % contribution of cost per adjusted bed day

Over a ten year period equations (5) and (6) become:

(7) $$\frac{\sum_{t=1}^{10} (x_t Y_{t-1} + \frac{1}{2} x_t y_t)}{X_{10} Y_{10} - X_1 Y_1} \cdot 100$$

(8) $$\frac{\sum_{t=1}^{10} (y_t X_{t-1} + \frac{1}{2} x_t y_t)}{X_{10} Y_{10} - X_1 Y_1} \cdot 100$$

APPENDIX B

CALCULATION OF WEIGHTED AVERAGE AWARD WAGE RATES

APPENDIX B

CALCULATION OF WEIGHTED AVERAGE AWARD WAGE RATES AND INDEXES

Calculation of weighted average award wage rates and indexes for Victorian hospital staff, for the period 1969 to 1979, was accomplished in several stages. The particular formula chosen to calculate the base weighted indexes is the Laspeyres' index:

$$\frac{\Sigma\, p_{ni}\, q_{oi}}{\Sigma\, p_{oi}\, q_{oi}}$$

where p is the wage rate of each occupational group i

q is the number of full time equivalent staff in occupational group i

n is the period (quarter) being considered ($n=0,1,\ldots,40$)

Stage I - Basic Series of Wage Rates

Award wage rates were extracted by hand from the determinations of fifteen of Victoria's Wages Boards covering the majority of the staff employed by hospitals in Victoria[1]. 49 identifiable staff groups were examined which, when subdivided into their various subgroups, gave a total of 253 separate staff categories. Having recorded the wage rates for each staff category over the entire period, the dates on which the wage changes applied were used to derive a weighted average rate for each quarter, the weights being the proportion of the days in each quarter during which the particular wage rates applied.

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(1) Few staff categories were omitted. Those that were were left out because either they were a 'new' staff category introduced during the period being studied (e.g. medical photographers) or they did not number amongst the staff listed by the hospitals despite appearing in the determinations.

Stage 2 - Average Wage Rates for 23 Staff Groups, 1969-1979

In terms of the Laspeyres formula this stage represents the calculation of (p_{ni}), the average wage rates of (i=1,2,...,23) staff groups during the (n=0,1,...,40) quarters September 1969 to September 1979 inclusive.

Calculation of quarterly average wage rates for 23 as against the original 253 staff categories was achieved by using as weights the full time equivalent numbers of staff in all Victoria's public general hospitals in the base year 1969-70. These figures were extracted from the staff summaries (form 9) returned to the Hospital and Charities Commission of Victoria by each individual hospital. Composition of the 23 staff categories and the proportionate weights used to derive average wage rates for each group are given below. The weights are based on the numbers of full-time equivalent staff in each category over all hospitals in 1969-70 (exceptions include those staff groups for which no detailed breakdown of staff 'types' was available e.g. specialists).

	STAFF GROUP	COMPONENT SUBGROUP	PROPORTIONATE WEIGHT
1.	MATRONS	Matrons	0.54
		Deputy Matrons	0.21
		Assistant Matrons	0.25
2.	CHARGE AND NIGHT SISTERS	Charge Sister 1	0.40
		Charge Sister 2	0.40
		Night Sisters	0.20
3.	SISTERS AND MIDWIVES	Sisters	0.86
		Midwives	0.14
4.	STUDENT NURSES	Year 1	0.35
		Year 2	0.39
		Year 3 +	0.26
5.	NURSE AIDES	Female rate only prior to 1972 (equal pay)	
6.	STUDENT NURSE AIDES	Female rate only prior to 1972 (equal pay)	
7.	NURSE ATTENDANTS	Ward Clerks	0.07
		Male Orderlies	0.34
		Ward Helpers	0.59

STAFF GROUP (cont.)	COMPONENT SUBGROUP	PROPORTIONATE WEIGHT
8. SUPERVISORY SISTERS	Step 1 on scale	0.50
	Step 3 on scale	0.50
9. TEACHERS	Principle Teacher	0.33
	Senior Teacher	0.33
	Teacher	0.34
10. RESIDENT MEDICAL OFFICERS	Year 1	0.31
	Year 2	0.21
	Year 3	0.14
	Year 4	0.13
	Year 5 and 6	0.21
11. SPECIALISTS	Class 1	0.25
	Class 2	0.25
	Class 3	0.25
	Class 4	0.25
12. OTHER MEDICAL	Medical Superintendants	0.83
	Deputy Medical Superintendants	0.17
13. TECHNICIANS	Radiographers	0.21
	Technicians/Technologists	0.77
	Hospital Scientists	0.02
14. THERAPISTS	Physiotherapists	0.62
	Occupational Therapists	0.26
	Speech Therapists	0.10
	Orthopticians	0.02
15. PHARMACISTS	Average of 6 rates	
16. OTHER MEDICAL ANCILLARY	Librarians	0.07
	Social Workers	0.36
	Medical Records Librarians	0.57
17. ADMINISTRATION	Accountants	0.14
	Administrative Officers	0.18
	Chief Clerks	0.15
	Hospital Managers	0.53

STAFF GROUP (cont.)	COMPONENT SUBGROUP	PROPORTIONATE WEIGHT
18. DIETARY	Dieticians	0.02
	Chefs	0.48
	Kitchen Assistants	0.48
	Catering Officers	0.02
19. CLEANING	Domestic Services Assistants	0.50
	Cleaners	0.50
20. HOUSEKEEPING	Rate for Houskeepers	
21. LINEN AND LAUNDRY	Rate for Laundry Sorters	
22. TRADES	Plumbers	0.18
	Electricians	0.18
	Engineers (skilled)	0.18
	Painters	0.10
	Carpenters	0.10
	Storemen	0.26
23. CLERICAL	Commercial Clerks	0.15
	Stenographers	0.85

Stage 3 - Unweighted Wage Rate Indexes for Each Staff Subgroup (p_n/p_o)

An unweighted index can be calculated for each of the 23 staff subgroups by dividing the average wage rate for each quarter (p_{ni} ; n=0,1,....,40) by the wage rate for that subgroup in the base quarter (p_{oi}= September 1969). This allows comparison of the rates of change in wage rates of the various groups over the entire 41 quarter period being studied (these indexes are shown in table 2.2, p.17)

Stage 4 - Base Year Quantity Weights (q_{oi})

Calculation of the base year quantity weights for each of the staff groups listed above was accomplished by using the full-time equivalent staff numbers already employed in stage 2 above. The weight for each staff group (i = 1,2,...,23) is simply the number of full-time equivalent staff in that

group in 1969-70.

Stage 5 - Base Year Quantity Weighted Award Wage Rate Indexes

Final derivation of the base year quantity weighted award wage rate indexes is a straightforward matter of applying the Laspeyres formula given above. Five indexes are calculated, one for each of the four main staff groups - nursing, medical, medical ancillary and general - and one for all staff groups combined. Formulae for the five weighted average indexes are as follows:

1. Nursing $\sum_{i=1}^{9} p_{ni}q_{oi} \Big/ \sum_{i=1}^{9} p_{oi}q_{oi}$

2. Medical $\sum_{i=10}^{12} p_{ni}q_{oi} \Big/ \sum_{i=10}^{12} p_{oi}q_{oi}$

3. Medical Ancillary $\sum_{i=13}^{16} p_{ni}q_{oi} \Big/ \sum_{i=13}^{16} p_{oi}q_{oi}$

4. General $\sum_{i=17}^{23} p_{ni}q_{oi} \Big/ \sum_{i=17}^{23} p_{oi}q_{oi}$

5. All Hospital Staff $\sum_{i=1}^{23} p_{ni}q_{oi} \Big/ \sum_{i=1}^{23} p_{oi}q_{oi}$

The resulting indexes are reported, along with the unweighted indexes (p_n/p_o), in table 2.2 p. 17 .

APPENDIX C

HOSPITAL GROUPS FOR CALCULATION OF SEPARATE WAGE RATE INDEXES

APPENDIX C

HOSPITAL GROUPS FOR CALCULATION OF SEPARATE WAGE RATE INDEXES

(Note: this list includes only those hospitals operating in 1969-70, the base year)

1. Teaching Hospitals (N=9):

   Alfred, Austin, Prince Henry's, Queen Victoria, Royal Children's, Royal Melbourne, Royal Victorian Eye and Ear, Royal Women's, St. Vincent's.

2. Metropolitan and Country Base Hospitals (N=20):

   Ballarat, Bendigo, Box Hill, Caulfield, Dandenong, Fairfield, Footscray (later Western General), Geelong, Gippsland, Glenelg (later Hamilton), Hampton, Mildura, Mooroopna (later Goulburn Valley), Preston and Northcote, St. George's, Sandringham, Wangaratta, Warrnambool, Williamstown, Wimmera.

3. All Other Hospitals (N=116):

   After Care, Airlie, Alexandra, Altona, Apollo Bay, Ararat, Bacchus Marsh, Bairnsdale (later E. Gippsland), Beeac, Benalla, Bethlehem, Birregurra, Boort, Burwood, Camperdown, Caritas Christi, Casterton, Castlemaine, Central Gippsland, Clunes, Cobram, Cohuna, Colac, Coleraine, Corryong, Creswick, Daylesford, Dimboola, Donald, Dunolly, Echuca, Edenhope, Eildon, Elmore, Essendon, Frankston, Goroke, Healesville, Heathcote, Heywood, Inglewood, Jeparit, Kaniva, Kerang, Kilmore,Koroit, Korumburra, Kyabram, Kyneton, Latrobe Valley, Lismore, Lorne, Macarthur, Maffra, Maldon, Manangatang, Mansfield, Maryborough, Minyip, Mordialloc-Cheltenham, Mortlake, Morwell, Murtoa, Myrtleford, Nathalia, Nhill, Numurkah, Oakleigh, Omeo, Orbost, Ouyen, Ovens, Penshurst, Port Fairy, Portland, Redcliffs, Ripon Peace, Robinvale, Rochester, Royal Dental, Royal Talbot, Rupanyup, Rutherglen, St. Arnaud, Seymour, Shelley Memorial, Skipton, South Gippsland, Southern Memorial (Royal), Southern Memorial Community (later Brighton Community), Southern Peninsula, Springvale, Stawell, Sunshine, Swan Hill, Tallangatta, Tatura, Tawonga, Terang, Timboon, Upper Goulburn, Waranga, Warracknabeal, Werribee, West Gippsland, Westernport, Willaura, William Angliss, Winchelsea, Wodonga, Wonthaggi, Woorayl, Wycheproof, Yarram, Yarrawonga, Yea.

APPENDIX D

GENERAL INCREASES IN AWARD RATES OF PAY IN VICTORIA 1968 TO 1979

APPENDIX D

GENERAL INCREASES IN AWARD RATES OF PAY IN VICTORIA, 1968 to 1979

These increases and their dates of implementation were as follows:

1968	25 October	$1.35
1969	19 December	3%
1971	1 January	6%
1972	19 May	$2.00
1973	29 May	2% + $2.50
1974	23 May	2% + $2.50
1975	1 May	3.6%
1975	18 September	3.5%
1976	15 February	6.4%
1976	15 May	3% up to a maximum of $3.80 per week
1976	15 August	1.5% ($2.50 up to $166; 1.5% over $166)
1976	22 November	2.2%
1977	31 March	$5.70
1977	24 May	1.9% up to a maximum of $3.80 per week
1977	22 August	2.0%
1977	12 December	1.5%
1978	28 February	1.5% up to a maximum of $2.60 per week
1978	7 June	1.3%
1978	12 December	4.0%
1979	27 June	3.2%

Source: Monthly Summary of Statistics, Victoria, ABS, Victorian Office for years 1970 to 1979

APPENDIX E

HOSPOWER VARIATION CODES

APPENDIX E

HOSPOWER VARIATION CODES

1. Basic hours (including casual hours)

2. Overtime

3. Penalties

4. Variable Allowances

   (i) Shift allowances (night, early morning and afternoon)

   (ii) On call allowance

   (iii) Long service leave

   (iv) Termination pay

   (v) Other variable allowances (risk rate, cashier allowance, van allowance, dirt money, nominee allowance, height allowance, scaffold allowance, shave allowance, interpreter's allowance, telephone allowance, patrol duty, tool allowance, disability allowance, switchboard allowance, heavy kitchen washing, confined space allowance, part-time leave allowance, post mortem allowance, in charge allowance, spray painting, uniform allowance, living out allowance, payment in lieu of public holidays, late meal penalty, training allowance, heat allowance, taxable travelling allowance, meal allowance, certificate allowance, bonus, lectures, wood handling allowance, non-taxable travelling allowance, non-taxable meals allowance, payment for workers compensation).

5. Fixed Allowances

   (i) Certificate and higher qualification allowances

   (ii) Uniform allowance

   (iii) Higher duties allowance

   (iv) Roster and on call allowances

   (v) Other fixed allowances (living out allowance, living away from home allowance, M.M.B.W. license allowance, taxable travelling allowance, group laundry, general teaching, entertainment allowance, in charge allowance - nurses, nauseous work, training school allowance, non-taxable travelling allowance, non-taxable meals allowance, control allowance).

6. Annual Holidays

7. Sick leave and sick absence

8. Other

   (i) Special leave

   (ii) Training

   (iii) Public holiday hours

   (iv) Accident pay

APPENDIX F

HOSPOWER JOB CLASSIFICATIONS

APPENDIX F

HOSPOWER JOB CLASSIFICATIONS

A. NURSING

1. Matrons:
   Matrons, deputy matrons and assistant matrons

2. Charge and night sisters:
   Night sisters in charge and charge sisters

3. Sisters and midwives:
   Sisters, registered midwives, mothercraft nurses, welfare sisters, and district nurses.

4. Student Nurses:
   1st, 2nd, 3rd years and others

5. Registered Nursing aides

6. Student nursing aides

7. Nurse attendants:
   Nurse attendants, theatre attendants, CSSD attendants

8. Supervisory sisters

9. Teachers:
   Principal teachers, deputy principal teachers, senior teachers, teachers

B. MEDICAL

1. Resident Medical Officers:
   RMO's years 1 to 6

2. Specialists and sessionals:
   Pathologists, radiologists, other specialists and sessionals

3. Other medical:
   Medical superintendent, deputy medical superintendent, admin. medical officers and research fellows

C. MEDICAL ANCILLARY

1. Technicians:
   Radiographers, medical technicians, medical technologists, dialysis technicians, electronic technicians, lung function technologists, ECG technicians, EEG technicians, pump technicians, theatre technicians, medical/technical laboratory assistants, hospital scientists, medical photographers and illustrators

2. Therapists:
   Physiotherapists, occupational therapists, speech therapists, orthoptists and optometrists

3. Pharmacists

4. Other medical ancillary:
Hospital librarians, medical record librarians and social workers

D. GENERAL

1. Administration:
Accountants, administrative officers, chief clerks, hospital managers, assistant managers, finance officers, paymasters, purchasing officers, credit officers, chief cashiers, personnel officers and public relations officers

2. Dietary:
Dieticians, cooks and apprentice cooks, food services assistants, kitchenmen and catering officers

3. Cleaning:
Domestic services assistants, orderlies and cleaners

4. Housekeeping:
Domestic services supervisors, housekeepers and assistants

5. Linen and laundry:
Linen, laundry and sewing staff

6. Trades:
Engineers, bricklayers, plumbers, painters, carpenters, metal trades, electricians, foremen, gardeners, incinerator attendants, storemen/women, boiler attendants, builders labourers and engine drivers

7. Clerical:
Clerical and other administrative clerical staff

APPENDIX G

PAYMENTS FOR CONDITIONS AND ALLOWANCES BY HOSPITAL GROUP AS A PERCENTAGE OF BASIC WEEKLY PAY 1973 TO 1978

Table 1 1973
Table 2 1974
Table 3 1975
Table 4 1976
Table 5 1977
Table 6 1978

APPENDIX G: Table 1

Payments for Conditions and Allowances, by Hospital Group, as a Proportion of Basic Weekly Pay, Survey Hospitals

YEAR : 1973

Payments for \ Hospital Group	Teaching (N=2) %	Metropolitan Special (N=1) %	Metropolitan General (N=3) %	Country Base (N=2) %	Country (N=1) %	All Hospitals (N=9) %
Overtime	4.94	1.88	2.84	2.89	3.21	4.01
Penalties	5.08	4.48	8.69	8.46	8.79	6.35
Variable Allowances	6.41	5.62	7.67	7.49	7.26	6.79
Fixed Allowances	0.50	0.37	1.36	1.52	0.40	0.78
Annual Holidays	6.05	6.22	6.12	6.63	6.70	6.15
Sick Leave	2.58	2.59	2.93	2.43	2.53	2.65
Other	0.93	4.26	1.28	1.16	1.13	1.24
Total	26.49	25.42	30.89	30.58	30.02	27.97

APPENDIX G : Table 2

Payments for Conditions and Allowances, by Hospital Group, as a Proportion of Basic Weekly Pay, Survey Hospitals

YEAR : 1974

Payments for \ Hospital Group	Teaching (N=2) %	Metropolitan Special (N=1) %	Metropolitan General (N=3) %	Country Base (N=3) %	Country (N=1) %	All Hospitals (N=10) %
Overtime	5.45	2.26	3.14	4.00	3.20	4.44
Penalties	4.93	4.99	8.97	9.12	9.05	6.69
Variable Allowances	6.74	6.63	8.15	8.71	7.75	7.42
Fixed Allowances	0.48	0.43	1.20	1.13	0.67	0.76
Annual Holidays	6.10	7.11	6.40	7.17	7.05	6.44
Sick Leave	2.59	3.30	3.03	2.97	2.18	2.77
Other	1.04	3.27	1.27	1.10	1.16	1.23
Total	27.33	27.99	32.16	34.20	31.06	29.75

APPENDIX G: Table 3

Payments for Conditions and Allowances, by Hospital Group, as a Proportion of Basic Weekly Pay, Survey Hospitals

YEAR : 1975

Payments for \ Hospital Group	Teaching (N=3) %	Metropolitan Special (N=1) %	Metropolitan General (N=4) %	Country Base (N=3) %	Country (N=8) %	All Hospitals (N=19) %
Overtime	4.80	1.85	2.87	3.86	3.27	4.08
Penalties	5.99	5.32	9.38	9.67	11.41	7.35
Variable Allowances	7.55	6.36	8.33	8.67	8.82	7.86
Fixed Allowances	0.43	0.25	0.90	0.90	0.81	0.60
Annual Holidays	9.33	7.06	6.95	7.68	7.64	8.44
Sick Leave	2.63	3.19	2.93	2.91	2.27	2.75
Other	1.27	2.92	1.63	1.28	0.50	1.40
Total	32.00	26.95	32.99	34.97	34.72	32.48

APPENDIX G : Table 4

Payments for Conditions and Allowances, by Hospital Group, as a Proportion of Basic Weekly Pay, Survey Hospitals

YEAR : 1976

Payments for \ Hospital Group	Teaching (N=3) %	Metropolitan Special (N=1) %	Metropolitan General (N=4) %	Country Base (N=3) %	Country (N=8) %	All Hospitals (N=19) %
Overtime	4.88	3.99	2.88	3.58	2.04	4.17
Penalties	7.79	7.59	8.97	10.35	12.06	8.51
Variable Allowances	8.28	8.09	8.15	9.93	7.35	8.47
Fixed Allowances	1.17	1.57	0.89	1.12	0.75	1.11
Annual Holidays	9.04	8.45	7.21	8.07	8.37	8.48
Sick Leave	2.42	3.14	2.87	3.28	3.01	2.69
Other	1.23	3.33	1.74	1.06	0.61	1.38
Total	34.81	36.16	32.71	37.39	34.19	34.81

APPENDIX G: Table 5

Payments for Conditions and Allowances, by Hospital Group, as a Proportion of Basic Weekly Pay, Survey Hospitals

YEAR : 1977

Payments for \ Hospital Group	Teaching (N=3) %	Metropolitan Special (N=1) %	Metropolitan General (N=4) %	Country Base (N=3) %	Country (N=14) %	All Hospitals (N=25) %
Overtime	6.17	3.84	2.90	3.37	1.28	4.79
Penalties	10.06	7.95	9.09	9.76	13.04	9.82
Variable Allowances	9.56	7.65	8.67	10.30	8.79	9.37
Fixed Allowances	2.96	3.88	1.41	1.70	1.25	2.43
Annual Holidays	9.09	7.65	7.41	8.46	9.04	8.58
Sick Leave	2.59	2.95	2.84	2.77	2.66	2.69
Other	1.89	3.44	1.68	1.30	0.87	1.79
Total	42.32	37.36	34.00	37.66	36.93	39.47

APPENDIX G: Table 6

Payments for Conditions and Allowances, by Hospital Group, as a Proportion of Basic Weekly Pay, Survey Hospitals

YEAR : 1978

Payments for / Hospital Group	Teaching (N=3) %	Metropolitan Special (N=1) %	Metropolitan General (N=4) %	Country Base (N=3) %	Country (N=15) %	All Hospitals (N=26) %
Overtime	5.32	2.82	2.45	3.02	0.65	4.07
Penalties	10.12	8.08	9.52	10.11	13.16	10.03
Variable Allowances	9.17	6.69	8.32	8.59	7.93	8.75
Fixed Allowances	2.91	4.07	2.00	1.79	1.26	2.53
Annual Holidays	9.08	8.19	7.57	9.53	8.95	8.78
Sick Leave	2.66	3.59	2.87	2.88	2.19	2.76
Other	2.36	3.57	1.72	2.16	1.07	2.19
Total	41.62	37.01	34.45	38.08	35.21	39.11

APPENDIX H

PAYMENTS FOR CONDITIONS AND ALLOWANCES BY STAFF CLASSIFICATION
AS A PERCENTAGE OF BASIC WEEKLY PAY
1973 TO 1978

Table 1 1973
Table 2 1974
Table 3 1975
Table 4 1976
Table 5 1977
Table 6 1978

APPENDIX H: Table 1

Payments for Conditions and Allowances, by Staff Classification, as a Proportion of Basic Weekly Pay, Survey Hospitals

YEAR : 1973

Payments for / Staff Group	Nursing %	Medical %	Medical Ancillary %	General %	All Staff %
Overtime	1.72	2.24	7.92	6.58	4.01
Penalties	9.84	0.14	1.45	6.86	6.35
Variable Allowances	9.73	2.77	4.45	5.90	6.79
Fixed Allowances	1.81	0.02	0.05	0.12	0.78
Annual Holidays	6.52	6.58	4.97	5.92	6.15
Sick Leave	2.59	0.51	2.27	3.93	2.65
Other	0.45	1.85	2.18	1.61	1.24
Total	32.66	14.11	23.29	30.92	27.97

APPENDIX H: Table 2

Payments for Conditions and Allowances, by Staff Classification, as a Proportion of Basic Weekly Pay, Survey Hospitals

YEAR : 1974

Payments for \ Staff Group	Nursing %	Medical %	Medical Ancillary %	General %	All Staff %
Overtime	1.65	5.24	8.91	6.25	4.44
Penalties	10.83	0.08	1.33	7.32	6.69
Variable Allowances	10.41	3.71	4.09	6.31	7.42
Fixed Allowances	1.62	0.21	0.08	0.17	0.76
Annual Holidays	7.25	6.56	4.87	5.87	6.44
Sick Leave	2.63	0.66	2.18	4.25	2.77
Other	0.57	1.35	2.20	1.68	1.23
Total	34.96	17.81	23.66	31.85	29.75

APPENDIX H Table 3

Payments for Conditions and Allowances, by Staff Classification, as a Proportion of Basic Weekly Pay, Survey Hospitals

YEAR : 1975

Payments for \ Staff Group	Nursing %	Medical %	Medical Ancillary %	General %	All Staff %
Overtime	1.87	4.76	7.70	5.56	4.08
Penalties	11.57	0.03	1.42	7.69	7.35
Variable Allowances	11.08	4.81	4.53	6.40	7.86
Fixed Allowances	1.23	0.23	0.07	0.14	0.60
Annual Holidays	10.72	7.53	5.85	6.84	8.44
Sick Leave	2.85	0.47	2.43	3.92	2.75
Other	0.62	1.42	2.73	1.93	1.40
Total	39.94	19.25	24.73	32.48	32.48

APPENDIX H: Table 4

Payments for Conditions and Allowances, by Staff Classification, as a Proportion of Basic Weekly Pay, Survey Hospitals

YEAR : 1976

Payments for \ Staff Group	Nursing %	Medical %	Medical Ancillary %	General %	All Staff %
Overtime	1.46	6.93	7.42	5.14	4.17
Penalties	11.65	6.80	1.46	7.55	8.51
Variable Allowances	10.60	7.80	5.49	6.81	8.47
Fixed Allowances	1.32	2.53	0.10	0.16	1.11
Annual Holidays	10.20	6.07	6.95	8.25	8.48
Sick Leave	2.93	0.38	2.18	4.09	2.69
Other	0.67	1.53	2.53	1.94	1.38
Total	38.83	32.04	26.13	33.94	34.81

APPENDIX H: Table 5

Payments for Conditions and Allowances, by Staff Classification, as a Proportion of Basic Weekly Pay, Survey Hospitals

YEAR : 1977

Payments for / Staff Group	Nursing %	Medical %	Medical Ancillary %	General %	All Staff %
Overtime	1.33	11.92	7.58	4.64	4.79
Penalties	11.81	12.64	1.89	7.89	9.82
Variable Allowances	11.32	10.40	6.16	7.07	9.37
Fixed Allowances	1.86	8.54	0.13	0.26	2.43
Annual Holidays	9.32	7.80	7.02	8.55	8.58
Sick Leave	2.74	0.67	2.09	4.04	2.69
Other	0.75	1.93	3.90	2.49	1.79
Total	39.13	53.90	28.77	34.94	39.47

APPENDIX H : Table 6

Payments for Conditions and Allowances, by Staff Classification, as a Proportion of Basic Weekly Pay, Survey Hospitals

YEAR : 1978

Payments for \ Staff Group	Nursing %	Medical %	Medical Ancillary %	General %	All Staff %
Overtime	0.94	10.41	7.03	4.10	4.07
Penalties	12.11	12.10	2.23	8.41	10.03
Variable Allowances	10.71	9.06	5.92	6.65	8.75
Fixed Allowances	1.91	9.23	0.20	0.39	2.53
Annual Holidays	8.86	9.38	7.46	8.88	8.78
Sick Leave	2.89	0.79	2.47	3.85	2.76
Other	1.31	2.33	4.25	2.60	2.19
Total	38.73	53.30	29.56	34.88	39.11

APPENDIX I

UTILISATION AND PRODUCTIVITY STATISTICS
11 SURVEY HOSPITALS
1973 TO 1979

Table 1 Inpatients Treated
Table 2 Inpatient Bed Days
Table 3 Outpatients Treated
Table 4 Adjusted Inpatients
Table 5 Adjusted Inpatient Bed Days
Table 6 Average Length of Stay
Table 7 Productive Hours Per Adjusted Inpatient: Nursing
Table 8 Productive Hours Per Adjusted Inpatient: Medical
Table 9 Productive Hours Per Adjusted Inpatient: Medical Ancillary
Table 10 Productive Hours Per Adjusted Inpatient: General
Table 11 Productive Hours Per Adjusted Inpatient: All Staff
Table 12 Productive Hours Per Adjusted Inpatient Bed Day: Nursing
Table 13 Productive Hours Per Adjusted Inpatient Bed Day: Medical
Table 14 Productive Hours Per Adjusted Inpatient Bed Day: Medical Ancillary
Table 15 Productive Hours Per Adjusted Inpatient Bed Day: General
Table 16 Productive Hours Per Adjusted Inpatient Bed Day: All Staff

APPENDIX I: Table 1

Inpatients Treated, 11 Survey Hospitals

Hospital Group \ Year	1973	1974	1975	1976	1977	1978	1979
Teaching	52,911	49,355	50,351	56,435	60,138	61,805	64,582
Metropolitan Special	5,853	7,025	7,443	7,340	8,266	8,539	7,291
Metropolitan General	28,296	28,385	28,689	27,815	28,727	30,761	32,101
Country Base	20,115	20,580	20,958	23,220	23,292	23,624	24,700
All Hospitals	107,175	105,345	107,441	114,810	120,623	124,729	128,674

APPENDIX I : Table 2

Inpatient Bed Days, 11 Survey Hospitals

Hospital Group \ Year	1973	1974	1975	1976	1977	1978	1979
Teaching	529,793	507,557	493,530	502,787	506,008	514,133	525,574
Metropolitan Special	29,726	34,991	35,455	35,484	36,392	35,902	32,401
Metropolitan General	255,179	255,579	254,449	255,246	250,014	247,072	250,041
Country Base	199,827	200,295	202,865	205,874	204,969	198,137	180,992
All Hospitals	1,014,525	928,835	986,299	999,391	997,383	995,244	989,008

APPENDIX I: Table 3

Outpatients Treated, 11 Survey Hospitals

Hospital Group \ Year	1973	1974	1975	1976	1977	1978	1979
Teaching	154,937	175,318	183,843	200,672	203,089	207,173	222,763
Metropolitan Special	24,328	21,664	22,259	31,787	38,423	38,241	42,753
Metropolitan General	80,427	91,391	94,922	107,521	113,708	119,868	129,802
Country Base	108,095	116,414	154,002	163,830	172,337	172,742	188,115
All Hospitals	367,787	404,787	455,026	503,810	527,557	538,024	583,433

APPENDIX I: Table 4

Adjusted Inpatients, 11 Survey Hospitals

Hospital Group \ Year	1973	1974	1975	1976	1977	1978	1979
Teaching	69,841	68,333	72,152	82,065	88,130	91,083	96,769
Metropolitan Special	10,921	11,625	12,389	14,311	17,502	18,171	17,470
Metropolitan General	34,103	34,999	35,747	35,527	37,157	40,045	42,567
Country Base	24,858	25,776	27,832	31,457	31,885	32,533	35,560
All Hospitals	139,723	140,733	148,120	163,360	174,674	181,832	192,366

APPENDIX I: Table 5

Adjusted Inpatient Bed Days, 11 Survey Hospitals

Hospital Group \ Year	1973	1974	1975	1976	1977	1978	1979
Teaching	701,867	711,490	708,876	736,018	741,301	754,974	782,644
Metropolitan Special	55,465	57,912	59,005	69,115	77,044	76,361	77,634
Metropolitan General	304,049	311,098	311,948	320,070	319,265	320,201	329,360
Country Base	244,977	249,385	265,939	275,445	277,263	271,166	262,755
All Hospitals	1,306,358	1,329,885	1,345,768	1,400,648	1,414,873	1,422,702	1,452,393

APPENDIX I: Table 6

Average Length of Stay,* 11 Survey Hospitals

Hospital Group \ Year	1973	1974	1975	1976	1977	1978	1979
Teaching	10.0	10.3	9.8	8.9	8.4	8.3	8.1
Metropolitan Special	5.1	5.0	4.8	4.8	4.4	4.2	4.4
Metropolitan General	9.0	9.0	8.9	9.2	8.7	8.0	7.8
Country Base	9.9	9.7	9.7	8.9	8.8	8.4	7.3
All Hospitals	9.5	8.8	9.2	8.7	8.3	8.0	7.7

* Derived by dividing the number of adjusted bed days by the number of adjusted inpatients (see Appendix I: Tables 4 and 5).

APPENDIX I: Table 7

Productive Hours Per Adjusted Inpatient, 11 Survey Hospitals

1. NURSING

Hospital Group \ Year	1973	1974	1975	1976	1977	1978	1979	% Change
Teaching	61.55	64.14	62.33	59.32	58.64	59.38	53.95	- 12.35
Metropolitan Special	19.80	20.34	20.85	19.74	16.71	16.44	17.30	- 12.63
Metropolitan General	52.80	54.30	56.49	60.82	59.49	57.59	52.91	0.21
Country Base	51.37	63.52	64.30	59.27	58.03	55.94	50.30	- 2.09
All Hospitals	54.34	57.96	57.82	56.17	54.51	54.08	49.72	- 8.51

APPENDIX I: Table 8

Productive Hours Per Adjusted Inpatient, 11 Survey Hospitals

2. MEDICAL

Hospital Group \ Year	1973	1974	1975	1976	1977	1978	1979	% Change
Teaching	14.32	15.66	15.47	14.22	14.00	13.39	12.66	-11.59
Metropolitan Special	4.65	4.73	4.48	4.89	4.89	4.52	4.60	- 1.08
Metropolitan General	5.28	5.86	6.59	7.45	7.57	7.41	7.35	39.20
Country Base	3.02	3.11	3.21	3.31	3.24	3.04	3.11	2.98
All Hospitals	9.35	10.02	10.11	9.83	9.75	9.34	8.99	- 3.85

APPENDIX I: Table 9

Productive Hours Per Adjusted Inpatient, 11 Survey Hospitals

3. MEDICAL ANCILLARY

Hospital Group \ Year	1973	1974	1975	1976	1977	1978	1979	% Change
Teaching	13.48	14.26	14.11	13.57	13.12	13.05	12.14	- 9.95
Metropolitan Special	5.82	5.20	5.42	4.90	4.21	3.72	3.83	- 34.19
Metropolitan General	5.90	6.04	6.23	7.06	7.52	7.26	7.10	20.34
Country Base	5.47	5.74	5.63	5.33	5.98	6.80	6.29	14.99
All Hospitals	9.60	9.91	9.89	9.81	9.73	9.73	9.19	- 4.27

APPENDIX I: Table 10

Productive Hours Per Adjusted Inpatient, 11 Survey Hospitals

4. GENERAL

Hospital Group \ Year	1973	1974	1975	1976	1977	1978	1979	% Change
Teaching	48.42	49.37	48.15	45.37	43.06	41.99	38.87	- 19.72
Metropolitan Special	29.81	30.16	27.92	25.44	21.45	20.71	21.84	- 26.74
Metropolitan General	35.71	35.09	36.18	37.48	37.87	35.70	32.89	- 7.90
Country Base	36.89	37.37	38.26	35.70	35.16	35.78	33.60	- 8.92
All Hospitals	41.81	42.03	41.71	40.05	38.35	37.37	35.02	- 16.24

APPENDIX I: Table 11

Productive Hours Per Adjusted Inpatient, 11 Survey Hospitals

5. ALL STAFF

Hospital Group \ Year	1973	1974	1975	1976	1977	1978	1979	% Change
Teaching	137.77	143.43	140.07	132.48	128.81	127.81	117.62	- 14.63
Metropolitan Special	60.08	60.44	58.67	54.97	47.26	45.39	47.56	- 20.84
Metropolitan General	99.69	101.30	105.49	112.82	112.45	107.97	100.24	0.55
Country Base	96.75	109.74	111.41	103.61	102.40	101.57	93.29	- 3.58
All Hospitals	115.11	119.93	119.53	115.86	112.34	110.51	102.91	- 10.60

APPENDIX I : Table 12

Productive Hours Per Adjusted Inpatient Bed Day, 11 Survey Hospitals

1. NURSING

Hospital Group \ Year	1973	1974	1975	1976	1977	1978	1979	% Change
Teaching	6.12	6.16	6.34	6.61	6.97	7.16	6.67	9.0
Metropolitan Special	3.90	4.08	4.38	4.09	3.80	3.91	3.89	-
Metropolitan General	5.92	6.11	6.47	6.75	6.92	7.20	6.84	15.5
Country Base	5.21	6.57	6.73	6.77	6.67	6.71	6.81	30.7
All Hospitals	5.81	6.13	6.36	6.55	6.73	6.91	6.58	13.25

APPENDIX I: Table 13

Productive Hours Per Adjusted Inpatient Bed Day, 11 Survey Hospitals

2. MEDICAL

Hospital Group \ Year	1973	1974	1975	1976	1977	1978	1979	% Change
Teaching	0.42	1.50	1.57	1.59	1.66	1.62	1.57	10.6
Metropolitan Special	0.92	0.95	0.94	1.01	1.11	1.08	1.03	12.0
Metropolitan General	0.59	0.66	0.76	0.83	0.88	0.93	0.95	61.0
Country Base	0.31	0.32	0.34	0.38	0.37	0.36	0.42	35.5
All Hospitals	1.00	1.06	1.11	1.15	1.20	1.19	1.19	19.0

APPENDIX I: Table 14

Productive Hours Per Adjusted Inpatient Bed Day, 11 Survey Hospitals

3. MEDICAL ANCILLARY

Hospital Group \ Year	1973	1974	1975	1976	1977	1978	1979	% Change
Teaching	1.34	1.37	1.44	1.51	1.56	1.57	1.50	11.9
Metropolitan Special	1.15	1.04	1.14	1.02	0.96	0.89	0.86	- 33.7
Metropolitan General	0.66	0.68	0.71	0.78	0.87	0.91	0.92	39.4
Country Base	0.56	0.59	0.59	0.61	0.69	0.82	0.85	51.8
All Hospitals	1.03	1.05	1.09	1.14	1.20	1.24	1.22	18.45

APPENDIX I : Table 15

Productive Hours Per Adjusted Inpatient Bed Day, 11 Survey Hospitals

4. GENERAL

Hospital Group \ Year	1973	1974	1975	1976	1977	1978	1979	% Change
Teaching	4.82	4.74	4.90	5.06	5.12	5.07	4.81	-
Metropolitan Special	5.87	6.06	5.86	5.27	4.87	4.93	4.91	- 19.6
Metropolitan General	4.01	3.95	4.15	4.16	4.41	4.46	4.25	6.0
Country Base	3.74	3.86	4.00	4.08	4.04	4.29	4.55	21.7
All Hospitals	4.47	4.45	4.59	4.67	4.73	4.78	4.64	3.8

APPENDIX I: Table 16

Productive Hours Per Adjusted Inpatient Bed Day, 11 Survey Hospitals

5. ALL STAFF

Hospital Group \ Year	1973	1974	1975	1976	1977	1978	1979	% Change
Teaching	13.71	13.78	14.26	14.77	15.31	15.42	14.54	6.1
Metropolitan Special	11.83	12.13	12.32	11.38	10.74	10.80	10.70	- 9.55
Metropolitan General	11.18	11.40	12.09	12.52	13.09	13.50	12.96	15.9
Country Base	9.82	11.34	11.66	11.83	11.78	12.19	12.63	28.6
All Hospitals	12.31	12.69	13.16	13.51	13.87	14.12	13.63	10.7

APPENDIX J

AVERAGE AWARD WAGE RATES AND ACTUAL BASIC WEEKLY PAYMENTS BY STAFF GROUPS, SURVEY HOSPITALS 1973 TO 1979

APPENDIX J

Average Award Wage Rates[1] and Actual Basic Weekly Payments[2], By Staff Group, Survey Hospitals, 1973 to 1979

Year	Nursing		Medical		Medical Ancillary		General		All Staff	
	Awards $/Week	Hospower $/Week	Awards $/Week	Hospower $/Week	Awards $/Week	Hospower $/Week	Awards $/Week	Hospower $/Week	Awards $/Week	Hospower $/Week
1973	64.53	64.80	174.37	184.80	93.45	97.60	65.49	70.40	74.58	78.40
1974	77.16	78.40	223.72	237.14	110.55	116.80	77.61	88.00	89.88	94.40
1975	95.73	97.60	291.55	309.04	134.66	144.00	95.75	108.80	112.04	117.60
1976	120.12	125.60	307.07	334.71	155.87	170.00	116.90	129.20	134.65	145.20
1977	136.27	140.00	333.74	370.00	173.07	189.20	134.65	145.60	152.04	161.20
1978	146.74	152.00	352.58	392.00	185.50	204.80	146.11	158.40	163.51	174.80
1979	156.80	161.20	374.37	407.20	197.83	222.40	156.06	168.80	174.51	185.20
% change	143.0	148.8	114.7	120.3	111.7	127.9	138.3	139.8	134.0	136.2

1. Averages of 4 quarters for financial years, base weighted by 1973 F.T.E. staff number (source: awards; and annual returns from survey hospitals, Victorian Health Commission).

2. Basic pay - basic hours base weighted by the number of basic hours recorded for each staff group in 1973.

APPENDIX K

THE STRUCTURE OF AVERAGE WEEKLY EARNINGS
4 STAFF GROUPS, SURVEY HOSPITALS
1973 TO 1979

Table 1 Nursing Staff
Table 2 Medical Staff
Table 3 Medical Ancillary Staff
Table 4 General Staff

APPENDIX K: Table 1

The Structure of Average Weekly Earnings for (i) Nursing Staff, Survey Hospitals, 1973 to 1979

Year	Average Award Wage Rates (1973 Weights) $/Week	Average Basic Payments (1973 Weights) $/Week	Average Basic Payments (Unweighted) $/Week	Average Gross Payments (inc. Conditions and Allowances) $/Week
1973	64.53	64.80	64.80	85.92
1974	77.16	78.40	78.80	105.99
1975	95.73	97.60	101.20	142.19
1976	120.12	125.60	132.00	183.61
1977	136.27	140.00	148.00	206.61
1978	146.74	152.00	162.40	225.90
1979	156.80	161.20	173.20	244.04
% Increase	143.0	148.8	167.3	184.0

Source: Tables 3.5 and Appendix J

APPENDIX K: Table 2

The Structure of Average Weekly Earnings for (ii) Medical Staff, Survey Hospitals, 1973 to 1979

Year	Average Award Wage Rates (1973 Weights) $/Week	Average Basic Payments (1973 Weights) $/Week	Average Basic Payments (Unweighted) $/Week	Average Gross Payments (inc. Conditions and Allowances) $/Week
1973	174.37	184.80	184.80	210.90
1974	223.72	237.14	239.40	282.01
1975	291.55	309.04	314.10	376.92
1976	307.07	334.71	350.80	463.10
1977	333.74	370.00	405.60	624.22
1978	352.58	392.00	425.60	654.44
1979	374.37	407.20	436.40	658.96
% Increase	114.7	120.30	136.1	212.5

Source: Tables 3.5 and Appendix J

APPENDIX K: Table 3

The Structure of Average Weekly Earnings for (iii) Medical Ancillary Staff, Survey Hospitals, 1973 to 1979

Year	Average Award Wage Rates (1973 Weights) $/Week	Average Basic Payments (1973 Weights) $/Week	Average Basic Payments (Unweighted) $/Week	Average Gross Payments (inc. Conditions and Allowances) $/Week
1973	93.45	97.60	97.60	120.34
1974	110.55	116.80	116.80	144.48
1975	134.66	144.00	144.40	180.50
1976	155.87	170.00	170.80	215.89
1977	173.07	189.20	190.40	245.62
1978	185.50	204.80	206.80	268.43
1979	197.83	222.40	224.00	293.44
% Increase	111.7	127.9	129.5	143.8

Source: Tables 3.5 and Appendix J

APPENDIX K: Table 4

The Structure of Average Weekly Earnings for (iv) General Staff, Survey Hospitals, 1973 to 1979

Year	Average Award Wage Rates (1973 Weights) $/Week	Average Basic Payments (1973 Weights) $/Week	Average Basic Payments (Unweighted) $/Week	Average Gross Payments (inc. Conditions and Allowances) $/Week
1973	65.49	70.40	70.40	92.15
1974	77.61	88.00	88.40	116.60
1975	95.75	108.80	110.00	146.85
1976	116.90	129.20	130.80	176.97
1977	134.65	145.60	147.20	201.37
1978	146.11	158.40	159.60	218.49
1979	156.06	168.80	170.40	234.47
% Increase	138.3	139.8	142.0	154.4

Source: Tables 3.5 and Appendix J

APPENDIX L

PRINCIPLE COST CENTRES AND THEIR DEFINITIONS

APPENDIX L

PRINCIPLE COST CENTRES AND THEIR DEFINITIONS*

1. Clearing Accounts

These clearing accounts, except the salaries and wages clearing account, are used for processing inventory transactions (receipts/issues etc.) in order to isolate inventory transactions from the actual direct expenses incurred in providing a service within a cost centre.

2. Suspense Accounts

These codes are used as suspense accounts, recording salaries and wages not directly allocated to an operating department. All payroll costs recorded in Suspense Accounts are ultimately reallocated to a cost centre.

3. General Administration

This cost centre is charged with all expenses associated with the general administration of the hospital and the provision of general support services which include patient reception functions (admitting, discharging and enquiries), management services, printing and duplicating, telephone and communications, public relations, appeal administration, chaplaincy services, auxiliary groups, insurance and rates, interest and board of management expenses. This cost centre normally excludes expenses associated with nursing and medical administration where these functions are independently structured in larger institutions.

4. Accounting and Finance

This cost centre is charged with all expenses associated with all general accounting functions, which include patient billing, preparation of budgets, financial reporting, investment of funds and cash collection.

5. Personnel and Payroll

This cost centre is charged with all expenses associated with the recruitment and selection of staff for hospital departments, salary and wage administration, all personnel functions, staff training and development, and industrial relations.

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* These cost centres are for institutions with annual expenditure in excess of $6 million. Shorter lists for institutions with annual of expenditure of $2 to $6 million and of less than $2 million are also delineated (see Health Commission of Victoria, 1981).

6. Employee Benefits - Non Assigned

This cost centre records the employer cost of employee benefits which are not controllable by functional heads. These employee benefits are limited to Long Service Leave Provision Superannuation (Employer cost only), and Workers Compensation Insurance. These costs eventually distributed to functional costs centres pro rata to ordinary wages.

7. Supply

The cost centre records all expenses associated with purchasing, receiving, storing, controlling, processing and distributing hospital supplies and equipment (excluding pharmaceuticals and linen). The costs of goods and services other than those used in maintaining this function are charged to user cost centres either at time of purchase, or as goods are consumed via a clearing or stocks on hand account.

8. Nurse Administration

All expenses associated with the overall administration and supervision of all nursing services including the recruitment of nursing personnel are charged to this cost centre.

9. Nursing Education

This cost centre is charged with all expenses associated with the provision of all internal basic and post-basic education of nursing personnel and includes the maintenance costs of a nursing library where applicable. Other expenses charged to this centre include any payments to lecturers on a fee-for-service basis for lectures given within nursing schools.

10. Medical Administration

This cost centre is charged with all expenses associated with the overall administration and supervision of all medical services including the recruitment of resident medical staff and costs associated with supervision of in-hospital clinical training.

11. Power, Light and Heat

This cost centre is charged with all expenses associated with the supply of energy for services including lighting, heating, boiler operation and water treatment facilities.

12. Engineering and Maintenance

This cost centre is charged with all expenses associated with:

- The maintenance and repair of hospital buildings and properties, all plant and fixed equipment, grounds and gardens, hospital vehicles.
- The performance of minor renovations.
- The provision of transport services.
- The disposal of hospital waste.

- The maintenance of hospital safety.
- Any work relating to the above performed by external contractors.

13. Food and Dietary Services

This cost centre is charged with all expenses associated with the provision of dietary advice to inpatients, outpatients and regional patients, the purchase of food stuffs and dining utensils, the delivery and serving of meals to patients and staff and the provision of tea services to patients and staff.

14. Domestic Services

All expenses associated with maintaining the cleanliness of hospital buildings and residences (which includes work done by external contractors), all portering functions including courier services, supervising car parking, maintaining security and attending lifts are charged to this cost centre.

15. Residences

This cost centre is charged with all expenses associated with housekeeping and supervisory expenses incurred in maintaining residential quarters for nursing and medical staff. It is also charged with all expenses incurred in maintaining premises owned by the institution which are rented or leased pending occupation by the institution.

16. Linen, Laundry and Sewing

This cost centre is charged with all expenses associated with the procurement, sorting, processing, distribution, mending and washing of all in-service linen, uniforms, special linens and any disposable linen substitutes.

17. Pharmacy

This cost centre is charged with all expenses associated with the requisition, storage, control, compounding, manufacturing, standardising, dispensing and distribution of drugs and intravenous fluids. In addition, expenses incurred in performing other pharmacy services such as the provision of information and reference material on all pharmaceutical matters, are charged to this centre.

18. Pharmacy Supplies

The user costs of all pharmaceutical supplies including drugs, medications, materials, and intravenous fluids issued to in/outpatients are charged to this cost centre which is primarily concerned with identifying the cost of consumption of these items.

19. Central Sterile Supply Department

All expenses associated with the storing, controlling, processing, sterilizing, assembling and distribution of sterile medical and surgical supplies and equipment are charged to this cost centre.

20. Medical Records

This cost centre is charged with all expenses associated with the collection, completion, assembly, availability, statistical analysis and maintenance of patients' medical records. Expenses include those incurred in the microfilming of medical records, the provision of morbidity statistics and also the provision of any information required for educational, research or legal purposes.

21. Diagnostic Laboratory Services

This cost centre is charged with all expenses associated with the performance of diagnostic laboratory tests used for the diagnosis and treatment of inpatients and outpatients. Expenses include any payments on a fee-for-service basis to institutions engaged by the hospital to provide a diagnostic service, and any costs invoiced by a hospital diagnostic department providing services to outside bodies (such as other hospitals and private medical practitioners) under the right to private practice.

22. Organ Imaging Services

This cost centre is charged with all expenses associated with the performance of diagnostic radiological tests used for the diagnosis and treatment of inpatients, outpatients and regional patients. Expenses include any payments on a fee-for-service basis to institutions engaged by the hospital to provide a diagnostic service and any costs incurred by a hospital diagnostic department providing services to outside bodies (such as hospitals and private medical practitioners) under the right to private practice.

23. Technical Support

This cost centre is charged with all direct costs associated with the provision of technical support services which include clinical photography, medical illustration, electrodiagnosis, medical library, orthotics and biomedical engineering. Included are the costs of consumables as well as the labour costs of qualified staff.

24. Allied Health Services

This cost centre is charged with all direct costs associated with the provision of allied health services by allied health professionals to inpatients and outpatients, domiciliary and regional patients. Included are the costs of consumables as well as the direct labour costs of allied health professionals which include, but are not limited to, physiotherapists, occupational therapists, speech therapists, chiropodists/podiatrists, audiologists, dental technicians and therapy radiographers.

25. Operating Theatre Suite

This cost centre is charged with all direct costs associated with the performance of surgical operations on inpatients and the continuous observation and care of patients during the immediate post-operative and post-anaesthetic periods and, where applicable, the maintenance of the theatre sterile supply unit. Included are the costs of consumables as well as the labour costs of nursing care which includes the activities of trained nurses, trainee nurse, registered nursing aides, trainee nurse

aides, theatre technicians and attendants/ward helps and also any clerical staff.

26. Wards

Each ward is a cost centre consisting of a geographically autonomous series of inpatient beds supervised by a Charge Sister. Wards are to be charged with all direct costs associated with the provision of nursing care to inpatients on the basis of physicians' orders and approved nursing care plans.

27. Casualty/Accident and Emergency

This cost centre is charged with all direct costs associated with the provision of initial screening and medical/surgical care on an unscheduled basis to patients suffering from injury, shock or other conditions requiring immediate medical attention. Included are the costs of consumables as well as the labour costs of medical and nursing care, which include the activities of all medical practitioners, trained nurses, trainee nurses, registered nursing aides, nursing attendants/ward helps and clerks.

28. Outpatient Services

This cost centre is charged with all directs costs associated with the provision of medical consultative, clinical and nursing services on a scheduled basis to ambulatory patients who are not admitted to a hospital bed (i.e. outpatients). Included are the costs of consumables as well as the labour costs of medical and nursing care which includes the activities of medical practitioners, trained nurses, trainee nurses, registered nursing aides, trainee nursing aides, nursing attendants/ward helps and clerks.

29. Clinical Units and Services

These cost centres are the individual elements of the hospitals' medical staff structure considered responsible for the provision of medical care to inpatients and outpatients. Such medical care may be provided by RMOs and Senior Medical Officers organized into clinical services/units or by visiting medical staff on a fee for service basis.

30. Education and Training

This cost centre is to be charged with salaries and wages and accrual for annual leave and sick leave only of staff formally employed in a trainee capacity either within the institution or on external courses. Only full time study-block time and the expense of providing for Sabbatical Leave is to be posted to this cost centre.

31. Other Cost Centres

These include, where applicable, the following:

Nursing Home	Hostel for Aged
Community Health Centre	District Nursing
Hostel	Quarantine Service
Day Hospital/Centre	Regional Services
Rehabilitation Centre	Research
Non Operating	

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