

Hospital services and casemix in Western Australia

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Abstract

The Health Department of WA currently operates as a single integrated funder and purchaser of health services for the State. Health Service Agreements defining the level of health provision are negotiated with the various health services in WA. During the latter part of the 1990s, the funding of public hospitals for acute inpatient care moved away from a historical basis to output-based funding using a casemix approach based on Diagnosis Related Groups (DRGs). Other hospital services are still mainly purchased using historical funding levels, negotiated block funding or bedday payments, with output-based funding mechanisms under investigation. WA has developed its own approach to classifying admitted patients that recognises differences in complexity of care among episodes grouped to the same DRG. WA also has a unique cost estimation model for calculating DRG cost weights, which is based on a linear estimate of the relationship between nights of stay in hospital and the cost of hospital care for each DRG. Another emerging trend in the provision of public hospital services in WA has been the greater involvement of the private sector through the contracting of private providers to operate public hospitals. While no close examination has been undertaken of the outcomes of these changes in terms of their effect on efficiency or other relevant indicators of hospital performance, current purchasing arrangements are being reviewed following recommendations made in a report by the Health Administrative Review Committee. No decision has yet been made as to future changes to the funding policy of WA public hospitals.

Background

Western Australia (WA) is the largest state or territory in Australia, covering one third of the continent. Most of inland WA consists of desert and semi-arid areas that are not suitable for cultivation. The climate varies from tropical in the north to temperate in the southwest. Western Australia has a low population density compared with other Australian states and territories - 0.7 people per square kilometre compared with a national population density of around 2 people per square kilometre (Australian Bureau of Statistics (ABS, 2001a).

In June 2000 the estimated resident population of Western Australia was 1.884 million. Almost seventy five percent of the population (1.364 million people) live in Perth, the state's capital city. The largest regional centres are Kalgoorlie (31,900), Bunbury (28,600), Geraldton (19,861) and Albany (15,980). The population growth rate is 1.4 per cent per annum, equal to that of the Northern Territory and second highest in the country behind Queensland (1.7 per cent). WA's population, like the Australian population in general, has been ageing steadily over the past 20 years. The median age of the population is 34.2 years, slightly below the Australia median of 35.2. Of the total population, 21.1 per cent are younger than 15 years and 4.7 per cent are over 75 (ABS, 2001b).

Indigenous people accounted for an estimated 3.2 per cent of the total state population in 1999. WA has the second highest proportion of indigenous people behind the Northern Territory (28.5 per cent). In Australia, indigenous people account for 2.1 per cent of the total population (ABS, 2000).

State program budget structure

Health comprises the single largest area of expenditure by the Western Australian Government. In 2001/01 recurrent funding appropriated to the Health Department of Western Australia (HDWA), the State's principal health authority, was \$1,801 million, or 24 per cent of the State's total recurrent budget. An additional \$317 million was allocated for capital works and other supplementary funding (HDWA, 2000a).

The Commonwealth's contribution to the State's recurrent health expenditure was \$725 million, which included funding provided through the Australian Health Care Agreement (\$599 million) and specific purpose payments such as the Home and Community Care program, the Public Health Outcome Funding Agreement and the High Cost Drugs program. Revenue raised by the health services from sources such as private patient fees and facility rentals amounted to \$118 million (HDWA, 2000a).

Within the health portfolio, acute health care services accounts for the largest component of expenditure. Other areas of expenditure include population-based public health, community health, mental health, aged care and Aboriginal health (HDWA, 2000b).

The challenges facing the Western Australian health system are similar to those faced by other States but are compounded by unique geographic and socio-demographic characteristics. In its submission to the Grants Commission on General Revenue Grant Relativities in 1999, the HDWA recommended the inclusion of the following special need factors in relation to acute hospital services (HDWA, 1999a):

1. Under-recording of Aboriginal utilisation of hospital services.
2. Regional differences in the utilisation and casemix of hospital services.
3. Adjusted cost weights to reflect the additional costs incurred for Aboriginals, children and people living in remote areas.
4. A 'non-State services' factor based on the level of private hospital service provision in rural non-remote regions, the impact of private hospitals on the usage and casemix of metropolitan public hospitals, and the lower cost of providing services to private patients in public hospitals.
5. An isolation factor to take account of costs incurred as a result of WA's isolation from other States including costs not currently recognised such as air freighting medical supplies, patient travel and recruitment of staff from other capitals.
6. Extension of the assessment of dispersion to include patient travel and accommodation, cost and frequency of recruitment, remote removals and unproductive travel time.
7. A service delivery factor to allow for diseconomies of scale.

Area structure and statutory basis of hospitals

In recent years, changes have been implemented in the area structure for the Perth metropolitan area. A Metropolitan Health Service Board (MHSB) was set up in July 1997 by the then Coalition Government to manage and operate all State Government owned and operated hospitals in the Perth metropolitan area. The purpose of bringing metropolitan services under a single management structure was to achieve improved cooperation and coordination between hospitals and to rationalise service provision. Following discussions between the State Government and the Australian Medical Association, four metropolitan health authorities were established in November 2000. Under these arrangements, the MHSB was to continue its overarching role regarding budget coordination and global planning for the delivery of health services and some metropolitan activities such as shared non-clinical services and the Central Wait Lists. The health authorities were to assume formal responsibility for the management and operations of the metropolitan hospitals and health services within their region. To achieve these changes, amendments to the Hospitals and Health Services Act 1927 were required (HDWA, 2000c). However, before these amendments occurred the incoming Labour Government abolished the MHSB in February 2001.

Following the abolition of the MHSB, the Health Administrative Review Committee (HARC) was appointed to examine how the Western Australian public health system's administrative structure should be reformed. This Committee has proposed establishing four metropolitan health service areas to manage health services within each area. Boards of Governance will oversee the Area Health Services and will be responsible for the health status and delivery of health services within their areas (HARC, 2001).

The proposed administrative arrangements for the metropolitan area are similar to the existing arrangements in non-metropolitan areas, where providers are grouped regionally into 21 Health Service areas with a board responsible for managing and controlling hospitals and nursing posts within each area. The HARC report made a recommendation for a review to investigate the optimal approach for administering and coordinating country Boards and services (HARC, 2001).

The current structure of the Health Department of WA is illustrated in Appendix A, with the structure proposed by HARC shown in Appendix B.

Hospital provision and performance

In 1999/00, Western Australia had 136 hospitals, of which 70 per cent were public hospitals (see Table 1). The most complex services are provided at the five teaching hospitals in Perth, with other public hospital services provided at metropolitan non-teaching hospitals and regional and district hospitals in country areas. The private sector owned 41 hospitals, and also provided hospital services for public patients under contract with the State at two hospitals. The private sector's provision of services is limited to the metropolitan and major rural centres, with only three private hospitals located outside the metropolitan area (Geraldton, Bunbury and Peel/Mandurah). Two of the three country private hospitals have been established under joint venture arrangements with the State Government (Ford, 1999).

Table 1: Number of hospitals by type of ownership, 1999/00

Ownership type	Number
Public	
Publicly managed	93
Privately managed	2
Private	41
Total	136

Source: Health Economics Unit Schedules, HDWA

The number of hospital beds in WA was 8,230 in 1999/00, of which approximately 65 per cent were in public hospitals (see Table 2). On a per population basis, the number of public and private beds is 28.0 and 15.6 per 10,000 population respectively.

Table 2: Number of public hospital beds by hospital type, 1999/00

Hospital type	Number of beds
Public	
Teaching hospitals	2,304
Metropolitan non-teaching hospitals	812
Rural hospitals	1,883
Other hospitals ¹	284
Private	2,947
Total	8,230

¹ Includes Graylands (psychiatric) Hospital (n=283) and Woorooloo Hospital (n=1)
Source: AIHW, (2001).

Table 3 shows the number of separations, average length of stay and average cost weight of separations by type of hospital. Utilisation of hospital services in WA is close to the national average rate. A report by the Australian Institute of Health and Welfare (AIHW), *Australian Hospital Statistics 1999-00*, indicated that WA had 3,027 separations per 10,000 population, slightly below the national average of 3,107 for the same period (AIHW, 2001). The separation rate for public hospitals was 7 per cent below the national average, while it was 5 per cent above the national average for private hospitals. Average length of stay in WA hospitals was 3.7 days. For hospitals included in the *Australian Hospital Statistics 1999-00* report, the average length of stay in WA hospitals and nationally was reported as 3.5 and 3.8 days respectively (AIHW, 2001).

The average cost weight of separations is a measure of the complexity of patients treated. Compared with a national index of 1.00, in 1999/00, the average cost weight in public and private hospitals in WA was 0.94 and 0.96 respectively.

Table 3: Number of separations, average length of stay and average cost weight of separations by type of hospital, 1999/00

Type of hospital	Number of separations	Average length of stay (days)	Average cost weight of separations
Public hospitals			0.94
Teaching hospitals	218,600	3.6	-
Metropolitan non-teaching hospitals	57,524	3.8	-
Privately managed hospitals	42,918	2.8	-
Rural hospitals	106,032	3.6	-
Other hospitals ¹	3,173	17.4	-
Private hospitals	18,649	2.8	0.96
Total	615,894	3.7	0.94

¹ Includes Graylands Hospital and Woorooloo Hospital

Source: Number of separations and average length of stay from the WA Hospital Morbidity System. Average cost weight of separations from Australian Hospital Statistics, 1999/00 (AIHW, 2001).

Table 4 presents the cost per casemix-adjusted separation for public hospitals by state and territory. Two sets of figures are listed: column 1 is taken from the *National Hospital Cost Data Collection* (Department of Health and Aged Care (DHAC), 2000) and column 2 is from *Australian Hospital Statistics* (AIHW, 2001). Substantially different estimates of the cost per casemix-adjusted separation are reported for WA, \$2,634 and \$3,355 respectively, compared with the equivalent reported national averages of \$2,488 and \$2,728. Reasons underlying these differences in the reported cost per casemix adjusted separation for WA include the use of different inpatient fractions, the use of national rather than WA cost weights, and the definition of which episodes were included in the cost weight calculations.

Table 4: Cost per casemix adjusted separation including depreciation for public hospitals by state or territory, 1998/99 and 1999/00

State or territory	NHCDC cost per casemix adjusted separation (\$) 1998/99	AIHW cost per casemix adjusted separation (\$) 1999/00
NSW	2,572	2,812
Victoria	2,309	2,529
Queensland	2,375	2,556
South Australia	2,337	2,579
Western Australia	2,634	3,335
Tasmania	2,632	2,848
Northern Territory	3,681	3,444
ACT	3,404	3,167
Australia	2,488	2,728

Source: Column 1 taken from the National Hospital Cost Data Collection (DHAC, 2000) and column 2 taken from Australian Hospital Statistics 1999/00 (AIHW, 2001)

Table 5 shows the number of bed days by type of hospital, separately identifying nursing home type bed days. Overall the number of hospital inpatient bed days per 1,000 population was 1,148 in WA. Nursing home type patients accounted for less than 1 per cent of total bed days. Compared with national rates, WA had 10 per cent fewer patient days per 1,000 population in public hospitals and 15 per cent more in private hospitals (AIHW, 2001).

Table 5: Number of beddays: total and nursing home type, 1999/00

Type of hospital	Number of beddays	Nursing home type
Public hospitals		
Teaching hospitals	784,580	0
Metropolitan non-teaching hospitals	216,159	2,250
Privately managed hospitals	126,509	1,223
Rural hospitals	333,193	11,265
Other hospitals ¹	106,958	162
Private	594,761	3,138
Total	2,162,160	18,038

¹ Includes Graylands Hospital and Woorooloo Hospital

Source: WA Hospital Morbidity System

Table 6 shows the number of episodes by payment classification and type of hospital. Public patients accounted for 60 per cent of all hospital episodes. Sixteen percent of private patients episodes were at public hospitals.

Table 6: Number of episodes by payment classification and type of hospital, 1999/00

Classification	Metro teaching	Metro non-teaching	Privately managed	Rural	Private	Other	Grand total
Public	185,697	49 077	27,127	93,397	1,614	863	357,775
Private ¹	16,335	1,134	4,517	6,306	147,108	3	175,403
Other ²	13,530	5,759	2,899	8,989	31,667	0	62,794
Total	215,562	55,970	34,543	108,692	180,389	868	595,972

¹ Includes private insured and uninsured

² Includes Department of Veteran Affairs, Motor Vehicle Insurance, Workers Compensation and all other payment classifications

Source: WA Hospital Morbidity System.

Funding arrangements

In Western Australia, the Funder Owner Purchaser Provider model was introduced in the early 1990s and this has been refined and developed over subsequent years. The Health Department of WA currently operates as a single integrated funder and purchaser of health services for the state. Under the current departmental structure, the strategic purchasing functions are concentrated in the Public Health and Purchasing Division, which comprises General Health Purchasing, Public Health and the Office of Aboriginal Health, and the Mental Health Division (Ford, 1999). The proposed new departmental structure recommended by the Health Administrative Review Committee does not identify a separate division for purchasing. However, a commitment has been expressed to output-linked budgeting so funding arrangements are likely to be based on some form of 'contracting' between the Health Department and providers (HARC, 2001).

The key functions of the existing Purchasing Division are to (Ford, 1999):

1. Conduct ongoing assessments of population needs, in consultation with local communities and providers.
2. Gather and analyse data on health status, activity and health outcomes.
3. Develop and refine purchasing tools consistent with strategic directions.
4. Develop contracts that put purchasing intentions into effect.

Strategic directions for health purchasing are set out in a *Purchasing Intentions* document prepared by the Purchasing Division for providers of health services, key stakeholders and the broader community (HDWA, 1999b). Purchasing strategies are presented mostly from a health zone perspective. Health zones are amalgamations of health authorities and health services: the four metropolitan health authorities combine to form a single health zone while the 21 rural health services are organised by postcode into six rural zones.

The purchasing model developed by the Health Department is structured on the basis of three dimensions (Ford, 1999):

1. An intervention dimension with three levels: prevention and promotion, diagnosis and treatment, and continuing care.
2. A health condition dimension based on aggregated Major Diagnostic Categories of the Diagnosis Related Groups (DRGs) with five levels: circulatory and respiratory, digestive and mobility, nervous system and mental health, reproduction and newborn, and systemic.
3. A population dimension including age, gender, ethnicity, aboriginality, location and socio-economic.

After consultation with providers, key stakeholders and the community, purchasing intentions based on this purchasing model are translated into Health Service Agreements (HSAs) with health service providers. HSAs define the contractual obligations of both the Health Department as Purchaser and the Health Service as Provider. In the metropolitan area, HSAs are negotiated with the Chief Executive of the teaching hospitals and the General Managers of the non-teaching hospitals, while HSAs are negotiated with the General Managers of

Health Services in the rural areas. The HSAs define the level of health provision to the Health Service level, thus reflecting the underlying philosophy of the purchaser/provider split to allocate responsibility to providers to operationalise the agreement as best suits the needs of each particular Health Service.

The HSAs include a Volume and Value Summary Sheet, which is divided into the three intervention levels and five conditions groups of the Purchasing Model. Detailed specification of activity and payment is generally confined to the diagnosis and treatment intervention level, in particular the acute in-patient component of hospital care where activity levels are specified at the health condition level. Other purchasing is based on historical funding levels, negotiated block funding or bedday payments.

As well as funding on the basis of the Purchasing Model, the Health Department grants additional funding to Health Services for the following specific purposes (HDWA, 1997):

1. Hospitals with historically high levels of resource consumption, which have been affected more than others by the introduction of output-based funding, are provided with provisional grants to ease their transition to a more efficient organisation of their activities. Included in these funds are allowances for community health services provided by hospitals.
2. Reconfiguration funds are allocated to providers for organisational changes, such as where existing production routines and facilities have been changed to provide different types of care or where activity has been relocated geographically or to improve accessibility for patients.
3. Special funding is provided that recognises the additional cost of service delivery in rural or remote locations.
4. Earmarked grants are separately provided for federally funded programs.
5. Separate schedules for capital works funding provide for approved capital items.
6. A pool of funds is available for projects that represent re-investment of funds within health services or programs, growth of existing programs and services or new initiatives.

Acute hospital inpatient care

Public hospital budgets are composed of five major components: services for acute admitted patients, services for non-acute admitted patients, services for non-admitted patients, community services, and training, teaching and research (McGuire, 1999). This section describes the purchasing of services for acute admitted patients; purchasing of other hospital care components are discussed in later sections.

In 1997/98 the Health Department moved away from funding historical levels of activity to purchasing outputs using a casemix approach based on Diagnosis Related Groups (DRGs). In 1999/2000, the Australian Refined DRG Classification (AR-DRG) version 4.0 was adopted, and version 4.2 is currently in use.

Western Australia has developed an approach to classifying admitted patients that recognises differences in complexity of care among episodes grouped to the same DRG. Three types of episodes of admitted patient are identified (HDWA, 1998):

1. Central episodes are cases falling within length of stay and cost boundaries set for each DRG. For most DRGs the low and high boundaries for length of stay are set at one third (L3) and three times (H3) the average nights of stay. However, the high boundary (HB) point is subject to clinical review and is capped at 91 days.
2. Exceptional episodes are cases where at least one parameter - either length of stay or cost - lies outside the limits defining the central episode for that DRG. Four types of exceptional episodes of care are possible: low exception but not sameday, low exception and sameday, high exception and quarter-year episodes.
3. Special admitted patient episodes include activity in specific clinical areas identified as requiring special attention with respect to purchasing for reasons such as being high volume/high cost or involving infrequently occurring hospital services for which costs are more difficult to predict. Episodes in these clinical areas are funded as special programs. The special program areas are critical care, stroke and stroke rehabilitation, mental health, renal dialysis, oral health and rehabilitation. In addition, high exception episodes are managed as a special program.

Cost weights in WA are not obtained from a single point estimate representing the average cost of each DRG, which is the method used in other Australian states. Rather, the WA cost estimation model derives a linear estimate of the relationship between nights of stay in hospital and the cost of hospital care for each DRG. The rationale for calculating a linear estimate is that the cost of care for patients within a DRG varies depending on the number of nights spent in hospital (McGuire, 1999). Up until 1999/2000 the data set of costed episodes used to compute the linear estimates was the WA Trendstar data from the four teaching hospitals spread across seven sites. In 2000/01 cost weights were computed using two years of WA and Victorian costed episodes, the latter including patient episode data from 25 hospitals. The costed episodes are trimmed at the 5th and 95th percentile points for each DRG, and reported costs are inflation-adjusted to reflect prices in the current base year (McGuire, personal communication).

The linear estimate calculated for each DRG identifies a one-time cost (OT) and a multi-time per diem cost (MTpd), which are the intercept and slope of the regression line respectively. The one-time cost is the expected fixed cost, excluding the daily costs associated with the length of hospital stay of an episode, incurred by a completed episode. The multi-time per diem rate defines the daily variable cost associated with the length of hospital stay of an episode classified to a DRG. The longer the stay, the greater the multi-time per diem cost incurred (McGuire, 1999).

Based on this linear estimate the following simple cost model showing the relationship between nights of stay in hospital and cost can be defined for episodes of care within each DRG:

$$\text{cost} = \text{OT} + \text{MTpd} \times \text{NOS} \quad \text{where NOS} = \text{nights of stay}$$

The WA cost estimation model adapts this simple cost model to provide incentives for technical efficiency and adjust for the uncertainty and risk involved in purchasing health care. Uncertainty and risk are limited by defining low and high boundary points for nights of stay. Central episodes are funded on the basis of a 'core cost', which is the average cost of episodes having length of stay between the low boundary (LB) and high boundary (HB) points. The core cost formula is as follows:

$$\text{core cost} = \text{OT} + \text{MTpd} \times \text{ANOS} \quad \text{where ANOS} = \text{average nights of stay for episodes falling between the LB and HB points}$$

For each DRG, one-time cost weights and multi-time per diem cost weights are computed from the core cost of central episodes and form the basis of the central episode cost weight. Central episodes are funded using central episode cost weights, thus hospitals with length of stay exceeding the average for any DRG have an incentive to reduce nights of stay to at least the average number across all hospitals (HDWA, 1998).

Admitted patient episodes other than central episodes are funded differently. If the episode is a low exception episode but not a sameday episode, the payment formula is the sum of the one-time cost plus the multi-time per diem rate multiplied by the number of nights of stay in hospital. Special admitted patient episodes, which are funded as special program areas, are purchased on the same basis as low exception episodes that are not sameday episodes.

If the episode is a low exception episode and is a sameday episode, then no multi-time per diem cost component applies and payment is based on the one-time (OT) cost only.

In the case of high exception episodes, and quarter year or longer episodes, payment comprises the core payment plus an exceptional payment. The exceptional payment is defined as:

$$\text{exceptional payment} = (\text{OT} + \text{MTpd} \times \text{NOS}) - \text{core payment}$$

High exceptional episodes of care are funded under a special scheme known as the Exceptional Episode Insurance Pool, which is a contingency pool held in reserve to reimburse providers incurring exceptional episode costs.

Cost weights are recomputed annually based on individually costed episodes from the current hospital cost data set. The base price used to convert cost weights into actual payments is derived using the WA Trendstar data, adjusted for inflation. Until 1999/00 separate cost weight schedule base prices were used for teaching and non-teaching hospitals, with a higher base price for teaching hospitals reflecting the additional costs of teaching, training, development and research. Since 2000/01 a single base price has been used and each teaching hospital has a designated overhead cost estimate or price inflator to cover the TTDR cost component (McGuire, personal communication).

Comparison of payment levels for two representative DRGs

The payment calculations used to allocate hospital costs is illustrated for two common hospital procedures - normal vaginal baby deliveries without complications (DRG O60D) and appendicectomies (DRG G07B). Table 7 shows the cost weight data and other key parameters for the 2001 cost weight schedule used in the 2001/02 financial year. The label mnemonics and the parameters they represent are listed below -

W_{OT} - one time cost weight

W_{MTpd} - multi time per diem cost weight

W_{CE} - central episode cost weight

W_{SD} - same day cost weight

LB - low boundary length of stay point

HB - high boundary length of stay point

Table 7: Payment data from the 2001 cost weight schedule

DRG	W_{OT}	W_{MTpd}	W_{CE}	W_{SD}	LB	HB
O60D	0.23	0.21	0.90	0.28	1	9
G07B	0.47	0.25	1.17	0.68	1	9

Source: HDWA, 2000/01 cost weight schedule (unpublished).

In 2000/01 the cost weight schedule base price for non-teaching hospitals was \$2,197, with price inflators for teaching hospitals ranging from 1.10 to 1.46 (McGuire, personal communication). The formulae for funding the different types of episodes of admitted patients for non-teaching hospitals were as follows -

Central episodes:	normal deliveries = $(0.90 * \$2,197) = \$1,977.30$ appendicectomies = $(1.17 * \$2,197) = \$2,570.49$
Sameday episodes:	normal deliveries = $(0.28 * \$2,197)$ appendicectomies = $(0.68 * \$2,197)$
Exceptional payments:	normal deliveries = $(0.23 + NOS * 0.21 - 0.90) * \$2,197$ appendicectomies = $(0.47 + NOS * 0.25 - 1.17) * \$2,197$ where NOS = nights of stay for exceptional episodes

Since the low boundary length of stay is one day for both procedures, low exception episodes but not sameday do not apply. For teaching hospitals the relevant price inflator was applied to the above payments.

Adjustments to hospital cost allocations

The cost allocations to hospitals for acute inpatient care, which is based on payment according to types of inpatient episode, are not adjusted in any way to reflect differences in specific patient characteristics, geographical factors or size effects. Patient characteristics that might require special consideration in cost allocation include Aboriginality, socio-economic status and private patient status. The worse health status and consequent longer length of stay of patients who are Aboriginal or low socio-economic status is automatically dealt with through the exceptional episode payment scheme, with additional nights of stay in hospital beyond the high boundary point reimbursed accordingly. No adjustment is made for payment for private patients; acute private inpatient revenue received by the Health Service is simply deducted from the bottom line of the Health Service Agreement. In the case of geographical factors and size effects, adjustments are made through the provision of additional grants to health service providers specifically for this purpose. The rural adjustment varies from 1 per cent to 15 per cent based on the Accessibility/Remoteness Index of Australia (ARIA), local government weights and the Regional Disability Index (Rohwedder, personal communication).

Capping of hospital cost allocations

The level of acute inpatient hospital activity is negotiated between the HDWA Purchasing Division and the management of the Health Authorities (in the metropolitan area) and Health Services (in the non-metropolitan areas) on the basis of the five health conditions defined in the Purchasing Model. Activity levels are written into the Health Service Agreements. The management of contracts with individual providers is the responsibility of the Contract Management Branch within the Finance and Infrastructure Division (Ford, 1999).

Adjustment for new technology

The payment model for allocating hospital costs automatically includes adjustment for new technology. If new technology is adopted for a treatment or procedure, then any consequent change in the type or level of inputs is reflected in the costed patient episodes from which DRG cost weights are derived. Since cost weights are derived annually, the adjustment for covering the cost of new technology costs is annual (Rohwedder, personal communication).

Waiting time initiatives

Waiting time initiatives are funded separately from untied Commonwealth funding to the States that was allocated by the previous Coalition government to reduce the length of waiting lists in WA hospitals. A Central Wait List Bureau has been established to allow for the effective referral and patient placement of patients waiting long periods on elective surgery lists. Additional inpatient activity relating to these patients results in additional payment to Health Services or hospitals, but eligibility for additional payment is conditional on target activity in the Health Service Agreements being met.

Coding audits

The Health Department has implemented a program of auditing hospital records and procedures, with all hospitals audited in two-year cycles. Although not limited to the accuracy of admitted patient information, audits take particular interest in this area of recording and processing because of its significant funding ramifications. In particular, the audits check on reported activity in relation to:

- the appropriateness of the admission;
- the inclusion of a discharge summary or coding sheet signed by the treating medical officer, indicating concurrence with the recorded information;
- the completeness of documentation in the record which supports the diagnoses made and treatment given; and
- the accuracy of diagnostic data coding.

In addition to these coding audits, an investigation was recently undertaken into exceptional episodes of care to identify DRGs with high exceptional episode impact (McGuire, 2000).

Non-acute admitted and non-admitted patients

Outpatient services in Western Australia are purchased using activity-based block funding. Target volumes are historically determined on the basis of activity levels in previous years. The intention is to move towards a system of purchasing on the basis of activity and unit cost using clinical groupings. A standard reporting form, the HA215, is used for reporting activity across outpatient departments. However, data obtained from the HA215 forms is not strictly comparable across hospitals as consistency has not been achieved in the way fields are interpreted.

Emergency department services are also purchased using block funding, but an improved purchasing mechanism is under investigation. Hospitals in the metropolitan area and the Bunbury Hospital use the Emergency Department Information System (EDIS) for recording patient data. Other hospitals use the Health Care Information System (HCARE).

The Australian National Sub and Non Acute Patient casemix classification system is not currently used in WA. Rehabilitation is considered as a special program area. Six DRGs have been added to extend rehabilitation service classification: orthopaedic, stroke, spinal, brain, cardiac and pulmonary. The payment formula for the

rehabilitation DRGs is the same as for low exception episodes that are not a sameday episode (i.e. the sum of the one-time cost plus the multi-time per diem rate multiplied by the number of nights of stay in hospital).

Nursing home type patient episodes, palliative care episodes and other admitted long-term patients (i.e. patients who have been residing within a hospital for more than one quarter) are funded based on bed day rates. Where this type of activity cannot be distinguished from other hospital activity, services to these patients are paid through the normal casemix scheme.

'Hospital in the home' programs are paid as specific programs through the Health Services. The Health Department and the General Practice Division of Western Australia also commenced a demonstration 'hospital in the home' project, Homeward 2000, in 1998. This project aims to treat patients in the community rather than in hospital and is funded on an activity basis.

Teaching and research

Teaching, training, development and research (TTDR) was purchased collectively from teaching hospitals on a block purchasing basis until 2000/01. This was calculated as a percentage of acute patient care costs across all activity including admitted and non-admitted patient services. The percentage payment was 9 per cent in 1997/98 and increased to 12 per cent, 15 per cent and 18 per cent in 1998/99, 1999/00 and 2000/2001 respectively. The same percentage was applied for all teaching hospitals.

In 2001/02 a new system was introduced, which accounts for the extra cost of TTDR by applying a hospital-specific price inflator to the cost weight schedule base price for non-teaching hospitals. These price inflators, which reflect the cost differences between each of the teaching hospitals and the combined average for non-teaching hospitals, vary from 1.10 to 1.46 across the teaching hospitals (McGuire, personal communication).

Two recent studies have investigated the issue of TTDR funding. The first study, which was commissioned by the Health Department, recommended the unbundling of TTDR funding from patient care. The proposed method of funding teaching and training was on the basis of the marginal cost of provision, and for research and development was a combined approach of annual program grants and project specific grants (Newchurch Australia, 1999). The Faculty of Medicine and Dentistry at the University of Western Australia commissioned the second study, which recommended that TTDR funding should not be unbundled from patient care funding (Lewin-Fordham, 2001).

Capital

In 2001/02 Treasury implemented capital user charging for all agencies receiving appropriations direct from the Consolidated Fund. Processes are currently being developed to implement a method of capital user charging from the Health Department to agencies (Treasury, 2001).

As in other states the Western Australian government has moved to seek private capitalisation of new public hospital facilities. At Joondalup the existing public hospital has been leased to a private operator, which funded major additions to the hospital and constructed an adjoining private hospital (WA Auditor-General 1997; 2000). At Peel the existing public hospital has had major additions, including a private hospital wing, and a private company operates both the private and public facilities. Co-located public and private hospital facilities also operate at Bunbury.

A Strategic Infrastructure Planning Group within the Health Department is responsible for planning for major capital expenditure. Health Services submit business cases for new major capital items to this group, who then review and prioritise projects on a statewide basis for consideration by the Commissioner of Health and the Minister for Health for submission to Treasury (Ford, 1999). Minor works and capital funding are funded as part of the normal asset management process whereby Health Services are expected to assign appropriate portions of their funding allocations to asset management.

A review committee, the Equipment Prioritisation Committee, has been established to examine the upgrading of major medical equipment within the metropolitan health services. The role of this committee is to facilitate equipment standardisation within the metropolitan area and to consolidate the tendering process to take full advantage of buying power.

Price updating (including salary adjustments)

All input cost adjustments are built into the agreed payment to Health Services at the beginning of the contract period. This includes price updating for episodes of care purchased on the basis of casemix funding as well as other services that are block purchased. Price adjustments include CPI adjustments, cost of award variations and other appropriate escalation factors.

Quality of care

Over the five years of the current Australian Health Care Agreement (1998-2003), the Western Australian Government is to receive funding from the Commonwealth for quality improvement initiatives. This funding is supplementary and builds on an ongoing State effort to improve the quality of clinical care. Under the terms of the agreement the State was required to develop a strategic plan for quality improvement and gain Commonwealth agreement. This strategic plan has been submitted to the Commonwealth and endorsement of the plan has been gained (HDWA, 2000d).

Consistent with the quality plan, the State Government is currently establishing a Quality Council that will advise on directions for improving quality.

Some key State initiatives being developed or already underway include:

- the development of an incident reporting and management system for public hospitals;
- development of clinical standards to be used in public hospitals;
- development of clinical practice guidelines, incorporating evidence-based practice guidelines;
- benchmarking processes to ensure that service delivery meets best practice benchmarks;
- support for the Collaborative Training and Education Centre to improve the surgical and procedural skills of doctors;
- increasing patient involvement in the evaluation of care and service delivery;
- the establishment of key performance indicators to measure the quality of services; and
- investment in continuing professional development for medical, nursing and allied health staff to ensure that they have the competencies to meet professional demands.

The Health Department has conducted statewide patient satisfaction surveys for 10 years. These surveys seek the views of over 20,000 patients including overnight, same-day, maternity, emergency, outpatient, community health, nursing post, multipurpose health services consumers and special groups of patients such as respite care patients. All questionnaires have versions available for parents, guardians or carers to complete on behalf of children or adult patients where necessary. Standardised results are used to assess patient satisfaction with health services, compare satisfaction between health services (benchmarking), and provide feedback to services on areas where they have performed well and areas where they can improve. Results are presented as a set of scale scores, a weighted composite score out of 100 and an outcome score. For the past three years, WA health consumers have indicated an overall high level of satisfaction with scores of above 80.

Mental health services

Mental health admitted patient services at all hospitals except special facilities have been funded using DRGs since 1997/98. High and low length of stay boundaries for the mental health DRGs are adjusted based on agreement between the parties. Episodes that become exceptional are reimbursed for the extended stay from a

portion of the Exceptional Episode Insurance Pool that is quarantined for mental health episodes (McGuire, personal communication).

In the case of special facilities such as Graylands Hospital, mental health admitted patient services are funded historically on the basis of indicative volumes of episodes and/or occasions of service for a set program price. Mental health non-admitted patient services are still block funded, but the intention is to move to price/activity funding.

Conclusion

During the latter part of the 1990s the HDWA moved away from funding public hospitals for acute inpatient care on a historical basis to output-based funding using a casemix approach based on DRGs. Other hospital services are still mainly purchased using historical funding levels, negotiated block funding or bedday payments, with output-based funding mechanisms under investigation.

The response to the introduction of casemix funding and the development of a purchaser role has been mixed. From a purchaser perspective, these initiatives have been viewed as providing more transparency in relation to the funding of hospital services and assisted in decisions relating to allocating scarce resources. While some providers of hospital services have supported the payment reforms and recognised the advantages of being able to fund services on the basis of a better understanding of hospital activities, others have argued against casemix-based funding, mainly on the grounds of the complexity of the current funding model and the additional administrative load involved. At this stage, no close examination has been undertaken of the outcomes of these changes in terms of their effect on efficiency or other relevant indicators of hospital performance.

Another emerging trend in the provision of public hospital services in WA has been the greater involvement of the private sector through the contracting of private providers to operate public hospitals. Proponents of private sector provision of public hospital services have argued that the private sector is able to build and operate hospitals more efficiently than the public sector. This has not been evaluated formally in WA, although in performance examinations of the private provision of public hospital care the Auditor General of WA has reported that: (i) no reliable information was available to establish that the Joondalup Health Campus (JHC) contract would provide net tangible benefits relative to a public sector alternative (Auditor General of WA, 1997), and (ii) cost and quality of services delivered by the JHC are generally comparable to metropolitan public hospitals (Auditor General of WA, 2000).

The review of the public health system's administrative structure in 2001 and subsequent changes in the HDWA have led to current purchasing arrangements being revisited. The report by HARC (2001) stated the current funding model was not widely understood, and recommended that funding of State Health services be based on a number of principles including output-linked budgets, simplified service agreement frameworks, the use of standard definitions for inputs and outputs (including case weighted measurement of hospital inpatient services), and transparency across the system of health service and program budgets. No final decision has yet been made as to how these recommendations will be incorporated into the future funding policy of WA public hospitals.

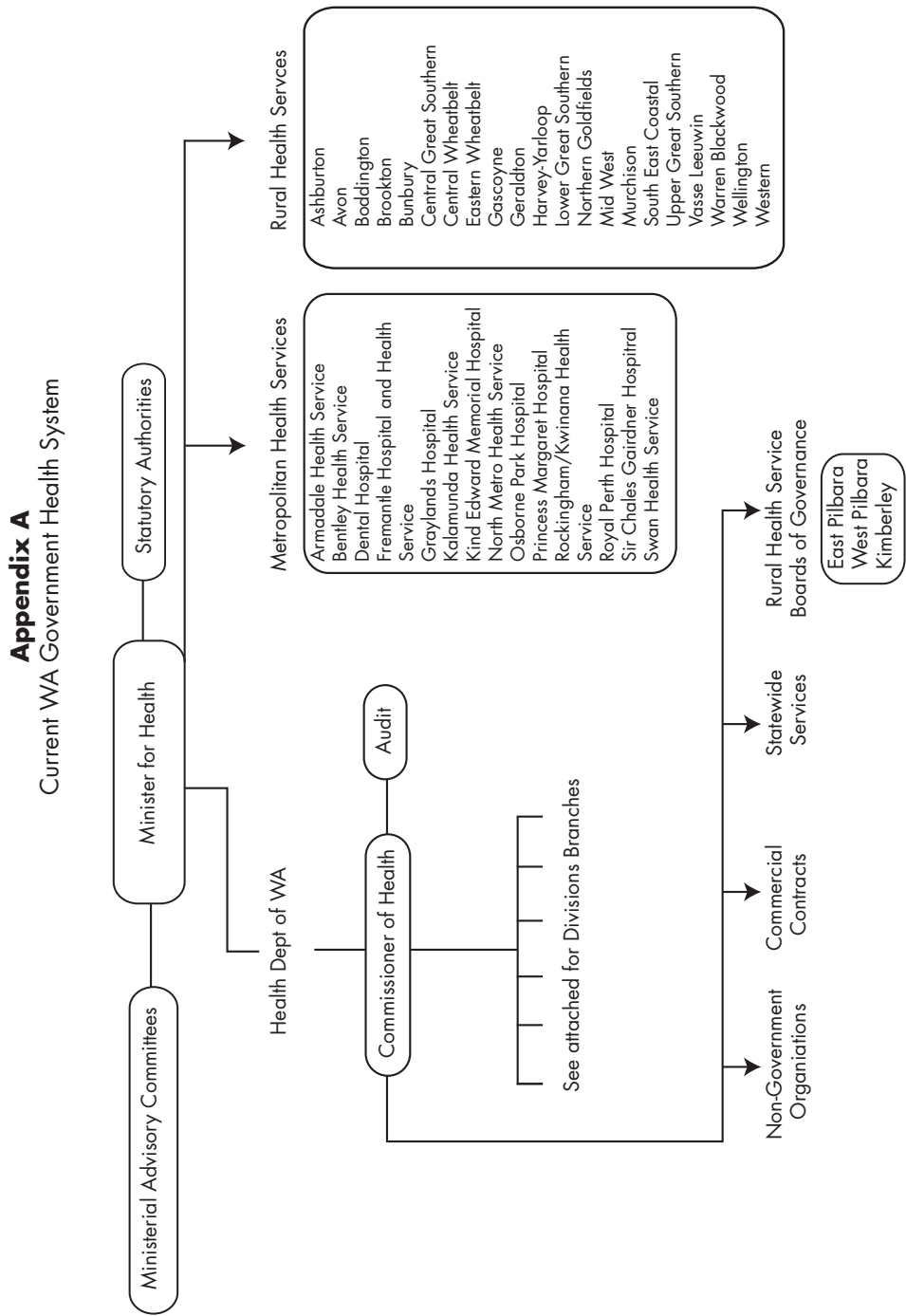
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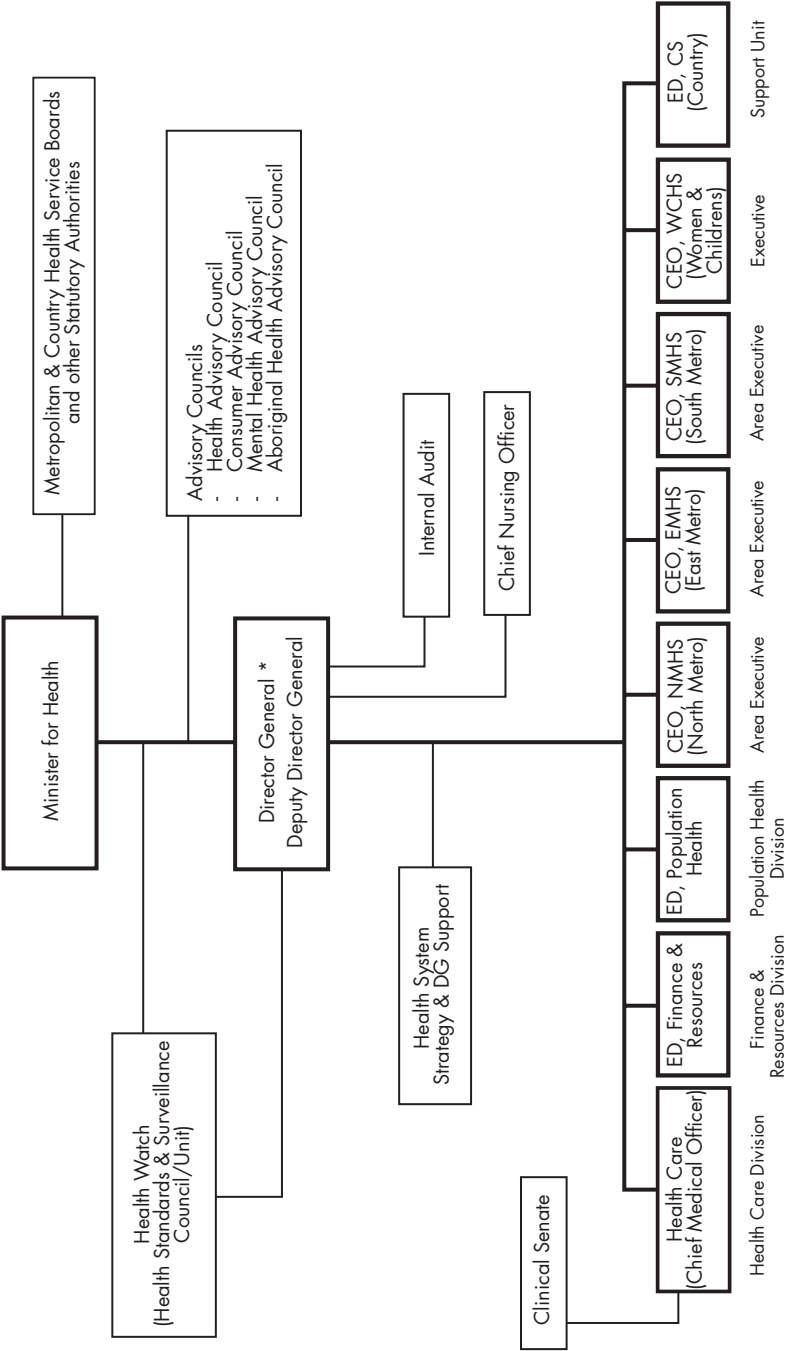
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Source: Report of the Health Administrative Review Committee – June 2001

Appendix B
Recommended WA Government Health System



*Used for consistency with Machinery of Government Taskforce
Source: Report of the Health Administrative Review Committee – June 2001