APPENDIXES

Appendix A

Membership of the National Health Ministers' Benchmarking Working Group at October 1995

Member	Organisation
Mr Bob Wells (Chair)	Commonwealth Department of Human Services and Health
Ms Julie Legaspi	NSW Health Department
Ms Johanna Cook	Victorian Department of Health and Community Services
Dr Ian Ring	Queensland Health Department
Mr David Inglis	WA Health Department
Mr John Glover	SA Health Commission
Mr Tony Sansom	Tasmanian Department of Community Services and Health
Mr Garry Walsh	ACT Department of Health and Community Care
Mr Ken Bourke	NT Department of Health and Community Services
Ms Justine Curnow	Commonwealth Department of Human Services and Health
Ms Cathy Ellis	Commonwealth Department of Human Services and Health
Ms Chris Woodgate	Commonwealth Department of Human Services and Health
Mr Mark Cooper-Stanbury	Australian Institute of Health and Welfare
Mr John Harding	Australian Institute of Health and Welfare
Mr Paul D'Arcy	Industry Commission
Mr George Siolis	Industry Commission
Mr Nick Legge	Victorian Department of Treasury and Finance
Mr Robert Reeves	Victorian Department of Treasury and Finance
Mr Peter Baulderstone	Australian Hospitals' Association
Mr Garry Griffin	Victorian Hospitals' Association

Appendix B

Groups and programs related to the National Health Ministers' Benchmarking Working Group

1. COAG Review of Commonwealth and State Service Provision

The review was established by the COAG in July 1993, its main tasks being to develop agreed national performance indicators for key services delivered by governments in Australia. The focus of the review is on key performance indicators that provide an overall, system-wide insight into the efficiency and effectiveness of each service area.

The review is to:

- establish the collection and publication of data that will enable ongoing comparisons of the efficiency and effectiveness of Commonwealth and State government services, including intra-government services; and
- compile and assess service provision reforms that have been implemented or are under consideration by Commonwealth and State governments.

The review Steering Committee selected for its initial focus eight service areas: schools, vocational training, hospitals, community services, public housing, police, courts, and corrective services.

2. National Hospital Outcomes Program

This Commonwealth program – which supersedes and builds on the work of the National Hospital Quality Management Program – aims to develop and implement performance measures for standards of quality and outcomes of care in Australian hospitals.

The program will:

- develop and refine measures and standards of hospital quality and outcomes, with the involvement of consumers, clinicians and hospital administrators;
- trial the use of these measures in hospitals;
- promote a range of activities that will assist hospitals to respond with improvements in quality and outcomes;
- implement an information/education strategy to promote the use of indicators and communicate quality and outcome improvement strategies to clinicians, managers and consumers; and
- evaluate the initiatives.

3. Better Health Outcomes for Australians: National Goals, Targets and Strategies for Better Health Outcomes Into the Next Century

As part of the development of a National Health Policy by Commonwealth and State and Territory Health Ministers, goals and targets for better health outcomes have been established in four focus areas: cardiovascular health, cancer, injury, and mental health.

For each of the goals in these areas, strategies have been proposed for achieving the determined targets.

The development of national health goals and targets provides:

- a way of focusing the health system on improving health outcomes, rather than activity levels and throughput;
- a focus on achieving more equitable outcomes in health;

- a way of monitoring and reviewing progress towards improved health outcomes, and of assessing the effectiveness of a range of preventive measures and treatment interventions; and
- a way of involving sectors other than health in health policy and planning.

4. National Demonstration Hospitals Program

This is a Commonwealth-funded program that involves public hospitals with best practice models of waiting time management working with groups of collaborating hospitals to transfer these best practice models. The expected outcomes of the program are:

- the transfer of best practice models in key hospital services to public hospitals throughout Australia;
- the exchange of information between public hospitals and the development of collaborating networks within the public hospital sector;
- the development and application of relevant industry benchmarks in the management of elective surgery; and
- the reduction of clinically inappropriate waiting times.

5. Best Practice in the Health Sector Program

This Commonwealth program provides funds to facilitate the adoption of best practice and enterprise-level reform in the health industry. It does this through the funding of projects capable of providing best practice demonstration models of organisational change to bring about better quality of care and health service delivery.

The objectives of the program are:

- to stimulate the health industry to adopt best practice standards in workplace organisation;
- to identify and develop innovative workplace initiatives that will be of benefit to the health industry nationally;
- to encourage benchmarking in the health industry; and
- to provide a wider understanding of best practice in health workplaces.

6. Consultancy on Common Asset Valuation Methodology for the Health Sector

This consultancy was commissioned by HSH to assist in the development of capital-related indicators in the health sector.

The terms of reference for the consultancy were:

1. determine the asset valuation methodology used by each State and Territory health authority;
2. examine these methodologies, showing the extent to which they are similar and/or different;
3. for the purposes of benchmarking, determine the extent to which the health authorities use the same capital-related definitions; and
4. recommend the most appropriate valuation methodology to be adopted by all States and assess the feasibility of this being implemented. If considered feasible, outline an implementation strategy, or if not feasible, recommend alternative options for making meaningful comparisons between States on capital-related performance measures.

7. National Health Information Agreement

The National Health Information Agreement was negotiated between Commonwealth, State and Territory health authorities, the ABS and the Institute. The agreement aims to improve cooperation on the development, collection and exchange of data and to improve access to

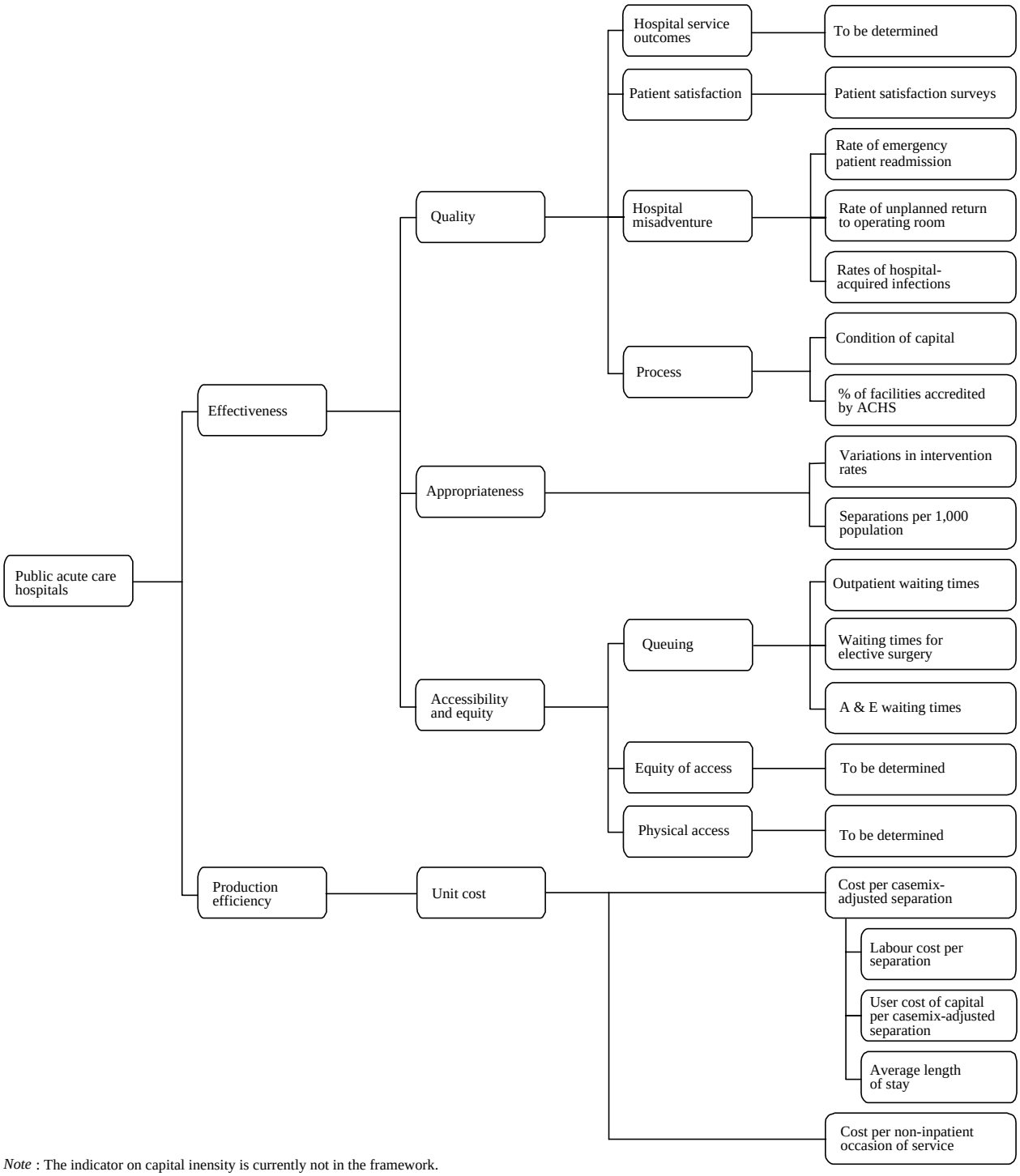
uniform health information by community groups, health professionals, government and non-government organisations.

A National Health Information Management Group (NHIMG) oversees the development of national health information and the implementation of the National Health Information Work Plan. The Group provides biannual reports to AHMAC on the progress of the work program.

The National Health Data Committee conducts an annual review of health-related definitions, coordinates information developments and endorses all definitions proposed for inclusion in the *National Health Data Dictionary* prior to making recommendations to the NHIMG.

Appendix C

Framework of hospital performance indicators: public acute hospitals



Note : The indicator on capital inensity is currently not in the framework.

Appendix D

Extracts from National Health Data Dictionary (NHDD), Summary edition 1993 (National Minimum Data Set Review Committee 1993)

Selected patient-level data items

Item P9: Area of usual residence

Level of enumeration: Patient.

Definition:

Geographic location of usual residence as stated by the patient at time of admission.

Classification/coding:

Statistical local area to be coded where place of usual residence is in same State or Territory as the establishment in which episode takes place. 4-digit statistical local area to be coded from the residential address using the Australian Standard Geographical Classification. Where complete residential address is not collected, the statistical local area should be derived from postcode using a postcode-to-statistical local area key.

State or Territory to be coded where place of residence is in different State or Territory to the establishment in which episode takes place.

Item P16: Patient accommodation status

Level of enumeration: Patient.

Definition:

An 'eligible person' means:

- a person who resides in Australia and whose stay in Australia is not subject to any limitation as to time imposed by law; but
- does not include a foreign diplomat or family (except where eligibility is expressly granted to such persons by the terms of a reciprocal health care agreement);
- persons visiting Australia who are ordinarily resident in the United Kingdom, New Zealand, Sweden, Malta, Italy and the Netherlands are covered by reciprocal health care agreements. However, persons from Malta or Italy are covered for six months only.

Eligible persons must enrol with Medicare before benefits can be paid.

Eligible:

Public patient: an eligible person who, on admission to a recognised hospital or soon after, elects to be a public patient;

or

an eligible public patient whose treatment is contracted to a private hospital.

A public patient shall be entitled to receive the care and treatment referred to in accordance with the Medicare Agreements without charge.

Private patient: an eligible person who, on admission to a recognised hospital or soon after, elects to be a private patient treated by a medical practitioner of his or her choice; or elects to occupy a bed in a single room.

Where such an election is made, the patient is responsible for meeting certain hospital charges as well as the professional charges raised by any treating medical or dental practitioner.

Or

an eligible person who chooses to be admitted to a private hospital.

Where such a choice is made, the patient is responsible for meeting all hospital charges as well as the professional charges raised by any treating medical or dental practitioner.

Department of Veterans' Affairs patient: an eligible person whose charges for this hospital admission are met by the Department of Veterans' Affairs.

Other patient: an eligible patient who does not meet the criteria for above categories; that is, not an eligible public patient, not an eligible private patient or an eligible Department of Veterans' Affairs patient. This category includes compensable patients, patients with Defence Force personnel entitlements and common law cases.

***Ineligible*:**

a person who is not eligible under Medicare.

Classification/coding:

1 = Eligible public patient

2 = Eligible private patient

3 = Eligible Department of Veterans' Affairs patient

4 = Eligible other patient

5 = Ineligible patient.

Item P21: Type of episode (type of care)

Level of enumeration: Patient.

Definition:

Mode of care provided in patient episode is classified into three categories:

- Section 3 of the Health Insurance Act as a nursing home type patient;
- rehabilitation patient: patient, other than nursing home type patient, who is admitted or transferred to a designated rehabilitation unit within a recognised hospital. Rehabilitation units are designated by the State health authority; and
- other patient: all other patients.

Classification/coding:

1 = Nursing home type

2 = Rehabilitation unit

3 = Other.

Item P37: Principal procedure

Level of enumeration: Patient.

Definition:

The procedure which consumed the greatest amount of hospital resources or, if this cannot be determined, that which was the definitive treatment for the principal diagnosis.

Procedures which should be coded:

- are surgical in nature;
- carry a procedural risk; or
- carry an anaesthetic risk; and
- require special facilities or equipment only available in an acute care setting.

Classification/coding: ICD-9-CM Volume 3.

The classification is revised annually by the National Centre for Health Statistics in the United States. New editions are published each October and will be implemented in Australia the following July or as determined by the National Coding Authority.

Item P38: Additional procedures

Level of enumeration: Patient.

Definition:

All significant procedures (additional to the principal procedure) performed on the patient during the episode of care. Refer to Item P37 for definition of procedures.

Procedures which should be coded:

- are surgical in nature;
- carry a procedural risk; or
- carry an anaesthetic risk; and
- require special facilities or equipment only available in an acute care setting.

Classification/coding: ICD-9-CM Volume 3.

The classification is revised annually by the National Centre for Health Statistics in the United States. New editions are published each October and will be implemented in Australia the following July or as determined by the proposed National Coding Authority.

Selected establishment level activity items

Item A1: Separations

Level of enumeration: Establishment.

Definition:

A separation is deemed to occur after a patient/client has been formally or statistically admitted for an episode of residential care and the patient/client:

- is formally discharged;
- is transferred to another institution;
- absconds;
- dies while in care;
- changes status between any of the categories of nursing home type, rehabilitation and other (see Item P2l); or
- leaves hospital for a period of leave exceeding seven days (acute hospitals) or ten days (public psychiatric hospitals).

Note that if statistically admitted, separation results in a second inpatient episode.

Item A2: Occupied bed-days

Level of enumeration: Establishment.

Definition:

The number of occupied bed-days is defined as the total number of days of stay for all patients/clients who were formally admitted for an episode of care and who underwent separation (Item Al) during the financial year.

The number of days of stay for a patient is defined as the separation date minus the admission date except for patients/clients who are admitted and separated on the same day. These clients/patients are to be included with a stay of one day.

All leave days are to be excluded from the occupied bed-days count, with the exception of overnight leave.

In determining the number of occupied bed-days, patient lengths of stay are not to be truncated or trimmed.

Item A4: Occasions of service

Level of enumeration: Establishment.

Definition:

An occasion of service is defined as any examination, consultation, treatment or other service provided to a patient in each functional unit of a health service establishment on each occasion such service is provided. Each diagnostic test or simultaneous set of related diagnostic tests for the one patient referred to a hospital pathology department consists of one occasion of service.

Selected establishment level resource items

Item E3: Number of available beds for admitted patients

Level of enumeration: Establishment.

Definition:

For acute and psychiatric hospitals the number of beds which are immediately available to be used by admitted patients or residents if required. They are immediately available for use if located in a suitable place for care, and there are nursing and other auxiliary staff available, or who could be made available within a reasonable period, to service patients or residents who might occupy them. The average number of beds should always be shown as a whole number. Exclude surgical tables, recovery trolleys, delivery beds, cots for normal neonates, emergency stretchers/beds not normally authorised or funded and beds designated for same-day non-inpatient care.

Beds in wards which were temporarily closed due to factors such as renovations or strikes but which would normally be open and therefore available for the admission of inpatients should be included in 30 June, end of financial year figures, but for average bed numbers, beds in wards which were closed for any reason (except weekend closures for beds/wards staffed and available for five days per week) should not be included. Numbers are to be provided as an average for the year and also at a point in time (end of year figures). The average is to be calculated from monthly figures where available (if not, basis is to be stated).

Item E8: Salaries and wages by staffing categories

Level of enumeration: Establishment.

Definition:

Salaries and wages payments for all employees of the establishment (including contract staff employed by an agency, provided staffing data are also available). This is to include all paid leave (recreation, sick and long-service) and also including salary and wage payments relating to workers' compensation leave for the following staffing categories:

- salaried medical officers;
- registered nurses;
- enrolled nurses;
- student nurses;
- trainee/pupil nurses;
- other personal care staff;
- diagnostic and health professionals;
- administrative and clerical staff; and
- domestic and other staff.

Generally, salary data by staffing categories should be broadly consistent with full-time equivalent staffing numbers. Where staff provide services to more than one hospital, their salaries should be apportioned between all hospitals to whom services are provided on the basis of hours worked in each hospital.

Salary payments for contract staff employed through an agency should be included under salaries for the appropriate staff category provided they are included in full-time equivalent staffing – if not, show salary payments separately.

Item E9: Payments to visiting medical officers

Level of enumeration: Establishment.

Definition:

All payments made to visiting medical officers for medical services provided to hospital (public) patients on an honorary sessionally paid or fee-for-service basis.

A visiting medical officer is a medical practitioner appointed by the hospital board to provide medical services for hospital (public) patients on an honorary sessionally paid or fee-for-service basis. This category includes the same Australian Standard Classification of Occupations codes as the 'salaried medical officers' category.

Item E10: Superannuation employer contributions (including funding basis)

Level of enumeration: Establishment.

Definition:

Superannuation employer contributions

Contributions paid or (for an emerging cost scheme) that should be paid (as determined by an actuary) on behalf of establishment employees either by the establishment or a central administration such as a State health authority, to a superannuation fund providing retirement and related benefits to establishment employees.

Funding basis

The following different funding bases are identified:

- paid by hospital to fully funded scheme;
- paid by Commonwealth government or State government to fully funded scheme; and
- unfunded or emerging costs schemes where employer component is not presently funded.

Fully funded schemes are those in which employer and employee contributions are paid into an invested fund. Benefits are paid from the fund. Most private sector schemes are fully funded.

Emerging cost schemes are those in which the cost of benefits is met at the time a benefit becomes payable; that is, there is no ongoing invested fund from which benefits are paid. The Commonwealth Superannuation Fund is an example of this type of scheme as employer benefits are paid out of general revenue.

Item E11: Drug supplies

Level of enumeration: Establishment.

Definition:

The cost of all drugs including the cost of containers. Gross expenditure should be reported with no revenue offsets (except for inter-hospital transfers).

Item E12: Medical and surgical supplies

Level of enumeration: Establishment.

Definition:

The cost of all consumables of a medical or surgical nature (excluding drug supplies) but not including expenditure on equipment repairs. Gross expenditure should be reported with no revenue offsets (except for inter-hospital transfers).

Item E13: Food supplies

Level of enumeration: Establishment.

Definition:

The cost of all food and beverages but not including kitchen expenses such as utensils, cleaning materials, cutlery and crockery. Gross expenditure should be reported with no revenue offsets (except for inter-hospital transfers).

Item E14: Domestic services

Level of enumeration: Establishment.

Definition:

The costs of all domestic services including electricity, other fuel and power, domestic services for staff, accommodation and kitchen expenses but not including salaries and wages, food costs or equipment replacement and repair costs. Gross expenditure should be reported with no revenue offsets (except for inter-hospital transfers).

Item E15: Repairs and maintenance

Level of enumeration: Establishment.

Definition:

The costs incurred in maintaining, repairing, replacing and providing additional equipment, maintaining and renovating building and minor additional works. Expenditure of a capital nature should not be included here. Do not include salaries and wages of repair and maintenance staff. Gross expenditure should be reported with no revenue offsets (except for inter-hospital transfers).

Item E16: Patient transport

Level of enumeration: Establishment.

Definition:

The direct cost of transporting patients excluding salaries and wages of transport staff.

Item E17: Administrative expenses

Level of enumeration: Establishment.

Definition:

All expenditure incurred by establishments (but not central administrations) of a management expenses/administrative support nature such as any rates and taxes, printing, telephone, stationery and insurance (including workers' compensation).

Item E18: Interest payments

Level of enumeration: Establishment.

Definition:

Payments made by or on behalf of the establishment in respect of borrowings (for example, interest on bank overdraft) provided the establishment is permitted to borrow. This does not include the cost of equity capital (that is, dividends on shares) in respect of for-profit private establishments.

Item E19: Depreciation

Level of enumeration: Establishment.

Definition:

Depreciation represents the 'expensing' of a long-term asset over its useful life and is related to the basic accounting principle of matching revenue and expenses for the financial period. Depreciation charges for the current financial year only should be shown as expenditure. Where intangible assets are amortised (such as with some private hospitals) this should also be included in recurrent expenditure.

Item E20: Other recurrent expenditure

Level of enumeration: Establishment.

Definition:

Other payments are all other recurrent expenditure not included elsewhere in any of the recurrent expenditure categories. Gross expenditure should be reported with no revenue offsets (except for inter-hospital transfers).

Appendix E

Analysis of HASAC estimation of inpatient fractions

One of the methodological issues in determining average cost per casemix-adjusted separation is the estimation of inpatient fractions (IFRACs). Theoretically this value could range from 0% to 100%, therefore it has a considerable influence on the bottom line. In this report IFRACs were provided by State and Territory health authorities at the hospital level for Victoria, Queensland, South Australia, the principal hospital in the Australian Capital Territory, and for the teaching and non-teaching groups of hospitals in Western Australia. For all other hospitals the IFRAC was estimated by using the HASAC conversion of non-admitted patient services into admitted patient bed-days.

The two issues arising from this are, firstly, a consistent approach to estimating IFRACs was not used for all jurisdictions, and, secondly, where HASAC is used it is a ratio established on the basis of hospital practices in 1971.

The first issue can be addressed by using the HASAC-calculated IFRACs for all hospitals. The results of this action are shown in Table E.1, in the rows labelled 'using HASAC=5.753'. Note that this reduces the average cost per casemix-adjusted separation by about 5% in Victoria and Queensland, with less significant changes in the other jurisdictions for which IFRACs were provided.

The conversion ratio was established almost 25 years ago, and reflected a resource relationship between admitted and non-admitted services at that time. Over the intervening period, the average length of stay for admitted patients has shortened (from 9.8 days in 1969–70 to 4.7 days in 1993–94) with a consequent increase in daily resource intensity. It is difficult to determine the change in resource intensity for non-admitted services over this period, though it is reasonable to question that the original ratio is still applicable.

The use of alternative ratios is tested in the table. The ratio of 7.102 non-admitted patient services to one bed-day was derived from the stated IFRACs provided by Victoria, Queensland and South Australia. The other two ratios shown are hypothetical, and indicate the direction and degree of the effect of using higher ratios. Other ratios may be tested using the data provided in the first two lines and the following formula:

$$\mathrm{IFRAC}_{\mathrm{H}} = \frac{OBD_S}{OBD_S + \left(\frac{NIOOS}{RATIO}\right)}$$

where $\mathrm{IFRAC}_{\mathrm{H}}$ is the estimated IFRAC using the HASAC approach, OBDs is the total occupied bed-days, NIOOS is the total non-inpatient occasions of service and RATIO is the ratio of non-admitted services to bed-days that is being tested.

Note, though, that such tests will not fit this series exactly, as other adjustments have been made in determining overall cost per separation, and the IFRACs shown below were calculated using hospital-level data.

Table E.1: Cost per casemix-adjusted separation based on different IFRACs, public acute hospitals, 1993–94

Variable	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Total occupied bed-days ('000s)	5,739	3,474	2,790	1,473	1,399	422	241	183	15,721
Total non-inpatient occasions of service ('000s)[a]	12,346	6,559	6,115	2,643	2,119	664	404	322	31,173
Total recurrent expenditure ($m)	3,821	2,231	1,481	896	820	253	191	116	9,809
Inpatient fractions (%)									
As used in this report	71.7	79.3	77.0	74.8	79.8	77.4	77.4	76.9	75.5
Using HASAC=5.753	71.7	74.9	73.2	76.2	77.7	77.4	77.2	76.9	73.9
Using HASAC=7.102 [b]	75.6	78.4	76.8	79.8	81.0	80.7	80.7	80.3	77.6
Using HASAC=7.500	76.5	79.3	77.7	80.7	81.8	81.6	81.5	81.2	78.4
Using HASAC=8.000	77.6	80.3	78.7	81.7	82.7	82.5	82.5	82.1	79.5
Cost per casemix-adjusted separation ($)[c]									
As used in this report	2,348	2,307	2,234	2,283	2,208	2,809	3,237	2,948	2,327
Using HASAC=5.753	2,348	2,184	2,127	2,323	2,154	2,809	3,232	2,948	2,280
Using HASAC=7.102	2,460	2,284	2,227	2,427	2,238	2,927	3,360	3,075	2,384
Using HASAC=7.500	2,487	2,308	2,252	2,451	2,259	2,955	3,390	3,105	2,410
Using HASAC=8.000	2,519	2,336	2,279	2,480	2,282	2,987	3,425	3,140	2,439
Change on reported value (%)									
Using HASAC=5.753	–	-5.3	-4.8	1.8	-2.5	–	-0.2	–	-2.0
Using HASAC=7.102	4.8	-1.0	-0.3	6.3	1.4	4.2	3.8	4.3	2.5
Using HASAC=7.500	5.9	–	0.8	7.4	2.3	5.2	4.7	5.3	3.6
Using HASAC=8.000	7.3	1.3	2.1	8.6	3.3	6.3	5.8	6.5	4.8

(a) The number of non-inpatient services for WA was only available at the State level, therefore the estimates of IFRACs and costs shown in tl may be different from estimates based on hospital-level data.

(b) This ratio is derived from the inpatient fractions supplied by Vic, Qld and SA only.

(c) Includes costs for medical services.

Sources: AIHW National Minimum Data Set collection, unpublished; HSH casemix database, unpublished; HSH Medicare Agreements data, unpublished

Appendix F

Comparison of expenditure data sources

The recurrent expenditure data used in this report were derived from the Institute's National Minimum Data Set collection which is used to produce the *Hospital Utilisation and Costs Study* (HUCS) series. The data are defined by NHDD items E8–E20 (with E19 – depreciation – not in scope for public hospitals).

It was sensible to use the HUCS expenditure data as it related to the activity data used for some of the indicators. Other sources of hospital expenditure data are available and these are listed in Table F.1 below.

The discrepancies among these sources are difficult to explain, but lie in the reasons for and methods of collection. The Commonwealth Grants Commission, for example, aims not so much to report actual expenditure, but to assess the relative needs of States and Territories for financial assistance from the Commonwealth.

Clearly, there are issues to be worked through in moving towards greater consistency among these and other sources. Projects currently under way – such as the development of a standard hospital chart of accounts and a standard classification of health expenditure – will contribute to achieving greater consistency.

In the meantime, readers should be aware of the discrepancies in expenditure data (and, to a lesser extent, activity and other data) and consider these when interpreting the results.

Table F.1: Recurrent expenditure data: comparison of sources, public acute hospitals, 1993–94

Variable	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Total recurrent expenditure									
National Minimum Data Set (HUCS) [a]	3,821	2,231	1,481	896	820	253	191	116	9,809
Commonwealth Grants Commission [b]	2,536	2,162	1,422	793	719	223	182	101	8,138
Medicare Agreements data [c]	4,140	2,290	np	np	828	258	204	118	na
ABS Government finance statistics [d]	3,422	2,068	1,382	993	819	213	258	135	9,290
Expenditure as a proportion of HUCS (%)									
Commonwealth Grants Commission	66.4	96.9	96.0	88.5	87.6	88.2	95.5	87.4	83.0
Medicare Agreements data	108.4	102.6	na	na	101.0	101.8	106.9	101.3	na
ABS Government finance statistics	89.6	92.7	93.3	110.8	99.9	84.1	135.2	116.3	94.7

(a) Recurrent expenditure used in this report.
(b) Estimated gross costs of providing hospital services adjusted for cross-border transactions, Medicare bonus payments and the quarantined components of the Hospital Funding Grants. For NSW, approximately $200m was excluded which related to the transfer of Concord repatriation hospital, and approximately $340m of non-fund items was excluded.
(c) Estimated gross operating costs for recognised hospitals.
(d) Estimated State and Territory current outlays: includes Economic Transactions Framework categories 1113, 1115 and 1131 for general hospitals and hospitals not elsewhere classified.

Sources: AIHW National Minimum Data Set collection, unpublished; Commonwealth Grants Commission 1995; HSH Medicare Agreements data, unpublished; ABS Government finance statistics database, unpublished.

Appendix G

Descriptive data for top 20 AN-DRGs

Table G.1: Top 20 AN-DRGs by volume (including same-day cases): key statistics, public and private acute hospitals, Australia, 1993–94[(a)]

Rank	AN-DRG	Description	Separations	Bed-days	% total separations	% total bed-days	% same day separations for AN-DRG
1	572	Admit for renal dialysis	228,173	232,993	5.4	1.3	99.3
2	674	Vaginal delivery without complicating diagnosis	140,900	573,671	3.4	3.1	1.1
3	780	Chemotherapy	108,810	132,952	2.6	0.7	88.0
4	727	Neonate, admission weight > 2499 g, without significant OR procedure, without problem	108,595	423,672	2.6	2.3	5.8
5	332	Other gastroscopy for non-major digestive disease, without complications	99,016	127,410	2.4	0.7	89.3
6	335	Other colonoscopy without complications	85,397	111,464	2.0	0.6	86.8
7	683	Abortion with D&C, aspiration curettage or hysterotomy	63,160	73,289	1.5	0.4	72.4
8	099	Lens procedure without vitrectomy, without complications	54,523	88,200	1.3	0.5	40.3
9	187	Bronchitis and asthma, age < 50, without complications	51,385	117,417	1.2	0.6	9.9
10	484	Other skin, subcutaneous tissue and breast procedures	49,964	76,256	1.2	0.4	77.8
11	128	Dental extraction and restorations	47,083	53,417	1.1	0.3	62.5
12	421	Knee procedures	44,147	79,466	1.1	0.4	47.2
13	943	Other factors influencing health status, age < 80, without complications	42,070	155,372	1.0	0.8	46.2
14	455	Medical back problems, age < 75, without complications	40,713	169,406	1.0	0.9	24.7
15	659	Conisation, vagina, cervix and vulva procedures	40,219	51,350	1.0	0.3	76.3
16	660	Endoscopic procedures, female reproductive system	37,313	45,224	0.9	0.2	71.3
17	122	Tonsillectomy and/or adenoidectomy	36,386	59,066	0.9	0.3	9.2
18	347	Abdominal pain or mesenteric adenitis, without complications	36,257	79,707	0.9	0.4	21.5
19	686	Other antenatal admission with moderate or no complicating diagnosis	34,977	79,931	0.8	0.4	25.4
20	252	Heart failure and shock	34,586	324,328	0.8	1.7	2.4
Other			2,809,029	15,572,572	67.0	83.6	24.6
Total			**4,192,703**	**18,627,163**	**100.0**	**100.0**	**34.6**

(a) Estimates provided by HSH using AN-DRG version 3.0; data trimmed using inter-quartile range method.

Note: These estimates are based on an incomplete database, so caution should be exercised in interpreting the results.

Source: HSH casemix database, unpublished.

Table G.2: Top 20 AN-DRGs by volume (excluding same-day cases): key statistics, public and private acute hospitals, Australia, 1993–94[(a)]

Rank	AN-DRG	Description	Separations	Bed-days	% total separations	% total bed-days	% same day separations for AN-DRG
1	674	Vaginal delivery without complicating diagnosis	139,340	572,111	5.1	3.3	na
2	727	Neonate, admission weight > 2499 g, without significant OR procedure, without problem	102,308	417,385	3.7	2.4	na
3	187	Bronchitis and asthma, age < 50, without complications	46,285	112,317	1.7	0.7	na
4	252	Heart failure and shock	33,746	323,488	1.2	1.9	na
5	122	Tonsillectomy and/or adenoidectomy	33,028	55,708	1.2	0.3	na
6	099	Lens procedure without vitrectomy, without complications	32,538	66,215	1.2	0.4	na
7	177	Chronic obstructive airways disease	31,331	288,335	1.1	1.7	na
8	455	Medical back problems, age < 75, without complications	30,652	159,345	1.1	0.9	na
9	367	Cholecystectomy without common duct exploration	30,390	136,024	1.1	0.8	na
10	347	Abdominal pain or mesenteric adenitis, without complications	28,473	71,923	1.0	0.4	na
11	670	Caesarean delivery, without complicating diagnosis	27,429	180,224	1.0	1.1	na
12	320	Hernia procedures except inguinal and femoral, age > 9	26,522	87,814	1.0	0.5	na
13	686	Other antenatal admission with moderate or no complicating diagnosis	26,110	71,064	1.0	0.4	na
14	274	Cardiac disorder, without AMI, with invasive cardiac investigative procedure, without complicating diagnosis, without major comorbidities	24,501	54,323	0.9	0.3	na
15	656	Uterus/adnexa procedure, without malignancy, age > 39 without complications or age < 40 with complications	23,623	140,723	0.9	0.8	na
16	421	Knee procedures	23,329	58,648	0.9	0.3	na
17	943	Other factors influencing health status, age < 80, without complications	22,647	135,949	0.8	0.8	na
18	349	Oesophagitis, gastroenteritis and other miscellaneous digestive disorders, age 10–74, without complications	22,017	64,181	0.8	0.4	na
19	941	Rehabilitation	21,950	585,972	0.8	3.4	na
20	261	Chest pain	20,892	61,212	0.8	0.4	na
Other			1,993,582	13,532,192	72.7	78.8	na
Total			**2,740,693**	**17,175,153**	**100.0**	**100.0**	**na**

(a) Estimates provided by HSH using AN-DRG version 3.0; data trimmed using inter-quartile range method.

Note: These estimates are based on an incomplete database, so caution should be exercised in interpreting the results.

Source: HSH casemix database, unpublished.

Appendix H

ICD-9-CM codes for sentinel procedures

Procedure	Codes[(a)]
Tonsillectomy ± adenoidectomy	282, 283
Hysterectomy	683–688
Caesarean section	74
CABG	361
Endoscopies	
Oesophagus	4223, 4224
Stomach	4413, 4414
Small intestine	4513, 4514, 4516
Colon	4523–4525
Hip replacement	8151, 8152
Lens insertion	137
Cholecystectomy	512
Appendicectomy	470

(a) Codes from *Annotated ICD-9-CM Volume 3*, effective 1 October 1991.

Age- and sex-standardised rates calculated using 1992–93 morbidity and population data, with the reference population being the Australian population as at 30 June 1991.

Appendix I

Test of significance for intervention rates

The intervention rates calculated for this report are estimates of the underlying rate in the population(s). Of interest is the difference between the rate estimate for one population and the rate estimate for a comparison population.

We hypothesise that the true rates are equal, and assume that the estimates are approximately normally distributed. We calculate a Z value of the difference between the rates:

$$Z = \frac{S - C}{\text{Standard error of difference}}$$

where S is the State or Territory rate, C is the comparison rate and the standard error of the difference is given by:

$$\sqrt{(\sigma_S^2 + \sigma_C^2)}$$

where s_S and s_C are the standard errors of the State and comparative rates respectively.

For age- and sex-standardised rates, the standard error of the rate is given by:

$$\sqrt{\sum_i \left(\frac{P_i^2 R_i (1 - R_i)}{P^2 P_i} \right)}$$

where P_i is the standard population in age-group i, R_i is the age-specific rate, P_i is the age-specific population at risk, and P is the total standard population.

Under the hypothesis that the true rates are equal, Z is approximately normally distributed, so we reject the hypothesis if

$$|Z| > 1.96 \quad (5\%) \text{ or}$$
$$|Z| > 2.576 \quad (1\%).$$

In most cases the 5% level is an adequate safeguard against the risk of identifying a significant result that has arisen by chance. Where many tests are performed, as in this report, there is a higher chance that one of the tests falsely produces a significant result. To reduce the overall risk, the more stringent 1% threshold is used.

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GLOSSARY

Acute

Having a short and relatively severe course.

Acute care episode

An episode of care in which the principal clinical intent is to do one or more of the following:

- manage labour (obstetric);
- cure illness or provide definitive treatment of injury;
- perform surgery;
- relieve symptoms of illness or injury (excluding palliative care);
- reduce severity of illness or injury;
- protect against exacerbation and/or complications of an illness and/or injury which could threaten life or normal functions;
- perform diagnostic or therapeutic procedures.

Acute hospital

Public, private or repatriation hospital that provides services predominantly to admitted patients with acute or temporary ailments. The term 'acute hospital' is often used synonymously with 'recognised hospital' or 'general hospital'.

Admission

The process by which an admitted patient commences an episode of care. The number of admissions has traditionally been a measure of hospital activity, though it is more appropriate to use the number of separations as the measure of activity (see below).

Admitted patient

A patient who has undergone a hospital's formal admission process. This includes same-day patients (that is, patients who are admitted and separated on the same day). Admitted patient is synonymous with inpatient.

AN-DRG

Abbreviation for Australian National-Diagnosis Related Group. Each AN-DRG represents a class of patients with similar clinical conditions requiring similar hospital services. The full set of AN-DRGs comprises a casemix classification system for use in Australian hospitals. Three versions of the classification system, and associated software, have been released to date.

Average case weight

A number describing the overall relative costliness of the patients treated by a hospital or group of hospitals compared with another hospital or group, or compared with the unit value (1.00). For example, a hospital with an average case weight of 0.96 has an overall casemix that is expected to be 8% less costly per case than a hospital that has an average case weight of 1.04.

Average length of stay (ALOS)

The average of the lengths of stay for all admitted patients in a hospital or group of hospitals. The length of stay for a patient is the difference between the date of separation and date of admission, less any leave days. For same-day patients, the length of stay is attributed a value of 1 day.

Benchmarking

The ongoing, systematic process to search for and introduce international best practice into an organisation.

Best practice

The cooperative way in which organisations and their employees undertake business activities in all key processes – and the use of benchmarking – that can be expected to lead to sustainable world-class outcomes.

Casemix

The number and type of patients treated by a hospital or group of hospitals. In Australia, casemix is described using the AN-DRG classification system.

Casemix-adjusted separations

The number of separations for a hospital or group of hospitals multiplied by the average case weight. This product is often termed the units of care.

Clearance time

A prospective measure of the capacity of the system to remove patients from the waiting list. It is calculated as the number of patients waiting at a point in time (the census point) divided by the mean number of patients cleared (admitted or removed) from the waiting list per month.

Compensable patient

An admitted patient entitled to, or who has been paid, compensation, damages or other benefits in respect of the injury, illness or disease that is being treated.

Cost weight

The relative costliness of a particular AN-DRG, determined so that the average cost weight for all AN-DRGs is 1.00.

Depreciated replacement value (DRV)

Total replacement value less accumulated depreciation that would have applied from the date of acquisition to the current financial period.

Depreciation

A representation of the service potential of an asset consumed during a financial period.

Eligible person

A resident of Australia or person visiting Australia from a country covered by a reciprocal health care agreement.

Episode of care

A phase of treatment. For most patients, a single episode of care makes up the hospital stay; for other patients, multiple episodes of care occur during the one hospital stay.

Free-standing day hospital facility

A private hospital treating patients on a same-day basis only.

Health outcome

A change in the health of an individual, or group of people or population, which is attributable to an intervention or series of interventions.

Hostel

A residential establishment for aged or disabled persons who cannot live independently but do not need nursing care.

IFRAC

Abbreviation of inpatient fraction. The IFRAC is an expression of the ratio of inpatient costs to total hospital costs.

Morbidity

Any departure from a state of physiological or psychological well-being. Collectively, morbidity refers to the details of conditions and treatments relating to a group of patients.

Non-admitted patient

A patient who receives a hospital service or attends a hospital clinic or unit and does not undergo the hospital's formal admission process. This term is synonymous with non-inpatient, but is different from outpatient in that outpatient services are a subset of all non-inpatient services.

Nursing home

An institution that provides long-term, regular, basic nursing care to chronically ill, frail or disabled persons.

Nursing home type patient (NHTP)

An eligible person admitted as a nursing home type patient, or a patient whose length of stay exceeds 35 days and who is not certified as an acute patient. The care required is consistent with that normally provided in a nursing home.

Opportunity cost

The value of the next best alternative that is sacrificed by retaining the asset.

Private patient

An eligible person who is admitted to a private hospital or, on admission to a public hospital, elects to be treated by a medical practitioner of his or her choice, or elects to be accommodated in a single room. A private patient is liable for hospital and professional charges incurred during the hospital stay.

Public (hospital) patient

An eligible person who, on admission, elects to be treated by a hospital-nominated medical practitioner and is not charged for the care or treatment provided by the hospital.

Recurrent expenditure

Expenditure which recurs continually or frequently. For this report, recurrent expenditure is defined by NHDD items E8–E18 and E20. The depreciation item (E19) does not include public hospitals in its scope in the NHDD.

Salaried medical officer

A medical practitioner engaged by a hospital on a full-time or part-time salaried basis.

Same-day patient

An admitted patient whose admission date is the same as the separation date.

Separation

The process by which an admitted patient completes an episode of care. In general, a separation is synonymous with discharge. The number of separations is a measure of hospital activity. Separations are counted instead of admissions because some information that classifies the episode of care can be determined only after the episode has concluded. For acute hospitals, the number of separations will be similar to the number of admissions for the same reporting period.

Total replacement value (TRV)

Total of current replacement cost of all assets.

Units of care

The product of the number of separations and the average case weight for a hospital or group of hospitals.

Visiting medical officer

A medical practitioner appointed by a hospital board to provide medical services for hospital (public) patients on an honorary, sessional or fee-for-service basis.

Waiting list

A register which contains essential details about patients who have been assessed as needing elective hospital care.

Waiting time

The difference between the admission date and the date a patient was registered on a waiting list. Waiting time can also be determined at census, and is the difference between the census date and the date a patient was registered on a waiting list.

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World Wide Web (WWW)

HCIA Inc. is a health care information company that markets clinical and financial decision support products to hospitals and related organisations. The company's databases and products are used to benchmark clinical performance and outcomes, and to manage the cost and delivery of health care.
E-mail contact is info@hcia.com or WWW home page is www.hcia.com/home/catalog/impag.html.

Also accessible from this home page is a summary of a report of the 100 top-performing acute care hospitals in the United States and benchmarks for successful and cost-effective health care delivery. The address is www.hcia.com/home/top100/top100top.html.

Discussion groups

Name: MHCARE-L; Description: discussion of topics pertaining to managed health care and continuous quality improvement; Contact: listserv@MIZZOU1.MISSOURI.EDU.

Name: HEALTHMGMT; Description: unmoderated discussion forum for those interested in the practice, research and education of management in health care and health care organisations; Contact: listserv@CHIMERA.SPH.UMN.EDU.