

NSW Funding Guidelines for Emergency Department Services 2002/2003

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1. Background

These guidelines are the second issued by NSW Health for the funding of Emergency Department Services. Their background lies in the report of the NSW Health Council. The Health Council report recommended that the improved management of Emergency Departments should concentrate on improving the coordination and networking of Emergency Departments and the implementation of a new method of funding. Funding should reflect the high fixed costs of Emergency Departments, the need to be available at all times to the most critically ill and the role of Emergency Departments within a broader network of critical care services.

These guidelines outline the design principles of the Emergency Department (ED) Episode Funding Model to be implemented in 2002/03. Like its counterparts for acute inpatient episode funding and Intensive Care Unit funding, it provides guidelines designed to assist Area Health Services implement the NSW ED Funding Model for their hospitals in 2002/03. It also outlines the issues that need to be addressed in refining and improving the model beyond 2002/03.

At the NSW level, the Emergency Services Implementation Group and the Funding Models Implementation Group share responsibility for developing the funding model for Emergency Departments. A sub group was established to develop recommendations on the implementation of a funding model for Emergency Departments and Professor Kathy Eagar from the Centre for Health Service Development at the University of Wollongong was engaged to design the actual model.

Consultation with clinicians and Area Health Services has been important in shaping the model outlined in this paper. This has largely occurred through the Emergency Services Implementation Group but also through a workshop with Area Health Services conducted in mid 2002.

The model for implementation in 2002/03 is based on what can feasibly be achieved in 2002 and is a refinement of the model introduced in 2001. The model will be further refined and developed over the next two years. Proposed developments are included in the paper.

2 Funding Policy

Under the Government's Action Plan for Health introduced in 2000, funding for Health Services was substantially increased and guaranteed over the next three years. This funding is allocated to Area Health Services to reflect population growth and health needs.

The Department's Resource Distribution Formula is used to guide the allocation of three year growth funds and address historical funding inequities.

Within their population based funding allocation, Area Health Services are required to allocate funds across all program areas. This task is fundamental to achieve Area Health Plans for service delivery that reflect Government and local priorities and strategies.

From 1 July 2000, Areas were required to use episode funding to allocate budgets to hospitals to meet the cost of admissions under the acute inpatient program. This did not include the Emergency Department component or Intensive Care component of admissions, which were funded through separate streams because:

- These services have high fixed capacity costs;
- The DRG system does not work well for these forms of care. Costs for patients dealt with by these services are impacted by different factors to those typically recognised in acute episode classifications (for example, triage category and severity).
- The cost weights derived for DRGs average out the ED and ICU costs across all hospitals and all episodes in each DRG. A funding model is required which recognises that the costs incurred are concentrated in hospitals with major ED and ICU services.

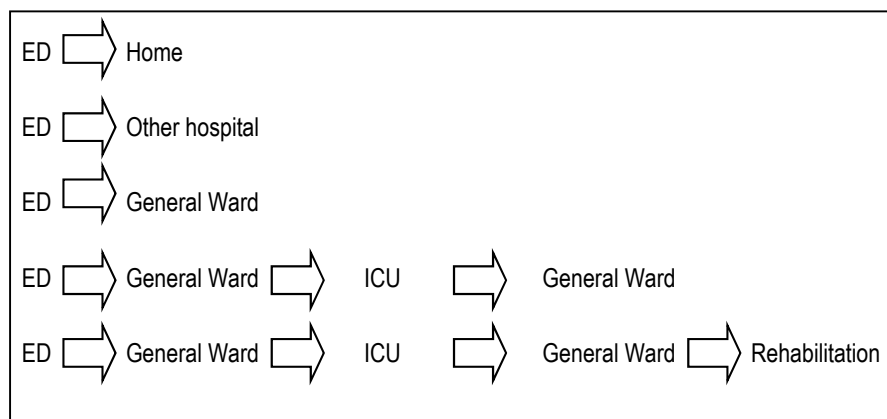
In 2002/03, separate funding models continue to apply to three different types of episodes of care:

- Acute inpatient episodes (exclusive of the Emergency Department component and/or Intensive Care component of such episodes);
- Emergency Department (ED) episodes defined as all of the care that a patient receives in an ED irrespective of whether the patient is subsequently admitted or discharged;
- Intensive Care (IC) episodes defined as all of the care that a patient receives in a designated Level 5 or 6 ICU during their inpatient stay. High dependency patients treated in these units are not included in the IC Episode Funding model.

The principle for these funding models is to recognise the costs of caring for patients at each different phase of their episode of illness. Each of these phases is known as an 'episode of care'. Information about each episode of care can be bundled together to form an integrated picture of the services that the patient receives at each point along the care continuum.

Just as 'episodes of illness' vary in their duration, intensity and outcomes, so to do 'episodes of care' vary in the objectives of care, the time involved, the nature of the interventions provided, the settings of care and the outcomes of care. Various pathways for patients who access hospitals via emergency departments are shown in Figure 1 to illustrate the diversity of patterns that are possible when a patient presents to the ED experiencing an episode of illness.

Figure 1 Examples of pathways of care after attending an ED



Episode funding will continue to be expanded in subsequent years to encompass entire episodes of illness. This will require the use of classification and costing systems that capture other settings and types of care. The overall episode of care classification schema for NSW is shown in Figure 2.

The next phase in implementing new model funding models will be the inclusion of sub-acute and non-acute care episodes for rehabilitation and palliative care. This will be possible because of the progressive implementation since 1998/99 of the Australian National Sub-Acute and Non-Acute Patient (AN-SNAP) classification in NSW. Costing and data collection are to be undertaken in 2002/03 with a view to extending funding models to rehabilitation and palliative care services for admitted patients in all designated units from 2003/04, and then to all units in future years.

Existing methods of funding will continue for the remaining services until such time as there are standard measures of output and implementation of agreed service classifications in program areas such as mental health, community health and outpatient services.

Figure 2 NSW Episode of Care Classification Model

Setting/ Type of care	Primary & Community Care	Acute		Sub- & Non-Acute
		Emergency Department	ICU	
Inpatient	N/A	AR-DRGs	ICU	AN-SNAP
Same day	N/A	AR-DRGs with same day weights		AN-SNAP
Outpatient	N/A	Select/modify available clinic based system		AN-SNAP
Community	Progressive development of specific modules for Primary & Community Care. Linkage with SNAP & MH-CASC.			AN-SNAP

Irrespective of whether the funding model is being applied to acute inpatient episodes, ED episodes or IC episodes, the objectives are the same:

- To create an explicit relationship between funds allocated and services provided;
- To shift the focus of management to outputs, outcomes and quality;
- To encourage clinicians and managers to identify variations in costs and practices so these can be managed at local level in the context of improving efficiency and effectiveness; and
- To provide mechanisms to reward good practice and support quality initiatives.

In addition, there are specific objectives in the design and implementation of the ED funding model:

- To recognise the particular features of Emergency Departments and the nature of their business.
- To recognise the availability role of Emergency Departments.
- To recognise that across the system different Emergency Departments will have different roles and funding requirements. For example, Emergency Departments in hospitals with a major referral and trauma role have a higher resource requirement. Planning processes, in particular the Metropolitan and ED Services Planning processes, are establishing the appropriate role for particular Emergency Departments.
- To ensure a component of funding is related to the services delivered (or planned to be delivered) by an Emergency Department.
- To provide balanced incentives to ensure patients are appropriately dealt with across the Emergency Department/Inpatient boundary.
- To take account of information infrastructure required to implement the recommended funding model.
- To build a capacity and incentive to benchmark and improve performance.
- To minimise complexity so that the model can be understood by the relevant stakeholders.

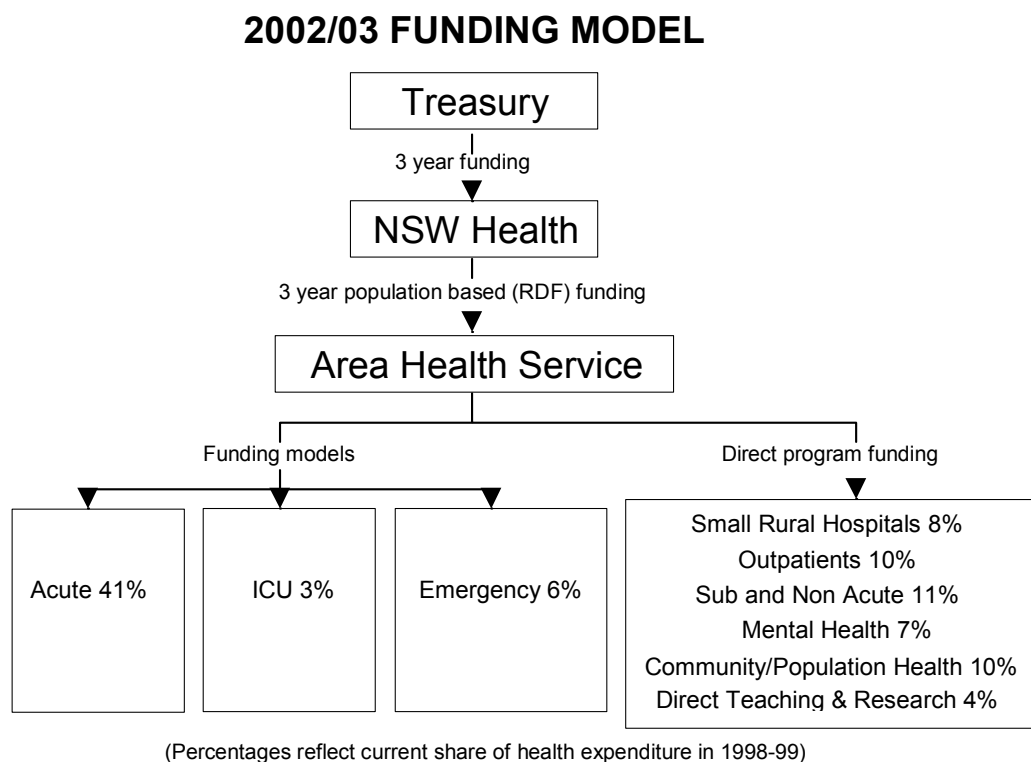
As with episode funding for acute inpatient care, the ED funding model will provide capacity to benchmark costs between comparable EDs. Due to limitations of current information and classification systems, benchmarking did not commence in 2001/02. With benchmarking now being introduced in 2002/03, any efficiencies arising from implementing the episode funding model will be retained by Area Health Services and will be used to meet increased service demand, expand services in high priority areas, introduce better models of care and invest in research, technology and training.

The Health Department will negotiate activity and performance targets with Area Health Services, particularly in the context of ensuring value in the use of enhancement funding. Area Health Services will continue to be responsible for service planning and for determining

the mix of services within global activity and performance targets, subject to any Statewide planning guidelines and requirements.

Figure 3 illustrates the role of ED funding in the context of the funding model that NSW will use in 2002/03 to fund health services.

Figure 3



2.1 Scope of ED Funding Guidelines

These guidelines are designed to assist Area Health Services implement the ED Funding Model in 2002/03. These guidelines do not concern broad strategic issues in the allocation of Area funding or in the planning and management of ED services but are designed to complement existing policies and planning guidelines prepared both by the Department and by Areas.

They are intended to be used to build up the budget allocated to each hospital and are not designed to allocate budgets to particular EDs. The process of funding clinical units within hospitals is a matter for Area Health Services and hospitals to determine within the funding framework and incentives provided by the funding models at hospital level. The make up of the ED budget will vary between Areas and Hospitals depending on the way clinical and non-clinical supra services are organised and cross charging arrangements implemented.

It is important to recognise that, before being in a position to implement the ED funding model for hospitals, Area Health Services must decide on how they will allocate resources across all programs. This task is fundamental to strategic and service planning at the Area

level and requires Area Health Services to take into account a range of considerations, including:

- Additional funding provided by the Government linked to specific service requirements (for example additional funding provided for mental health services, intensive care units, and emergency departments);
- The Area's plans for strategically changing the shape of service delivery to better reflect Government and local priorities and strategies;
- The current shape of service delivery compared to State benchmarks; and
- Major service and capital developments that will impact on the level, cost and mix of services provided.

Likewise, these guidelines do not address in any detail the funding of services other than those to be funded in 2002/2003 through the ED Funding Model. Separate guidelines are issued on the funding of ICU and acute inpatient services.

Finally, these guidelines do not include reporting requirements except in broad terms. Minimum reporting standards will be set by the Department to meet its responsibilities with more detailed levels of disaggregation to be determined by Areas. As far as possible, the Department will use routinely reported data through EDIS and ISC to generate reports for monitoring targets and performance. The Department of Health's reporting requirements in terms of activity and financial management will be issued separately and Areas will be required to provide information on target level of activity for 2002/03 and the allocation of ED episode funding by hospital.

2.2 Overview of the NSW ED Funding Model

The ED Funding Model is designed to fairly share financial risk between Area Health Services and hospitals and to create incentives that are in the best interests of patients. Area Health Services will need to ensure that hospitals carry the financial risk for those factors that are within their control (eg efficiency). However, hospitals should not be required to carry all financial risk for factors outside their control (eg differences in severity or complexity between ED patients).

As with acute inpatient services, the core feature of the ED Funding Model is the allocation of a prospectively determined budget that is linked to the expected outputs of each hospital. This is a prospective funding model in which the funding for a particular hospital or service is agreed at the beginning of the financial year and does not change through the year. However, there can be changes in funding levels between years based on revisions to activity targets.

This prospective budget has two main components – an **activity** payment that is based on the expected case weighted volume of the ED and an **infrastructure** payment. There is no intention at this stage to introduce any retrospective components into the ED funding model. However, retrospective adjustments during the year in response to actual activity levels or performance may be considered in future years.

A key feature of the Model is the use of marginal payment rates for the **activity** component of the prospective budget. This rate will be standard across NSW. It applies to all in-scope hospitals and all peer groups. It is based on 20% of the cost of the average NSW case weighted ED episode, adjusted to remove the costs of Area overheads and depreciation.

An activity payment rate of **\$65 per cost weighted ED episode** has been determined for use in 2002/03. This figure has been determined based on research indicating that about 80% of ED costs are fixed (at least in the short-term). Only about 20% of costs are variable. These variable costs – pharmacy, pathology, imaging and disposables - are determined by the volume and mix of patients seen in the ED.

In addition to activity payments, each hospital will receive an infrastructure funding component that will address the role and size of the ED and underlying differences in costs between hospitals. On average, the infrastructure payment will represent 80% of the cost of the average NSW case weighted ED attendance (weighted for volume), adjusted to remove the costs of Area overheads and depreciation. Benchmark payment rates are provided in Appendix A. There are three benchmarks – one for hospitals in acute care peer groups A1 and B1, one for the A2 hospitals and another for hospitals in peer groups B2 and C1.

In 2002/03, the infrastructure payment will include payments for both differences in costs between hospitals that can be justified and differences that cannot be justified. Justifiable cost differences are defined as the fixed costs of running an ED taking into account:

- The expected **annual volume** of patients presenting to each ED. This is by far the single biggest determinant of the costs of running an ED. About 80% of ED costs are fixed (at least in the short-term) and those fixed costs are largely determined on an estimate of the number of expected attendances. While there are daily and seasonal fluctuations, the annual number of attendances at each ED is able to be estimated with a reasonable level of accuracy;
- The **role** of the hospital and its ED with specific reference to its role in the provision of teaching and research, trauma services and retrieval relative to other hospitals in the same peer group¹;
- Differences between hospitals in their ED **casemix**. In 2002, there are two measures of casemix in the model – complexity and urgency.
- In 2002/03, **complexity** is measured and incorporated into the ED Episode Funding model by use of the variables ‘visit type’ and ‘disposition’ as a proxy for complexity. In 2002/03 there are only two disposition classes incorporated in the model – ‘ED Only’ episodes are those in which the patient is treated solely in the ED (whether as an outpatient or an admitted patient). ‘Subsequently admitted’ episodes are those in which the patient is treated in the ED and is subsequently admitted to a ward, either at the same hospital or another. Work has begun on how to better measure complexity and it is expected that more sophisticated measures will be incorporated into the model in subsequent years;
- In 2002/03, **urgency** is incorporated into the ED Episode Funding model by use of the variable ‘triage category’. In 2002/03, average triage rates per peer group are incorporated into the model for all but the A3 peer group. Hospital-specific triage rates are used for the two hospitals in the A3 group. The two childrens hospitals that comprise

¹ In 2002/2003, teaching and research costs sitting in ED cost centres are allocated as part of the T&R program to hospitals for funding purposes but are included in ED costs for comparative purposes only.

the A2 group have been included in the A1 group for this purpose. This is a temporary measure and will be reviewed when a measure of patient complexity is available;

- **Hospital-specific factors** such as layout, scope and other factors beyond the control of the hospital itself. Some Emergency Departments are physically designed to allow for more efficiencies than others, some include observation and short-stay wards, others provide an X-ray service with the Department. Some hospitals are unable to recruit to essential positions on a permanent basis and thus incur unavoidable additional costs for casual staff. The definition of a justifiable hospital-specific cost is clear. If the cause of the additional cost is within the control of the hospital and its clinicians, the additional cost is not justifiable. If the factor causing the additional cost is beyond the control of the hospital and its clinicians, it is a justifiable additional cost. As with teaching and research, additional costs are assessed relative to other hospitals in the same peer group. Each Area Health Service will be responsible for identifying any hospital-specific factors that warrant additional funding in the infrastructure payment; and
- **Hospital budgeting practices**, especially with respect to whether ambulance and retrieval costs are held by the ED or by a separate department.

Benchmarks for ED Peer Groups are included in Appendix A. Benchmarking of EDs begins in 2002/2003. From this point, if an allocation to an individual hospital cannot be justified and exceeds State benchmarks, this additional allocation will be transparently identified as a transition grant. Area Health Services will be required to phase out the transition grant within three years, beginning in 2002/03. Costs data on each hospital, and a comparison to the peer group benchmark cost, is given in Table 19.

In all instances the focus will be on unexplained differences in cost between hospitals. There are justified differences in cost between hospitals within peer groups and Area Health Services will have the capacity to justify variations above benchmarks for legitimate reasons at Area and facility level. Area Health Services should also take this opportunity to look at the funding for EDs that are operating well below benchmark to ensure the work undertaken by the department is recognised and funded appropriately to enable the provision of quality care. Likewise, Area Health Services have the opportunity to reward efficient hospitals that are operating at or below the benchmark for their peer group through funding of higher activity or enhanced services.

2.3 Specific issues in the design of the NSW ED Funding Model

2.3.1 Aligning clinical responsibilities and costs

As a general principle, the scope of ED activity to be subject to separate funding should encompass the full range of services managed by clinical managers of EDs so funding and clinical decisions are aligned.

In the case of patients who are 'ED only', this is quite straightforward. It is more complex in the case of patients subsequently admitted to a ward. In particular, the issue of diagnostics and pharmacy ordered for patients who are subsequently admitted as overnight inpatients was the subject of considerable debate and consultation during 2000/2001. The clinical management of patients treated in Emergency Departments is often shared between the ED and the attending medical officer who will ultimately manage treatment in the ward.

Frequently diagnostic tests are ordered whilst the patient is still located within the ED, but following consultation with the appropriate specialist.

The key issue under debate during the consultation process was about where to allocate funding for prescribed pharmacy (not imprest) and diagnostic (both pathology and imaging) services costs ordered within the ED funding model. One option was to fund these costs through the ED funding stream. The alternative is to allocate them to fund them through the DRG funding stream covering the medical officer and clinical unit who ultimately manages the patient in the ward to which the patient is transferred.

Each of these options creates different incentives. Allocating such costs through the ED funding stream may create incentives for the ED to develop more efficient prescribing and ordering practices. However, it may delay the ordering of required tests and treatments until the patient is transferred to a ward and thus result in increases in length of stay.

The funding model adopted in 2001/02, and maintained in 2002/03, is to allocate funding responsibility for prescribed pharmacy (not imprest) and diagnostic (both pathology and imaging) services costs ordered within the ED through the DRG funding stream to the medical officer and clinical unit who ultimately manages the patient in the ward to which the patient is transferred².

This approach is designed to create incentives for the receiving clinical unit to become actively involved in the patient's treatment from the point at which treatment begins in the ED

The rationale for this approach is:

- In many instances pathology and imaging have been ordered, and pharmaceuticals prescribed, following consultation with the specialist who will ultimately be the Attending Medical Officer for the patient.
- Assigning costs to the DRG funding stream will create incentives, on the part of the ultimate Attending Medical Officer, for the patient to be moved to the ward so that activity can be recorded against the ward rather than have the patient discharged from ED.

The implementation of these arrangements is easy when all of the costs associated with pathology, imaging and pharmaceuticals ordered can be linked to individual patients and time stamped to the ED. This occurs when there were internal charging arrangements in place. Areas without patient level cost assignment information systems will need to need to assign costs by estimating the proportion of pathology, pharmacy and imaging attributable to patients treated only in EDs.

Some AHS have indicated that their information systems cannot allow for such an approach to be fully implemented in the 2002/2003 model. In these cases, best estimates will be

² Thus, with the full implementation of the ED episode funding model, a hospital receives three funding allocations for its ED services:

1. funding through the ED funding model for the clinical activity of the ED,
2. funding through the Teaching and Research program for teaching and research in ED and
3. funding through the acute inpatient funding model for pharmacy and diagnostics for patients subsequently admitted.

The implications for internal hospital budgeting are that the funds for pharmacy and diagnostics for patients subsequently admitted should be excluded from the hospital ED budget and included in the budget of the appropriate clinical department/s.

necessary³ and action will be required during 2002/03 to allow more precise identification of the circumstances in which diagnostic tests are ordered, and appropriate allocation of budgetary responsibility. Similar issues will apply in relation to pharmaceutical treatments commenced whilst the patients is still located within the ED.

While this is the model adopted for funding purposes, it is not the approach adopted for costing and benchmarking purposes because:

- While an increasing number of hospitals can cost on this basis, many still cannot.
- The goal is to benchmark hospitals in relation to their EDs, including all of the costs that they incur in running an ED service. If the goal was to benchmark EDs as a clinical unit, a range of other indirect costs would also be removed on a consistent basis (eg, Area overhead costs over which the ED has no control).
- Removing these costs creates distortions between hospitals. The more patients who are subsequently admitted, the lower the average cost (because their pharmacy and diagnostic costs are removed).

But the effect is to double count these costs (at least in theory) because they are costed and funded through the DRG stream but also costed through the ED stream. Areas will need to remove them from the ED stream when building up hospital budgets and transfer them to the acute care stream.

With the correct costing data, it would be possible to calculate 2 benchmarks (including and excluding these costs). However, the data are not sufficiently accurate to allow this to happen at this stage, particularly because of problems with the data being reported from clinical costing sites.

The approach taken in 2002/03 is that the benchmarks include these costs but that, when building up hospital budgets, Areas remove the same amount they included in the ED cost data and allocate this back through the acute care episode funding stream.

2.3.2 Classification issues

In addition to volume and role, other important factors drive the costs of Emergency Departments that relate to the mix of cases dealt with by the Emergency Department. Factors found to be important in various costing studies include:

- Urgency;
- Age;
- Disposition (although there appear to be systematic changes in the significance of disposition);
- Complexity (ie complexity of the patient's condition as opposed to the urgency for treatment).

A funding model for ED requires the adoption of a classification of Emergency Departments episodes, and associated cost weights, that incorporates these patient-related cost drivers. The major options for classifying the services of Emergency Departments are:

- Urgency Related Groups (URGs);

³ Appendix 1 contains NSW average costs for 2000/2001 from those hospitals able to report them. These rates should be used if more accurate local data are not available.

- Urgency, Disposition and Age Related Groups (UDAGs)

Neither of these approach is “ideal” and neither can be implemented with accuracy in 2002/2003. UDAGs are the better of the two classification models but need to be updated to take account of the changing casemix of patients dealt with in Emergency Departments in more recent years. For example, more complex cases are being dealt solely within ED, and in other cases also more complex interventions pushed forward into the ED component of the stay. Any classification adopted for ED will need to be refined and developed over time to incorporate this changing and developing role.

In recent years NSW Health has adopted Urgency, Disposition and Age Related Groups (UDAGs) for classifying ED services, although the cost weights applied for these are now dated.

While there are indications that the UDAG classification provides a better classification to explain cost variation in ED than URGs, the Commonwealth has decided that the URG classification should be the national classification for ED. This limits the capacity of NSW to adopt the UDAG classification in its current form since the service weights to undertake the cost weight development are only available for URGs. Further work needs to be undertaken to determine whether UDAGs should be used in future years and, if so, whether the current age groupings are appropriate or whether it would be better to have a age split at 3 years.

A further issue is that, despite improvements, there are still data quality problems, particularly with respect to one of the key variables used in all existing ED classifications – disposition. In consequence, NSW is adopting a staged approach to the classification of ED episodes with variations in the mix of patients (urgency and complexity) being progressively incorporated into the model.

Year 1 (2001/2002)

Four options were modelled for implementation in Year 1.

Model 1 was based simply on the number of attendances to each ED. There was no weighting for complexity or urgency. This model was discounted because it would result in significant inequity between hospitals, with those doing more complex work being systematically disadvantaged.

In Model 2, the total number of attendances at each individual ED was weighted for complexity and urgency. Model 2 used the data actually reported for each hospital. It was discounted because of variability in same day admission rates that cannot be attributed to the health needs of the patients presenting to ED and because of concerns that the use of hospital-specific triage rates would create incentives for gaming.

In Model 3, the total number of attendances at each individual ED was weighted for complexity and urgency. However, the model used the average disposition and triage rates for the hospital peer group rather than the data reported for each hospital. It was discounted because it failed to take into account genuine variations in the rates of patients subsequently admitted to hospital for overnight care linked to the delineated role of each hospital.

In Model 4, the model implemented in 2001/2002, the total number of attendances at each individual ED was weighted for complexity and urgency. This model used the average triage rates for the hospital peer group (with the B1 and B2 groups amalgamated together) but each hospital's own disposition rates as a proxy for complexity.

Complexity was measured and incorporated in Models 2, 3 and 4 by use of the variable 'disposition' as a proxy. Visit type was also used in the measurement of complexity. It had originally been intended to incorporate three disposition categories (not admitted, same day ED admission and admitted to ward). However, due to variations in same day ED admission policies between hospitals, the available data are unreliable and were not useable for 2001/02.

Following consultation with the Emergency Services Implementation Group, it was decided that, in 2001/02, there would be only two disposition classes incorporated in the model:

- An 'ED Only' episode is one in which the patient is treated solely in the ED (whether as an ambulatory or an admitted patient).
- A 'Subsequently Admitted' episode is one in which the patient is treated in the ED and is subsequently admitted to a ward, either at the same hospital or another.

Urgency was incorporated into the ED Funding model by use of the 5 national triage categories. The quality of triage data was good enough to allow for their incorporation in the model in 2001/02. However, there remained concerns about the capacity to game (manipulate) triage category if hospital-level triage data were incorporated into the funding model. Following consultation with the Emergency Services Implementation Group, it was decided that average triage rates per peer group would be incorporated into the model for all but the A3 peer group.

Following consultation at a Statewide workshop in May 2001, the method for assigning ED attendances to classes was refined and the final model for 2001/02 used 3 variables from the EDIS data collection - visit type, triage and disposition. The algorithm used is:

1. If a record has missing data, the episode is classified as 'ED Only, Triage Category 5'⁴.
2. If the disposition status is 'Did Not Wait', the episode is classified as 'Did Not Wait'.
3. If the visit type is 1 (Emergency Presentation), 3 (Unplanned Return Visit for continuing condition), 5 (Referred, non-admitted person) or 9 (Person in transit) the episode is classified according to the triage score and the disposition class recorded for the visit.
4. If the visit type is 2 (Return visit - Planned ED), 4 (Outpatient Clinic) 6-8 (various types of pre-arranged admissions) the episode is reclassified to 'ED Only, Triage Category 5'
5. If the visit type is 10 (DOA), the episode is assigned a cost weight equivalent to 'Subsequently Admitted, Triage Category 5'.

Under this model, hospitals with higher rates of admission to a ward have a relative increase in volumes, as do hospitals in peer groups with above average triage scores. Thus, the share of work undertaken by the major referral centres is increased at the expense of smaller district and country hospitals. This is an acceptable outcome given that these smaller hospitals rely on the major referral centres for back-up services.

However, in practice, this is not the effect because the model applies within Area Health Services and not at the State level. The effect within each Area is shown in Appendix E.

Year 2 (2002/2003)

⁴ Thus, hospitals with poor quality EDIS data have their workload under-estimated in the funding model.

Whether or not the patient is subsequently admitted (SA) as an overnight patient remains in the model as a proxy for complexity. Work is in progress to develop a better measure:

- NSW is developing more consistent criteria for admission as a same day patient and pilot studies are in progress. If implemented in 2002/03 (for at least part of the year), the results could be used in the 2003/04 model.
- A National project to develop an ED complexity scale has begun. This project will take over a year and the earliest the scale could be introduced is some time in 2003/04. The results could go into the 2004/05 model.

Given this work in progress, no attempt was made to refine the classification or to undertake a costing study in the interim.

In consequence, there are only two changes in the 2002/2003 model. These are:

- The 11 class classification remains but the weights have been recalibrated to reflect changes in triage rates and disposition rates.
- The two childrens hospitals have been included in the A1 group for the purpose of calculating triage rates. This is a temporary measure only and will be reviewed when a measure of patient complexity is available.

The decision to include the A2 with the A1 group is based on evidence (see Table 1) that the triage patterns of children in mixed EDs are significantly different from the children in paediatric EDs. There are also differences between rural and metropolitan (in fact, the 2 childrens hospitals are not significantly different to the rural base hospitals). The effect of these differences is that the specialist childrens hospitals have a lower 'case complexity' in the model. This is also the case for A3, C2 and C1, but the impact is less because they treat a smaller proportion of children.

Table 1 Triage rates for children by peer group 2001/2002

Peer	Type	all patients <16 years	Triage 1 and 2	Triage 3	Triage 4 and 5	Children as % of total ED attendances	Peer as% of all NSW patients < 16 years
A3 Total	Ungrouped	2872	2.5%	9.2%	88.3%	11.7%	0.79%
C2 Total	Rural district	11930	1.8%	10.3%	87.9%	26.4%	3.28%
C1 Total	Rural base	61332	2.0%	19.5%	78.5%	26.2%	16.86%
A2 Total	Childrens	69440	4.3%	22.6%	73.1%	99.4%	19.09%
B2 Total	Small metro districts	62677	3.3%	34.5%	62.2%	27.0%	17.23%
B1 Total	Large metro districts	70807	6.0%	39.9%	54.0%	23.4%	19.46%
A1 Total	General referral hospitals	83287	7.0%	39.5%	53.5%	18.1%	22.89%
All		363792	4.6%	30.8%	64.6%	25.2%	100.00%

However, there are many reasons that could account for the variation seen in the table above and it is by no means clear that these variations provide a sufficiently strong reason to take a separate approach to the childrens hospitals on more than an interim basis. This issue needs to be reviewed when a measure of patient complexity is available.

Year 3 (2003/2004)

From 2003/04, it should be possible to have more consistent criteria in place for same day admissions. A direct measure of complexity should be ready for collection for at least part of 2003/04. If a more direct measure of complexity is introduced during 2003/2004, its' results could be incorporated into the model from 2004/05.

2.3.2.1 Measuring urgency

Urgency is incorporated into the model by use of the 5 level Australasian Triage Scale. The proportion of attendances by each triage category is shown in Table 2.

Analysis of 2000/2001 data suggests that, with few exceptions, triage data are generally of a high standard.

Table 2 Triage data by Peer Group – 1999/2000 and 2000/2001

1999/2000						
Peer	Triage 1	Triage 2	Triage 3	Triage 4	Triage 5	All
A1	1.6%	7.9%	35.3%	43.2%	12.0%	100.0%
A2	0.5%	3.7%	24.1%	41.5%	30.1%	100.0%
A3	0.4%	5.5%	25.0%	49.5%	19.6%	100.0%
B1	0.8%	6.6%	32.7%	46.4%	13.4%	100.0%
B2	0.7%	5.5%	25.4%	42.6%	25.8%	100.0%
C1	0.4%	3.3%	20.3%	44.6%	31.5%	100.0%
All hospitals	1.0%	6.2%	29.8%	44.2%	18.8%	100.0%
2000/2001						
Peer	Triage 1	Triage 2	Triage 3	Triage 4	Triage 5	All
A1	1.5%	8.8%	35.9%	42.7%	11.2%	100.0%
A2	0.8%	3.6%	23.3%	37.9%	34.4%	100.0%
A3	0.4%	5.7%	23.7%	49.5%	20.7%	100.0%
B1	0.8%	7.5%	36.3%	44.5%	10.9%	100.0%
B2	0.6%	5.3%	26.9%	43.5%	23.7%	100.0%
C1	0.3%	3.5%	20.6%	41.6%	34.0%	100.0%
All hospitals	0.9%	6.7%	31.2%	43.1%	18.1%	100.0%
Differences from 1999/00 to 2000/01						
Peer	Triage 1	Triage 2	Triage 3	Triage 4	Triage 5	All
A1	-0.1%	0.9%	0.6%	-0.5%	-0.8%	0.0%
A2	0.3%	-0.1%	-0.8%	-3.6%	4.3%	0.0%
A3	0.0%	0.2%	-1.3%	0.0%	1.1%	0.0%
B1	0.0%	0.9%	3.6%	-1.9%	-2.5%	0.0%
B2	-0.1%	-0.2%	1.5%	0.9%	-2.1%	0.0%
C1	-0.1%	0.2%	0.3%	-3.0%	2.5%	0.0%
All hospitals	-0.1%	0.5%	1.4%	-1.1%	-0.7%	0.0%

2.3.2.2 Measuring patient complexity

Table 3 shows disposition data by peer group. Variations in same day admission policies between hospitals means that this category was unable to be used in 2002/2003. Work is in progress to develop more consistent practices. In the interim, ambulatory (non-admitted) and same day admitted attendances are grouped together to create an 'ED Only' class. When grouped in this way, the data are sufficiently accurate to be used in 2002/2003.

Table 3 Disposition data by Peer Group– 1999/2000 and 2000/2001

1999/2000				
Peer	Subsequently admitted (SA)	ED Only	Did Not Wait	All
A1	28.5%	65.2%	6.2%	100.0%
A2	17.6%	79.4%	3.0%	100.0%
A3	16.7%	80.4%	2.8%	100.0%
B1	25.4%	74.6%	6.7%	100.0%
B2	20.8%	79.2%	3.8%	100.0%
C1	13.6%	81.2%	5.2%	100.0%
All hospitals	22.8%	71.8%	5.4%	100.0%
2000/2001				
Peer	Subsequently admitted (SA)	ED Only	Did Not Wait	All
A1	29.4%	63.0%	7.6%	100.0%
A2	15.4%	80.4%	4.2%	100.0%
A3	16.3%	80.8%	2.8%	100.0%
B1	24.3%	68.2%	7.4%	100.0%
B2	21.8%	73.9%	4.3%	100.0%
C1	17.4%	77.0%	5.6%	100.0%
All hospitals	24.0%	69.6%	6.4%	100.0%
Differences from 1999/00 to 2000/01				
Peer	Subsequently admitted (SA)	ED Only	Did Not Wait	All
A1	0.9%	-2.2%	1.4%	0.0%
A2	-2.2%	1.0%	1.2%	0.0%
A3	-0.4%	0.4%	0.0%	0.0%
B1	-1.1%	-6.4%	0.7%	0.0%
B2	1.0%	-5.3%	0.5%	0.0%
C1	3.8%	-4.2%	0.4%	0.0%
All hospitals	1.2%	-2.2%	1.0%	0.0%

However, at best, disposition is simply a crude proxy for complexity. As noted above, a more direct measure of complexity will be incorporated as soon as one is available.

2.3.3 Emergency Department Peer Groups

NSW has a well-established system for classifying hospitals into Peer Groups. This peer grouping is based solely on the hospital's inpatient activity as measured by the DRG classification and, in the acute inpatient episode funding model, different benchmarks are set for different peer groups.

A key issue considered during the development of the current guidelines was whether ED benchmarks should be based on these existing peer groups or on the delineated role of each ED (which is strongly correlated with peer group) or on some other criterion.

Following analysis of both activity and cost data three ED Peer Groups have been adopted in the 2002/2003 funding model:

ED Peer Group A1/B1

ED Peer Group A1/B1 includes 26 hospitals with a general peer group classification of A1 or B1. The funding model for ED Peer Group A1/B1 is based on using:

- Each hospital's own disposition data to classify an ED episode as either 'ED Only' or 'Subsequently Admitted'.
- The A1 average triage rate for hospitals with a general peer group classification of A1.
- The B1 average triage rate for hospitals with a general peer group classification of B1.
- The hospital-specific triage rate for the one A3 hospital included in this peer group (Sydney).

ED Peer Group A2

ED Peer Group A2 includes the 2 childrens hospitals. The funding model for ED Peer Group A2 is based on using:

- Each hospital's own disposition data to classify an ED episode as either 'ED Only' or 'Subsequently Admitted'.
- The A1 average triage rate.

ED Peer Group B2/C1

ED Peer Group B/C includes 15 hospitals with a general peer group classification of B2 or C1, plus the Newcastle Mater. The funding model for ED Peer Group B2/C1 is based on using:

- Each hospital's own disposition data to classify an ED episode as either 'ED Only' or 'Subsequently Admitted'.
- The B2 group average triage rate for hospitals with a general peer group classification of B2.
- The C1 group average triage rate for all hospitals in Peer Group C1.
- Newcastle Mater's own triage rates.

These 3 ED Peer Groups form a benchmark group for funding purposes and benchmarks have been set for each of these 3 peer groups as shown in Appendix A. The placement of the A2 Hospitals, Sydney and Newcastle Mater in particular will be reviewed again as better information on costs and ED patient complexity becomes available.

2.3.4 Teaching and Research

At the NSW funding program level, Teaching and Research (T&R) is a separate funding program. Based on a formula model, it consists of the estimated costs of teaching, learning and research.

In the ED costing study undertaken in the lead up to these guidelines, some hospitals and areas excluded 'teaching and research' costs while others made no such adjustments. Despite Cost of Care standards, there was significant variation in the amount allocated as T&R (from 0% to nearly 10%). There is no apparent reason why the percentage of T&R costs should vary as they do (ie, hospitals with similar staff profiles are reporting different amounts).

Given the variations in staff mix (particularly the mix of salaried medical staff and VMOs), the question was whether 'T&R costs' should be included or excluded when calculating the benchmark.

Excluding them would be consistent with the NSW program structure. But it distorts comparisons between hospitals. Even if all hospitals used the same formula, the effect is that hospitals with VMOs (particularly rural hospitals) look more expensive, whilst hospitals fully staffed by salaried doctors (predominantly teaching hospitals), look less expensive.

It was therefore decided that T&R costs (as reported) be included in the benchmark in 2002/03 and in future years. For funding purposes, however, the Area should continue to fund this through their T&R program allocation.

2.3.5 Funding, budgeting and access block

The issue of how the funding model would deal with access block was raised extensively during clinical consultations undertaken during the development of the model. The position initially adopted in the 2001/2002 model was that financial incentives to minimise access block are best created through internal hospital budgeting rather through Area to hospital funding. This is maintained in the 2002/2003 model.

The 2002/2003 ED funding model creates clear incentives for hospitals to better manage access block. Patients who do not proceed to a ward and are, instead, treated only in ED will be classified as an 'ED Only' episode. 'ED Only' episodes have lower costweights than episodes where the patient proceeds to a ward (see Appendix B) and no DRG payment will be made under the acute episode funding model.

It is proposed that, at the individual Area and hospital level, consideration be given to the introduction of cross-charging for patients remaining in ED due to access block. Under this arrangement, the ED would charge the relevant clinical department for patients who remain in the ED after they reach the benchmark time. Area Health Services and hospitals with access block problems are strongly recommended to move to this approach during 2002.

3 NSW Emergency Department Funding Model Guidelines

These guidelines describe 5 steps required to implement the ED funding model within an Area Health Service. These 5 steps are:

- Step 1 Determine in-scope services
- Step 2 Determine activity levels for 2002/2003
- Step 3 Determine activity budgets
- Step 4 Determine infrastructure budgets
- Step 5 Implement

Each of these steps is described below. In each case, the guidelines define the issue to be addressed and identify those elements that are mandatory within the ED Funding Model. Decisions and actions that are required at the Area level are identified in relation to:

- Policy and management,
- Service planning and activity analysis, and
- Financial planning and analysis.

3.1 Step 1 Determine In-Scope Services

Mandatory element/s

The Emergency Department funding model is to apply to hospitals with an ED with a delineated role of 4 or above. Emergency Departments with a delineated role of 4 and above “can manage most emergencies, including stabilisation and assisted ventilation” and have experienced medical officers on site 24 hours a day.

Emergency Departments with a role delineation of less than 4 are excluded from mandatory inclusion in the ED funding model. This is because these Departments do not generally have 24 hour access to the range of services available to higher level Departments and do not incur a similar level of fixed availability costs. However, there is capacity for an AHS to include a Level 3 unit in the model if appropriate (see below).

All services provided in the Emergency Department (Level 4 and above) are in-scope for episode funding through the ED stream, including the ED component of an admitted patient’s stay. This is based on the general principle that the scope of ED activity to be subject to separate funding should encompass the full range of services managed by clinical managers of EDs so funding and clinical decisions are aligned.

For hospitals in scope, there are several broad types of patients and several groups of costs that are included in the model.

The types of patients include:

- A: Non-admitted patients;
- B: Admitted patients who are admitted within the ED, and then discharged from the ED, without transfer of clinical responsibility to another doctor;

- C: Admitted patients who are admitted within the ED, dealt with jointly by the ED team and another non-ED doctor, but then discharged from the ED;
- D: Admitted patients who are admitted within the ED and then clinical responsibility is transferred to another doctor, and the patient is transferred to a ward for further treatment; and
- E: Patients dealt with by retrieval services, where ED staff are involved or consulted during the retrieval, but the patient is never actually treated in the ED itself.

Whilst it appears clear that costs for A and B should be dealt with through the Emergency Department funding stream, the boundaries between the Acute inpatient funding stream based on DRGs and the Emergency Department stream are not so clear for C and D. The funding model also has to recognise the cost involved with any referral function for E.

There are other issues to be considered in relation to various types of costs. The types of cost include:

1. Costs incurred within an ED cost centre, such as medical, nursing, allied health and other staff employed directly within the ED. Operational and consumable expenses such as imprest drugs will also be incurred under the ED cost centre.
2. Clinical costs sometimes incurred under another cost centre. These may include pathology and diagnostic imaging ordered for patients within the ED, and drugs prescribed for patients treated within the ED. Unless there is a internal charging system through which these costs are charged back to the ED cost centre, these costs will be meet by another cost centre. A number of hospitals have internal charging systems of this nature, but not all.
3. Overhead costs, including costs such as maintenance, cleaning, medical records and hospital administration.
4. Consultation and Liaison costs provided into the ED by clinical staff employed under other cost centres and Consultation and Liaison undertaken by ED staff.
5. Teaching and research costs.

Table 4 describes the approach to be adopted for 2002/2003.

Table 4 The scope of the ED funding model 2002/03.

Cost Type:	A: Non-Admitted Patients	B and C: Patients Admitted and Discharged from the ED	D: Patients Admitted in ED and transferred to Ward
Medical – ED	ED Funding Stream	ED Funding Stream	ED Funding Stream
Nursing – ED	ED Funding Stream	ED Funding Stream	ED Funding Stream
Allied Health – ED	ED Funding Stream	ED Funding Stream	ED Funding Stream
Other – ED	ED Funding Stream	ED Funding Stream	ED Funding Stream
Pharmacy – Imprest	ED Funding Stream	ED Funding Stream	ED Funding Stream
Pharmacy – Prescribed	ED Funding Stream	ED Funding Stream	DRG Funding Stream
Pathology/Imaging Ordered in ED	ED Funding Stream	ED Funding Stream	DRG Funding Stream
Overheads (related to ED cost centres)	ED Funding Stream	ED Funding Stream	ED Funding Stream
Teaching and Research	T&R Program Stream	T&R Program Stream	T&R Program Stream

Consultation and Liaison from non-ED staff	DRG Funding Stream	DRG Funding Stream	DRG Funding Stream
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Area action - policy and management

The ED role of all hospitals should be reviewed in the context of the relevant planning exercises for emergency services.

Areas need to resolve how to fund ED-type services in hospitals where the ED has a delineated role of less than Level 4. There are 3 possibilities.

- If the ED service has appropriate medical staffing, provides primarily an ED service and is on the EDIS system, classify it as an ED and include it in the funding model in ED Peer Group C irrespective of the formally delineated role or general peer group. As a general guide, these units would be expected to treat more than 15,000 (weighted) attendances in 2002/2003.
- If the ED service is not on EDIS or does not provide sufficient volume and level of services to be included in the ED episode funding model, then the costs of patients treated solely in the ED ('ED Only patients') should be funded using a block grant. The costs associated with patients who are subsequently admitted to a ward should be met through the Acute Inpatient Episode Funding allocation to the hospital. The cost of ED services for patients who are subsequently admitted is to be included in the DRG cost by use of an ED inpatient fraction (IFRAC) in the hospital's DRG cost.
- If the ED service provides primarily a primary care/outpatient service, classify it as an outpatient service for funding purposes. If so, it is out of scope for ED funding in 2002/2003 and is funded in a block grant based on the actual costs of running the unit until appropriate funding models are developed for outpatient services.

Area action - activity analysis

Assemble an EDIS activity data set for analysis. The appendices to this paper include relevant data for 2000/2001. Area Health Services have already received 2001/2002 data in electronic format for use in estimating 2002/2003 volumes.

Include all admitted patients who were treated exclusively within the ED (ie. the patient is admitted to and discharged from the ED) without being transferred to a ward. Also include the ED component of an episode for a patient who is subsequently admitted and transferred elsewhere.

Note that this activity also includes activity occurring in 'short-stay wards' (however named) that are part of the ED and under the clinical management of the Director of ED. If possible, identify and remove activity that is a substitute for outpatient activity such as methadone clinics funded through the drug and alcohol program but run in the ED. It may not be possible to remove all such activity for the 2002/2003 funding model. In this case, adopt the method used in the attachments to these guidelines and classify all such activity as ED Only, Triage Category 5.

Area action – financial

Assemble a financial data set for analysis that includes a total operating budget for each ED, including their share of both Area and hospital overheads. In most cases, this should reconcile with the hospital's program allocation under Program 2.1 (Emergency Services). However, Program 2.1 may need to be purified to ensure that it includes the cost of all in-

scope ED services shown in Table 4 and excludes the cost of out of scope services (such as methadone clinics) if the equivalent activity can be excluded (see above).

The ED funding file should include all ED cost centres, ED overhead costs (both Area and hospital) and the costs of all diagnostics and pharmacy ordered by the ED, irrespective of whether the patient is subsequently admitted. An adjustment to deal with the costs of diagnostics and pharmacy ordered by the ED but covered by acute inpatient episode funding will need to be made subsequently in Step 3 when determining the activity component for ED funding. The ED fraction of other direct cost centres such as resident medical officers should be excluded from the acute episode funding file and added as separate line items to the ED funding file.

Note that the ED funding file will contain two types of costs. Most will be the direct costs of ED that form an ED budget at the hospital level. But the file will also contain other hospital costs (overheads, RMOs etc) that will not necessarily be passed on from the hospital to the ED.

3.2. Step 2 Determine activity levels for 2002/2003

Mandatory element/s

Under the ED funding model, the ED funding budget is built up based on expected activity in 2002/03 and the fixed capacity costs of the ED.

Area action - policy and management

Decide on the cost weighted volume of services to be delivered by each hospital in 2002/2003. Start with existing levels, then increase/decrease in line with strategic service development plans, waiting time management strategies, activity forecasts based on historic trends and population growth, government initiatives and so on. Unless there are major service changes in progress, there is a high level of predicability in the demand for emergency services.

Area action - activity analysis

Modify the existing activity file to incorporate changes in expected case weighted volumes for 2002/2003. Note that the level of proposed activity is tentative only at this point as the final volumes will need to be refined in the final steps to match funding levels and activity levels.

The Department has provided Health Services with 2001/02 EDIS data in a spreadsheet that applies the cost weight rules outlined in these ED Funding Guidelines. A copy is available from Rick Sondalini, Manager Funding Policy Unit, Tel 9391 9562. Health Services can use this to spreadsheet to project the activity level for 2002/03 by estimating the increase in activity by triage and by the SA/ED Only/DNW disposition. The spreadsheet will weight these urgency and disposition variable to provide the expected case weighted volumes for 2002/2003.

Area action – financial

Calculate the total quantum of funding to be distributed through the ED funding model in 2002/2003. Start with the 2001/02 ED program allocation and expenditure budget (incorporating the recurrent allocation and revenue budget estimate). Exclude the expenditure budget allocated to out of scope hospitals and out of scope services. Separately identify the diagnostic and pharmacy costs for patients subsequently admitted and Teaching and Research costs to leave these in the pool when comparing against benchmark costs in

Appendix A. Areas should used the NSW average cross charges provided in Table 6 if they are unable to identify these costs from their own information systems.

For funding purposes, remove Area overhead costs, diagnostic and pharmacy costs for patients subsequently admitted and Teaching and Research costs from the pool of funds that will be distributed through ED funding to hospitals. If depreciation is not passed onto hospitals, exclude it from the pool of funds. The hospital will receive funding for diagnostic and pharmacy costs for patients subsequently admitted via the Acute Inpatient Episode Funding stream and the Teaching and Research costs through the hospital's T&R program allocation.

3.3. Step 3 Determine activity component

Mandatory element/s

Each hospital with an in-scope ED is to be funded through the allocation of a prospective budget to each hospital consisting of both an activity and an infrastructure component.

Area action - policy and management

Nil.

Area action - activity analysis

Nil.

Area action – financial

- 1 Calculate the budget for the activity component based on projected case weighted activity for each hospital and the standard NSW activity payment of \$65 per ED case weight.
- 2 Split this activity component into 2 budgets so that the hospital can receive specific information about each by:
 - 2.1 First calculating an allocation for pharmacy and diagnostics for 'Subsequently Admitted' patients based on hospital data on cross charges or by utilising the averages in Appendix A (see Section 2.3.1 and Appendix A for further information) and allocating this amount to the relevant clinical units.
 - 2.2 Allocating the remaining amount as an activity allocation for the hospital's ED.

3.4. Step 4 Determine infrastructure component

Mandatory element/s

The infrastructure component must be transparent and justifiable. Any infrastructure component that when combined with the activity component results in a total allocation above the benchmark for the peer group that cannot be justified will have to be allocated as a transition grant and then phased out within 3 years. For cost benchmarking purposes these allocations should include the share of Area overhead attributable to in-scope ED activity, diagnostic and pharmacy costs for patients subsequently admitted and Teaching and Research costs.

Benchmarks for each peer group are provided in Appendix A.

Area action - policy and management

Agree on criteria to be considered in determining infrastructure grants. In 2002/03, the infrastructure payment will include payments for both differences in costs between hospitals that can be justified and differences that cannot be justified. Justifiable cost differences are defined as the fixed costs of running an ED taking into account the factors outlined in Section 2.3. Area Health Services should also take this opportunity to look at the funding for the EDs that are operating well below benchmark to ensure the work undertaken by the department is recognised and funded appropriately to enable the provision of quality care.

The Department will work with Areas to review the justifiable infrastructure costs incorporated into 2002/03 budgets and to refine the methodology to be used to calculate infrastructure payments in subsequent years. These costs are likely to be based on staffing profiles of EDs of comparable role and activity with comparable levels of patient complexity. Information from the 2000/01 Hospital Cost Data Collection and a separate survey of ED expenditure will again be used to derive these infrastructure costs.

A final issue to be managed is to ensure the rate for the infrastructure component is adjusted to reflect available funds to the Area Health Service.

Area action - activity analysis

Nil.

Area action – financial

Build up a fixed infrastructure allocation for each hospital's ED. If retrieval costs are held in the ED cost centre, allocate these as a separate line item in the infrastructure payment. The level of fixed payments will vary between hospitals, although 80% of the total cost of running the ED is a guide to the average. Model the effects of the proposed fixed infrastructure grants by:

- comparing with each hospital's previous year budget adjusted to incorporate any projected changes in role or volumes; and
- adding the fixed and the activity components together, and comparing the difference with the NSW cost for the peer group (minimum, maximum and average)⁵.

3.5. Step 5 Implementation of ED funding model

Mandatory element/s

ED funding must apply for the 2002/2003 financial year. Areas that have not already done so need to bring together clinicians, hospital managers, and area staff to review the implementation of ED funding at an Area and hospital level. Area Health Services are expected to continue to involve clinicians in the process of determining and monitoring ED funded activity and budgets.

Area action - policy and management

- Implement the ED Funding model.

⁵ Note that NSW benchmarks include superannuation and workers compensation and that, if these costs are not passed onto hospitals, Areas will need to take this account when comparing costs with benchmarks.

- As part of a Funding Service Agreement with each hospital covering ED, IC and acute inpatient funding streams, including an explicit agreement about reporting arrangements, specify the amount to be allocated to the hospital for ED services and the target level of activity in 2002/03. They should also identify the difference between the amount allocated to the hospital for ED services and the amount that would be calculated through applying the benchmark rate as a transition grant;
- As outlined in the reporting requirements to be issued as part of the allocation letter to Areas, provide information on target levels of activity for 2002/03, the allocation of ED funding by hospital and the difference between the amount allocated to the hospital and the amount that would be calculated through applying the benchmark rate;
- Develop a work program to better understand ED costs and to more precisely calculate justifiable infrastructure grants from 2002/2003;
- Continue to build capacity to better identify the value of pharmacy, imaging and pathology tests ordered by EDs which are outside the scope of ED Funding;
- Develop costing capacity to provided quarterly reporting and monitoring of activity on costs by the ED Funding stream;
- If relevant, undertake further analysis to better justify variations in infrastructure grants and to allow reductions in transition payments in subsequent years.
- A process of quarterly reporting on through the year estimates of expenditure by the ED Funding stream will be initiated from 2002/03. In recognition that the costing capacity in some Health Services is not sufficiently advanced to accurately provide this information, the quarterly reporting requirements will only apply to Health Services with such capacity. All Health Services will have 2002/03 to put systems in place to undertake quarterly reporting and monitoring of activity on costs by the ED Funding stream for implementation in 2003/04. Guidelines will be issued during 2002/03 to assist all Health Services build this capacity.
- Some Area Health Services have developed broader performance agreements with hospitals that place ED, IC and Acute Inpatient Episode Funding in the context of achieving overall performance priorities and extends the concept of performance agreements that apply between the Department and Area down to a hospital level. While such performance agreements are not mandatory they are seen as good practice since they clarify joint responsibilities of the Area and its facilities in meeting health system requirements and can do so using the NSW Health's Framework for Managing the Quality of Health Services.

Area action - activity analysis

Agree on activity flow.

Area action – financial

Areas must ensure that the proposed allocations are within the expenditure that can be funded from their 2002/03 budget allocation and revenue estimates. If this is not the case, review the proposed activity levels, infrastructure and activity funding components in line with available funds.

Combine prospective activity and infrastructure components to form an ED Funding allocation for each hospital. Add in other program funding and excluded services. Agree on cash flow.

4. Conclusion

Successful implementation of ED funding requires Area Health Services to identify the mix of staff, skills and resources that have to be devoted to achieve implementation in 2002/2003 and initiate discussion at facility level with senior managers and clinicians about the practical implementation of ED funding.

The Department will continue to work with Area Health Services to provide the data, information and support required. Areas are also encouraged to share experience and expertise to assist those Health Services that face a difficult task to build the capacity to implement episode funding.

Area Health Services are encouraged to feedback comments and issues that arise during the implementation process so that they can be taken into account in refining the model to apply from 2002/2003. These comments can be directed to Rick Sondalini, Manager Funding Policy Unit on tel: 9391 9562, fax: 9391 9994 or e-mail at esond@doh.health.nsw.gov.au.

Appendix A

NSW benchmarks for ED peer hospitals and the methodology used to derive them

The benchmarks for 2002/2003 are shown in Table 5:

Table 5 2002/2003 ED Benchmarks

ED Peer Group	Benchmark per case weighted ED episode	Standard activity payment	Average infrastructure payment
ED Peer Group A1/B1 and Sydney Hospital (all A1 and B2 hospitals)	\$345	\$65	\$280
ED Peer Group A2 (the two Childrens Hospitals)	\$295	\$65	\$230
ED Peer Group B2/C1 and Newcastle Mater Hospital (all B2 and C1 hospitals)	\$260	\$65	\$195
All	\$320	\$65	\$255

A case weighted ED episode is an ED attendance weighted according to the ED Classification shown in Appendix B.

The benchmarks set for 2002/2003:

1. Are based on 2000/2001 information provided by Areas and hospitals in a special ED cost data collection undertaken in the first half of 2002.
2. Includes all of the direct costs of running the ED except any reported retrieval costs.
3. Includes share of Area and hospital overhead costs of running the ED. Where these were available from the Area or hospital or through the 2000/2001 cost of care collection, each hospital's own overhead costs were used. Where these were not available, the Statewide average rate of 32% was applied.
4. Excludes depreciation (excluding any superannuation and workers compensation managed at Area level).
5. Includes superannuation and workers compensation for all hospitals, including those where these items are retained at the Area level. Where actual figures were available, each hospital's own costs were used. Where these were not available, Statewide average rates were applied.
6. Includes all costs associated with teaching and research currently included in ED cost centres.
7. Include cross-charges or costs of pharmacy and diagnostic tests for ED patients, whether or not they were subsequently admitted. Hospital-specific costs were used where these were reported. If not, Statewide average costs were applied. These Statewide average costs are calculated across all patients (except those classified as 'Did Not Wait') in those hospitals able to report cross-charges, whether or not the patient received pharmaceuticals or diagnostic services. No overhead costs were applied to these costs, irrespective of whether they were cross-charged. The rates are shown in Table 6.
8. Include a cost escalation factor of 4.5% from 2000/01 to 2002/03.

The placement of Sydney in the A/B1 group and Newcastle Mater in the B2/C1 group will be reviewed for 2003-04 in light of improved cost data that is expected from Sydney Hospital and comparison of Newcastle Mater with other peer group hospitals.

Table 6 NSW average cross charges

	Average cost per case weighted attendance 2000/2001	Last year (1999/2000)
Pharmacy	\$8.79	\$7.30
Pathology	\$19.27	\$18.63
Radiology	\$36.10	\$14.18
All	\$64.15	\$40.11

Table 7 summarises the cost components included for both costing and funding purposes. The reason for the distinction between funding and costing is set out in Sections 2.3.1 and 2.3.5.

Table 7 Costs included for costing and funding purposes

Cost Type:	ED Funding Model		ED Cost Model
	ED Only Patients	Subsequently Admitted Patients	Is item included in ED cost model for all patients (both ED Only and those SA)?
Medical – ED	ED Funding Stream	ED Funding Stream	Yes
Nursing – ED	ED Funding Stream	ED Funding Stream	Yes
Allied Health – ED	ED Funding Stream	ED Funding Stream	Yes
Other – ED	ED Funding Stream	ED Funding Stream	Yes
Pharmacy – Imprest	ED Funding Stream	ED Funding Stream	Yes
Pharmacy – Prescribed	ED Funding Stream	DRG Funding Stream	Yes
Pathology/Imaging Ordered in ED	ED Funding Stream	DRG Funding Stream	Yes
Overheads (related to ED cost centres)	ED Funding Stream	ED Funding Stream	Yes
Teaching and Research	T&R Program Stream		Yes
Consultation and Liaison from non-ED staff	DRG Funding Stream	DRG Funding Stream	No

From 2002/2003, hospitals will thus receive up to 3 allocations for their ED services:

- An ED allocation through the ED Episode Funding Model for direct clinical activity comprising both an activity and an infrastructure component;
- An allocation through the DRG stream for the pharmacy and diagnostic costs of patients subsequently admitted; and
- An allocation through the Teaching and Research Program for their teaching and research role.

2002/2003 benchmarks include all three components.

Appendix B

NSW ED classification for use in 2002/2003

Table 8 ED classification and weights

Class	Description	Cost Weight
1	Subsequently Admitted/Priority 1	2.606
2	Subsequently Admitted/Priority 2	1.631
3	Subsequently Admitted/Priority 3	1.472
4	Subsequently Admitted/Priority 4	1.316
5	Subsequently Admitted/Priority 5	1.299
6	ED Only/Priority 1	1.351
7	ED Only/Priority 2	1.164
8	ED Only/Priority 3	0.986
9	ED Only/Priority 4	0.829
10	ED Only/Priority 5	0.680
11	Did not wait	0.497
All	All	1.000

Weights are recalibrated from original UDAG weights to exclude age as a splitting variable and for the mix of ED attendances in NSW. UDAG weights incorporate all ED costs for patients subsequently admitted and are the only ones that do so.

ED attendances are allocated to classes using the following algorithm:

1. If a record has missing data, the episode is classified as 'ED Only, Triage Category 5'.
2. If the disposition status is 'Did Not Wait', the episode is classified as 'Did Not Wait'.
3. If the visit type is 1 (Emergency Presentation), 3 (Unplanned Return Visit for continuing condition), 5 (Referred, non-admitted person) or 9 (Person in transit) the episode is classified according to the triage score and the disposition class recorded for the visit.
4. If the visit type is 2 (Return visit - Planned ED), 4 (Outpatient Clinic) 6-8 (various types of pre-arranged admissions) the episode is reclassified to 'ED Only, Triage Category 5'.
5. If the visit type is 10 (DOA), the episode is assigned a cost weight equivalent to 'Subsequently Admitted, Triage Category 5'.

Appendix C

Workload profile of each hospital under the 2002/2003 model

Table 9 2000/2001 ED raw activity data by hospital (sorted by total volume)

Ranking	Peer	Hosp	Name	Total raw volume
1	A1	Q230	John Hunter	49375
2	A1	B202	Gosford	46263
3	A1	C213	St. George	46155
4	A1	A208	Royal Prince Alfred	45973
5	A1	D209	Liverpool	45718
6	A1	B218	Royal North Shore	42873
7	A1	P208	Wollongong	41859
8	A2	A207	Westmead Kids	41002
9	A1	C231	Prince of Wales	39517
10	A1	D210	Nepean	38978
11	A1	D224	Westmead	37930
12	B1	B206	Wyong	35708
13	A1	A212	St. Vincent's	35360
14	B1	D215	Campbelltown	34793
15	B2	J216	Tamworth	34500
16	B2	R219	Wagga Wagga	31878
17	B1	D227	Bankstown	31449
18	A2	C238	Sydney Kids	28856
19	B1	C214	Sutherland	28646
20	B2	K211	Dubbo	28439
21	C1	H223	Tweed Heads	28429
22	B2	H208	Coffs Harbour	27663
23	C1	P207	Shoalhaven	27533
24	B1	D203	Blacktown	26995
25	B1	A202	Canterbury	25928
26	B2	L216	Orange	25692
27	B1	D218	Mount Druitt	25163
28	A1	A237	Concord	24836
29	B1	D206	Fairfield	24559
30	A3	Q211	Newcastle Mater	24483
31	B2	M201	Albury	24007
32	B2	H214	Lismore	22482
33	C1	P211	Shellharbour	22056
34	B1	B210	Hornsby	21906
35	C1	Q206	Maitland	21388
36	C1	S201	Broken Hill	21077
37	B1	B224	Ryde	21023
38	B1	D201	Auburn	20502
39	C1	R205	Griffith	20251
40	B1	B214	Mona Vale	19836
41	C1	L201	Bathurst	19260
42	B2	J225	Manning River	18758
43	A3	A216	Sydney	18541
44	B2	H307	Port Macquarie	18482
45	B1	B212	Manly	17635
46	C1	N209	Goulburn	15843

Note:

All data in this and subsequent tables are for 2000/2001 and include those hospitals using the EDIS information system.

Table 10 2000/2001 ED raw activity data (triage and type) by hospital

Peer	Hosp	Name	Total raw volume	SA Triage 1	SA Triage 2	SA Triage 3	SA Triage 4	SA Triage 5	SA All	ED Only Triage 1	ED Only Triage 2	ED Only Triage 3	ED Only Triage 4	ED Only Triage 5	ED Only All	Did not wait	All
A1	A208	Royal Prince Alfred	45973	0.7%	3.2%	12.6%	9.1%	3.2%	28.8%	0.1%	2.2%	17.4%	27.1%	16.8%	63.7%	7.5%	100.0%
A1	A212	St. Vincent's	35360	1.3%	4.3%	12.9%	1.4%	0.7%	20.5%	0.9%	6.6%	29.7%	29.2%	4.4%	70.8%	8.6%	100.0%
A1	A237	Concord	24836	0.8%	3.8%	13.1%	13.6%	1.9%	33.3%	0.4%	2.4%	12.9%	25.9%	19.8%	61.5%	5.2%	100.0%
A1	B202	Gosford	46263	0.7%	6.1%	12.5%	12.9%	1.2%	33.4%	0.1%	4.0%	18.0%	29.7%	10.9%	62.6%	4.0%	100.0%
A1	B218	Royal North Shore	42873	1.4%	5.5%	16.8%	10.7%	1.5%	35.9%	0.2%	4.0%	18.5%	26.6%	10.3%	59.5%	4.5%	100.0%
A1	C213	St. George	46155	1.0%	4.7%	14.4%	8.7%	0.1%	28.8%	0.1%	3.3%	20.5%	36.2%	2.8%	62.9%	8.2%	100.0%
A1	C231	Prince of Wales	39517	1.4%	3.1%	12.5%	7.9%	1.5%	26.4%	0.3%	2.4%	16.2%	29.2%	14.4%	62.4%	11.2%	100.0%
A1	D209	Liverpool	45718	1.2%	3.8%	20.2%	6.3%	0.4%	32.0%	0.4%	2.1%	25.7%	24.9%	4.4%	57.4%	10.6%	100.0%
A1	D210	Nepean	38978	1.1%	7.6%	15.5%	6.4%	0.1%	30.8%	0.5%	6.3%	22.2%	26.2%	1.7%	56.9%	12.3%	100.0%
A1	D224	Westmead	37930	1.5%	6.4%	13.7%	11.7%	0.5%	33.8%	0.2%	3.7%	13.0%	31.4%	9.0%	57.3%	8.9%	100.0%
A1	P208	Wollongong	41859	1.1%	3.7%	11.3%	5.8%	1.7%	23.7%	0.4%	4.4%	21.1%	28.7%	15.4%	70.0%	6.3%	100.0%
A1	Q230	John Hunter	49375	0.8%	2.9%	10.5%	11.1%	0.2%	25.5%	0.1%	1.7%	15.0%	47.8%	5.5%	70.0%	4.4%	100.0%
A1 Total			494837	1.1%	4.6%	13.9%	8.8%	1.1%	29.4%	0.3%	3.5%	19.3%	30.7%	9.3%	63.0%	7.6%	100.0%
A2	A207	Children's Westmead	41002	0.6%	2.3%	8.9%	4.1%	1.4%	17.3%	0.4%	1.9%	17.3%	33.1%	24.2%	77.0%	5.7%	100.0%
A2	C238	Sydney Children's	28856	0.2%	1.3%	6.3%	3.5%	1.2%	12.6%	0.1%	1.0%	10.4%	31.5%	42.3%	85.3%	2.2%	100.0%
A2 Total			69858	0.5%	1.9%	7.8%	3.9%	1.3%	15.4%	0.3%	1.5%	14.5%	32.4%	31.7%	80.4%	4.2%	100.0%
A3	A216	Sydney (excl. Eye)	18541	0.0%	0.6%	3.9%	4.2%	0.7%	9.4%	0.1%	1.8%	15.2%	47.0%	22.7%	86.8%	3.8%	100.0%
A3	Q211	Newcastle Mater	24483	0.5%	5.0%	11.9%	4.2%	0.0%	21.6%	0.1%	2.8%	14.2%	41.5%	17.7%	76.3%	2.1%	100.0%
A3 Total			43024	0.3%	3.1%	8.4%	4.2%	0.3%	16.3%	0.1%	2.4%	14.6%	43.9%	19.8%	80.8%	2.8%	100.0%
All A Group			607719	0.9%	4.2%	12.8%	7.9%	1.0%	26.8%	0.3%	3.2%	18.4%	31.8%	12.6%	66.3%	6.9%	100.0%
B1	A202	Canterbury	25928	0.5%	4.4%	10.2%	7.2%	0.4%	22.7%	0.1%	3.6%	20.2%	35.3%	7.0%	66.3%	11.1%	100.0%
B1	B206	Wyong	35708	0.4%	5.1%	8.6%	7.3%	0.3%	21.8%	0.1%	4.8%	20.7%	39.4%	5.3%	70.3%	7.8%	100.0%
B1	B210	Hornsby	21906	0.7%	5.2%	10.3%	8.9%	0.5%	25.6%	0.1%	5.7%	20.4%	30.2%	15.2%	71.7%	2.7%	100.0%
B1	B212	Manly	17635	0.6%	3.6%	11.5%	9.5%	1.1%	26.2%	0.0%	2.7%	17.1%	30.2%	21.2%	71.3%	2.6%	100.0%
B1	B214	Mona Vale	19836	0.5%	2.8%	11.0%	10.6%	1.1%	26.1%	0.1%	2.3%	14.6%	34.9%	18.9%	70.8%	3.1%	100.0%
B1	B224	Ryde	21023	0.6%	2.6%	9.4%	7.1%	0.6%	20.3%	0.1%	2.3%	17.3%	44.5%	12.0%	76.3%	3.4%	100.0%
B1	C214	Sutherland	28646	0.8%	5.7%	13.4%	7.3%	0.7%	27.9%	0.2%	4.7%	25.3%	28.7%	8.2%	67.1%	5.0%	100.0%
B1	D201	Auburn	20502	0.4%	2.4%	8.0%	6.8%	0.8%	18.4%	0.1%	1.8%	14.1%	33.4%	26.8%	76.2%	5.4%	100.0%
B1	D203	Blacktown	27043	0.7%	3.6%	11.7%	7.4%	0.3%	23.8%	0.3%	2.9%	20.7%	30.4%	3.9%	58.2%	18.0%	100.0%
B1	D206	Fairfield	24559	0.5%	4.0%	14.2%	5.7%	0.2%	24.6%	0.1%	2.4%	25.2%	36.1%	6.5%	70.3%	5.1%	100.0%
B1	D215	Campbelltown	34793	0.5%	2.6%	13.6%	5.4%	0.8%	22.9%	0.2%	3.2%	27.9%	29.4%	8.5%	69.3%	7.8%	100.0%
B1	D218	Mount Drutt	25188	0.8%	3.4%	13.0%	5.7%	0.2%	23.1%	0.2%	2.9%	22.0%	37.5%	4.5%	67.1%	9.8%	100.0%
B1	D227	Bankstown	31449	0.6%	2.8%	19.2%	9.1%	0.0%	31.7%	0.1%	1.5%	25.8%	30.9%	0.7%	58.9%	9.4%	100.0%

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Peer	Hosp	Name	Total raw volume	SA Triage 1	SA Triage 2	SA Triage 3	SA Triage 4	SA Triage 5	SA All	ED Only Triage 1	ED Only Triage 2	ED Only Triage 3	ED Only Triage 4	ED Only Triage 5	ED Only All	Did not wait	All
B2	H208	Coffs Harbour	27663	0.9%	4.9%	12.4%	4.3%	0.4%	22.8%	0.1%	2.7%	20.2%	34.0%	14.8%	71.8%	5.4%	100.0%
B2	H214	Lismore	22482	0.8%	4.0%	15.5%	8.8%	0.9%	30.2%	0.1%	1.9%	18.1%	34.3%	11.8%	66.4%	3.5%	100.0%
B2	H307	Port Macquarie	18482	0.6%	4.5%	11.5%	12.8%	1.2%	30.5%	0.1%	2.4%	12.8%	38.2%	11.7%	65.2%	4.3%	100.0%
B2	J216	Tamworth	34500	0.6%	3.8%	7.8%	4.9%	0.7%	17.8%	0.0%	2.6%	14.6%	35.7%	24.9%	77.8%	4.4%	100.0%
B2	J225	Manning River	18758	0.4%	2.7%	11.5%	10.8%	0.8%	26.3%	0.1%	1.2%	17.1%	38.1%	11.5%	68.0%	5.7%	100.0%
B2	K211	Dubbo	28439	0.3%	2.1%	13.1%	3.6%	0.8%	19.9%	0.0%	1.0%	25.8%	22.3%	26.5%	75.7%	4.4%	100.0%
B2	L216	Orange	25692	0.7%	3.5%	7.2%	5.5%	0.4%	17.3%	0.1%	2.1%	12.1%	39.6%	27.1%	81.0%	1.7%	100.0%
B2	M201	Albury	24007	0.5%	1.5%	7.8%	7.3%	0.9%	17.9%	0.1%	1.1%	13.2%	41.7%	21.0%	77.0%	5.0%	100.0%
B2	R219	Wagga Wagga	31878	0.3%	2.4%	7.0%	9.1%	1.0%	19.8%	0.0%	1.4%	6.9%	31.4%	36.3%	75.9%	4.3%	100.0%
B1 and B2 Total			566117	0.6%	3.6%	11.3%	7.3%	0.6%	23.3%	0.1%	2.6%	19.1%	34.1%	14.6%	70.6%	6.1%	100.0%
C1	H223	Tweed Heads	28429	0.4%	3.1%	7.0%	6.2%	1.0%	17.8%	0.1%	2.3%	15.9%	33.0%	23.0%	74.3%	7.9%	100.0%
C1	L201	Bathurst	19260	0.3%	1.8%	6.7%	8.8%	2.5%	20.0%	0.0%	0.7%	5.6%	29.7%	41.7%	77.9%	2.1%	100.0%
C1	N209	Goulburn	15843	0.2%	1.2%	8.1%	5.5%	1.8%	16.7%	0.0%	0.2%	14.7%	21.6%	40.7%	77.2%	6.1%	100.0%
C1	P207	Shoalhaven	27533	0.4%	3.2%	9.3%	6.4%	1.1%	20.3%	0.0%	1.7%	14.4%	36.1%	21.6%	73.9%	5.8%	100.0%
C1	P211	Shellharbour	22056	0.2%	1.6%	5.8%	4.5%	0.5%	12.7%	0.1%	1.5%	13.9%	41.7%	19.9%	77.1%	10.3%	100.0%
C1	Q206	Maitland	21388	0.3%	2.4%	12.9%	9.2%	0.5%	25.3%	0.0%	1.0%	16.2%	28.8%	22.3%	68.4%	6.4%	100.0%
C1	R205	Griffith	20251	0.2%	2.0%	9.0%	3.1%	0.3%	14.6%	0.0%	0.6%	10.5%	51.4%	21.0%	83.5%	1.8%	100.0%
C1	S201	Broken Hill	21077	0.2%	1.7%	4.7%	5.6%	1.8%	13.9%	0.0%	0.7%	6.5%	26.3%	48.2%	81.7%	4.4%	100.0%
C1 Total			175837	0.3%	2.2%	7.9%	6.2%	1.2%	17.8%	0.0%	1.2%	12.5%	34.0%	28.7%	76.5%	5.8%	100.0%
All B and C Group			741954	0.5%	3.2%	10.5%	7.0%	0.7%	22.0%	0.1%	2.3%	17.5%	34.1%	18.0%	72.0%	6.0%	100.0%
Grand Total			1349673	0.7%	3.7%	11.5%	7.4%	0.9%	24.2%	0.2%	2.7%	17.9%	33.1%	15.5%	69.4%	6.4%	100.0%

Table 11 Average case weight by hospital

Peer	Hosp	Name	Average Weight Subsequently Admitted	Average Weight ED Only	Average Weight DNW	Average Weight All
A1	B218	Royal North Shore	1.48	0.95	0.50	1.12
A1	B202	Gosford	1.48	0.95	0.50	1.11
A1	A237	Concord	1.48	0.95	0.50	1.10
A1	D224	Westmead	1.48	0.95	0.50	1.09
A1	D209	Liverpool	1.48	0.95	0.50	1.07
A1	A208	Royal Prince Alfred	1.48	0.95	0.50	1.07
A1	C213	St. George	1.48	0.95	0.50	1.06
A1	Q230	John Hunter	1.48	0.95	0.50	1.06
A1	D210	Nepean	1.48	0.95	0.50	1.06
A1	P208	Wollongong	1.48	0.95	0.50	1.05
A1	C231	Prince of Wales	1.48	0.95	0.50	1.04
B2	H214	Lismore	1.47	0.85	0.50	1.03
B2	H307	Port Macquarie	1.47	0.85	0.50	1.03
A1	A212	St. Vincent's	1.48	0.95	0.50	1.02
B1	D227	Bankstown	1.47	0.85	0.50	1.02
A2	A207	Children's Westmead	1.48	0.95	0.50	1.01
B1	C214	Sutherland	1.47	0.85	0.50	1.01
B1	B212	Manly	1.47	0.85	0.50	1.01
A2	C238	Sydney Children's	1.48	0.95	0.50	1.00
B1	B214	Mona Vale	1.47	0.85	0.50	1.00
B1	B210	Hornsby & Ku-Ring-Gai	1.47	0.85	0.50	1.00
B2	J225	Manning River	1.47	0.85	0.50	1.00
B1	D206	Fairfield	1.47	0.85	0.50	0.99
B2	H208	Coffs Harbour	1.47	0.85	0.50	0.98
A3	Q211	Newcastle Mater	1.50	0.84	0.50	0.97
B1	B224	Ryde	1.47	0.85	0.50	0.97
B1	D215	Campbelltown	1.47	0.85	0.50	0.97
B1	D218	Mount Druitt	1.47	0.85	0.50	0.96
B2	K211	Dubbo	1.47	0.85	0.50	0.96
B2	R219	Wagga Wagga	1.47	0.85	0.50	0.96
B1	B206	Wyong	1.47	0.85	0.50	0.96
B2	L216	Orange	1.47	0.85	0.50	0.95
B1	A202	Canterbury	1.47	0.85	0.50	0.95
B1	D201	Auburn	1.47	0.85	0.50	0.95
B2	J216	Tamworth	1.47	0.85	0.50	0.95
B2	M201	Albury	1.47	0.85	0.50	0.95
B1	D203	Blacktown	1.47	0.85	0.50	0.94
C1	Q206	Maitland	1.36	0.80	0.50	0.92
C1	L201	Bathurst	1.36	0.80	0.50	0.91
C1	P207	Shoalhaven	1.36	0.80	0.50	0.90
C1	R205	Griffith	1.36	0.80	0.50	0.88
C1	H223	Tweed Heads	1.36	0.80	0.50	0.88
C1	N209	Goulburn	1.36	0.80	0.50	0.88
C1	S201	Broken Hill	1.36	0.80	0.50	0.87
A3	A216	Sydney (excl. Sydney Eye)	1.40	0.83	0.50	0.87
C1	P211	Shellharbour	1.36	0.80	0.50	0.84

Appendix D

Impact of the 2002/2003 model by hospital

Table 12 Impact of case weighting by hospital

Peer	Hosp	Name	Raw activity	Case weighted activity	Difference	Difference %
A1	B218	Royal North Shore	42873	47992	5119	11.9%
A1	B202	Gosford	46263	51259	4996	10.8%
A1	A237	Concord	24836	27381	2545	10.2%
A1	D224	Westmead	37930	41301	3371	8.9%
A1	D209	Liverpool	45718	48960	3242	7.1%
A1	A208	Royal Prince Alfred	45973	49088	3115	6.8%
A1	C213	St. George	46155	49142	2987	6.5%
A1	Q230	John Hunter	49375	52535	3160	6.4%
A1	D210	Nepean	38978	41186	2208	5.7%
A1	P208	Wollongong	41859	43772	1913	4.6%
A1	C231	Prince of Wales	39517	41033	1516	3.8%
B2	H214	Lismore	22482	23104	622	2.8%
B2	H307	Port Macquarie	18482	18978	496	2.7%
A1	A212	St. Vincent's	35360	36008	648	1.8%
B1	D227	Bankstown	31449	31953	504	1.6%
A2	A207	Children's Westmead	41002	41588	586	1.4%
B1	C214	Sutherland	28646	28881	235	0.8%
B1	B212	Manly	17635	17746	111	0.6%
A2	C238	Sydney Children's	28856	28987	131	0.5%
B1	B214	Mona Vale	19836	19911	75	0.4%
B1	B210	Hornsby & Ku-Ring-Gai	21906	21955	49	0.2%
B2	J225	Manning River	18758	18672	-86	-0.5%
B1	D206	Fairfield	24559	24259	-300	-1.2%
B2	H208	Coffs Harbour	27663	26988	-675	-2.4%
A3	Q211	Newcastle Mater	24483	23831	-652	-2.7%
B1	B224	Ryde	21023	20338	-685	-3.3%
B1	D215	Campbelltown	34793	33651	-1142	-3.3%
B1	D218	Mount Druitt	25163	24205	-958	-3.8%
B2	K211	Dubbo	28439	27326	-1113	-3.9%
B2	R219	Wagga Wagga	31878	30630	-1248	-3.9%
B1	B206	Wyong	35708	34306	-1402	-3.9%
B2	L216	Orange	25692	24520	-1172	-4.6%
B1	A202	Canterbury	25928	24741	-1187	-4.6%
B1	D201	Auburn	20502	19439	-1063	-5.2%
B2	J216	Tamworth	34500	32691	-1809	-5.2%
B2	M201	Albury	24007	22720	-1287	-5.4%
B1	D203	Blacktown	26995	25289	-1706	-6.3%
C1	Q206	Maitland	21388	19768	-1620	-7.6%
C1	L201	Bathurst	19260	17486	-1774	-9.2%
C1	P207	Shoalhaven	27533	24729	-2804	-10.2%
C1	H223	Tweed Heads	28429	24962	-3467	-12.2%
C1	N209	Goulburn	15843	13899	-1944	-12.3%
C1	S201	Broken Hill	21077	18277	-2800	-13.3%
A3	A216	Sydney	18541	16074	-2467	-13.3%
C1	P211	Shellharbour	22056	18569	-3487	-15.8%

Note: Maitland adjusted to take account of co-located GP primary care service.

Appendix E

*Impact of the 2002/2003 model within each Area Health Service***Table 13 Impact within each Area Health Service**

<i>Hosp</i>	<i>Name</i>	<i>Weighted Volumes 1999/2000</i>	<i>% of Area case weighted ED attendances 1999/2000</i>	<i>Weighted Volumes 2000/2001</i>	<i>% of Area case weighted ED attendances 2000/2001</i>	<i>% change in weighted activity between 1999 and 2000</i>
<i>Central Sydney</i>						
A202	Canterbury	24748	25.28%	24741	24.45%	-0.03%
A208	Royal Prince Alfred Hosp	46481	47.48%	49088	48.50%	5.61%
A237	Concord	26656	27.23%	27381	27.05%	2.72%
CSAHS		97885	100.00%	101211	100.00%	3.40%
<i>Central Coast</i>						
B202	Gosford	46751	59.29%	51259	59.91%	9.64%
B206	Wyong	32101	40.71%	34306	40.09%	6.87%
CCAHS		78852	100.00%	85565	100.00%	8.51%
<i>Northern Sydney</i>						
B210	Hornsby & Ku-Ring-Gai	22048	17.82%	21955	17.16%	-0.42%
B212	Manly	18613	15.05%	17746	13.87%	-4.65%
B214	Mona Vale	18408	14.88%	19911	15.56%	8.17%
B218	Royal North Shore	44842	36.25%	47992	37.51%	7.02%
B224	Ryde	19799	16.00%	20338	15.90%	2.73%
NSAHS		123709	100.00%	127943	100.00%	3.42%
<i>South East Sydney</i>						
A212	St. Vincent's	32809	17.53%	36008	17.99%	9.75%
A216	Sydney	15522	8.29%	16074	8.03%	3.56%
C213	St. George	45555	24.34%	49142	24.56%	7.87%
C214	Sutherland	29016	15.50%	28881	14.43%	-0.46%
C231	Prince of Wales	39170	20.93%	41033	20.50%	4.76%
C238	Sydney Children's	25102	13.41%	28987	14.48%	15.48%
SESAHS		187174	100.00%	200125	100.00%	6.92%
<i>Western Sydney</i>						
D201	Auburn	18892	16.75%	19439	17.63%	2.89%
D203	Blacktown	27346	24.25%	25289	22.94%	-7.52%
D218	Mount Druitt	25134	22.29%	24205	21.96%	-3.69%
D224	Westmead	41397	36.71%	41301	37.47%	-0.23%
WSAHS		112769	100.00%	110234	100.00%	-2.25%
<i>South West Sydney</i>						
D215	Campbelltown	34095	25.39%	33651	24.24%	-1.30%
D206	Fairfield	22608	16.84%	24259	17.47%	7.30%
D209	Liverpool	45259	33.71%	48960	35.27%	8.18%
D227	Bankstown	32309	24.06%	31953	23.02%	-1.10%
SWSAHS		134270	100.00%	138823	100.00%	3.39%
<i>Wentworth</i>						
D210	Nepean	38192	100.00%	41186	100.00%	7.84%
WAHS		38192	100.00%	41186	100.00%	7.84%

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<i>Hosp</i>	<i>Name</i>	<i>Weighted Volumes 1999/2000</i>	<i>% of Area case weighted ED attendances 1999/2000</i>	<i>Weighted Volumes 2000/2001</i>	<i>% of Area case weighted ED attendances 2000/2001</i>	<i>% change in weighted activity between 1999 and 2000</i>
<i>Illawarra</i>						
P207	Shoalhaven	24926	30.17%	24729	28.40%	-0.79%
P208	Wollongong	39424	47.71%	43772	50.27%	11.03%
P211	Shellharbour	18281	22.12%	18569	21.33%	1.58%
IAHS		82631	100.00%	87071	100.00%	5.37%
<i>Hunter</i>						
Q206	Maitland	21483	23.48%	19768	20.56%	-7.99%
Q211	Newcastle Mater	21908	23.94%	23831	24.79%	8.78%
Q230	John Hunter	48107	52.58%	52535	54.65%	9.20%
HAHS		91498	100.00%	96133	100.00%	5.07%
<i>Mid North Coast</i>						
H208	Coffs Harbour	25238	57.98%	26988	59.11%	6.94%
J225	Manning River	18289	42.02%	18672	40.89%	2.10%
MNCAHS		43527	100.00%	45660	100.00%	4.90%
<i>Northern Rivers</i>						
H214	Lismore	22215	48.57%	23104	48.07%	4.00%
H223	Tweed Heads	23520	51.43%	24962	51.93%	6.13%
NRAHS		45735	100.00%	48066	100.00%	5.10%
<i>New England</i>						
J216	Tamworth	33138	100.00%	32691	100.00%	-1.35%
NEAHS		33138	100.00%	32691	100.00%	-1.35%
<i>Macquarie</i>						
K211	Dubbo	25708	100.00%	27326	100.00%	6.29%
MAHS		25708	100.00%	27326	100.00%	6.29%
<i>Mid Western</i>						
L201	Bathurst	16624	42.41%	17486	41.63%	5.18%
L216	Orange	22575	57.59%	24520	58.37%	8.62%
MWAHS		39199	100.00%	42006	100.00%	7.16%
<i>Greater Murray</i>						
M201	Albury	22468	42.41%	22720	42.59%	1.12%
R219	Wagga Wagga	30516	57.59%	30630	57.41%	0.38%
GMAHS		52984	100.00%	53351	100.00%	0.69%
<i>Southern NSW</i>						
N209	Goulburn Base Hosp	13746	100.00%	13899	100.00%	1.11%
SAHS		13746	100.00%	13899	100.00%	1.11%
<i>Far West</i>						
S201	Broken Hill Base Hosp	18526	100.00%	18277	100.00%	-1.34%
FWAHS		18526	100.00%	18277	100.00%	-1.34%

Appendix F

Summary cost data by ED Peer Group and Area

Table 14 Average cost by Acute Care Peer Group

Peer	Average cost per case weighted attendance	Difference from NSW average	Difference from most expensive group (B1 Group)
B1 only	\$331	\$25	\$0
A1 only	\$329	\$22	-\$2
A3 only	\$257	\$6	-\$19
A2 only	\$281	-\$26	-\$51
B2 only	\$247	-\$59	-\$84
C1 only	\$251	-\$56	-\$80
All	\$306	\$0	-\$25

Note: Sydney, Broken Hill and Port Macquarie Hospitals excluded from this and all other cost tables.

Table 15 Average cost by ED Peer Group

Peer	Average cost per case weighted attendance
A1/B1	\$330
A2	\$281
B2/C1	\$249
All	\$306

Table 16 Results by Area (listed in order of cost)

<i>Hosp</i>	<i>Cost per weighted attendance</i>	<i>Peer average</i>	<i>Difference per weighted attendance</i>
WSAHS	\$360	\$330	\$30
NSAHS	\$343	\$330	\$13
SWSAHS	\$342	\$330	\$12
CCAHS	\$339	\$330	\$9
WAHS	\$336	\$330	\$6
SESAHS	\$328	\$322	\$6
IAHS	\$303	\$290	\$13
CSAHS	\$285	\$330	-\$45
SAHS	\$282	\$249	\$33
MNCAHS	\$274	\$249	\$25
GMAHS	\$253	\$249	\$4
NEAHS	\$249	\$249	\$0
NRAHS	\$248	\$249	-\$1
MWAHS	\$240	\$249	-\$9
HAHS	\$240	\$293	-\$53
MAHS	\$234	\$249	-\$15

Cost per weighted attendance is the average for all ED episodes in the Area Health Service. Peer average is based on the ED Peer Group mix within each Area. Sydney, Broken Hill and Port Macquarie Hospitals are excluded.

Appendix G

Summary cost data by hospital 2000/2001 listed in order of cost

Table 17 Cost by hospital in order of cost

Hosp	Average weight	Cost per subsequently admitted, with cross charges and overheads	Cost per ED Only, with cross charges and overheads	Cost per DNW, with overheads but no cross charges	Average weighted cost (CW of 1)	Difference from NSW average
Hornsby	1.00	\$602	\$350	\$203	\$409	\$103
Westmead	1.09	\$582	\$371	\$195	\$392	\$86
St. Vincent's	1.02	\$563	\$359	\$188	\$379	\$73
Liverpool	1.07	\$541	\$345	\$181	\$365	\$59
Manly	1.01	\$531	\$309	\$180	\$361	\$55
Wollongong	1.05	\$533	\$340	\$178	\$359	\$53
Blacktown	0.94	\$525	\$305	\$177	\$357	\$51
Bankstown	1.02	\$517	\$300	\$175	\$352	\$46
RNS	1.12	\$515	\$328	\$172	\$347	\$41
Gosford	1.11	\$505	\$322	\$169	\$340	\$34
Wyong	0.96	\$495	\$287	\$167	\$336	\$30
Nepean	1.06	\$498	\$318	\$167	\$336	\$30
Auburn	0.95	\$492	\$286	\$166	\$335	\$29
Mt Druitt	0.96	\$482	\$280	\$163	\$328	\$22
St George	1.06	\$486	\$310	\$163	\$327	\$21
Sutherland	1.01	\$470	\$273	\$159	\$320	\$14
Fairfield	0.99	\$467	\$271	\$158	\$317	\$11
POW	1.04	\$470	\$300	\$157	\$316	\$10
Campbelltown	0.97	\$465	\$270	\$157	\$316	\$10
Concord	1.10	\$451	\$287	\$151	\$304	-\$2
Mona Vale	1.00	\$437	\$254	\$148	\$297	-\$9
Ryde	0.97	\$429	\$249	\$145	\$292	-\$14
Sydney Children's	1.00	\$433	\$277	\$145	\$292	-\$14
Canterbury	0.95	\$427	\$248	\$144	\$290	-\$16
Goulburn	0.88	\$384	\$226	\$140	\$282	-\$24
Coffs Harbour	0.98	\$415	\$241	\$140	\$282	-\$24
Bathurst	0.91	\$377	\$223	\$138	\$277	-\$29
Albury	0.95	\$403	\$234	\$136	\$274	-\$32
Westmead Kids	1.01	\$405	\$258	\$136	\$273	-\$33
Royal Prince Alfred	1.07	\$403	\$257	\$135	\$271	-\$35
Manning Base	1.00	\$386	\$224	\$130	\$262	-\$44
Lismore	1.03	\$378	\$220	\$128	\$257	-\$49
Newcastle Mater	0.97	\$386	\$215	\$128	\$257	-\$49
Shoalhaven	0.90	\$343	\$202	\$125	\$252	-\$54
Tamworth	0.95	\$365	\$212	\$124	\$249	-\$57
Tweed	0.88	\$326	\$192	\$119	\$239	-\$67
Wagga Wagga	0.96	\$349	\$203	\$118	\$237	-\$69
Shellharbour	0.84	\$323	\$190	\$118	\$237	-\$69
John Hunter	1.06	\$348	\$222	\$117	\$235	-\$71
Dubbo	0.96	\$345	\$200	\$117	\$234	-\$72
Maitland	0.92	\$318	\$188	\$116	\$234	-\$72
Orange	0.95	\$314	\$182	\$106	\$213	-\$93
All	1.00	\$450	\$271	\$152	\$306	\$0

Note: Sydney, Broken Hill and Port Macquarie Hospitals excluded from this and all other cost tables.

Appendix H

Summary cost data by ED Peer Group 2002/2003

Table 18 Cost by 2002/03 ED peer Group (2001/02 costs, ranked by cost within Peers)

Peer	Code	Hosp	Cost per subsequently admitted, with cross charges and overheads	Cost per ED Only, with cross charges and overheads	Cost per DNW, with overheads but no cross charges	Average cost per weighted attendance (all)	Last year	Difference from average for peer
B1	B210	Hornsby	\$602	\$350	\$203	\$409	\$240	\$79
A1	D224	Westmead	\$582	\$371	\$195	\$392	\$293	\$62
A1	A212	St. Vincent's	\$563	\$359	\$188	\$379	\$320	\$49
A1	D209	Liverpool	\$541	\$345	\$181	\$365	\$287	\$35
B1	B212	Manly	\$531	\$309	\$180	\$361	\$219	\$31
A1	P208	Wollongong	\$533	\$340	\$178	\$359	\$314	\$29
B1	D203	Blacktown	\$525	\$305	\$177	\$357	\$297	\$27
B1	D227	Bankstown	\$517	\$300	\$175	\$352	\$275	\$22
A1	B218	RNS	\$515	\$328	\$172	\$347	\$255	\$17
A1	B202	Gosford	\$505	\$322	\$169	\$340	\$270	\$10
B1	B206	Wyong	\$495	\$287	\$167	\$336	\$279	\$6
A1	D210	Nepean	\$498	\$318	\$167	\$336	\$282	\$6
B1	D201	Auburn	\$492	\$286	\$166	\$335	\$267	\$5
B1	D218	Mt Druitt	\$482	\$280	\$163	\$328	\$330	-\$3
A1	C213	St George	\$486	\$310	\$163	\$327	\$325	-\$3
B1	C214	Sutherland	\$470	\$273	\$159	\$320	\$360	-\$11
B1	D206	Fairfield	\$467	\$271	\$158	\$317	\$255	-\$13
A1	C231	POW	\$470	\$300	\$157	\$316	\$324	-\$14
B1	D215	Campbelltown	\$465	\$270	\$157	\$316	\$221	-\$14
A1	A237	Concord	\$451	\$287	\$151	\$304	\$277	-\$26
B1	B214	Mona Vale	\$437	\$254	\$148	\$297	\$237	-\$33
B1	B224	Ryde	\$429	\$249	\$145	\$292	\$197	-\$38
B1	A202	Canterbury	\$427	\$248	\$144	\$290	\$355	-\$40
A1	A208	RPA	\$403	\$257	\$135	\$271	\$251	-\$59
A1	Q230	John Hunter	\$348	\$222	\$117	\$235	\$211	-\$95
A1/B1			\$488	\$299	\$164	\$330		\$0
A2	C238	Sydney Kids	\$433	\$277	\$145	\$292	\$314	\$11
A2	A207	Westmead Kids	\$405	\$258	\$136	\$273	\$261	-\$8
A2 only			\$417	\$266	\$140	\$281		\$0
C1	N209	Goulburn	\$384	\$226	\$140	\$282	\$386	\$33
B2	H208	Coffs Harbour	\$415	\$241	\$140	\$282	\$254	\$33
C1	L201	Bathurst	\$377	\$223	\$138	\$277	\$268	\$28
B2	J225	Manning Base	\$386	\$224	\$130	\$262	\$192	\$13
B2	H214	Lismore	\$378	\$220	\$128	\$257	\$278	\$8
A3	Q211	Newcastle Mater	\$386	\$215	\$128	\$257	\$255	\$7
C1	P207	Shoalhaven	\$343	\$202	\$125	\$252	\$247	\$2
B2	J216	Tamworth	\$365	\$212	\$124	\$249	\$213	-\$1
C1	H223	Tweed	\$326	\$192	\$119	\$239	\$0	-\$10
B2	R219	Wagga Wagga	\$349	\$203	\$118	\$237	\$239	-\$12
C1	P211	Shellharbour	\$323	\$190	\$118	\$237	\$284	-\$12
B2	K211	Dubbo	\$345	\$200	\$117	\$234	\$190	-\$15
C1	Q206	Maitland	\$318	\$188	\$116	\$234	\$185	-\$16
B2	L216	Orange	\$314	\$182	\$106	\$213	\$183	-\$36
B2/C1			\$358	\$208	\$124	\$249		\$0
All			\$450	\$271	\$152	\$306	\$271	\$0

Note: Sydney excluded due to data problems, Broken Hill excluded due to missing cost data and Port Macquarie also excluded.

Table 19 Variation between actual and benchmark cost by hospital

<i>Hosp</i>	<i>Name</i>	<i>Cost by hospital</i>	<i>Peer group average</i>	<i>Difference per weighted attendance</i>
<i>Central Sydney</i>				
A202	Canterbury	\$290	\$330	\$40
A208	Royal Prince Alfred Hosp	\$271	\$330	\$59
A237	Concord	\$304	\$330	\$26
CSAHS		\$285	\$330	\$45
<i>Central Coast</i>				
B202	Gosford	\$340	\$330	-\$10
B206	Wyong	\$336	\$330	-\$6
CCAHS		\$339	\$330	-\$9
<i>Northern Sydney</i>				
B210	Hornsby & Ku-Ring-Gai	\$409	\$330	-\$79
B212	Manly	\$361	\$330	-\$31
B214	Mona Vale	\$297	\$330	\$33
B218	Royal North Shore	\$347	\$330	-\$17
B224	Ryde	\$292	\$330	\$38
NSAHS		\$343	\$330	-\$13
<i>South East Sydney</i>				
A212	St. Vincent's	\$379	\$330	-\$49
C213	St. George	\$327	\$330	\$3
C214	Sutherland	\$320	\$330	\$10
C231	Prince of Wales	\$316	\$330	\$14
C238	Sydney Children's	\$292	\$281	-\$11
SESAHS		\$328	\$322	-\$6
<i>Western Sydney</i>				
D201	Auburn	\$335	\$330	-\$5
D203	Blacktown	\$357	\$330	-\$27
D218	Mount Druitt	\$328	\$330	\$2
D224	Westmead	\$392	\$330	-\$62
WSAHS		\$360	\$330	-\$30
<i>South West Sydney</i>				
D215	Campbelltown	\$316	\$330	\$14
D206	Fairfield	\$317	\$330	\$13
D209	Liverpool	\$365	\$330	-\$35
D227	Bankstown	\$352	\$330	-\$22
SWSAHS		\$342	\$330	-\$12
<i>Wentworth</i>				
D210	Nepean	\$336	\$330	-\$6
WAHS		\$336	\$330	-\$6
<i>Illawarra</i>				
P207	Shoalhaven	\$252	\$249	-\$3
P208	Wollongong	\$359	\$330	-\$29
P211	Shellharbour	\$237	\$249	\$12
IAHS		\$303	\$290	-\$13
<i>Hunter</i>				

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<i>Hosp</i>	<i>Name</i>	<i>Cost by hospital</i>	<i>Peer group average</i>	<i>Difference per weighted attendance</i>
Q206	Maitland	\$234	\$249	\$15
Q211	Newcastle Mater	\$257	\$249	-\$8
Q230	John Hunter	\$235	\$330	\$95
HAHS		\$240	\$293	\$53
<i>Mid North Coast</i>				
H208	Coffs Harbour	\$282	\$249	-\$33
J225	Manning River	\$262	\$249	-\$13
MNCAHS		\$274	\$249	-\$25
<i>Northern Rivers</i>				
H214	Lismore	\$257	\$249	-\$8
H223	Tweed Heads	\$239	\$249	\$10
NRAHS		\$248	\$249	\$1
<i>New England</i>				
J216	Tamworth	\$249	\$249	\$0
NEAHS		\$249	\$249	\$0
<i>Macquarie</i>				
K211	Dubbo	\$234	\$249	\$15
MAHS		\$234	\$249	\$15
<i>Mid Western</i>				
L201	Bathurst	\$277	\$249	-\$28
L216	Orange	\$213	\$249	\$36
MWAHS		\$240	\$249	\$9
<i>Greater Murray</i>				
M201	Albury	\$274	\$249	-\$25
R219	Wagga Wagga	\$237	\$249	\$12
GMAHS		\$253	\$249	-\$4
<i>Southern NSW</i>				
N209	Goulburn Base Hosp	\$282	\$249	-\$33
SAHS		\$282	\$249	-\$33

Appendix I

Summary staffing data by ED 2000/2001

Table 20 Staffing data as provided by Areas and hospitals

			Total raw attendances reported	Total weighted attendances	Nursing FTE reported	Medical FTE reported	Admin and clerical FTE reported	Allied health	Diagnostic & other	Domestic & personal care	Weighted attendances per nursing FTE	Weighted attendances per medical FTE	Weighted attendances per admin & clerical FTE	Weighted attendances per all other FTE	Average weighted attendances per nursing FTE per week	Average weighted attendances per clerical FTE per week	Average weighted attendances per medical FTE per week
B1	B212	Manly	17,635	17,746	28.7	13.0	0.0	0.0	0.2	1.9	619	1368	0	8742	12	0	26
A3	A216	Sydney	18,541	16,074	24.6	16.8	12.0	0.0	0.0	0.0	654	955	1344	0	13	26	18
A1	A237	Concord	24,836	27,381	41.3	23.4	9.7	0.0	0.0	0.0	663	1169	2832	0	13	54	22
B1	D227	Bankstown	31,449	31,953	47.4	19.9	16.0	0.0	27.3	18.4	674	1608	1997	700	13	38	31
A1	B218	RNS	42,873	47,992	71.0	49.7	17.6	0.0	0.0	8.7	676	967	2730	5542	13	52	19
A1	D224	Westmead	37,930	41,301	61.0	39.4	19.8	0.0	0.0	8.2	677	1048	2082	5068	13	40	20
A1	D209	Liverpool	45,718	48,960	69.2	25.4	22.1	0.0	31.8	14.6	707	1930	2216	1056	14	43	37
A1	C231	Prince of Wales	39,517	41,033	57.0	28.4	2.0	0.0	0.0	0.0	720	1445	21042	0	14	405	28
B1	C214	Sutherland	28,646	28,881	39.6	21.0	9.9	0.0	8.3	8.8	730	1375	2906	1684	14	56	26
A1	C213	St. George	46,155	49,142	66.3	32.9	16.6	0.3	0.0	5.3	741	1495	2957	9203	14	57	29
A1	A208	RPA	45,973	49,088	66.2	36.2	5.1	0.0	0.0	4.0	742	1355	9701	11550	14	187	26
A1	A212	St. Vincent's	35,360	36,008	48.5	27.7	15.9	0.0	0.0	4.9	742	1302	2260	7364	14	43	25
B1	B214	Mona Vale	19,836	19,911	26.6	15.2	4.0	0.0	0.0	0.0	748	1311	4990	0	14	96	25
A1	D210	Nepean	38,978	41,186	54.9	32.4	15.6	0.0	0.0	5.9	750	1273	2633	6993	14	51	24
B1	B210	Hornsby	21,906	21,955	28.8	19.6	8.2	0.0	0.0	0.0	762	1121	2687	0	15	52	22
C1	P211	Shellharbour	22,056	18,569	23.7	9.0	0.2	0.0	0.0	0.0	782	2063	123795	0	15	2381	40
A1	P208	Wollongong	41,859	43,772	54.8	35.8	13.3	0.6	0.0	10.5	799	1224	3281	4189	15	63	24
B1	A202	Canterbury	25,928	24,741	30.9	20.2	9.7	0.0	0.0	0.0	800	1227	2561	0	15	49	24
B1	D201	Auburn	20,502	19,439	24.3	16.7	1.6	0.0	0.0	2.2	801	1167	12226	9041	15	235	22
B1	D218	Mount Druitt	25,163	24,205	30.0	18.2	9.8	0.0	0.0	0.0	807	1329	2483	0	16	48	26

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			Total raw attendances reported	Total weighted attendances	Nursing FTE reported	Medical FTE reported	Admin and clerical FTE reported	Allied health	Diagnostic & other	Domestic & personal care	Weighted attendances per nursing FTE	Weighted attendances per medical FTE	Weighted attendances per admin & clerical FTE	Weighted attendances per all other FTE	Average weighted attendances per nursing FTE per week	Average weighted attendances per clerical FTE per week	Average weighted attendances per medical FTE per week
A2	C238	Sydney Kids	28,856	28,987	34.4	26.9	7.4	0.0	0.0	0.0	843	1078	3917	0	16	75	21
B1	B224	Ryde	21,023	20,338	23.9	15.6	1.1	0.0	0.0	0.0	850	1305	18323	0	16	352	25
A2	A207	Westmead Kids	41,002	41,588	48.6	32.1	9.8	0.0	0.0	0.0	856	1296	4244	0	16	82	25
B1	D203	Blacktown	26,995	25,289	29.1	16.7	12.5	0.0	0.0	0.0	868	1517	2022	0	17	39	29
B1	D206	Fairfield	24,559	24,259	26.3	15.6	16.0	0.0	8.5	11.8	923	1560	1514	0	18	29	30
C1	H223	Tweed Heads	28,429	24,962	26.7	13.3	6.1	0.0	0.0	0.0	934	1877	4119	0	18	79	36
A1	B202	Gosford	46,263	51,259	54.7	42.0	11.5	0.0	0.0	0.0	937	1220	4457	0	18	86	23
A1	Q230	John Hunter	49,375	52,535	55.0	34.2	10.6	0.0	0.0	0.0	955	1536	4956	0	18	95	30
B1	B206	Wyong	35,708	34,306	34.2	19.3	9.9	0.0	1.0	3.5	1002	1778	3465	7624	19	67	34
C1	P207	Shoalhaven	27,533	24,729	23.7	9.0	0.2	0.0	0.0	0.0	1042	2748	164862	0	20	3170	53
B1	D215	Campbelltown	34,793	33,651	31.6	20.1	24.4	0.0	11.6	13.0	1065	1671	1379	1370	20	27	32
B2	H214	Lismore	22,482	23,104	21.2	14.3	5.6	0.0	0.0	0.0	1091	1618	4126	0	21	79	31
B2	J225	Manning River	18,758	18,672	16.1	1.0	8.4	0.0	0.0	0.1	1161	18861	2236	373443	22	43	363
B2	M201	Albury	24,007	22,720	19.1	10.7	0.5	0.0	0.0	0.0	1189	2131	45440	0	23	874	41
B2	H208	Coffs Harbour	27,663	26,988	22.2	11.0	0.0	0.0	0.0	0.0	1216	2449	0	0	23	0	47
C1	Q206	Maitland	21,388	19,768	14.7	6.6	2.7	0.0	0.0	0.0	1345	2995	7321	0	26	141	58
B2	R219	Wagga Wagga	31,878	30,630	18.6	15.5	12.8	0.0	0.0	1.0	1648	1976	2399	30630	32	46	38
B2	K211	Dubbo	28,439	27,326	16.5	6.7	0.0	0.0	3.1	0.0	1652	4103	0	8787	32	0	79
B2	J216	Tamworth	34,500	32,691	19.7	16.3	1.5	0.0	0.0	0.0	1661	2001	21794	0	32	419	38

Average weighted attendances per week is calculated by dividing total weighted attendances per FTE by 46 (46 being the average number of weeks worked per FTE). Medical workload data are unreliable for those hospitals employing VMOs as there are variations in how VMO numbers are reported.

Appendix J

Cost data by ED 2000/2001

Table 21 Raw cost data – cost modelling sites able to report overheads

Hospital name	Average amount across all	Shellharbour	Wagga Wagga	Albury Base	Shoalhaven	Wollongong	Dubbo Base	Westmead	Blacktown	Auburn	Mt. Druitt
Administrative expenses		\$5.98	\$8.40	\$9.63	\$6.60	\$8.20	\$7.34	\$10.84	\$10.18	\$7.84	\$12.22
Depreciation		\$10.05	\$9.69	\$11.44	\$5.57	\$27.88	\$5.44	\$27.27	\$31.40	\$15.58	\$17.40
Domestic services		\$5.08	\$4.49	\$5.70	\$2.53	\$5.00	\$4.17	\$9.53	\$8.90	\$6.55	\$6.63
Food supplies		\$5.02	\$0.09	\$1.38	\$2.80	\$2.41	\$0.62	\$1.01	\$2.63	\$0.36	\$3.38
Grants		\$0.01	\$0.61	\$0.74	\$0.01	\$0.01	\$0.00	\$0.09	\$0.00	\$0.00	\$0.00
Imaging	\$36.10	\$32.01	\$23.04	\$45.07	\$25.47	\$39.98	\$0.11	\$0.00	\$31.03	\$0.00	\$15.92
Interest expenses		\$0.00	\$0.03	\$0.05	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
IPTAAS		\$0.00	\$1.32	\$2.07	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Medical and surgical supplies		\$6.51	\$6.28	\$4.93	\$7.01	\$10.99	\$7.88	\$11.36	\$8.48	\$6.24	\$7.75
Pathology	\$19.27	\$11.56	\$17.51	\$0.00	\$7.74	\$14.36	\$21.25	\$0.00	\$0.00	\$0.00	\$0.00
Patient transport excluding IPTAAS		\$2.85	\$0.38	\$2.05	\$26.86	\$0.78	\$7.55	\$0.00	\$0.78	\$0.00	\$1.13
Payments to VMOs		\$0.00	\$10.86	\$25.88	\$0.36	\$0.00	\$45.41	\$0.77	\$3.64	\$1.43	\$4.46
Pharmacy	\$8.79	\$7.69	\$5.94	\$0.00	\$9.58	\$11.47	\$5.17	\$0.00	\$10.19	\$5.46	\$9.76
Prostheses		\$0.00	\$0.02	\$0.00	\$0.10	\$0.00	\$0.04	\$0.18	\$0.03	\$4.21	\$0.00
Repairs and maintenance		\$8.79	\$5.50	\$4.81	\$1.81	\$3.68	\$1.28	\$10.57	\$8.88	\$5.04	\$5.76
S&W admin & clerical		\$13.74	\$7.81	\$13.22	\$15.31	\$34.77	\$14.96	\$50.66	\$48.90	\$19.68	\$43.78
S&W Allied Health		\$0.92	\$2.27	\$1.78	\$1.55	\$4.39	\$2.98	\$17.32	\$18.42	\$13.30	\$12.29
S&W Diagnostic and professionals		\$0.53	\$13.98	\$1.54	\$0.69	\$1.97	\$0.09	\$0.00	\$0.00	\$0.00	\$0.00
S&W domestic & personal care staff		\$13.25	\$6.36	\$13.56	\$7.96	\$25.34	\$6.33	\$22.14	\$23.83	\$17.72	\$16.05
S&W Medical		\$21.23	\$50.84	\$49.75	\$59.52	\$91.47	\$21.72	\$75.39	\$69.28	\$79.85	\$73.68
S&W Nursing		\$83.80	\$47.22	\$53.35	\$61.97	\$76.83	\$38.43	\$83.95	\$71.76	\$75.19	\$73.28
Superannuation		\$9.60	\$10.18	\$12.34	\$7.59	\$16.27	\$10.59	\$22.52	\$17.66	\$17.72	\$14.35
Workers compensation		\$8.15	\$3.96	\$4.57	\$4.75	\$10.20	\$4.31	\$5.50	\$5.87	\$6.27	\$5.73
Other recurrent expenditure		\$0.46	\$10.31	\$1.33	\$1.73	\$0.95	\$0.00	\$17.26	\$17.13	\$13.24	\$14.52
Total		\$237.17	\$237.41	\$253.75	\$251.91	\$359.07	\$200.12	\$339.09	\$339.17	\$280.08	\$308.39
All medical		\$21.23	\$61.71	\$75.63	\$59.88	\$91.47	\$67.13	\$76.16	\$72.92	\$81.28	\$78.14

Note: Hospitals unable to report the costs of imaging, pharmacy, pathology, superannuation and workers compensation are allocated costs based on the NSW average

Table 21 continued

Hospital name	Average amount across all	Coffs Harbour	Manning Base	Hornsby	RNS	Manly	Mona Vale	Ryde	Lismore	Tweed	Goulburn
Administrative expenses		\$15.11	\$16.40	\$13.28	\$12.16	\$12.92	\$7.13	\$8.97	\$7.95	\$8.99	\$10.62
Depreciation		\$4.84	\$7.32	\$11.07	\$13.71	\$8.07	\$8.74	\$5.57	\$11.68	\$7.71	\$10.70
Domestic services		\$4.45	\$3.51	\$8.54	\$6.18	\$6.48	\$3.93	\$4.27	\$5.85	\$4.01	\$4.86
Food supplies		\$1.46	\$0.45	\$3.45	\$2.00	\$2.85	\$0.23	\$1.71	\$0.71	\$0.51	\$1.17
Grants		\$0.00	\$0.00	\$0.02	\$0.02	\$0.02	\$0.02	\$0.01	\$0.07	\$0.00	\$0.15
Imaging	\$36.10	\$0.00	\$0.00	\$41.49	\$30.43	\$48.94	\$0.00	\$21.80	\$8.99	\$5.13	\$22.69
Interest expenses		\$0.00	\$0.00	\$0.01	\$0.02	\$0.01	\$0.01	\$0.01	\$0.00	\$0.00	\$0.05
IPTAAS		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Medical and surgical supplies		\$5.91	\$6.83	\$8.58	\$8.40	\$9.16	\$8.82	\$7.34	\$6.68	\$8.41	\$4.31
Pathology	\$19.27	\$9.51	\$0.00	\$67.01	\$14.54	\$36.94	\$0.00	\$50.21	\$15.55	\$15.32	\$16.26
Patient transport excluding IPTAAS		\$2.57	\$2.67	\$0.52	\$0.72	\$0.00	\$0.00	\$0.39	\$9.46	\$7.46	\$6.84
Payments to VMOs		\$14.20	\$4.81	\$0.04	\$0.19	\$0.04	\$0.17	\$0.25	\$4.33	\$3.78	\$34.41
Pharmacy	\$8.79	\$0.00	\$0.00	\$21.59	\$8.36	\$11.09	\$9.06	\$7.08	\$7.55	\$1.65	\$4.43
Prostheses		\$0.00	\$0.21	\$0.01	\$0.00	\$0.00	\$0.00	\$0.00	\$0.01	\$0.00	\$0.00
Repairs and maintenance		\$7.14	\$2.69	\$6.52	\$6.95	\$5.63	\$7.82	\$5.12	\$6.21	\$5.39	\$2.66
S&W admin & clerical		\$19.20	\$30.79	\$32.87	\$32.27	\$19.82	\$17.52	\$12.56	\$22.76	\$25.78	\$21.16
S&W Allied Health		\$0.00	\$0.00	\$3.01	\$5.47	\$2.07	\$1.76	\$2.03	\$0.57	\$0.54	\$0.00
S&W Diagnostic and professionals		\$25.77	\$3.41	\$1.68	\$2.76	\$1.60	\$1.75	\$1.31	\$5.51	\$4.67	\$8.77
S&W domestic & personal care staff		\$24.41	\$9.13	\$16.48	\$9.08	\$13.94	\$9.51	\$10.60	\$12.24	\$10.76	\$9.86
S&W Medical		\$48.62	\$48.66	\$79.80	\$84.42	\$69.62	\$77.45	\$69.68	\$63.68	\$57.80	\$61.97
S&W Nursing		\$47.64	\$56.07	\$79.98	\$91.54	\$91.76	\$79.50	\$70.46	\$60.99	\$63.60	\$49.66
Superannuation		\$13.87	\$11.49	\$18.56	\$17.56	\$18.25	\$13.12	\$13.30	\$11.81	\$12.66	\$14.82
Workers compensation		\$7.05	\$4.20	\$4.08	\$6.09	\$7.96	\$4.55	\$3.91	\$6.08	\$4.99	\$7.33
Other recurrent expenditure		\$1.70	\$0.69	\$1.75	\$1.47	\$2.31	\$1.79	\$1.07	\$0.08	\$0.19	\$0.13
Total		\$248.62	\$202.03	\$409.29	\$340.62	\$361.40	\$244.13	\$292.09	\$257.06	\$241.64	\$282.14
All medical		\$62.83	\$53.47	\$79.84	\$84.62	\$69.66	\$77.62	\$69.92	\$68.01	\$61.58	\$96.37

Table 21 continued

Hospital name	Average amount across all	Fairfield	Liverpool	Campbelltown	Bankstown
Administrative expenses		\$13.13	\$16.29	\$11.94	\$12.53
Depreciation		\$13.02	\$18.45	\$7.82	\$7.97
Domestic services		\$5.56	\$6.80	\$4.84	\$6.06
Food supplies		\$4.34	\$2.53	\$1.50	\$1.54
Grants		\$0.28	\$0.33	\$0.25	\$0.27
Imaging	\$36.10	\$41.99	\$54.01	\$56.36	\$68.03
Interest expenses		\$0.00	\$0.00	\$0.00	\$0.00
IPTAAS		\$0.00	\$0.00	\$0.00	\$0.00
Medical and surgical supplies		\$9.45	\$14.06	\$8.98	\$9.99
Pathology	\$19.47	\$13.50	\$7.42	\$3.34	\$12.59
Patient transport excluding IPTAAS		\$1.26	\$1.00	\$8.29	\$0.96
Payments to VMOs		\$1.22	\$2.20	\$10.30	\$6.53
Pharmacy	\$8.95	\$6.88	\$8.47	\$8.39	\$7.28
Prostheses		\$0.05	\$0.19	\$0.01	\$0.06
Repairs and maintenance		\$8.09	\$10.43	\$9.05	\$9.34
S&W admin & clerical		\$29.17	\$21.10	\$32.08	\$33.33
S&W Allied Health		\$0.00	\$0.00	\$0.00	\$0.00
S&W Diagnostic and professionals		\$0.00	\$0.00	\$0.00	\$0.00
S&W domestic & personal care staff		\$19.18	\$11.05	\$14.42	\$20.59
S&W Medical		\$83.90	\$68.89	\$77.41	\$75.17
S&W Nursing		\$62.29	\$89.64	\$55.54	\$66.93
Superannuation		\$12.24	\$12.49	\$9.01	\$14.78
Workers compensation		\$4.63	\$6.96	\$316.18	\$5.11
Other recurrent expenditure		\$0.23	\$1.92	\$0.86	\$0.75
Total		\$317.40	\$335.78	\$316.18	\$351.85
All medical		\$85.13	\$71.09	\$87.71	\$81.71

Table 22 Raw cost data – clinical costing sites

Hospital name	Wyong	Gosford	St George	Sutherland	SCH	CHW	Nepean	St Vincent's	POW
Salaries and wages Nursing	\$64.61	\$68.76	\$80.13	\$75.34	\$72.28	\$62.44	\$83.84	\$78.59	\$94.74
Salaries and wages Medical	\$62.95	\$72.51	\$73.08	\$43.51	\$60.37	\$38.91	\$75.50	\$57.43	\$61.15
Salaries and wages Diagnostic, Allied Health and other health professionals	\$16.30	\$12.28	\$9.33	\$8.79	\$6.37	\$0.00	\$0.28	\$23.28	\$15.80
Salaries and wages admin and clerical staff	\$34.19	\$31.20	\$28.53	\$30.46	\$29.65	\$19.80	\$46.98	\$53.81	\$40.00
Salaries and wages domestic and other personal care staff	\$19.12	\$22.48	\$7.79	\$9.07	\$12.18	\$13.80	\$15.93	\$38.85	\$8.12
Payments to VMOs	\$8.27	\$1.70	\$1.94	\$4.00	\$2.20	\$0.00	-\$0.02	\$0.81	\$0.17
Pharmacy (both imprest and prescription)	\$0.00	\$0.00	\$5.12	\$0.00	\$6.02	\$1.75	\$0.00	\$10.05	\$13.42
Med & surg supplies, imaging & path	\$7.41	\$9.49	\$29.06	\$6.94	\$28.12	\$5.82	\$6.78	\$0.00	\$18.56
Food supplies	\$0.45	\$0.47	\$0.32	\$6.98	\$1.45	\$1.05	\$1.59	\$0.10	\$1.72
Domestic services	\$3.38	\$3.44	\$7.12	\$3.94	\$3.37	\$4.20	\$7.32	\$6.35	\$7.24
Patient transport excluding IPTAAS	\$8.95	\$10.94	\$1.26	\$2.33	\$0.00	\$0.00	\$1.01	\$0.80	\$0.50
Administrative expenses & workers comp	\$16.84	\$18.09	\$20.02	\$20.65	\$11.78	\$5.74	\$18.07	\$23.34	\$19.24
Interest expenses	\$0.03	\$0.03	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.18
Superannuation	\$16.78	\$17.77	\$17.25	\$15.32	\$13.56	\$10.83	\$17.77	\$21.60	\$15.74
Repairs and maintenance	\$8.20	\$8.81	\$3.11	\$6.42	\$1.43	\$4.84	\$5.70	\$14.96	\$4.45
Depreciation	\$9.26	\$8.31	\$11.00	\$13.57	\$6.87	\$11.98	\$10.40	\$7.99	\$13.89
Grants	\$0.00	\$0.00	\$0.00	\$0.01	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
IPTAAS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Other recurrent expenditure	\$7.95	\$7.27	\$1.55	\$2.28	\$2.81	\$0.85	\$2.11	\$0.00	\$3.94
Total	\$275.42	\$285.23	\$272.47	\$274.12	\$258.45	\$182.02	\$282.85	\$329.98	\$316.45
All medical	\$71.22	\$74.21	\$75.02	\$47.51	\$62.57	\$38.91	\$75.47	\$58.24	\$61.32

Table 23 Raw cost data – cost modelling sites unable to report overheads

Hospital name	Average amount across all hospitals added for sites with missing data	John Hunter	Maitland	Concord	RPA	Canterbury	Newcastle Mater	Sydney
Administrative expenses		\$3.57	\$2.57	\$2.95	\$2.15	\$1.84	\$3.88	\$9.31
Depreciation		\$0.00	\$0.60	\$2.55	\$1.80	\$1.31	\$4.84	\$1.66
Domestic services		\$2.93	\$3.15	\$1.17	\$1.50	\$3.37	\$3.11	\$2.78
Food supplies		\$0.06	\$0.10	\$0.00	\$0.01	\$0.11	\$0.10	\$0.03
Grants		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Imaging	\$36.10	\$42.08	\$33.24	\$0.00	\$0.00	\$0.00	\$0.00	\$4.19
Interest expenses		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
IPTAAS		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Medical and surgical supplies excluding prostheses		\$6.79	\$17.90	\$10.17	\$11.33	\$10.38	\$7.56	\$5.19
Pathology	\$19.27	\$0.00	\$10.57	\$0.00	\$0.00	\$11.52	\$24.93	\$29.48
Patient transport excluding IPTAAS		\$0.00	\$0.12	\$0.12	\$0.02	-\$1.99	\$0.00	\$0.00
Payments to VMOs		\$0.00	\$1.56	\$0.00	\$0.00	\$0.00	\$0.00	\$0.02
Pharmacy	\$8.79	\$4.88	\$4.62	\$7.29	\$1.69	\$8.99	\$8.54	\$7.44
Prostheses		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Repairs and maintenance		\$0.58	\$0.27	\$1.13	\$0.28	\$0.78	\$4.70	\$0.45
Salaries and wages admin and clerical staff		\$8.08	\$5.53	\$1.32	\$4.01	\$0.00	\$2.24	\$52.45
Salaries and wages Allied Health		\$0.48	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Salaries and wages Diagnostic and health professionals		\$0.00	\$0.00	\$0.00	\$0.00	\$0.06	\$1.59	\$0.00
Salaries and wages domestic and personal care staff		\$0.00	\$0.00	\$0.00	\$2.95	\$0.00	\$0.00	\$0.44
Salaries and wages Medical		\$54.40	\$55.58	\$73.14	\$61.09	\$83.54	\$44.46	\$114.76
Salaries and wages Nursing		\$55.04	\$40.59	\$84.04	\$72.20	\$67.01	\$58.81	\$63.74
Superannuation		\$0.00	\$9.12	\$0.00	\$0.00	\$0.00	\$9.43	\$15.02
Workers compensation		\$0.00	\$3.99	\$0.00	\$0.00	\$0.00	\$6.91	\$4.17
Other recurrent expenditure		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Total		\$175.30	\$188.90	\$181.32	\$157.24	\$185.62	\$176.26	\$309.47
All medical		\$54.40	\$57.14	\$73.14	\$61.09	\$83.54	\$44.46	\$114.77