

REFORMING TASMANIA'S HOSPITALS

A PROGRAM FOR CHANGE

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Executive summary

Tasmania's public hospitals cost the people of this state at least 20% more than is justified by the work they do. With the sole exception of the Canberra Hospital, the four major Tasmanian hospitals are the least efficient and worst run in the country and they have been getting worse for decades.

The most comprehensive data on the relative performance of the various state public hospital systems comes from the Australian Institute of Health and Welfare's annual *Australian Hospital Statistics* report. The table below shows the cost of the average inpatient separation (service) in Tasmania in 2011-12 was 15.9% higher than the national average and 28.5% higher than in Victoria, the most efficient state.

Cost (\$) per casemix-adjusted separation (excluding depreciation) 2011-12

	<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>WA</i>	<i>SA</i>	<i>Tas</i>	<i>ACT</i>	<i>NT</i>	<i>Aust</i>
Medical labour costs	1 185	975	1 177	1 407	1 237	1 295	1 417	1 299	1 163
Non-medical labour	2 490	2 443	2 707	2 729	2 373	2 990	3 328	2 969	2 564
<i>Nursing</i>	1 320	1 271	1 338	1 323	1 396	1 460	1 857	1 788	1 336
<i>Other staff</i>	1 169	1 172	1 368	1 406	977	1 531	1 471	1 181	1 229
Other recurrent costs	1 604	1 275	1 362	1 596	1 642	1 747	1 639	1 749	1 477
Total	5 280	4 693	5 246	5 733	5 251	6 033	6 384	6 017	5 204
Cf national average (%)	+1.4%	-9.8%	+0.8%	+10.1%	+0.9%	+15.9%	+22.6%	+15.6%	na
Cf Victoria (%)	+12.5%	na	+11.8%	+22.1%	+11.9%	+28.5%	+36.0%	+28.2%	+10.9%

Source: AIHW

The cost to Tasmanians comes both in budgetary terms but in the failure of an inefficient and badly managed system to provide the amount of care it could and should. With the right policies in place, the state's hospitals could treat at least 20% more patients for the same cost. Thousands of people each year are unnecessarily missing out on treatment because our hospitals are so badly run.

At the same time, the basis of Commonwealth hospital funding has changed radically as the central part of the federal government's national health reform package. The Commonwealth has set a national efficient price, currently at about \$4500 for the average inpatient service, weighted for complexity. Though the AIHW and the Commonwealth's Independent Hospital Pricing Authority calculate costs using somewhat different methods, it is clear that if Tasmanian costs continue at around \$6000, there will be a huge hit to the state budget. A leaked IHPA document, obtained last year, calculated the annual loss to Tasmania in hospital funding at over \$80 million, a figure which could be expected to increase with rising demand, new technology and price inflation.

Under the funding agreement between the Commonwealth and the states, 'loser' states will have access to compensatory top-up funding until the end of the 2019-20 fiscal year. But this is an illusion. Any top-up cash drawn by Tasmania will be lost in a commensurate readjustment to the state's GST entitlement by the Commonwealth Grants Commission. Unless performance improves dramatically, by 2020 the cost to the state is likely to amount to over \$500 million over a four-year budget estimates period.

The question, then, is what can be done? The state government has been well aware of this situation for some years but has been unable or unwilling to confront it effectively. Costs have continued to rise well beyond what can be justified by the state's situation. The time has come for a radical rethink of the way our hospitals do business.

Four fundamental reforms are needed:

- The state government should introduced activity-based (or casemix) funding for all hospital services. This is a system of allocating a price for each hospital service, based on what it ought to cost. The government's approach to this so far has been grossly inadequate: although the Minister has claimed to have introduced this funding method, she has not in fact done so. Per-separation costs do not appear to be calculated according to nationally accepted formulae and – more significantly – adhering to the system has been made voluntary for the state's hospitals. Once a proper and rigorous system of casemix funding has been introduced, the price paid to hospitals for each service should be reduced from their present level to the national efficient price in predictable six-monthly stages over two to three years. As broader reform bears fruit, further reductions should be possible.
- A new approach, known as 'lean thinking' or 'lean management' to be introduced in all major public hospitals. This involves constant review of patient-flow and other processes with the principal aim of eliminating everything that is not of value to the patient. Hospital staff, who know their jobs better than anyone, are centrally involved in all planning at every stage. Elsewhere, including in Australia, this approach has delivered large improvements in efficiency, safety, and staff and patient satisfaction.
- A joint, coordinated purchasing program for drugs, medical and surgical supplies to be established with Victoria and New South Wales. By combining the three states' buying power, this would revolutionise the market in hospital supplies to the public's benefit.
- Capital spending decisions must be removed from the political pork barrel. An expert committee should review all capital spending proposals over \$1 million. The minister should be prevented by law from approving a proposal that had not gained a positive recommendation from the committee. This will protect the minister from political pressure and remove the threat of corruption from these critical decisions.

For far too long, health policy from all three political parties has consisted of uncoordinated thought bubbles – proposals that seemed like a good idea at the time but which fell far short of the fundamental and systemic reform the state's hospitals and their patients desperately need. These thought bubbles often take the form of election commitments that are quickly and conveniently forgotten when the election is over. Usually this is the best outcome. When these isolated thought bubbles are enacted, they can cause serious imbalances, inequities and inefficiencies in the system. For instance, there is no overall benefit to the community if political and public pressure produces special initiatives for lower-urgency elective surgery patients if that comes at the cost of not being able to treat more seriously ill people. One recent ill-designed federal initiative elective surgery led to the state performing a huge number of cheap cataract operations but not the more expensive knee and hip replacements – simply to meet numeric targets imposed from Canberra.

To be effective, reform must be comprehensive and must deal with the basic problems facing our system: its failure to use its the resources available to it in a way which provides the best value for the consumer. This paper suggests such a program. It addresses all the major resource inputs – basic funding methods, the efficient use of labour, better purchasing and evidence-based capital spending decisions.

A state election is due early next year. In repeated polls, voters nominate health and hospitals as their top priority. Any party wishing to be taken seriously on its health policies must produce a comprehensive and integrated program of reform. Without such reform, any new minister will soon find him or herself in the same parlous political position as the present minister. This is such a program: it is unlikely to be the only one possible but, so far, it is the only one on the table.

Casemix hospital funding in Tasmania

Casemix (or activity-based) funding was introduced by Liberal governments in Victoria in 1993 and South Australia in 1994. In both cases it coincided with major hospital budget cuts. And rather than seeing these two issues as distinct, the governments' opponents characterised casemix at the time as the mechanism by which budgets were cut: the system, most unfairly, was blamed for the cuts. That may be one reason why, when Kevin Rudd proposed a similar system for the nation, he changed the name to 'activity-based funding'.

In fact, it is probable that the efficiencies mandated by casemix greatly softened the effects of the budget cuts in Victoria and South Australia. A number of health economists believe that, without the efficiencies of casemix to offset the cuts, the hospital systems in those states, particularly in Victoria, would have all but collapsed.

Casemix allocates a specific cost to each acute inpatient service (or separation): these are called diagnosis related groups, or DRGs. The government sets an overall budget cap but the patient mix is driven by what is needed: there is no financial incentive for hospitals in treating one type of patient preferentially over another. If a hospital delivers a service for less than the casemix price, it keeps the extra. But if it spends more, it will not be given a top-up. Casemix is a means of tracking costs and a rational system of funding hospitals: it encourages, even mandates, efficiency but does not in itself provide the mechanism for achieving it. Casemix promotes and rewards good hospital management: it does not create it.

But it is no coincidence that, twenty years after they pioneered casemix, the most economically efficient public hospital systems in Australia are those in Victoria and South Australia. Importantly, no subsequent government, Labor or Liberal, has reversed these reforms.

Some jurisdictions, such as Western Australia, have been able to achieve reasonable results without casemix funding: they have been able to ensure their hospitals are managed properly without it. In Tasmania, this has proved to be impossible. Successive health ministers, well aware of the inefficiencies in the system for which they are nominally responsible, and required to take the constant blame for poor results, have tried and failed to improve the situation. They have failed because they have not accurately identified either what is wrong with the way the hospitals organise their day-to-day businesses or how to ensure compliance with ministerial authority.

Ministers have had less political power than the hospitals they have been expected to control, and for which they must take public and parliamentary responsibility. People within hospitals, who are unhappy with a proposed reform measure, can take their case to the public and the media and be at once believed. If a minister was to propose major and contested reforms against the wishes of some administrators or staff, the probability is that the minister would be quickly and comprehensively defeated. If this situation is to end – as it must – casemix should be seen as the central and indispensable tool in the hands of a reforming minister and government.

Casemix: how it works

Casemix (or activity-based) funding is a method of tracking how much each of the many services provided by a hospital cost, and how the costs of one area combine with others within the same system and between systems. It can show, for instance, which areas of a hospital, or of a hospital system, are inefficient and in need of reform. It can be used to guide block-funding or it can be used as a funding tool in its own right. It is in this form – setting the price to be paid for every service – that it has been shown to produce the best efficiencies, and to ensure the available budget is used to

produce the greatest health benefit for patients and the community.

At the heart of casemix is the diagnosis-related group, or DRG. Some typical DRGs are ‘vaginal delivery without complications’, ‘musculo-skeletal malignant neoplasm with catastrophic complications’, ‘carpal tunnel release’ or ‘liver transplant’. Each DRG is given a cost-weight: for instance, in the current Australian system (AR-DRG version 6)¹ a liver transplant has a cost weight of 32.35. This means the price for a liver transplant is 32.35 times the average: the average is always 1. In contrast a carpal tunnel release, a wrist operation, has a cost-weight of 0.45: it costs only 45% of the average service. At current Australian average costs, a liver transplant costs \$145,565 and a carpal tunnel release costs \$2,015.

So far, the system ensures relativities are right: that the cost of each service is in line with what it ought to be, and that there is therefore no financial incentive to cherry-pick those patients on whom they will make more cash. But the actual price paid by the government – for everything – still has to be set. This is done by attaching a dollar figure to the central average cost-weight of ‘1’. According to present national averages, that figure is about \$4,500.

Attempting immediately to reach the national efficient price would not work: achieving structural efficiency will take some time, and a sudden change of this magnitude would risk compromising the quality of care. A better approach would be to phase the new system in by lowering the central value each six months over three years until the desired target is reached: that would be either the national average price or the Commonwealth’s new National Efficient Price. In this way, everyone in every hospital would know what was happening, and which targets they had to reach at each point. Hospitals would have no option but to introduce the obvious and achievable reforms that previous ministers have been impotent to achieve.

All jurisdictions including Tasmania are required, for reporting data to the Commonwealth, to have fully developed casemix systems. The system which already exists in the DHHS is only used for data reporting and to inform block-funding but could easily be used to put into place a casemix funding activity. No more bureaucrats would be needed.

The main casemix tool, the AR-DRG, is produced by the Commonwealth Department of Health and Ageing. It is updated annually to take health price inflation into account, and every few years there is a whole new edition to accommodate changes to the relativities between DRGs which occur because of new technologies and practices. Both Victoria and South Australia developed their own refinements of the AR-DRG. These refinements are quite technical, but a brief explanation of one may help to explain more about how the system works.

In Victoria, there was concern that a single DRG based on the cost of an average length of stay (LOS) tended to underpay long-stay patients and over-pay short-stay and same-day cases. This may not be such a bad thing: it gives hospitals an incentive to achieve shorter lengths of stay. This benefits both the system and the patient, because few people want to stay in hospital any longer than they have to, and in Tasmania the average length of stay is nine per cent longer than for the nation as a whole. But it worried the Victorians, who perhaps believed that with reasonable LOS efficiency already in place, over-payment for short-stay patients was no longer productive. So from 1996-97, they introduced technical refinements of their own to reflect more accurately the actual costs being incurred.

Casemix: a pretend version

In her opening remarks at Estimates Committee hearings in the Legislative Council last year the Minister for Health and Human Services, Michelle O’Byrne, said:

¹ Australian Refined Diagnosis Related Groups.

What happens from 1 July is that we will move to a purchaser-provider model. We, as the Tasmanian government, will purchase services. We will sign a service agreement with our three THOs that outlines the services they are to provide and the amount of money they will get for provision of those services. It is not a matter of giving them a bucket of money and then they say, 'well, I can only afford to do x, y and z'. They will have a service agreement that says 'you must do a,b,c,d,x,y and z'.

This will be done under an activity-based funding model, which will allow us to track where the money goes. For those who do have concerns about patients who travel around Tasmania, it is a very normal thing for patients to travel around Tasmania and receive episodes of care in appropriate environments. Under the model, the dollar will follow the patient. That is very clear: if a patient moves to receive treatment within Tasmania somewhere else, or even interstate, the dollar will follow the patient.²

It was not to be. When one searches the subsequent service agreements (see Appendix 2) for meaningful signs of an effective activity-based funding model, one finds nothing of the sort. There is no specified requirement to apply the nationally accepted cost-weights: this may be the aim, but it's not required in a document that amounts to a contract. If there is a departure from these national cost-weights, it will produce distortions which invite hospitals to cherry-pick cases, concentrating on those that deliver them more profit and neglecting those they perform less efficiently and more expensively. This was a serious problem in the early days of casemix funding in Victoria and South Australia twenty years ago but it has since been largely overcome by the careful development of cost-weights which all relate closely to one another. Even more significantly, patient volumes were set for each 'service related group' – such as orthopaedics or ophthalmology – but the agreement made these purely voluntary: the hospitals could ignore them if they chose.

The schedules are indicative only and are included to provide a broad indication of the anticipated volumes to be delivered in 2012-13 at an SRG level. The final mix of services delivered within the overall volume contracted is at the discretion of the THO having regard for the historical mix of services provided by the THO.³

It will be seen from Appendix 2 to this paper that there are major differences in the base-price (that is, the price per weighted separation) being paid for 'state-wide services' – such as haematology and neurosurgery – of \$6,095 rather than \$5,300. In other words, these services seem to have been taken out of the general system and given a bonus. Again, one worries about cherry-picking.

These prices are still much too high. While it is reasonable for a reduction in costs not to be demanded all at once – a sudden 20% reduction would not give time for productivity improvements to compensate – the government has given no indication of how they intend eventually to meet the national efficient price which is being demanded from Canberra.

It is difficult to see how this system can deliver the improvements the state's hospitals and their patients have so desperately needed for so long.

2 Legislative Council Estimates Committee A, *Hansard*, Monday 28 May 2012, Parliament of Tasmania, p. 57.

3 DHHS: *2012-13 Service Agreement, THO South*, Appendix 1, pp. 19-21. All three THO agreements contain the same measures.

Lean management for Tasmanian hospitals

In order to avoid major loss to the state budget of Commonwealth funding, the costs of delivering services in our public hospitals, as measured by the cost per casemix-weighted separation, will have to come down from \$6000 to about \$4600. A properly organised casemix (activity-based) funding system, phased in over two to three years, will be the first key to this – but it is only half the picture. Casemix mandates change but does not provide the actual means for change. The other half requires a revolution in the way hospitals do things. The most promising approach, and one which is now well proven in hospitals in several nations including Australia, is called ‘lean thinking’ or ‘lean management’.

The concept began in Toyota’s car factories in Japan in the 1950s. It was based on a few key principles, including:

- Anything that does not add value for the customer is waste.
- Whole processes must be looked at from beginning to end, not just in bits.
- The people who actually do the job *must* be the principal agents of formulating change.
- Any worker who notices a significant defect has the right to stop the line to allow rectification to take place, to ensure the defect is not repeated and that it never reaches the customer.

It was only about a decade ago that these principles, which have become common in manufacturing and other complex processes, began to be applied in hospitals. Where the ‘lean’ approach has been thoroughly and properly applied, dramatic improvements in efficiency, patient outcomes and staff satisfaction have been achieved. One of the world leaders is the Flinders Medical Centre in Adelaide.

The policy director of Britain’s NHS Confederation wrote:

A number of things have struck me about places I have visited where people are implementing Lean. Firstly, the clinicians are involved and enthusiastic. People seem to be having fun. Secondly, the scale of the improvements is often extraordinary.

‘Fun’ is not a concept often associated with public hospitals.

In hospitals, some principles are:

Everything that does not add value for the patient is waste and should be abolished. This includes most of the things many hospital departments do. Adding value includes not only finding processes that are more efficient but that are also safer, so it is a major driver of safety and quality in health care. It includes patients’ time and convenience, something most hospitals ignore. For instance, a traditional hospital may call all day surgical patients in for an 8am admission, even though some may not be treated until the afternoon. A ‘lean’ hospital will not do that.

Process mapping. Attention is given to all elements of a patient’s journey, rather than fixing one bottleneck and leaving others – which would not improve overall performance. *Everything* is reviewed and, where necessary, redesigned. And it’s done primarily by the doctors, nurses and others actually doing the work, and who know the processes best. One product of this process mapping and redesign is the patient flow protocol, like that now used for elective surgery patients at the Alfred Hospital.

A different role for administrators. No longer will administrators issue edicts from upstairs and expect them to be accepted. They will no longer be ‘firemen’, coming down to examine a single problem or an isolated bottleneck and imposing a solution. They will be members of a collaborative team, along with the doctors and nurses – who know the patient handling process far better than any administrator. Elsewhere, this change of culture and of role has been strongly resisted by some conventionally minded administrators who have successfully thwarted the process of change. It is essential that senior administrators drive this change: if they are unwilling or unable to do so, they must go.

No redundancies. Lean management, properly applied, will do more with less. That’s what efficiency means. Staff numbers could be reduced. But lean cannot be mean. It has been shown – and it’s common sense anyway – that people who think a change may cost them their jobs are unlikely to cooperate enthusiastically, so a no-sackings policy has been almost universally adopted by ‘lean’ hospitals. In Tasmania’s case, that promise can easily be made to doctors and nurses. But numbers of administrators and clerks will probably need to be reduced, either through offering redundancy packages or by re-deploying them elsewhere in the public service. But although some of their roles will be changed, administrators and clerks will still be essential to the reorganised hospitals and will be an integral part of the new system. Therefore, any redundancies should take place very early in the process.

100% reinvestment. Similarly, staff will be less likely to collaborate if they think a new system will give the government an opportunity to take money out of the hospital system. This would also be unacceptable to patients, GPs and the community. Therefore, a clear guarantee will have to be given that all savings will be reinvested in the system, in addition to normal growth.

‘Chief engineer’. Toyota’s system relies heavily on chief engineers, senior technical staff who are outside of the usual reporting system but who have the role of mentoring change and who are involved in the production process from product development right through to delivery. An analogous role has often been used in hospitals, with a team of senior doctors and nurses with floating overall responsibility.

What won’t change. The usual lines of reporting will not change. Nor will the new system attempt to tell doctors and nurses how to treat patients: its aim is merely to give them a better chance of doing the job they signed up for. Salaries will not go up or down because of the new system.

It is with the day-to-day operations within hospitals that the bulk of potential savings are to be made. For instance, the fact that average lengths of stay in Tasmanian hospitals are 9% more than they should be needs to be addressed. There is a great deal of anecdotal evidence from clinicians and the Australian Nursing Federation that patient-flow processes are inefficient and sometimes chaotic. There can be substantial delays in a patient’s move from one stage of treatment to another or to discharge. Experience in other jurisdictions has shown that this can be successfully addressed by protocol-led patient flow processes, produced through ‘lean’ methods and with nurses and doctors taking the lead in planning. At the Alfred Hospital in Melbourne, highly inefficient elective surgery programs were reformed by separating low-to-medium acuity patients into a physically separate centre, and by instituting such a protocol (*see below*).⁴

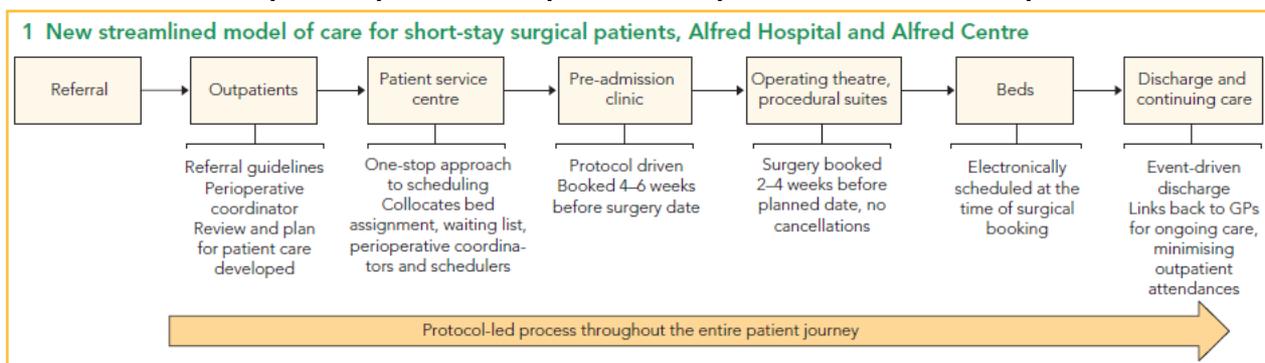
A main measure of administrative efficiency in elective surgery is the number of scheduled procedures which are cancelled by the hospital. At the Alfred, this number fell from 28% to 1% in the new centre and 7% in the main hospital, indicating that at least half the improvement, and probably more, was a result of this basic and cheap administrative tool.

As a matter of priority, elective surgery should be separated from more urgent cases by setting up a

4 Judy A Lowthian *et al*, Streamlining elective surgery in a public hospital: the Alfred experience, *Medical Journal of Australia*, vol.194, no. 9, 2 May 2011.

specific centre, initially within existing facilities but later as physically separate entities for low- to medium-acuity patients. These could be public facilities on private hospital campuses, in existing public facilities (such as the Repatriation Hospital in Hobart), or a mix of both.

Example of a protocol-led patient flow process: the Alfred Hospital



Source: *Medical Journal of Australia*

Patient-flow protocols should be established in all areas of Tasmanian public hospitals wherever it is clinically and administratively appropriate to do so.

But delays will continue at an unacceptable level for as long as bed occupancy rates remain as high as they are. The RHH and LGH are typically 98% full and both spend substantial periods at 100%. This means all facilities are over-stretched, medical mistakes are more likely to be made, and patients needing to be moved have to stay where they are, in turn blocking access for others. As reforms allow saved money to be reinvested in opening or re-opening beds, the temptation to fill all of them at once should be resisted. The aim should be to reduce average bed occupancy to around 93% within the next term of government, with further reductions to come.

This will also reduce or eliminate the access block which at present adds massively to the workload of emergency departments, increases the rates of complications and deaths among affected patients, and reduces the capacity of emergency staff to deal with new patients coming through the door. This, in turn, will reduce or eliminate ambulance ramping and relieve some of the pressure on the ambulance service.

Another policy minefield awaits with the introduction of the National Efficient Price by the federal government's Independent Hospital Pricing Authority. A leaked IHPA document showed the new system, if it had been introduced in 2012, would have cost Tasmania over \$80 million in federal funding. A funding guarantee delays this process until July 2020 but, if Tasmanian hospital costs are not reduced by then, the loss to the state budget will be far greater.

But elements of the new national system are controversial and need to be validated before being adopted by Tasmania. At present, the casemix system – based as it is on the AR-DRG classifications – covers only acute inpatient services. The IHPA has been developing, very quickly, other classifications to cover almost everything public hospitals do, which have never been thought suitable for this sort of treatment and have always been block-funded. These include emergency departments, specialist outpatient clinics, subacute patients, hospital-in-the home and many kinds of non-GP community care.

The states and territories have serious concerns about the validity of these very new classifications. The standard DRGs took a number of years before the bugs were ironed out – before, for instance, the relativities between various DRGs were fully refined to eliminate the opportunity for hospitals to cherry-pick those patients on whom they made more of a profit and neglect those who cost them money.

Reforming the hospital supplies market

The idea behind this proposal is to utilise for Tasmanian, Victorian and New South Wales hospitals the combined buying power that no state could achieve on its own. Together, they represent about half of the national hospital supplies market. The savings to be obtained for Tasmania are illustrated by the per-separation cost of drugs and medical supplies in this state, compared with other states and particularly with Victoria.

Cost (\$) per casemix-adjusted separation of medical/surgical and drug supplies in Australian public hospitals, 2010-11 and 2011-12

	<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>WA</i>	<i>SA</i>	<i>Tas</i>	<i>ACT</i>	<i>NT</i>	<i>Aust</i>
Medical supplies (2010-11)	540	390	582	332	335	780	467	414	471
Medical supplies (2011-12)	574	400	572	380	349	746	518	435	491
Drug supplies (2010-11)	254	239	257	267	238	317	144	243	250
Drug supplies (2011-12)	235	243	243	286	244	326	156	247	245

In 2011-12 Victoria spent on drugs 46.4% less per patient service than Tasmania (on a casemix-weighted basis) and a quarter as much on medical and surgical supplies. Applying these figures to actual expenditure data yields a theoretical saving for that year of \$68 million for drugs and \$28 million for supplies, giving a total of almost \$97 million.⁵

Public hospital drug and supply expenditure in Victoria and Tasmania, 2011-12, and potential savings for Tasmania in reducing costs to those of Victoria,

	<i>Victoria</i>		<i>Tasmania</i>		<i>Vic is less than Tas by</i>	<i>Potential Tas savings</i>
	\$'000	Per sep'n	\$'000	Per sep'n	Per sep'n (%)	\$'000
Drugs	507 153	400	146 795	746	46.4%	68 113
Med/surg supplies	838 794	243	113 256	326	25.4%	28 767
Total	1 345 947	643	260 051	1 072		96 880

Source: AIHW

In reality, savings of this magnitude would not be possible without significant market reform. The fragmentation – and therefore weakness – of the buyer side of the market means both states are likely to be paying far too much in most cases for these items. Reform of the market, to increase the mutual buying power of both states, and then to use that new power to enforce changes which would balance more equitably the position of buyer and seller, is the subject of these notes.

Such an outcome is not achievable by Tasmania on its own: it does not have the strength to change the structures of the markets in which it operates. Suppliers could too easily threaten not to supply Tasmania unless their demands were met: their businesses would not suffer unduly by doing so. They would be far more reluctant to take such an attitude with Tasmania and Victoria combined.

For Victoria, savings as a result of market reform of even 10%, plausibly achievable in the relatively short term, would on the basis of 2010-11 figures yield about \$130 million a year and, assuming normal price inflation, well over \$520 million across a four-year budget period.

Too often, manufacturers and wholesalers have been able to fragment the buyer side of their

⁵ This assumes that patients with a given condition are given similar clinical treatment in both states, with similar drugs and supplies being used. In an era of internationally accepted standards of care and therapeutic guidelines, this assumption is probably reasonable.

markets by a number of strategies. These include:

- Forcing hospitals and health departments to deal only with state-based middlemen rather than negotiating with the principal party – the manufacturer or importer. The principal company sets the wholesale price to the local middleman, who can then only reduce the price paid by hospitals by taking a lower retail margin.
- The practice of local hospital networks in dealing separately with suppliers, rather than teaming up together, massively undermines their power to negotiate.
- Marketers will often offer structured price reductions – known as price volume agreements – on the basis of how many units a particular user will buy. Some of the larger hospital networks may believe that, through this system, they are getting a good price. They are almost certainly wrong in this comfortable assumption. They are getting a good price only in relation to other, smaller institutions and networks but a poor result compared to that which a less fragmented system would yield.

At the Commonwealth level, the Pharmaceutical Benefits Scheme always negotiates price with drug manufacturers: eventual users (such as individuals in the case of the main list or hospitals in the case of the Highly Specialised Drugs Program list) order as they want from retail pharmacies or wholesale suppliers. This system is well-tried and the industry is accustomed to it. It could readily be extended to other areas, such as therapeutic devices and certain diagnostics.

In the case of manufacturers who refuse to comply with this well-tried system, the relevant products should be de-listed whenever this does not involve a substantial clinical penalty for patients.

Where feasible, generic items should be supplied subject to open tender. Generic manufacturers compete energetically on price, particularly when several rival companies are marketing the same compound: the most efficient way of making use of this competition is through a tender process. The large makers of patent drugs, on the other hand, operate as a pricing cartel even when their products are clinically interchangeable. Tenders will not work in this environment: individual negotiations with manufacturers must therefore take place.

There is no reason why this initiative should add to bureaucracy levels. A joint committee between the two states with official and expert membership should oversee the lists. Negotiations with suppliers should be undertaken by officials in their current positions.

The listings committee should include, apart from officials, at least one clinical pharmacologist, at least one surgeon, at least one pathologist, microbiologist or virologist, a health economist with knowledge of procurement policy, and a representative of the consumer's viewpoint. Expert members should be chosen for the particular knowledge, experience and insight they can bring to the table. They should specifically *not* represent any organisation or sectional interest and should not be chosen because they do. A panel of clinical and technical experts, independent of industry, should be established whose individual members can be called upon to assist consideration of particular items. The independence of all members of the main committee and its consultative panel is essential to the integrity of the process. For the same reason, manufacturers or suppliers should not be represented.

The Department of Health and Human Services has contracted the consultancy firm, KPMG, conduct for it a review of hospital procurement. From statements at the parliamentary estimates hearings in May this year it appears, though, that this will not cover drugs or supplies, a major source of economic inefficiency. A deputy secretary, Michael Pervan, made the claim that:

In terms of our procurement strategies we are comparable with Victoria, if not cheaper, particularly on pharmaceuticals. It comes down to how we use them and the amounts we use that results in those costs that are reported and have been noted by Martyn. It is all about clinical practice as opposed to

procurement practice.⁶

This statement is extraordinary for two reasons. The first, as we have seen, is that it directly contradicts the evidence: AIHW figures show Tasmania's public hospitals spend 46% more on the average patient's treatment than Victoria's. Secondly, the claim that this discrepancy is due not to increased drug prices but to Tasmanian doctors prescribing drugs to their patients at such immensely high levels is not only unbelievable but an attack on the basic professional competence of Tasmanian doctors. Over-prescribing is a serious professional matter, with safety implications for patients in unnecessary side-effects and drug interactions that are potentially dangerous and occasionally devastating. If the Department and the Minister have evidence of such practices, they should make them available.

Drugs

It is easiest in this area to see how a purchasing system might be structured: there are many very well-developed precedents. What happens with drugs provides the model for the cost-effective purchase of devices and diagnostics.

The first task will be to compare the existing drug lists of both states. An initial combined list would consist of those items which appear on each list. As existing agreements with suppliers for each item expire, negotiations for collaborative purchasing should begin.

For those items which appear on one state's list but not the other, a decision should be made about whether one should prevail. In some cases that will not be a particularly difficult decision: among patented medicines there are many 'me-too' drugs in the same class and with virtually identical clinical profiles. This continues when they move out of patent into the realm of generics, with several compounds, each having several manufacturers each with its own brand, and all doing essentially the same job. Where the choice is between different brands of the same drug, the decision should be made solely on price and continuity of supply.

Those chemically and clinically unique items which appear on the current Tasmanian list but not on Victoria's should be considered for a supplementary list, following consultation with pharmacists and clinicians. This list should be rigorously restricted to those items shown to be clinically necessary and cost-effective. A supplementary list which is undisciplined and too long would tend to undermine the whole exercise, because Tasmania would have to negotiate by itself with suppliers.

Together, Victoria and Tasmania could pursue price-volume arrangements with suppliers that are not currently possible with Tasmania's low volumes and weak market power. Under these arrangements, a series of prices is set for a product, dropping when volume benchmarks are reached. In effect, it is a structured discount for bulk purchase. This has advantages for buyer and seller: it is a way of the buyer using market power to its best advantage, while the supplier maintains its 'headline' benchmark price, against which deals with other buyers around the world may be judged. It also helps local company representatives resist pricing pressure from their overseas head offices and to negotiate more freely and meaningfully with Australian public-sector buyers.

Although there are some lessons to be drawn from the PBS process, prices paid for drugs in our hospitals should, on average, be lower than those paid by the national system, which has not been substantially reformed for almost 30 years and needs an overhaul. The PBS does not attempt to

6. Hansard, *Estimates Committee A (Michelle O'Byrne) - Part 2*, Parliament of Tasmania, Tuesday 4 June 2013.

negotiate the lowest price for a drug, but sets its prices on the basis of what a drug buys in terms of health benefit, compared with an existing medication. Once a price is set it is not reviewed, even when new clinical data reveal a drug has higher risks or poorer benefit than expected, or when the comparator drug is found to be less cost-effective than *it* was at the time of listing. And the PBS pays far too much for generics. A well-conceived state system can do better.

Therapeutic devices

Fundamentally changing the way prostheses are ordered and bought in Tasmania is fundamental to this reform. At the moment, unlike the situation in other states, surgeons can order any prosthesis they want, regardless of price or cost-effectiveness. This means expensive items are routinely bought when identical but much cheaper generic versions of the same product are available, or when a more expensive product offers the patient no advantage. Free-for-all ordering results in unduly large numbers of different products being stocked, many of which have to be bought in multiples and which may be thrown away when they reach their expiry date. As some prostheses cost \$10,000 or more each, this is a serious matter.

Changing this system must not be left to the discretion of hospital administrations. It must be forced by the government. This reform process is the vehicle by which it can force that change for the public good.

Private insurers already have lists of approved prostheses, and set a reimbursement price for each. Most surgeons in private practice are reluctant to use devices which are not on these lists because their patients will have to pay the difference. The listing system is well established in the devices industry.

As with drugs, a combined list should be established with Victoria, with the option of establishing a strictly limited supplementary list if there is clear clinical benefit of doing this. All pricing negotiation should be conducted jointly. As with drugs, items for which suppliers refuse to conduct joint pricing negotiations and to harmonise their prices between the states, should be de-listed, unless there is a very substantial clinical reason for not doing so.

Diagnostics

This is the most complex and, probably, fragmented market for reform but the opportunity exists for large savings in both states for reagents and other supplies. Different products and even different technologies are used by various labs to conduct the same tests. Addressing the full range of this market fragmentation will be difficult and slow. But substantial savings can nevertheless be achieved in the short term.

A review should be undertaken in both states to determine which products are common to a number, even if not to all, public laboratories. Negotiations with manufacturers for the supply of these common items should be started within the combined Victorian and Tasmanian listing structure to make the most of the public sector's buying power. At the moment, labs have to deal on their own behalf or as part of a small and necessarily weak network with very large and sometimes aggressive international companies.

Work should then begin among the public labs of both states to harmonise products and, so far as is possible, technologies. As this is achieved, these items should be added to the two states' combined procurement list and negotiations begun with manufacturers.

Making capital spending honest

Some of the inefficiency and inequity in the Tasmanian public hospital system is due to bad capital investment decisions, driven often by short-term local politics rather than by equity or efficiency. At the same time, health ministers can be put under siege by local interest groups which can marshal votes in marginal electorates. This is a major cause of inequity and economic waste: the wrong facility established in the wrong place, often for too much money, has to continue being funded for many years. Examples are the Mersey Hospital at Latrobe and the PET scanner at the Royal Hobart Hospital.

There is a way out of this, that will both ensure the integrity of the system and protect the Minister politically.

An independent expert group should be appointed by the Minister with appropriate economic and clinical qualifications to which is referred any item of capital expenditure in public hospitals above \$1 million. It will be required to rule objectively on the evidence of cost effectiveness, future demand, social need and so on. They would report to the Minister.

Expert advisory groups are not new and many fail to live up to expectations. Usually, these groups fail to prevent powerful and damaging political lobbying because their findings can be brushed aside. This problem was faced at a national level by the Pharmaceutical Benefits Scheme, which is the target of extraordinarily energetic, co-ordinated and well-funded campaigns by global drug companies and other sectional groups. Decades ago, the federal government met the challenge by amending the *National Health Act* forbidding the Minister for Health from approving the listing of a drug on the PBS unless it had first obtained a positive recommendation from the Pharmaceutical Benefits Advisory Committee, which is required to consider cost effectiveness as well as clinical need. The Minister is not required to list a drug which has a positive recommendation – only not to list one which does not – so the government retains control of its budget. The system has worked well: it has protected the PBS from the kind of pressure that would have destroyed its integrity and exposed the Minister to continual and politically damaging pressure.

In the context of Tasmanian public hospitals, there would be three benefits: the system's integrity would be restored; new facilities would be put into the right place for the right price; and the Minister's would be politically shielded.

As with the PBS example, there would be no compulsion on the government under this model to go ahead with something that had a positive recommendation: the government would keep control of its budget. A recommended project could be delayed or shelved entirely, depending on what the government can afford at the time and on the basis of broad priorities.

Appendix 1: Extract from AR-DRG version 6, showing cost weights and average costs

NATIONAL HOSPITAL COST DATA COLLECTION

V6.0x Public Sector

COST WEIGHTS FOR AR-DRG VERSION 6.0x, Round 14 (2009-10)

Public Sector - Estimated

DRG	DRG Description	Cost Weight	Standard Error	Number of Seps	Number of Days	ALOS (Days)	Average Cost per DRG (\$)			Average Component Cost per DRG (\$)						DRG	
							Total	Direct	Overhead	Ward Medical		Ward Nursing		Non Clinical Salaries	Pathology		
										Direct	Overhead	Direct	Overhead		Direct		Overhead
A01Z	LIVER TRANSPLANT	32.35	0.28	197	6,741	34.27	145,565	126,244	19,321	29,406	2,755	15,297	1,981	4,706	7,815	1,608	A01Z
A03Z	LUNG OR HEART/LUNG TRANSPLANT	25.84	1.05	118	3,769	32.02	116,292	99,159	17,134	9,747	2,293	6,993	769	1,576	8,587	1,180	A03Z
A05Z	HEART TRANSPLANT	29.88	0.25	70	2,857	40.87	134,479	112,403	22,075	16,134	3,658	7,316	915	2,198	7,076	1,170	A05Z
A06A	TRACHEOSTOMY W VENT>95 +CCC	42.28	0.22	2,849	138,379	48.58	190,261	156,649	33,612	9,305	1,564	9,588	1,833	2,831	6,902	1,046	A06A
A06B	TRCH&VNT-CCC OR TRCH/VNT+CCC	19.35	0.07	6,865	182,004	26.51	87,076	71,283	15,793	5,883	929	5,895	1,007	1,879	4,206	588	A06B
A06C	VENTILATION>95 - CCC	12.72	0.16	283	4,244	15.02	57,222	46,194	11,028	3,665	258	2,057	272	1,248	2,336	337	A06C
A06D	TRACHEOSTOMY -CCC	8.51	0.05	361	5,443	15.09	38,298	30,778	7,520	5,168	808	4,431	933	1,477	994	154	A06D
A07Z	ALLOG BONE MARROW TRANSPLANT	18.57	0.48	503	16,823	33.41	83,569	69,721	13,848	5,123	2,501	19,055	2,058	2,607	7,047	1,110	A07Z
A08A	AUTO BONE MARROW TRANSPLNT+CC	8.78	0.13	555	12,391	22.31	39,533	32,542	6,991	3,130	1,200	10,538	1,643	1,434	3,379	597	A08A
A08B	AUTO BONE MARROW TRANSPLNT-CC	3.49	0.14	358	3,362	9.38	15,690	12,589	3,101	1,187	317	4,013	457	941	1,141	178	A08B
A09A	RENAL TRANSPLANT+PANCREAS+CC	10.44	0.05	369	5,018	13.6	46,977	39,958	7,019	4,511	903	7,351	1,140	1,182	2,971	529	A09A
A09B	RENAL TRANSPLANT -PANCREAS-CCC	7.68	0.08	433	3,447	7.95	34,581	29,612	4,969	3,439	703	5,218	559	1,116	1,535	197	A09B
A10Z	INSERTION OF VAD	57.51	0.30	38	1,886	49.88	258,801	219,866	38,934	16,913	6,679	5,829	1,224	3,950	9,900	1,390	A10Z
A11A	INS IMPLNT SP INFUS DEV+CCC	17.56	0.89	25	832	33.17	79,026	63,204	15,822	13,091	1,839	20,015	3,225	9,252	825	102	A11A
A11B	INS IMPLNT SP INFUS DEV-CCC	4.51	0.09	69	324	4.68	20,285	17,859	2,425	1,915	300	2,480	515	848	88	29	A11B
A12Z	INS NEUROSTIMULATOR DEV	4.50	0.13	330	908	2.76	20,270	18,295	1,975	1,019	109	996	170	584	119	41	A12Z
A40Z	ECMO	42.11	0.45	229	7,391	32.34	189,526	159,221	30,305	11,819	1,577	3,692	776	2,848	11,246	1,943	A40Z
B01A	VENTRICULAR SHUNT REV+CSCC	4.10	0.03	234	2,141	9.14	18,442	14,894	3,548	2,832	391	3,826	788	714	408	79	B01A
B01B	VENTRICULAR SHUNT REV-CSCC	2.51	0.04	205	947	4.61	11,294	9,241	2,053	1,491	202	1,854	399	449	177	34	B01B
B02A	CRANIAL PROCEDURES + CCC	8.88	0.07	2,551	45,119	17.68	39,944	32,856	7,088	4,545	737	6,913	1,346	1,320	1,455	294	B02A
B02B	CRANIAL PROCEDURES + SCC	5.73	0.08	1,785	19,172	10.74	25,795	21,255	4,539	2,915	396	3,973	692	1,018	818	144	B02B
B02C	CRANIAL PROCEDURES - CSCC	4.18	0.06	3,758	26,136	6.95	18,809	15,539	3,269	2,003	272	2,547	443	704	514	94	B02C
B03A	SPINAL PROCEDURES + CSCC	6.24	0.08	249	3,601	14.49	28,083	22,915	5,168	3,717	571	5,486	998	1,209	771	146	B03A
B03B	SPINAL PROCEDURES - CSCC	3.19	0.01	824	3,437	4.17	14,365	12,023	2,342	1,368	206	1,681	279	425	204	49	B03B
B04A	EXTRACRANIAL VASCULAR PR +CCC	5.27	0.05	344	4,072	11.85	23,717	19,382	4,335	2,847	450	4,259	745	826	722	120	B04A
B04B	EXTRACRANIAL VASCULAR PR -CCC	2.60	0.02	1,608	6,568	4.08	11,699	9,539	2,160	1,414	199	1,321	221	389	260	41	B04B
B05Z	CARPAL TUNNEL RELEASE	0.45	0.01	12,532	13,027	1.04	2,015	1,542	473	307	28	99	28	56	6	4	B05Z
B06A	CBL PSY, MUS DYSY, NPPTHY PR +CC	5.23	0.04	318	4,464	14.03	23,541	18,955	4,587	3,249	460	5,361	880	1,190	784	130	B06A
B06B	CBL PSY, MUS DYSY, NPPTHY PR -CC	1.08	0.01	2,209	3,512	1.59	4,838	3,818	1,020	559	73	417	84	153	89	16	B06B
B07A	PRPHL & CRANL NERV & OTH PR+CC	3.49	0.03	610	5,866	9.62	15,712	12,426	3,286	1,806	339	3,585	704	617	415	71	B07A
B07B	PRPHL & CRANL NERV & OTH PR-CC	1.20	0.01	3,424	5,936	1.73	5,380	4,251	1,129	566	99	464	101	145	50	16	B07B

NATIONAL HOSPITAL COST DATA COLLECTION

V6.0x Public Sector

COST WEIGHTS FOR AR-DRG VERSION 6.0x, Round 14 (2009-10)

Public Sector - Estimated

DRG	Average Component Cost per DRG (\$)																				DRG	
	Imaging		Allied		Pharmacy		Critical Care		Oper Rooms		Emerg Depts		Supplies		Spec Proc Suites		Pros-theses	On-Costs	Hotel	Deprec		No. of Hosps
	Direct	Overhead	Direct	Overhead	Direct	Overhead	Direct	Overhead	Direct	Overhead	Direct	Overhead	Direct	Overhead	Direct	Overhead						
A01Z	2,642	358	2,562	458	13,894	429	21,690	3,706	16,345	2,036	104	137	3,462	1,401	86	14	1,990	6,100	2,406	2,178	9	A01Z
A03Z	2,984	704	3,377	503	12,589	243	30,196	7,248	14,476	1,841	68	17	2,536	500	414	45	1,405	3,462	1,248	1,291	4	A03Z
A05Z	1,909	345	2,325	370	13,447	701	37,865	9,665	16,180	2,497	167	39	2,005	398	572	182	2,499	2,689	1,163	994	5	A05Z
A06A	3,923	691	3,953	776	4,911	204	93,142	18,030	6,387	1,317	294	77	2,164	1,558	315	56	2,154	9,411	3,805	4,024	87	A06A
A06B	2,133	328	1,907	378	2,733	129	34,059	6,789	4,605	908	296	73	1,300	1,029	275	49	1,467	4,370	1,856	2,003	93	A06B
A06C	1,048	169	1,081	209	788	92	26,414	5,742	2,242	405	287	65	606	761	17	3	480	3,685	1,367	1,590	61	A06C
A06D	400	61	1,294	246	933	31	3,131	713	8,816	1,940	98	24	982	809	29	11	981	1,971	968	898	60	A06D
A07Z	1,069	174	1,977	335	22,219	1,231	3,813	621	473	108	9	2	2,148	1,485	2,413	1,081	49	2,697	1,052	1,109	18	A07Z
A08A	813	135	909	145	7,789	257	1,449	238	443	83	5	1	1,108	781	522	253	52	1,399	706	522	36	A08A
A08B	272	57	252	51	3,501	117	28	4	130	30	9	2	517	566	340	181	16	675	403	305	36	A08B
A09A	1,287	163	628	110	12,889	444	1,642	280	5,136	1,044	16	3	914	543	26	4	599	1,251	758	651	19	A09A
A09B	730	119	544	70	8,609	237	327	73	5,200	1,021	140	2	864	606	5	1	490	1,405	759	614	19	A09B
A10Z	3,358	691	3,326	1,322	8,704	132	91,640	20,943	15,014	2,080	241	66	4,291	662	915	247	49,908	5,146	2,070	2,159	8	A10Z
A11A	847	129	2,347	325	4,086	198	107	24	3,710	517	78	18	2,647	2,233	278	136	5,786	3,326	1,845	2,038	13	A11A
A11B	113	18	545	43	524	33	87	40	2,286	320	12	3	456	358	22	3	8,114	606	272	254	22	A11B
A12Z	169	34	259	194	363	33	437	104	3,188	399	10	3	290	199	6	2	10,481	484	352	226	29	A12Z
A40Z	2,452	379	2,630	513	5,338	267	94,673	15,714	12,093	1,696	115	28	1,494	946	433	51	1,656	7,719	3,373	4,055	31	A40Z
B01A	717	114	369	77	346	29	306	73	2,841	565	268	72	410	449	46	28	1,067	856	425	347	33	B01A
B01B	460	62	133	27	131	10	98	22	2,480	443	234	55	299	227	3	1	926	520	304	250	30	B01B
B02A	2,212	319	1,264	238	1,237	57	4,447	969	4,615	872	284	70	995	607	112	39	1,762	1,667	815	754	36	B02A
B02B	1,518	206	668	128	557	33	1,885	400	4,380	806	230	55	671	462	60	18	1,263	1,249	649	600	39	B02B
B02C	1,106	154	360	70	335	19	915	196	4,249	786	148	39	475	311	38	10	1,192	888	477	466	52	B02C
B03A	823	129	660	153	758	40	819	184	4,520	813	148	37	744	609	21	6	2,253	1,194	712	562	35	B03A
B03B	271	39	254	57	202	15	99	22	4,099	752	42	9	193	221	5	2	2,735	545	308	282	47	B03B

Appendix 2: Extract from Tasmanian Health Organisation service agreements, 2012-13

Appendix I. Cost weighted separations by Service Related Group

Appendix I. Cost weighted separations by Service Related Group

The following SRG schedules are based upon 2011-12 activity data as provided by the previous Area Health Service. The schedules are indicative only and are included to provide a broad indication of the anticipated volumes to be delivered in 2012-2013 at an SRG level. The final mix of services delivered within the overall volume contracted is at the discretion of the THO having regard for the historical mix of services provided by the THO.

Service Related Group	Volume (weighted separations)	Price per weighted separation (\$)	Budget (\$'000)
Edit DRGs	238	\$5,300	\$1,261
Cardiology	1,767	\$5,300	\$9,365
Interventional Cardiology	1,517	\$5,300	\$8,038
Dermatology	272	\$5,300	\$1,443
Endocrinology	1,004	\$5,300	\$5,324
Gastroenterology	1,941	\$5,300	\$10,289
Diagnostic GI Endoscopy	754	\$5,300	\$3,995
Haematology	1,044	\$5,300	\$5,533
Immunology & Infections	1,058	\$5,300	\$5,610
Medical Oncology	769	\$5,300	\$4,075
Chemotherapy	1,537	\$5,300	\$8,148
Neurology	2,100	\$5,300	\$11,130
Renal Medicine	678	\$5,300	\$3,594
Renal Dialysis	1,591	\$5,300	\$8,431
Respiratory Medicine	2,249	\$5,300	\$11,920
Rheumatology	560	\$5,300	\$2,966
Pain Management	159	\$5,300	\$842
Medicine, No Definitive Subspecialty	1,657	\$5,300	\$8,784
Breast Surgery	203	\$5,300	\$1,075
Cardiothoracic Surgery	535	\$5,300	\$2,836
Colorectal Surgery	1,236	\$5,300	\$6,553
Upper GIT Surgery	1,434	\$5,300	\$7,603
Head & Neck Surgery	141	\$5,300	\$748
Neurosurgery	1,547	\$5,300	\$8,199
Dentistry	278	\$5,300	\$1,471

Appendix I. Cost weighted separations by Service Related Group

Service Related Group	Volume (weighted separations)	Price per weighted separation (\$)	Budget (\$'000)
ENT	544	\$5,300	\$2,884
Orthopaedics	4,498	\$5,300	\$23,841
Ophthalmology	373	\$5,300	\$1,977
Plastic Surgery	1,193	\$5,300	\$6,323
Urology	869	\$5,300	\$4,606
Vascular Surgery	1,352	\$5,300	\$7,165
Surgery, No definitive subspecialty	2,092	\$5,300	\$11,087
Extensive Burns	0	\$5,300	\$0
Tracheostomy & ECMO	3,502	\$5,300	\$18,559
Gynaecology	1,014	\$5,300	\$5,375
Obstetrics	2,897	\$5,300	\$15,352
Qualified neonate	0	\$5,300	\$0
Perinatology	65	\$5,300	\$345
Definitive Paediatric Medicine	217	\$5,300	\$1,150
Drug & Alcohol	257	\$5,300	\$1,359
Psychiatry	3,210	\$5,300	\$17,012
Rehabilitation	26	\$5,300	\$136
Geriatrics	455	\$5,300	\$2,414
Total#	48,833		\$258,818

#Components may not add to totals due to rounding.

Inpatient Statewide Services:

Service Related Group	Volume (weighted separations)	Price per weighted separation (\$)	Budget (\$'000)
Haematology	67	\$6,095	\$408
Cardiothoracic Surgery	2,552	\$6,095	\$15,554
Neurosurgery	1,736	\$6,095	\$10,581
Extensive Burns	402	\$6,095	\$2,450
Qualified neonate	729	\$6,095	\$4,443
Perinatology	1,747	\$6,095	\$10,648

Appendix I. Cost weighted separations by Service Related Group

Total	7,233		\$44,084
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#Components may not add to totals due to rounding.