

Funding issues for Victorian hospitals: the risk-adjusted vision beyond casemix funding

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Abstract

This paper discusses casemix funding issues in Victoria impacting on teaching hospitals. For casemix payments to be acceptable, the average price and cost weights must be set at an appropriate standard. The average price is based on a normative, policy basis rather than benchmarking. The 'averaging principle' inherent in cost weights has resulted in some AN-DRG weights being too low for teaching hospitals that are key State-wide providers of high complexity services such as neurosurgery and trauma. Casemix data have been analysed using international risk adjustment methodologies to successfully negotiate with the Victorian State Government for specified grants for several high complexity AN-DRGs. A risk-adjusted capitation funding model has also been developed for cystic fibrosis patients treated by The Alfred, called an Australian Health Maintenance Organisation (AHMO). This will facilitate the development of similar models by both the Victorian and Federal governments.

Funding issues for Victorian teaching hospitals

This paper discusses some key hospital funding issues impacting on large Victorian teaching hospitals in Australia, and outlines mechanisms to successfully address them. The paper was presented at the *National Colloquium on Health Outcomes and Financing* held during September 1999. The Colloquium was convened by the Centre for Hospital Management and Information Systems Research, University of NSW to explore the impact of health service financing on health service management and clinical service providers in acute and non-institutional settings. The Colloquium was attended by representatives from Commonwealth and State governments and health care providers from all Australian States and Territories. The Alfred hospital was nominated by the Victorian Department of Human Services to represent the provider perspective on the hospital industry in Victoria. We begin by discussing price issues in casemix funding arrangements in terms of Statewide funding negotiations between the Victorian Department of Human Services and the Victorian Treasury and the absolute dollar amount that is paid for the average cost. For a system of case payment to be acceptable to a hospital, this base amount must be accepted as being set at an appropriate achievable standard. The 'averaging principle' inherent in the application of AN-DRG cost weights has resulted in some high intensity AN-DRG weights being too low for a large teaching hospital that is a key State-wide provider of services such as cystic fibrosis and trauma. Two thirds of our major trauma cases require neurosurgery. This role often involves the treatment of very complex casemix.

This has led to the application of risk adjustment techniques to successfully negotiate with the Victorian Department of Human Services for specified grants for several high intensity AN-DRGs. The econometric methodology used to demonstrate that high complexity patients were the key cause of deficits incurred for

AN-DRG 23 (Craniotomy with complications and co-morbidities) in the face of very efficient clinical practice is provided in the second section. Internationally benchmarked hospital utilisation, costs and casemix complexity were central features of this work.

Risk adjusted capitation funding models are promising alternatives to casemix funding arrangements for chronic disease. A capitation-funding model for cystic fibrosis patients treated by The Alfred hospital, based on international methodologies is covered in the final section. This work will facilitate the further development of such funding models in Victoria and, in the national context, for the Co-ordinated Care Trials being led by the Health Services Division of the Commonwealth Department of Health and Aged Care.

Price issues: Base payments per case and AN-DRG price relativities

If casemix policy is to maintain credibility, the funding arrangements must respond to changes in the cost structure of hospitals and meet increases in demand. In the USA, the Prospective Payment Assessment Commission advises on 'update factors' to incorporate changes in inflation and technology (Duckett 1995). The Victorian Department of Human Services has used various models to forecast State level hospital expenditure, including econometric models based on OECD methodologies. These have provided key input into funding negotiations about the entire statewide hospital funding with the Victorian Treasury. A model developed by the Acute Health Division of the Victorian Department of Human Services found that Victorian Gross State Product, population aged under 4 years, the mix of public and private patients in public hospitals, introduction of casemix funding and funding cuts, the proportion of public beds to total beds in Victoria and technology significantly impacted on expenditure. Projections of each of these significant independent variables and associated coefficients have been used to forecast the expenditure in the budget cycle for Victoria for 1997-98. Annual real and nominal hospital expenditure were also forecasted up to 2000-01. Population estimates and the Consumer Price Index projections from the Victorian Treasury were used to predict total nominal hospital inpatient expenditure from the real per capita expenditure estimates. The results have also been used for internal budget allocation within the Victorian Department of Human Services expenditure (Antioch, Walsh & Anderson et al. 1999).

Whilst this approach has been applied in negotiations with Treasury for the entire statewide hospital budget to the Victorian Department of Human Services, Duckett (1995) emphasises that another critical element is the level of the absolute dollar amount that is paid for the average cost. For a system of case payment to be acceptable to a hospital, this base amount must be accepted as being set at an appropriate, achievable standard.

As casemix funding was introduced in Victoria in the context of severe budget reductions, with subsequent reductions, this aspect of casemix funding requires careful monitoring. Although the price relativities for casemix funding (the weights) are set using data for Victorian hospitals, the actual base payment per case is essentially determined on a normative or policy basis and is not the result of any public benchmarking process. There is a risk that the price may not be set at an achievable level consistent with quality standards (Duckett 1995). Threat of malpractice, physician practice patterns and patient expectations will constrain elasticity of supply in the short run (Ellis & McGuire 1986). How quickly this 'inertia' is overcome will depend, in part on the strength of the 'control structures' of the health care system and the size of the budget cuts (Duckett 1995).

The general pursuit by economic 'rationalists' of efficiency as the only 'policy' relevant value and the consequential neglect of altruism and other moral behaviours, is a short sighted strategy with long-term negative consequences (Etzioni 1988). From the perspective of a large Victorian teaching hospital, the pursuit of equity in addition to efficiency would involve the principle of a fair price that would cover the costs of the efficient provider plus allow 'normal' profit. It would also enable a sustainable provider industry; avoid the need for cross-subsidisation between hospital services and avoid the need for additional specified grants. Key problems have emerged from the application of the 'averaging' principle that is inherent in the use of cost weights that represent the 'average' cost by AN-DRG across the industry in Victoria. As demonstrated in the following sections, the AN-DRG cost weight for various high intensity AN-DRGs has proven to be too low for a large teaching hospital that is often one of the key statewide providers of services.

Purchasers often inherently endorse a policy of cross subsidisation between services by frequently advancing a "swings and roundabouts argument" that implies that major deficits that are incurred for specific AN-DRGs

will be compensated by those AN-DRGs that accrue a surplus. Analyses to determine entity profit/loss was recently undertaken by The Alfred, analysing all costs incurred and revenue from casemix funded activity and allocation of all fixed, variable, specified and Transport Accident Commission grants. These analyses have found that the Alfred hospital has experienced overall deficit in operational costs due to inappropriate underfunding in the face of a higher complexity throughput and efficient delivery of health services. Several high complexity AN-DRGs have been associated with large financing gaps due to very costly, sicker patients in the face of efficient service delivery. Changes to the casemix formulae have inadequately compensated for this problem. However, the Victorian Department of Human Services has recently attempted to rectify this situation through the provision of risk adjusted specified grants for some AN-DRGs following consideration of the econometric and benchmarking analyses undertaken by The Alfred hospital.

Risk adjusted specified grants for high complexity AN-DRGs

During early 1998-99, The Alfred hospital was concerned that the price it received from the Victorian Department of Human Services (the purchaser) for certain AN-DRGs was significantly less than the costs incurred in the management of patients. Craniotomy with complications and co-morbidities (AN-DRG 23) was one such AN-DRG. Outlined below is the methodology used by the hospital in its submission to the purchaser. A mutually satisfactory outcome was negotiated.

The Alfred hospital informed the Victorian Department of Human Services that we had incurred a price/cost gap of \$1.3m in 1996-97 for AN-DRG 23 and that this deficit will likely worsen given changes in the 1998-99 casemix weights and boundary point changes that define high and low outliers on length of stay. It would also be exacerbated by loss of the Training and Development Grant supplement. The high outlier weight fell by 11.8% and the inlier weights fell by 9.2%. Benchmarking analyses undertaken by The Alfred indicated that our clinical practice is consistent with efficient best practice. Compared to national and international Health Round Table (HRT) benchmarked hospitals, The Alfred was efficient on costs, average length of stay and bed-day gap. The bed-day gap is a measure of the inlier days beyond the 75th percentile plus the outlier days beyond the outlier trim point. It therefore measures the potential efficiencies that could be obtained if all stays were reduced to the 75th percentile length of stay.

There were 10 hospitals included in our benchmarking comparisons for AN-DRG 23, with a range of separations in the hospitals of 1 to 271. The Alfred had 182 separations. We had the fourth highest average cost and median cost (\$14,790). The median cost range across all hospitals was \$11,302 - \$20,308 with The Alfred falling around the midpoint of the range of both average and median costs across all hospitals. The Alfred had the second lowest average length of stay at 14.8 days, which was 2.5 days lower than the average across the group. It had the second lowest proportion of bed-day gap days at 11% accounting for 296 bed-days. The bed-day gap as a proportion of all bed-days for the Alfred was 6 percentage points lower than for the average across 'all hospitals'.

Financial and benchmarking data were used for 1996-97 given that the cost weight study that determined the cost weights for 1998-99 used data for 1996-97. The reasons for the price/cost gap of \$1.3m were provided. The Alfred treats a more complex/high intensity group of patients relative to other benchmarked hospitals for this AN-DRG. It has the second highest proportion of elderly (29%) which was 5 percentage points higher than for 'all hospitals'. The Alfred had 66% of cases emergency, which was 4 percentage points higher than the proportion across all benchmarked hospitals. It had the third highest proportion (56%) of complex 3-4 patients, which was 5 percentage points higher than for other hospitals.

We argued that the lower levels of funding through reduction in the inlier and outlier cost weights may further exacerbate the hospital's price/cost gap, particularly given our relatively costly complex casemix treated by our state-wide referral centres for complex neurosurgery. Following discussions with the Victorian Department of Human Services, the hospital further analysed the data to demonstrate that its high complexity patients were significant cost drivers using econometric multiple regression analyses. The method implicitly incorporates international methodologies on "risk adjustment" of health funding models. We also undertook analyses of our highest cost patients for this AN-DRG and demonstrated that they were more complex patients that related to our statewide referral centre status.

A multiple regression model was used to address the issue of whether our relatively high complexity patients are significant cost drivers for AN-DRG 23 at The Alfred. Cases defined as emergency admission, aged and complex 3-4 are considered high complexity patients and may be associated with relatively high costs. Complexity 3-4 is derived from patient level data from the Complexity and/or Comorbidity levels (CCL). The CCL is a complexity class structure derived from the Refined Grouper Number (RGN) of the Yale University research project "DRG Refinement with Diagnostic Specific Co-morbidities and Complications" (Commonwealth Department of Health and Family Services, 1996). There are four levels of CCL, ranging from 1 (lowest) to 4 (highest). The variable length of stay 'outlier' also appeared to be a significant cost driver on visual inspection of the data. 70% of our 10 highest cost patients were high outliers, with an average length of stay ranging from 45 to 94 days. There were no high outliers amongst any of the remaining patients.

Our benchmarking analyses had found that the Alfred was high on the proportion of elderly, emergency admissions and 3-4 complexity level. The multiple regression analysis aimed to determine if there was an inter-relationship between the elderly, emergency, complexity and outlier variables and patient levels costs in The Alfred data set. All patients (except for one) with complexity code 3-4 incurred all the costs per patient above \$15,459 and up to \$83,555 (highest cost). The general model included the variables emergency admission, age, length of stay outlier and complexity class 3 or 4, which are defined in Table 1. Equation 1 took the following form:

$$\text{COSTPP} = \text{Bo} + \text{B1 (AGE)} + \text{B2 (EMERG)} + \text{B3 (OUTLIER)} + \text{B4 (COMPLEXITY)} + \text{E} \quad (\text{Equation 1})$$

Table 1: Definitions of variables

Variable	Definition
COSTPP	Cost per patient
AGE	Patient age
EMERGENCY	Dummy Variable (1 if patient admitted through Emergency Department, 'zero' if otherwise).
OUTLIER	Dummy variable (1 if patient was an outlier on length of stay, 'zero' if otherwise)
COMPLEXITY	Dummy variable (1 if patient was classified as high complexity, level 3 or 4, 'zero' if otherwise)

Table 2: Results of econometric analyses for AN-DRG 23

Variable	Coefficients	T Stat	P value
Emergency	3344	2.35	0.0198
Age	-69	-1.76	0.0808
Outliers	33421	8.98	4.114 E-16
Complexity	6486	3.31	0.001
Intercept	12560	4.12	5.708E-05

The results are shown in Table 2. They were $R^2 = 0.36$, $SE = 8911.77$, $F = 26.68$ [Significance 2.63 E-17]. The significant variables enable Equation 2 to be specified as follows:

$$\text{COSTPP} = 12650 (\text{Bo}) + 3344(\text{EMERGENCY}) + 33421 (\text{OUTLIER}) + 6486 (\text{COMPLEXITY}) + \text{E} \quad \text{Equation 2}$$

The independent variables explained 36% of the variance in per patient costs. Emergency, outliers and complexity were significant cost drivers in this AN-DRG. Age was not statistically significant. Higher costs were positively associated with outliers on length of stay, emergency admissions and high complexity patients. In line with international approaches the intercept, or constant, was interpreted as the base rate, with the other coefficients representing the additional costs incurred by such patients (Farley et al. 1996 and Antioch, Walsh & Wilson et al. 1999). For example, a patient that was admitted through the emergency department, with complexity score of 3 or 4 would cost \$22,390.

Another issue requiring investigation was determining what type of patients are highest cost and contributing to the deficit at The Alfred. An analysis of our 15 highest cost patients indicated that 8% of 182 cases accounted for 23% of our total costs of \$3.3m. Eighty percent of these 15 patients were emergency admissions. The average length of stay across these patients ranged from 13 to 94 days. The highest cost patient had a principle diagnosis of intracranial abscess with a principle procedure involving drainage of intra-cerebral haematoma. There were five principle diagnoses characteristic of the 15 highest cost patients including subarachnoid haemorrhage, intracerebral haemorrhage, cerebral aneurysm non-ruptured, benign neoplasm of the brain and intracranial abscess. These patients had 5 high cost procedures undertaken, including clipping of aneurysm, elevation of skull fracture fragments; other excision or destruction of lesion or tissue of the brain; ventricular shunt to extra-cranial site and drainage of intra-cerebral haematoma. All 15 patients were severity level 3-4. These diagnoses and procedures clearly relate to a more complex casemix, associated with The Alfred's role as one of the State-wide referral centres for complex neurosurgery. Similar benchmarking and econometric analyses were also undertaken for AN-DRG 3 (Tracheostomy except for mouth, larynx or pharynx disorder age > 15).

The Victorian of Human Services further analysed the Statewide costing data to determine the *relative disadvantage* of the funding provisions for The Alfred compared with other teaching hospitals for both AN-DRGs 3 and 23. Specified grants were also determined for other teaching hospitals in Victoria. The Alfred Hospital secured specified grants for AN-DRGs 23 and 3 for 1998-99 and 1999-2000 to the mutual satisfaction of both parties. During 1999, The Alfred also approached DHS using similar evidence for additional risk adjusted specified grants for 12 high intensity AN-DRGs in the area of respiratory, cardiology and trauma for 1999-2000. The Acute Health Division of DHS is currently working with The Alfred on these findings.

Risk-adjusted capitation funding model for cystic fibrosis in Victoria

Antioch, Walsh and Wilson et al. (1999) developed a risk adjusted capitation funding model for cystic fibrosis in the context of budgetary deliberations with the Victorian Department of Human Services. This section provides a brief overview of their findings. During 1997-98, The Victorian Department of Human Services funded cystic fibrosis patients receiving care in Victorian hospitals under casemix funding arrangements, predominantly through AN-DRG 173 (cystic fibrosis). AN-DRG 173 was not subject to any specified grants for inpatient care beyond the standard casemix funding arrangements in 1997-98 and previous years. However, the cost weight had progressively fallen over the past few years.

The hospital indicated to the Victorian Department of Human Services that it required additional specified grants during 1998-99 due to previous financial loss despite cost-effective service provision. The hospital argued that it is disadvantaged because it has a more complex casemix associated with our role as the State-wide Centre for Adult Cystic Fibrosis.

The funding arrangements did not appear to address the price/cost gap experienced by the hospital. In fact, during 1996-97, The Alfred incurred a price/cost gap of \$459,176 despite relatively efficient provision of services. This gap was partially offset by the Training and Development Grant. The hospital calculated that the deficit would likely be exacerbated under the new funding arrangements for 1998-99, given the new funding formula resulted in a decline in the cost weight by -14.8% from 3.063 to 2.609. The high outlier weight declined by the same proportion.

The hospital analysed and provided benchmarking analyses to the Victorian Department of Human Services to demonstrate the hospital's efficiency in delivering cystic fibrosis services, to secure additional specified funding.

The reasons for the price/cost gap were clearly articulated. The Alfred has a more complex casemix than the other hospitals but was still able to deliver cost-effective care. Despite higher absolute numbers of high intensity patients, The Alfred's average length of stay and average costs remained close to most other benchmarked hospitals and indeed were \$3,000 lower than the highest cost hospital. The subsequent econometric analyses found that the variables that were significant cost drivers were related to our more complex casemix, given they included emergency admissions, high complexity 3-4 status, the number of procedures performed and outliers on length of stay. These variables are also very important in determining how any capitated model for cystic fibrosis could be risk adjusted. The hospital did secure an additional specified grant for 1998-99 and 1999-2000. The cost weight also increased during 1999-2000 (Antioch, Walsh & Wilson et al. 1999).

The Victorian Department of Human Services is currently examining alternative models for funding, consistent with integrated and co-ordinated care with a view to developing a comprehensive purchasing model for 2000-2001. Likewise, the Commonwealth government is very interested in exploring ways to risk adjust capitation payments in the context of co-ordinated care trials. The current work provides the appropriate methodology to risk adjust a capitation funding model for a specific disease consistent with international experience in this complex field (See also Farley et al. 1996). Capitation funding models are thwarted in the absence of adequate risk adjustment strategies. Antioch, Walsh and Wilson et al. (1999) further discuss models of care and clinical guidelines for cystic fibrosis and international best practice.

Defining capitation arrangements

Under capitation arrangements, fund holders are paid a fixed amount of money for each enrollee, regardless of the amount of services actually provided. Capitation funding models have been part of financing systems in many countries. In the UK, for example General Practitioners were funded in the National Health Service through capitation arrangements from as early as 1947. Capitated managed care organizations and other types of fund holders assume financial risk for providing medical care to their enrollees. Increasingly, managed care organizations are passing on some or all of this risk to their physicians by paying them on a fully or partially capitated basis (Grasso et al. 1998) and sharing risk with their sponsors (or purchasers) (Van de Ven & Ellis 1999).

Antioch, Walsh and Wilson et al. (1999) developed a capitation payment method for cystic fibrosis patients treated by The Alfred hospital, called a 'health plan' or Australian Health Maintenance Organisation to support appropriate treatment choices and to protect the health plan from undue financial risk. The Alfred would be both the provider and health plan simultaneously. The sponsors are the Victorian Department of Human Services and the Federal government. There is both prospective and retrospective risk sharing with the State government. Health funds and physicians are excluded from risk sharing given the current method of funding physicians and the very high proportion of public patients treated at The Alfred.

The payment method consists of a blended prospective risk-adjusted annual capitated payment for individuals with cystic fibrosis for inpatient and outpatient care by State government combined with Fee For Service (FFS) Federal government payments for some drugs and medical services; lump sum event payment for expected incremental costs of lung transplant and also outlier payments for expensive patients. Some home care and palliative care services were 'carved out', in line with international experience. The methodology explained 21% of the variance in annual inpatient payments per patient. Risk adjustment for inpatient payments captured substantial variations across the patient group, with risk adjustment payments calculated for emergency admissions, high complexity scores, number of procedures and length of stay outlier status (Antioch, Walsh and Wilson et al. 1999).

Inpatient risk adjusted capitation payments

The initial general econometric model for specifying the cystic fibrosis funding model for the inpatient component included the variables: age, emergency admission, outlier, complexity class 3 or 4, number of diagnoses, number of procedures and sex for all cases grouped to AN-DRG 173. The results, identifying significant variables and adjusted for heteroskedasticity, enable the following equation to be specified.

$$\text{COSTPP} = 4492.723(\text{Bo}) + 1276.886 (\text{EMERG}) + 6377.113 (\text{OUTLIER}) + 3043.526 (\text{COMPLEXITY}) + 317.3643 (\text{PROC}) + E \quad \text{Equation 3.}$$

R squared =0.2104, Standard error of regression =3598.296; with F =14.39, Prob = 0.000

A correlation co-efficient matrix of all independent variables indicated that there was no multicollinearity with correlation co-efficients in the range of 0.06 to 0.15.

During the financial year analysed, 85% of all admitted patients with a diagnosis of cystic fibrosis, were admitted at least once though out the year under AN-DRG 173. Their risk-adjusted payments could be based upon their first admission under AN-DRG 173 and involving any of the above variables that are captured in the medical record for their admission. For the remaining patients any admission from the previous year for AN-DRG 173 could serve as the data source. The prospective risk adjusted payment component for all cystic fibrosis patients registered with The Alfred would therefore be based on a payment level determined for each patient during their first admission under AN-DRG 173, multiplied by the 'best practice' admission rate per patient, and then summed across the total number of registered patients for the year to arrive at a total prospective payment. The coefficients in equation 3 are interpreted as the additional cost per patient per episode attributable to the relevant independent variables. An emergency admission would accrue an additional \$1,277 in addition to the base rate of \$4,493. If the patient was also an outlier, an additional \$6,377 would be payable for a total amount of \$12,147. Here, the constant (intercept value) is the base payment.

An Expert Panel on Cystic Fibrosis convened by the Victorian Department of Human Services considered a proposal for 2.5 inpatient admissions per registered patient per annum. This utilisation figure of 2.5 could be multiplied by the risk adjusted cost derived for each patient based on their risk adjusters obtained from their AN-DRG 173 admission and summed across all patients to derived the total amount payable to the AHMO. The results of the capitation payment structure when applied to the per patient utilisation recommendations of the Expert Panel on Cystic Fibrosis provide a very promising mechanism to facilitate greater service flexibility and integration at a more appropriate price.

There would also be an end-of-year retrospective payment for some costs ie cost "outlier risk sharing" between sponsor (Department of Human Services) and AHMO (The Alfred). This would involve a specified proportion (75%) of costs above a threshold level of say \$25,000 per patient per year (Antioch, Walsh & Wilson et al 1999). Risk sharing for adjustments for high outliers on costs was also adopted for the End Stage Renal Disease in the USA (Farley et al. 1996).

Ambulatory capitation payments

The ambulatory allied health services are currently funded at \$40 per visit (Victorian Department of Human Services 1999). The Victorian Department of Human Services Expert Panel on Cystic Fibrosis recently considered a proposal to increase these visits to 7 per annum per patient for physiotherapy, dietetics, social work and 4 per annum for occupational therapy. The capitated amount for these services could be based on the 'best practice' utilisation figures finally determined by DHS and multiplied by the average cost of the visits. If the rate of 7 per annum per patient is decided, then the capitation rate payable to the AHMO for all registered cystic fibrosis patients would be calculated by multiplying 7 for each allied health discipline by the number of patients, at a cost of \$40 per visit.

Overview of Commonwealth-State payments for cystic fibrosis

The model would include both Commonwealth and State payments to the AHMO. State government payments would include all hospital inpatient care, ambulatory care currently funded through the Victorian Ambulatory Classification System (VACS) and allied health grants.

Federal government payments would be in the form of blended FFS payments in the AHMO model. They would include services billed by medical staff to the Health Insurance Commission (HIC) including ambulatory medical services and lung function tests; drugs prescribed for ambulatory patients that are available

under the Pharmaceutical Benefits Scheme and pharmaceuticals provided by the Commonwealth under Section 100 for access to high cost drugs. Community-based psychosocial services and other community services billed to the HIC would also be included (Antioch, Walsh & Wilson et al. 1999).

Skilled nursing home, hospice, home care services (Grasso et al. 1998), community based services (Farley et al 1996) and mental health treatment (Van de Ven & Ellis 1999) are often 'carved out' of standard benefit packages offered by managed care plans. They are either not covered or covered separately (Van de Ven & Ellis 1999). In line with international experience, services provided by the Royal District Nursing Service and palliative care services, along with community-based psychosocial services and other community services billed to Victorian Department of Human Services would be 'carved out' of the capitation component of the model and funded through current arrangements. Further, the AHMO would not include services provided by secondary centres jointly agreed with the specialist service.

The general proposed approach used, involving capitation, risk adjustment and "risk scores" for patients, is in line with recent developments from the USA that take effect from 2000. During 1999, Health Maintenance Organizations (HMOs) receive of a fixed payment for each beneficiary, adjusted only for a few factors, like the beneficiary's age, sex and country of residence - but not for the patient's medical history. Medicare paid an average of \$5,800 a year for each beneficiary in an HMO. Under the new payment system, HMOs will receive extra payments for beneficiaries who have been hospitalised in the prior year for specific conditions. The bonus will run from \$1,910 a year for patient with breast cancer to \$26,464 for a person with AIDs. Payments for healthy Medicare beneficiaries could be reduced as much as 20% (Pear 1999).

Conclusion

If casemix policy is to maintain credibility and equity, the funding arrangements must respond to changes in the cost structure of hospitals and meet demand increases. Although the price relativities for casemix funding are set using Victorian data, the actual base payment per case is determined on a policy basis rather than on any public benchmarking process. Further, key problems have emerged from applying the averaging principle inherent in cost weights. The Victorian Department of Human Services has attempted to address this problem to some extent since 1998-99 through the provision of risk adjusted specified grants for some complex AN-DRGs following consideration of econometric and benchmarking analyses undertaken by The Alfred Hospital. The hospital and government worked together to resolve these complex issues and the results have impacted on the more equitable provision of specified grants for these AN-DRGs across the entire Victorian hospital industry. This is a very promising step forward, and has paved the way for an improved Victorian funding model.

Risk adjusted capitation funding models are other promising alternatives to casemix funding arrangements for chronic disease. The capitation funding model for cystic fibrosis patients treated by The Alfred is instructive in guiding policy makers on how such models could be applied in Australia, given our health insurance arrangements and Commonwealth-State financing arrangements. Politically, it represents 'incremental' policy change, rather than system-wide 'capitation' reform. It is therefore more likely to be politically acceptable and implementable in our health industry. It has great potential to be applied nationally through the Co-ordinated Care Trials being led by the Federal Government, in addition to its more local application in Victoria.

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