

# Using Australian DRGs in Germany: a commentary

DON HINDLE AND MAX J LENZ

Don Hindle is Visiting Professor in the School of Health Services Management, Faculty of Medicine, University of New South Wales. Max J Lenz is a health systems consultant, managing director of LENZ Company (Switzerland), and organiser of the First German Casemix Conference in 1999.

## Abstract

*Germany will begin a change to per case payment by DRG from January 2003. It has selected the Australian DRG classification as the basis for patient categorisation, in preference to the many other DRG variants around the world. The main aim is increase control over expenditure. We describe some of the reasons for high levels of spending on hospital inpatient care, including the fragmented insurance system and supplier-induced demand. We summarise the reasons why Australian DRGs were selected, and note some of the benefits that will accrue for Australia.*

## The legislated requirement to change to per case payment

The direction of technology transfer is more often from Germany to Australia, for obvious reasons like history, geography, and size. However, there is an interesting recent exception in health care: Germany has decided to adopt a few of the financing and management ideas that originate in the Australian public hospital sector.

In May 2000, the German federal government enacted legislation that requires payments for nearly all types of public and private hospital inpatient care to be made on a per case basis, where cases are categorised by Diagnosis Related Group (DRG). It is unclear at the time of writing how psychiatric, rehabilitation, and a few other types of care will be handled, given the concerns about the suitability of DRGs for these cases.

Per case payment means that there is a predetermined and all-inclusive amount for each type of complete patient episode (such as \$2000 for each normal childbirth and \$7000 for each hip replacement). The payment method is likely to be similar to that used by most Australian states and territories: that is, the allocation of a predetermined total budget among hospitals in proportion to their cost-weighted share of total production.

Per case payments have been used in small trials in Germany since 1997. However, the dominant approach at present involves payment according to itemised bills: hospitals charge separately for each inpatient day of stay, medical procedure, pathology test, and so on in much the same way as the majority of Australian private hospitals. Full implementation of per case payment must be completed by 2006 after two years of transitional arrangements (Mohr 2001).

The German government believes that the change will lead to improved control over clinical practice variations that adversely affect both the cost and quality of care. Like other countries that have implemented per case payment (including Australia), Germany expects that there will be an immediate impact on the cost of care, because per case payment gives the hospitals a financial incentive to avoid unnecessary services. Unlike payment by itemised bills, there is no additional revenue for the hospital if (say) it keeps the patient an extra day.

## Why Germany needs to change

Many people may be surprised that Germany feels the urgent need to make a major change. It has higher average incomes than Australia, and has earned a reputation for productive efficiency in many industries. One might reasonably expect it would be better at providing health care, especially in view of our inability to solve fundamental problems - and the consequent widely held view that our health care system is in crisis. For an up-to-date discussion of Australia's problems, see the Senate's new report (Australian Senate, 2000).

In fact, Germany has a mix of short-term and structural difficulties that may be more serious than those faced by Australia. We will briefly mention a few, before discussing the change to DRG-based payment.

## Current methods of health care financing in Germany

There are many similarities between the health care systems of Germany and Australia. For example, they both split the responsibilities for health system management between federal and regional government authorities (the 16 states in the case of Germany), have highly skilled and well-equipped clinical workforces, and both provide high-quality care in efficient ways for the most part.

However, there is a fundamental difference of structure: Germany has no equivalent of Medicare - a government health insurance system funded from general revenue. Rather, every German is required to choose a health insurance policy from one of around 700 non-government health insurance companies (or funds), which are a mix of for-profit and non-profit (but mainly the latter), large and small, local and national, and restricted or open membership. The choice is more limited for any individual, since many are restricted in some way - such as by location of normal place of residence or type of occupation.

For example, an employee of Volkswagen could choose to join the scheme restricted to VW employees, or a local non-profit scheme, or a national for-profit scheme. He or she could choose various levels of coverage in terms of levels of copayment, the range of covered illnesses, and cost of premiums. In effect, the German government requires people to be insured, but they are allowed more discretion than Australians with regard to the type and level of insurance.

Most people are covered by virtue of their employment, with premiums paid directly by the employer on a 50:50 basis. All other citizens are covered in one way or another. Insurance funds are required by law to accept disadvantaged people (such as the retired or disabled) who cannot pay the full premiums themselves. The burden is shared among funds by a government-supervised reinsurance process.

There are advantages in providing choice, at least for some people who can work out the complexities and afford to pay more for more care. However, there is an obvious penalty in terms of efficiency: large numbers of multiple competing insurers have higher administrative costs, fewer opportunities to share common development costs and analytical systems, and lower bargaining powers when negotiating with hospitals.

The problems of this approach to insurance have been well documented, and they affect everyone. For example, hospitals complain about the prolonged negotiations that are required each year with a large number of different insurance funds - and about the consequential complexities of operation, such as the different methods of billing, audit, and payment.

The insurance companies themselves are in a continual state of dispute about reinsurance. As is the case for the Australian private insurance sector, there are government-imposed rules about cross-subsidisation, whereby funds with low-risk membership must make transfer payments to funds with higher numbers of heavy users. The aims of reinsurance are mainly to reduce the danger that funds will selectively insure - do what the Americans call cream-skimming, by avoiding the enrolment of people who will probably require high-cost care.

The core process involves redistribution on the basis of age-sex groups, for which average levels of service utilisation have been calculated. Unfortunately, these variables fail to explain many of the observed variations in service use and cost. For example, there are large regional variations in health care costs that seem primarily to reflect historical differences in supplier-induced demand. The more wealthy regions that have more hospital beds and doctors per capita have much higher health care costs than one might expect on the basis of demographic factors alone.

Citizens suffer in many ways. One is that they are faced with options that are difficult to appraise, and another is that they have a constant worry over whether they have made the right choice of level and mix. If their contributions are paid in part by their employer, they may have a shared concern about the high costs of premiums.

It is worth noting, however, that ignorance is common: members are likely to be unsure about their coverage (and associated rules about copayments, exclusions, and qualifying periods), they might have only a vague notion about the level of contribution made by their employer, and they may be unaware of the extent to which their employer is influenced by the cost of premiums when choosing a fund and insurance plan. When the degree of choice was increased in the mid-1990s, there was a widespread expectation that many people would survey their options and make changes in the direction of the better-managed funds. In fact, the level of change has been very low, confirming experiences in Australia and elsewhere: most members have difficulty in differentiation.

There is also a complicated set of rules regarding copayments (Tuschen & Philippi 2000). The rules became even more complicated during the 1990s, as the government became increasingly concerned about the burden of health insurance on industry.

In other words, Germany suffers from the same kinds of problems that exist in the Australian private health insurance sector. The cost penalties that Australia experiences with respect to a minor part of our health care system apply to all of Germany's.

In some respects, German health insurers are worse off than those in Australia. One problem in Germany is that most of the hospitals' capital expenditures are financed separately by the local government, although there are plans to change this in 2007 (Leber 1999). A related problem is that the insurance funds are given hardly any discretion with respect to the hospitals with which they will contract. With few exceptions, they are expected to contract with all the hospitals that the local government authority considers need to exist and be provided with business. One serious consequence is that there are too many hospitals and hospital beds, and there is too much facilitation of supplier-induced demand.

The more forward-looking Australian private insurers have recognised the benefits in being able to force hospitals to compete on price and quality, and are now contracting with only a subset of private hospitals. There is no equivalent degree of between-hospital competition in Germany.

However, there are some aspects of the German system that give funds an advantage over their equivalents in Australia. Most important, the inability of insurance funds to control costs has led in recent years to much more aggressive action by the government. This included the mandating of fixed annual budgets through legislation enacted in 1989 for ambulatory care and in 1993 for inpatient care (Richard and Schonbach, 1996). In brief, each local government area is empowered to set a ceiling for expenditure in the next financial year. Limits are typically set for each type of health care service (such as dental services or ambulatory care), and for each hospital.

Incidentally, the capping of budgets has been seen by many observers to be a step backwards. There has been a growing lobby in favour of increasing the use of market forces. Theurl (1999) notes that Austria (which has shared with Germany a longstanding commitment to Bismarckian models of social insurance for more than a century) made a conscious decision in 1990 not to follow Germany's plan for greater market freedom. Rather, it chose increased government intervention that has been manifested in many ways. However, after ten years, the differences in levels of use of market forces are relatively minor. In some respects, Germany is repeating the experiences of the United States of America under President Reagan: while Reagan's dominant election theme had been to deregulate the health care sector and encourage competition, by 1984 his administration had implemented one of the most interventionist models in US history - which included government mandating of prices for Medicare services through DRG-based per case payment.

One important difference, relative to the USA, is that Germany has always had a greater commitment to social pooling. Heubel (2000) argues that no German government could move far away from a predominantly socialised approach to health care financing and resource allocation. Like Australia, there is a greater degree of acceptance of competition between care providers than between health care financing and purchasing agencies. Thus, while there has been frequent discussion of the need to improve the efficiency of health insurance, no-one is willing to give them the degree of freedom that is necessary if competition is to have a significant effect.

The change to fixed budgets was essentially anti-competitive, but it has slowed down the rate of increase in health care expenditures. It is not, however, sufficient in the view of the government or the insurance funds. The main problem is that expensive health care practices are hard to correct in the short term. The typical approach aims to set the expenditure ceilings at a growth rate equal to fund revenues from premiums. However, the premiums have been high for so long (between 9% and 16% of gross salaries and wages in 1997, depending on the fund) that it is difficult for anyone to imagine anything different. We are currently working on the comparison of various service costs for German and Australian hospitals, and the common German response to any set of Australian data is '... that can't be right, you're missing something, no-one could do it so cheaply'. As Glossmann et al (2000) put it, German hospitals have not found good reasons to establish '... modern and competitive organisational structures'. Rather, they have been able to afford to have low levels of clinical involvement in the management of population health and resources, and to postpone the alleviation of operational weaknesses including '... bureaucratic structures and a lack of interdisciplinary cooperation'.

German health insurance funds have lower administrative costs in comparison to most other countries. The average is only around 6% of total expenditures, compared with 11% for private health insurers in the United States of America and 12% in Australia.

There are several reasons for this. One is that, as noted above, they are under much tighter government control than the private health insurers in Australia. For example, all German funds are required to offer similar packages of covered services. There is consequently very limited opportunity for German funds to compete: since 95% of costs relate to government-mandated cover, they can only differentiate themselves at the margins - typically by offering health promotion and illness prevention services like stop smoking clinics and subscriptions to exercise clinics. The effects of these services at the margins have not been adequately evaluated, and some observers argue they are no more than marketing gimmicks.

The German funds save on administration relative to US insurers by spending less on the control of health care expenditures. There are, as yet, only limited programs of utilisation review and other managed care activities. However, the situation seems to be changing rapidly in this regard, in spite of growing opposition from some medical groups (Lorenz, von Mittelstaedt, and Gaertner 2000).

One other structural problem that merits mention is the high degree of separation between hospital and 'ambulatory' care - which is largely a distinction between hospital inpatient on the one hand, and GP and specialist medical care on the other. Like the Australian private sector, many doctors bill separately from the hospitals in which they practise.

It has traditionally been the case that doctors have negotiated payment rates collectively by way of their professional associations. In contrast, hospitals have had no equivalent opportunity to negotiate collectively - and indeed there is no strong hospital association of any kind. For this and other reasons, quite different processes have emerged over time, and there has been little reason to contemplate greater integration of care. Germany recently began a series of experiments along the lines of Australia's co-ordinated care trials, and largely for the same reasons. However, it will be some time before the consequential inefficiencies are overcome.

Australia and Germany have similar kinds of constraints to greater integration. Delnoij and Brenner (2000) note that the use of GPs as gatekeepers is inherently difficult if, as is the case in Germany at present, there are multiple payers. An interesting recent study suggests, however, that there would be strong support among Germans for the use of family physicians as gatekeepers - perhaps as a consequence of the complexities of choice of care provider that they face under current arrangements (Himmel, Dieterich, and Kochen, 2000).

## Short-term problems

We mentioned there are some short-term problems, and the most important of these are a consequence of the re-unification of Germany in 1990. This not only meant that health care spending had to increase in order to create a single and equally costly health care system across east and west. It also increased the overall pressure on resources across all sectors - and contributed to a general economic downturn in Germany after 1995. As Tony Blair said recently, with apparent glee, there has never been a previous occasion in recent history when the United Kingdom's economy was stronger than that of Germany, or when Germany had higher rates of unemployment.

However, short-term factors have probably been over-emphasised. The fact is that Western Germany was a high-spending nation long before re-unification, as can be seen in Figure 1. Last year, it spent over 10% of its GDP on health care, compared with 8.5% for Australia (and between 6.5% and 9% for almost every other country with similar wealth and socio-political structure). Germany's spending has exceeded Australia's current level (8.5% of GDP) since 1973. Indeed, only the USA and Switzerland spend more of their GDP on health care - and for similar reasons including an even greater fragmentation of health insurance (and the dominance of for-profit companies).

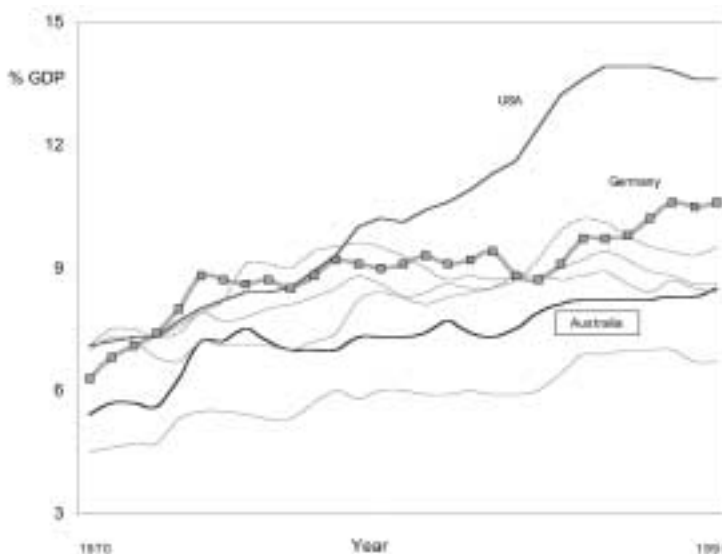
Some relevant indicators are shown in Figure 2. Germany has more acute beds per 1000 than Australia. There has been a decline during the 1990s, but the rate of reduction has been slower in Germany than in Australia.

The same pattern can be seen for acute inpatient days of stay. There has been a decline in both countries, but it has been a more marked fall in Australia. In 1997, the most recent year for which statistics are available, Germany had more than twice the number of acute inpatient days per capita. It should be noted that the figures are not entirely comparable, since there are differences in definitions. However, the reported differences are too large to be explained by differences of definition at the margins.

Figure 2 shows two sets of statistics that may explain some of the differences in the level of use of hospitals. Germany has more medical practitioners per capita, and significantly more specialists. Indeed, Germany has twice the numbers per capita, and its specialist workforce is growing more rapidly than Australia's.

In summary, a combination of inefficient insurance and supplier-induced demand is perhaps the main reason why Germany spends more on health care than most other countries - and more than its government wants to spend. These structural problems are widely recognised, and have been the subject of debate for at least thirty years. However, like most other social democracies, Germany has found it difficult to make major changes of direction in the face of inertia, the vested interests of for-profit players, and the reluctance of governments to accept the inevitable criticism in the mass media that any proposal for change engenders - no matter how sensible it might be.

**Figure 1: health expenditure as a percentage of GDP, selected OECD countries, 1970 to 1998**



There was an opportunity to make changes immediately after re-unification: wars, floods, famines, and similar traumatic experiences are excellent stimulants to the overthrow of old systems. The opportunity was enhanced in this case because health care was quite different in the East and the West. The communist East had accepted

the typical command economy approach that applied across the Soviet Empire: centralised funding by the government, salaried employment of all health care professionals, free services according to need (but with more for the politically powerful), and centralised planning (one shoe fits all). The adverse consequences in East Germany were much the same as elsewhere - few opportunities for initiative, disillusion and lack of motivation among many health care professionals, little interest in consumers' rights, the pain of having to follow simplistic policy decisions made by the Central Committee, and so on. However, East Germany managed much better than most other command economies for reasons such as its history of high educational standards and commitment to science and technology.

When the Wall collapsed, the new Republic had the options of retaining the two different health care systems, blending them, or choosing one over the other. The Western model was chosen for a mix of good and bad reasons. The most important were that it was larger (55 million rather than 20 million users), it contained more articulate proponents including the insurers and care providers, was technically more sophisticated (and therefore more attractive to the well-off), and was politically more correct in the sense of the ideas about economic rationalism and small government that dominated free-world thinking. After all, this was the time that Margaret Thatcher's 'internal market' reforms were being applied to the UK National Health Service.

Opposition from the East was muted and half-hearted. One important factor was that, if the western model were the victor, the higher levels of expenditure that it required would mean that care providers in the East would be the recipients of additional funding. This has proven to be the case: there has been a large increase in infrastructure investment and in recurrent expenditure, often more as a consequence of a desire to equalise health system costs across East and West than in the interests of improving performance.

**Figure 2: selected comparative statistics, Australia and Germany**

(Source: OECD)		Germany		Australia	
		N	% change between years	N	% change between years
Acute beds per 1000 population					
	1987	7.5	-	7.1	-
	1997	5.2	-30.7	4.0	-43.7
Medical practitioners per 1000 population					
	1993	3.2	-	2.4	-
	1997	3.4	6.2	2.5	4.2
Medical specialists per 1000 population					
	1993	1.9	-	0.9	-
	1997	2.2	15.8	0.9	0.0
Acute care bed-days per capita					
	1987	2.4	-	1.3	-
	1997	2.1	-12.5	1.0	-23.1
Out-of-pocket health spending (%of total)					
	1987	10.8	-	14.5	-
	1997	11.9	10.2	16.2	11.7

There was never any serious debate about optional models for a reunified health care system. The general view was that the West's model was probably more efficient in most respects and was certainly more liberal. On the other hand, it was demonstrably less equitable and more wasteful in many ways. The jury is still out regarding cost-effectiveness. However, the latest studies suggest that, if there was any difference in health status, it might marginally have favoured the West among the elderly (Hillen et al, 2000). Aspects of both systems might have

been included in a better model, but there was too little time and so much else to do. It is rarely the case in health care that, if one puts aside fundamental conflicts of choice, they will disappear in time. Rather, they are likely to re-surface when you least want them to do so, and bite you. This has happened in Germany during the last two or three years of economic downturn, with respect to the balance between privilege and equity.

The fact that unemployment is much higher in the former East is unsurprising. Nor should it be surprising that many Germans - and not only those in East - are angry that the unemployed are given smaller shares of health care at a time when their needs tend to be highest. In general, health care professionals in the East are much more likely to question the direction of the health care system, and to point out that there has been continual change since 1990 which has done little more than create buildings and insurance offices, and undermine the extent to which health services are delivered in an ethical and caring way. Much of the criticism is founded on nostalgia - a desire for the good old days, even though they were not good for the most part. Some of the criticism is entirely justified on the grounds of both fairness and cost-effectiveness.

Like Australia, Germany recognises that privilege (paying more to obtain more health care) is more likely to be preferred by the well off. Germany has the additional problem of dealing with conflicts of principle that are split on a geographical dimension - east and west.

The new left-of-centre government of Chancellor Schroeder has started out with a commitment to deal with the old problems, in much the same way as his soul mate Tony Blair did in 1997. The Chancellor is receiving a good deal of support on this from the Green Party, which provides a large minority of seats, and also the Minister for Health. (Just before going to print, a new Minister for Health was appointed who belongs to the Socialist Party.)

The Schroeder government has recognised that any increase in equity depends to a significant degree on reducing the waste in the hospital sector, and on obtaining better information about the care that is being provided. This was the primary motive for Federal legislation on per case payment by DRG.

## Changing to per case payment by DRG

A large amount of work will have to be done if the change is to be successfully implemented. At present, Germany has few of the required tools. In particular, it does not have an accepted and tested DRG classification system, or measures of the average cost for each DRG that could be used as the basis for setting the per case payment amounts.

An implementation plan was devised, in which the critical first step was definition of the classification by the end of 2000. This is to be followed by a survey of six months of costs of a representative sample of hospitals, and calculation of the starting set of DRG cost relativities by the end of 2001. Many questions remain to be answered, such as whether there are to be regional cost relativities, how acute hospital transfers will be handled, and to what degree teaching hospital might receive higher payment rates.

There are many variants of the DRG classification in use, and that could have been chosen by Germany. For example, the US federal government has a variant (HCFA-DRGs) that differs from one used by several states including New York (AP-DRGs). The UK has its own variant, called Healthcare Resource Groups. Other countries with their own adaptations include Canada, France, and Australia. The multinational US company, 3M, is also promoting the use of a classification called International All-Patient DRGs that is claimed to have been developed to suit many countries (including those in western Europe).

Germany had the option of developing its own classification from first principles. However, for various reasons including the tight timetable for implementation, it decided the best approach would be to take the most suitable of the existing DRG variants and modify it as necessary to suit the peculiarities of Germany's needs and clinical practices.

The process of appraisal of the options had to be completed very rapidly, in view of the tight timetable set by the government. This and related tasks were devolved to a committee comprising widespread representation from the insurance and care provision sectors. Indeed, the government has taken the view that its responsibilities are limited to making sure others act - and in particular, to ensuring that the industry solves its own problems in the spirit of 'self-government'. This approach is in line with the broad application of corporatism in Germany (Schwartz & Busse, 1996).



The committee has been facing many of the same kinds of problems experienced by the private health care sector in Australia. There is not much trust between competing private health insurers, or between insurers and care providers. However, a change of the magnitude indicated in the Act requires a concerted effort.

In the case of selection of a basis for German DRGs, there was some degree of duplication of effort, and this led to one research team proposing a solution preferred by most insurers, and another team proposing a solution with more support from the hospitals. There was also strong marketing by commercial contenders, such as the offering of free initial use of DRG software, along the lines that applied in Australia in 1991 when we were trying to select the right starting variant.

Most insurers inclined towards selection of 3M's largely proprietary version, All-Patient DRGs (AP-DRGs). This option also included consideration of the extended version, called All-Patient Refined DRGs (APR-DRGs).

The German Hospital Association recommended selection of Australian Refined DRGs (AR-DRGs). The analytical process was rushed and complicated, and has not yet been fully documented in the technical literature. However, it seems that considerable effort was made and sensible investigations were undertaken. The two leading options were rated on 17 dimensions, of which some of the more interesting are shown in Figure 3.

The main advantage of the Australian classification was considered to be its more sophisticated way of handling multiple diagnoses. AP-DRGs (like all other leading contenders) make use of complications and comorbidities or CCs, which are diagnoses in addition to the principal diagnosis that have been shown to increase patient length of stay (and hence costs of care) by at least one day in 75% of patients.

However, only the most significant CC is taken into account. If the patient has several CCs, they are all ignored after the first.

**Figure 3: ratings of relative suitability of AR-DRGs and AP-DRGs, selected attributes**

Attribute	Ratings	
	Australian (AR-DRG)	AP-DRG
Handling of comorbidities	√√√	
Aggregation at higher nodes	√	
Clinical acceptability		
Software competition	√√	
Cost homogeneity	√√	
Usefulness for facility and service planning	√	
Usefulness for clinical management	√	
Economic acceptability		√
Transparency of assignment		√
Clinical coding systems		√√

*Based on presentation by Dr Max Lenz, Patient Classification Conference, Bern, 10 November 2000*

Indeed, this approach was used in Australia's variant (Australian Refined DRGs or AR-DRGs) until version 4 was released in 1998. From AR-DRG version 4, a more sophisticated and clinically sensible approach has been used.

It is a matter of common sense that the complexity and consequent cost of care would tend to increase in proportion to the number of CCs that were present. In fact, there is empirical evidence of this, including analyses undertaken in Australia (Hindle, Degeling, and van der Wel 1997).

The approach is described fully in documentation from the Commonwealth Department of Health and Aged Care (CDHAC 1998). In outline, the set of diagnoses defined to be CCs was subjected to statistical analysis by a Departmental team, together with clinical review by the Australian Casemix Clinical Committee (ACCC), a group of expert clinicians that has been in operation since 1992 to advise the Australian government on DRG design and related matters.



Incidentally, the effects of heavy involvement of the ACCC in this and other related matters was a key factor in causing the German Hospital Association to conclude that AR-DRGs were clinically more acceptable. It is much easier for a predominantly public health care sector to stimulate the active involvement of practising clinicians than it is for commercial software companies in (say) the United States of America.

Advice from the ACCC led to many changes in the CC lists, including the addition of 111 diagnoses not defined as CCs in previous AR-DRG versions. The additional diagnoses included infections, nutritional disorders, fluid disorders, depressive and other psychoses, amnesia, eating disorders, skin and leg ulcers, incontinence, circulatory and respiratory disorders, child maltreatment, rehabilitation and a range of allied health interventions.

The next step involved review of the significance of each CC. Each CC is assigned a score from 1 to 4, called the clinical complexity level or CCL, on the basis of observed effects on average in a study database (which comprises several years of discharges from the large majority of Australian hospitals). The CCL value for a CC is affected by the principal diagnosis.

The third step involved looking at the effects of there being more than one CC for an inpatient episode. A computational model was developed by analysis of the study database, which produces a score for the episode (the patient's clinical complexity level or PCCL) as a weighted combination of all CCs present in the inpatient episode.

The idea is illustrated in Figure 4. It shows six patients, and how their CCs are used to calculate the additional complexity of care and consequent higher cost of care. The first part of Figure 4 shows the rules that applied for version 3 where (like HCFA, AP-DRG, and all other widely used variants) the complexity is determined simply by the maximum CCL value of all the secondary diagnoses in a record.

The second part shows the effects of the new logic. On the whole, a patient with a larger number of significant secondary diagnoses is given a higher complexity score.

Figure 4: illustration of the different use of CCs in Australian DRGs version 4

Patient	CCs with their CCL values						Patient's CCL
	CC #1	CC #2	CC #3	CC #4	CC #5	CC #6	
Logic in Australian DRGs, version 3							
A	4	3					4
B	4						4
C	3	3					3
D	2	2	2	1	1	1	2
E	2						2
F	1	1	1	1	1		1
Logic in Australian DRGs, version 4							
A	4	3					4
B	4						3
C	3	3					4
D	2	2	2	1	1	1	4
E	2						2
F	1	1	1	1	1		3

The sense of this change is obvious, and is supported by empirical analysis. The Commonwealth Department of Health and Aged Care (CDHAC 1998) concludes that "... it has produced a better set of CCs for version 4 in terms of measuring higher resource use." One important indicator of improvement is that the use of age to signify cost differences has been reduced. The number of DRGs defined only by an age split fell from 20 to 8, and the number defined by both age and CC fell from 60 to 32. The number of DRGs defined by CC alone increased from 81 to 126. Of these 19 are three-way CC splits, compared with only 5 in version 3.

It is not surprising that AR-DRGs rated highly in terms of the German hospitals' first criterion - use of CCs. This was also a factor in the high rating of AR-DRGs from the perspective of acceptability for clinicians. It simply makes no sense to clinicians to take account of only one diagnosis after the principal diagnosis.

Dr Robert Mullins, a member of the Yale University team that developed DRGs in the late 1970s, argued at a conference in Bern in September 2000 that 3M was right in choosing not to take the same approach of counting the number of CCs on the grounds that the data in many countries were still deficient. He noted that the combinatory model may be worthwhile in Australia, where there is a relatively complete recording of secondary diagnoses, but it would not be helpful for countries like Germany or Switzerland because the average number of recorded diagnoses is lower.

This may be a shortsighted argument. The completeness of recording is certain to improve once hospitals are being paid on a DRG basis - as has been the case in Australia. Even if there are unrecorded diagnoses, it will always make sense to count those that are present in a clinically logical way.

As shown in Figure 3, a factor that favoured AP-DRGs was that software had already been developed to accept the German procedure classification, OPS-301. In contrast, the Australian variant makes use of our adaptations of ICD-10 and the Commonwealth Medicare Benefits Schedule - which jointly form the ICD-10-AM diagnosis and procedure classification system.

We suspect that the decision was close. From a purely statistical point of view, studies have shown that AR-DRGs are only marginally superior to AP-DRGs. See, for example, the analysis by Reid, Palmer, and Aisbett (2000) in a recent issue of AHR. The decision may have depended critically on the view of some parties that a link with the Australian government would be less risky than one with a multinational for-profit corporation. For some people, the fact that no-one from Australia was actively lobbying in favour of or marketing AR-DRGs was an encouraging sign.

## Benefits for Australia

The decision by the German government to use Australian DRGs as the starting point will have several immediate benefits for Australia. First, the Commonwealth government will be paid a license fee for the AR-DRG classification, and for the sale of associated materials (such as those related to the coding of diagnoses and procedures, estimation of costs of various types of patient care, and auditing).

Second, there will be many opportunities for Australian companies to sell consulting services. This has already been happening. The best consulting groups are likely to have ongoing business if only because - even in a country more than four times the size of Australia and with strong research and development capabilities - there is so much to be done if implementation is to be successful on 1 January 2003.

Third, and most important in my view, we will benefit from opportunities to compare performance, undertake collaborative research, share in technology developments, and so on. Several German hospital groups have already established collaborative arrangements with similar institutions in Australia. At the other extreme, it is likely that the Commonwealth will have the opportunity to share ideas about refinement of the DRG classification, and to learn from the refinements that Germany is bound to make in the near future.

Finally, the strategic approach taken by Australian governments has stood the test of critical evaluation by various German agencies, and been given top marks. If nothing else, this will be a powerful additional argument to be used against the various parties in Australia than have been resisting these ideas, including much of the private health care sector.

## A postscript: will the changes work?

A change to per case payment by DRG makes sense, and selection of Australian DRGs was probably the optimal decision. However, some people are arguing that the deadline for full implementation is too tight, and Germany is likely to implement a poor solution in haste - and then regret at leisure. The US federal

government's experience with per case payment by DRG is a good example. Once the prospective payment system was in place after 1983, the inertia that is an inevitable consequence of distribution of billions of dollars among competing players has meant that most of the obvious flaws in DRG logic have not been able to be addressed.

Concern has also been expressed about devolution of implementation to a committee of competing agencies that has unclear lines of authority. It is difficult to find compromise solutions on (say) the level of additional payments to teaching hospitals because it has differential effects on the financial wellbeing of the agencies that committee members represent.

However, the German government has the power to take over and impose a solution. It has shown a willingness to do so in the recent past, and the threat should be sufficient to ensure that 'self-government' works in this case. If there is cohesion, Germany has all the other resources that are needed to ensure highly successful implementation within the deadline and to build a foundation for continual improvement afterwards.

Perhaps a more important concern is whether the overall context is conducive to effective use of per case payment. Strehl (2000) argues that the reforms are too restricted: while DRG-based per case payment is sensible, nothing is being done to address '... the structural deficits' of the German health care system. In particular, the '... monopolies of hospitals for inpatient and of contract doctors for outpatient care are not changed.'

Busse (1999) makes a similar point. He notes that, while the federal and state governments make general policies, most resource allocation decisions are made through negotiations between the medical associations and the insurance funds at local levels and with local political oversight. This may be a suboptimal arrangement, given the results of a 1999 survey of German public opinion which showed that '... the majority of the public favours unlimited funding for health services and that treatment decisions should be made by doctors. Limiting the benefits catalogue to a core of essential services is rejected as well as priorities based on age.' He concludes that there will have to be a more open and better-informed debate about rationing if progress is to be made.

These arguments seem strong to us. Per case payment by DRG will have little value unless it affects resource allocation and clinical practice (Hochreutener, Eichler, et al 1999). Germany, like Australia and in contrast to the United States of America, does not need to use prospective payment to control total expenditures. There are better ways.

Debates about health care are ultimately ones about balance: between equity and privilege in terms of contributions to and receipts from insurance, centralisation (to obtain efficiencies of scale) and devolution (to ensure involvement), competition and collaboration, and so on.

A case in point is the current debate in Germany about capped budgets. They have been strongly criticised, and there is pressure to abandon them in favour of some form of increased competition.

This would be a mistake. The approach of budget capping is correct in principle. The answer is not to abandon it, but rather to improve the way it is being applied. In general, it is not sensible to try to allow the overall level of health spending to be determined in the market place. There is a much stronger argument for using markets to determine the volumes and prices of individual health care providers.

The way that Germany resolves these kinds of matters will be crucial in terms of the effectiveness of the change to per case payment by DRG. It is in observing the battles and their outcomes that Australia may expect to obtain the most benefit.

## References

- Australian Senate 2000, *'Healing our hospitals: report on public hospital funding'*, Senate Community Affairs References Committee, Parliament House, Canberra.
- Busse R 1999, 'Priority-setting and rationing in German health care', *Health Policy*, vol 50 no 1-2, pp71-90.
- CDHAC (1998), *'Australian Refined Diagnosis Related Groups, version 4.1: definitions manual'*, Commonwealth Department of Health and Aged Care, Canberra.

- Delnoij D & Brenner G 2000, 'Importing budget systems from other countries: what can we learn from the German drug budget and the British GP fundholding?', *Health Policy*, vol 52 no 3, pp157-69.
- Glossmann JP, Schliebusch O, Diehl V & Walshe R 2000, 'Lean management in hospitals: potentials and limitations', *Med Klin*, vol 95 no 8, pp470-3.
- Heubel F 2000, 'Patients or customers: ethical limits of market economy in health care', *J Med Philos*, vol 25 no 2, pp240-53.
- Hillen T, Schaub R, Hiestermann A, Kirschner W & Robra BP 2000, 'Self rating of health is associated with stressful life events, social support and residency in East and West Berlin shortly after the fall of the wall', *J Epidemiol Community Health*, vol 54 no 8, pp575-80.
- Himmel W, Dieterich A & Kochen MM 2000, 'Will German patients accept their family physician as a gatekeeper?', *J Gen Intern Med*, vol 15 no 7, pp496-502.
- Hindle D, Degeling P & van der Wel O 1997, 'Severity variations within DRGs: measurement of hospital effects by use of data on significant secondary diagnoses and procedures', *Australian Health Review*, vol 21 no 1.
- Hochreutener MA, Eichler K et al 1999, 'Outcome 98', PUBLIK 6, Health Departement of Zurich, Switzerland.
- Leber WD 1999, 'Implementierung eines kompletten Fallpauschalensystems als Kern der Strukturreform' *Symposium des AOK-Bundesverbandes* am 18. Mai 1999; <http://www.wido.de/Krankenhaus/drg/DRGAdaption>.
- Lorenz KP, von Mittelstaedt G & Gaertner T 2000, 'Managed care perspectives in Germany', *Gesundheitswesen*, vol 62 no 3, pp127-9.
- Mohr FW, 2001, 'Zu- und Abschläge geregelt - Bundeseinheitliche Regelung für Zu- und Abschläge bei Anwendung des DR-DRG-Systems', *Krankenhaus Umschau*, vol II/2001, pp 28-30.
- Reid B, Palmer G & Aisbett C 2000, 'The performance of Australian DRGs', *Australian Health Review*, vol 23 no 2, pp 20-31.
- Richard S & Schonbach KH 1996, 'German sickness funds under fixed budgets' in FW Schwartz, H Glennerster & RB Saltman (eds) *Fixing health budgets: experience from Europe and North America*, Wiley England.
- Schwartz FW & Busse R 1996, 'Fixed budgets in the ambulatory care sector: the German experience' in FW Schwartz, H Glennerster & RB Saltman (eds) *Fixing health budgets: experience from Europe and North America*, Wiley England.
- Strehl R 2000, 'Health care reform 2000 - effects on inpatient care', *Chirurg*, vol 71 no 4, pp 417-21.
- Theurl E 1999, 'Some aspects of the reform of the health care systems in Austria, Germany and Switzerland', *Health Care Anal*, vol 7 no 4, pp 331-54.
- Tuschen KH & Philippi M 2000, 'Leistungs- und Kalkulationsaufstellung im Entgeltsystem der Krankenhäuser', 2000, 2. Überarbeitete Auflage, Verlag W Kohlhammer GmbH, Stuttgart-Berlin-Köln.