A REVIEW OF ACTIVITY BASED FUNDING / ACTIVITY BASED MANAGEMENT IN WESTERN AUSTRALIA

2009/10 - 2010/11

A REPORT BY MICHAEL SCOTT

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FOREWORD

This is a report into Activity-based Funding (ABF) and Activity-based Management (ABM). It has been compiled with the help of many people in the Department of Health in Western Australia and members of the Area Health Services (AHS).

I am indebted to all of those who gave freely of their time to help compile this report.

I am also grateful for discussions with Chris Ham and Jonathan Appleby of the Kings Fund and Nigel Edwards of the NHS Confederation who took time to discuss the evidence around Activity Based Costing systems in healthcare around the world. They pointed me in the direction of much of the research that I have referenced. Again I am grateful to the authors whose work I have drawn upon, particularly those reports still in press.

Whilst I have endeavoured to accurately reflect people's comments, I may at times have misunderstood. The report therefore ultimately reflects my views, and any errors therein are mine.

Equally any comments are intended as constructive and are given in the role of critical friend. To invite external review of one’s own work is a sign of a strong leader, and I thank Dorothy Jones for asking me to do this work. It is a privilege to be invited to look into and learn from another Health system and I hope this report goes someway to repaying that debt.
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1) EXECUTIVE SUMMARY

The introduction of activity-based funding:

Western Australia has had a chequered history of the introduction of activity-based funding. Previous attempts with a narrow financial focus proved unpopular, destabilising and ultimately unsuccessful. To introduce Activity-Based funding and Activity Based-Management (ABF/ABM) against this backdrop was a challenge. It is therefore not a trivial statement to say that the introduction has been successful.

I found the following features of particular note:

- The introduction was well-managed and led by a strong coherent team
- Year one performance has been good with activity and finance under control and proportionate
- The team has produced good materials, communication and change management.
- Clear, transparent performance management indicators have been produced with clinically based goals.
- There is a comprehensive data on performance; reported through very clear reports and web based tools
- Throughout the introduction of ABF there has been a focus on quality.

MOVING FORWARD WITH ACTIVITY BASED COSTING TO THE NEXT STAGE

Given the successful introduction of activity-based funding and activity-based management there is now the opportunity to move on to the next stage. The following points reflect possible next steps:

- Over the three year programme it was right that year one should have a central focus to initiate and lead the change. As the second year unfolds the program can move to co-production between the central team and the area health services. In year three area health services can adopt more of a focus on implementation with the central team retaining control and design of the system.
- In light of the above comments there needs to be more focus and resources in Area Health Services (AHS). Each area needs to produce its own change management and implementation plan.
- Given policy drivers to increase care closer to home and the management of chronic care conditions there needs to be a greater emphasis on out of hospital services and pricing.
- There needs to be an appropriate balance of health care and population health goals.
• ABF is founded on a drive for quality. A reduction in adverse events will undoubtedly be supported by the ABF drive. However, consideration should be given to further quality incentives both in terms of performance framework and incentive pricing within ABF/ABM.

• Given their different circumstances, further work needs to be done on mental health, country health services, and children's services.

• As noted above, the initial introduction has been very successful. Consideration now needs to be given to the need to continue to drive the system forward whilst getting buy-in at all levels.

PIFFALS AND POSSIBILITIES

Activity-based funding has been introduced throughout many health systems. This gives the opportunity to learn from both successes and mistakes. Having established this mechanism in Western Australia there is now both threat and opportunity as follows:

• Any system of this type incentivizes providers to increase the level and depth of their coding. Whilst this brings benefits it can generate perverse incentives within the system.

• Suitably incentivized hospitals may increase their activity; some of this may support policy directions, some may not.

• With hospitals funded according to an activity and pricing formula, they need to be able to control their costs and risks.

• With the payment system now established there is an opportunity to vary the payment or "tune" the system.

• Incentive payments for quality could speed the journey to quality health care. Examples are given from other systems where reward payments are given for best practice care.

• Equally, an efficient price can be used to maximise the volume of care (at a high level of quality) through price efficiency.

Ultimately the health system in Western Australia has to respond to a wide variety of stakeholders and principally the needs and wants of its local population. The successful introduction of activity-based funding and management is a significant step on this journey. It gives the opportunity to understand where dollars are being spent such that decisions can be made in the best interests of patients and in support of the policy goals. It is now for the Department of Health together with its stakeholders to agree where best to take its next steps.

The following recommendations are based upon my brief period of study:
RECOMMENDATIONS

The following recommendations are made to take the introduction of ABF/ABM to the next stage:

1) The change programme should move to phase of co-production. To facilitate this there should be a Provider network created chaired by an Area Health Service Chief Executive and supported by the central team.

2) To support the change programme in Area Health Services, learning should be considered from the four-hour rule programme. A fund of up to $150,000 should be made available to each area health service. This would be available on a matched funding basis to create change programs within area health services to 2013. Area health services should consider combining these posts with existing change programme leads within services.

3) The shift to a per diem rate beyond the high boundary point will create a fund in excess of $100 million. A proportion of this should be tagged to promote change against the eight quality initiatives. A further proportion should be used to create an innovation pool to facilitate best practice in chronic care and encourage the application of proposed models of care. All of these should be focused on the prevention of hospital admissions. They could be considered to work jointly with new Medicare locals on alternative purchasing models. A degree of urgency is proposed for the introduction of these funds.

4) As part of the change management program there should be a focus on the necessary tools for business intelligence, costing etc. There is a danger unless these are resourced and prioritised that ideas will run ahead of ability to deliver.

5) I received a clear view that there should not be a radical or divisive purchaser – provider split in WA. This would be counter – productive and counter – cultural to the current environment and is unlikely to represent a good use of resources. Nonetheless, the Executive Directors of the Department of Health should meet with the Director General in a forum without providers that enables them to give purchasing advice to the DG.

6) Consideration should be given to an annual review of the change programme with a more major academic – based study at the end of the programme to assess its efficacy.

I propose taking each of the key terms of reference in turn.
2) **HOW HAVE AREA HEALTH SERVICES DEVELOPED AND IMPLEMENTED ABF/ABM IN WESTERN AUSTRALIA HOSPITALS?**

Throughout my visits I saw good evidence for the introduction of ABF. However, the most frequent phrase I heard was that it was "early days"

In terms of awareness, I found universal awareness and broad support for ABF/ABM. People were largely complimentary about the central team; they found the materials helpful and accessible. Particular praise was given for the communication style, the focus on quality; the transparency and helpfulness of the central team.

It was also apparent that different area health services had different issues with the programme. To some extent this reflected the nature of their work, the extent of their infrastructure and also the extent to which they had already used the system. Those that subcontract for private hospital activity were familiar with the concept and indeed had been using it for some time. It was understandable that they had greater familiarity with the concept and were more comfortable with its application.

There was much comment about resources that could be dedicated to the introduction of the new system. This was most keenly felt in organisations with little historic exposure to ABF or extensive infrastructure. Whilst I address this in recommendations, it must be said that these are large, sometimes multibillion-dollar organisations who should be able to find internal resource. Nonetheless some additional resource as a catalyst would undoubtedly be helpful. I saw systems and reports that clearly demonstrated that ABF was being used internally. This somewhat negated the above point and it showed that there was ownership at executive level at least.

The fact that the new system has been introduced is a testament to the success of its implementation. This is particularly noteworthy given previous experience in Western Australia. However, equally, the extent to which area health services had made changes directly as result of the introduction of ABF was limited. Many talked of changes in lengths of stay and greater focus on quality. However it is difficult to establish a direct causal relationship with ABF. It is however very clear that ABF had been supportive of these changes if not directly responsible for them.

The following points represent a synthesis of what was often said:

- ABF had brought rigour and transparency and encouraged efficiency and effectiveness
- It was well embedded at executive level and was moving mind sets, however it still had to filter further down the organisation
- The introduction has been very successful compared to previous attempts
- It has impacted quality positively as it helps to prioritise resources
• It had promoted an extensive reporting culture of both finance and activity together with key performance indicators

There were however some comments suggesting changes which would further support the implementation of the new system:

• The latest health purchasing intentions had yet to be fully embedded at an operational level. The latest draft was issued during the compilation of my report and it was apparent that not all the details had reached operational level.

• There was a need for more joint ownership and joint development of the ABF/ABM system

• Some commented on the need for even closer alignment between the PAQ team and the Department of Health finance team

• Whilst the performance management framework was supported it was felt that some targets were so "stretch" that they became unachievable. There was a request for a balance between aspiration and capability

• Whilst ABF undoubtedly gave the ability to move money around within area health service services during transition there was clear evidence that this was still slow to happen.

• All acknowledged the special circumstances of Western Australia, its high rurality, indigenous population and geography. There were also comments about the extent to which the special circumstances of each area health service had been taken into account.

• There was some indication that the programme had not been well resourced in area health services. As noted above these are large organisations which have considerable and internal resource. Nonetheless the comparison was made with a four-hour rule programme whether a relatively small amount of money had been a catalyst for the introduction of change

There was universal comment from area health services that further work was needed on costing systems and IT generally. It was stressed that this should be done collectively and collaboratively between area health services and the central team to ensure maximum involvement from the frontline.

In respect of Mental Health it is most definitely ‘early days’. Around the world there is little evidence of successful ABC systems in this arena. The English NHS is piloting a scheme based around ‘clustering’ – many years after the introduction of PbR in the acute sector. The Mental Health Commission has a key role in developing a system that accurately reflects the needs of this particular client group. This is even more important given the recently announced growth in resources for mental health. This work needs to be conducted in close liaison with the PAQ team and finance colleagues. The lack of a Health Activity Purchasing
Intentions document or indeed much indication from the Commission of what it might contain at the time of my visit makes further comment in this area difficult.

Overall it must be said that the introduction has been successful. The system is embedded and people comment favourably about transparency and rigour. This is a three year programme. It is right and understandable that in the first year the drive and detail have come from the central team. The second year should represent a transition year with co-production or co-piloting of the new system between the central team and Area health services. In year three greater responsibilities should go to area health services for the implementation of the system with the rules and concepts being retained centrally. This three-year transition is represented diagrammatically below:
INITIAL DRIVE AND FOCUS FROM CENTRAL TEAM

CO-PRODUCTION BETWEEN CENTRAL TEAM AND AREA HEALTH SERVICES

GREATER FOCUS ON AHS IMPLEMENTATION-CENTRAL TEAM AS DESIGNERS AND REGULATORS OF THE SYSTEM
3) **ALIGNMENT OR ABF/ABM WITH CURRENT AND FUTURE NEEDS AND GOVERNMENT OBJECTIVES AND TARGETS.**

In this section I shall consider points two, three and four of the terms of reference; in detail these are:

- Whether the design and implementation methodology for ABF/ABM in Western Australia meets the current and future need of WA patients, the WA community, WA clinicians and WA health care providers
- The alignment between ABF/ABM and clinical services planning, funding, resource allocation, resource utilisation, service delivery and quality improvement processes.
- Assess whether the purpose of improvement is appropriate, adequately designed and considered to ensure that implementation of ABF/ABM meets government objectives and targets.

In essence all of these questions relate to the same principle, i.e. is the policy the right policy and is its implementation on track to meet policy goals?

To answer this question one must first consider the policy context. The dominant national policy context is the Health and Hospital Reform Commission report: A healthier future for all Australians. This report and subsequent COAG agreements have set a national agenda for reform. The National report in June 2009 identified three reform goals:

1) Tackling major access and equity issues that affect health outcomes for people now.
2) Redesigning the health care system so that it is better positioned to respond to emerging challenges
3) Creating an agile and self-improving health system for long-term sustainability

Whilst all of these goals relate to ABF it is the ‘efficient funding of hospitals" that is most relevant.

The report recommends the introduction of ABF using case-mix classifications.

"Activity-based funding refers to making payments on the basis of "outputs" delivered by health service providers, such as a hospital admission, and emergency Department visit or outpatient consultation. Activity-based funding explicitly links funding to the actual services provided. It allows funders to compare the costs across different health service providers (such as hospitals) in providing the same health service (such as a hip operation)"

It is clear that the Western Australia introduction of ABF/ABM meet this objective. Whether this hospital – centric objective supports the other wider health system objectives will be debated below.
At a more local level, Western Australia clinical services framework (CSF) form the foundation for planning health care services. This comprehensive document is the culmination of a comprehensive planning process. It takes estimated demand, current utilisation and scenarios around models of care to project future activity demands and utilisation of secondary and tertiary hospitals. ABF/ABM is well aligned with this process. It is well designed and positioned to deliver the requirements of the clinical services framework. Indeed, it's hard to imagine a satisfactory delivery of the CSF without ABF/ABM.

However, as noted throughout this report, activity based costing has the potential to drive up hospital activity. It therefore needs to be used carefully in conjunction with demand management. The clinical services framework states:

"Work on managing demand for hospital inpatient services remains a priority... Analysis of admitted patient information indicates a small number of disease groups that have the potential to produce 80 % of achievable bed – day savings."

It goes on to say:

"Admission rates and bed days can be reduced by initiatives such as: refining and expanding early discharge and initiatives and day hospital programs, increasing the use of community service such as post acute care programs, hospital in the home and rehabilitation in the home.

The report also highlights the need to reduce emergency Department demand through direct admissions for chronic disease type patients and diverting and directing less urgent patients to alternate care programs.

The test for ABF/ ABM is whether it can address these latter points in respect of diverting hospital demand.

At an annual level, the Department of Health has a very clear process for outlining healthcare activity through its health care activity purchasing intentions (HAPI). It firstly explains the policy context in which ABF/ABM operates. It gives technical guidance on the forthcoming financial year but most importantly it indicates the changes to the system planned for the forthcoming year. The 2011/12 document signals a tightening of the system. It proposes that inpatient episodes with a length of stay above the high boundary point will be funded at a per diem rate. In addition, all non-acute inpatient episodes will be funded on a set per diem rate for each peer group consistent with expenditure required for non-acute patients.

Both of these changes suggest a reduction in funding for non-efficient providers. It is a vital change to move from an average price to an efficient price. It is a very good example of the way in which the new system can be "tuned" to policy objectives now that it is established. The document also flags further changes such as the treatment of teaching, training and research (TT &R). The report notes the changes at a Commonwealth level but nonetheless flags work to be done locally in 2011 to identify a methodology for block funding of the services for the coming year. This further emphasises the way in which ABF can be used to transparently fund services. A similar exercise has been conducted in the English NHS and
research and development payments and teaching supplements are paid independently of the tariff. This has allowed transparency of costs not only of teaching and research only but also focused on the true unit cost of care. However these moves are not without controversy and difficulty in implementation.

During my conversations there was much thought given to the purchaser provider split. It is clear that in earlier introductions of ABF which had been unsuccessful, the purchaser provider split was not helpful. In the current incarnation; the Director-General is both purchaser and line manager of public sector providers. It was suggested that this could be a conflict; however no negative aspects of this were noted. Indeed there appeared to be a very collaborative and conducive environment to progressing ABF. The fact that the Director-General line manages some providers should not preclude him from being a purchaser. The tools of the purchaser i.e. assessing the needs of the population and planning and setting contracts to meet these needs can still be accomplished. Indeed there was an English incarnation of the system where the District general manager took exactly this role. Further, it does not preclude using some of the techniques described in this report i.e. incentivising quality through particular payments, insisting on certain efficiencies in lengths of stay and outpatient follow-ups. It seems that a "third way" is open to Western Australia. This would deliver the benefits in terms of quality; technical and allocative efficiency that the purchaser provider split can bring with few of the adversarial downsides that more radical systems can create.

If this position is to be maintained however the Director-General may benefit from direct advice from purchasing colleagues in a purchasing forum with colleagues from Department of Health. There is currently an operational meeting with area health services which clearly should continue. I propose a similar meeting of the Director-General with Executive Directors of the Department of Health who could advise him on purchasing matters in isolation from providers.
Activity based costing systems are increasingly prevalent throughout the world’s health systems. Although given different titles and the different policy objectives they share many things in common.

There is a database of evidence concerning the implementation and overall effectiveness of such systems. A comprehensive list of references is given in Appendix V

**THE PURPOSE OF ACTIVITY BASED COSTING SYSTEMS**

Throughout the world health systems have chosen to move to activity based costing systems. These have invariably been linked to an explicit policy objective. Although this chapter will examine the evidence from around the world it will first look at the English NHS.

The English NHS moved to activity based costing almost 10 years ago. It was introduced under the heading of payment by results (PbR). However, this was a misnomer, in actual fact in the early days it was purely payment for activity. What is particularly interesting is the way in which the NHS has modified its original policy goal of this period.

PbR was introduced at a time or relatively low levels of funding and high waiting lists. The explicit objective of the Secretary of State of the time was to increase acute activity. He understood that the system and surgeons in particular would respond to the incentive element inherent in this form of activity based costing. The surgical activity was required to reduce waiting lists and therefore the system was incentivised essentially by "piecework". This initial policy objective was undoubtedly successful. Waiting times for elective surgery were as high as 18 months. Over a period of years this high-level has been progressively reduced. At the time of writing 90% of admitted patients completed their treatment journey from GP referral to conclusion of treatment within 18 weeks. However, as with any relatively blunt tool there were also unintended consequences and perverse incentives; these will be examined below.

In any complex system, changing policies, levers and incentives can produce both desired results and unintended consequences. The payment by results mechanism which successfully incentivised elective activity also rewarded a growth in non-elective activity. At a time when the policy goal was to redirect acute care to local; low costs settings; hospitals continued to increase non-elective activity.

A further incentive of DRG based systems is the incentive to ‘up-code’. Coding had been a relatively low status role however with extra payment linked to increased complexity, coders became very much in demand. Although studies have shown (Audit Commission) that the net effect of changes in coding have been broadly neutral; local purchasers would strongly believe that case-mix complexity has risen during the period of introduction of PbR.
If the original goal of payment by results was to incentivise activity it has, with some modifications been subsequently used for the following policy objectives:

- enabling choice
- transferring funding so that money follows the patient
- enabling benchmarking
- creating efficiency
- incentivising quality

Appendix III details some of the changes the NHS has made to its payment by results tariff. These reflect the evolution of the policy goals described above, for instance to remove the incentive to increase non-elective activity in hospitals the emergency tariff has been capped using the activity level in 2008/9 as the baseline. Further activity above this level is only funded to hospitals at 30% of tariff. The purchaser retains the balance to invest in community care initiatives.

To incentivise quality; best practice tariffs have been introduced. These at first covered a limited range of activity but are being regularly extended. The additional payment is given to providers that follow clinical best practice in areas such as fractured neck of femur.

CQUINs are a further example of incentivising quality. Standing for "commissioning for quality and innovation" CQUINs once again have been applied to an extended range of initiatives. They are used to incentivise providers to hit certain key performance indicators, again in relation to clinically evidenced best practice. This could range from a reduction in healthcare acquired infections to a reduction in hospital-acquired pressure sores or best practice in the stroke unit.

**EVALUATION OF PAYMENT BY RESULTS IN THE ENGLISH NHS**

There have been a number of studies considering the impact of payment by results on the NHS. Given that the time required for studies to be completed and published most of these reflect the early days of PBR and its relation to choice and efficiency in particular.

A seminal work is that published by Farrah et al in the BMJ. Their objective was to examine whether the introduction of payment by results was associated with changes in key outcome variables. The study looked at the financial years 2003/4 and 2005/6.

Due to the way payment by results was introduced, the researchers had a natural experiment where they could compare the introduction of the new policy against a control group of providers in Scotland not implementing the policy. They considered a number of variables such as length of stay, proportion of day case admissions as a proxy for unit cost, growth in the number of spells to measure increases in output, and changes in all hospital mortality.
The results, although small were measurable. Length of stay fell more quickly and the proportion of day cases increased more quickly where payment by results was implemented. This suggests a proxy reduction in unit costs. There was also some association between the introduction of payment by results and growth in acute hospital activity. Little measurable change occurred in the quality of care.

Farrah et al have brought their research right up-to-date with a paper due to be published shortly on the DH website. This 2010 paper confirms their early results and expands upon them. Once again they confirmed that the introduction of PbR has been associated with reductions in lengths of stay and increases in the proportion of spells treated as day case admissions. From this they deduce that hospitals are using fewer resources i.e. becoming more efficient when treating a given cohort of patients. They note that this impact is consistent with the great majority of theoretical research. The reduction in lengths of stay for a required spell of care is 2.5%. They further note that the reduction in lengths of stay for non-elective spells was smaller than for elective. They have no definitive theoretical explanation for this. The authors have further monitored the impact of PbR on quality of care. They acknowledge that the measures are a relatively crude and can find no increase in quality of care but equally PbR has not had an adverse impact on quality of care. They find small but significant reductions in hospital mortality attributable to PbR; some reductions in 30 day post CABG mortality but no change in emergency readmissions following treatment for fracture.

As noted above one of the policy goals for the English NHS was to incentivise greater activity. The authors noted evidence consistent with the view that activity increased as result of PPR. This was particularly the case for non-elective admission even controlling for other policy impacts.

This more detailed research also considered the impact of PbR on different groups of patients. This was done to investigate whether the policy created unintended consequences for particular patient groups, i.e. older people; those from deprived populations or the so-called 'skimming' effect where low cost patients are treated differentially. Overall the authors found little impact by patient type, socio-economic group, gender and other factors. Not surprisingly urban residents were more likely to have a day case procedure as result of PbR. Otherwise; PbR was broadly neutral on these issues.

A wide-ranging study was conducted by the Audit Commission on the first three years of payment by results. The authors found that the relative transparency and fairness of a tariff-based system helps tighten financial management arrangements. It created a clear basis for planning, costing, reporting and decision-making. Together with other changes it created a more business-like focus with greater interest in information and improving data quality. Given other changes such as the move to Foundation trust status the authors found it difficult to separate the impact of payment by results on its own. However they consider that Payment by results had less impact on NHS activity and efficiency than might have been expected. They found some impact on the number of day cases and also possibly on lengths of stay. Payment by results did incentivise purchasers to find alternatives to hospital admission.
However they were unable to conclude whether PbR drove these changes or simply reinforced them.

They did find that PbR had undoubtedly enabled some trusts to make significant income gains. In particular it encouraged providers to more rigorously count and code activity in order to ensure full payment from purchasers. This impact was particularly noted in Foundation trusts which were early implementers of PbR. They further note that NHS data systems were not sufficiently sophisticated or timely to support the new system.

**COMPARISON OF ABF ACROSS INTERNATIONAL HEALTH SYSTEMS**

O’Reilly et al considered the experience of implementing activity-based funding in five different European countries. They noted that activity-based funding has become the most common mechanism for reimbursing hospitals across Europe. The review considers the motivation for introducing activity-based funding together with evidence available to assess the impact of implementation. They note that assessing the impact of activity-based funding is complicated by the shortage of rigorous empirical evaluations. However they note that the introduction has been associated with an increase in activity, decreased length of stay and reduction in the rate of growth in hospital expenditure in most of the countries under consideration.

**Table 1** (over) indicates the policy objectives of introducing activity-based funding.

It is worth noting that an improving quality featured in three of the countries.

**Table 2** (over), outlines the breadth, scope and depth of hospital activity subject to activity-based funding. It shows that most systems had exclusions particularly around mental health services but also out-patients.
Table 1: Policy objectives for introducing activity-based funding

<table>
<thead>
<tr>
<th>Objective</th>
<th>ENGLAND</th>
<th>FINLAND</th>
<th>FRANCE</th>
<th>GERMANY</th>
<th>IRELAND</th>
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<tbody>
<tr>
<td>Increase efficiency</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>Expand activity</td>
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<td>Enhance patient choice</td>
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<td>Increase patient satisfaction</td>
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<td>Reduce waiting lists</td>
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<td>Improve quality</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Control costs</td>
<td>✓</td>
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<td>Ensure the fair allocation of resources (or funding) across geographical areas and across and within health care sectors</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Shift patterns of service provision away from historical patterns</td>
<td>✓</td>
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<td>Encourage the development of new, cost-effective treatment pathways</td>
<td>✓</td>
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<tr>
<td>Improve transparency of hospital funding, activity and management</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Encourage provides to be responsive to patients and purchasers</td>
<td>✓</td>
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<tr>
<td>To cover costs of production</td>
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<td>Create a level playing field for payments to public and private hospitals</td>
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<tr>
<td>Improved documentation of internal processes and increased managerial capacity which would in turn result in improved efficiency and quality</td>
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<tr>
<td>Establish link between activity and funding</td>
<td>✓</td>
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Sources: Commission on Health Funding, 1989; Wiley, 2005b; Bellanger and Tardif, 2006; Epstein and Mason, 2006; Ettelt et al., 2006; Miraldo et al., 2006; Ettelt and Nolte, 2010
Table 2:

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<tr>
<td><strong>Breadth – Hospital participation</strong></td>
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<tr>
<td>Mandatory</td>
<td>✓</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
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<td><strong>Scope – Type of hospital activity</strong></td>
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</tr>
<tr>
<td>Inpatient and day case</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Outpatient</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>X</td>
<td>✓</td>
</tr>
</tbody>
</table>

**Depth – Classification of hospital activity**

<table>
<thead>
<tr>
<th>Classification system</th>
<th>Healthcare Resource Group (HRG)</th>
<th>Nord DRG</th>
<th>Groupe Homogène des Malades (GHM)</th>
<th>German DRG (G-DRG)</th>
<th>Australian Refined DRG (AR-DRG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of DRG’s</td>
<td>C 1,400&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1,020&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2,291&lt;sup&gt;c&lt;/sup&gt;</td>
<td>1,200&lt;sup&gt;d&lt;/sup&gt;</td>
<td>698&lt;sup&gt;f&lt;/sup&gt;</td>
</tr>
</tbody>
</table>
Different countries had different methodologies for the setting of price or tariff system. Prices are set at a national level in three of the five countries considered. In Germany it’s been agreed that states will gradually converge to a narrow range at federal level over a period of time. This will conclude in 2014 within acceptable range between +2.5% and -1.25%. In contrast in Finland, there is more decentralisation and prices vary across hospital districts, reflecting local payment systems to some local levels. In the English NHS whilst there is a national tariff the market forces factor allows prices to be adjusted for the local variation in wage rates.

All five countries use average costs to determine the tariff. This has a number of drawbacks. It incentivises hospitals to increase activity wherever marginal cost is less than average cost. It also does not incentivise efficiency. To address this in England, the Department of Health applies a 3.5% tariff deflator to ensure on-going efficiency. The authors note that the pure form of activity-based funding does incentivise increased activity. They note that all countries under consideration have adopted approaches to tackle this issue. Germany uses a differential pricing to services provided in excess of the volume agreed. In France all hospitals face reduced provide prices if activity levels are exceeded. In England volumes are constrained by the funding available to PCT commissioners; however in reality much power remains with hospital providers.

Street et al have considered a range of studies that have evaluated the introduction of activity-based funding. Like others they point out the lack of rigorous evaluation and the difficulty of conducting any controlled studies. They note increases in volume of care, increasing day case activity and reduction lengths of stay. However they appear to be unable to find any evidence in studies that the quality of patient care has improved; equally there is no evidence of deterioration. Interestingly their overview of the purposes of DRGs systems in 12 European countries does not list quality improvement as the original purpose:
Table 3: Overview of the purposes of DRG systems in 12 European countries.

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>YEAR OF DRG INTRODUCTION</th>
<th>Original Purpose(s)</th>
<th>Principal purpose(s) in 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>1997</td>
<td>Reimbursement</td>
<td>Reimbursement, planning</td>
</tr>
<tr>
<td>England</td>
<td>1992</td>
<td>Patient classification</td>
<td>Reimbursement</td>
</tr>
<tr>
<td>Estonia</td>
<td>2003</td>
<td>Reimbursement</td>
<td>Reimbursement</td>
</tr>
<tr>
<td>Finland</td>
<td>1995</td>
<td>Description of hospital activity, benchmarking</td>
<td>Planning and management, hospital billing</td>
</tr>
<tr>
<td>France</td>
<td>1991</td>
<td>Description of hospital activity</td>
<td>Reimbursement</td>
</tr>
<tr>
<td>Germany</td>
<td>2003</td>
<td>Budgetary allocation</td>
<td>Reimbursement</td>
</tr>
<tr>
<td>Ireland</td>
<td>1993</td>
<td>Budgetary allocation</td>
<td>Budgetary allocation</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2005</td>
<td>Reimbursement</td>
<td>Reimbursement</td>
</tr>
<tr>
<td>Poland</td>
<td>2008</td>
<td>Reimbursement</td>
<td>Reimbursement</td>
</tr>
<tr>
<td>Portugal</td>
<td>1990</td>
<td>Informing system, third party payments, funding</td>
<td>Information system, third party payments, budgetary allocation</td>
</tr>
<tr>
<td>Spain/Catalonia</td>
<td>1997</td>
<td>Reimbursement</td>
<td>Reimbursement, benchmarking</td>
</tr>
<tr>
<td>Sweden</td>
<td>1991</td>
<td>Reimbursement</td>
<td>Benchmarking, performance measurement</td>
</tr>
</tbody>
</table>

They also note that in the majority of cases the introduction of DRG-based funding was associated with higher total costs. This is at least in part due to activity levels.

Street et al have written a paper on the unintended consequences and challenges of DRG-based funding. They state as follows:

"Incentives to reduce unit costs may lead hospitals to compromise quality, a practice known as "skimping" and hospitals may attempt to shift costs to the other parts of the care pathway, such as primary care, social services or the patient's family (“cost shifting”). ‘ Adverse selection’ means hospitals deliberately select patients with lower costs. In addition, there is potential for misuse of the classification codes ("up-coding"). To guard against these consequences countries have introduced various regulatory mechanisms. In Sweden there are activity and expenditure ceilings, in Germany marginal pricing; and data audit is widely used as in the example from the Audit Commission above.

They list further challenges as:
• Categorisation problems may lead to unfair reimbursement of patient selection
• There may be insufficient independence of price setting in certain markets
• Control of expenditure can be difficult given the incentivisation effect on hospitals.

They conclude that DRG-based systems have more potential to deliver efficiency of hospital services than other funding models. Whilst this in itself does not enhance quality it enables the provision of the same volume of care at lower cost. As all of the studies have noted no detrimental effect on quality this frees up resources that can be directly applied to quality initiatives. One recommendation from this report is to utilise funds released from high boundary costs into quality initiatives. In this way the reduced length of stay and efficiency benefits of ABF can be recycled to drive quality.

During my visit much was made of the exceptional costs of the rural nature of Western Australia. It is undoubtedly the case that very special conditions apply to remote and rural areas. However in an interesting paper by Hindle et al they look at the effects of isolation on funding of small rural hospitals. Surprisingly they report a close correlation of actual expenditure with those predicted by use of a case-mix model alone, across one hundred and five small public hospitals in New South Wales. Contrary to expectations reduced size was also associated with reduced costs and reduced isolation was associated with increased costs.

The authors suggest that this may in part be due to variations in severity within the acute admitted patient category which are not fully explained by the case-mix instrument (DRG classification). They further argue that whilst this model has identifiable weakness is it is better than any other available option in terms of cost prediction small hospitals (with the obvious exception of expenditure-based models). However they argue for protection against any real changes in funding if such model is introduced in the short term.
5) ISSUES AND ELEMENTS THAT NEED TO BE BETTER EMPHASISED IN THE ABF/A BM MODEL TO ENSURE THAT WA HEALTH IS ABLE TO MEET GOVERNMENT OBJECTIVES AND TARGETS

From the above it is clear that the initial introduction has been successful. Systems are in place, stakeholders are on board and the first changes and developments are being planned. Of particular note is a positive relationship with Treasury and wider government as a result of these changes.

The following comments therefore are made in this context with the intent of taking the system to the next level. It is clear that having got the basic cost mechanism established it can now be used to address a number of issues.

HEALTH CARE AND POPULATION HEALTH

There is often confusion in the public mind between health care, health and hospitals. Whilst hospitals are the public face of the healthcare system the majority of health is generated elsewhere. The wider determinants of health include housing, employment, education and wider societal factors. At its most extreme some healthcare groups such as Kaiser Permanente regard hospital admission as a failure of the system. Is it is against this backdrop that the next steps should consider the role of wider health care goals and non-hospital-based activity in relation to ABF/A BM.

There is a danger that activity based costing systems incentivise hospital activity as the literature reviews above demonstrate. However this does not have to be the case. A strong drive from a purchasing function can ensure that resources are shifted to out of hospital care. This will need a clear direction in terms of performance management and "tuning" the payment mechanism. Area health services are well placed to deliver the more high-tech and clinically advanced hospital at home initiatives. Consideration should be given to a wider variety of community and third sector providers for the more community and social end of care. As result of changes to payments beyond high boundary levels funds will become available in the system. It is suggested that these funds are directed towards out of hospital care to prevent admissions, particularly around chronic care conditions. There exists an opportunity to work with the embryonic Medicare locals to ensure the success of such initiatives.

The question was raised whether activity based costing methods could be applied across all health services. In particular public health activities were deemed to be a challenge for this methodology. However it is possible to use a tariff-based system for public health and health promotion. For the last year in the West Midlands of the English NHS a tariff-based system has been used for smoking cessation. Providers are rewarded according to 4 week or 12 week quitters. More importantly the tariff is varied such that it rewards providers for working with target groups. This includes people from ethnic minorities, those from deprived communities, people with disabilities and women smoking during pregnancy. The
unit cost for work with his target groups can be more than double that for the average member of the population.

Having been running for just one year, it is early days for in-depth evaluation. However an evaluation report has been produced and shows some encouraging results. It has brought new providers in the market who brought with them innovative techniques. It is too early to judge the impact on health inequalities but there is some evidence of an increase in quitters in key vulnerable groups. What is clear from this is that activity-based funding can be introduced into this area with some success. Like other areas; once the mechanism established it can be tuned to address particular local issues.

The group that introduced this technique are now considering other areas such as weight loss by tariff. There are also considering "bundling" issues together such that providers can tackle total lifestyle issue with individuals.

**AREA HEALTH SERVICES AND INFRASTRUCTURE**

It is noted elsewhere that area health services need to do further work on their own change programs. The concept of "push and pull" is helpful here. Much of the change thus far has been "pushed" from the centre. In the next stage incentives should be aligned such that area health services are "pulling" the change towards them. This will require the payment mechanism to start to take effect. It will also require a range of carrots and sticks within the performance framework. Thus far performance is generally seen as a stick and an extensive intervention framework has been put together. Further thought could be given to incentives to area health service Chief executives. Suggestions include greater flexibility around signing off vacancies and other operational matters.

There are a range of infrastructure components which need to be addressed if the next phase is to be successful. ICT was frequently mentioned as both an enabler and a constraint in the next steps; consideration should be given to increasing resources available to make capital investment in this area possible. Likewise, coding and coders was seen as a very clear constraint. There is some evidence of movement in this area but work remains to be done. A number of examples were given where coders’ jobs were being made easier by pooling resources and doctors preparing adequate discharge summary. Further work needs to be done on sharing best practice in area health services.

The critical test for ABF/A BM will come with the introduction of new infrastructure. There are very large infrastructure projects underway and the payment system must be able to transfer resources between institutions. It is vital that some of the issues above are tackled prior to 2014 and the opening of the Fiona Stanley hospital. This is compounded by potential developments at a Commonwealth level and the move to an efficient price. Unless there is progress that there is danger that "states will pay for their inefficiencies"
APPENDIX I

Terms of Reference

REVIEW OF ACTIVITY BASED FUNDING/ACTIVITY BASED MANAGEMENT
2009-2010 – 2010-2011 IN WA

Prior to the development and roll out of ABF/ABM into other areas of the WA health system e.g. outpatients, WA Health has commissioned a review of the ABF/ABM program in WA to:

1. Explore how Area Health Services have developed and implemented ABF/ABM in WA hospitals.
2. Assess whether the design and implementation methodology for ABF/ABM in WA meets the current and future needs of WA patients, the WA community, WA clinicians and WA health care providers.
3. Assess the alignment between ABF/ABM and clinical services planning, funding, resource allocation, resource utilisation, service delivery and quality improvement processes.
4. Assess whether the purpose of improvement is appropriate, adequately designed and considered to ensure that implementation of ABF/ABM meets government objectives and targets.
5. Critically assess the policy and evidence base underpinning the WA Health ABF/ABM program reforms.
6. Identify issues and/or elements that need to be better emphasised or included in the ABF/ABM model to ensure that WA Health is able to meet government objectives and targets.

Reviewer

- Consultant selected by Dr Jones and Hardy Group International to conduct review is Michael Scott, former Chief Executive NHS Westminster and Director of the Modernisation Agency.
APPENDIX II

List of those Interviewed

Kim Snowball
Dr Dorothy Jones
Ken Dawson
Ann-Marie Alexander
Claire Mullen
Michelle Kosky
Bing Rivera
Cameron Bell
Sharon Hallam
Gerrard Montague
Beress Brooks
Dr Amanda Ling
Karen Lennon
Lyn David and team
Eddie Bartnik
Rebecca Brown
Rod Whithear and team
Gail Milner and team
TarunWeeramanthri
Ian Smith and team
Mark Scully

Tim Reid
Philip Aylward and team
Ian Male and Dianne Barr
Dr Simon Towler and team
David Russell Weisz and team
Wayne Salvage and team
APPENDIX III

CONTRACT INCENTIVES FOR ENGLISH NHS PROVIDER HOSPITALS

Contracting in the NHS has developed as result of their purchaser/provider split. Over the years the contract has been developed and amended and is now in the form of a standard national contract:

Each year the contract is examined in the light of performance and policy developments. Incentives and penalties are then applied to "tune" the contract. The report below is extracted from an actual NHS trust. It gives highlights of the contract incentives and penalties provided by local and national contracting issues.

KEY CHANGES TO THE CONTRACT

The following issues have been introduced to the contract:

- Best practice tariffs.
- QUIP (Quality, Innovation, Productivity and Prevention) savings.
- Emergency threshold cap.
- Emergency readmissions.
- A plan to eliminate single sex accommodation.
- Compliance with national and local quality targets and indicators.

The possible financial implications of these are discussed in turn below:

BEST PRACTICE TARIFFS

The NHS operating framework for 2011/12 introduced mandatory best practice tariffs in the following areas:

- Interventional radiology.
- Incentivising high day case rates.
- Primary total hip and knee replacements.
- Adult renal dialysis.
- Transient ischaemic attack (TIA).
- Paediatric diabetic medicine.
The best practice tariffs introduced in 2010/11 will continue to apply in 2011/12. These are:

- Fragility hip fracture care.
- Acute stroke care Pathway.
- Cholecystectomy.

Taking two examples of these; firstly fragility hip fractures. The key clinical criteria that need to be satisfied are time surgery to within 36 hours, ortho-geriatrician involvement, to include admitted under the joint care of an ortho-geriatrician and orthopaedic surgeon, assessment by geriatrician in the preoperative period and post—operative geriatrician directed care.

An additional payment of £920 each patient treated on the best practice pathway. This gives the opportunity of an additional income of £1.1 million.

The key criteria for acute stroke care include urgent brain scanning for all suitable patients, and all stroke patients having prompt access to high-quality acute stroke unit where they spend 90% of their admitted time. Incentive payments are split into two areas. Firstly £707 for patients admitted directly to a stroke unit; £275 the timely delivery of initial CT scans. If all patients were treated on the best practice pathway the trust could gain a further £1.4 million.

**INCENTIVISING DAY CASES**

Certain HRG s have been selected to be done at a day case level. Each procedure has an incentivised price some £300 greater than the normal elective tariff. This includes breast surgery, hernia repairs, orthopaedic surgery, and laparoscopic cholecystectomy.

**EFFICIENCY**

Efficiency savings are expected in this contract round. Commissioners expect us to achieve efficiency savings in the following areas:

- Reduction in first to follow-up outpatient ratios.
- Frail Elderly pathway (redirecting admissions away from A&E).
- A decrease in consultant to consultant referrals.
- Reducing procedures of limited clinical value.
- Musculoskeletal pathway redesign.

The potential downside of all these efficiency savings is £3.2 million.
**EMERGENCY THRESHOLD**

In 2011/12 any emergency activity above the 2008/09 levels will only be paid for at a rate of 30% of the relevant tariff. The remainder will go to invest in services that reduce emergency admissions. There is potential income at risk of £3.1 million as a result of this however; this can be ameliorated by the use of the best practice tariff.

**EMERGENCY READMISSIONS**

The NHS operating framework for 2011/12 confirmed that providers would be financially penalised for emergency readmissions occurring within 30 days of the original admission. Penalties are to be applied as follows:

1) In 2001 – 12 commissioners will not pay for readmissions with some defined exceptions within 30 days of discharge following an elective spell.

2) For emergency readmissions within 30 days of discharge following a non-elective admission the trust will need to deliver at least 25% on its 2000 and 8009 readmission rate.

PbR guidance does provide some flexibility in how these rules are applied. Specifically, if commissioners agree a readmission is clearly unrelated to the original admission; a penalty need not be applied. However some £700,000 of income is at risk as result of these changes.

There are a range of further financial penalties related to key performance indicators. These include:

- The 95th percentile wait below four hours in A&E from arrival to admission transfer or discharge.
- Cancer waiting times.
- 18 weeks referral to treatment.
- MRSA bacteraemia.
- Elimination of mixed sex accommodation.
- Rates of Clostridium difficile.
APPENDIX IV

LIST OF "NEVER EVENTS' IN THE ENGLISH NHS

- Wrong site surgery.
- Wrong implant/Prosthesis.
- Retained foreign object post operation.
- Wrongly prepared high risk injectable medication.
- Maladministration of potassium-containing solutions.
- Wrong route administration of chemotherapy.
- Wrong route administration of oral/enteral treatment.
- Intravenous administration of epidural medication.
- Maladministration of insulin.
- Overdose of midazolam during conscious sedation.
- Opioid overdose of an opioid-naive patient.
- Inappropriate administration of daily oral methotrexate.
- Suicide using non-collapsible rails.
- Escape of a transferred prisoner.
- Falls from unrestricted Windows
- Entrapment in bed rails.
- Transfusion of ABO incompatible blood Components.
- Transplantation of ABO or HLA – incompatible organs.
- Misplaced Naso – or Oro – gastric tubes.
- Wrong gas administered.
- Failure to monitor and respond to oxygen saturation.
- Air embolism.
- Misidentification of patients.
- Severe scalding of patients.
- Maternal deaths due to postpartum haemorrhage after elective Caesarean section.
APPENDIX V

LIST OF REFERENCES


2) Farrar et al: Payment by Results: Consequences for key outcome measures and variations across HRGs, providers and patients. A report for the Department of Health 2010.


4) O’Reilly, Busse, Hakkinen, Or, Street and Wiley: Paying for Hospital Care: The experience with implementing activity – based funding in five European countries.


