

Designing a funding system for rehabilitation services

Part 2: Policy objectives and options for achieving efficiency and quality of care

STEPHEN DUCKETT, LEN GRAY AND ANNA HOWE

This paper is a revised version of a paper presented at the Advancing Rehabilitation Conference, November 1994. At that time, Stephen Duckett was Professor of Health Policy and Dean, Faculty of Health Sciences, La Trobe University. Len Gray is Executive Director, Bundoora Extended Care Centre. Anna Howe is Reader, School of Health Systems Sciences, La Trobe University.

Abstract

This paper examines the objectives of a funding policy for rehabilitation services. A casemix funding system comprises two sets of instruments: a classification system and a payment system. Attention is given to identifying which policy objectives are best pursued through each of these instruments. The paper then analyses the effect of various instruments on creating incentives for efficiency and quality, and assesses policy options with regard to their capacity for dealing with the heterogeneity of rehabilitation patients and controlling various forms of gaming. In conclusion, the paper canvasses four major areas warranting consideration in advancing policy: the use of a blended payment system; dealing with functional gain; the development of an information base; and the focus on designated rehabilitation units.

Developing a funding policy for rehabilitation

Although the absence of an acceptable classification system has hindered the development and implementation of casemix funding for rehabilitation, this has not been the only inhibiting factor. Developing a funding policy for rehabilitation requires clarification of the objectives of the payment system and also selection of the appropriate instruments to achieve those objectives. This paper aims to address a range of issues concerning the

development of a classification system and a payment system for rehabilitation services, and the application of these systems to achieve identified policy objectives.

What are the key policy objectives?

An ideal payment system for rehabilitation should promote efficient, high-quality rehabilitation practice. Few would disagree with such an objective, but operationalising it requires clarification of the meaning of 'efficient' and 'high-quality'.

Economists argue that the concept of efficiency has two key elements: technical efficiency and allocative efficiency. Technical efficiency can be defined as the relative consumption of inputs versus the production of the output or, in health care terms, the cost per treated patient. Allocative efficiency is defined as the achievement of the optimal allocation of resources across competing outputs. Allocative efficiency in rehabilitation would be maximised if resources were allocated to those individuals or services which achieve the greatest improvement in functional gain *as a result of rehabilitation*, relative to their costs; that is, the ratio of functional gain to costs is the highest. The qualification *as a result of rehabilitation* is important in that some patients achieve improvements in function simply with the passage of time.

Functional gain is used here in a broad sense of improved capacity for independent living. As well as improvements in independent physical function, it includes improvement in function due to training in the use of aids and appliances, and improved motivation and psychological well-being. Training of carers may also be an input to achieving improved function of the patient.

In the rehabilitation context, a question of technical efficiency is whether a high-cost, intensive therapy program for cardiac patients achieves a better outcome than a low-cost, gentle exercise program; that is, which is the best means to an identified end? A question of allocative efficiency is whether it is better to continue rehabilitation for patients who have shown only limited improvement in the first month of treatment, to take in a new group of patients for the same period of treatment, or to direct resources to other patient groups.

Addressing allocative efficiency requires moving beyond the simple policy objective that an increase in the number of patients treated is a desirable goal to begin to assess whether every additional patient being

treated brings an equal economic benefit. This extension requires an assessment of both costs of care and 'need' or benefits from care.

Victoria's acute funding arrangements operationalise costs by using diagnosis related groups (DRGs) with a price based on benchmark efficiency. A similar approach for rehabilitation can be contemplated. Compared to acute DRGs, a rehabilitation casemix system is expected to involve less diversity of cases and a more limited range of resource use. However, outcomes may be more diverse in terms of degree of recovery and acceptability of the outcome to the patient, clinicians and payers. A further major consideration is the limited information systems that currently exist on patients' functional status and resource use in rehabilitation services.

Operationalising the prediction of need or benefit in both acute and rehabilitation settings is much more complex than operationalising costs. While economists are attempting to define benefit in terms of disability adjusted life years and quality adjusted life years, these approaches are still at the developmental stage and no country or system has yet incorporated these measures or other need measurements into funding arrangements. Although, theoretically, quality adjusted life years can be used to measure benefit from rehabilitation services, this benefit is typically indicated in terms of expected functional gain. Interestingly, as indicated in part I of this paper, functional related groups incorporate expected functional gain into the classification system (Duckett, Gray & Howe 1995). They would thus incorporate the measurement of such gain directly into any funding system based on a functional related group classification scheme.

Ensuring high-quality rehabilitation services also involves consideration of functional gain. In this case, 'high-quality' can be defined as achieving an individual's maximum expected functional gain, in turn involving comparison of the actual functional gain achieved with the expected functional gain. The definition and measurement of expected functional gain is a major area requiring development. The first requirement is the adoption of valid and reliable standard instruments to measure initial dependency and improvement. Second, systems or protocols are needed to take account of the outcomes attributable to therapy inputs vis-a-vis other factors affecting outcome. Previously existing conditions that may set a baseline for recovery have to be taken into account, as do prospects for spontaneous recovery. The availability of best practice approaches in earlier stages of treatment, for example, high-quality prostheses, will also affect rehabilitation outcomes.

Funding policy instruments

There are two main components of any casemix-based funding system: the *classification system* and the *payment system*. The latter comprises the regulations or policies which define the way the classification system is used for payments. A choice needs to be made when designing a casemix-based system as to which elements of overall policy objectives will be pursued through the design of the classification system and which through regulation or other elements of payment system design. Wilkerson, Batavia and DeJong (1992) make a similar distinction, describing two key elements of policy as involving a 'classification system' and a 'justification system'. The distinction between DRGs as a classification system and casemix payments is also seen in the resident classification instrument and in CAM/SAM funding.

The classification system

In acute care, DRGs have become the dominant classification system. In rehabilitation, however, there is no dominant classification system as yet, and the Victorian Department of Health and Community Services has initiated a project to develop a classification system suitable for Victorian rehabilitation services. The New South Wales Casemix Area Network is also undertaking a project to develop a classification system for rehabilitation services (see part 1 of this paper, Duckett, Gray & Howe 1995).

While information requirements for developing a rehabilitation classification system are currently being considered, more attention must be given to relating information to the conceptual basis of the system rather than data gathering *per se*. Several aspects of existing data collection tools and practice warrant comment in terms of their applicability to rehabilitation information. First, data collected on dependency of nursing home residents is used only to address continuing care needs and does not include any estimation of functional gain. In contrast, functional related group systems include estimates of functional gain in the classification design.

Second, the extent to which commonly used scales such as the Barthel Index and functional independence measures can provide reliable and discriminating measures of functional gain needs to be determined. The Barthel Index was designed to measure functional impairment; its capacity to predict functional gain has yet to be established. Questions for

investigation include the need for weighting different impairments and how levels of outcome are to be compared, for example, functioning with an aid compared to independent functioning. Further, given that cognitive capacity and motivation are important factors in rehabilitation, particular attention needs to be given to measuring impairments in these areas. Many existing measures, including the Barthel Index, do not cover these areas.

Third, the acceptability of different measures to clinicians and in terms of practicality needs to be taken into account. Finally, as a rehabilitation classification system will sit between acute DRGs and the resident classification instrument, there are advantages in having a high degree of compatibility between relevant common items.

A further consideration in developing an information base and classification system design is the balance to be struck between collecting data from all units providing defined rehabilitation services, and from units identified as demonstrating best practice and providing high standards of care. The former approach will show the extent of variability in present practice while the latter can establish benchmarks for performance.

The payment and regulatory system

The second component of a casemix-based policy relates to aspects of the design of the payment arrangements or the regulatory environment which surrounds the classification system. Three examples can be given here of elements of the Victorian casemix system that relate to the regulatory environment. These examples illustrate ways in which regulatory provisions are needed to ensure appropriate incentives and to cover 'exceptions' to the general rules of the classification system that are more readily dealt with by regulation than by incorporating additional features in the payment system. In particular, the regulations provide a useful and simple means of allowing for and controlling 'extras' which might not be so well controlled directly through the payment system.

The condition governing access to the additional throughput pool relating to the need for hospitals to reduce waiting lists was probably the most notable example of regulatory arrangements in Victoria's acute care casemix system. The pool was, however, only a small component of funding, accounting for only about 2 per cent of total casemix funding in 1993-94.

Another example is the payment policy for exceptional cases or outliers. The risk borne by providers for high-cost patients is mitigated by

the outlier policy which makes additional funding available for cases with lengths of stay well above the average for each DRG. The Victorian Department of Health and Community Services changed the definition of outliers for 1994–95, thus changing payment arrangements without in any way altering the classification system of DRGs. The outlier payments are only a small part of the payment system; in 1992–93, the 5 per cent of outlier cases accounted for almost 25 per cent of bed-days and around 12 per cent of casemix funding.

A further example in acute care that is particularly relevant to rehabilitation relates to payment for surgically implanted prostheses such as pacemakers or artificial joints. The choice here is whether the classification system should identify those patients who have procedures involving prostheses or whether prosthesis payments should be a separate add-on identified in some other way. In fact, Victoria's funding arrangements adopt both approaches: the DRG classification includes a number of DRGs defined in terms of whether an artificial pacemaker is inserted; and special payment arrangements were also made where necessary in 1993–94, as in the case of funding scoliosis patients at the Royal Children's Hospital because they had substantially different requirements from other patients in the relevant DRG.

There is an immediate parallel here with rehabilitation services. In terms of services for amputees, for example, one could design a classification system which identifies those cases which require fabrication and fitting of an external prosthesis and have different groups within the classification system to identify different types of prostheses. Alternatively, there could be separate payment arrangements for prostheses as part of the overall payment system, independent of the classification system. Given the recent changes in prosthesis funding arrangements implemented by the Victorian Department of Health and Community Services, the latter approach may be the appropriate path to follow.

Whether a particular issue is addressed through the classification system or the payment system, including its associated regulations, depends partly on technical issues, such as whether the data are available to develop an appropriate classification system with homogeneous groups, and partly on strategies to minimise abuse or gaming and to minimise perverse incentives.

Incentives for efficiency and quality in rehabilitation

Developing a rehabilitation funding policy requires balancing incentives to improve technical efficiency with the need to promote allocative efficiency and high-quality care. In particular, as with acute care services, a rehabilitation funding policy needs to provide incentives for providers to address efficiency issues; that is, providers should bear the risk for any variation in efficiency of providing services.

Lump sum and/or per diem payments

Developing incentives for achieving appropriate length of stay is a key component of rehabilitation funding policy and the balance between lump sum and per diem funding is thus critical. Casemix funding has to date been characterised as inevitably involving variable lump sum payments for particular cases, or groups of similar cases. This approach, however, is not necessarily the case. Moreover, lump sum and per diem systems are not mutually exclusive: even the acute health DRG system involves a melding of lump sum payments with additional per diem payments for outlier stays.

Lump sum arrangements provide strong incentives to curtail excessive length of stay variation whereas per diem arrangements fund whatever length of stay is incurred. Nursing home funding in Australia involves a casemix system that allocates funding on a per diem basis, as do the resource utilisation group and Non-acute Inpatient Working Party systems. Per diem payments are quite appropriate for nursing home care where containing length of stay is not an objective of the payment system. To the extent that length of stay is contained, it is through the classification system which assigns lower reimbursement to low dependency individuals who are likely to accumulate longer stays, and so creates a disincentive to admit these residents, and through rationing total supply of nursing home beds.

Although costs of rehabilitation services are not completely determined by length of stay, it is here that quality and allocative efficiency issues come to the fore. Once rules for selecting patients for rehabilitation are agreed, policy should ensure that patients who can benefit from further rehabilitation are not discharged too early because of lump sum funding policies, and that providers are not given an incentive by per diem funding to keep patients beyond the point when functional gains can be expected to occur.

Best practice and quality of care

The decision to continue rehabilitation for existing patients has to take account of the costs and outcomes of interim care provided to patients awaiting rehabilitation. Where the number of places for rehabilitation is limited, there is a need to maintain throughput to avoid a backup of patients awaiting rehabilitation in other, less appropriate, units where functional capacity may decline, increasing the rehabilitation task. Prompt admission as well as appropriate discharge is required.

In the past, entry to a rehabilitation phase of care was commonly marked by transfer to a rehabilitation ward. The closer integration of rehabilitation with acute management of particular conditions means that the once common two-stage approach of a rehabilitation stay added on to an acute stay, resulting in a longer stay beyond the acute stay, is less in accord with best practice. This integration has particular implications for linking payment only to rehabilitation services delivered in particular settings, to which the patient has to gain access to receive care funded under the rehabilitation system.

At the same time, rehabilitation is becoming increasingly differentiated, with specific care plans and treatments for different clinical problems. Rehabilitation is increasingly being provided in specialised programs distinct from either acute care or long-term care, although in many cases operating within an acute hospital and not necessarily limited to designated wards. A number of the Medicare Incentive Projects implemented from 1991 to 1993 focused on rehabilitation services. Evaluations of these projects demonstrated the potential for improved outcomes from greater specialisation in specific areas of rehabilitation and close integration with other elements of care. For example, projects for management of fractured neck of femur reported reductions in length of stay, improved functional outcomes and negligible readmissions (Cameron et al. 1992; Farnworth & Kenny 1992; Street, Hill & Gray 1994).

Such integration of rehabilitation with overall patient management has a bearing on the settings in which rehabilitation care is delivered and to which a rehabilitation casemix system would apply. While there are advantages of specialisation in developing dedicated rehabilitation units, and payment can be readily linked to such units, there may also be disadvantages if patients have to wait for a bed before rehabilitation can commence. Similarly, discharge may be facilitated where rehabilitation can continue in a community setting such as a day hospital; to this end,

hospitals are already able to fund the provision of aids, equipment and home modifications. Further, there is mounting evidence that early return to a normal living environment can contribute to cost-effective rehabilitation and that assessment of relevant functional capacities is best carried out in such environments.

It may be preferable to think in terms of specialised programs that can be delivered in a variety of settings, with funding covering the full range of services provided as part of rehabilitation treatment. Ideally, a casemix rehabilitation system should be able to encompass rehabilitation services provided in community settings such as a day hospital, domiciliary therapy visits and home modifications, as availability of these services can assist in discharge and improvements in functional gain. For practical reasons, however, it is appropriate to focus attention initially on developing a classification system which describes inpatient activities.

The question that arises is whether the rehabilitation casemix payment system is to apply only to patients treated in dedicated rehabilitation units, or to patients receiving an identified mode of rehabilitation care wherever this care is delivered. The ways in which a separate funding strategy is consistent with and can enhance the development of specialised rehabilitation programs are of considerable importance in promoting best practice in patient care and also in managing resources across the health care system as a whole. The lack of separate funding has been a factor inhibiting this development to date, and other funding arrangements have tended to operate as disincentives to establishing high-quality rehabilitation services. The outcomes achieved in the Medicare Incentive Projects demonstrate that achieving improved outcomes more widely will require considerable attention to aspects of service delivery and care practice, and that funding is only one of the forces driving these changes.

Similarly, in geriatric rehabilitation, relationships with aged care assessment teams will be critical. Such teams are a major point of admission to rehabilitation and play a central role in decisions to cease rehabilitation and transfer to other modes of ongoing care. This interaction is seen in the growing but diverse provision of geriatric assessment and rehabilitation in many Australian hospitals. A survey conducted in 1992 (Dorevitch & Gray 1993) found that of the 90 hospitals in which rehabilitation was provided to aged patients as part of a defined hospital geriatric service, only 17 had a dedicated rehabilitation unit, 41 had a combined assessment and rehabilitation unit, and the remainder operated through general

rehabilitation or other mixed function wards. Some six out of ten hospital geriatric services also operated a day hospital.

The specialist unit approach, which has been adopted in the United States and in Victoria, still leaves the policy question as to how to set the budget for the rehabilitation unit. Again there are two options. The budget can be based either on history, with all the weaknesses inherent in that, or on specific rehabilitation casemix measures. The latter strategy is clearly preferred and the task of developing a casemix measure specific to rehabilitation becomes a more bounded exercise than attempting to roll rehabilitation into the acute casemix system.

Evaluating policy options

Current funding policies for acute health services rely very heavily on the classification system and eschew using the regulatory framework in the funding design. This emphasis on the classification systems is partly because DRGs are well accepted and relatively robust, and the DRG classification system yields relatively homogeneous groups. Further, the workload of hospitals is characterised by a large number of separations, each of which has a relatively small number of bed-days. A payment policy based on separation thus provides averaging over that large number of separations.

A funding policy for rehabilitation needs to address standardisation of cost structures and promotion of functional gain. Specifically, a policy should aim to reduce unnecessary cost variations to achieve similar outcomes in terms of functional gain. As indicated above, there are two main policy instruments that can be used to achieve this policy: the classification system and the regulatory framework. Table 1 shows how the two instruments could be used to achieve the relevant objectives.

Table 1: Policy instruments to achieve objectives in rehabilitation funding

Policy issue	Classification system	Regulatory framework
Standardisation of variation in cost	Treated patient as basic unit for system (as with DRGs)	Control of costs of inputs through designation process Control of bed capacity/total days through accreditation and licensing processes Control of daily costs through classification system (as with RCI and CAM/SAM, RUGs)
Standardisation/promotion of improvement in outcome	Incorporate extent of functional gain into classification system as with FRGs	Accreditation process to review functional gain achieved by designated rehabilitation units

Heterogeneity of patients

Rehabilitation services face a different situation from acute care services with regard to within group homogeneity and between group heterogeneity. There is no widely accepted classification system and, to the extent that data are available, length of stay is more heterogeneous for apparently similar patients. Outcomes are also more diverse; rather than death or recovery, the outcomes of rehabilitation may range from complete recovery to such limited improvement that long-term care is required, up to the highest level of nursing home care.

The balance between separations and stays for a typical rehabilitation program is also reversed compared with acute services. There is a relatively small number of separations, each of which accumulates a relatively large number of bed-days. To some extent, therefore, providers cannot rely on the same averaging of risks over each separation as occurs with acute inpatient services.

Gaming: skimming and skimping

Containing the risk for gaming in classification and payment systems is also important. A payment policy in rehabilitation has to be designed to minimise the risks of two particular types of gaming: *skimming* and *skimping*.

Skimming refers to the situation where agencies have an incentive to ‘pick winners’, that is, to pick patients with good prospects of recovery and to avoid those who, because of inadequacies in the classification or payment

systems, are predicted to have costs which will exceed revenue. In developing a rehabilitation casemix system, it will be important to incorporate the information used by rehabilitation physicians in predicting length of stay, functional gain and destination on discharge, so that the variables included in the design of the classification system reflect the clinical decision-making process.

Any shortcoming in the classification system may make it possible for providers to make admission choices based on skimming to maximise revenue. The selection of instruments that minimise gaming of functional assessment is thus critical to the classification system. The consequences of skimming are, on the one hand, that some potential patients who would benefit from rehabilitation services are not able to gain sufficient access to them and, on the other, that the purchaser has paid more than they should have for the service provided and outcomes achieved. There is also a possibility that because of experience of a limited range of cases based on past attempts to skim, physicians have only limited capacity to judge the best skim cases and that those admitted may not be those who achieve the best result even from a financial perspective.

Skimping occurs when a provider reduces the level or quality of services to lower than the traditional or contemporary norm. If there was a single lump sum payment for a particular type of rehabilitation, there may be an incentive for an agency to discharge patients before they have achieved their optimum level of functioning. The provider would still receive the same amount of money but the patient would not receive the expected benefit.

One means of countering skimping is to split funding of hotel or infrastructure costs and care or therapy costs. The former costs can then be funded at a standard rate to create an incentive for efficiency and the latter costs funded in relation to care and therapy needs, and paid for only when they are provided and accounted for. These mechanisms have been adopted with a degree of success in the CAM/SAM funding arrangements in nursing homes to achieve improved efficiency while maintaining quality of care; the nursing home funding arrangements also make provision for extra payments, such as enteral feeding (Gregory 1993).

A further example can be seen in possible arrangements covering payment for prostheses associated with rehabilitation. Inclusion in the lump sum could lead to skimping, with providers saving through the use of less costly prostheses and so compromising quality of care. A separate payment for prostheses could instead ensure that the most suitable devices were used and paid for accordingly.

Recommendations for a funding policy

The fundamental basis for the design of a rehabilitation funding policy is the definition of what is within the scope of the policy. The Victorian approach of limiting special rehabilitation funding arrangements to designated rehabilitation services provides a well-defined starting point. Beyond this point, several directions are emerging for the development of a casemix funding system for rehabilitation; four areas are raised for consideration to advance this development.

First, consideration could be given to having a *blended payment system*, involving both lump sum and per diem components for rehabilitation services. The relative balance of the two components could vary within the classification system depending on the heterogeneity of the patient groups. The level of per diem payment could vary according to the overall level of dependency and the lump sum could vary in relation to the extent of improvement expected, recognising the intensity and duration of rehabilitation required to achieve the desired outcome. Thus a highly dependent patient requiring rehabilitation for multiple disabilities due to stroke would attract a larger relative per diem component than patients requiring rehabilitation for hip replacement, but if the degree of improvement from the different baselines was expected to be similar, the lump sum would be similar. A blended system would allow sharing of the risk of length of stay variation between the purchaser and providers. Ellis and McGuire (1986) proposed a blended prospective payment system for the United States.

The composition of the lump sum and the per diem components could each take account of different variable and standard costs. A four-way split can be suggested, with hotel costs and base nursing costs funded on a per diem basis, and variable therapy and variable nursing costs by lump sum payments, the amount of which could depend on dependency and recovery goals. Lump sum payments would then drive length of stay; an incentive to contain excess stays is created by paying for higher initial costs and for lower costs later in a stay.

A second critical issue in payment system design is whether *functional gain* is incorporated into the classification system or into the overall regulatory framework. While a number of measures of functional status have been developed, there is a need for comparative assessment of their attributes with regard to reliability, validity and predictive capacity. Among issues to be determined are the frequency and period over which

functional gain is to be measured; timing must be adequate to capture improvements but not so long as to prolong length of stay in the expectation or hope of further gain beyond a defined rate of improvement. The importance of the classification system vis-a-vis the payment system will depend on resolving these issues. If functional gain is not in the classification system, the risks of skimping are increased. These risks can be counteracted by strong quality assurance processes introduced as part of the funding policy.

Third, the development of an *information system* in conjunction with enhanced care planning for rehabilitation patients and improved management of rehabilitation services is fundamental to a casemix system. To this end, rehabilitation services should be required to adopt a uniform record-keeping system. Such a system should provide the basis of the classification and payment system in the same way that the acute hospital information system provides the information inputs to the DRG casemix system in acute care. A carefully selected minimum data set that supports individual care planning and routine service management is required, in a form that can be easily analysed and can generate regular reports on patient outcomes on a weekly or other periodic basis. The resolution of several aspects of system design should assist in the specification of the minimum data necessary to make the system operational; the collection of data without reference to the preferred design is likely to be wasteful in covering too many extraneous variables.

Finally, the Victorian policy limits access to specific rehabilitation grants to a small number of *designated rehabilitation services*. This designation should be subject to regular review, say every three years. The review process should involve audit of the rehabilitation services' experience, including comparative analysis of discharge decisions and outcomes between units. Continuation of present units and designation of new units should depend on meeting specified performance criteria and outcome standards.

The characteristics and performance of designated units should also provide the basis for defining parameters for rehabilitation programs that might not necessarily be delivered in specified physical units. Parameters relating to staffing mix, the types of care services provided, patient selection, throughput and outcomes could enable a rehabilitation casemix system to be applied to programs that met these criteria and the patients managed in these programs wherever the programs were delivered.

Conclusion

The work that has been done on casemix systems for acute care and long-term care in Victoria, at a national level in Australia, and overseas now provides a context in which a rehabilitation casemix system can be considered. The issues discussed and recommendations put forward in this paper have covered the policy framework within which a new rehabilitation casemix classification and payment system could be designed. The next step is to operationalise the concepts and structure of a system and test it with a preliminary data set.

The combination of a blended payment system and tighter auditing and accreditation of rehabilitation services should ensure an appropriate sharing of the risks of providing and funding rehabilitation services between the purchaser and the provider without creating disincentives that adversely affect the quality of patient care.

The development of a casemix-based system for funding rehabilitation services has the capacity to achieve greater efficiency and equity and promote best practice within these services. Further, in realising greater consistency between payment systems for acute care, rehabilitation and long-term care, it can contribute to better allocation of resources and avoiding inefficiencies, including cost-shifting, between different areas of the overall health care system. Ultimately, to the extent that a rehabilitation casemix system yields a better understanding of the health problems that generate a need for rehabilitation and promotes effective management strategies, it may contribute to the development of preventive approaches.

References

- Cameron I, Quine S, Lyle D & Helby L 1992, *Rehabilitation after proximal femoral fracture: A randomised controlled trial*, Final Report of the Fractured Neck of Femur Rehabilitation Study (Hornsby Ku-Ring Gai Hospital) to the Department of Health, Housing and Community Services.
- Dorevitch M & Gray L 1993, 'National survey of hospital geriatric services: A study of hospital-based geriatric services in Australia', *Aged and Community Care Service Development and Evaluation Reports*, No 9, Australian Government Publishing Service, Canberra.

- Duckett S, Gray L & Howe A 1995, 'Designing a funding system for rehabilitation services (Part 1)', *Australian Health Review*, vol 18, no 3, pp 30–44.
- Ellis RP & McGuire TP 1986, 'Provider behaviour under prospective reimbursement', *Journal of Health Economics*, vol 5, pp 129–51.
- Farnworth M & Kenny P 1992, *Economic evaluation of the Fractured Hip Management Program at Westmead Hospital: Summary of results*, Centre for Health Economics Research and Evaluation, Westmead Hospital.
- Gregory B 1993, 'Review of the structure of nursing home funding arrangements: Stage 1', *Aged and Community Care Service Development and Evaluation Reports*, No 11, Australian Government Publishing Service, Canberra.
- Street P, Hill T & Gray L 1994, 'Report of the first year's operation of an ortho-geriatric service', *Australian Health Review*, vol 17, no 1, pp 61–74.
- Wilkerson DL, Batavia AL & DeJong G 1992, 'Use of functional status measures for payment of medical rehabilitation services', *Archives of Physical Medicine and Rehabilitation*, vol 73, pp 111–20.