



The University of Sydney

Faculties of Health Sciences and Architecture

**The Home Modification:
Information Clearinghouse Project**

Cost Approaches to housing and care An annotated bibliography

Prepared by:

**The Home Modification Information
Clearinghouse Project Team**

Authored by
Katrina Chaudhary

August 2007

Anderson, C., Ni Mhurchu, C., Brown, P. M., & Carter, K. (2002). Stroke Rehabilitation Services to Accelerate Hospital Discharge and Provide Home-Based Care: An Overview and Cost Analysis. *Pharmacoeconomics*, 20(8), 537-552.

This is a systematic review with meta-analysis and economic evaluation of randomized clinical trials of early hospital discharge and home-based rehabilitation for patients with acute stroke. The authors included all published randomized controlled trials of stroke rehabilitation services with a policy of early hospital discharge and provision of domiciliary rehabilitation with or without 24 hour nursing care.

Data from the included studies was collected on study quality; major clinical outcomes including hospital stay, death, institutionalization, disability, and readmission rates; and resource use associated with hospital stay, rehabilitation, and community services. The resources are priced using Australian dollars (\$A) healthcare costs and the outcomes and costs of the new intervention was compared with standard care. The focus of this analysis was whether health outcomes following early discharge could be improved or maintained at the same or lower cost?

Bridge, C., Phibbs, P., Kendig, H., Mathews, M., & Bartlett, H. (2006). The costs and benefits of using private housing as the 'Home Base' for care for older people: A systematic literature review. Retrieved 2007, from <http://www.ahuri.edu.au/publications/projects/p60313>.

This is a systematic review of the literature on the costs and benefits of using private housing as a home base for care of older

people. It provides background information for developing a model to help determine the influence of a range of housing variables on the cost of aged care focusing on tenure, dwelling, type and location. Much of the research reviewed was conducted outside Australia. This comprehensive literature review is the first stage of a project aimed to inform policy and program delivery issues associated with financial costs and benefits to individuals and governments using private housing as the home base for the provision of care services for the older people in Australia.

Challis, D., Darton, R., Johnson, L., Stone, M., & Traske, K. (1991). An evaluation of an alternative to long-stay hospital care for frail elderly patients: II. Costs and effectiveness. *Age and Ageing*, 20(4), 245-254.

This paper provides the main findings of a cost evaluation of a service to provide alternative care at home for patients receiving long-stay hospital care. Elderly people receiving the service were compared with a group of similar patients in an adjacent health district. The paper presents data on length of time at home and in hospital, changes in quality of life and care of elderly people, and effects upon informal carers for the two groups.

Chappell, N., L., Betty, H., Marcus, J. H., Jo Ann, M., & Carol, M. (2004). Comparative Costs of Home Care and Residential Care. *The Gerontologist*, 44(3), 389.

This paper reports on Canadian research that examined the cost effectiveness of home care for seniors as a substitute for long-term institutional services. Two Canadian cities were included in the research: Victoria, British Columbia, and

Winnipeg, Manitoba. The research computes the costs of formal care and informal care in both settings and ensures comparable groups of clients in both settings by comparing individuals at the same level of care. The results reveal that home care is significantly less costly than residential care even when informal caregiver time is valued at replacement wage.

Chen, Q., Kane, R. L., & Finch, M. D. (2000). The cost effectiveness of post-acute care for elderly Medicare beneficiaries. Inquiry - Blue Cross and Blue Shield Association, 37(4), 359.

This article presents the findings of a cost-benefit analysis study of post-acute care (PAC) in different settings. The analysis found that home health care was more cost effective than PAC in skilled nursing facilities (SNFs) or rehabilitation facilities. The cost effectiveness for home health care was also more favourable relative to being home without formal care. Post-acute care in SNFs was not cost effective compared to being home without formal care. The cost-effectiveness analysis showed mixed support for PAC in rehabilitation facilities. The authors conclude that these results and the use of cost-effectiveness analysis in general, provide a basis for a more efficient Medicare reimbursement system for PAC.

Coughlin, T. A., McBride, T. D., Perozek, M., & Liu, K. (1992). Home care for the disabled elderly: predictors and expected costs. Health Services Research, 27(4), 453-479.

This article presents findings from a US study in which the cost implications of anticipated behavioural responses, for example caregiver substitution, were estimated. The study was based on the 1982 National Long-Term Care Survey of disabled, non-institutionalized elderly

persons. The results demonstrate that anticipated behavioural responses in 1990 would have added between \$1.8 and \$2.7 billion dollars to the cost of public home care program. Results from a variety of cost simulations are presented, with a discussion of policy implications of the findings.

Croucher, K., Hicks, L., & Jackson, K. (2006). Housing with care for later life: A literature review. York: Joseph Rowntree Foundation.

This report presents a comprehensive overview of recent evidence related to new and emerging models of housing with care for later life. The review focuses on primary research and service evaluations, drawing out key messages regarding how to best meet the housing and care needs of older people in an ageing society. The primary focus is on UK evidence that addresses crucial issues of independence, social integration and the capacity of housing with care to meet a range of care needs. This review will be of significant interest to those engaged in commissioning and developing housing with care schemes for older people, including policy makers, service planners and those engaged in developing and delivering services.

Dutrenit, J.-M. (2005). Cost-benefit analysis in social care for elderly people. Evaluation Review, 29(5), 389-406.

Social care at home for elderly people is now growing rapidly in France. A new question is what are better forms of care for the different partners concerned? The research presented here, offers some answers to this question. Ceteris paribus, cultural activities in a group or at home - versus others appear to produce more interest for elderly, professional caregivers, and the rest of society. (Author abstract)

Eastaugh, S., R. (2001). Cost-effective potential for home health care. *Managed Care Quarterly*, 9(1), 41.

This article discusses the cost-effective potential of home health care. The author considers a range of assumptions for three critical variables: annual health care costs, annual hospital days saved, and high and low estimates for the marginal cost of savings for a foregone day of hospitalization.

Greene, V. L. (2005). Prospective budgeting for home care: making titration work. *Journal of Aging and Health*, 17(4), 399-424.

The objective of this study was to provide a flexible model for prospective budgeting for home care to serve as a template for practical decision making. Methods used are standard risk-neutral expected value theory, cost benefit analysis, and the conditional logistic probability model. Results indicate a prospective budgeting model that provides analytic scaffolding for a practical decision support system for home care case managers, consultants, and program evaluators that can improve program equity, efficiency, and effectiveness.

The author criticizes the well-known Titration Budgeting Model of Weissert, Chernew, and Hirth in terms of its logical and operational problems but then goes on to develop a framework within which the goals of the titration model can be met and home care resources can be more efficiently allocated.

Kendig, H. L., & et al. (1999). Costs of community care services for individuals with complex needs. *Australasian Journal on Ageing*, 18(2), 86-92.

The objective of this study was to determine to what extent costs of intensive community care can be predicted and by which factors. Costs of community care services were calculated for 497 clients of Linkages (Community Options) projects in Victoria, Australia, in 1992. Results indicated that the costs to government and carers vary by project and were best predicted by client dependency, client incontinence, male carers and non-resident carers. Additional costs related to length of time as a Linkages client. The authors concluded that client and carer characteristics had limited capacity to predict costs (29% of variance explained). (Author abstract)

Lansley, P., McCreddie, C., & Tinker, A. (2004). Can adapting the homes of older people and providing assistive technology pay its way? *Age & Ageing*, 33(6), 571-576.

Adaptations and Assistive Technology (AT) have an important role in enabling older people to remain in their own homes. The purpose of this study was to measure the feasibility and cost of adaptations and AT, and the scope for these to substitute and supplement formal care. The results indicated that the adaptability of properties varied according to many design factors and the needs of occupiers. The study found that the most adaptable properties were ground floor flats and bungalows; the least were houses, maisonettes and flats in converted houses. Purpose-built sheltered properties were generally more adaptable than corresponding mainstream properties but the case for bungalows was opposite.

The authors concluded that appropriately selected adaptations and AT can make a significant contribution to the provision of living environments which facilitate independence. They can both substitute for traditional formal care services and supplement these services in a cost-effective way.

Leung, A. C.-T., Liu, C.-P., Chow, N. W.-S., & Chi, I. (2004). Cost-Benefit Analysis of a Case Management Project for the Community-Dwelling Frail Elderly in Hong Kong. *Journal of Applied Gerontology*, 23(1), 70-85.

This article reports the findings of a case management project for community dwelling frail elderly patients discharged from hospitals in Hong Kong. The authors discuss the use of case management as a tool in achieving integrated, quality, and cost-effective care for this group of people.

Melin, A.-L., Hakansson, S., & Bygren, L. O. (1993). The cost-effectiveness of rehabilitation in the home: A study of Swedish elderly. *American Journal of Public Health*, 83(3), 356.

This is a randomized controlled trial investigating whether care of elderly and disabled patients could be more cost-effective after a short-term hospital stay. The authors examined a primary home care intervention program on functional status, use and the costs of care after 6 months. 110 patients were randomized to physician-led primary home care with a 24 hour service and 73 controls were offered ordinary care. Physical, cognitive, social and medical functions were assessed. Data on inpatient days and outpatient visits were converted to cost. Significant cost reductions were found in the randomized sample.

Ramos, M. L., Ferraz, M. B., & Sesso, R. (2004). Critical appraisal of published economic evaluations of home care for the elderly. *Archives of Gerontology & Geriatrics*, 39(3), 255-267.

A systematic appraisal of 24 economic evaluations of home care for the elderly

published between 1980 and 2004. The review involved the assessment of both costs and consequences related to home care exclusively for the elderly, aged 65 or more. The authors critically appraise the methodology using five accepted principles used worldwide for conducting economic evaluations. The findings report a disparity in methods of writing economic evaluations and low adherence to the methodological principles in economic evaluations related to home care for the elderly.

Watson, K., & Perkins, A. (2005). *A framework for cost-benefit analysis of HASI and RRAP-D*. Ottawa, Ontario: Canada Mortgage and Housing Corporation.

The theme of this report is how to assess whether assistance with renovations enable an elderly or disabled person remain in their present dwelling is cost-effective. Canada Mortgage and Housing Corporation (CMHC) commissioned this methodology study to develop a framework for the cost-benefit analysis of two existing programs, the Residential Rehabilitation Assistance Program for Persons with Disabilities (RRAP-D) and Home Adaptations for Seniors Independence (HASI).

The framework includes all the effects of these two programs on the applicants, their caregivers and their community. The study team developed a logic model for the two programs and a quantitative model of potential impacts of the renovations over time. The authors list all the costs and benefits that might be relevant and discuss how each might be measured. The report is presented in two volumes and includes an extensive literature review on cost-benefit frameworks. Survey responses are presented in tables. This report is a valuable resource for researchers and government policy makers.

Weissert, W., Chernew, M., & Hirth, R. (2003). Titrating versus targeting home care services to frail elderly clients: an application of agency theory and cost-benefit analysis to home care policy. *Journal of Aging & Health*, 15(1), 99-123.

The article summarizes the shortcomings of current home care targeting policy, provides a conceptual framework for understanding the sources of its problems, and proposes an alternative resource allocation method. Methods required for different aspects of the study include synthesis of the published literature, regression analysis of risk predictors, and comparison of actual resource allocations with simulated budgets. The authors conclude that titration of care would reallocate resources to maximize marginal benefit for marginal cost.

Weissert, W. G., Cready, C. M., & Pawelak, J. E. (2005). The Past and Future of Home- and Community-Based Long-Term Care. *The Milbank Quarterly*, 83(4), 1-71.

This article reviews the results of home and community care studies conducted over the last several decades. 150 documents were selected for review out of 700 citations identified, from which 27 most rigorous studies were chosen. The purpose of the review was to reach overall conclusions on costs and effects of home and community care for the aged by examining findings of research conducted over the past three decades. The study shares some features in common with other efforts to make sense of the growing plethora of home and community care studies.

Widiatmoko, D., & Smith, R. D. (1996). The cost-effectiveness of home assessment and modification to reduce falls in the elderly: a decision-analytic modelling approach (Working paper no. 60). York: Centre for Health Program Evaluation.

The purpose of this study was to model, the cost-effectiveness of introducing a home hazard assessment and modification intervention for those aged over 75 years, from the perspective of the health service purchaser. The intervention was assumed to reduce the incidence of falls in the independent elderly living at home.

The evaluation was conducted using available published literature, focussing on Australian data. Includes a literature review on the demographic profile of the elderly in Australia, and the evidence regarding risk factors, and the interventions to reduce falls in the elderly. The model was designed to simulate the costs and consequences of a fall to the elderly over a one year period.