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# A multidisciplinary model of transitional rehabilitation in acute aged care

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## ABSTRACT

This article describes the first stage of a three-stage pilot research project to establish a Healthy Ageing Unit, in a private hospital in Western Australia, based on a multidisciplinary model of transitional rehabilitation for the elderly acute patient. Results of the Stage One Developmental Needs Assessment and User Consultation indicated the need for post-acute intermediate care for the older patient. An audit of admissions and separations data found that patients aged 65 years and over had an average length of stay of 33.4 days compared with the Australian norm for all patients of 3.7 days and that, in the previous year, more than 322 acute general, medical and surgical patients had been unable to be admitted for treatment because of bed shortages. Moreover, anecdotal information suggested that both nursing staff and patients were frustrated by the lack of time available to adequately provide "enabling" care. The Unit proposed an innovative multidisciplinary model of staffing, with enrolled nurses trained as therapy assistants providing the majority of care. The development of selection criteria for the Unit was based on data identified from medical records and focus groups. Medically stable acute patients aged 60 years and over were referred to the Unit and were assessed as suitable candidates for therapeutic nursing if they had the expected ability to improve/rehabilitate within a two-week time frame. Patients who were assessed as unable to make this progression were deemed unsuitable candidates and admitted to the conventional care wards for other support and discharge planning.

## KEY WORDS

Healthy ageing, acute aged care, multidisciplinary transitional rehabilitation, intermediate care, therapeutic nursing

## INTRODUCTION

The establishment of a Healthy Ageing Unit (HAU) in Western Australia by one of the country's largest denominational, not-for-profit private health care providers was identified as a strategy capable of addressing the challenges posed by its extended length of stay population whilst supporting the health care organisation's Strategic Plan 2001-2011 for the Care of the Older Person and Marginalised Groups.

To explore the feasibility, effectiveness and acceptability of the HAU a three-stage pilot research project was proposed, in collaboration with the School of Nursing and Midwifery and the Centre for Research into Aged-Care Services (CRACS) at Curtin University of Technology. The aim of the first stage of the pilot was to conduct a Needs Assessment and User Consultation to inform the development of the Unit, using a qualitative descriptive approach. The second stage combined qualitative and quantitative methodology in a controlled intervention, with a pre-test and post-test design, to compare clinical outcomes of patients admitted to the HAU with a control group from a conventional post-care ward. The final stage involved follow-up at three months in order to examine clinical outcomes of patients in the *intervention* and *control* group beyond discharge.

This article provides a broad background to the research project and draws on literature to support the research approach taken in Stage One of the pilot.

## BACKGROUND

Aged care has received renewed attention since the release of Australia's National Strategy on Ageing: An Older Australia, Challenges and Opportunities for All (Australian Department of Health and Ageing, 2002). National policies and attitudes now recognise the potential for more positive experiences of ageing and call on all States and levels of government to take a leadership and facilitation role to ensure older Australians are able to lead healthy, active fulfilling lives. Yet, the growth in awareness in ageing issues and of the importance of age-sensitive services has been accompanied by increasing pressure on acute services within the Australian health care system arising, in part, from an increasingly elderly population.

According to the Australian Bureau of Statistics (ABS), Australia's population structure is ageing rapidly compared to most other member countries of the

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the Organisation for Economic Co-operation and Development (OECD). Moreover, the ABS population projections indicate that this trend is likely to continue for the foreseeable future. Currently, 'the aged' – those aged 65 years or more – account for 36% of all health care expenditure, yet account for only 12% of the whole population. Furthermore, it is predicted that in the absence of offsetting factors (e.g., reduced age-specific disability rates), the ageing population will mean further increased usage of health-care resources, related to: more frequent and longer hospital stays; high levels of frailty; chronic complex co-morbidities or multi-morbidities; potential losses in cognitive potential and learning ability, and high prevalence of dementia (Baltes & Smith, 2002; Madge, 2000).

In acute care, the use of scarce resources by older people in the post-acute phase are frequently portrayed as inappropriate and those older people who remain in hospital longer than a comparable younger person are often considered 'bed blockers' (Littlechild & Glasby, 2000 cited in Andrews, Manthorpe & Watson, 2004; Fine, 2001; COTA, 2000). The frequent and interchangeable use of the terms 'inappropriate acute bed use' and 'bed blocker' stigmatises the older patient and ignores the conceptual differences between these terms. There are many factors that have been associated with the delayed discharge of the older person from hospital, including: slower recovery after acute episodes of ill health and longer time required to achieve maximum potential compared to younger patients; as well as organisational /administrative factors (i.e., co-ordination with aged and community services) (Baltes & Smith, 2002; Victor, Healy, Thomas & Seargeant, 2000).

Regardless, the therapeutic needs of 'difficult to discharge' older patients, combined with increased numbers needing hospitalisation and bed shortages, has persistent ramifications for the acute hospital setting that need to be addressed (McCallum, Simons & Simons, 2003; Duckett, 2002). The cultures of hospitals are however, oriented to short-term stays, during which people are repaired or cured (Lunney, Lynn, Foley, Lipson & Guralnik, 2003). Within the acute care environment, which is reflected by rapid through put and frequent understaffing, and where many tasks of a critical nature need to be achieved by the acute care nurse on a shift, there may not be time to allow the older patient to undertake their own personal care. Rather, it becomes 'quicker to do it your self'. For the older person undertaking these tasks, regardless of the time it takes, is a critical success factor in maintaining self-esteem and relative independence (Victor, et al., 2000).

Therefore, a major cultural change is required to deal with those who have chronic complex co-morbidities or multi-morbidities and who may also have major social and environmental impacts on their health condition (Naylor, Brooten, Campbell, Maislin, McCauley & Schwartz, 2004; Naylor, Bowles & Brooten, 2000). This implies a need for a model of

care that provides a flow from acute health care to aged care and community services, and vice versa, for many older people in this situation (McCallum, et al., 2003; COTA, 2001).

Intermediate care has emerged to form a crucial part of health-care and social policy in the United States, United Kingdom and Australia. Planners and policy makers have seen its potential to amalgamate the explicit requirements for lower cost health-care, appropriate use of human resources and improved bed management, with requirements for improving services and achieving better clinical outcomes for older people.

The meaning of the term 'intermediate care' is, however, somewhat elusive in that it has been applied to a heterogeneous group of interventions (variously described as integrated care, special care, step-down, step-up, interim, transitional, sub-acute, post-acute, etc) and applied across a range of settings, to a range of patient groups (Roe, Daly, Shenton & Lochhead, 2003; Steiner, 2001; Griffiths & Wilson-Barnett, 2000, 1998). For example, Martin, Peet, Hewitt and Parker (2004) reported the existence of 70 schemes, providing divergent services across the United Kingdom, which could be clustered under the rubric of intermediate care and that inconsistently used the above terms to describe the interventions.

Beyond that, there is consensus regarding the type of clinical services or service models to which the broad term has been applied, ranging from post-acute schemes to improve transition from hospital to home or long-term care (whether hospital- or community-based) to crisis intervention schemes (admission avoidance) (Steiner, 2001).

One model of intermediate care that has gained popularity since the 1960s is the *nurse-led* or *post-acute nurse-led unit* for hospitalised patients who are deemed medically stable but not ready for discharge (Steiner, 1997). The underlying philosophy of this type of unit is strongly associated with the Hall concept of therapeutic nursing, which is based on the proposition that by transferring appropriate patients to a low technology environment, where patients practice home-like activities under the auspices of rehabilitation professionals (nurses rather than doctors), patients' clinical outcomes will improve, post-discharge quality of life will be increased and hospital lengths of stay and re-admission rates will be reduced because the main need during the post-acute period is nursing, not medicine (Evans & Griffiths, 1994; Hall, et al., 1975 cited in Pearson, 2003 and Pearson, Puntun & Durant, 1992; Wiles, Postle, Steiner & Walsh, 2001).

To-date, results from trials of *nurse-led units* have been inconsistent. The early evaluations of this type of unit were promising and resulted in a proliferation of new schemes during the 1990s. However, Griffiths and Wilson-Barnett (1998) reported that all these early trials had significant methodological weaknesses, which suggests that more caution should be attached to the positive interpretation of the results than have

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been reported. For example, few reported the use of well-tested outcome measures; the controlled design was compromised by patient attrition; most used only proxy pre-test measures and not all trials controlled for pre-test differences.

Evaluation of the more recent randomised controlled trials has failed to find any positive impact of the *nurse-led units* on patient outcomes, above and beyond conventional nursing care. Indeed, Steiner, Walsh, Pickering, et al. (2001), Griffiths, Harris, Richardson, et al. (2001), Richardson, Griffiths, Wilson-Barnett, et al. (2001) and Griffiths, Wilson-Barnett, Richardson, et al. (2000) noted that despite a lower cost per day for the *nurse-led units* (related to fewer major medical reviews, tests and investigations), the longer stays associated with units actually translated to a higher cost overall.

A subsequent comparison of the interventions implemented over the past 20 years has revealed the model is far more complex than initially conceptualised. Most significantly, Griffiths (2002) noted that the skills mix of the *nurse-led units* differed across studies. Improved patient outcomes were associated with a higher skills mix (i.e., a higher ratio of qualified to unqualified staff) at levels comparable with the acute ward with which it was compared. While the unsuccessful units had a far lower skill mix and staffing levels. Griffiths and Wilson-Barnett (2000) also reported that successful *nurse-led units* were staffed with nurses specialised in gerontology and that nursing care incorporated nurturing, rehabilitation and general health teaching. This suggests that in order to achieve the best outcome, that is optimal client independence, nurses require specialised knowledge and expertise in patient education and the needs of the older person, which includes the complexity of illness and age, comorbidities, polypharmacy and long-standing disability.

Furthermore, Griffiths and Wilson-Barnett (2000) found differences between the rehabilitative activities of the units, across studies. In particular, they noted substantial differences between their main study and their pilot work. These researchers noted *nurse-led units*, which demonstrated no improvement in outcomes, were associated with less input from allied health services than the acute wards with which they were compared, even though the resources available to both wards did not differ.

Another area that has been identified as particularly critical to quality care for older patients is discharge planning conducted by highly skilled nurses, specialised in gerontology. Naylor, et al., (2004) and Kane, Chen, Finch, et al. (2000) cited evidence that suggests inadequate discharge planning is responsible for a significant number of preventable readmissions and high levels of patient care dissatisfaction. Kane, et al. also noted that less frequent admission was associated with better physical function at one year post-discharge for patients with chronic complex co-morbidities or multiple morbidities. This work is supported by

an Australian study conducted by Hegney, McCarthy, de la Rue, et al. (2002) which confirmed the importance of the gerontology Clinical Liaison Nurse (CLN) in identifying older people at risk of injury or continued ill health after discharge.

Overall, the reviewed literature appears to suggest that there are too many variables at play in the *nurse-led units* to dispense with the model without further research into the elements of the model that determine success or failure. Moreover, it is implied that the potential benefits claimed for intermediate care may not have equal value and may, in fact, resemble a hierarchy of competing priorities. Steiner, et al. (2001) further suggest that intermediate care should not be regarded as synonymous with cost savings, nor should it always be tied to nurse-led care.

The HAU proposed in this pilot research project provided the opportunity to address key issues identified from the literature. Moreover, it provided the private health care organisation the opportunity to contribute to the expanding published literature alongside its public health counterparts, who have been actively engaged in government sponsored demonstration programs to improve bed management and hospital based care for older Australians (e.g., The Transitional Care Packages Project, unpublished) (Australian Government Department of Health and Ageing, 2004).

The HAU was proposed as a *multidisciplinary transitional rehabilitation unit for the care of the elderly acute patient*, under the framework of intermediate care. The Unit was designed to offer transitional or therapeutic nursing to prepare elderly patients who may be taking longer to recover than a comparable younger patient, for return to their home environment. The design differed in some ways from other *nurse-led units* in that it was to be a *nurse-led unit* with enrolled nurses (ENs) trained as therapy assistants providing the majority of patient care and support. The HAU was also designed to be supported by a consultant geriatrician and professionals from allied health services, with weekly multidisciplinary meeting held to ensure that a holistic approach to patient care was maintained. A Clinical Nurse (CN) would provide overall management of the Unit, as well as an assessment and discharge-planning role.

#### **STAGE ONE**

The first stage of the pilot project included six non-consecutive phases: a feasibility study and development of a business plan; establishment of a HAU management team; proposal development and development of admission criteria; staff education in relation to the Unit's philosophy and the needs of its clients, and the recruitment of staff with appropriate gerontology and/or community nursing experience.

#### **METHODOLOGY – Stage one**

Prior to the commencement of the HAU, a business plan was developed and approved by the Hospital Management Committee to utilise 10 unused beds for a period of six months.

Management Committee to utilise 10 unused beds for a period of six months. The business plan was based on a preliminary audit of long-stay patients that was conducted on three wards over six weeks in February 2003. The results of the audit found patients over the age of 65 years remained in hospital on average for 33.4 days. An additional factor considered was the number of patients who were unable to be admitted to the hospital because it was full. In the seven months, from July 2002 to the time of the audit, more than 322 patients had been unable to be admitted for reasons of inadequate beds. Additional anecdotal evidence also suggested that staff and patients were stressed by the lack of "enabling" care provided. Based on these facts and anecdotal evidence, it was suggested that if appropriate patients were transferred to the HAU for a minimum of four days of their hospital stay, following stabilisation, it would release an additional 238 acute bed days, providing sufficient evidence of the Unit's feasibility.

**HAU management team**

A management team was established comprising key organisational and research stakeholders and aged care advocates from the Centre for Research into Aged Care Services (CRACS) and Silverchain. A sequential process was planned and implemented to ensure all relevant procedures were followed, appropriate outcomes identified and appropriate data collected. Figure one illustrates the process. The HAU management team also continually reviewed and considered feedback related to all aspects of the HAU and research project.

**Research proposal**

In light of the results of the feasibility study and based on published research, a proposal was developed to explore a multidisciplinary transitional model of health care for acute aged patients, using a pre-test and post-test comparative design. Two of the health care organisation's metropolitan hospitals were to be used as settings; to compare the management approaches to the rehabilitation of aged patients admitted for acute conditions. These sites were designated as the HAU *intervention* group and conventional care *control* group. Focus group research was also included in the proposal, to be conducted by University-based nurse researchers working with clinical staff of both hospitals and other interested and relevant community-based aged care providers.

**Ethics approval, staff recruitment, development and training**

Following the granting of approval for the HAU and project from the relevant ethics committees, the health organisation's Project Officer and Executive Director of Nursing and Clinical Services commenced recruitment of staff with appropriate gerontology and/or community nursing experience. As the focus of the hospital was predominantly on acute nursing, it was recognised that the establishment of the HAU could require the recruitment of staff external to the hospital.

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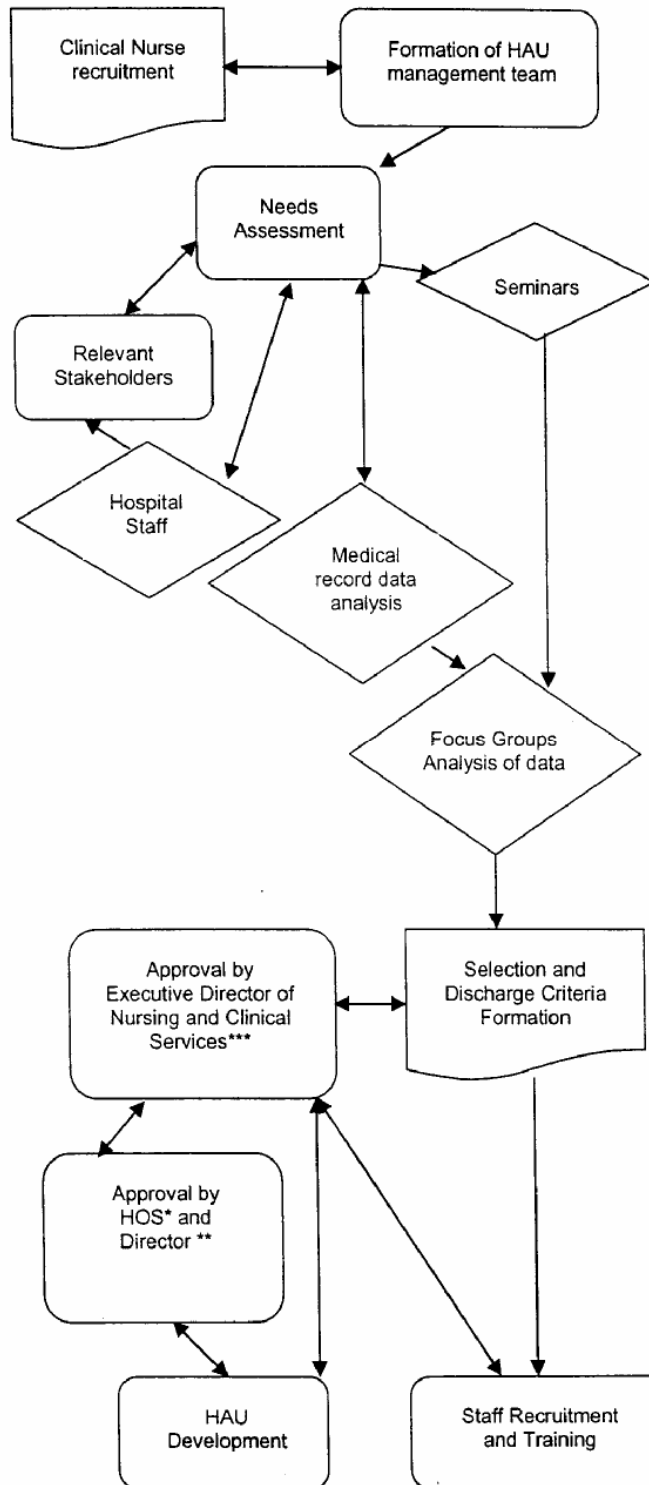


Figure 1 Developmental and needs assessment – February to May 2003

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### Information seminars

Due to the predominance in focus on acute care nursing, it was recognised that a substantial paradigm shift was required to staffs' understanding of the needs of older patients and the intermediate model of health care. Consequently, a series of two-hour information forums was conducted with staff to promote the HAU and project as a collaborative partnership (Downie, Orb, Wynaaden, McGowan, Zeeman & Olgivie, 2001). During these sessions, the HAU philosophy and the research proposal were presented, and interested staff and existing expertise identified. Flyers were circulated throughout the hospital and to community care providers informing them of the seminars and inviting all to attend.

### Focus groups

Three focus groups were conducted with key stakeholders in patient care, including nursing and medical staff, allied health professionals, general practitioners and other possible care providers. The purpose of these focus groups was to glean information to develop selection criteria, resource requirements and possible service needs, in response to four specific questions (refer Results section). Participation in the groups enabled individuals to become partners with the HAU study (Downie, et al., 2001). Letters inviting care providers to attend focus groups were mailed and included a copy of the HAU's Philosophy and Missions Statement.

### RESULTS

A thematic analysis was conducted on the large volume of qualitative data that was obtained from the focus group participants, in response to four specific questions (refer below). Two researchers, each coding independently and using the thematic analysis procedure (Streubert & Carpenter, 1999), analysed the qualitative data. The reproducibility and accuracy of the analysis was established by demonstrating the extent to which each researcher was able to reproduce the same results from the same criteria and data in the formation of categories. Inter-rater reliability was determined by having the researchers recode information obtained during focus group encounters to see if each had identified consistently the same categories. Inter-rater reliability across both coders demonstrated a highly satisfactory level of reproducibility and accuracy.

In response to the first question "*How do you think patients will benefit from the specialised care on the Healthy Ageing Unit?*" focus group participants raised a number of issues, which could be clustered under a broad category of '*opportunity for improving patient confidence*'. It was hoped that the patients would see the Unit as a stepping-stone towards going back to their normal place of residence, with several aspects noted: an emotional and physical transition where patients can recognise that the acute phase is over, a place where patient limitations/deficits can be addressed, and a step-down process that helps with the transition between being sick and going home.

A second broad category of '*opportunity for the family to gain confidence*' was also suggested. This category covered such issues as: the family will feel more confident and comfortable in seeing more of the staff than in the acute wards; the family will see that there is more time for the patient from an environmental perspective; the family will have time to prepare for extra services, which the patient may need; and it will increase the family's confidence when they see the outcomes.

Information gained from the second question "How would you determine which patients should be transferred to the Healthy Ageing Unit?" raised issues, such as isolation and place of residence, comorbidity, fatigue, anxiety or fear about medical equipment, socio-environmental factors (e.g., social and financial supports, suitability of their place of residence), pre-morbid coping and impaired mobility / ambulation as important determinants of eligibility based on the known vulnerability of this population.

The question "Describe any challenges/concerns that need to be considered in relation to staff and patients on the Health Ageing Unit?" raised responses concerned with issues of staff education and training. In particular, staff noted that specialists in rehabilitation nursing care as opposed to acute care nursing would be required. Focus group participants also raised concerns related to issues of legal liability over the use of ENs as the providers of the majority of nursing care.

In response to the final question "*Who else in the community needs to be involved?*" participants stressed the importance of providing a continuum of integrated services, across hospital-based services and across a wide range of community care providers, such as the general practitioner, home and community care programs (HACCs), aged care assessment teams (ACATs) and hostel/retirement village managers. Participants noted that some aged care services (i.e., HACCs) were somewhat seasonal and questioned the impact of this seasonality on the HAU.

### Selection criteria

Following an audit of patient medical notes and hospital separation data, it was determined that medically stable acute general, medical and surgical patients over 60 years of age would be eligible for entry to the HAU. Moreover, input from the consultant geriatrician suggested that patients should be selected based on their expected ability to improve/rehabilitate within a two-week time frame. Patients who were not able to make this progression would not be considered suitable candidates for therapeutic nursing and would be referred for other support and discharge planning. In addition, patients who required medical intervention after admission would be discharged back to the conventional care wards for acute nursing care. These data were subsequently integrated with data obtained from the focus groups to form a set of selection criteria (see Table 1).

**Table 1** Healthy Ageing Unit admission criteria

**Inclusion Criteria**

- Patients who are 60 years and older.
- Patients who are medically and surgically stable, that is not requiring major diagnostic tests. Patients who are medically stable, but receiving intravenous therapy are considered eligible.
- Patients motivated to participate in the project.
- Patients who are anxious or fearful about coping with equipment.
- Consideration of transient confusion related to hospital admission and acute illness, as opposed to severe cognitive impairment.
- Social domiciliary situation is conducive to the patient returning to their place of residence.
- Patients who are de-conditioned from a long-stay in hospital.
- Has a positive social history: they were managing before admission, but not now.
- Manageable co-morbidities – arthritis, respiratory conditions, diabetes, hypo/hypertension, Parkinson's disease, cardiac issues, controlled congested cardiac failure, urinary tract infection – suitable for low intensity nursing.
- Moderately impaired mobility – ambulation problems, but still able to ambulate.
- Those who lack confidence and are not coping or tired or de-conditioned.
- Those who are becoming more dependent on their carer/family.
- Experiencing difficulties with activities of daily living (ADLs) during course of admission, but was independent prior to admission.

**Surgical Patients**

- Post-abdominal surgery taking longer to recovery.
- Surgery complicated by co-morbidities requiring longer stay in hospital.
- Surgery complicated by cardiac issues requiring longer stay in hospital.

**Orthopaedic Patients**

- Those who need management of their failure to be ready to cope at home, rather than their orthopaedic problems.
- Potential for falls to be investigated.

**Medical Patients**

- Patients with previous cerebral vascular accident.

**Exclusion Criteria**

- Dementia or severe cognitive impairment.
- Patients requiring an intensive specialised rehabilitation program and thus not suitable candidates for low intensity therapeutic nursing care.

**DISCUSSION**

Following the Stage One Developmental and Needs Assessment and User Consultation, the proposed pilot HAU and research project gained staff and organisational support. It became recognised that the HAU provided an opportunity to promote the importance of care for the older person, in an acute health care setting. At the same time, the project addressed the organisation's business goals, as bed occupancy and long-stay patients have inevitable ramifications on the health organisation as well as the community.

Stage One of the pilot research project supported the feasibility of establishing the HAU in the health care organisation. It also highlighted the extent of the paradigm shift required by staff, as some hesitation and confusion regarding the philosophical underpinnings of the HAU were evident in the early developmental stages. However, as a result of Stage One, the profile of aged care nursing was increased within the HAU hospital setting.

The importance of the proposed HAU was that it was seen to support the innovative utilisation of beds and the potential to produce sufficient revenue to cover the costs of the Unit, whilst at the same time providing leading edge health care service for older persons. Moreover, removing older persons from the general acute care environment was expected to have the potential to reduce the stresses on both these patients and that placed on nursing staff who were aware of their aged patients' needs but frustrated by their inability to provide the best care. As a result of Stage One, the establishment of the HAU, which will be described in a subsequent article, provided new career opportunities for staff within the organisation, as well as contributing significantly to bridging the theory-practice gap in the care of the older person.

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