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# Eat Walk Engage: An Interdisciplinary Collaborative Model to Improve Care of Hospitalized Elders

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## Abstract

High-quality, efficient health care for older patients is a priority for health care systems. Acute Care for Elders units improve outcomes but there is a need for generalizable models of care that adopt the principles pioneered in these units. This report describes Eat Walk Engage, a collaborative care model on a general medical ward in Brisbane, Australia. The model focused on early mobilization, feeding assistance, and cognitive stimulation. Using the Promoting Action on Research Implementation in Health Services implementation framework, the facilitation team enabled the clinical team to recognize barriers and develop solutions. Challenges included unclear responsibility, workload concerns, and risk aversion. Implementation strategies included engaging champions, education, audit and feedback, task delineation and delegation, improving physical resources, and workforce redesign. During the first 18 months, audits showed improved nursing documentation in targeted domains and improved performance of mobilizing and cognitive strategies; length of stay for older inpatients fell by 3 days on the intervention ward.

## Keywords

hospitalization, interdisciplinary care, health services for the aged

Care of the aging patient in the hospital is a core business of health services. In Australia, as in other developed countries, more than half of overnight inpatients are older than 65 years of age.[1] Multimorbidity and frailty associated with aging predispose elders to nonspecific complications of acute illness such as functional decline, delirium, and worsening malnutrition, often exacerbated by features of the hospital care environment.[2,3] Functional decline, delirium, and malnutrition are mutually reinforcing, and each predicts higher hospital complications, costs, mortality, and loss of independence.[3-7]

Comprehensive assessment and interdisciplinary team care on specialist geriatric units can reduce functional decline, reduce length of stay, and increase the likelihood of living at home following acute hospitalization compared to general medical ward care.[8-10] However, specialized Acute Care for Elders units are available to a minority of elderly inpatients. A broader approach to implementation of elder care principles on hospital wards that provide care for older patients is essential to achieve equitable access to high-quality care.[4] A recent review notes limited evidence for hospital-wide interventions for older inpatients and recognizes the challenges of adapting complex models to local context and incorporating local barriers and facilitators into implementation.[11] Observational and qualitative studies document a range of patient, staff, and environmental barriers to uptake of effective approaches such as early ambulation, cognitive strategies, and nutrition support.[12-19]

The Department of Internal Medicine and Aged Care (IMAC), Royal Brisbane and Women's Hospital, provides care to more than 5000 general medical admissions each year, two thirds of whom are older than 65 years of age. IMAC has pursued an active program of quality improvement and research in older medical patients over the past 10 years, including introduction of an interdisciplinary care model,[20] a proactive functional independence program,[21] implementation of delirium guidelines,[22] and

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use of feeding assistance models.[23] These projects delivered measurable improvements in functional decline, delirium, and nutritional intake, consistent with similar published studies.[24-31] However, many strategies associated with improvements have been difficult to sustain in practice.

The Eat Walk Engage (EWE) program was designed to embed successful strategies into routine practice. The program aimed to engage the interdisciplinary care team to recognize the care needs of older patients, recognize care gaps, and take responsibility for local sustainable solutions. Specific aims of the program were to support adequate nutritional intake, promote early exercise and ambulation, and provide orientation and therapeutic activities to reduce complications such as functional decline, delirium, falls, and prolonged hospitalization. The study team hypothesized that the program would improve processes of care (including nursing documentation of patient needs and delivery of target interventions) and reduce length of hospital stay in older patients.

## Methods

### Setting and Participants

The Royal Brisbane and Women's Hospital is a 900-bed, metropolitan, government-funded teaching hospital in Brisbane, Australia. The program was implemented on a 30-bed general medical ward—the "home ward" for 3 medical teams. Patients admitted from the emergency department were allocated their treating team based on a cyclical admitting roster. The treating team consisted of a physician, registrar (postgraduate year 3-6 physician trainee), 2 interns (postgraduate year 1 medical officers), and a consistent allied health professional team (physiotherapist, occupational therapist, social worker, nutritionist, and speech therapist) who met daily with the medical and ward-based nursing staff to discuss patients' care and discharge planning.[20] The target group for the new model of care was emergency admissions older than age 65; because some younger patients also might benefit, provision of specific strategies would remain at the discretion of the clinical team.

### Planning the Intervention

The program was initiated by local clinicians without external funding. Leadership was provided by staff with experience in complex interventions. An enabling approach was used to support the interdisciplinary team to identify feasible strategies to meet program aims and solve local implementation barriers. The implementation process is described using the revised Promoting Action on Research Implementation in Health Services (PARIHS) framework, which proposes that successful implementation is a function of evidence, context, and facilitation.[32]

The program was facilitated in partnership between a physician (AM) from IMAC and a physiotherapist (PM) from the Safety and Quality Unit. Each had experience with leading complex implementation. The physician had "insider" status from work on the target ward, providing credibility among clinicians, and had subject expertise related to previous research.[20-23] The physiotherapist was an "outsider" to the ward with credibility related to her organizational position, and developed trust by being accessible to clinicians and responding promptly to concerns.

### Evidence and Context

The choice of medical ward provided several advantages. Published evidence for reducing delirium and functional decline comes largely from older medical patients, and local research had confirmed the magnitude of the target issues. Care of the aged patient was recognized as a priority for clinical staff. Previous projects had demonstrated that practice change was possible and improved patient outcomes, providing reason for change. Several senior clinicians had contributed to previous projects and understood care processes, gaps, and challenges. The nurse unit manager was a strong advocate. The interdisciplinary team model had high allied health professional resourcing and established mechanisms of interdisciplinary communication and governance. Weekly interdisciplinary education sessions addressing acute care of the elderly had been established as part of the medical intern education program. Staff were accustomed to regular feedback of performance data, including length of stay and adverse events.

However, there also were challenges. The proposed program was a complex, multicomponent and multidisciplinary "package" of strategies. Although some strategies had existing natural champions, responsibility often was diffused among multiple staff members (eg, physiotherapists provide recommendations for physical activity but delegate supervision to nursing staff). This led to variable ownership of proposed strategies and concern about increased workloads. The multidisciplinary nature of the implementation meant that there was no clearly defined point of senior accountability for resource allocation and outcomes. Although the interventions were agreed to be central to good care, this made them less observable in everyday practice. There was perceived conflict between the evidence and the safety concerns of staff (eg, fear that mobilizing patients would result in increased falls). Frequent staff changeover and competing priorities typical of a teaching hospital were challenges to ongoing engagement. The physical arrangement of the ward was

**Table 1.** Clinical Strategies.[a]

| Aim | Proposed Clinical Strategies |
|---|---|
| EAT: Enhance nutrition | Provide high-protein high-energy diet (nutrition/food services)<br>Provide mid meals (nutrition/food services)<br>Ensure patients sitting out ready to eat (nurses)<br>Provide encouragement and assistance (nurses/all staff/families)<br>Minimize clinical activity during meal times (all staff)<br>Weekly shared morning tea in patient lounge with tempting food and drinks (senior allied health professionals) |
| WALK: Enhance mobility/ functional recovery | Encourage and assist sitting out of bed (nursing)<br>Provide graded exercise program (physiotherapy)<br>Encourage and assist mobilizing (all staff/families)<br>Encourage, assist independence in ADLs (nurses, occupational therapist)<br>Provide walking destination (eg, table/chairs at the end of hallway) (? nurse unit manager)<br>Improve patient lounge (nurse unit manager)<br>Provide activity diary and exercise booklet (physiotherapy/nurses/junior medical officer)<br>Provide ward maps and signs (physiotherapist/nurse unit manager) |
| ENGAGE: Prevent delirium/ enhance recovery | Weekly activity session in patient lounge (senior allied health professionals)<br>Provide daily newspaper (end of hallway) (unclear)<br>Provide magazines in patient areas (end of hallway) (nursing assistant)<br>Provide crosswords/Sudoku (nursing assistant)<br>Update orientation boards daily (nurses)<br>Provide access to television/radio/DVDs (unclear)<br>Facilitate hand massages delivered by volunteers (nursing assistant) |

Abbreviation: ADLs, activities of daily living.
[a]List of strategies proposed by the operational workgroup, and in parentheses the person(s) who agreed to be responsible. Some proposed strategies did not have an agreed point of responsibility.

limiting, and there were limited resources to support patient activities, especially cognitive activities.

## *Designing the Interventions*

Key senior clinical and executive stakeholders from a range of disciplines were invited to contribute to the steering committee, providing oversight and accountability for the first 18 months. The group met on 3 occasions for direction and reporting of progress.

Clinical strategies to address program aims (Table 1) were proposed by a small operational group representing nursing, medicine, and allied health professionals, who were invited to participate in consultation with the nurse unit manager, based on their clinical role and recognition as opinion leaders. Approximately 8 staff attended monthly meetings during which they were encouraged to develop, implement, and reflect on specific clinical strategies to achieve program objectives. Group meetings emphasized interdisciplinary collaboration and responsibility and permitted feedback regarding barriers, group problem solving, and role clarification. The facilitators maintained engagement by regular goal-focused contact in person or by e-mail, assisting with motivation and problem solving.

## *Implementing the Interventions*

Several methods were used to support implementation of proposed strategies, including staff and patient education, use of clinical champions, audit and feedback of performance, and contingent problem solving. In Table 2, the PARIHS framework is used to describe how implementation strategies were tailored to the identified strengths and weaknesses of the local context.

It became clear that role delineation and designation of responsibility for some key tasks was the major challenge to change. Clinical strategies without clear delegation (eg, updating orientation boards) or considered the responsibility of multiple staff (eg, providing patient activities) were poorly completed when the ward became busy and other clinical priorities supervened. Several potential solutions were considered. Organizational constraints prevented expansion of nursing assistant hours to support the program. The study team attempted to engage the hospital volunteer group,[33] but small numbers of

**Table 2.** Implementation Strategies.[a]

| Element | Implementation Methods |
|---|---|
| Research and guidelines | Used existing regular interdisciplinary education sessions and nursing in-service to support dissemination of evidence |
| | Used simple constructs "Eat Walk Engage" to summarize complex evidence |
| Clinical experiences and perceptions; local practice | Identified key opinion leaders from previous projects |
| | Reflected on previous successful changes |
| | Disseminated local data from previous evaluations |
| | Social marketing |
| Patient experience, needs, preferences | Used detailed patient-level data from previous evaluations |
| | Provided direct feedback from patients as part of audit process |
| | Shared patient stories within working group |
| | Provided education materials for patients and caregivers |
| Characteristics of targeted practice | Engaged previous champions familiar with concepts and data |
| | Used enabling facilitation framework to support teamwork |
| | Encouraged experimentation and modification of strategies |
| | Identified links with existing documentation practices |
| | New AHA permitted clearer role delineation, reduced concerns about workload, and provided greater observability |
| Leadership support | Used existing interdisciplinary governance |
| | Built steering committee to provide accountability |
| | Regular formal and informal interactions with local leaders and champions, scanning for issues and troubleshooting |
| | Flexible meeting times and engagement strategies |
| | Interactive contingent problem solving outside of usual processes (eg, targeted appeals to local business, charities, and staff for relevant small resource requests) |
| | Advocacy at higher organizational level when required |
| Culture | Social marketing strategies and teamwork to reinforce strong interdisciplinary culture |
| | Acknowledged and reflected on previous implementation successes and challenges |
| | Set realistic time lines, identifying potential challenges such as times of high acuity, staff changes, holiday periods, among others |
| | Facilitated group negotiations regarding roles and responsibilities |
| | Emphasized shared problem solving |
| Evaluation capabilities | Practical data collection strategy with focus on team processes and patient feedback |
| | Engaged work group in developing and refining measures |
| | Provided prompt, concise feedback of performance data |
| Receptivity | Engaged key decision makers early and regularly, providing decision-making authority |
| | Maintained "fit" of program with organizational and ward goals |
| | Contingent problem solving |
| | Multiple measures chosen |

Abbreviation: AHA, allied health assistant.
[a]List of strategies used by the facilitation team to build on strengths and address barriers related to evidence and local context.[32]

volunteers, limited hours, and high turnaround required considerable senior staff time for task training and supervision. Fortunately, workforce innovation funding allowed development of a new role: a multiprofessional allied health assistant (AHA). A subgroup of the Eat Walk Engage steering committee secured funding, developed a position description and training package, and recruited. Critical success factors included inclusion of the AHA within the existing interdisciplinary team, engagement and education of allied health professionals for safe successful delegation, and a system of governance and professional development (provided through the Physiotherapy Assistant workgroup within the Physiotherapy Department). The AHA assumed responsibility for strategies including

encouraging eating and ambulation, providing and encouraging cognitive activities, assisting patients to attend weekly activity sessions, and updating orientation boards. As a visible champion present on the ward daily, the AHA enhanced program observability and patient and staff engagement.

### *Evaluating the Interventions*

Evaluation included process and outcome measures. Processes were measured using periodic cross-sectional audits on the target ward by 1 facilitator (PM), who used a consistent protocol over 3 to 4 weekdays to capture a representative group of patients. Inpatients flagged for EWE by senior nursing staff were identified from the patient "whiteboard" (shared inpatient list). These patients were invited to participate in a brief interview, conducted in the early afternoon, enquiring whether they had sat out, walked, received assistance with eating, and had an activity to keep their mind active on the audit day. Patients were invited to comment on the perceived importance of program strategies (eating, walking, and engaging). For each consenting patient, the daily nursing care record for the observation day was reviewed for documentation of cognitive status (confusion, behavioral concerns), mobility assistance required, level of recommended activity, and level of nutritional assistance required. Process data and patient comments were summarized for the operational group after each audit. Staff feedback regarding perceived program impact was obtained from the operational group as reflection on the 12-month audit data, and from ward staff by a brief written survey assessing the impact of the AHA role on patient care, team dynamics, job satisfaction, and time management, using a 5-point Likert-type scale.

Outcome measurement used available organizational data. Direct measurement of patient outcomes (eg, functional decline, delirium) was not undertaken because the study team's previous studies[20-23] had already shown that successful implementation of these strategies improved outcomes, and individual patient data collection is not sustainable. Monthly mean acute care length of stay was calculated for all patients aged 65 and older who had a nonelective admission to the target ward, using data from the hospital clinical costing database (January 2011 to June 2012). To control for organization-wide temporal trends, monthly mean acute care length of stay also was calculated for all patients aged 65 and older who were admitted through the emergency department to medical, surgical, or oncology inpatient wards, excluding the emergency short stay unit, intensive and coronary care units, postacute geriatric units, or mental health unit. In view of staff concerns regarding safety, the number of reported falls in patients aged 65 and older was obtained each month from the hospital incident reporting system. Evaluation was approved by the Royal Brisbane and Women's Hospital Human Research Ethics Committee.

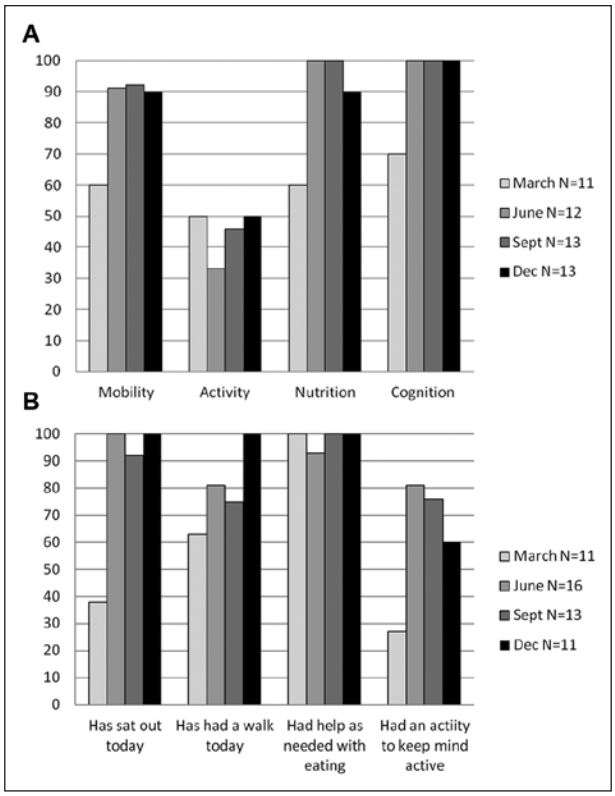


**Figure 1.** Ward audit. (A) Percentage of audited patients with documentation of individual care needs on the daily care record on day of audit. (B) Percentage of audited patients who self-reported target activities on day of audit.

## Results

The operational group convened in October 2010 and the steering committee in January 2011. Strategies were initiated in February 2011 and evolved over several months. The multiprofessional AHA commenced in October 2011. The proportion of older inpatients identified on the nursing station whiteboard as potential EWE participants increased from 77% in March 2011 to 90% in December 2011, suggesting that the program was perceived as widely relevant.

Figure 1A shows documentation on key domains of the daily nursing care record for audited patients at 3-month intervals. Improvements were seen in documentation of current cognitive status, mobility assistance requirements, and nutritional assistance. The level of recommended activity (eg, bed rest, ambulation) remained poorly documented on the care record, which may reflect

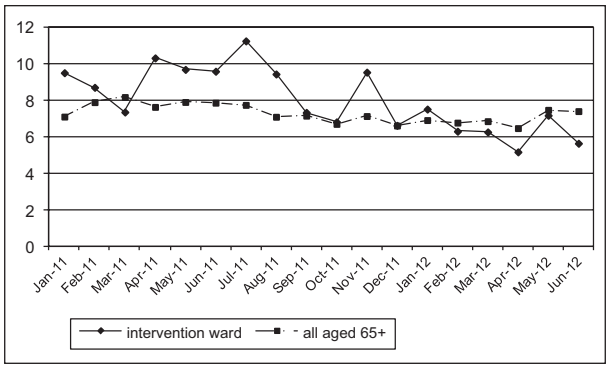


**Figure 2.** Length of stay.
Mean monthly length of stay for acute episode (days) for all emergency admissions aged 65 or older on intervention ward compared to whole of hospital. Data obtained from hospital clinical costing system.

lack of autonomy of nursing staff in deciding levels of ambulation.[13,19]

Figure 1B shows patient reports of mobility, feeding assistance, and therapeutic activities. There were improvements in the proportion of patients reporting that they had sat out in a chair, gone for a walk, and had an activity to keep their mind active (eg, book, crossword, newspaper), although more than a third of patients still reported no therapeutic activities at the final audit. Most participants reported receiving the help they needed with eating at all audit periods.

Participants were asked to comment on their perceived importance of keeping up with everyday personal activities such as eating, taking a walk, or doing something to keep their mind active in hospital. All participants agreed that these were important, revealing a range of motivating factors. These included avoiding further loss of function—"You turn into a jellyfish just staying in bed," "You have no muscles if you stop"—and not wanting to rely on others—"I don't like to be someone else's responsibility." Participants also recognized the contribution of these tasks to expediting discharge home—"I need to walk and talk to keep living with my family" and "If I'm ever going to get home, I need to eat, to increase my vitality." Some participants also commented on activity for symptom management—"It helps my back, I'm not one to stay in bed"—and for preventing boredom—"Otherwise I would be bored out of my mind."

Figure 2 compares acute length of stay for older inpatients on the target ward and on inpatient medical and surgical wards throughout the hospital. Although mean monthly length of stay for older nonelective inpatients across the organization was relatively stable over the observation period, length of stay on the target ward fell from approximately 9 days in early 2011 to about 6 days by early 2012. This translated into greater throughput on the target ward, with discharges increasing from 55 per month January to June 2011 to 80 per month January to June 2012 for the same nursing staff levels and bed numbers.

Figure 3 shows reported falls on the target ward from June 2010. Apart from a small peak in April 2011, there was no increase in falls incidence attributable to the observed increase in patient mobilization.

Staff feedback was obtained from 3 senior nurses, 7 allied health professionals, and 1 physician attending a group interview with the facilitator. Staff perceived that there were patient benefits and efficiency gains. They noted that the ward seemed "calmer" with less patient agitation, despite the objective evidence of greater patient throughput. The multiprofessional AHA position was considered a central element of sustainability. Surveys regarding the AHA role were distributed on a single day to 7 clinical nurses, 7 allied health professionals, 1 physician, the ward administrative officer, and the ward patient support officer, who all provided feedback. Respondents agreed that the role had a positive influence on patient care (94%) and on team functioning (94%), and 80% agreed that their job satisfaction had increased since the role was introduced. Despite the time required for task delegation, 6 of 7 allied health professionals agreed the AHA allowed more time for direct patient interventions, and 4 of 7 had more time for patient education. No respondent reported any negative impact of the new role.

## Discussion

EWE was intended as a model to translate evidence into practice to improve care of older medical patients. Initial audits showed gaps in both documentation of needs and performance of activities to improve mobility, ambulation, and cognitive engagement, which improved over subsequent audits. Sequential audits also showed an increase in patient-reported mobility levels and access to cognitive activities. Patients requiring assistance to eat consistently reported receiving help, perhaps reflecting a recent quality improvement project on the ward.[23] Length of stay for older patients fell by 3 days over the implementation period, with no increase in reported falls despite greater throughput. Patients clearly endorsed the principles of the program, and clinical staff reported positive effects on patient care, teamwork, work efficiency, and job satisfaction.

Several previous models have been described to improve the care received by all hospitalized elders on medical and surgical wards, including the Hospital Elder Life Program[28,33] and Nurses Improving Care for Hospitalized Elders (NICHE; http://www.nicheprogram.org/). These models have often been nurse led,[25,27,34] utilizing a specialist geriatric nurse to educate nursing staff

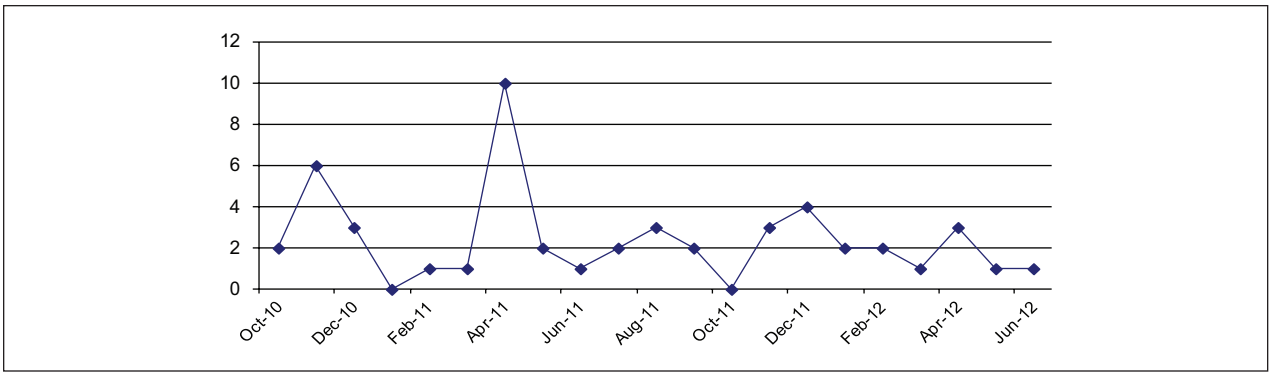


**Figure 3.** Monthly falls.
Number of reported falls each month for patients aged 65 years and older on the intervention ward. Data obtained from patient incident reporting system.

and support care protocols with a geriatric syndrome focus. The present model also focused on geriatric syndromes but was driven by an interdisciplinary team. Although the NICHE program establishes an organizational "top-down" approach to support ward practices, the present project was initiated by local clinicians.

The facilitators used a holistic enabling facilitation approach to build on local strengths and address barriers, based on social context theories.[35] Several unique features of the context favored success. The established interdisciplinary model provided governance and communication systems to support change. The setting was primed by previous project experience, and local champions helped lead the change. An established education program provided opportunities for continuing education for a range of disciplines.

However, the interdisciplinary environment also provided challenges because of diffuse leadership, variable understanding and endorsement of different strategies, concerns about unequal impact on workloads, and areas of unclear role delineation. Tasks that are seen as "everyone's" responsibility can be omitted because of lack of accountability.[16] In particular, less skilled tasks (eg, assisting with meals, providing brochures or activities, walking) were less likely to have champions, perhaps reflecting increasing subspecialization of the health care workforce. These barriers proved difficult to overcome within existing staffing structures and roles.

The addition of the new AHA role addressed many of these issues and provided a highly visible program champion to support continuing patient and staff engagement. Previous local and international models also have required additional staffing support at leadership/implementation level[21,33,36] and/or at daily task level.[22-28] Studies describe the use of nurses,[25-27] volunteers,[24,28] students,[21] or trained nursing assistants.[22,23] The experience reported herein extends previous reports of using an AHA to reduce functional decline[31,37] by providing targeted geriatric training to expand the scope beyond a conventional physiotherapy assistant's role.

The study team observed a persistent lack of responsibility for tasks related to cognitive stimulation and delirium prevention. No discipline took initial responsibility for strategies such as updating orientation information or distributing cognitive resources. Simple resources such as reading materials and television access were viewed as housekeeping or "diversionary" strategies rather than clinical interventions, and procurement under clinical equipment budgets was not feasible. The facilitator team encouraged and assisted the clinical workgroup to consider alternative approaches (eg, asking the local news agency to donate a daily newspaper, obtaining low-cost radios from a local community radio station). The AHA has taken "ownership" of orientation strategies and distributing resources, but without senior clinician responsibility these strategies rapidly erode when the AHA is on leave. Further work is required to embed this component sustainably.

Risk aversion also was an obstacle. Many staff expressed anxiety about the risk of a patient falling while mobilizing, a barrier demonstrated in studies of nurses' attitudes toward ambulation and functional dependence.[13,19] Hospital-acquired infection was cited as a reason not to distribute newspapers, and to justify shrink-wrapping of food for inpatients, leading to a greater need for assistance with meals. These perceived risks outweigh concerns about deconditioning, delirium, and worsening nutrition status and may be an unanticipated consequence of the "adverse event" focus of organizational safety and quality approaches that focus on low-frequency but high-impact complications such as falls and hospital-acquired infections.

There are several limitations to this report. As a quality improvement program, evaluation strategies were

selected to be meaningful to staff, simple, and sustainable. Small participant numbers for each audit increase the potential for bias. However, observations were undertaken using standardized methods in each observation period. Evaluation was undertaken by the facilitation team rather than an objective third party. This also raises potential for bias but provided valuable insights into the implementation setting and processes. Length of stay is influenced by a range of factors such as case mix, staffing, and availability of subacute care options. However, the sustained and substantial reduction in length of stay on the target ward, without a similar pattern in older patients discharged from other wards, suggests a systematic local change is responsible. Replication of these results in another setting would strengthen this conclusion.

### *Summary and Future Directions*

This pilot study has provided "proof of concept" that EWE can improve care of older acute inpatients. The challenges are to sustain and expand this model. Previous studies demonstrate the importance of continuing organizational support, clinical champions who communicate regularly with decision makers, dedicated staffing, and simple ongoing data collection.[38,39] For the implementation ward, continuation of the AHA role is considered vital to success. This role focuses on key tasks that underpin good geriatric care, but without competing clinical priorities, similar to the role of trained volunteers in other models.[33,40] Organizational support for expansion of an assistant workforce will require embedded training and governance systems. Ongoing data monitoring and feedback and education of multidisciplinary staff members will require organizational commitment and visible program champions.[33]

Although resource requirements were modest, the program required experienced facilitators and regular monthly ward staff meetings. Other wards may require greater initial and continuing education efforts; identification and engagement of local champions takes time to develop trust and shared vision. The facilitation team has undertaken a 12-month preparation period on a vascular surgical ward (where there is a similarly high proportion of older patients) and is implementing EWE in this new environment, with detailed evaluation including patient outcomes (delirium, functional decline, falls, hospital utilization, and quality of life) as well as ward processes. This will help define the efficacy and transferability of EWE.

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## Authors' Note

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## Declaration of Conflicting Interests

The authors declared the following potential conflicts of interest with respect to the research, authorship, and/or publication of this article: All authors are employed by the health service in which this study was conducted.

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