A Pilot Study to Investigate the Feasibility of an Occupational Therapy Early Referral Tool for Nurses in Acute Care

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Thesis Abstract

This thesis investigates the feasibility of an occupational therapy early referral tool for use by nurses in an acute care context. The thesis is presented as two components:

- Part 1: A literature review
- Part 2: A journal manuscript

The literature review provides a background of the role of occupational therapy in acute care, the demands, expectations and perceptions of occupational therapy in this context and how use of an occupational therapy referral tool may improve occupational therapy provision in acute care contexts. The review also examines the existing research on acute care referral tools for functional decline, specifically to determine which tools and methods are currently in use to identify patients with complex needs, how these tools work and how they are implemented in clinical practice. The scope, strengths and weaknesses of the tools are compared to determine the most suitable instrument for identification and prioritisation of patients requiring occupational therapy referral on admission to acute care wards.

The findings from the literature review informed the development and undertaking of a pilot, mixed methodology study trialing the use of an occupational therapy referral tool by nurses in acute care. Quantitative data from the tools completed by the nurses were analysed to determine characteristics of patients requiring referral to occupational therapy. In addition, qualitative data from interviews with the nurses at the completion of the trial were reviewed to understand their perspectives of occupational therapy and their experience of using the early referral tool.

The second section of this thesis is a journal manuscript describing the pilot study, study outcomes and the implications of this research. This research manuscript will be submitted to the Australian Occupational Therapy Journal.

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Section 1: Literature Review

1. INTRODUCTION

1.1 Background to the Topic

Due to current economic constraints on acute care services, hospital priorities are increasingly focused around decreasing the length of patient stay and reducing readmission rates (Griffin & McConnell, 2001). Indeed, acute care priorities are based around stabilising the specific condition for which a patient is admitted, thus medical staff have less time to identify other conditions which will impact on a patient's functional performance and consequential ability to be safely discharged in a timely manner (Victorian Government Department of Human Services, 2004). Multidisciplinary strategies promoting psychosocial and functional outcomes in addition to medical treatment, have been shown to decrease length of stay and re-admissions rates, and improve treatment cost-effectiveness due to the client-centred nature of these strategies (Landi et al., 1997). Hence implementing structures that improve efficiency by maintaining a client-centred focus are paramount for acute care facilities.

Royal North Shore Hospital (RNSH) is a 660 bed acute care facility servicing the upper and lower north shore areas of Sydney (NSW Health Department, 2013). With an aging demographic in this locality and associated complexity of medical conditions (Northern Sydney Central Coast Health, 2008), the demand on occupational therapy (OT) services at RNSH will increase in the future. As a result, occupational therapy staff are reviewing systems to accurately and efficiently identify patients requiring referral. This has included a Quality Improvement Project investigating potential screens to identify patients at risk of functional decline (Tan, 2013). The introduction of an electronic medical record (EMR) system at RNSH also provides a timely opportunity for integration and automation of a new referral system within the EMR.

The occupational therapy role in an acute care context is associated with the discharge planning process, specifically providing client-centred assessments and making recommendations that improve discharge outcomes. These outcomes may include assessing the patient for discharge to an appropriate rehabilitation setting or facilitating a patient's ability to participate in occupations required to safely return and remain at home (Holm & Mu, 2012). In an acute care environment where the

value of efficient and coordinated care is well recognized, an early referral screening tool to identify patients at risk of functional decline will facilitate a more proactive approach to occupational therapy thus potentially improving outcomes for patients, families, clinicians and Royal North Shore Hospital (RNSH).

Although a number of screening tools have been identified from the literature, none of these tools were designed specifically for occupational therapy referrals and no existing tool comprehensively covers all the necessary criteria for predicting risk of functional decline nor provides sufficient information for patient prioritisation. In addition, none of these tools were designed by occupational therapists. The Modified Blaylock Referral Tool was developed by the author as part of a Quality Improvement Project at RNSH to address these deficiencies and a preliminary study of the instrument has shown that the screen has an acceptable level of specificity and sensitivity when compared to an occupational therapy assessment of referral need (Tan, 2013). Further testing is required with medical staff however to establish the validity and utility of the tool for use in an acute care context. In addition, integration with the electronic medical record system currently in the process of implementation at RNSH will enhance the application of this tool.

This study therefore proposes to investigate the feasibility of the Modified Blaylock Referral Tool for use by acute care nurses.

1.2 Aim of Literature Review

This literature review aims to illustrate the role of occupational therapy in acute care, the demands, expectations and perceptions of occupational therapy in this context and how use of an occupational therapy referral tool may improve occupational therapy provision in an acute care context. The review examines the existing research on acute care referral tools for functional decline, specifically to determine which tools and methods are currently in use to identify patients with complex needs, how these tools work and how they are implemented in clinical practice. The scope, strengths and weaknesses of the tools are compared to determine the most suitable instrument for use at Royal North Shore Hospital and potentially other acute care facilities.

An occupational therapy screening tool will allow for identification and prioritisation

of patients at risk of functional decline at the admission stage. This will facilitate an earlier, more proactive approach to occupational therapy and thus utilisation of occupational therapy clinical reasoning to inform the decision making process, potentially resulting in more integrated, client-centred outcomes for the patient and their carer, reduced length of stay and readmission rates and increased clinician satisfaction.

1.3 Search Strategy

A rigorous search process was undertaken to ensure that all relevant literature was identified and included in this review. A number of databases including Medline, CINAHL, AMED, OTSeeker and Scopus were searched. Search terms included acute care, hospital, functional decline, triage, prioritisation, discharge planning, discharge, screening, occupational therapy and allied health. The timeframe of the articles was not limited to ensure that all relevant screening tools were included in this study, with articles from the earliest available time until the present included in the review. Reference lists from these articles were also reviewed to determine any additional relevant publications that were missed in the database searches. This allowed the inclusion of all relevant publications and screening tools developed over time, rather than just reviewing the most recent literature. All identified literature was reviewed and included in the study if deemed relevant. Studies were also limited to English language publications. Triage tools for conditions other than functional decline and publications discussing the use of triage tools for disciplines other than occupational therapy were excluded from this study.

A Google search was also undertaken of government health websites and general internet sites to identify other tools and methods currently being used both in an Australian and international context.

2. NATURE OF ACUTE CARE

Anderson, Anderson & Glanze (1998) define 'acute care' as 'a short stay within a hospital setting' (p.18). The primary purpose of acute care is to stabilise a patient's urgent medical condition and address risks to further deterioration of life (Bondoc et al., 2012). Acute care is characterized by a medical-model focus, with patients with complex conditions treated for their admission condition specifically, whilst

underlying problems contributing to the original diagnosis or other implications of the diagnosis such as functional decline may remain unidentified or unaddressed (Victorian Government Department of Human Services, 2004).

In addition, with economic constraints becoming more dominant in acute care facilities, hospitals are increasingly focused on shortened length of stay and reduced re-admission rates (Craig, Robertson, & Milligan, 2004). The NSW Ministry of Health (2012) reported that the average length of stay for patients in NSW acute care hospitals was 3.4 days for 2011-2012, compared with an average length of stay of 4.1 days for RNSH. The unplanned/unexpected readmission rate within 28 days of discharge for NSW acute care hospitals was reported as 6.3% in 2010-2011 increasing to 6.7% in 2011-2012. These re-admission rates are expressed as a percentage of all discharges. NSW Health is aiming to reduce unplanned re-admission rates by 5% per year over the next four years (NSW Ministry of Health, 2012), thus this area will become of higher priority at RNSH and NSW hospitals in general. Instruments that assist therapists to prioritise and manage their referrals will facilitate more effective provision and allocation of occupational therapy resources in acute facilities (Harding, Taylor, & Shaw-Stuart, 2009).

3. OCCUPATIONAL THERAPY AND ACUTE CARE

3.1 The Role of Occupational Therapy in Acute Care

The role of occupational therapy in acute care involves providing client-centred assessments, interventions and task modifications to allow performance of occupational-based goals (American Occupational Therapy Association, 2008). This includes facilitation of transfers, mobilisation and functional activities, preventing decline and co-ordination of care (Bondoc et al., 2012). The role also involves discharge planning activities such as determining appropriate discharge options and ensuring that a patient has access to appropriate supports post-discharge (Crennan & MacRae, 2010; Jette, Grover, & Keck, 2003).

The medical-model focus and economic priorities of acute care facilities often conflict with the holistic, individualised occupational therapy approach (Griffin & McConnell, 2001). Occupational therapists perceive their role as utilising their clinical reasoning skills and experience to contribute to care strategies focusing on meaningful,

individualised patient goals and discharge decisions (Crennan & MacRae, 2010; Jette et al., 2003). Many occupational therapists therefore become frustrated and feel that their professional focus has been compromised by time and budget constraints, forcing them to concentrate on self-care and discharge priorities rather than other meaningful occupations (Craig et al., 2004). These constraints also result in pressure being exerted on occupational therapists to support discharge of patients who they do not believe are ready (Craig et al., 2004).

Nurses' perceptions of occupational therapy vary depending on the facility, relationships with individual therapists and nurses' knowledge of the occupational therapy role. Nurses commonly perceive occupational therapists as providers of home visits and equipment, as discharge planners and as barriers holding up discharge. These perceptions are influenced by poor communication between nurses and therapists due in part to the lack of continuity of nurses on the ward due to shift work, use of casual staff and the mismatch between nursing shifts and occupational therapists' working hours which leads to ineffective handover of occupational therapy recommendations. Nurse priorities may also conflict with those of occupational therapists. For example, nurses may perform daily self-care tasks for a patient to improve ward efficiency, however this prevents the patient from learning and practicing the skills required to participate in these occupations (Atwal, 2002).

Nurses' perceptions are also influenced by individual therapists' representations of their profession on the ward. Occupational therapists must strongly define their role and be visible on the ward and within an inter-disciplinary team. Failure to do so results in role ambiguity, duplication of tasks, reduced communication and poorer group outcomes (Atwal, 2002). This can cause therapists to feel devalued and disregarded, as their role is not properly appreciated or understood by other disciplines (Griffin & McConnell, 2001).

3.2 Theoretical Framework
Theoretical frameworks provide a guide for client-centred holistic clinical practice consistent with the fundamental occupational therapy principles (Rogers, 2005). This

project frames the implementation of an occupational therapy early referral tool in acute care hospitals within the Model of Human Occupation (MoHO) as shown in Figure 1 (Kielhofner, Forsyth, Kramer, Melton, & Dobson, 2009). The MoHO was selected for this study, as it shows nurses as individual systems, with the output of the systems affected by the presses and affords of the internal and external environments.

Figure 1: Application of MoHO to Acute Care Nurses

Objects   Tasks

INPUT
- Acute care time and resource constraints
- Medical model focus in acute care
- Lack of structured guidelines for OT referral
- Low OT visibility on the ward

P R E S S   O R   A F F O R D ?

Social   Cultural

THROUGHPUT
- Challenge to nurses' understanding of the OT role in acute care
- Nurse demotivation and dissatisfaction due to less holistic approach to care and inability to address complex needs.
- Change to nurses' perceptions of the impact of functional performance on discharge decisions
- Current reality – habits, roles and skills based around addressing the specific medical condition for which a patient was admitted.
- Increasing demand on OT due to inappropriate referrals.

OUTPUT
- Changing nurse attitudes and understanding of the OT role
- Change to nurse referral behaviour
- Change to rate of appropriate referrals to OT
- Earlier referral of patients to OT
- More holistic approach to patient care

FEEDBACK
- Improved integration of multidisciplinary teams
- Improved OT satisfaction due to increased level of appropriate referrals
- Improved nurse motivation due to multidisciplinary and holistic approach to patient care
- Potential reduction in length of patient stay and readmission rates.

The acute care environment provides a 'press' on the nurses in terms of resource and time constraints, poor occupational therapist visibility and medical model focus. This may result in negative feedback, including dissatisfied therapists and potentially delayed discharge. The Modified Blaylock Referral Tool is an environmental input, 'affording' clearer and more consistent referral practices, more integrated multidisciplinary teams and increased therapist satisfaction ideally providing positive feedback to the system.

4. METHODS OF REFERRAL TO OCCUPATIONAL THERAPY IN ACUTE CARE HOSPITALS

4. 1 Current Occupational Therapy Referral Methods

Commonly, referral of patients with specific conditions such as brain injury, spinal injury or burns to occupational therapy, is automatic. Occupational therapy referral of other acute care patients with complex needs however is less clear. Referrals of these complex patients may come from medical staff or proactive occupational therapists - in practice the majority of these referrals come from nurses. Generally, there are no defined criteria for nurses to refer a patient to occupational therapy, rather the nurses refer based on their assessment of the patient's need, prior experience of occupational therapy and their perception of how a therapist can address this need (Hobbs, Boysen, McGarry, Thompson, & Nordrum, 2010).

Nurses' perceptions of the occupational therapy role are therefore influential in determining how patients are referred. Poor understanding of the role may result in lack of referral, late referrals, inconsistency of referrals between disciplines and therapists' recommendations being seen as an 'inconvenience' and 'delaying discharge' (Craig et al., 2004). In contrast, over-referral is also an issue, with patients being referred despite lack of need, resulting in over-loading of therapists, high priority patients missing out on therapy and increased therapist stress (Hobbs et al., 2010).

Identification of patients with complex needs and occupational therapy referral during admission are affected by additional factors including lack of medical staff awareness of assessment criteria to identify complex patients, inefficient collection, storage and

communication of patient information and inconsistent involvement of the patients and family in the assessment (Victorian Government Department of Human Services, 2004).

4.2 Current Occupational Therapy Referral Methods at Royal North Shore Hospital

There is currently no consistent method or set of criteria to identify the need for occupational therapy referral for medical professionals at RNSH. As mentioned previously, some wards, such as the spinal injury unit have automatic referrals. In other wards, such as aged care, the signs of functional decline are more obvious, so the need for referral is clearer and a higher level of early referral is received from nurses in these wards. In contrast general medical wards receive a mix of patients. Identification of patients with complex needs is more difficult under these circumstances due to the increased subtlety and variety of signs of functional decline. The visibility of a particular occupational therapist on the ward, the nature of the interventions and assessments implemented by an occupational therapist and a nurse's previous experiences with occupational therapy are all factors that may influence the decision to refer.

In some departments, occupational therapists are more proactive, with the therapists doing a quick screen of the patient summary sheets or attending the morning nurse handover meetings to identify patients requiring referral and prompting the nurses to refer. However although these activities are beneficial they are time intensive, placing stress on limited occupational therapy resources. An occupational therapy referral tool would allow therapists to spend less time screening patients thus increasing the available time for provision of therapeutic services (Hobbs et al., 2010).

5. BENEFITS OF EARLY REFERRAL TO OCCUPATIONAL THERAPY

Early identification of acute care patients requiring occupational therapy is essential for the efficient development and implementation of timely, comprehensive, integrated and client-centred care plans (Griffin, 2002). A meta-analysis of controlled trials by Stuck et al. (1993) showed that early referral to multidisciplinary teams including occupational therapy is important in preventing functional decline and consequential prolonging of hospital stays in elderly patients.

Early referral facilitates a more timely involvement of occupational therapy and thus increases the timeframe for provision of therapy services. Patients benefit due to the increased time available for assessment of their needs and implementation of assessment recommendations. The longer timeframe also facilitates increased involvement of families and carers and a more client centred approach to therapy. A case study by Craig et al. (2004) involving a survey of New Zealand therapists, also illustrated how the involvement of occupational therapy as part of a multidisciplinary team resulted in better outcomes for the client, in terms of effective discharge decisions and planning.

A pilot study conducted by Hobbs et al. (2010) at 2 teaching hospitals in the United States showed that an early referral tool benefits the institution by reducing length of stay and readmission rates and streamlining the occupational therapy referral process by decreasing inappropriate referrals. Clinician satisfaction also improved due to better utilisation of occupational therapy expertise in clinical decision making as a consequence of the reduction in inappropriate referrals.

6. NEED FOR OCCUPATIONAL THERAPY REFERRAL TOOLS

Screening tools have been shown to improve identification of patients with complex needs at the admission stage, allowing earlier allied health professional involvement and improved discharge outcomes, however there is currently a lack of screening tools for occupational therapy in acute care (Hobbs et al., 2010). A randomised trial by McCusker et al. (2001) examined the effectiveness of a screening tool in identifying patients at risk of functional decline to facilitate appropriate treatment. The trial was conducted within four hospitals in Montreal, Canada. The control group underwent normal acute care procedures while the intervention group was assessed using the Identification of Seniors At Risk (ISAR) 1 and 2 screens and then referred to the relevant allied health professionals. The results showed that the screens in conjunction with the care plans implemented reduced the rate of functional decline four months post discharge, from 30.9% to 21.1% as assessed by the Older American Resources and Services Scale (McCusker et al., 2001). These results were considered both clinically and statistically significant. This methodologically sound study involved randomised and concealed allocation to groups, equivalency at baseline,

blinded assessment and analysis with intention to treat.

In addition, Hobbs et al. in a 2010 case study, detailed the development of an occupational therapy/physiotherapy triage flowchart and checklist implemented in an acute care facility. The checklist and flowchart reduced inappropriate therapy referrals by 29%, whilst appropriate referrals remained consistent with therapist-assessed referrals. Therapist productivity and hospital revenue increased, due to reduced therapist hours spent on triaging patients. These findings cannot be considered as conclusive however due to the small sample size (the triage tool was only used at two facilities), the exclusion of many relevant departments that refer to occupational therapy and the physiotherapy focus of the study.

The aging Australian population also increases the need for an acute care screening tool. The Victorian Government Department of Human Services (2004) has identified the necessity for a more coordinated approach to acute aged care due to the higher complexity of diagnoses specifically amongst these patients. The proportion of the Australian population aged over 65 is predicted to almost double from 13% in 2007 to 25% in 2056 (Australian Bureau of Statistics, 2011). This demographic group currently accounts for one third of hospital bed days (Gray et al., 2002). Hence systems facilitating timely identification, treatment and sustainable discharge will become increasingly important in the future.

Screening tools may also have considerable benefit for nurses. Providing a defined set of criteria to assess patients, increases the visibility and transparency of the role of occupational therapy thus medical staff are able to provide a more objective assessment and justification of requirement for referral. Consistency of referral standards across individual nurses, disciplines and shifts is also increased.

Patient prioritisation is a further benefit of screening tools. With occupational therapy resources under increasing strain in acute care settings due to economic constraints, prioritisation of patients will allow for more effective planning and allocation of resources in response to an assessed level of patient need (Harding et al., 2009).

In addition, with the introduction of the electronic medical record (EMR) system at many acute care facilities, automation of screening tools should also be considered. Automatic generation of referrals from nurse admission data entered into the EMR may further streamline the occupational therapy referral process. Patient data extracted from the nurses' computerised admission records via an EMR program would allow a patient's need for occupational therapy to be rated, prioritised and a referral generated. No references discussing the integration of referral tools similar to that proposed by this study into the EMR for other allied heath or medical disciplines were found in this review of the literature.

7. OVERVIEW AND ANALYSIS OF SCREENING TOOLS

7.1 Overview of Screening Tools

A 'screening tool' is a scoring system used to identify patients at risk of a specific outcome, in this case, functional decline, (Cornette et al., 2005). Nine screening tools and one computer model were reviewed as part of this analysis.

Screening tools were included based on the following criteria:
- assessment of risk of functional decline used as an outcome measure
- tested in an acute care hospital setting
- sufficient data provided in the literature to allow review of the tool

The tools reviewed include:
- Blaylock Risk Assessment Screening Score (BRASS)
- Complexity Prediction Instrument (COMPRI)
- eQ Health Solutions Discharge Risk Checklist
- Identifying Seniors at Risk, Parts 1 and 2 (ISAR)
- Hospital Assessment Risk Profile (HARP)
- Adult Admission and Discharge Assessment
- Score Hospitalier d'Evaluation du Risque de Perte d'Autonomie (SHERPA)
- Triage Risk Screening Tool (TRST)
- Inouye Instrument

A summary of the background of the tools is included below in Table 1. Table 2

includes data on the criteria assessed by the tools, as well as information on how the tools are administered.

The Hospitalised Elderly Longitudinal Project tool (HELP) (Wu et al., 2000) was also reviewed. This is a computer program modeling functional decline in the elderly two and twelve months post discharge. The purpose of the model is significantly different to the screening tools, in that it was designed to accurately predict the probability of functional decline post discharge, rather than to screen large numbers of patients at admission. The model uses many of the same criteria as the screening tools however it also uses additional criteria, such as gender, race, serum albumin level and depth of coma to calculate a prediction of functional status two months post discharge. The model is not appropriate as a patient screening tool on admission, as it requires data that may take up to three days to collect (Sutton, Grimmer-Somers, & Jeffries, 2008). This prospective cohort study of 804 patients compared the outcome of the computer model with functional status post discharge. Results were found to be 80% accurate, however were not generalisable as the sample was limited to patients above the age of 80 years old. The main parameters used by this model are consistent with the screening criteria utilised by the other tools, providing further evidence of the relevance of these criteria for identifying risk of functional decline.

Table 2 provides a summary of each of the tools to allow comparison. Table 2 also includes the criteria utilised in the HELP model to allow comparison. Copies of the screening tools are included in Appendix B (excluding the HELP computer model).

Table 1: Overview of Screening Tools

	Name	Author	Country	Purpose	Scoring	References	Strengths	Weaknesses
1	Blaylock Risk Assessment Screening Score (BRASS)	Blaylock and Cason, 1992	USA	Assesses functional, physical, cognitive and psychosocial status determine risk of functional decline and level of support required for discharge.	Criteria weighted. Final score prioritised	Blaylock and Cason, 1992; Mistiaen, Duijnhouwer, Prins-Hoekstra, Ros, and Blaylock, 1999	- Weighting of assessment criteria allows for more effective prioritization of patients - Comprehensive list of assessment parameters	- Further assessment required to determine the accuracy of the screen when generalized to general medicine wards, rather than purely for aged care. - May have to be repeated prior to discharge, as a patient's support requirements may be have changed from when the screen was administered on admission.
2	Complexity Prediction Instrument, COMPRI	Huyse et al., 2001	Netherlands, Germany, Spain, USA, Hungary, Portugal, Denmark, Italy	Screening tool to identify patients with high complexity care needs.	Yes/No Final score prioritised	Huyse et al., 2001	- Developed in general medical wards hence not specific to aged care contexts - Considers mental health issues - Requires doctor and nurse input hence less subjective	- Requires a high level of medical staff involvement. Doctor/nurse must predict parameters including length of stay. There are no guidelines provided on how to assess these criteria hence clinical judgment will vary considerably between raters. - The assessment is administered on admission. Some parameters are difficult to determine at admission.
3	eQ Health Solutions Discharge Risk Assessment	eQ Health Solutions, 2012	USA	Discharge checklist to identify level of support required for discharge.	Yes/No Prioritised	eQ Health Solutions, 2012	- Identifies patients as low, medium or high risk for discharge. - Comprehensive list of assessment parameters	- No additional reviews available on this checklist, thus further assessment is required to determine if it has sufficient predictive validity to be used as an screening tool. - Discharge checklist only, does not identify risk of functional decline on the ward.

Table 1 continued:

	Name	Author	Country	Purpose	Scoring	References	Strengths	Weaknesses
4/5	Identifying Seniors at Risk, ISAR, Part 1 and 2	McCusker, Cardin, Bellavance and Belzile, 2000	Canada	The ISAR 1 & 2 are screening tools designed to detect likelihood of severe functional impairment, depression and increased utilization of health services. The ISAR 1 is a brief pre-screen, with patients with high scores further screened using the ISAR 2.	Yes/No Scored	Australian and New Zealand Society for Geriatric Medicine, 2008; Beaton and Grimmer, 2013; De Saint-Hubert et al., 2010; McCusker et al., 2000; Rosted, Wagner, Hendriksen, and Poulsen, 2012; Sutton et al., 2008; St Mary's Research Centre, 2011; Victorian Government Department of Human Services, 2004	- ISAR 1 and 2 have the highest level of evidence (1a) of all the tools reviewed - ISAR 1 and 2 are also the most frequently used screening tests. - Part 1 quick and simple to administer	- Accuracy of the tool will vary significantly between raters due to the general nature of the questions, leaving them open to misinterpretation. - Accuracy will be affected when the results are self reported – the assessments may be inaccurate when the patient is cognitively impaired or desires a particular outcome. - Higher resource requirement if two screens are required.
6	Hospital Assessment Risk Profile, HARP	Sager et al., 1996	USA	Identifies elderly patients at risk of functional decline post admission.	Prioritised – low, medium, high	Beaton and Grimmer, 2013; De Saint-Hubert et al., 2010; Sager et al., 1996; Sutton et al., 2008	- This tool has been validated and is rated at the second highest level of evidence (1b) for the tools reviewed. - Quick and simple to complete	- Requires additional tests performed by a clinician to provide information for the screen. - Screening categories are very broad, hence resulting in low sensitivity.
7	Inouye Instrument	Inouye et al., 1993	USA	Identifies elderly patients at risk of functional decline during their hospital stay.	Scored, prioritised	De Saint-Hubert et al., 2010; Inouye et al., 1993; Sutton et al., 2008	- Only a small number of items to complete - Questions are not objective	- Requires additional tests - Difficult to determine some parameters at admission.

Table 1 continued:

	Name	Author	Country	Purpose	Scoring	References	Strengths	Weaknesses
8	Adult Admission and Discharge Assessment	Carroll, 2007	Australia	Admission and discharge checklist for patients, providing a summary of patient admission data including basic functional decline risk identification.	Identifies rather than prioritises patients	Carroll, 2007	- Identifies need for referral to occupational therapy and other allied health disciplines.	- Parameters are very limited and quite general. - Not designed as a screen for functional decline, no literature available to verify the clinical validity and reliability of the screen.
9	Score Hospitalier d'Evaluation du Risque de Perte d'Autonomie, SHERPA	Cornette et al., 2005	USA	Identifies patients at risk of functional decline.	Prioritised	Beaton and Grimmer, 2013; Cornette et al., 2005; De Saint-Hubert et al., 2010; Sutton et al., 2008	- Useful tool for identification of patients at low risk of functional decline.	- Requires additional patient assessment using the Mini Mental State Examination and IADL assessment. - Requires prospective validation in an independent patient sample. - The number of factors utilized to identify patients at risk of functional decline is also very low thus low specificity.
10	Triage Risk Screening Tool, TRST	Hustey et al., 2007	USA	Identifies patients at risk of repeated admissions or nursing home placement.	Yes/No	Hustey et al., 2007; St Joseph's Healthcare, 2012; Sutton et al., 2008;	- Parameters easily determined during emergency department (ED) admission, screen takes less than a minute to perform. - Includes a section to allow for ED staff to refer based on own assessment - Developed using parameters predicting repeated ED visits for elderly patients.	- No assessment of functional performance - Poor sensitivity and specificity, as would be expected when the parameters are relatively limited and general compared to the other tools. - Professional recommendation section is very subjective

Table 2: Summary of Criteria Included in Screening Tools

	HARP	ISAR 1	ISAR 2	SHERPA	BRASS	HELP	TRST	COMPRI	NCAHS Checklist	EQ Health	Inouye Instrument
Risk factor predicting functional decline:											
Decubitus ulcer										✓	✓
Cognitive impairment	✓		✓	✓	✓	✓	✓			✓	✓
Current functional impairment	✓	✓	✓		✓			✓	✓	✓	✓
Low social activity level			✓								✓
Functional status prior to admission		✓				✓					
Prior hospitalization		✓			✓		✓			✓	
Sensory deficit		✓	✓		✓		✓		✓		
Memory loss		✓									
Polymedication			✓		✓		✓	✓		✓	✓
Falls in previous year			✓	✓						✓	
Poor self perceived health				✓				✓			
Age	✓			✓	✓	✓					
Living situation			✓		✓		✓		✓	✓	
Behaviour pattern					✓						
Mobility			✓		✓		✓	✓		✓	
Number of active medical problems			✓		✓				✓		
Assistance with medication			✓				✓	✓			✓
History of mental illness										✓	
Issues with health literacy										✓	
End stage condition										✓	
Diagnosis of CHF, COPD, diabetes, HIV, AIDS								✓		✓	
Incontinent			✓			✓	✓			✓	
Reduced adherence to treatment plan										✓	
Requires assistance to manage O$_2$/nebuliser										✓	
Predicted length of stay								✓			
Patient has complex needs								✓			

Table 2 continued:

	HARP	ISAR 1	ISAR 2	SHERPA	BRASS	Wu	TRST	COMPRI	NCAHS Checklist	EQ Health	Inouye Instrument
Predicted mental health issues during admission								✓			
ED staff recommendation							✓	✓			
Failure to cope							✓		✓		
Mood/behavior/depression			✓		✓	✓	✓				✓
>6 doctors visits in the previous 6 months								✓			
Unplanned admission								✓			
Patient is retired								✓			
Quality of life						✓					
Gender						✓			✓		
Race						✓					
Type of disease						✓					
Albumin						✓					
SUPPORT physiology score						✓					
Need for nursing home						✓					
Nutrition (eg. weight loss)			✓								
Pain management			✓								
Previously refused services			✓								
Persistent symptoms			✓								
Additional Tool Data											
Answer type	Rating	Yes/No	Yes/No	Yes/ No, Rating	Rating	Rating	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No
Additional tests required	Yes	No	No	Yes	Yes	No	No	No	No	No	Yes
Number of questions	3	6	22	5	10		6	13	66	15	4
Completed by	ED Nurse	Self report / nurse	Nurse	Nurse	Nurse		Nurse	ED Nurse and Doctor	Self report/nurse	Nurse	Nurse
Sensitivity (%)	61/40/21[1]	73	93	68	73	-	63	88			88
Specificity (%)	68/81/89[1]	71	39	71	81	-	60	54			54
Notes	-	Followed by ISAR 2	Post ISAR 1	-	-	-	-	-			
When tool is administered	Admission	Admission	Post ISAR 1	Admission	Admission	-	Admission	Admission	Admission	Discharge	Admission

[1] Sensitivity and specificity data for low/medium/high classifications.

As can be seen from Table 2, the most common factors identified across the tools included (from most frequent criteria to less frequent criteria):

- Activities of Daily Living (ADL) performance / functional impairment
- Polymedication
- Cognitive impairment
- Living situation /support status. Includes whether the patients lives at home, nursing home, level of support from family or community services.
- Prior recent admission to hospital
- Mood / behavior / symptoms of depression
- Mobility
- Sensory deficits (vision / auditory)
- Incontinence
- Age
- Number of active medical problems
- Falls history
- Assistance required to manage medication

As a result, the author determined that the screening tool selected for this study should cover all of these factors to ensure accurate prediction of functional decline.

7.2 Analysis of Screening Tools

In selecting a screening tool for use at RNSH, the reviewed screening tools were assessed against a number of factors to ensure accuracy, reliability and operability. These factors included:

i)   Content validity and predictive validity
ii)   Resource requirements for administering the screens
iii) Required Outcomes

7.2.1 Content Validity and Predictive Validity

Content validity is defined as 'the extent to which a test or assessment matches the real requirements of the situation (Polgar & Thomas, 2008, p. 292) and predictive validity as 'the extent to which a test or measure can validly predict a future event (Polgar & Thomas, 2008, p. 297)

The more factors included in a screening checklist, the greater the accuracy in identifying relevant patients, however the tool must also be efficient and practical to integrate into everyday practice. The number of criteria included in the tool and the way these criteria are assessed must be balanced against the clinical utility of the screening tool (Harding et al., 2009). For example, the Inouye Instrument includes the presence of a decubitus ulcer as a factor indicating increased risk of functional decline (Sutton et al., 2008). However, as decubitus ulcers are only present in 2-4% of the patients who suffered from functional decline (Cornette et al., 2005), inclusion of this factor in a modified screening tool is not perceived as a high priority. Hence the SHERPA tool identified the link, but did not include the presence of a decubitus ulcer as a predictor (Cornette et al., 2005).

Another aspect to be considered is the level of assessment required for each criterion. The TRST requires the patient's cognitive state to be assessed using the Mini Mental State Examination, with the results integrated into the screen. This increases the work, time and resources required to complete the screening tool. The number of criteria for an initial screening tool cannot be too excessive or time consuming or the tool will be impractical to integrate into admission routines (Sutton et al., 2008). Reducing the criteria too much will however affect the content validity of the screening tool. Hence to ensure content validity, the criteria selected for the RNSH tool cover all the common factors for functional decline identified in the reviewed screening tools as listed above.

Predictive validity of the existing tools was reviewed, specifically the sensitivity and specificity data as discussed in the literature. Sensitivity is defined as the proportion of patients identified by an assessment who required identification, while specificity refers to the proportion of patients rejected by an assessment who were correctly rejected (Polgar & Thomas, 2008). When developing a screening tool, sensitivity and specificity are important, to identify patients requiring referral but also to prevent referral of patients who do not require assessment. Specificity and sensitivity data are not available for all the tools reviewed and information about generalisation of results to other settings is also scarce throughout the literature, hence further testing is

required to verify the suitability of the selected tool for an acute care setting. As the predictive validity data provided for the tools did not vary significantly, the selection of one tool over the others based on this data could not be justified (Sutton et al., 2008). Available data are provided in Table 2.

In addition, many of the screening tools are designed specifically for aged care patients, hence there may be variation in the predictive validity of the tools if they are applied to a general acute care ward due to the difference in medical conditions and their implications.

Reliability is defined as ' the extent to which a test or measurement is reproducible (Polgar & Thomas, 2008, p. 298) and is important for a screening tool to ensure that results are consistent. There was minimal reliability information available for any of the tools.

7.2.2 Resource Requirements for Administering Screens

The feasibility and practicality of a screening tool is influenced by how easily the required information is obtained. Factors affecting practicality include:

- Level of input required to administer the screen. Some tools such as the TRST require data from other functional/cognitive tests (Sutton et al., 2008). This is impractical for an admission screening tool, as it involves too intensive a level of assessment before the screen can be performed.
- Person completing the tool. Self-report screens are less resource intensive than tools requiring medical staff assessment (Mistiaen et al., 1999). Inter-rater reliability of the specific tools reviewed is not discussed in the literature, however self-report screens will be more open to inconsistency and inaccuracy between patients particularly if they wish to portray themselves in a more positive or negative light (Burns, 2000). Medical staff / allied health assessments may also be vulnerable to bias, if subjective rather than objective measures are used (Harding et al., 2009).
- Timing of the administration of the screen. This is associated with the actual purpose of the screen. Screens for discharge planning may occur just prior to discharge, whereas screens to determine the risk of functional decline will

occur at admission. Availability of resources to complete the screen during the admission process must also be considered.

Previous screening tool studies have focused only on the measurement properties rather than the efficacy and utility of tools in an acute care context (Harding et al., 2009).

7.2.3 Required Screening Outcomes

Screening tools are designed for a range of purposes hence a tool must be selected that is relevant for the specific purpose. For example, the ISAR1 is used for preliminary screening and identifies the requirement for a more detailed secondary screen (Rosted et al., 2012). Under these circumstances, a simple yes/no rating system is sufficient, with more detailed information provided by the second screen. Others, such as the Blaylock Risk Assessment Screening Score, are used for patient prioritisation thus requiring more comprehensive data collection (Blaylock & Cason, 1992). RNSH have indicated that they require a tool that prioritises patients for occupational therapy referral.

8. THE MODIFIED BLAYLOCK REFERRAL TOOL

A Quality Improvement Project (QIP) was undertaken by the RNSH Occupational Therapy Department, reviewing the effectiveness of the ISAR 1, Blaylock Risk Assessment Screening Score and the eQ Health Discharge Checklist to identify patients at risk of functional decline (Tan, 2013).

The project identified the Blaylock Risk Assessment Screening Score as the most appropriate tool for RNSH due to the following factors:
The tool:
- Prioritises patients at risk of functional decline.
- Includes the majority of functional decline risk factors defined by the literature.
- Is designed to be completed by nurses on admission to acute care. Hence the tool's purpose is consistent with that required by RNSH.
- Requires nurse assessment only, does not require additional testing of functional/cognitive status.

A literature review conducted as part of the QIP, identified that in addition to the original Blaylock Risk Assessment Screening Score criteria, 'falls history', 'memory' and 'diagnosis,' were parameters which also commonly occurred in other screening tools in the literature. As a result, the original Blaylock Risk Assessment Screening Score was adapted to include these new items. Prioritisation weighting scores for these new items were determined based on discussion with senior RNSH occupational therapists and their experience of these factors as influencing a patient's functional performance. The Modified Blaylock Referral Tool is therefore more specific for occupational therapy referral. A copy of the tool is included in Appendix A. The Modified Blaylock Referral Tool has undergone pilot testing in an acute care ward, showing good sensitivity and specificity compared to occupational therapists' assessment of patients' referral needs. However further work is required to establish validity and clinical utility in an acute care context (Tan, 2013).

9. CONCLUSION

There are currently no existing published screening tools available for the specific identification and prioritisation of patients requiring occupational therapy in an acute care setting. A screening tool such as the Modified Blaylock Referral Tool, will assist nurses to identify patients at high risk of functional decline requiring early occupational therapy referral by providing a consistent set of criteria with which to assess patients, thus improving outcomes for patients, therapists and acute care facilities (Victorian Government Department of Human Services, 2004).

There are two main areas requiring further review before the Modified Blaylock Referral Tool can be implemented in an acute care facility:
  i)   The validity and reliability of the tool must be demonstrated in this context.
  ii)   The feasibility of the tool for use by nurses in this context must be demonstrated.

This study will focus on the feasibility of the Modified Blaylock Referral Tool as an occupational therapy early referral screening tool for use by nurses in acute care.

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SECTION 2: JOURNAL MANUSCRIPT

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References

The Modified Blaylock Referral Tool for Early Identification of Patients Requiring Occupational Therapy Referral: A Pilot Study

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ABSTRACT

Background/aim: Acute care priorities are focused on stabilisation of a patient's condition on admission. Patients with multi-morbidities affecting functional performance may not have their needs adequately met. Occupational therapy is well placed to address factors affecting functional decline thus early and accurate identification of patients requiring referral is imperative. This study investigated the feasibility of an occupational therapy early referral tool for acute care nurses.

Methods: A mixed methods cross-sectional approach was used including:

i) Completion of the Modified Blaylock Referral Tool (MBRT) on 305 patients by six acute care nurses in 3 wards. The tool results were analysed using descriptive and non-parametric statistics.

ii) Semi-structured interviews with nurses on completion of the trial to understand their perspectives of occupational therapy and using the MBRT.

Results: Of the assessed patients, 45% were recommended for occupational therapy referral. The main criteria associated with functional decline risk were mobility, memory and recent hospital admissions. Nurses indicated barriers to referral included resource limitations, lack of visibility and understanding of occupational therapy and lack of holistic assessment of patients. The MBRT identified patients consistent with nurses' own recommendations and was easy to administer during admission to the ward.

Conclusion: This study demonstrates the clinical utility of the MBRT for nurses to identify acute care patients at risk of functional decline. Recommended further research includes trials with larger nurse and ward samples and longitudinal studies to examine the effect of the MBRT on outcomes such as length of stay and post-discharge functional performance.

Key words: functional decline, screening tool, triage, hospital admission, prioritisation

INTRODUCTION

Due to current economic constraints on acute care services, hospital priorities are focused around decreasing the length of patient stay and reducing readmission rates (Craig, Robertson, & Milligan, 2004; Griffin & McConnell, 2001). Indeed, this focus is consistent with the fundamental definition of acute care as, 'a short stay within a hospital setting' (Anderson, Anderson & Glanze, 1998, p.18). Acute care priorities are to stabilise the specific condition for which a patient is admitted and are characterized by a medical-model of care with less opportunity to identify other conditions that will impact on a patient's functional performance. This may affect the ability to safely discharge patients in a timely manner (Victorian Government Department of Human Services, 2004). The Royal North Shore Hospital (RNSH), a 660 bed facility servicing the north shore area of Sydney, has recognised that the local aging population will result in an higher complexity of medical conditions, increasing the demand on acute care in the future (Northern Sydney Central Coast Health, 2008; New South Wales Health Department, 2013). Hence, RNSH staff are investigating systems facilitating timely identification, treatment and sustainable discharge of patients with complex needs.

Multidisciplinary strategies promoting psychosocial, functional and medical outcomes, have been shown to decrease length of stay and re-admission rates, and improve treatment cost-effectiveness due to the client-centred nature of these strategies (Landi et al., 1997). The occupational therapy role in acute care is concerned with the discharge planning process, specifically providing client-centred assessment, identifying appropriate discharge options, and providing support to facilitate these options (Holm & Mu, 2012). In contrast, nurses' perceptions of the occupational therapy role vary depending on the facility, relationships with individual therapists and nurses' knowledge of occupational therapy. Nurses commonly perceive occupational therapists as providers of home visits and equipment, as discharge planners and as barriers delaying discharge (Atwal, 2002). Where there are no defined criteria for nurses to refer a patient to occupational therapy, nurses refer based on their assessment of the patient's need, prior experience of occupational therapy and their perception of how a therapist can address this need (Hobbs, Boysen, McGarry, Thompson, & Nordrum, 2010). Nurses' perceptions of the occupational therapy role

are therefore influential in determining how patients are referred with poor understanding of the role resulting in lack of referral, inconsistent or late referral (Craig et al., 2004).

Early identification of patients requiring occupational therapy allows for a proactive approach to therapy, increasing the timeframe for provision of therapy and enabling the development and implementation of comprehensive, integrated and client-centred care plans (Griffin, 2002). A meta-analysis of controlled trials by Stuck et al. (1993) showed that early referral to multidisciplinary teams including occupational therapy is important in preventing functional decline and consequential prolonging of hospital stays in elderly patients. Additionally, a case study by Craig et al. (2004) illustrated how the involvement of occupational therapy as part of a multidisciplinary team resulted in better client outcomes such as appropriate, safe and durable discharge options, and more effective discharge decisions and planning.

Screening tools have been shown to improve identification of patients with complex needs at admission, allowing earlier allied health involvement and improved discharge outcomes (Hobbs et al., 2010). A pilot study by Hobbs et al. (2010) showed that early referral tools benefit the institution by reducing length of stay and readmission rates and streamlining the occupational therapy referral process by decreasing inappropriate referrals. Occupational therapist job satisfaction improved due to better utilisation of therapists' expertise in clinical decision-making as a consequence of the reduction in inappropriate referrals.

Although a number of screening tools have been identified from the literature, no existing tool covers all the necessary criteria for predicting risk of functional decline and facilitates patient prioritisation. The Modified Blaylock Referral Tool (MBRT) was developed by the author to address these deficiencies and initial testing of the instrument confirmed that the tool has an acceptable level of specificity and sensitivity when compared to an occupational therapy assessment of referral need (Tan, 2013). Further testing is required however to establish the validity and clinical utility of the tool for use in an acute care context.

The Modified Blaylock Referral Tool has been identified as a suitable tool to identify patients requiring occupational therapy referral. The purpose of this study is therefore to investigate the clinical utility of the tool and to identify the characteristics of patients who would potentially require occupational therapy referral. The research question posed was: 'Is a tool facilitating early identification of patients requiring occupational therapy referral feasible for nurses in an acute ward setting?'

METHODS

This pilot study used a cross-sectional, mixed method design to explore the feasibility of acute care nurses using the MBRT to identify patients requiring occupational therapy referral. Data were collected via interviews with nurses administering the tool on the ward and data from the completed checklists. The cross-sectional design was appropriate to establish associations between the variables within the MBRT and a patient's need for occupational therapy referral (Bowling, 1997), while the mixed methodology enabled qualitative and quantitative results to be compared and combined to provide a comprehensive investigation of the tool's feasibility (Creswell & Clark, 2007, p.5).

Participants

Participants consisted of six nurses from one acute care orthopaedic ward, one Short Stay Surgical Unit (SSSU) and one Pre-Admission Clinic (PAC). These wards were selected due to the broad range of patients they treat, which makes identification of patients with complex needs more difficult for nurses. The Clinical Nurse Consultant provided consent for the wards to be included in the study and nominated the nurses to be involved based on a convenience sample. All nurses invited to participate in the study were provided with a Participant Information Sheet detailing the purpose of the research and nurses provided informed consent. The nurses were trained in the use of the MBRT and were supervised in the completion of the tool to ensure correct administration by the author. The nurses then used the tool in their day-to-day duties on the ward unsupervised.

Nurses participating in the trial were awarded continuing professional development points towards their professional registration because of their involvement in the study.

The Northern Sydney Local Area Health District Human Research Ethics Committee granted approval for this project.

Data Collection

Modified Blaylock Referral Tool

The MBRT comprises of a 13-question survey covering functional, physical, cognitive and psychosocial status to identify whether occupational therapy referral is required. It uses a weighted scoring system, facilitating prioritisation of referrals. A copy of the tool is included in Appendix A.

During the six-week data collection period, participating nurses selected and completed the MBRT on a convenience sample of patients within 48 hours of admission. Under normal circumstances, on completion of the checklist, the nurse determines the patient's priority for referral based on the MBRT score, and a referral to occupational therapy would follow. As a pilot study, the purpose of the study was to collect data rather than prompt occupational therapy referral hence nurses were instructed to continue with their usual referral practices regardless of the MBRT results.

The nurses completed 305 tools during the data collection period. This allowed a reasonable estimation of usual practice so that data could be used to calculate sample sizes for future studies on this topic.

Semi-Structured Interviews

Interviews were performed by the first author at the end of the trial of the MBRT. Questions were designed to gain information from the nurses about their experience administering the tool on the ward, their perceptions of the tool's strengths and weaknesses, their understanding of the occupational therapy role in acute care and their experience of referral to occupational therapy. These topics were identified by the literature as areas requiring further investigation. The interview questions are included in Table 1.

Insert Table 1: Interview questions

Each interview lasted 20-30 minutes, and all were audiotaped. Digital recordings were transcribed verbatim.

Data Analysis

Modified Blaylock Referral Tool

The MBRT data were analysed using descriptive and comparative statistics using the SPSS Version 21.0 statistical package (IBM Corporation, 2012), to determine similarities and differences between priority groups requiring occupational therapy referral in terms of functional decline risk factors. Groups were divided into priority levels based upon the following criteria adapted from Blaylock & Cason (1992).

- Score <10: No risk
- Score = 10: Low risk
- 11-20: Medium risk
- Score => 20: High risk

Low, medium and high-risk scores using this tool would prompt occupational therapy referral at the respective priority levels.

Statistical tests for normality showed that the MBRT data were not normally distributed, hence the data were analysed using Kruskal-Wallis and Mann-Whitney U non-parametric tests (Polgar & Thomas, 2008).

Semi-Structured Interviews

Interview transcripts were analysed using NVivo 10 software (QSR International Pty Ltd, 2012). Transcripts were read and re-read, then coded line-by-line. Each code was then grouped with similar codes to form themes. Repetition of similar themes within new interviews indicated that data saturation had been reached.

Rigour

Rigour of the qualitative data analysis was addressed using the four criteria specified by Lincoln and Guba (1986) as follows:

i)   Credibility – Interview transcriptions were member checked to verify accuracy of recording and interpretation.

ii)   Transferability – Experienced participants with knowledge across a broad range of acute care practice were recruited.

iii)   Dependability – Analysis adhered to a recognized coding method.

iv)   Confirmability – Independent coding of data and cross checking of themes were conducted by the first and second authors.

RESULTS

Characteristics of Study Participants

Seven nurses were initially invited to participate in the trial, however one declined. Participant data are summarised in Table 2.

Insert Table 2: Demographics of nurses participating in the Modified Blaylock Referral Tool Trial

Patient Data From the Modified Blaylock Referral Tool Trial

Overall 305 Modified Blaylock Referral Tools were completed during the trial period, with the majority of patients surveyed (81.6%; n=249) from the PAC. Patients from the acute ward and the PAC were mainly over the age of 65 (Acute ward: 68.4%; n=26 and PAC: 52.2%; n=130 respectively). Conversely 77.8% (n=14) of patients in the SSSU were below the age of 55, with none over the age of 65. The gender split was approximately equal in the acute ward and PAC, however 61.1% (n=11) of the patients treated in the SSSU were male.

Modified Blaylock Referral Tool Results

Table 3 summarises the demographics of the surveyed patients and shows the mean MBRT scores for the corresponding individual criteria both by ward and overall.

Table 3 also identifies profiles of patients requiring referral to occupational therapy across the wards, showing common characteristics of patients who should be referred according to the MBRT. In total, 44.3% (n=135) of patients were identified who required referral to occupational therapy. The acute care ward had the highest proportion of patients requiring referral - 87.7% (n=33) of which 28.9% (n=10) of these were high need, followed by the PAC with 40.6 % (n=101) requiring referral, and the SSSU with 5.6% (n=1) needing referral.

Insert Table 3: Modified Blaylock Referral Tool results for the surveyed patients

Higher MBRT scores were associated with memory issues (p<0.001), previous hospital admissions in the past 3 months (p<0.001), confused behaviour (p=0.001), disorientation (p<0.001), and requiring assistance for ambulation (p<0.001). A number of functional criteria were also associated with higher MBRT scores, including requiring assistance for toileting (p<0.001), finances (p<0.001), and medication administration (p=0.006); incontinence of faeces (p=0.018) and a patient's concern for their ability to cope at home post discharge (p<0.001). These risk scores were more pronounced in the acute care ward.

Other parameters with a strong likelihood of functional decline included wandering behaviour (p=0.002), number of active medical conditions (p<0.001), patient's ward (p<0.001), falls (p<0.001), and age (p<0.001). Age was further investigated to determine the effect of the weighting on the final prioritisation score. The scores were recalculated, removing the age weighting – however there was still an association between increasing age and higher MBRT scores (p<0.001).

Although incontinence of urine (p=0.123) and depression (p=0.162) had a high or medium range MBRT score compared to those without these conditions the associations were not statistically significant.

Nurse Attitudes to the Use of the Modified Blaylock Referral Tool

Three main themes emerged from the nurse interviews:
    i)   The current reality of practice and barriers to occupational therapy referral.
    ii)   Nurses' experiences of using the MBRT
    iii)   Future opportunities

Table 4 summarises the main themes from the interviews.

Insert Table 4: Nurse interview themes

The nurses reflected on their experiences of using the tool throughout the interviews, highlighting ease of use, consistency with their own assessment of patients requiring

occupational therapy, structure and the prompting of a more holistic approach to patient assessment as key benefits.

1. Current Reality of Practice and Barriers to Early Occupational Therapy Referral
Resource constraints were a common theme for many nurses, who identified the lack of visibility of occupational therapists on their wards, insufficient time to refer and lack of efficient referral systems and a perceived lack of availability of therapy services as referral barriers.

> *'For some of the orthopaedic patients, the occupational therapists come and see them here. But usually they don't have time…….. they used to, but they haven't for a long time.'*
>
> (PAC nurse A)

Communication was also identified as a referral barrier, with nurses expressing a lack of confidence in existing methods of communication and information transfer, such as note taking and paper records, consistent with the literature.

> *'There's a real gap……. if there was something that the nurses could use to flag them* [OT's]*, because at the moment the paperwork just goes off and we have no idea.'*
>
> (PAC nurse C)

Overall, nurses had an awareness of the assistance that occupational therapists could provide to support a patient's functional outcomes. They identified the importance of assessing a patient's function, indicating that in terms of discharge home,

> *'……..if they're not set up for their functional environment, then I think it retards them as well'.*
>
> (Acute Care nurse)

The nurses used a number of criteria to identify patients requiring referral and many of these factors were consistent with those included in the MBRT.

> *'Mobility issues and self-care issues are the major ones. If they're elderly,*
> *on their own, if they have mental health things or dementia or things like*
> *that'.*

<div align="right">(PAC nurse D)</div>

Nurses also reported additional risk factors that they used to flag patients requiring higher levels of discharge support, including living in a rural setting and presence of pressure areas.

All the nurses participating in the study relied on their previous clinical experience, to inform their clinical reasoning and ability to identify patients with complex care needs. They had concerns that less experienced nurses would not necessarily consider a patient's functional capacity when assessing their suitability for discharge.

> *'Sometimes I don't think they* [other nurses] *think of the whole total*
> *person, they just think of what's actually in front of them………not*
> *thinking of the total impact that that* [injury] *can have on someone,*
> *physically and out in the real world, because it's just a lower limb fracture*
> *and you can get up on crutches and you can go home. Well that's*
> *sometimes easier said than done, if it was me, I've got three flights of steps*
> *to get up'.*

<div align="right">(Acute Care nurse)</div>

The nurses admitted however, that the MBRT prompted them to consider a patient's functional implications more deeply, regardless of their experience level.

2.   Nurses' Experiences of Using the Modified Blaylock Referral Tool
The nurses were all positive about their experience using the MBRT, with the patients identified by the tool as at risk of functional decline consistent with the nurses' own assessments. The tool criteria were consistent with the risk factors used by the nurses.

> *'It was pretty accurate actually. I think it covered all the bases that I can think of in terms of patients' needs on discharge.'*
>
> (PAC nurse D)

In addition, patients prioritised with higher scores were also the patients that the nurses classified as having more complex care needs.

> *'It was consistent with the patients that I would expect would have high needs once they got home'.*
>
> (PAC nurse D)

In terms of practicality and ease of use, all nurses indicated that the tool did not significantly increase their workload.

> *'By the time you'd finished your nursing admission you could answer it fairly quickly, less than a minute probably'.*
>
> (PAC nurse B)

Indeed, the majority of the information required by the tool was already determined during the admission process through discussions with or observation of the patients.

> *'Having seen the people….and just asking a couple of questions, or just even seeing them do things, I could fill out the form. So I didn't have to specifically go and ask, because it's stuff that you already ask in chatting with them.'*
>
> (SSSU nurse)

Nurses perceived early identification of patients with complex needs as a benefit of the tool, as this could facilitate more efficient and effective treatment.

> *'Once they're admitted to the ward and they're already flagged then the process can begin straight away and can be streamlined.'*
>
> (PAC nurse D)

The MBRT was viewed by nurses as promoting a holistic understanding of patients rather than a medical condition based focus, therefore facilitating proactive provision of patient support.

> *'I think it's great that it's heightening the awareness of just thinking ahead, planning ahead, not just thinking about our patient coming in for the surgery but the impact of it afterwards'.*
>
> (PAC nurse C)

Nurses also advised that the MBRT provided structure and ensured they were more thorough in their nursing admission assessments, prompting them on functional aspects to discuss with patients.

3. Areas for Improvement and Future Implications for the Modified Blaylock Referral Tool

A number of improvements were suggested for the tool, including clarification of the instructions for specific areas such as falls history and functional status. The nurses also identified the requirement for multiple administrations of the tool for some patients. For example, patients with an extended hospital stay or who have undergone major surgery will have significantly different functional needs as their stay progresses. A time based prompt and a prompt based on particular medical procedures must be considered prior to implementation of the tool.

The nurses were supportive about the potential to integrate the referral tool into an electronic medical record (EMR) system, with the proviso that access to these systems would require significant improvement. The EMR was viewed as the most efficient method to communicate information between departments, as long as all departments were accessing and using the system.

> *'I think the best thing to do would be to integrate it into a computer program and if there was an alert system that triggered a referral.'*
>
> (PAC nurse D)

DISCUSSION

With occupational therapy staffing under increasing strain in acute care settings, identification and prioritisation of patients with complex care needs will allow for more proactive and effective planning and allocation of resources in response to an assessed level of patient need (Harding, Taylor, & Shaw-Stuart, 2009). This pilot study investigated the feasibility of the Modified Blaylock Referral Tool when used by nurses in an acute care context.

Modified Blaylock Referral Tool Findings

A number of associations were determined between tool criteria and the MBRT total score. The common factors identified by nurses, such as age, living status and mobility contributed to a higher score and hence risk of functional decline. However other less widely recognised factors such as memory, number of previous admissions within the past three months, cognitive factors, and functional criteria including requiring assistance for toileting, finances and medicine administration were shown to have a strong association. This is consistent with Sager et al. (1996) who similarly found that age, cognitive and functional status were strongly associated with functional decline. This highlights the necessity of considering a patient's overall needs rather than purely their medical condition during admission, as these criteria will have a strong influence on the level of support required for discharge.

The ward was also associated with the MBRT score. Patients from the acute ward were generally at higher risk, due to the nature of their conditions. Nurses reported that patients from the SSSU or PAC were often undergoing procedures with less functional impact and had preliminary appointments with the hospital prior to admission to facilitate preparation for admission and organisation of post discharge support.

The patient's perception of their ability to cope post discharge was strongly associated with a high risk score, suggesting that a patient may be aware of circumstances, roles or functional performance issues that will impact their successful discharge. Identification of patient concern in the MBRT will allow occupational therapy to address the reasons behind this concern.

Nurse Identification of Patients with Complex Needs

Overall, interview data indicated that the criteria identified by the nurses as alerts for functional decline were consistent with the MBRT criteria. However, despite the range of functional decline flags identified in the MBRT results, the only high priority flag discussed by nurses during the interviews as important was mobility. This suggests that the MBRT is needed to ensure that patients with complex care needs are not overlooked by nurses, particularly if criteria such as the number of admissions in the previous month and memory issues, both high risk criteria, are not routinely considered when nurses are reviewing patients.

Despite the high level of experience amongst nurses interviewed, nurses did not consistently mention functional performance as a criterion to identify patients requiring occupational therapy referral. This indicates that the ability to use clinical reasoning to assess the risk of functional decline is not only based on experience level, but also depends on an individual nurse's understanding of function and its effect on discharge safety and durability. The MBRT provides consistency in occupational therapy referral between nurses, clarifying where occupational therapy can assist and prompting nurses to review patients in a more holistic manner. With resource constraints reducing occupational therapy visibility on the ward, nurses cannot rely on the therapist to identify patients needing referral, and collaboration between nurses and therapists on a daily basis may be reduced. The necessity for nurses to be able to accurately assess patients with complex support needs is becoming increasingly important.

The nurses suggested extra criteria for addition to the checklist, for example the Waterlow pressure care score. However, the tool has been designed purely as a screening checklist hence the number of criteria and assessment methods must be balanced against the clinical utility of the tool (Harding et al., 2009). Cornette et al. (2005) identified that although the presence of a decubitus ulcer is a strong indicator of functional decline the condition is not sufficiently prevalent to warrant inclusion in a screen. In addition, patients with decubitus ulcers will be identified through other criteria, such as functional status. Hence, assessments that increase the tool's

administration time with minimal additional benefit have been excluded from the screen.

Importance of Communication and Definition of the Occupational Therapist Role

Throughout the interviews, it was clear that for the MBRT to be effective, nurses required not only an understanding of the occupational therapy role but also a strong relationship with therapists to support communication and feedback of information. The nurses reported that the checklist does not replace communication but rather enhances communication effectiveness facilitating efficient service provision to support patients' functional needs.

The perception of occupational therapy within acute care varied between nurses. Equipment prescription was identified as a major reason for referral, however many nurses also indicated that they referred to assist with functional performance issues. One participant referred patients requiring functional support to other medical staff, such as doctors rather than occupational therapy. This highlights the need for therapists within acute care to define their role and increase their visibility to ensure that nurses are reminded of the assistance that occupational therapy can provide thus making referral simpler and more consistent. This need to articulate the role of occupational therapy is not specific to acute care, with similar findings noted by Smith and Mackenzie (2011) in mental health settings.

Clinical Utility of The Modified Blaylock Early Referral Tool

The nurses' experience of the MBRT was generally positive. All nurses reported that the tool's prioritization of patients at risk of functional decline was consistent with their own personal assessment. Although additional research is required to verify the tool's accuracy in terms of an occupational therapy assessment of appropriateness of referral, this pilot study gives a preliminary indication that the tool is identifying and rejecting the correct patients.

Overall, the tool administration was considered to be user friendly and required minimal resources. Nurses reported that the majority of the information required was already collected during the admission process, however any additional information

was easily added to this process. As a result, the time taken to administer the tool was minimal. The majority of nurses integrated the tool into their admission routine and recommended that formal inclusion as part of the admission process was the best way to ensure widespread use.

The nurses identified that the MBRT provided structure to interviews and prompted them to consider clients more holistically. Nurses advised that admission interviews were mainly focused around the patient's diagnosis with less consideration of functional performance. Indeed the nurses reported that using the tool had prompted them to think more deeply about the functional implications of a patient's condition and the effects on discharge. The tool was perceived as providing a proactive approach to care for patients with complex needs, with impairments influencing discharge identified and addressed earlier in a patient's stay potentially decreasing length of stay and readmission rates. In addition, providing a prioritised list of patients requiring occupational therapy can improve patient management and workflow, by facilitating more structured occupational therapy resource planning (Hobbs et al., 2010).

Implications of the Modified Blaylock Referral Tool

A major benefit identified by many of the nurses is the future integration of the MBRT with the electronic medical record system that is currently being implemented at RNSH. Ideally, the system would extract the relevant data from computerised nurse admissions, then generate a referral based on the MBRT score. Alternatively as a preliminary system, nurses will complete the tool online, with the data required by the MBRT drawn from the system via the EMR and referrals automatically generated based on the MBRT score thus reducing the time required to refer to occupational therapy. Automating the MBRT will improve the efficiency, consistency and transparency of the referral system for all stakeholders. Access to MBRT data electronically will also provide significant benefits for health researchers. However, nurses indicated that due to the lack of access to input data to the system and the lack of consistent use by all departments, automation of the MBRT is currently not feasible.

The trial also emphasized the importance of occupational therapists defining their role within acute care. The lack of holistic patient assessment indicates that nurses may not be referring adequately to occupational therapy or may not be familiar with the role of the occupational therapist in contributing to improving a patient's functional performance, identifying appropriate discharge options and the importance of early referral to facilitate improved discharge outcomes. The nurses involved in this trial were all highly experienced and working in an orthopaedics context hence were likely to have had a higher exposure to the occupational therapy role and hence a better understanding of the assistance therapists can provide with discharge than the general nursing population. Even within this group, the themes of lack of occupational therapy visibility and role definition were still prevalent, suggesting that other areas of acute care may have a much poorer understanding. This highlights the importance of therapists actively promoting their role within an acute care context.

Scope and Limitations

The pilot nature of this study introduced many limitations into the study design. The sample size of the nurse qualitative component and the completed surveys was relatively small, and nurses were based in a limited number of wards. Hence, although the results give an indication of the tool's feasibility, they cannot be extrapolated to all acute care contexts and wards. In addition, the sample size was insufficient to establish statistical associations for some criteria. As a result, despite the positive outcomes received, further studies with a larger sample size of nurses across a broader range of wards and in different hospital settings are required to determine the accuracy, reliability and practicality of the tool in an acute care context.

The sample of patients surveyed was not representative of the general acute care population, with a higher proportion of patients in the 65-79 year old age group compared to NSW acute care hospital averages (NSW Ministry of Health, 2013). This may be attributed to the nature of the wards participating in this study. Had the study scope included all acute care wards at RNSH rather than being skewed towards orthopaedic wards, the age demographics may have been more consistent with the NSW average. This may have influenced the study outcomes, specifically the proportion of patients requiring occupational therapy referral and also the specific criteria contributing to the MBRT score. Hence the data from this trial, although

providing a preliminary indication of referral patterns, cannot be taken as conclusive. In addition, this trial did not review the effect of the MBRT on longer-term outcomes, such as length of stay and functional performance post-discharge. Future research should focus on trialing the survey in more acute care wards and longitudinal studies to determine whether the tool improved longer-term outcomes.

CONCLUSION

This pilot study demonstrated the clinical utility of the Modified Blaylock Referral Tool within an acute care context. Benefits of the tool included its ease of use, and accuracy in identifying patients consistent with nurses' assessment of complex need thus potentially streamlining the provision of occupational therapy services. The tool provides a prompt to nurses to think more holistically about a patient's discharge, the importance of functional performance in ensuring a safe, sustainable and timely discharge; and the assistance that occupational therapy can provide in facilitating this process. In addition, the automation of the tool using an electronic medical record system could introduce further efficiencies into occupational therapy referral.

In an acute care environment where the value of efficient and coordinated care is well recognised, the Modified Blaylock Referral Tool will facilitate a more proactive involvement of occupational therapy in clinical decision-making and provision of therapy services. This will deliver a more integrated, client-centred approach to discharge potentially improving outcomes for patients, families, clinicians, Royal North Shore Hospital and other acute care facilities.

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TABLES

Table 1: Interview questions

	Question
1.	How did you find using the tool on the ward with respect to: Ease of use, time taken to complete, clarity, contribution to workload, any patient reactions?

2.	As a tool to identify/alert to patients at risk or with discharge needs, how do you think the tool went?
	      - Identification of appropriate patients
	      - Identification of too many patients or not enough

3.	At what point of admission should be tool be administered?
4.	Did the tool help you in your day-to-day work on the ward? How?
5.	Do you refer to occupational therapy for discharge assistance? When do you refer a patient to occupational therapy? What are the flags for you, based on your personal experience?
6.	How did you find filling out the 'functional status' section of the checklist? Did you find it difficult to estimate what level of assistance a patient will require at discharge? (Did you take it to mean that the individual patient could/could not perform the task without assistance? Or did you consider the patient's functional status depending on whether they had family/carers to assist?)
7.	What improvements could be made to the tool? What didn't work so well?
8.	Did you observe any changes on the ward as a result of this trial?
9.	Do you think that there was a difference in the outcome from the tool based on whether you did a file review or whether you had seen the patient before filling out the tool?
10.	What do you perceive as the benefits of a tool like this?
11.	How do you see this tool being integrated into practice on the ward/clinic? What do you think is needed to support use of this tool?
12.	With the introduction of electronic medical records, we may have the ability to automate the alert system. Do you see a benefit to this?
13.	Any other general advice that we need to consider for our project?

Table 2: Demographics of Nurses Participating in the Modified Blaylock Referral Tool Trial[1]

	Ward	Gender	Nursing Experience (years)	Role
1	Pre admission clinic	F	24	Registered Nurse
2	Pre admission clinic	F	30	Registered Nurse / Clinical Nurse Consultant
3	Pre admission clinic	F	40	Registered Nurse
4	Pre admission clinic	F	21	Registered Nurse
5	Short Stay Surgical Unit	F	32	Registered Nurse
6	Acute Ward	F	27	Clinical Nurse Consultant

[1]*The number of Blaylock surveys completed by each nurse could not be determined as all surveys were de-identified prior to analysis*

Table 3: Modified Blaylock Referral Tool Results for the Surveyed Patients *(N=305)*

| | Total n | % | Mean Blaylock Score for Individual Wards | | | Mean Total Score CI (95%) | Mean Blaylock Risk Score | Association with Risk Score p value[3] |
			Acute Care	SSSU[2]	PAC[1]			
Age:								p<0.001
<= 55	99	32.5	7.4	4.5	4.2	5.2 (4.4-6.0)	No risk	
56 – 64	44	14.4	20.2	7.8	9.3	10.5 (8.5-12.5)	Low	
65-79	127	41.6	18.8	-	9.9	11.2 (10.3-12.1)	Medium	
80+	35	11.5	20.9	-	14.8	16.7 (14.3-19.1)	Medium	
Gender								p=0.754
Male	154	50.5	17.4	4.6	8.7	9.6 (8.6-10.6)	Low	
Female	145	47.5	18.3	6.8	8.9	10.0 (8.9-11.1)	Low	
Unknown	6	2.0	-	-	-	-	-	
Ward								p<0.001
Acute Care Ward	38	12.5	-	-	-	17.8 (15.0-20.6)	Medium	
PAC[1]	249	81.6	-	-	-	8.8 (8.2-9.4)	No risk	
SSSU[2]	18	5.9	-	-	-	5.3 (3.4-7.2)	No risk	
Living Situation								p<0.001
Alone	72	23.6	20.1	8.3	11.2	12.8 (11.2-13.4)	Medium	p<0.001
Hostel	8	2.6	30.0	-	8.5	13.9 (5.0-22.8)	Medium	p=0.328
With family /spouse	225	73.8	15.2	4.3	8.2	8.7 (7.9-9.5)	No risk	p<0.001

Table 3 continued:

	Total n	%	Acute Care	SSSU[2]	PAC[1]	Mean Total Score CI (95%)	Mean Blaylock Risk Score	Association with Risk Score p value[3]
			Mean Blaylock Score for Individual Wards					
Functional Status								p<0.001
Eating/feeding	11	3.6	28.0	-	11.0	19.7 (12.2-27.2)	Medium	p=0.001
Bathing/grooming	65	21.3	19.8	7.4	13.0	14.9 (12.8-17.0)	Medium	p<0.001
Toileting	22	7.2	27.0	-	16.8	22.2 (18.1-26.3)	High	p<0.001
Transferring	20	6.6	23.3	-	13.1	19.3 (14.8-23.8)	Medium	p<0.001
Incontinent of urine	3	1.0	17.2	-	-	32.0 (-56.9-120.9)	High	p=0.123
Incontinent of faeces	2	0.7	17.2	-	-	31.5 (-63.8-126.8)	High	p=0.018
Meal preparation	124	40.7	20.0	6.2	10.5	12.4 (11.1-13.7)	Medium	p<0.001
Medication administration	5	1.6	30.0	-	17.0	22.2 (8.2- 36.2)	High	p=0.06
Finances	8	2.6	25.8	-	21.5	24.8 (16.8-32.8)	High	p<0.001
Grocery Shopping	141	46.2	17.8	7.0	11.4	12.5 (11.4-13.6)	Medium	p<0.001
Transportation	144	47.2	18.2	6.7	11.6	12.9 (11.7-14.1)	Medium	p<0.001
Concerned with ability to cope post discharge	20	6.6	27.0	-	19.5	21.2 (18.2-24.2)	High	p<0.001
Cognition								p<0.001
Orientated	292	95.7	14.1	5.31	8.7	9.1 (8.5-9.7)	No risk	
Disorientated	13	4.3	28.2	-	21.0	25.7 (-17.0-68.4)	High	
Memory Issues	19	6.2	29.6	5.3	18.0	23.5 (19.6-27.4)	High	p<0.001

Table 3 continued:

	Total n	%	Acute Care	SSSU[2]	PAC[1]	Mean Total Score CI (95%)	Mean Blaylock Risk Score	Association with Risk Score p value[3]
			Mean Blaylock Score for Individual Wards					
Behaviour Pattern								p<0.001
Wandering	7	2.3	-	-	15.5	17.4 (11.3-23.5)	Medium	p=0.02
Agitated	8	2.6	10.0	-	11.7	11.3 (8.1-14.8)	Medium	p=0.192
Confused	4	1.3	31.8	-	-	31.8 (23.5-40.1)	High	p=0.001
Depressed	3	1.0	-	-	16.3	16.3 (-6.2-38.8)	Medium	p=0.162
History of Falls								p<0.001
Sensory deficits								p<0.001
No deficits	192	63.0	14.6	5.0	7.2	8.1 (7.3-8.9)	No risk	
Visual or hearing deficits	88	28.9	25.1	7.5	10.9	12.4 (10.9-13.9)	Medium	
Visual and hearing deficits	25	8.2	-	-	11.8	12.6 (10.3-14.9)	Medium	
Mobility								p<0.001
Ambulatory	226	74.1	12.0	5.3	7.7	7.7 (7.1-8.3)	No risk	
Ambulatory with mechanical assistance	61	20	18.3	5.5	14.5	14.9 (13.1-16.7)	Medium	
Ambulatory with human assistance	10	3.3	24.1	-	14.0	22.1 (16.0-28.2)	High	
Nonambulatory	8	2.6	15.6	-	-	15.6 (12.8-18.4)	Medium	
Chronic Condition	157	51.5	20.6	-	11.7	13.3 (12.3-14.3)	Medium	p<0.001

Table 3 continued:

	Total n	%	Mean Blaylock Score for Individual Wards			Mean Total Score CI (95%)	Mean Blaylock Risk Score	Association with Risk Score p value[3]
			Acute Care	SSSU[2]	PAC[1]			
Previous Admissions (last 3 months)								p<0.001
None	253	83	15.3	5.3	8.4	8.9 (8.2-9.6)	Low	
1	46	15.1	20.8	-	11.0	12.9 (10.8-15.0)	Medium	
2	1	0.3	N/A	-	-	-	-	
3	5	1.6	30.7	-	14.5	24.2 (10.6-37.8)	High	
Active medical problems								p<0.001
<3	209	68.5	9.3	5.1	7.5	5.9 (5.3-6.5)	No risk	
3-5	67	22	16.9	-	11.8	12.8 (11.5-14.1)	Medium	
>5	29	9.5	24.8	-	14.5	19.5 (16.4-22.6)	Medium	
Number of Medications								
<3	116	38	11.0	5.1	5.1	5.5 (4.7-6.3)	No risk	p<0.001
3-5	99	3.5	13.6	-	9.4	9.7 (8.7-10.7)	No risk	
>5	90	29.5	21.0	-	13.0	15.1 (13.8-16.4)	Medium	
Risk Level								
No risk	170	55.7	5.2	4.5	5.5	5.4 (5.0-5.8)	No risk	
At risk	21	6.9	-	-	-	10.0 (9.5-10.5)	Low	
Medium risk	92	30.2	15.8	-	13.2	13.8 (13.3-14.3)	Medium	
High risk	22	7.2	28.2	-	21.8	25.0 (22.4-27.6)	High	

[1] *PAC – Pre-Admission Clinic*
[2] *SSSU – Short Stay Surgical Unit*
[3] *Data were analysed using Kruskal-Wallis and Mann-Whitney U non-parametric tests (Polgar & Thomas, 2008. p. 221)*

Table 4: Summary of Nurse Interview Themes

Themes	Sub-Themes and Coding
Current Realities of Practice - barriers to occupational therapy referral	*Current nurse practices and attitudes* - Understanding and perceptions of the occupational therapy role - Lack of holistic patient view - Lack of resourcing - Inadequate level of communication with occupational therapists *Criteria used by nurses to identify a patient's need for occupational therapy* - The flags selected for the Modified Blaylock reflected the flags that nurses use to identify patients with complex needs. - Additional flags identified including: rural patients, Waterlow score and physical home environment.
Nurses' Experiences of Using the Modified Blaylock Referral Tool	*Assessment of tool* - Accuracy: tool consistent with nurses' assessment of patients. - User friendly. - Benefits less experienced nurses. *Administration of tool* - More effective if done in person. - Timing of administration: Could be done in Pre-Admission Clinic, on admission to the ward, post surgery. - Include in nurse routines. *Benefits of tool* - Proactive identification of patients with complex needs. - Gives structure and prompts to nurses. - Changes nurses' ways of thinking. - Improve patient management and workflow.
Future Opportunities	*Potential Improvements to Referral to occupational therapy* - Integration with an automated electronic referral system. - Prioritisation of referrals. *Implementation of tool* - Requires significant education of nurses. - Make tool part of existing nurse routines.

- Communication of tool amongst all staff, not
just nurses.

Improvements to Tool
- Clarification of criteria.
- Make categorisation of scores clear.
- Identified additional criteria that could be
considered.

Section 3: Appendices

Appendix A: Modified Blaylock Referral Tool

Appendix B: Literature Review – Screening Tools Reviewed

Appendix C: Australian Occupational Therapy Journal Author Guidelines

Appendix D: Ethics Approval Letter from Northern Sydney Local Area Health District HREC

Appendix E: Participant Information Sheet and Consent Form

APPENDIX A: MODIFIED BLAYLOCK REFERRAL TOOL

Modified Blaylock Referral Tool
To be completed within 48 hours of admission
Note: This form is not required for nursing home patients

Age:

0	< = 55 years
1	56 - 64 years
2	65 - 79 years
3	80+ years

Living Situation / Social Support:

1	Hostel
1	Lives with spouse / family
4	Lives alone

Functional Status:

0	Independent in activities of daily living and instrumental activities of daily living

Will Require Assistance on Discharge with:
(More than one option can be selected)

1	Eating / feeding
1	Bathing / grooming
1	Toileting
1	Transferring
1	Incontinent of bowel function
1	Incontinent of bladder function
1	Meal preparation
1	Responsible for own medication administration
1	Handling own finances
1	Grocery shopping
1	Transportation
5	Patient concerned about own ability to cope post-discharge

Cognition:
Orientation:

0	Oriented
1	Disoriented to some spheres some of the time
2	Disoriented to some spheres all of the time
3	Disoriented to all spheres some of the time
4	Disoriented to all spheres all of the time

Memory issues:

5	Yes
0	No

Behaviour Pattern:

0	Appropriate
1	Wandering
1	Agitated
1	Confused
1	Depressed

Mobility:

0	Ambulatory
1	Ambulatory with mechanical assistance
2	Ambulatory with human assistance
3	Nonambulatory

History of Falls:

1	Yes
0	No

Sensory Deficits:

0	None
1	Visual or hearing deficits
2	Visual and hearing deficits

Number of Previous Admissions/Emergency Room Visits:

0	None in the last 3 months
1	One in the last 3 months
2	Two in the last 3 months
3	More than two in the last 3 months

Diagnosis:

3	Diagnosis of chronic medical conditions such as COPD, diabetes, CCF or mental health issues

Number of Active Medical Problems:

0	Three medical problems
1	Three to five medical problems
2	More than five medical problems

Number of Drugs:

0	Fewer than 3 drugs
1	Three to five drugs
2	More than five drugs

Total Score:

Risk Factor Index:	Circle appropriate risk factor		
<10 - No discharge planning risk	10 - at risk for home care resources	11-19 - at risk for extended discharge planning	> 20 - at risk for placement other than home

Note: If uncertain about circling an answer, please circle it. Once form is completed, an OT can determine whether additional assessment is required.

This survey is adapted from Blaylock, A., & Cason, C. (1992). Discharge planning - predicting patient's needs. *Journal of Gerontological Nursing, 18* , 5-10.

APPENDIX B: LITERATURE REVIEW – SCREENING TOOLS REVIEWED

Appendix B1: Blaylock Risk Assessment Screening Score (Blaylock & Cason, 1992)

FIGURE

Blaylock Discharge Planning Risk Assessment Screen

Circle all that apply and total. Refer to the Risk Factor Index.*

Age
0 = 55 years or less
1 = 56 to 64 years
2 = 65 to 79 years
3 = 80+ years

Living Situation/Social Support
0 = Lives only with spouse
1 = Lives with family
2 = Lives alone with family support
3 = Lives alone with friends' support
4 = Lives alone with no support
5 = Nursing home/residential care

Functional Status
0 = Independent in activities of daily living and instrumental activities of daily living
Dependent in:
1 = Eating/feeding
1 = Bathing/grooming
1 = Toileting
1 = Transferring
1 = Incontinent of bowel function
1 = Incontinent of bladder function
1 = Meal preparation
1 = Responsible for own medication administration
1 = Handling own finances
1 = Grocery shopping
1 = Transportation

Cognition
0 = Oriented
1 = Disoriented to some spheres† some of the time
2 = Disoriented to some spheres all of the time
3 = Disoriented to all spheres some of the time
4 = Disoriented to all spheres all of the time
5 = Comatose

Behavior Pattern
0 = Appropriate
1 = Wandering
1 = Agitated
1 = Confused
1 = Other

Mobility
0 = Ambulatory
1 = Ambulatory with mechanical assistance
2 = Ambulatory with human assistance
3 = Nonambulatory

Sensory Deficits
0 = None
1 = Visual or hearing deficits
2 = Visual and hearing deficits

Number of Previous Admissions/ Emergency Room Visits
0 = None in the last 3 months
1 = One in the last 3 months
2 = Two in the last 3 months
3 = More than two in the last 3 months

Number of Active Medical Problems
0 = Three medical problems
1 = Three to five medical problems
2 = More than five medical problems

Number of Drugs
0 = Fewer than three drugs
1 = Three to five drugs
2 = More than five drugs

Total Score:

*Risk Factor Index: Score of 10 = at risk for home care resources; score of 11 to 19 = at risk for extended discharge planning; score greater than 20 = at risk for placement other than home. If the patient's score is 10 or greater, refer the patient to the discharge planning coordinator or discharge planning team.
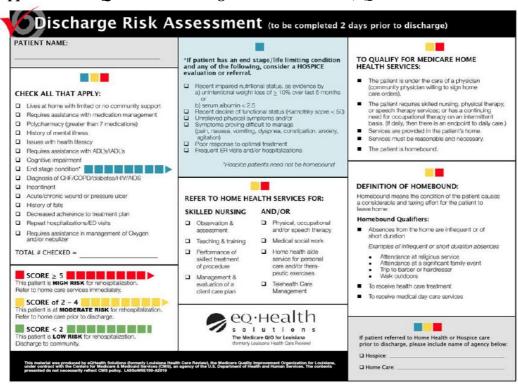†Spheres = person, place, time, and self.
Copyright 1991 Ann Blaylock

Appendix B2: Complexity Risk Prediction Instrument (COMPRI) (Huyse et al., 2001)

FIGURE 1.   Complexity Prediction Instrument (COMPRI)

Predictions Made by the Doctor

Do you expect this patient to have a hospital stay of 2 weeks or more?	Yes	No
Do you think the organization of care during hospital stay will be complex?	Yes	No
Do you expect that this patient's mental health will be disturbed during this hospital stay?	Yes	No

Predictions Made by the Nurse

Do you expect this patient to have a hospital stay of 2 weeks or more?	Yes	No
Do you think the organization of care during hospital stay will be complex?	Yes	No
Do you think this patient will be limited in activities of daily living after discharge?	Yes	No

Additional Questions

Is this an unplanned admission?	Yes	No
Is the patient retired?	Yes	No
Is the patient known to have a currently active malignancy?	Yes	No

Did the patient

have walking difficulties during the last 3 months?	Yes	No
have a negative health perception during the last week?	Yes	No
have more than 6 doctor visits during the last three months?	Yes	No
take more than three different kinds of medications the day prior to admission?	Yes	No

Appendix B3: eQ Health Discharge Risk Assessment (eQ Health Solutions, 2012)

Appendix B4: Inouye Instrument (Inouye et al., 1993)

Risk Factor	
Decubitus Ulcer[1]	Yes/No
Cognitive Impairment[2]	Yes/No
Functional Impairment[3]	Yes/No
Low Social Activity Level[4]	Yes/No

[1]Decubitus ulcer: Defined as at least superficial skin breakdown at any one of 11 potential pressure points.

[2]Cognitive impairment: Mini-Mental State Examination Score <20

[3]Functional impairment: Defined as requiring assistance with one or more basic-care skills by patient report in the two weeks prior to admission.

[4]Low social activity level: Defined as participation in<= 3 of 11 social activities in a typical month. Activities include religious activities, group activities (eg. senior centre, community group), outings (eg. movies, plays, restaurants, sporting events), hobbies, sports, bingo/games, paid/volunteer work.

Final risk factor is determined by adding the risk factors present, to produce a prioritisation score.

Appendix B5: Identifying Seniors At Risk 1 (ISAR1) (St Mary's Research Centre, 2011)

PLEASE ANSWER YES OR NO TO EACH OF THESE QUESTIONS

			Hospital use only
1.	Before the illness or injury that brought you to the Emergency, did you need someone to help you on a regular basis?	☐ YES ☐ NO	1 0
2.	Since the illness or injury that brought you to the Emergency, have you needed more help than usual to take care of yourself?	☐ YES ☐ NO	1 0
3.	Have you been hospitalized for one or more nights during the past 6 months (excluding a stay in the Emergency Department)?	☐ YES ☐ NO	1 0
4.	In general, do you see well?	☐ YES ☐ NO	0 1
5.	In general, do you have serious problems with your memory?	☐ YES ☐ NO	1 0
6.	Do you take more than three different medications every day?	☐ YES ☐ NO	1 0

TOTAL: _____

Score: Positive / Negative (circle one)

Appendix B6: Identifying Seniors At Risk 2 (ISAR2) *(St Mary's Research Centre, 2011)*

Standardized Personal Information Form

- Residence type:
  Name/Phone/Fax

A D D R E S S O G R A P H

- Primary caregiver(s)
  Name/Phone   Name/Phone

- Primary care physician   • Homecare service contact person
  Name/Phone/Fax   Name/Phone/Fax

SEISAR Problem Checklist (please refer to the corresponding standardized questionnaire in annex)

Y	C	N	INT	COMMUNICATION
			MD	Impaired vision
			MD	Impaired hearing

Y	C	N	INT	MEDICATION
			GA/MD	Polypharmacy/new medication
			GA/S	Rx management difficulties

Y	C	N	INT	COGNITION
			ED/S	Acute confusion/disorientation
			GA/S	Undiagnosed cognitive problem

Y	C	N	INT	BEHAVIOR/AFFECT
			GA/S	Depression
			ED/S/GA	Agitation

Y	C	N	INT	NUTRITION
			MD/G/S	Recent weight loss/malnutrition
			MD/S	Substance abuse

Y	C	N	INT	ACTIVE MEDICAL ISSUES
			ED	Persistent presenting symptoms
			MD	Active co morbidities

Y	C	N	INT	MOBILITY
			GA/S	Falls (past or recent)
			GA/S	Problems walking/difficulty in using walking aid

Y	C	N	INT	PAIN MANAGEMENT
			ED/S	Persistent pain
			ED/MD	Joint/bone pain

Y	C	N	INT	ACTIVITES OF DAILY LIVING
			S	Difficulties with meal preparation
			S	Limitations with basic hygiene
			MD/S	Incontinence

Y	C	N	INT	SOCIAL
			S/MD	Insufficient support, lives alone
			S/MD	Social isolation/neglect
			S/MD	Previously refused service

Y YES, problem present   **C** Problem present but **COMPENSATED**   **N** NO, problem absent

INT: **MD** – Primary care physician   **ED** – ED physician   **S** – Homecare service   **GA** – Geriatric assessment

Standardized Information (Check where appropriate)

Source of information:	Living Arrangements:		Referrals given:
☐ Patient	☐ Alone	☐ House/apartment	☐ GP letter
☐ Caregiver	☐ With spouse/family	☐ Group home, nursing home, LTC	☐ Home care
☐ Home Care contact	☐ Residence with services	☐ Residence with no services	☐ ED referral

Appendix B7: Hospital Admission Risk Profile (HARP) *(Sager et al. 1996)*

Hospital Admission Risk Profile (HARP)

1. Scoring range 0-5

A. Age

AGE CATEGORY	RISK SCORE	
<75	0	
75-84	1	
≥85	2	SCORE =

B. Cognitive function (abbreviated MMSE)*

MMSE SCORE	RISK SCORE	
15-21	0	
0-14	1	SCORE =

C. IADL function prior to admission**

INDEPENDENT IADL's	RISK SCORE	
6-7	0	
0-5	2	SCORE =

2. Risk categories

TOTAL = _____

TOTAL SCORE	RISK OF DECLINE IN ADL FUNCTION
4 or 5	High risk
2 or 3	Intermediate risk
0 or 1	Low risk

*Abbreviated MMSE includes only the following 21 components of the original 30 item test: orientation (10 items: year, season, month, date, day, city, county, state, hospital, floor); registration (3 unrelated items, such as hat, ball, tree); attention (5 items, such as spelling WORLD backwards); and recall (same 3 items as in registration). Each correct answer is scored one point.
**A person is judged independent in an activity if he/she is able to perform the activity without assistance. A person is scored dependent if he/she either does not perform an activity, requires the assistance of another person or is unable to perform an activity. IADL activities include telephoning, shopping, cooking, doing housework, taking medications, using transportation and managing finances.

NORTH COAST
AREA HEALTH SERVICE
NSW⊕HEALTH HOSPITAL
ADULT ADMISSION AND
DISCHARGE ASSESSMENT

MRN:
SURNAME:
GIVEN NAMES:
D.O.B: SEX:
(Affix Addressograph)

Admission Date ___ / ___ / ___ Time _____ GP _____ Ward _____ Interpreter required? _____

PRESENTING HEALTH PROBLEM:

RELEVANT COEXISTING CONDITIONS & PAST HISTORY:

PATIENTS OWN MEDICATIONS ☑	Yes	No
Stored in _____ Ward		

ALLERGIES:	Yes	No	REACTION	Taken Home? By Who?		
Food				S4D / S8 cupboard		
Drugs / Medications				Webster pack?		
Latex / Other				**COMPLEMENTARY THERAPIES USED:** (circle)		
Allergy Band				Herbal Massage		

ORIENTATION TO WARD ☑		Acupuncture Chiropractic		
Patient informed of treating doctor		TV	Other:	
Introduction to other patients		Visiting hours	**GENERAL AIDS/PROSTHESES:** ☑	Yes	No
Telephones / Mobile / Public		Buzzer/Call Bell	Glasses		
Toilet / Bathroom		Patient Lounge	Contact lenses		
Meal Times		**VALUABLES**	Hearing aid: Right Left		
Ward/Unit Routine		Nil	Walking Aid Type:		
Aware of Rights & Responsibilities/Privacy		Sent Home	Dentures: Upper Lower		
Aboriginal Health Liaison Officer		Hospital Safe	Above items brought to Hospital		
Visiting clergy - consent to visit Yes		Other/Specify	Other/Comment		
Comment _____ No					

DISCHARGE RISK SCREEN	Yes	No
ESTIMATED DATE OF DISCHARGE: → PATIENT/FAMILY AWARE OF DATE		

NB. When a risk is identified (ie ☑), consider a referral to Discharge Planner or appropriate Allied Health practitioner

Discharge Risk Factors	Yes	No	List Referrals eg. Discharge Planner / Mental Health	Date of Referral	Initial
Does patient live alone?					
Are there concerns about returning home alone?					
Does the patient have an identified carer? If YES, state who:					
Type of residence (circle): Home / Unit / Caravan / Residential Aged Care Facility Number of stairs: Front .... Rear .... Internal .... Ramp					
Does the patient have caring responsibilities for other persons / children / pets? (circle)					
If YES, are they being cared for whilst you are in hospital?					
Do you have concerns about their well being?					
If YES, what arrangements have been made? Comment:					
Is the patient likely to have problems managing self care on discharge, eg: walking, bathing, dressing, meal preparation, shopping, wound care, etc?					
Does the patient take 6 or more medications? (Discuss with clinical pharmacist/Medical Officer re: Home Medicines Review)					
Does the patient require the assistance of an Aboriginal Hospital Liaison Officer?					

What are the patients transport arrangements on discharge? eg relative/friend: ....

If NO transport organised describe action taken ....

INFECTION CONTROL ☑	Yes	No
Does the patient require Transmission Based Precautions? ie Airborne, Droplet, or Contact Precautions		
Does the Patient have a Notifiable Disease? If yes, refer **Infection Control Isolation Record Form**		
If answer is "Yes" to any question notify Infection Control RN/CNC	Note: If referred, document on Discharge Risk Screen	

Completed By: _____ Print: _____ Designation: _____ Date: _____

(left margin, vertical) TO BE COMPLETED ON ADMISSION SIGN & DATE EACH COMPLETED PAGE

(left margin, vertical) PACIFIC MEDIPRINT Official Form Supplies 02 6922 5600 06-04-06 FINAL DRAFT

(right margin, vertical) ADULT ADMISSION AND DISCHARGE ASSESSMENT

Appendix B9: Score Hospitalier d'Evaluation du Risque de Perte d'Automnomie (SHERPA) *(Cornette et al., 2005)*

	Risk score
Fall in the previous year	
No	0
Yes	2
MMSE <15/21	
No	0
Yes	2
Bad self-perceived health	
No	0
Yes	1.5
Age (years)	
<75	0
75–84	1.5
>84	3
Pre-admission IADL score	
6–7	0
5	1
3–4	2
0–1–2	3

Appendix B10: Triage Risk Screening Tool (TRST) *(St Joseph's Healthcare, 2012)*

Triage Risk Screening Tool (TRST)

Instructions: Please make a check mark ☑ in the appropriate box to indicate *presence or suspicion of any of the following*

* Please complete for all patients 75+ years of age*

1. ☐ History of cognitive impairment (poor recall or not oriented)

2. ☐ Difficulty walking / transferring or recent falls

3. ☐ Five or more medications

4. ☐ ED use in previous 30 days or hospitalization in previous 90 days

5. ☐ Lives alone **and/or** no available caregiver

6. ☐ ED staff professional recommendations:
   - ☐ Nutrition / weight loss
   - ☐ Incontinence
   - ☐ Failure to cope
   - ☐ Medication issues
   - ☐ Sensory deficits
   - ☐ Depression / low mood
   - ☐ Other _____

APPENDIX C: JOURNAL SUBMISSION GUIDELINES

The *Australian Occupational Therapy Journal* is the official journal of Occupational Therapy Australia. The journal publishes original articles dealing with theory, research, practice and education in occupational therapy. Papers in any of the following forms will be considered: Feature Articles, Research Articles, Reviews, Viewpoints, Critically Appraised Papers, and Letters to the Editor.

Research Articles
Research Articles should contain the following:
Structured abstract: 250 word limit.
Introduction: The aims of the article should be clearly stated and a theoretical framework (if applicable) should be presented with reference to established theoretical model(s) and background literature. A succinct review of current literature should set the work in context. The introduction should not contain findings or conclusions.
Methods: This should provide a description of the method (including subjects, procedures and data analysis) in sufficient detail to allow the work to be repeated by others.
Results: Results should be presented in a logical sequence in the text, tables and figures. The same data should not be presented repetitively in different forms.
Conclusion: The conclusion should consider the results in relation to the purpose of the article advanced in the introduction. The relationship of your results to the work of others and relevant methodological points could also be discussed. Implications for future research and practice should be considered. The conclusion section of your structured abstract should contain the key messages/take home points of your article.

Research Article manuscripts should not exceed 5000 words, and have no more than 35 references. For manuscripts that report on randomised controlled trials, please include all the information required by the CONSORT checklist. All manuscripts must include a flow chart showing the progress of participants during the trial. Where applicable, reference should be made to the extension to the CONSORT statement for non-pharmacological treatment and the CLEAR NPT. When restrictions on word length make this difficult, this information may be provided in a separate document submitted with the manuscript.

COVER LETTER AND ETHICAL CONSIDERATIONS
Papers are accepted for publication in the journal on the understanding that the content has not been published or submitted for publication elsewhere, and this must be stated in the covering letter. The covering letter must contain an acknowledgement that all authors have contributed significantly, and that all authors are in agreement with the content of the manuscript.
Authors must also state that the protocol for the research project has been approved by a suitably constituted Human Research Ethics Committee of the institution within which the work was undertaken and that it conforms to the provisions of the Declaration of Helsinki (as revised in 2008). All investigations involving humans must include a statement about the ethical review process. It is expected that most investigations will seek review by a Human Ethics Review Committee. Where ethical review has not been sought or obtained, justification must be provided. It is expected that most investigations involving humans will require informed consent for

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Manuscripts should follow the style of the Publication Manual of the American Psychological Association, 6th ed. (2009)**.**
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Units. All measurements must be given in SI or SI-derived units.
Abbreviations. Abbreviations should be used sparingly - only where they ease the reader's task by reducing repetition of long, technical terms. Initially use the word in full, followed by the abbreviation in parentheses. Thereafter use the abbreviation only. The abbreviation of OT is not allowed in the manuscript.

PARTS OF THE MANUSCRIPT
Manuscripts should be presented in the following order: (i) title page, (ii) abstract and key words, (iii) text, (iv) acknowledgements, (v) references, (vi) appendices, (vii) figure legends, (viii) tables (each table complete with title and footnotes) and (ix) figures. Footnotes to the text are not allowed and any such material should be incorporated into the text as parenthetical matter.

Title page
The title page should contain (i) the title of the paper, (ii) the full names, qualifications and designations of the authors and (iii) the addresses of the institutions at which the work was carried out together with (iv) the full postal and email address, plus facsimile and telephone numbers, of the author to whom correspondence about the manuscript should be sent. The present address of any author, if different from that where the work was carried out, should be supplied in a footnote.

The title should be short, informative and contain the major key words and consider including the study design for research articles. Do not use abbreviations in the title. A short running title (less than 40 characters) should also be provided.

All submitted manuscripts must indicate the total word length for the manuscript, word length of the abstract, number of references, figures and tables on the title page of the manuscript.

Abstract and key words
Research, Feature and Review articles must have a structured abstract that states in 250 words or fewer the purpose, basic procedures, main findings and principal

conclusions of the study. Divide the abstract with the headings: Background/Aim, Methods, Results, Conclusions and significance of the study. Viewpoint articles should have an unstructured abstract of 150 words or fewer. Abstracts should not contain abbreviations or references.

Key words
Three to five key words must be supplied. They are required to index the content of the paper and should be selected from the US National Library of Medicine's Medical Subject Headings (MeSH) browser list. Key words should be arranged in alphabetical order. Please do not use words already written in your title or abstract.

Text
Authors should use the following subheadings to divide the sections of their manuscript: Introduction, Methods, Results and Conclusion. All articles should include an introduction that provide a background to the article, describes its purpose and outlines its relevance to occupational therapy. References should be made to an established theoretical background and/or background literature. The implications of the work for occupational therapy practice, and further research and/or conceptual development, should be clearly described.

Acknowledgements
The source of financial grants and other funding must be acknowledged, including a frank declaration of the authors' industrial links and affiliations. Authors should state any potential conflicts of interest. The contribution of colleagues or institutions should also be acknowledged. Personal thanks and thanks to anonymous reviewers are not appropriate.

References
The American Psychological Association (author, date, title, source) system of referencing is used (examples are given below). In the text give the author's name followed by the year in parentheses: Smith (2000). If there are two authors use 'and': Smith and Jones (2001), but if cited within parentheses use '&': (Smith & Jones, 2001). When reference is made to a work by three to five authors, cite all the authors the first time: (Davis, Jones, Wilson, Smith, & Lee, 2000); and in subsequent citations, include only the name of the first author followed by et al.: (Davis et al., 2000). When reference is made to a work by six or more authors, the first name followed by et al. should be used in all instances: Law et al. (1997). If several papers by the same author(s) from the same year are cited, a, b, c, etc. should be inserted after the year of publication. Within parentheses, groups of authors should be listed alphabetically. In the reference list, references should be listed in alphabetical order. In the reference list, cite the names of all authors when there are six or fewer; when seven or more, list only the first six followed by et al. Do not use ibid. or op cit.

Reference to unpublished data and personal communications should not appear in the list but should be cited in the text only (e.g. A. Smith, unpublished data, 2000). All citations mentioned in the text, tables or figures must be listed in the reference list.

Authors are responsible for the accuracy of the references.

We recommend the use of a tool such as Reference Manager for reference management and formatting.

Journal article
Bennett, S., & Bennett, J. W. (2000). The process of evidence-based practice in occupational therapy: Informing clinical decisions. *Australian Occupational Therapy Journal*, *47*, 171-180. doi: 10.1046/j.1440-1630.2000.00237.x.

Advanced online publication of journal article with DOI
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Appendices
These should be placed at the end of the paper, numbered in Roman numerals and referred to in the text. If written by a person other than the author of the main text, the writer's name should be included below the title.

Tables
There is a limit of four tables or figures per manuscript. Tables should be self-contained and complement, but not duplicate, information contained in the text. Number tables consecutively in the text in Arabic numerals. Type tables on a separate sheet with the legend above. Legends should be concise but comprehensive - the table, legend and footnotes must be understandable without reference to the text. Vertical lines should not be used to separate columns. Column headings should be brief, with units of measurement in parentheses; all abbreviations must be defined in footnotes. Footnote symbols: †, ‡, §, ¶, should be used (in that order) and *, **, *** should be reserved for P-values. Statistical measures such as SD or SEM should be identified in the headings.

Figures
There is a limit of four tables or figures per manuscript. All illustrations (line drawings and photographs) are classified as figures. Figures should be cited in

consecutive order in the text. Each figure should be labelled on the back in very soft marker or chinagraph pencil, indicating name of author(s), figure number and orientation. Do not use adhesive labels as this prohibits electronic scanning. Figures should be sized to fit within the column (80 mm), intermediate (114 mm) or the full text width (171 mm).

Line figures should be supplied as sharp, black and white graphs or diagrams, drawn professionally or with a computer graphics package. Lettering must be included and should be sized to be no larger than the journal text. Photographs should be supplied as sharp, glossy, black-and-white or colour photographic prints and must be unmounted. Individual photographs forming a composite figure should be of equal contrast, to facilitate printing, and should be accurately squared.

Magnifications should be indicated using a scale bar on the illustration.

If supplied electronically, graphics must be supplied as high resolution (at least 300 d.p.i.) files, saved as .eps or .tif. A high-resolution print-out must also be provided. Digital images supplied only as low-resolution print-outs and/or files cannot be used.

Figure legends
Type figure legends on a separate sheet. Legends should be concise but comprehensive - the figure and its legend must be understandable without reference to the text. Include definitions of any symbols used and define/explain all abbreviations and units of measurement.

AUTHOR SERVICES
Author Services enables authors to track their article, once it has been accepted, through the production process to publication online and in print. Authors can check the status of their articles online and choose to receive automated emails at key stages of production so they do not need to contact the production editor to check on progress. Visit the Author Services website for more details on online production tracking and for a wealth of resources, including FAQs and tips on article preparation, submission and more.

PROOFS
It is essential that corresponding authors supply an email address to which correspondence can be emailed while their article is in production. Notification of the URL from where to download a Portable Document Format (PDF) typeset page proof, associated forms and further instructions will be sent by email to the corresponding author. The purpose of the PDF proof is a final check of the layout, and of tables and figures. Alterations other than the essential correction of errors are unacceptable at PDF proof stage. The proof should be checked, and approval to publish the article should be emailed to the Publisher by the date indicated, otherwise, it may be signed off on by the Editor or held over to the next issue.

APPENDIX D: ETHICS APPROVAL LETTER FROM NORTHERN SYDNEY LOCAL AREA HEALTH DISTRICT HREC

Health
NSW GOVERNMENT | Northern Sydney Local Health District

21 August 2013

Miss Emma Tan
Room J104,
C42 Cumberland Campus
75 East Street
Lidcombe
NSW 2141

Dear Miss Tan,

1305-179M: *Pilot Study to Investigate the Feasibility of an Occupational Therapy Early Referral Survey Tool for Nurses in Acute Care*
Investigator(s): *Miss Emma Tan, Dr Lynette McKenzie, Ms Megan Yeo, Ms Katrina Travassaros*

Thank you for sending the **Northern Sydney Local Health District (NSLHD) Human Research Ethics Committee (HREC)** a proposal for **Low Risk/ Negligible Risk application** for the above study.

Please be advised that the HREC Executive, at their meeting held on **30 July 2013**, has reviewed this study and has concluded that the project is qualified as a **Low Risk** research project and therefore deemed appropriate for expedited review. Please be advised that your study has now been approved.

The documentation included in the approval is as follows:

- Low and negligible Risk (LNR) Application, submission code: AU/6/0622112, dated 16 April 2013
- Patient Information Sheet and Consent Form, Version 2, dated 29 July 2013
- Interview Questions for Semi-structured Interviews Post Trial - Questionnaire, Version 1, dated 9 April 2013
- Modified Blaylock Occupational Therapy referral Survey Tool, Version 1, dated 16 April 2013
- Ward Participation Agreement, Version 3, dated 9 April 2013
- Project Timeline, Version 1, dated 11 April 2013
- Curriculum Vitae of Emma Tan

It is noted that the approval covers the following NSW Health sites:

- Royal North Shore Hospital

It is noted that the study has been assessed by the HREC Executive for *ethical* and *scientific review* ONLY and that clearance on the Site Specific aspects of the trial (local sign-off's, legal documentation etc) MUST be obtained from the above listed sites prior to commencement of research. Each site has different requirements; NSW Area Health Service sites require submission and approval of a Site Specific Assessment (SSA) and/or ACCESS Request Form which can be

Research Office
Kolling Building, Level 13
Royal North Shore Hospital
St Leonards NSW 2065
Tel (02) 9926 4590 Fax (02) 9926 6179

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NSLHD REF NO: 1305-179M,

completed at: www.ethicsform.org/au. Please contact the local site for advice on what will be required.

At this time, we also remind you that, in order to comply with the approval of **LOW RISK RESEARCH**, in line with NSLHD HREC policy, the Chief Investigator is responsible to ensure that:

1. *The HREC is notified of anything that might warrant review of the ethical approval of the project, including unforeseen events that might affect the ethical acceptability of the project.*
2. *The HREC is notified of all Serious Adverse Events (SAEs) or Serious Unexpected Suspected Adverse Reactions (SUSARs) in accordance with the Serious Adverse Event Reporting Guidelines. Please refer to the Research Office website.*
3. *Proposed amendments to the research protocol or conduct of the research that may affect the ethical acceptability of the project are submitted to the HREC on an amendment form (including any relevant attachments). For multi-centre studies, the Chief Investigator should submit to the Lead HREC and then send the amendment approval letter to the investigators at each of the sites so that they can notify their Research Governance Officer.*
4. *Proposed changes to the personnel involved in the study are submitted to the HREC on a Change in Personnel Form (accompanied by the investigator's CV where applicable).*
5. *The HREC must be provided with an annual progress report for the study by the 31st October each year. For multi-centre studies the Chief Investigator should submit to the Lead HREC on behalf of all sites.*
6. *The HREC must also be provided with a final report upon completion of the study. For multi-centre studies the Chief Investigator should notify the Lead HREC and the investigators at each site should notify the relevant Research Governance Officer.*
7. *The HREC must be notified, giving reasons if the project is discontinued at a site before the expected date of completion.*

Please refer to the NSLHD Research Office website to access forms such as the amendment form, Annual/Final Report Form, Change in Personnel Form and Serious Adverse Event Guidelines and Forms;

Internet:
http://www.northernsydneyresearch.com.au

HREC approval is valid for five (5) years from the date of the approval letter.
Your approval will therefore expire on the 21 August 2018.
Your first progress report is due on the 31st October 2013.

Yours sincerely,

Katherine Chubb
Ethics Manager
Research Office
NORTHERN SYDNEY LOCAL HEALTH DISTRICT

Carbon Copy: Ms Megan Yeo and Dr Lynette McKenzie

AURED NEAF REF: *LNR/13/HAWKE/187*
NSLHD REF NO: 1305-179M,

PARTICIPANT INFORMATION SHEET

**Pilot Study to Investigate the Feasibility of an Occupational Therapy Early
Referral Survey Tool**

Invitation
You are invited to participate in a research study for a trial of an occupational therapy
referral survey. The study will investigate whether this survey is practical and
effective for use by nurses on the ward to identify when Occupational Therapy
referral is required.

The study is being conducted by Emma Tan as part of the degree of Master of
Occupational Therapy at The University of Sydney, under the supervision of Lynette
Mackenzie, Associate Professor – Discipline of Occupational Therapy, The
University of Sydney. Katrina Travassaros - Student Unit Supervisor, Occupational
Therapy Department, Royal North Shore Hospital and Megan Yeo - Acute Care Team
Senior Occupational Therapist, Occupational Therapy Department, Royal North
Shore Hospital will be supporting this study as investigators.

Before you decide whether or not you wish to participate in this study, it is
important for you to understand why the research is being done and what it will
involve. Please take the time to read the following information carefully and
discuss it with others if you wish.

1. What is the purpose of this study?
The purpose of this study is to investigate whether a trial occupational therapy referral
survey is practical for use by nurses on the ward. The survey uses 13 questions
covering functional, physical, cognitive and psychosocial status to identify whether
Occupational Therapy referral is required. The survey is proposed to be used by
nurses within 48 hours of admission of a patient. Earlier identification of patients
requiring Occupational Therapy will allow for the more efficient development and
implementation of timely, comprehensive and client centred care plans.

2. Why have I been invited to participate in this study?
You have been identified as a nurse working in an area where the study is to be
conducted who may be interested in participating.

**3. What if I don't want to take part in this study, or if I want to withdraw
later?**
Participation in this study is completely voluntary - you are not under any obligation
to consent and - if you do consent - you can withdraw at any time without affecting

your relationship with Royal North Shore Hospital. However once survey tools have been submitted anonymously, your responses cannot be withdrawn.

If you agree to participate in an interview you may stop the interview at any time if you do not wish to continue and the information provided will not be included in the study.

4. What does this study involve?
If you agree to participate in this study, you will be asked to sign the Participant Consent Form.

You will then be trained in the use of the Modified Blaylock Occupational Therapy Referral Survey Tool. The survey data will be collected over a period of one month. You will be requested to fill out the trial referral survey as part of the standard administration procedures on admission. The survey itself will be de-identified before being forwarded to the project investigators.

On completion of the study, you may be invited to participate in a 30-60 minute audio taped interview to provide your feedback on the survey and suggest any improvements to the process.

All data collection and interviews will take place at Royal North Shore Hospital.

5. How much time will the study take?
Participants will complete the referral surveys as part of the normal admission administration process. The survey is only a small addition to the admission process. Surveys will be collected over a period of one month.

Nurses who agree to participate in interviews will need to allow for 30-60 minutes for an interview to be completed at the completion of the survey trial. This will be conducted within your working hours.

6. How is this study being paid for?
No funding is required for the study. No money is paid directly to individual researchers and there are no conflicts of interest.

7. Are there risks to me in taking part in this study?
As the study involves only the completion of a checklist, there are no physical or medical risks involved.

8. What happens if I suffer injury or complications as a result of the study?
This study will require additional time to complete the checklist during the admission administration process. The Clinical Nurse Consultant for your ward is aware of this extra time demand on your workload.

There are no injuries anticipated as a result of this study. Participants in this study are covered by existing Occupational Health and Safety policies.

9. 'Will I benefit from the study?'

This study aims to improve the Occupational Therapy referral process and may improve future identification and treatment of functional impairment, however it will not directly benefit you.

10. Will taking part in this study cost me anything, and will I be paid?
Participation in this study will not cost you anything. Participation is on a voluntary basis and therefore does not involve a payment to the participants.

11. How will my confidentiality be protected?
All aspects of the study, including results, will be strictly confidential and only the researchers will have access to information on participants.

The surveys do not require nurse sign off and will be de-identified hence completed surveys cannot be tracked back to individual nurses.

12. What happens with the results?
If you give us your permission by signing the consent document, we plan to discuss/publish the results as part of an Occupational Therapy Masters thesis and a publication in the Australian Occupational Therapy Journal.

In any publication, information will be provided in such a way that you cannot be identified. Results of the study will be provided to you, if you wish.

13. Can I tell other people about the study?
Yes – although only nurses nominated by their Clinical Nurse Consultant are eligible to participate.

14. What should I do if I want to discuss this study further before I decide?
When you have read this information, the researcher, Emma Tan will discuss it with you and any queries you may have. If you would like to know more at any stage, please do not hesitate to contact her on 0457711235.

14. Who should I contact if I have concerns about the conduct of this study?
This study has been approved by Northern Sydney Local Area Health District HREC. Any person with concerns or complaints about the conduct of this study should contact The Research Ethics Manager, Kollings Institute/Northern Sydney Local Health District who is the person nominated to receive complaints from research participants. You should contact them on 9926 4592 and quote project number 1305-197M.

<div align="center">

Thank you for taking the time to consider this study.
If you wish to take part in it, please sign the attached consent form.
This information sheet is for you to keep.

</div>

PARTICIPANT CONSENT FORM

Pilot Study to Investigate the Feasibility of an Occupational Therapy Early Referral Survey Tool

1. I,...
    of...
    agree to participate as a subject in the study described in the participant information statement attached to this form.

2. I acknowledge that I have read the participant information statement, which explains why I have been selected, the aims of the study and the nature and the possible risks of the investigation, and the statement has been explained to me to my satisfaction.

3. Before signing this consent form, I have been given the opportunity of asking any questions relating to any possible physical and mental harm I might suffer as a result of my participation and I have received satisfactory answers.

4. I understand that I can withdraw from the study at any time without prejudice to my relationship to Royal North Shore Hospital.

5. I agree that research data gathered from the results of the study may be published, provided that I cannot be identified.

6. I understand that if I have any questions relating to my participation in this research, I may contact Emma Tan on telephone 0457711235, who will be happy to answer them.

7. I acknowledge receipt of a copy of this Consent Form and the Participant Information Statement.

8. I understand that if I consent to an interview I can stop the interview at any time if I do not wish to continue, the audio recording will be erased and the information provided will not be included in the study.

9. I consent to:
    - Participation in an interview   YES ☐   NO ☐
    - Audio-recording   YES ☐   NO ☐
    - Receiving Feedback   YES ☐   NO ☐

If you answered YES to the "Receiving Feedback" question, please provide your details i.e. mailing address, email address.

<u>Feedback Option</u>

Address: _____

            _____

Email: _____

Complaints may be directed to The Research Ethics Manager, Kollings Institute/Northern Sydney Local Health District who is the person nominated to receive complaints from research participants. You should contact them on 9926 4592 and quote project number 1305-197M.

Signature of subject   Please PRINT name   Date

_____

Signature of investigator   Please PRINT name   Date

_____