

Content validity of the ResCareQA: An Australian residential care quality assessment based on resident outcomes

AUTHORS

Dr Mary Courtney

RN, BA, MHP, PhD

Dean - Faculty of Health and Social Development,
University of British Columbia Okanagan, University
Way Kelowna, Canada.
Mary.Courtney@ubc.ca

Dr Maria O'Reilly

BOccThy, MOccThy, PhD

Senior Research Assistant, Institute of Health and
Biomedical Innovation, Queensland University of
Technology, Kelvin Grove, Queensland, Australia.
m2.oreilly@qut.edu.au

Prof Helen Edwards

RN, DipAppSc, BA, PhD

Head, School of Nursing and Midwifery, Queensland
University of Technology, Kelvin Grove Queensland,
Australia.
h.edwards@qut.edu.au

Dr Stacey Hassall

BA (Psych), PostGradDipProfPsych, MOrgPsych, PhD
A/Manager Evidence (Research), Disability, Community
Care Services and Multicultural Affairs Queensland,
Brisbane, Queensland, Australia.
Stacey.Hassall@Communities.qld.gov.au

Acknowledgements

This project was made possible through funding from UnitingCare Australia, Blue Care (Brisbane), the Queensland University of Technology Strategic Linkages Scheme, and the Queensland Nursing Council. The views expressed are those of the authors and do not necessarily represent the views of the funding bodies

KEY WORDS

Ageing, residential care, quality of care, validity, Delphi process

ABSTRACT

Objective

To determine the face and content validity of the Residential Care Quality Assessment (ResCareQA) developed to fill the current gap in quality assessment tools within the Australian residential aged care system. The ResCareQA contains 24 questions across four domains: *Resident Health* (seven questions), *Personal Care* (five questions), *Resident Lifestyle* (five questions) and *Care Environment* (seven questions), and allows the easy calculation of 36 clinical indicators for an overall assessment of quality in the residential care setting.

Design

Face and content validity were assessed by using modified Delphi process to consult an expert panel of experienced aged care professionals and a consumer representative.

Setting

The Delphi questionnaire was distributed via email and all panellists completed it online in their own home or place of work.

Subjects

The expert panel constituted six members, all of whom were experienced residential aged care professionals.

Main outcome measures

The Delphi survey aimed to reach agreement about the face and content validity of the assessment tool.

Results

All agreed the ResCareQA had good face and content validity, although some minor changes were suggested to improve content validity.

Conclusion

The ResCareQA provides a comprehensive but easy to administer means of monitoring quality in residential aged care facilities, with the tool usually completed in less than 30 minutes. Example questions are included with this article.

INTRODUCTION

Assessing quality of care is a vexatious issue that is not well addressed within the Australian residential aged care system (O'Reilly et al 2007). While the Accreditation process has been credited with improving quality within this sector, it is regarded by many as not going far enough, particularly as it has little emphasis on clinical outcomes (Australian Society for Geriatric Medicine 2002). Outcomes represent the result of all inputs into care and are thus important indicators of care quality. In recent years, the Victorian State Government has released quality indicators for state-run facilities (Department of Human Services 2007; Victorian Department of Human Services 2004) and the Federal Government has begun exploring the issue (Department of Health and Ageing 2007), but Australia does not yet have a standardised system of quality assessment related to clinical outcomes (O'Reilly et al 2007). In light of this gap, the Clinical Care Indicator (CCI) Tool was developed after extensive industry consultation and exploration of methods used internationally, such as the Minimum Data Set (MDS), which is used in the United States (Courtney et al 2007). The MDS forms part of an integrated case-mix, care planning and quality assessment system, used to collect a comprehensive set of clinical data at prescribed intervals (Murphy et al 1995; Mukamel and Spector 2003; Karon and Zimmerman 1998; Shipman et al 2005; Mor et al 2003). This system is considered to be largely responsible for improved quality outcomes within US nursing homes since its introduction in 1991 (Achterberg et al 1999; Hawes et al 1997; Phillips et al 1997; Mor et al 2003; Mukamel and Spector 2003). However, rather than adopting something developed for another country, the aim of the CCI Tool was for it to be relevant to Australian clinicians and facilities. The items in the CCI Tool were originally identified by expert clinicians and industry representatives from Australia (Courtney et al 2007), and it was refined after a national pilot and a Brisbane-based trial of its use within the quality improvement context. The final version of

the CCI Tool covered 23 clinical areas, within four domains of care (*Resident Health, Personal Care, Resident Lifestyle, Care Environment*). The domains reflect those within the Accreditation Standards to facilitate ease of use (Courtney et al 2007). Outcome data is expressed as clinical care indicators (CCIs), which, as their name implies, indicate areas where care should be reviewed. Trials found the CCI Tool could generate comprehensive and holistic clinical outcome data, while remaining relatively quick and easy to administer (Courtney et al 2007). The tool was favourably viewed by those who used it because it enabled them to review and act on clinical feedback. The CCI Tool thus demonstrated real potential to contribute to enhanced quality within residential aged care in Australia.

Scope of this paper

When developing new measures, it is essential that their accuracy and applicability to the relevant population be established through psychometric evaluation (Greenwood 2004; Bowling 2002; Polit et al 2001). Of the numerous psychometric properties that must be investigated, face validity and content validity are the most fundamental and should be established before any others. *Face validity* is the degree to which a measurement instrument appears to measure what it is supposed to be measuring (Bowling 2002; Greenwood 2004; Polit et al 2001). While superficial and based on subjective impressions, it is important for an instrument to have reasonable face validity in order for users to consider completion worthwhile (Greenwood 2004). *Content validity* refers to the degree to which the items in an instrument adequately cover areas of importance and interest, with no irrelevant content included (Greenwood 2004; Bowling 2002; Polit et al 2001; Jordan et al 1998). Commonly both constructs are established using an expert panel (Greenwood 2004; Bowling 2002; Polit et al 2001; Jordan et al 1998). In the study reported on in this paper expert assessment of face and content validity was undertaken using modified Delphi technique, resulting in a revised version of the CCI Tool, renamed the *ResCareQA*.

METHOD

The Delphi process

The Delphi technique has been in use for a number of decades and is regarded as an effective means of ascertaining group consensus (Delbecq et al 1975; Bowling 2002; Cross 2005; de Villiers et al 2005; Sandin Bojö et al 2004). Utilising a structured process, the technique enables simultaneous consultation with a group of experts to arrive at group agreement (Bowling 2002; Delbecq et al 1975; Jones and Hunter 1996; de Villiers et al 2005; Kennedy 2004; Sandin Bojö et al 2004). Specifically, Delphi process involves several rounds of questionnaires, which progressively refine responses to an issue until agreement between respondents is reached or approximated (Bowling 2002; Delbecq et al 1975; Cross 2005; de Villiers et al 2005; Jones and Hunter 1996; Sandin Bojö et al 2004). The advantages of this technique are that it allows respondents time to deliberate, does not require scheduling meetings, and retains anonymity. The disadvantages are that it often takes a long time to complete and it does not enable the free generation of ideas that can occur through discussion (Delbecq et al 1975; Kennedy 2004). Given the logistical difficulties presented by trying to bring busy panellists together at the same time, a modified Delphi technique was considered the most suitable means of ensuring participation.

Expert panel recruitment

The expert panel comprised experienced aged care clinicians, managers and researchers, as well as a consumer representative. Invitations to participate were sent to potential panellists, with information about the study and expression of interest forms for return via post or e-mail. Telephone and email follow-up confirmed participation. Out of 19 people invited, the final panel comprised six members. Those who could not take part cited time pressures as their primary reason for non-participation.

Ethical considerations

All participants were volunteers who could withdraw at any time. Confidentiality was maintained throughout the process, with data stored securely with the second author. Ethical approval was obtained from the Queensland University of Technology Human Research Ethics Committee.

Procedure

Participants were emailed copies of the CCI Tool and its User's Guide. Face validity was ascertained by an overall judgement of the CCI Tool as an appropriate instrument for assessing clinical status and care outcomes within residential aged care. Content validity was established through assessment of each item and deciding whether it (a) was appropriate for inclusion, and (b) adequately assessed the clinical area it aimed to. Participants entered their responses into e-forms and emailed them back to the researchers, who then reviewed and collated the replies. Changes were made to the CCI Tool according to suggestions where appropriate (i.e. if the suggested changes matched the purposes of the assessment). While traditional Delphi process incorporates the use of a ranking system in its responses (de Villiers et al 2005; Jones and Hunter 1996), this study utilised an alternative approach, whereby qualitative comments and suggestions were collated and incorporated into the revised assessment. Due to recruiting delays, the panel was also smaller than the recommended 10-15 participants (Cross 2005; de Villiers et al 2005; Delbecq et al 1975). For these reasons, the procedure followed is referred to as *modified* Delphi process. The specific questions asked of the panellists are included in Appendix 1.

Pooled results were returned to panel members for further comment, with the responses from the second round subsequently reviewed. As agreement had been reached by this stage, summarised feedback and a final revision of the CCI Tool was then returned to the panel. The end result of this process was a revised assessment tool - the ResCareQA.

FINDINGS

Face validity

Responses confirmed that the ResCareQA had acceptable face validity, although further explanation was required to ensure understanding that it was designed to indicate clinical care quality, not for use as a care planning instrument. Such clarification was added to the User's Guide. The panel raised concerns about its length and ease of use. This

will be monitored over time, but previous trials had suggested that care staff found it easy to use, with a mean completion time of just under 30 minutes (Courtney et al 2007).

Content validity

Most comments about content validity were directed towards adding more detail, with more of a care planning focus. However, while the ResCareQA might provide useful information for care planning, its focus is on using outcomes to indicate care *quality*, and some details required for care *planning* would add unnecessary complexity to the assessment. This confirmed the need for clearer explanation of the assessment's purpose in the User's Guide. After completion of the Delphi process, a number of changes and additions were made to create the final version of the ResCareQA. The specific changes are outlined below.

Unplanned hospital visits: a new indicator was added to the "Resident Health" section (see table 1). The item indicates the number of unplanned hospital admissions and/or visits to an emergency department in the three months prior to assessment. A high number of unplanned hospital visits would be considered an adverse event suggesting the need to review resident clinical status and care procedures.

Toileting and continence: this item was changed from a focus on continence alone, to an assessment of other toileting issues as well. In doing so, two new questions were added - *Toileting Appliances* and *Faecal Impaction*.

Hydration status: this item was modified to focus on under-hydration only, since research suggests that over-hydration is rarely a problem in the residential aged care context (Mentes 2006; Dimant 2001). Listed in the item are the most reliable clinical signs of dehydration identified in the literature (aside from laboratory tests) (Bennett 2000; Dimant 2001; Keller 2006; Mentes 2006; Sullivan 2005). Because dehydration is a clinical emergency, the timeframe for observing lack of fluid intake was shortened from one week to three days.

Activities of daily living: the definitions pertaining to activities of daily living in the user's guide were modified slightly to provide further clarification.

Care of the senses: no concerns were expressed by panel members. However, on conducting its own review, the research team made the scales for hearing and vision more consistent with each other and in line with standard descriptors of levels of impairment (Hear-It AISBL 2008; World Health Organization 2010).

Communicating: responses to this item originally took the form of a three-point Lickert-type scale ("*usually understands*", "*sometimes understands*", "*rarely/ never understands*"). After panel review, an extra item ("*no problems*") was added.

Adaptation and behaviour patterns: this was adjusted to ensure consistent differences between points on the scale.

Restraints: the term "*environmental restraints*" was changed to "*environmental modification*", which acknowledges that such strategies entail adjusting the environment to minimise risk of absconding or harm, rather than directly limiting the movement of the resident, as is the case with restraint. A new point on the scale was also added ("*used occasionally but not in last week*").

Depression: the panel deemed this item too long and difficult to complete. The indicators of depression were subsequently replaced by the *Cornell Depression in Dementia Scale* (Alexopoulos et al 1988), a screening tool which can be applied to both cognitively intact and cognitively impaired individuals (De Bellis and Williams 2008). While the section on depression symptoms remains long, the format is somewhat clearer than on the original CCI Tool, and it is based on an assessment that will become increasingly familiar to residential aged care staff across Australia, as its use is advocated with the new Aged Care Funding Instrument (ACFI) (De Bellis and Williams 2008). The numerical summary score from this scale is also useful in that it provides an uncomplicated means of identifying residents with possible clinical depression. However, its inclusion should not be considered a diagnostic tool, but rather as a trigger - any residents identified as

potentially depressed should then be assessed by a medical professional. Subsequent sections of the “*Depression*” item were also simplified, by omitting one section (“*mood persistence*”) and combining

two others (“*medication*” and “*other therapies*” - into “*treatment*”). While still a lengthy item, this outcome indicator is an important one to measure (De Bellis and Williams 2008).

Table 1: The ResCareQA - care domains and clinical areas assessed (*italic text indicates modified/ added items*)

Care domain	Clinical area	Clinical care indicators (ccis)
Resident health	1. Pressure ulcer rates	Presence of ulcers
	2. Skin integrity	Presence of lesions
	3. Infections	Presence of infections
	4. Medication	a. Polypharmacy b. No pharmacy review
	5. Pain management	a. Pain frequency: daily pain b. Pain severity: severe pain
	6. Cognitive status	Decline in cognitive function
	7. <i>Unplanned Hospital Visits</i>	<i>Multiple unplanned hospital admissions</i>
Personal care	8. <i>Toileting and continence</i>	a. Bladder continence b. Bowel continence c. <i>Toileting appliance</i> d. <i>Faecal impaction</i>
	9. <i>Hydration status</i>	Poor hydration
	10. Activities of daily living	Activities of daily living decline
	11. Dental Health	Poor dental health
	12. <i>Care of the senses</i>	a. Sensory decline b. Sensory aids
	13. Nutrition	a. Poor nutritional status b. <i>Fed by tube</i>
	14. Meaningful activity	Meaningful activity
Resident lifestyle	15. Sleeping patterns	a. Sleep disturbance b. Use of sedatives
	16. <i>Communicating</i>	a. Communication difficulties b. Communication difficulties without use of communication aids c. Difficulties with English language without access to translators
	17. <i>Adaptation and behaviour patterns</i>	Disruptive behaviour
Care environment	18. <i>Restraints</i>	a. Physical restraints b. Chemical restraints
	19. Falls	Falls in the last month
	20. <i>Depression</i>	a. Symptoms of depression b. Symptoms of depression without treatment
	21. Family involvement	Family support
	22. Allied health	Allied health contact
	23. <i>Medical visits</i>	<i>Medical visits</i>
	24. Multi-disciplinary case conferences	Multi-disciplinary case conferences

Medical visits (formerly “doctors’ visits”): one respondent suggested there was no reference to specialists within this item, even though specialists were in fact included in the User’s Guide instructions. It is hoped by changing the name to the broader “*medical visits*” and highlighting “*doctor/specialist*”

in its body, it should be more obvious to someone completing the form that this item includes doctors of all forms (excluding those who saw the resident during an unplanned hospital admission). Other health professionals are included in the “*allied health*” section.

The revised CCI Tool: the ResCareQA

After all the above adjustments were made, the ResCareQA contained subtle differences to the CCI Tool, including an extra clinical area for assessment (unplanned hospital visits). The ResCareQA was circulated to the panel, along with their collated comments. After review, all agreed that the revised instrument was acceptable and it was adopted for further reliability and validity analysis. Table 1 provides a summary of the ResCareQA, outlining clinical areas assessed and their relevant CCIs. Highlighted entries in the table indicate where changes to the CCI Tool were made to create the ResCareQA. Sample questions from the ResCareQA are shown in Appendix 2. When used, raw data from this form is converted into CCIs through use of numerators and denominators, examples of which are in Appendix 3. Anyone interested in using the ResCareQA can obtain it and its supporting documents from the authors.

DISCUSSION

While there is a high level of regulation within the Australian residential aged care system, comprehensive quality assessment and related benchmarks are conspicuous by their absence. It is widely agreed that the key to evaluation of quality, effectiveness, and outcomes of care of older people is the use of comprehensive assessment. Such assessment, specifically of the physical, social, and psychological wellbeing of older people, should be able to provide potential residents, carers, providers, and regulators with a sound information base about the appropriateness and effectiveness of service delivery. In recent years, the Federal Government has released recommended care documentation procedures (Department of Health and Ageing 2005), extensively reviewed the Residential Care Scales (RCS) (Aged Care Evaluation and Management Advisors 2003) resulting in the new ACFI funding assessment (Department of Health and Ageing 2007b), and is now undertaking a review of the Accreditation Process (Office of Aged Care Quality and Compliance 2009). The Victorian State Government, which operates a large number of residential aged

care facilities, introduced its own set of five quality indicators in 2006, for which benchmarks are currently being developed (Department of Human Services 2007). However, apart from a document released in 2007 (Department of Health and Ageing 2007a) the Federal Government has not made any visible moves to introduce universal quality monitoring that extends beyond the Accreditation standards.

To address the absence of a national quality monitoring assessment, the ResCareQA was developed. The ResCareQA collects data on 24 areas of care, can be completed in 30 minutes, and has been designed to complement the ACFI, such that little extra work is required by care staff to use it. Trials prior to the commencement of this study found it to be user-friendly and capable of collecting useful clinical data. This study further established its utility by confirming face and content validity.

Limitations

Recruiting and consulting the expert panel took much longer than expected - dealing with busy people requires diligence with follow-up and reminders. While a panel of 10-15 respondents would have been ideal (Cross 2005; de Villiers et al 2005; Delbecq et al 1975), six respondents have been successfully used in previous Delphi panels (Sandin Bojö et al 2004) and it was simply not feasible to continue trying to source members. Further, it should be noted that the ResCareQA had already been extensively reviewed by a number of other expert panels and revised accordingly in earlier phases of its development (Courtney et al 2007), constituting proxy Delphi rounds in themselves. This study sought merely to formalise face and content validity of the assessment.

CONCLUSIONS

Establishing face and content validity of the ResCareQA consolidated its value as a quality assessment tool for the residential aged care industry. The strengths of the ResCareQA are that it is holistic but manageable - covering a wide range of clinical issues relevant to residents of aged care

facilities, with a manageable completion time. Creating further brevity in the assessment at the expense of richness of data would risk missing key aspects of residential care. Another strength of the ResCareQA is that it was developed specifically for Australian facilities, based on input from industry representatives, and using similar terminology as that in the ACFI and Accreditation assessments, thereby ensuring its applicability for the Australian context. Analysis of further psychometric properties, utilising quantitative data will be reported on in a subsequent article. Aged care facilities require a valid and reliable means of monitoring care quality and informing quality improvement strategies. Establishing the ResCareQA as a valid and reliable instrument should thus make a valuable contribution to the state of residential aged care in Australia.

REFERENCES

- Achterberg, W., van Campen, C., Margriet, A., Kerkstra, A., and Ribbe, M.W. 1999. Effects of the Resident Assessment Instrument on the care process and health outcomes in nursing homes. A review of the literature. *Scandinavian Journal of Rehabilitation Medicine*, 31(3):131-37.
- Aged Care Evaluation & Management Advisors. 2003. Resident Classification Scale Review (Aged & Community Care Service Development & Evaluation Reports No. No. 43). Canberra: Department of Health & Ageing
- Alexopoulos, G.S., Abrams, R.C., Young, R.C., and Shamoian, C.A. 1988. Cornell Scale for depression in dementia. *Biological Psychiatry* 23(3):271-284.
- Australian Society for Geriatric Medicine. 2002. Position Statement 10: Residential Aged Care from the Geriatrician's Perspective. *Australasian Journal on Ageing*, 21(1):46-51.
- Bennett, J.A. 2000. Dehydration: Hazards and benefits. *Geriatric Nursing*, 21(2):84-88.
- Bowling, A. 2002. Research methods in health: Investigating health and health services. 2nd ed. Buckingham: Open University Press.
- Courtney, M., O'Reilly, M.T., Edwards, H., and Hassall, S. 2007. Development of a systematic approach to assessing quality within Australian residential aged care facilities: The Clinical Care Indicators (CCI) Tool. *Australian Health Review*, 31(4):582-591.
- Cross, H. 2005. Consensus methods: a bridge between clinical reasoning and clinical research? *International Journal of Leprosy and Other Mycobacterial Diseases*, 73(1):28-32.
- De Bellis, A., and Williams, J. 2008. The Cornell Scale for Depression in Dementia in the context of the Australian Aged Care Funding Instrument: a literature review. *Contemporary Nurse: A Journal for the Australian Nursing Profession*, 30(1):20-31.
- de Villiers, M.R., de Villiers, P.J.T., and Kent, A.P. 2005. The Delphi technique in health sciences education research. *Medical Teacher*, 27(7):639-643.
- Delbecq, A.L., Van de Ven, A.H., and Gustafson, D.H. 1975. Group techniques for program planning: A guide to nominal group and Delphi processes. Middleton: Green Briar Press.
- Department of Health & Ageing. 2005. Documentation and Accountability Manual. Retrieved 15 September, 2005, from <http://www.health.gov.au/internet/wcms/Publishing.nsf/Content/ageing-manuals-dam-download.htm>
- Department of Health and Ageing. 2007a. Developing resident-centred quality indicators in residential aged care (Report to support the project for the Evaluation of the impact of accreditation on the delivery of quality of care and quality of life to residents in Australian Government subsidised residential aged care homes). Canberra: Commonwealth of Australia.
- Department of Health & Ageing. 2007b. New Funding Model for Residential Aged Care: Welcome to the Aged Care Funding Instrument. Retrieved 9 December, 2009, from <http://www.health.gov.au/internet/main/publishing.nsf/Content/New+Funding+Model+for+Residential+Aged+Care-1>
- Department of Human Services. 2007. Resource manual for Quality Indicators in Public Sector Residential Aged Care Services (2007 - 2008 version 1). Melbourne: State of Victoria, Department of Human Services, Rural and Regional Health and Aged Care Services Division.
- Dimant, J. 2001. Delivery of nutrition and hydration care in nursing homes: Assessment and interventions to prevent and treat dehydration, malnutrition, and weight loss. *Journal of the American Medical Directors Association*, 2(4):175-182.
- Greenwood, K.M. 2004. Measurement: Concepts, tools and issues. In Handbook of research methods for nursing and health science., edited by V. Minichiello, G. Sullivan, K. Greenwood and R. Axford. Frenchs Forest: Pearson: Prentice Hall.
- Hawes, C., Mor, V., Phillips, C.D., Fries, B.E., Morris, J.N., Steele-Friedlob, E., Greene, A.M., and Nennstiel, M. 1997. The OBRA-87 nursing home regulations and implementation of the Resident Assessment Instrument: Effects on process quality. *Journal of the American Geriatrics Society*, 45(8):977-985.
- Hear-It AISBL. 2010. Defining hearing loss 2008 [cited 28 April 2010]. Available from <http://www.hear-it.org/page.dsp?page=334>.
- Jones, J., and Hunter, D. 1996. Consensus methods for medical and health services research. In Qualitative research in health care, edited by N. Mays and C. Pope. London: BMJ.
- Jordan, K., Ong, B.N., and Croft, P. 1998. Mastering statistics: A guide for health service professionals and researchers. Cheltenham: Stanley Thornes Publishers.
- Karon, S.L., and Zimmerman, D.R. 1998. Nursing home quality indicators and quality improvement initiatives. *Topics in Health Information Management*, 18(4):46-58.
- Keller, M. 2006. Maintaining oral hydration in older adults living in residential aged care facilities. *International Journal of Evidence-Based Healthcare*, 4(1):68-73.
- Kennedy, H.P. 2004. Enhancing Delphi research: Methods and results. *Journal of Advanced Nursing*, 45(5):504-511.
- Mentes, J. 2006. Oral hydration in older adults: Greater awareness is needed in preventing, recognizing, and treating dehydration. *The American Journal Of Nursing*, 106(6):40-49.
- Mor, V., Angelelli, J., Gifford, D., Morris, J., and Moore, T. 2003. Benchmarking and quality in residential and nursing homes: Lessons from the US. *International Journal of Geriatric Psychiatry*, 18(3):258-266.

Mukamel, D.B., and Spector, W.D. 2003. Quality Report Cards and nursing home quality. *The Gerontologist*, 43(Spec Issue II):58-66.

Murphy, K., Morris, J., Fries, B., and Zimmerman, D. 1995. The Resident Assessment Instrument: Implications for quality, reimbursement, and research. *Generations*, 19(4 winter):43-46.

O'Reilly, M., Courtney, M., and Edwards, H. 2007. How is quality being monitored in Australian residential aged care facilities? A narrative review. *International Journal for Quality in Health Care*, 19(3):177-182.

Phillips, C.D., Hawes, C., Mor, V., Fries, B.E., and Morris, J.N. 1997. Geriatric assessment in nursing homes in the United States: Impact of a national program. *Generations*, 21(4):15-20.

Polit, D.F., Beck, C.T., and Hungler, B.P. 2001. *Essentials of nursing research: Methods, appraisal, and utilization*. 5th ed. Philadelphia: Lippincott.

Sandin Bojö, A.-K., Hall-Lord, M.-L., Axelsson, O., Udén, G., and

Larsson, B.W. 2004. Midwifery care: Development of an instrument to measure quality based on the World Health Organization's classification of care in normal birth. *Journal of Clinical Nursing*, 13(1):75-83.

Shipman, P., Popejoy, L., McGauley, S., Minner, D., and Vogelsmeier, A. 2005. MDS Version 2.0 item-by-item self study guide and quick reference. The Quality Improvement Program for Missouri 2005 [cited 10th May 2005]. Available from www.nursinghomehelp.org/itembyitem.pdf.

Sullivan, R.J., Jr. 2005. Fluid intake and hydration: Critical indicators of nursing home quality. *North Carolina Medical Journal*, 66(4):296-299.

Victorian Department of Human Services. 2004. Public sector residential aged care policy: The Victorian Government's role in residential aged care. services. Melbourne: Aged Care Branch, Department of Human Services.

World Health Organization. 2010. Visual impairment and blindness 2009 [cited 28 April 2010]. Available from <http://www.who.int/mediacentre/factsheets/fs282/en/>.

APPENDIX 1: PANEL QUESTIONS

1. Please comment on the over-all suitability of this assessment for use within residential aged care.
2. For each section of the assessment, as listed below, please comment on :-
 - a. The suitability of the question(s) for inclusion
 - b. The wording of the question(s)
 - c. Whether you believe anything should be added
3. Are there any other comments you'd like to make about the form and its contents?

APPENDIX 2:

Example Questions from the ResCareQA (Residential Care Quality Assessment)

Resident Health

4	Medication	Answer both questions below, in regards to medications taken by the resident.
a	Poly-pharmacy	Record the number of different medications taken by the resident in the last week. If no medications used, please enter zero ('0').
b	Pharmacy Review	Has a pharmacy review been conducted in the last 3 months? (tick the relevant box) <input type="checkbox"/> Yes <input type="checkbox"/> No

Personal Care

9	Hydration Status	Record if any of the following indicators of fluid status are present (tick relevant box/es).
.	a. None	<input type="checkbox"/>
	b. Weight loss of 1.5kg within the last week	<input type="checkbox"/>
	c. Oral signs - dry mucous membranes/ tongue furrows	<input type="checkbox"/>
	d. Output exceeds input	<input type="checkbox"/>
	e. Lack of fluid intake - did not consume all or most of the drinks given in last 3 days	<input type="checkbox"/>
	f. Dry, flaky skin	<input type="checkbox"/>
	g. Loss of tissue turgor	<input type="checkbox"/>

Resident Life Style

14 Meaningful Activity	Record the average time in last week that resident was involved in activities of personal interest and meaning.	
See Users Guide for definitions	Most of the time - more than 2/3 of time	<input type="checkbox"/>
	Some of the time - from 1/3 to 2/3 of time	<input type="checkbox"/>
	Little of the time - less than 1/3 of the time	<input type="checkbox"/>
	None of the time	<input type="checkbox"/>

Care Environment

18 Restraints	Record the use of restraints during the last week. Please use one of the codes below (0, 1, 2, 3) in the box beside each type of restraint.	
Codes	Not used	
	Used occasionally but not in last week	
	Used during last week, but not daily	
	Used daily	
Restraint types	Chair that prevents rising	
	Trunk restraint	
	Limb restraint	
	Bed rails used for restraint purposes	
	Any type of chemical restraint	
	Environmental modification (e.g. door alarms)	

APPENDIX 3:**ResCareQA: Example Clinical Care Indicators***

(*) Full list of Clinical Care Indicators and User's Guide available from the authors on request.

Resident Health**4. Medication Management****a. Polypharmacy**

Definition: Use of nine (9) or more different medications.

Numerator: Residents who receive nine (9) or more different medications on most recent assessment.

Denominator: All residents on most recent assessment.

b. No Pharmacy Review

Definition: Prevalence of medication prescription without pharmacy review.

Numerator: Residents who did not have their medications reviewed by a doctor or pharmacist in the three months prior to the most recent assessment.

Denominator: All residents on most recent assessment.

Personal Care**9. Poor Hydration Status**

Definition: Prevalence of dehydrated residents.

Numerator: Number of residents with two (2) or more indicators of poor hydration status on most recent assessment.

Denominator: All residents on most recent assessment.

Resident Lifestyle**14. Meaningful Activity**

Definition: Prevalence of little or no participation in meaningful activity.

Numerator: Residents with little or no meaningful activity (score of 2 or 3) at most recent assessment.

Denominator: All residents on most recent assessment.

Care Environment**18. Restraints*****a. Physical Restraints***

Definition: Prevalence of daily physical restraints.

Numerator: Residents who are physically restrained (i.e. chair, trunk, limb, bed-rails) on a daily basis at most recent assessment.

Denominator: All residents at most recent assessment.

b. Chemical Restraints

Definition: Prevalence of daily chemical restraints.

Numerator: Residents who are chemically restrained (i.e. through use of psychotropic medication) on a daily basis at most recent assessment.

Denominator: All residents at most recent assessment.