EDITORIALS

Accuracy, validity and reliability in assessment and in evaluation of services for older people: the role of the interRAI MDS assessment system

In this issue of *Age and Ageing*, Jónsson reports how comorbidity and functional limitations in older people in acute hospital care are under-reported in the acute medical admission notes when compared with assessment using the interRAI Acute Care instrument [1]. The implications are that problems may be discovered later in the in-patient stay delaying discharge or not addressed at all resulting in greater problems for the older person at home after discharge and possibly re-admission or admission to long-term care. In the UK, there is the particular challenge of Payment by Results, which is introducing tariff-based payments for acute hospital care. The tariffs are set on a primarily diagnosis- and procedure-based system, which does not yet account for increased lengths of stay for people with physical disability [2], those with a ‘high level of need’—in the UK, their number is predicted to increase 54% by 2025 as the population ages [3]. If the acute medical records of these mainly older in-patients are incomplete, then clinical coding cannot even begin to support a re-imbursement system.

UK health and social care services are under severe financial pressure; hospital beds are being closed and staff are being shed. Community care services are being squeezed and the value of intermediate care is being questioned. New policy documents continue to announce measures for maintaining independence, preventing hospital admission and monitoring of performance and quality of services. How can these challenges be reconciled?

The pressures are not unique to the UK. Indeed, at the instigation of its member countries in the industrialised nations, the Organization for Economic Co-operation and Development (OECD) has addressed the subject in some detail. ‘Measuring Up—Improving health system performance in OECD countries’ examined progress and challenges in the effective measurement and application of performance indicators to improve health systems. In this enlightening publication, Wolfson and Alvarez describe how person level data, aggregated from the point of contact with the individual, can be used for outcome and service evaluation through to planning, modelling and high level indicators [4] (Figure 1). The potential of this approach for care older people was considered as long as 1992 by an international research and development collaboration—interRAI—and built into a new model for assessment instruments for older people.

interRAI (http://www.interrai.org) specifically designed these Minimum Data Set (MDS) assessment instruments to structure assessment in such a way that they supported, primarily, not only the needs of the individual and his or her carers and the development of care plans but also the benefits that accrue from recording standardised data [5]. interRAI academics took this approach because they believed that aggregated data were the key to understanding complex needs and patterns of service associated with older people in local, national and international contexts. Structuring the assessment instruments to ensure quality care for the person assessed while at the same time ensuring valid reliable standardised data were the key to success.

The design methodology begins with teams who have established expertise in each assessment domain reviewing the scientific literature and existing assessment instruments for that domain. Then follows a dialogue to specify the minimum set of questions necessary to determine whether there might be a problem to be addressed or potential to benefit from care services within that domain. This set of questions forms the assessment instrument. They trigger Client Assessment Protocols (CAPs) that alert the assessor to a problem, a risk or a potential for improvement that should be addressed in the care plan. Each CAP provides background information and guidance on factors and interactions that should be considered in the care plan, thus providing educational and care-planning support for the assessor.

The assessment instrument is then extensively field tested for validity and reliability. interRAI Fellows translate them into a wide variety of languages, with systematic back translation to ensure validity. In addition, each research and development team may produce eligibility algorithms, quality indicators, case-mix classification systems, data integrity tools or best practice protocols. These are also systematically developed on sound scientific principles and tested against gold standard instruments, where they exist, and in specific research projects where they do not. The reliability and validity testing typically takes place in a number of different countries, and research and development findings are always published in the peer reviewed scientific literature. Only then is the instrument published for general use.

The design of the instruments is such that they have a core of common assessment items that ensures comparability across a wide range of settings and client groups and dramatically reduces the need for separate assessments and paperwork. Scales, for example, for pressure sore risk assessment, nutritional assessment, activities of daily living, cognition and mood become redundant.
Department of Health should link assessment of eligibility to the single assessment process and support the development of reliable assessment methods.

There is also an extensive scientific literature from interRAI assessment instrument-based pharmaco-epidemiology studies of the outcomes of prescribed medication in the real world of the frail elderly who are the major recipients and yet are systematically excluded from the clinical trials [10].

In the UK, the interRAI tools remain relatively unknown, although the MDS-home care for community care has been accredited by the UK Department of Health for use in England and Wales. These assessment instruments have the capacity to meet many of the challenges we face in geriatric medicine. They can deliver exactly what Wolfson and Alvarez describe. Indeed, Hirdes reports in this issue how the interRAI tools are being developed into an integrated health information system in Canada. They are probably the most versatile viable way of recording person level information from routine practice in a way that permits aggregation of accurate, reliable, valid data, safe for use in health services research and pragmatic studies where randomised controlled trials are impossible.

Within the British Geriatrics Society, we are addressing again the role of geriatric medicine and geriatricians. The interRAI assessment tools could be the basis for research and service development, informing management and policy while preserving the rights and interests of the people for whom we provide health and social care. They specifically overcome the problems highlighted by Jonsson.

Conflict of interest statement

Professor Carpenter is a Fellow of interRAI.

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References


Figure 1. Broad summary indicators.

A mature instrument consists of:

(i) An MDS form—comprehensive multi-dimensional assessment items;

(ii) Triggers that highlight needs, risks and potential for improvement for assessors to act upon;

(iii) CAPs that support the assessor in developing a care plan;

(iv) Status and outcome measures—reliable validated scales and algorithms and quality indicators;

(v) A user manual;

(vi) Training materials.

interRAI has recently announced the launch of a fully integrated suite of assessment instruments that include the interRAI ‘contact’ screener, Home (community) Care, Assisted Living (sheltered housing), Long-Term Care Facilities (residential and nursing homes), Palliative Care, Acute Care, Post-acute Care (including rehabilitation settings), Mental Health, Community Mental Health, Persons with Disabilities (young physically disabled) and Intellectual Disabilities (learning difficulties). Assessment instruments for hospital admission triage and for paediatrics are currently in process of development. All the instruments use the same assessment items for key domains ensuring that information is transferable and people, services and outcomes can be compared across settings.

The interRAI assessment instruments have been introduced into over 30 countries, and interRAI databases hold hundreds of thousands of assessments that constitute a major resource for research. The research literature includes many hundreds of MDS-related studies (http://www.interrai.org/bibliography/view/).

The literature also includes many examples of the use of interRAI tools to provide objective data for (i) a resource use case-mix system, (ii) targeting and evaluation of intermediate care, (iii) modelling of intermediate care service requirements, (iv) performance indicators for older people’s hospital services, (v) many issues of quality of care in nursing homes, (vi) reliable determination of the contribution of registered nurses to care for residents in nursing homes (RNCC) [6] and (vii) assessing eligibility for fully funded nursing care (NHS continuing care) [7]. The last two subjects were the focus of two reports from the Health Ombudsman in 2 years [8, 9]. She recommended that the Department of Health should link assessment of eligibility
Frail elderly people comprise a subpopulation that poses numerous important challenges for the health care system. In Canada, like most developed nations, per capita health care expenditures rise disproportionately with age [1]. Although there is widespread concern in the popular media that population ageing will have catastrophic financial consequences, it is generally felt that population ageing has played a minor role in rising health expenditures in Canada [2], and it will be possible to cope with the costs of caring for future cohorts of the elderly if we manage the health care system appropriately.

Home care has become the fastest growing segment of the Canadian health care system, and a national commission on the Future of Health Care in Canada [3] described home care as ‘the next essential service’. Nonetheless, hospitals continue to be the leading source of health expenditure in Canada [4], and the rates of acute hospitalisation of Canadians aged 85 years and over are almost six times higher than those under 65 years [5]. The study by Jónsson and colleagues in this issue raises the troubling question of whether current care practices in acute hospitals provide an adequate response to the complex care needs of frail elderly people [6]. Indeed, for most countries, the same question could be posed for the health care system as a whole.

It would be easy to dismiss Jónsson and colleagues findings as much ado about paperwork. They clearly demonstrate that clinical documentation in Nordic acute hospitals is non-systematic, incomplete and inattentive to issues of functional status or co-morbidity. Why is that a problem? Among the most important reasons for alarm is the complexity of the health needs of frail elderly people. The presentation of symptoms is often ambiguous, threats to health are multifactorial, trajectories of change are highly variable and outcomes of care are uncertain. Comprehensive assessment yielding high quality, multidimensional information has come to be regarded as an essential tool required to provide care at the individual level and to manage services at the aggregate level [7]. Jónsson and colleagues propose the use of the MDS-AC instrument to this end; however, it may be argued that there is a need to extend this approach across all sectors providing services to frail elderly people.

The province of Ontario, Canada, has made several steps forward in establishing an integrated health information system based on the interRAI instruments [8]. Following an extensive review of alternative assessment and classification systems [9, 10], complex continuing care hospitals/units were mandated in 1996 to use the Resident Assessment Instrument 2.0 [RAI 2.0; also referred to as the Minimum Data Set 2.0 (MDS 2.0)] [11]. By 2002, the RAI-Home Care (RAI-HC) [12] was mandated for all home care clients expected to be on service for 60 days or more. Case managers in single point entry agencies known as Community Care Access Centres (CCACs) now use the RAI-HC to assess needs and to contract services for home care clients. In 2005, the RAI-Mental Health (RAI-MH) [13] was mandated for use in all adult in-patient beds in psychiatric hospitals/units, including acute, long stay, forensic and geriatric psychiatry. Implementation of the RAI 2.0 is currently underway for all long-term care facilities in the province, including for-profit and not-for-profit homes. The most recent initiative is a joint effort between interRAI and the Ontario Ministry of Health and Long Term Care to develop a contact assessment that will be used as the initial, brief assessment of all CCAC clients. Implementation of the interRAI Contact Assessment (interRAI CA) will begin in May 2006, and it will be used to determine (i) the need for comprehensive assessment with the RAI-HC; (ii) urgency for initiation of services such as nursing or personal support

### Addressing the health needs of frail elderly people: Ontario’s experience with an integrated health information system

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