

Comprehensive geriatric assessment

The increasing morbidity related to old age requires careful assessment.

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Stanley Lipschitz graduated MB BCH (Wits) in 1980. He specialised in internal and geriatric medicine in New Zealand in 1989. After working as a Consultant at Tauranga Hospital (south west of Auckland) for several years, he returned to South Africa. His current major areas of clinical and research interest are osteoporosis and memory disorders, including Alzheimer's disease and other dementias. In addition, he continues to manage elderly and frail elderly patients – predominantly on an outpatient basis. He is an executive committee member of the National Osteoporosis Foundation of South Africa and is currently vice-president of the South African Geriatrics Society.

With increasing age, there is an age-related increase in co-morbidity and disability. Ageing is a process that steadily reduces physiological reserve, resulting in diminished ability to compensate for the toll of illness. Illnesses accumulate with age and increase in severity and number. Frailty (a complex interplay of health and illness, attitudes, resources and dependence on others, leading to a decreased ability to withstand illness without loss of function) increases with age. A double burden of physiological decline and disease is associated with excess morbidity and resultant disability, i.e. difficulty performing simple physical and mental tasks necessary for daily life.

Finding the optimal model of care for the elderly has been the subject of research since the origins of geriatric medicine. In the 1940s Marjory Warren, observing high rates of institutionalisation in the frail elderly, identified a lack of comprehensive assessment of the medical, social, functional and psychological needs of this high-risk group. The hospital where she worked was filled with neglected and bed-ridden elderly patients. She observed the inadequacy of care for readily recognisable and remediable problems. By systematically evaluating these patients, she was able to determine who would benefit from medical intervention and rehabilitation. She was then able to mobilise these patients and in many cases to discharge them back to their own homes.

Definition

Comprehensive geriatric assessment (CGA) is a multidimensional inter-disciplinary diagnostic process focused on determining a frail elderly person's medical, psychological and functional capability in order to develop a co-ordinated and integrated plan for treatment and long-term follow-up.

The aim of this multifaceted intervention is the restoration of healthy function and independence where possible, as well as the amelioration of disability and distress. Potential benefits of CGA include improvement in diagnostic accuracy, optimisation of medical treatment, improved prognosis, restoration of maintenance function, support for loss of choice and autonomy, and improved

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quality of life. Randomised trials of CGA in multiple health service settings show it to be a cost-effective intervention that improves quality of life, health and social care. It has value when applied in an acute hospital or rehabilitation unit, but its value is also evident when used after hospital discharge, as a component of outpatient consultation and home assessment services and in institutional care.

Components of comprehensive geriatric assessment

Components	Elements
Medical assessment	Problem list Co-morbid conditions Medication review Nutritional status
Assessment of function	Basic activities of daily living (ADLs) Instrumental activities of daily living Activity/exercise status Gait and balance
Psychological assessment	Mental status (cognitive) testing Mood (depression) testing
Social assessment	Informal support needs and assets Care resource eligibility/ financial assessment
Environmental assessment	Home safety Transportation and telehealth

Goals of CGA

These should include maintaining function and improving quality of life, implementing a co-ordinated plan of care, screening for preventable diseases, screening for functional impairment that may result in physical disability, identifying social support needs and mobilising family and community resources.

Goals also include improving the process of care, such as diagnostic accuracy, guiding the selection of interventions to restore or preserve health, monitoring clinical change and evolution over time and, if necessary, arranging for long-term care assessment. Finally, the goals must also include a formal attempt to contain the costs of care, such as reducing the costs of unnecessary formal services and unnecessary prolonged stay in hospital or frail care.

The sick elderly patient is in a state of flux, suffering from an acute illness, exacerbations of one of several chronic conditions, worsening social circumstances, mental deterioration, malnutrition and depression. CGA dissects the components of change and instability to suggest strategies for at least small improvements in health and function. CGA recognises that cure in this population is less common but that a strategy, often of practical intervention tailored to the specific needs and resources of the patient, may result in small therapeutic gain. The latter concept recognises that in frail elderly patients with loss of homeostatic reserve, multiple chronic disease and disability cure is almost never the goal of treatment. One should rather set realistic therapeutic goals for preservation and restoration of function by changing one or two remedial factors.

Who benefits from CGA?

It seems appropriate to target CGA at a specific high-risk population. The most important targeting criteria include age, multiple physical disease, specific geriatric syndromes, impairment of functional ability and social problems – either alone or in combination. Clinical trials using these criteria have shown a significant reduction in nursing home placement, a reduction in the use of medications, and improved survival, functional status and mental status. Frail older people are a group who benefit most from CGA. Frailty represents a state of

reduced homeostasis and resistance to stress that leads to increased vulnerability and risk of adverse outcomes such as the progression of disease, falls, disability and premature death.

Two or more of the following are *markers of frailty*:

- inability to perform one or more basic ADLs in the 3 days before admission
- a stroke in the past 3 months
- depression
- dementia
- history of falls
- one or more unplanned admissions in the past 3 months
- difficulty walking
- malnutrition
- prolonged bed rest
- incontinence.

Who should do it?

If possible, a multidisciplinary team should be responsible for CGA. Members of this team should include:

- an accredited senior specialist physician/geriatrician
- a co-ordinating specialist geriatric nursing sister
- a specialised social worker
- dedicated appropriate therapists (physiotherapists, occupational therapists).

How is CGA delivered?

The assessment process includes the development of a plan of care incorporating appropriate rehabilitation. The formation of a programme of therapy is decided on by the interdisciplinary team. A diagnostic, dynamic, multidisciplinary approach is essential for successful comprehensive assessment. Without regular review of individual patients CGA is doomed to failure and frail elderly patients will continue to be poorly managed. Comprehensive assessment of the frail elderly should therefore not be confused with a single assessment process. Encouraging older people to get out of bed, to mobilise and to

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regain their function is an important goal. It is recommended that the multidisciplinary team communicate well with the patient by setting goals and objectives with them, their family and their carers. Team meetings need to take place frequently and should be held with the patients and their families, allowing frail older patients to regain control over their environment and their health.

What are the benefits of CGA for frail older people?

Inpatient comprehensive assessment of frail older people may reduce short-term mortality and increases the chances of living at home at 1 year. An improvement in physical function is demonstrable at 6 months. Reduction in hospital re-admissions and placement in care homes as well as improvement in quality of life and in cognition is shown at 12 months. These have all been recognised as important markers of effective care for the frail older patient. The benefits of CGA are greatest in dedicated management units for frail older people (geriatric assessment and management units). These can include wards for acutely ill older people and rehabilitation wards.

Current evidence strongly suggests that ward-based CGA should now be considered the standard of care for the frail elderly inpatient.

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Challenges in South Africa

Lack of experience and training in the field of geriatric medicine translates to lack of skilled personnel (geriatricians, geriatric nurse specialists, specialist social workers, physiotherapists and occupational therapists with skill and experience of working with the frail elderly) as well as a lack of in- and outpatient resources.

Suggested reading

Comprehensive Assessment for the Older Frail Patient in Hospital. British Geriatrics Society Policy Committee, 2005 (online).

Comprehensive Geriatric Assessment Position Statement. American Geriatrics Society, 2005 (online).

Ellis G, Langhorne P. Comprehensive geriatric assessment for older hospital patients. *Br Med Bull* 2005; 71: 45-59.

Wieland W, Hirth V. Comprehensive geriatric assessment. *Cancer Control* 2003; 10(6): 454-462.

In a nutshell

- Frailty in old age results in functional loss in association with illness.
- Illness is therefore associated with excess morbidity and disability.
- The need for comprehensive assessment of the medical, social, functional and psychological needs of the high-risk elderly patient was identified back in the 1940s by Marjory Warren.
- Comprehensive geriatric assessment (CGA) was thus born.
- CGA is best applied to acutely and subacutely ill elderly patients in hospital and frail care. The principles of CGA can, however, be applied to any ill or compromised elderly patient.
- Components of CGA include medical, functional, psychological, social and environmental assessment.
- Goals of CGA include maintenance of function, improved quality of life, implementation of a co-ordinated plan of care, screening for preventable disease, impairment and disability, and identification of available support.
- CGA is best done by a co-ordinated team of specialised health professionals – in the absence of such team the principles of CGA can be applied to the assessment of all elderly patients. Regular review is essential.

single suture

Rarely, tamoxifen may fail

In some cases tamoxifen, routinely prescribed to treat breast cancer, may help cancer proliferate, according to David Shapiro and colleagues at the University of Illinois, Urbana-Champaign. It may do so by mimicking oestrogen, which can help the tumour to grow and may also shield cancer cells from the immune system. In cultured human cancer cells, oestrogen increases the production of the protein, PI-9. This protein blocks the body's immune system from destroying tumour cells.

Tamoxifen, which usually reduces the effect of oestrogen, can have the same effect. Both the hormone and the drug bind to receptors in cell nuclei that activate the gene for PI-9. In tumour cells that have many of these receptors, the drug was as effective as oestrogen at providing protection against the immune system's killer cells. This finding may explain why tamoxifen is far less effective in women with tumours that contain high levels of oestrogen receptors. So far, these findings are in animal studies only and tamoxifen will continue to be prescribed in women until the mechanism has been verified.

Shapiro S, et al. *Onogene* 2007; 46: 4106.