

# GERIATRIC ASSESSMENT

*The progressive increase in numbers of older citizens and the concomitant increase in medical expenses, necessitated the need to organise the extensive database necessary to properly manage elderly patients with multiple, interacting problems.*



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Comprehensive geriatric assessment (CGA) incorporates the striking complexity of the older patient, simultaneous management of multiple disorders, the difference between curing and caring and between disease and functional status, as well as the interdisciplinary team work essential to manage the elderly with physical and/or cognitive impairment.

When disease processes become chronic, goals of diagnosis and treatment change. End-points in chronic diseases are optimisation of quality of life and reaching the highest possible functional level in all fields. The usual clinical model of treating-to-cure-after-diagnosis is inadequate, as knowledge of aetiology often has no relevance to improvement of function. The same holds true for determining deficits in cognition or functioning, where the impact of these deficits on quality of life and functional level are more important than the actual deficits. CGA is thus essential to minimise disability and prevent further morbidity via primary, secondary as well as tertiary prevention strategies.

CGA is a multidimensional assessment, and many factors contribute to the difficulty of this assessment. These include the (often daily) changes in functional state, the necessity for a collateral history, cognitive impairment and the individual's specific social circumstances. To address issues in chronic illness properly, health care providers need a breadth of knowledge well beyond their traditional realm of training.

CGA is a way to systematic structured collection of information in order to develop an appropriate plan of care. Most clinicians are not able to perform a true CGA, as the evaluations have to be conducted by a team of health care providers instead of a solitary doctor. The CGA in its full depth is time-consuming; patient fatigue may play an important role and labour intensity causes major reimbursement problems. In contrast to the CGA, the Geriatric Assessment (GA), which is the basic, multidimensional screening that should be performed on every elderly patient, can be streamlined and efficient. The GA is discussed in detail below.

## GERIATRIC ASSESSMENT

In addition to the 'routine' history and examination, doctors should look out for the presence of so-called 'geriatric syndromes' (Table I) as well as non-medical issues of special relevance to the health of the elderly. These non-medical issues include the social support network, financial situation, environmental circumstances, spiritual beliefs and religion, and advance directives. In the course of the 'routine' medical evaluation, these problems often go unnoticed as the elderly often do not report them spontaneously (e.g. due to embarrassment or a belief that these are part of normal ageing). There are specific instruments available to measure each dimension.

To carry out effective screening the practitioner should become familiar with a general questionnaire (Table II) and a limited number of these scales, and have the knowledge and ability to interpret them. Table II shows a single 12-item

Table I. Geriatric syndromes

- Immobility
- Instability
- Urinary incontinence
- Mental illness
- Malnutrition
- Polypharmacy
- Impairment of vision and/or hearing

screening questionnaire covering all main domains. It can be modified according to local circumstances and expanded on for positive items. Individual questions refer to specific domains: e.g. question 2 refers to nutrition, question 7 to activities of daily living (ADL) abilities and question 8 to competence in the instrumental activities of daily living (IADL) field. It should be remembered that a collateral history is often indispensable as the patient may have forgotten facts because of dementia, depression or sometimes even 'voluntarily', being scared of displacement from home or institutionalisation. Current international standards ask for a 6-monthly, routine screening of all older citizens, but in South Africa this may not be feasible, at least not in the near future.

- **Question 1** centres around polypharmacy. Most elderly take at least one medication per day and many take multiple tablets of different kinds. Individuals 70 - 80 years of age have a 5 times greater incidence of adverse drug events (25%) than the group between 20 and 30 years old (5%); 10% of older individuals with adverse effects require admission to hospital. Inappropriate prescribing occurs when patients see multiple providers or take over-the-counter medicines, medicines from friends or family and outdated medications kept in the cupboard for years. All medications need to be brought to the consultation. It should never be forgotten that alcohol use may play an unrecognised role in impairment: many factors, of which loneliness is the most important, con-

Table II. Standard questionnaire

1. Have you brought all your medication with you? Can I see it please?
2. Have you lost weight? More than 10% in the past 6 months?
3. Do you have difficulty with reading, driving or household tasks due to poor eyesight?
4. Have you or your family any trouble with your hearing lately?
5. Have you in the past year ever lost urine and got wet? If yes, how often do you experience incontinence? Do you have any other urinary problems?
6. Have you fallen in the past 6 months? If yes, how did that happen?
7. Are you able to:
  - Bath, shower or wash yourself? Get to the toilet on your own?
  - Dress yourself including zips, buttons, putting on shoes and tying shoelaces?
  - Get around the house safely?
  - Prepare food and do other kitchen chores?
8. Are you able to:
  - Do heavy work around the house (scrub floors, wash windows)?
  - Go shopping for your daily needs, clothes, etc.?
  - Get around town (post office, bank, shops) by car or bus by yourself?
  - Do strenuous activities like fast walking, carrying heavy shopping bags, etc.?
9. Do you often feel sad or depressed?
10. How do you or your carers feel about your memory?
11. How do you feel about your financial situation?
12. Do you stay alone or with your family?  
How often do you see the relative/ friend with whom you have the most contact (when staying alone)?

NB. Positive screen means: a 'yes' on questions 1 - 6, 9; a 'no' on any of the items of questions 7 - 8; a negative indication in questions 10 and 11; staying alone or seeing the carer less than 2 - 3 times a week in question 12.

Table III. Differentiation between depression and dementia

Depression is more likely if:

- Affective symptoms and/or a history of prior depression
- Patient emphasises cognitive defects
- Subacute onset and discrete course
- MMSE >21 and high scores on depression scales
- More comparable recent and long-term memory loss
- More comparable impairment of verbal and performance skills
- Variably disturbed 'effortful' cognition, no focal deficit
- Antidepressant drug trial results in improvement, not delirium

tribute to its use and some studies found abuse in up to 40% of nursing home residents.

- **Question 2** focuses on malnutrition. In community-living elderly protein-energy malnutrition occurs

in only 5 - 10%, but in hospitalised elderly it is found in 20 - 60% of admissions and in old age homes in up to 85%! Malnutrition in the elderly is associated with increased morbidity and mortality and thus with longer hospital stays.

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It goes mainly unrecognised unless body mass index (BMI) and/or the Mini Nutritional Assessment (MNA)<sup>2</sup> are routinely determined. A good crude assessment of nutritional status is the BMI (weight (kg)/height m<sup>2</sup>). Weight should be measured at every visit. Height needs to be measured at the initial visit only, as this parameter decreases by only 1 cm per decade after the age of 20. However, the BMI does not correlate well with the MNA which is a specific, validated instrument to detect malnutrition in old age.

- **Question 3** and the screening tests for visual impairment (Snellen's chart) are justified by the high rate of visual disorders and the brevity of the screening. The prevalence of each of the major eye diseases (cataract, glaucoma, diabetic retinopathy and age-related macular degeneration) increases with age and presbyopia is universal, necessitating reading glasses. Visual problems increase the risk of injury due to falls or motor vehicle accidents and limit independence and psychosocial function.
- Hearing impairment (**question 4**), affects about 1 in every 3 persons 65 years and over and is associated with decreased cognitive, emotional, physical and social functioning and is a contributing factor in the development of delirium.
- The social implications of urinary incontinence (**question 5**) are immense and unrecognised. It is highly prevalent among community-dwelling older women (in nursing homes even more), but needs specific asking, especially if the practitioner is male. Women tend to find this an embarrassing topic and tend to ascribe it to old age, putting up with anxiety, shame and social isolation rather than mentioning their burden to the practitioner.
- **Question 6** deals with both mobility and balance which are predictors of functional decline in community-based elderly. Mobility problems are best assessed by examination, where the 'timed get up and go test' is short, easy and very useful.<sup>3</sup> The patient has to rise from a chair, walk 3 meters, turn, walk back and sit down again; normal performance is in less than 14 seconds. Observing the gait is very useful.
- If any item from **question 7** comes up positive, a scale for the assessment of function such as the modified Barthel index<sup>4</sup> could be used, in order to determine the degree of (in)-dependence (and start formulating a suitable care plan). An assessment of function is a measure of the overall impact of diseases and disorders on the individual. The modified Barthel index is a standardised self-care evaluation that tests the competence in the basic activities of daily living (BADL) which could be administered as a pre-visit questionnaire, completed by the patient while in the waiting room.
- The other two levels of function that must be measured in the elderly are screened for in **question 8** — the instrumental ADLs (IADLs), that measure the patient's ability to live independently (e.g. shopping, driving, handling a bank account, running the household, using the telephone, taking medications) and the advanced ADLs (AADLs), measuring the ability to fulfil societal, community or family roles. It is often worthwhile to do a 'collateral' index (which may give a very different score from the patient's own one) and one should remember that sound judgement and intact cognition are needed to perform these tasks safely and effectively. Questions that address specific IADL and AADL functions could also be put into a previsit questionnaire that helps the doctor save time and effort.
- As worldwide about 10% of elderly have depressive symptoms, **question 9** is important. Depression tends to be under-recognised due to the similarity of the symptoms to those that accompany common medical illnesses. A useful rating scale is the Geriatric Depression Scale (GDS),<sup>5</sup> which is a 30-item inventory that can be self-administered or observer-rated and takes 5 - 10 minutes to complete. Abbreviated scales of 15, 10 and even 4 items exist,<sup>6</sup> all of which have been validated and found useful in screening for depression in the older individual.
- In addressing **question 10**, every individual should have a Folstein's Mini Mental State Examination (MMSE)<sup>7</sup> done at every visit, to detect and follow up any change or decline in memory. The score on the MMSE needs to be adapted by age and educational level:<sup>8</sup> compared with a person with  $\geq 12$  years of education who should score out of 30 points, an individual with 9 - 12 years' schooling may score out of 29 points, those

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with 5 - 8 years' education can be expected to score out of 27 points and persons with 4 years' education or less can score out of 23 points. This means that an individual with 2 years' schooling is fully cognitively intact when he or she scores 23 (out of 30) points, whereas a person with  $\geq 12$  years education who scores 24 (out of 30) has a high likelihood of having an early dementia or a delirium. Age-related decline in MMSE results in a decline of 2 points between 70 and 85 years, so an 85-year-old university graduate who scores 28 (out of 28) is considered fully cognitively intact.

Differentiation of early dementia from depression in old age is often quite difficult (Table III) as symptoms can be very similar. Affective symptoms, however, are usually much more outspoken in depression, and sufferers do distinctly poorly on depression scales. Depressed patients have particular difficulty with effortful cognitive tasks and give many 'I do not know' responses on mental status tests, but do better overall on cognitive scales than dementing patients. At times though, the differentiation between depression and early dementia may be so difficult that a trial of antidepressant therapy is indicated to distinguish between the two disorders.

- **Questions 11 and 12** are increasingly important when older

people become frail. Availability of help from family and friends is frequently the factor determining whether a functionally dependent older person will stay at home or is institutionalised. A short pre-visit questionnaire can serve very well to get an idea of the older individual's family structure, the financial situation and the availability of support.

Non-medical issues that are not covered by the questionnaire are the living environment and advance directives. With progressive frailty, the safety and independence of the patient are increasingly determined by the home environment. No screening instruments exist to measure the safety of an environment and the best screening would be a home visit by the practice nurse or a trained social worker. However, this may not always be feasible. In frail elderly, the patient's goals and preferences for care are essential in formulating a management plan. Especially when patients become unable to speak for themselves, advance directives that specify treatments that patients may or may not want are invaluable in guiding therapy. These directives should be laid down at a stage when the person concerned still has the cognitive capacity to make these decisions; questions in the pre-visit questionnaire may indicate the individual's wish to discuss these matters.

#### IN-HOME GERIATRIC ASSESSMENT

Between 1% and 3% of community-dwelling elderly have severe functional limitations or immobility, and although 2 - 3 times more frail elderly live at home than in nursing homes, they are seldom visited by their physicians in their most desired living environment — their own home. It is expected that the number of frail, immobile elderly will more than double over the next

20 years and in-home assessment may prove a valuable tool to provide the information needed to optimise the individual's functional status.

Benefits of in-home assessment include: evaluation in the most relevant circumstances with the most accurate judgement of the individual's functional level, the optimal chance to evaluate caregiver factors such as caregiving skills, caregiver attitudes or burnout, and environmental factors such as space, cleanliness and safety. Home assessment is especially helpful for evaluating the need for institutional care, possible neglect or abuse, and those patients whose problems remain unsolved after an evaluation at the consulting rooms (e.g. patients who start falling, patients with worsening urinary incontinence, uncontrolled diabetes, hypertension or heart failure for no apparent reason, and those with unexplained 'failure to thrive'). Signs of alcohol abuse may be present and kitchen cabinets, bedside tables and tables beside the lounge chair may reveal use of drugs that were not mentioned in the office consultation. Inconsistencies between facts presented at the office consultation and found at the home visit may be a red flag for reliability of future reports.

During the in-home assessment, screening does not target the usual issues such as cancer, hypercholesterolaemia or hypertension, but focuses on high-yield areas where a clear benefit can be derived from intervention. These are the geriatric syndromes (Table I): falling, immobility, incontinence and constipation, depression, dementia and confusion, malnutrition including (often poor) oral and dental hygiene, polypharmacy and visual/hearing impairment. Assessment of home safety is time-consuming and not always easy and could best be carried out by an appropriately trained nurse or social worker. It should always be remembered, however, that a health care provider is a guest in the patient's home; respect for autonomy is required and standards should be set based on health care goals. The

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limited resources that may be available should also be taken into account.

#### GERIATRIC ASSESSMENT IN AN INSTITUTIONAL SETTING

Most residents in old age homes have been admitted for long-term care and any assessment or intervention should be weighted against the life expectancy of the resident as well as the quality of life. Specific areas of concern are pressure ulcers, use of restraints, physical discomfort, sleep and sexuality.<sup>9</sup>

The prevalence of **pressure ulcers** in old age homes can be as high as 23% in First-World environment and may be higher in less well developed circumstances. Prevention is of prime importance as pressure ulcers cause immense pain and suffering and are expensive and labour-intensive to treat. Residents are chair- or bed-bound, as well as those unable to turn around in bed, should be evaluated, put on pressure-reducing/relieving devices, and turned every 2 hours, day and night.

**Restraints and side rails** are generally inappropriate. Goals should be to maximise ability and mobility; restraints have been found to potentially cause injury and even death and should be applied as seldom as possi-

ble. Side rails, often considered harmless and routine, have in the past caused death (by strangling) as well as multiple cases of moderate to severe trauma and are considered restraints if they prevent an able patient from getting out of bed. There are no data to indicate that side rails increase safety. Studies show an increase in traumatic incidents if individuals fall out of bed over side rails. Their use must thus be scrutinised, individualised and clearly prescribed by the practitioner to be acceptable practice.

It has been estimated that **pain** occurs twice as often in the over 60s as in younger adults and it is known that many elderly find it difficult to communicate their pain to others. Especially in dementing or confused individuals and those with hearing or visual impairments, assessment of pain and discomfort may be very difficult. All evaluations have to include complaints of pain, and one should be responsive to requests and suggestions from carers for detection and relief of pain.

Long-term care facilities, like hospitals, are places renowned for **sleep** disturbance. Noise, light and nursing efforts are usually very effective in keeping people awake, as are certain habits of elderly themselves (drinking coffee, tea or chocolate containing caffeine, theobromide and other stimulating substances, at night, watching TV in bed, etc.). Daytime alertness is a good indicator of adequate sleep, although the elderly may be expected to need a nap after lunch.

**Sexuality** is an all-too-often overlooked aspect of life of the aged person and admission to an old age home may dramatically change intimate relationships. Despite the fact that privacy is often a major problem and sexuality in the elderly is not considered to exist at all, relationships can be maintained or new ones

formed, indicating the importance of this aspect of quality of life in old age.

For long-stay residents, goals are to create an environment that is supportive to the residents and their families, to make the best of existing abilities and to improve quality of life wherever possible. Geriatric assessment and re-assessment are the starting and follow-up points from where this process can lead to better care for the institutionalised and, in fact, all the elderly in our society.

*References available on request.*

#### IN A NUTSHELL

Geriatric assessment (GA) is a multi-dimensional screening tool.

GA serves to detect overlooked areas of importance for the older person.

GA is also used to detect the presence of geriatric syndromes and non-medical issues of relevance to elderly.

Pre-visit self-rating questionnaires (e.g. Barthel index) are time saving and useful.

A standard questionnaire during consultation will cover the majority of the needs of the older individual.

Use of a limited number of standardised rating scales will enable the practitioner to screen effectively.

In-home assessment can reveal crucial information that would not otherwise have been procured.

Quality of life issues are of prime importance for all older individuals and should always be taken into account.