Comprehensive geriatric assessment

What is comprehensive geriatric assessment?

Comprehensive geriatric assessment describes the multidisciplinary, holistic approach to the evaluation of older people's health needs, providing appropriate strategies for treatment, support and follow up. Care of this patient group, who often share frailty as a common comorbidity, presents inherent challenges compared to younger patients. Older people have less physiological reserve and are at increased risk of iatrogenic complications. They often have multiple comorbidities, an extensive drug history and are functionally and socially vulnerable. They therefore require a broad assessment of their state of health including medical, cognitive, psychological, social and functional aspects of daily living. Comprehensive geriatric assessment provides a template approach encompassing these key areas in a systematic, multidisciplinary fashion.

The concept of comprehensive geriatric assessment arose from the pioneering approach of Marjory Warren, 'the mother of geriatrics'. She created the UK's first geriatric assessment unit in 1935, systematically reviewed those labelled as 'chronically ill', and classified them based on mobility, continence, cognition and behaviour. This allowed individualized management plans with identification of those who would benefit from ongoing medical and rehabilitation interventions. The result was mobilization of many previously bedridden patients, significant increases in discharges and reduction in the number of chronic beds (Barton and Mulley, 2003). Comprehensive geriatric assessment has continued to evolve since then to incorporate modern multidisciplinary medical strategies and social services.

With the UK's rapidly growing ageing population, proportions of older people seen in primary and secondary care across most adult specialties are increasing. By 2050 the dependence ratio of older people, defined as the number of people ≥65 years as a proportion of those of working age (Matheson, 2009), will increase from 22% to 46% (Organisation for Economic Co-operation and Development, 2004). The largest increases in hospital admissions are in the older population (Ellis et al, 2011).

In anticipation of this 'geriatric boom', all medical trainees, irrespective of previous geriatric experience, must be able to thoroughly assess an older person, understanding the additional aspects required. Meta-analysis has shown that patients who received formal comprehensive geriatric assessment in secondary care were more likely to be alive and in their own homes at 12-month follow up (Ellis et al, 2011). Comprehensive geriatric assessment is an evidence-based solution to an emergent epidemiological burden. This article delineates the key components of comprehensive geriatric assessment and discusses a practical approach to its implementation for core trainees in an inpatient setting.

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How is comprehensive geriatric assessment delivered?

Comprehensive geriatric assessment is a coordinated, multidisciplinary assessment which aims to identify a multifaceted problem list and subsequently construct and implement targeted solutions. This allows the creation of a patient-centred care plan. It can be initiated or continued in any setting, from the emergency department or surgical ward, to the care home: it is no longer a process unique to the geriatric ward.

Integral to the beneficial outcomes seen in most randomized controlled trials and systematic reviews is the identification of an experienced leader, usually a senior clinician, orchestrating a dedicated, multidisciplinary team. Core team members vary with environment but generally include: clinician, specialist nurse, social worker, occupational therapist, physiotherapist, dietician, speech and language therapist, and pharmacist. As comprehensive geriatric assessment is a dynamic iterative process, not a single event, it is essential to have regular team meetings to feedback new information and current progress if execution is to be effective. However, more focused comprehensive geriatric assessments can be undertaken for acute admissions by identifying at-risk frail patients and liaising with primary care and specialist community services to plan further assessment.

Key components assessed during comprehensive geriatric assessment are outlined in *Table 1*. While the exact constitution depends upon the individual patient, his/her apparent needs, available resources, and the setting, all comprehensive geriatric assessments should broadly include medical, psychological, social or environmental, and functional components. Those aspects most pertinent to the medical trainee are discussed in detail below.

Cognition

Comprehensive geriatric assessment presents a unique opportunity to systematically assess cognition in older people and initiate long-term management if appropriate. The primary aim is to identify dementia, which is a colossal and growing socioeconomic burden affecting 12 million people worldwide (Ferri et al, 2005), and delirium, which can result in an eight-fold increase in mortality risk (Kakuma et al, 2003) and is a significant risk factor for the development of dementia (Davis et al, 2012). Furthermore, it is important to recognize signs of mild cognitive impairment and consider referral to memory services as more than 50% affected will develop dementia (National Institute for Health and Care Excellence, 2006).

Evaluation necessitates a thorough history of the pattern of cognitive change, for which collateral history is imperative. This requires a fairly detailed understanding of the patient's baseline cognition in terms of short- and long-term memory, attention, language, mood, personality and executive function. Mood is particularly important as depression is a significantly under-recognized phenomenon in older adults and is commonly misdiagnosed as dementia, and vice versa. Specific questions around daily tasks can tease out impairment, e.g. difficulty using the phone, forgetting appointments and disorientation when outwith familiar environments. The GP may also be a good source of collateral history.

If cognitive impairment is suspected, examination and investigation with a focus on exclusion of reversible causes is required. On examination note any signs indicating infection, nutritional status, abnormal neurology or sensory impairment. Relevant investigations are listed in *Table 2*.

Core trainees should be familiar with carrying out brief, standardized tests of cognitive function. The benefits are threefold: they add weight to diagnosis, can gauge severity, and repeated scoring allows demonstration of progression or fluctuation. The Montreal cognitive assessment, mini-mental state examination and abbreviated mental test score are the most widely used and validated tests. However, Psychological Assessment Resources has asserted copyright over the official version of the mini-mental state examination, requiring a royalty payment for its use. The Montreal cognitive assessment has greater sensitivity and specificity than the mini-mental state examination (Nasreddine et al, 2005) and is preferable where possible; however, the abbreviated mental test score is useful as a rapid screening tool in the acute setting. Referral to a memory service on discharge, outside the context of an acute illness, is vital along with discussion with both the patient and family.

Mood

Assessment of mood should overlap with evaluation of cognition. Depression in older adults is common, notably underdiagnosed, undertreated and associated with significantly increased risk of poorer outcomes from physical illness, disability and death. As for cognitive impairment, comprehensive geriatric assessment is an opportunity to recognize and address depression. Diagnosis relies on a thorough history including collateral, observation of demeanour, and exclusion of precipitating or perpetuating abnormalities, e.g. hypothyroidism. Risk assessment is paramount here as old age is a risk factor for suicide in depression (Manthorpe and Iliffe, 2010). Several scales have been well validated in older people, including the Geriatric Depression Scale, the Hospital Anxiety and Depression Scale, and the Patient Health Questionnaire.

Falls risk

Falls are extremely common in older people, with 50% of those aged 80 years and over falling at least once annually (National Institute for Health and Care Excellence, 2013). Moreover, falls result in increased length of stay, readmission, morbidity and mortality. They may result from acute illness, chronic disease or interaction with the environment. Assessment of current and future falls risk should be a priority in the comprehensive geriatric assessment and requires a collated effort between clinician,

Table 1. Components of the comprehensive geriatric assessment

Medical	Problem list
	Comorbidities
	Continence
	Falls risk
	Nutritional status
	Medication review
	Advance care planning
	Vision and hearing
Psychological	Mood
	Cognition
	Ideas, concerns and expectations
	Capacity
Social or environmental	Formal care support
	Home safety and appropriateness
	Social network providing informal support
	Accessibility to local resources
	Financial assessment
Functional	Gait and balance
	Mobility and transfers
	Basic activities of daily living, e.g. feeding, washing, toileting
	Instrumental activities of daily living, e.g. shopping, cooking, managing money
	Advanced activities of daily living, e.g. hobbies and interests

Table 2. Investigations for suspected dementia, delirium and depression

Bloods	Full blood count
	Urea and electrolytes
	Liver function tests
	Thyroid function tests
	C-reactive protein
	Bone profile
	Glucose
	Haematinics
Imaging	Chest X-ray
	Computed tomography or magnetic resonance imaging of the head to exclude other cerebral pathology and aid diagnosis of dementia aetiology (National Institute for Health and Care Excellence, 2006)
Other	Electrocardiogram
	Urine microscopy and culture

physiotherapist and occupational therapist. A simple screening question in the initial clerking is: 'how many falls have you had in the last year?' If there have been two or more falls in the past year, patients should be considered high risk and referred for multidisciplinary falls assessment. Clinicians should be able to readily recognize and manage the risk factors listed in *Table 3*.

Continence

Continence is often overlooked by medical professionals and not reported by patients because they are embarrassed. It can considerably detriment physical, functional and psychological wellbeing and confine people to their homes. Urinary incontinence affects over a fifth of those aged over 85 years and increases the risk of hospital and nursing home admission (Collerton et al, 2009).

It is vital to include questions around urinary and bowel continence in the history, using an open approach, and to classify any incontinence identified. Simple tests for affected patients are listed in *Table 4*. These are important before considering referral for specialist assessment.

Polypharmacy

Polypharmacy is a common accessory to ageing with more than two-thirds of UK patients over 75 years prescribed four or more drugs and a sixth of hospital admissions related to prescribed medication (Fitzgerald and Pirmohamed, 2007). This is a notable source of harm in older people, in part as a result of increased susceptibility to adverse drug reactions.

Comprehensive geriatric assessment should always include an iterative process of drug rationalisation, with the underpinning question being: 'does my patient really need to be taking this?' However, it is essential to have a thorough drug history, with GP and pharmacist input, before stopping a drug. In addition, the patient should be adequately monitored following any change to medication and the GP informed of the change, along with the reasoning behind it.

Table 3. Risk factors for falls and subsequent injury

Orthostatic hypotension
Cardiac dysrhythmias
Autonomic instability
Impoverished gait
Neurodegenerative disease
Cerebrovascular disease
Cognitive impairment
Lower urinary tract symptoms, particularly nocturia and urgency
Osteoporosis and osteopenia
Vitamin D deficiency
Sensory impairment, e.g. visual or hearing deficit, or impaired proprioception
Generalized brain atrophy
Polypharmacy

Advance care planning

Advance care planning allows older adults to clearly and legally delineate their preferences in care should they lose capacity in the future preventing them from expressing their wishes. While 60–90% of the adult population supports advance care planning, only 8% in England and Wales have finalized an advance care planning document (Royal College of Physicians, 2009).

Comprehensive geriatric assessment should aim to elicit health-care preferences and engage in discussion around advance care planning. While it may seem entirely appropriate to broach the subject of advance care planning, it is important to remember that some patients may not feel ready or able to do so. Discussions must be sensitive, relevant, open, and centred on the individual's wishes. Patients should be given adequate information about the natural history of their illness, possible management options as it progresses, and under which circumstances their advance care plan would be valid. Discussions should be dynamic and over a sufficient period of time, with adequately trained team members involved.

The process may result in a number of formalized outcomes including advance statements, advance decision to refuse treatment, and lasting power of attorney. Up to one third will change their advance care planning, particularly as their medical, social or functional status changes. Discussion is therefore also important with people who already have advance care plans in place to identify any such changes.

Tips for the core trainee

Many of the key components of comprehensive geriatric assessment can be assessed via a good quality history and multi-system examination. Core trainees therefore have a unique opportunity to initiate focused comprehensive geriatric assessment in their initial clerking. Becoming comfortable with integrating open screening questions (*Table 5*) into the history can yield valuable information early and help shape multidisciplinary management.

Asking more general questions can be a good indicator of multiple domains, e.g. asking about hobbies can reflect function, mood and cognition. In addition, a more holistic view of clinical examination can add to the comprehensive geriatric assessment. For example, a good neurological examination can give insight into a patient's cognitive (ability to retain and follow commands, language) and functional (gait, pincer grip, coordination, sensation) status, in addition to medical deficit.

Table 4. Simple initial tests for urinary and faecal incontinence

Tests for urinary incontinence	Urine dipstick and if positive: microscopy, culture and sensitivities	
	Digital rectal examination	Presence of constipation
		Prostate size (in men)
	Post-void residual volume	
	Prostate specific antigen (in men) if appropriate	
Tests for faecal incontinence	Digital rectal examination	Presence of constipation
		Anal tone
	Full neurological examination including perineal sensation	
	Stool cultures if diarrhoea	

It is important that while taking a history and examining, the clinician is thinking: 'given my findings, how would my patient cope in the current situation – is he/she likely to need additional help?' The formulation of a comprehensive problem list on admission provides a clear overview and can prompt further exploration of components either during admission or on discharge.

Fundamental to a successful comprehensive geriatric assessment is a coordinated multidisciplinary approach. Failure to prioritize clear communication between individual team members, particularly across specialties, is a common hurdle to achieving targets. Allocation of pre-defined time for team meetings to discuss progress or problems is an effective way to ensure that handover of information is not reliant on entries in medical notes, which can be illegible or incomplete.

Challenges

Comprehensive geriatric assessment has a strong evidence base but is still a relatively unfamiliar concept for many outside of geriatric medicine. It is often incompletely executed, therefore negating its benefits. Specific in-hospital barriers include: lack of relevant staff training, insufficient time and resources, communication difficulties, lack of continuity of assessment as patients are transferred between wards, and absence of a consistent team leader. Increased awareness, education and effective re-allocation of resources to match the growing socioeconomic burden of geriatric illness are required to address these challenges and allow integration of the comprehensive geriatric assessment into daily clinical practice. BJHM

Table 5. Useful screening questions for the core trainee

How often do you see your doctor?
How often have you been admitted to hospital?
How are you managing with your health problems?
Is there anything you are particularly concerned or worried about?
How do you take your medications each day?
Would you like any (more) help with things at home, e.g. cleaning, cooking or paying bills?
Are you managing to get around OK?
What do you normally eat and drink each day?
Do you ever feel like you cannot control your bladder or bowels, or struggle to get to the toilet in time?
Do you see your family and friends often?
Do you feel like you are more forgetful recently?
How would you describe your mood?
Do you have any views or preferences about how you wish to be medically treated in the future?

KEY POINTS

- The ageing population is growing at a rapid pace.
- Older adults have additional, complex, multifaceted needs when compared with younger populations.
- The comprehensive geriatric assessment is a dynamic process involving a multidisciplinary holistic assessment of the older person's health needs and the creation of a patient-centred management plan.
- Meta-analyses and systematic reviews have demonstrated tangible long-term benefits of comprehensive geriatric assessment.
- Early identification of frail patients with significant comorbidities or complex social requirements is vital to allow initiation of comprehensive geriatric assessment even in the acute setting where resource and time constraints exist.
- Core medical trainees can contribute to much of the comprehensive geriatric assessment with key insights into the problem list, cognition, mood, falls assessment, continence, medication review and advance care planning.
- Involvement of relevant multidisciplinary team members and effective communication within the team is key to the success of comprehensive geriatric assessment.

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