

## Mock Geriatrics SCE paper 2019 – Answers

1. **e. Subjective Global Assessment** – All other tools are validated for *screening* for malnutrition, whereas SGA is a validated *assessment* tool (MNA Full Form but not short form can also be used for assessment). See: <http://nutritioncareincanada.ca/tools/assessment-sga>

2. **c. 5%** – His ABCDE score is 5 (age >60, BP ≥140/90, unilateral weakness, duration 10-59 minutes), which equates to a 5-6% risk of stroke in the next 7 days.

3. **c. Sick sinus syndrome** – Sick sinus syndrome is the most appropriate answer. She is not beta blocked, there is no evidence of postural hypotension or complete heart block and there is nothing in the history to suggest intracranial pathology. AF and sick sinus syndrome frequently coexist. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4956371/>

4. **c. Weight loss** – Weight loss forms part of the phenotypic definition of frailty as proposed by Fried et al; it is a characteristic which can be used to define the presence of frailty rather than a syndrome of frailty. “Frailty syndromes” are presentations of typical presentations of decompensation in a person with frailty and are akin to the historical “Geriatric Giants” listed in brackets: Falls (Instability); Immobility (Immobility); Delirium (Intellectual impairment); Susceptibility to side-effects of medications (Iatrogenesis); Incontinence (Incontinence).

[https://www.bgs.org.uk/sites/default/files/content/resources/files/2018-05-14/fff2\\_short\\_0.pdf](https://www.bgs.org.uk/sites/default/files/content/resources/files/2018-05-14/fff2_short_0.pdf)

5. **b. Adoption of a calorie restriction diet** – The demographic work that led to the identification of ‘Blue Zones’ (regions of the world where people are considered to live much longer than average) found a number of important factors which were consistent in centenarian populations throughout the world. They tended to eat moderate amounts of food, with an emphasis on a plant-based diet but did not stick to a calorie restricted diet. They also valued family, physical activity and faith. Caloric restriction has in animal models led to longevity and reduction of poor physical health. Franceschi has done a reasonable amount of work investigating the effect of inflammation on healthy ageing. He has found that gene polymorphisms coding for pro-inflammatory cytokines are under-represented in centenarians plus gene polymorphisms coding for anti-inflammatory cytokines are over-represented suggesting a genetic component to their ageing success. There is increased diversity of the gut microbiota of centenarians often with a pre-disposition towards bacteria with known anti-inflammatory effects.

*Santoro et al. Gut microbiota changes in the extreme decades of human life: a focus on human centenarians. Cell Mol Life Sci. 2008.*

*Franceschi et al. Centenarians as a model for healthy ageing. Human ageing: from the bench to the clinic. 2003.*

6. **a. Reheat food at a high temperature ensuring the inside is steaming hot** – Guidance for preventing food poisoning includes washing hands, worktops, and dishcloths, using separate chopping boards to prepare raw meat, keeping raw meat separate, cooking food thoroughly, not washing raw meat (which can spread bacteria around the kitchen), keeping refrigerated food below 5°C, cooling and storing leftover food within 90 minutes of cooking in the fridge or freezer, and respecting use-by dates. There is some evidence that suggests that the consumption of alcohol beverages may have a protective

effect in some food-borne infectious outbreaks, however, routine consumption of alcohol for this reason should not be recommended!

<https://www.nhs.uk/live-well/eat-well/10-ways-to-prevent-food-poisoning/>

**7. c. Differentiation of essential tremor and Parkinson's Disease** – NICE is very strict in its guidelines on appropriate diagnostic investigations in Parkinson's disease. The only scenario for which DaT scanning is recommended by NICE is to differentiate between essential tremor and Parkinson's Disease. The guidelines also do not recommend acute levodopa challenge tests (trial of levodopa to assess response), objective smell testing, or any other form of imaging.

<https://www.nice.org.uk/guidance/ng71/chapter/Recommendations#diagnosing-parkinsons-disease>

**8. b. Intermittent pneumatic compression of the lower legs** – The increased risk of haemorrhagic complications following stroke outweighs the antithrombotic effects of heparin in venous thromboembolism (VTE) prevention. Compression hosiery is beneficial in preventing VTE following surgical interventions, but the same benefit has not been seen following stroke. Aspirin is not effective in VTE prevention. However, intermittent pneumatic compression has been showed to reduce VTE and 30-day mortality following stroke (CLOTS3 trial).

**9. a. Embolism and thrombosis** – Embolism and thrombosis are recognised complications of antipsychotics. Increased risk of cerebrovascular insufficiency has also been reported with risperidone. The other side-effects listed have not been reported with risperidone.  
<https://bnf.nice.org.uk/drug/risperidone.html>

**10. a. Discharge back home with a package of care** – This patient lacks capacity to make a decision on her discharge destination. However, she would not meet criteria for a nursing home and it would be reasonable to see how she manages in her own home with a package of care before considering residential care, given that this is her preferred option and she previously lived at home, has not been wandering, requires intermittent help with activities of daily living. This would not be a reason to keep a patient in an acute hospital and there is not much to be gained in discharging to intermediate care seeing as the patient is close to her baseline. The Mental Capacity Act advises "Where there's more than one option, it's important to explore ways that would be less restrictive or allow the most freedom for a person who lacks capacity." <https://www.nhs.uk/conditions/social-care-and-support-guide/making-decisions-for-someone-else/mental-capacity-act/>

**11. b. 2100 kcal, 70g protein, 2L of fluid** – NICE nutrition guidelines:

1.4.2 For people who are not severely ill or injured, nor at risk of refeeding syndrome, the suggested nutritional prescription for total intake should provide all of the following:

- 25–35 kcal/kg/day total energy (including that derived from protein)
- 0.8–1.5 g protein (0.13–0.24 g nitrogen)/kg/day

- 30–35 ml fluid/kg (with allowance for extra losses from drains and fistulae, for example, and extra input from other sources – for example, intravenous drugs)
- adequate electrolytes, minerals, micronutrients (allowing for any pre-existing deficits, excessive losses or increased demands) and fibre if appropriate.

<https://www.nice.org.uk/guidance/cg32>

12. **d. Raised IL-10** – IL-10 is anti-inflammatory and therefore considered to prevent muscle loss. Its role in muscle quality is yet to be fully established. Intramuscular adipose tissue, conversion of type 2 to type 1 muscle fibres, neuromuscular junction degeneration, and decrease in angle of pennation are all considered to contribute to poor muscle quality in sarcopenia.

*Narici and Maffulli. Sarcopenia: characteristics, mechanisms and functional significance. British Medical Bulletins. Sep 2010.*

13. **b. Permanent Pacemaker in-situ** – There have been no deaths reported secondary to tilt table testing and it is generally considered safe. There are no absolute contraindications to tilt table testing itself; contraindications relate mainly to the use of additional pharmacological agents (e.g. vasodilators) used during testing. However, the presence of a pacemaker is neither an absolute nor a relative contraindication to tilt table testing or any drugs used during the procedure; the others are all at least relative contraindications.

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.683.3898&rep=rep1&type=pdf>

<https://emedicine.medscape.com/article/1839773-overview#a3>

<https://academic.oup.com/eurheartj/article/30/21/2631/2887508>

14. **b. Smoking** – Medscape - Parkinson's disease has an excellent summary of aetiological factors involved in the development of the condition. In brief, although the aetiology of Parkinson's disease is still unclear, most cases are hypothesized to be due to a combination of genetic and environmental factors. Currently known genetic causes of Parkinson disease account for approximately 10% of cases. The PD-1 mutation was found after investigating families with familial Parkinson's disease. Smoking and caffeine consumption are protective but the pathophysiological mechanisms remain unclear. Exposure to all forms of pesticides either through direct contact or rural living/ drinking from wells increases the risk of development of Parkinson's disease. There is a 4- to 7-fold increase in risk of developing Parkinson's disease following a diagnosis of melanoma. This is likely to be due to genetic causes. A single but very large cohort study demonstrated an increased risk of development of Parkinson's disease in individuals with Type 2 Diabetes Mellitus, particularly in younger individuals.

15. **b. Up and right** – Her centre of gravity will have shifted to account for asymmetrical weight and posture.

[https://www.physio-pedia.com/Biomechanics\\_in\\_prosthetic\\_rehabilitation](https://www.physio-pedia.com/Biomechanics_in_prosthetic_rehabilitation)

16. **a. Remove the nasogastric tube** – This X-ray shows a misplaced nasogastric tube within the lungs; it is not safe to feed and the tube should be removed. When assessing X-rays for nasogastric tube position, a correctly placed tube should meet all of the following criteria:

- Follows oesophagus / Doesn't follow carina
- Bisects the carina
- Crosses diaphragm in the midline
- Tip clearly visible below the diaphragm

<https://geekymedics.com/assessing-nasogastric-ng-tube-placement/>

17. **b. Strength and balance training** – Strength and balance training has been shown to reduce falls risk and is recommended by NICE as part of individualised multifactorial intervention. The other interventions listed have not been recommended by NICE due to insufficient evidence.

<https://www.nice.org.uk/guidance/cg161/chapter/1-Recommendations>

18. **a. Decreased cytokine activity** – Circulating levels of IL6, IL1, and TNF $\alpha$  have been shown to be higher in older people with muscle loss. Reduced sense of smell and taste reduces interest, and, therefore intake of food. Increased cholecystokinin (CCK) reduces hunger and, therefore, again oral intake (acts on the hypothalamus hunger-satiety control regulation). Delayed gastric emptying also causes early satiety. Leptin is an anorexigenic hormone secreted by adipose tissue; since adipose tissue levels increase relatively with age, increased leptin is considered to contribute to reduced hunger.

19. **b. 1** – WHO Performance status

Grade	Explanation of activity
0	Fully active, able to carry on all pre-disease performance without restriction
1	Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g., light house work, office work
2	Ambulatory and capable of all selfcare but unable to carry out any work activities. Up and about more than 50% of waking hours
3	Capable of only limited selfcare, confined to bed or chair more than 50% of waking hours
4	Completely disabled. Cannot carry on any selfcare. Totally confined to bed or chair
5	Dead

20. **b. Right sided lateral medullary syndrome** – Lateral medullary syndrome presents with ipsilateral weakness, facial sensory loss, Horner’s syndrome, palatal weakness, dysphagia, ataxia, nystagmus, and contralateral sensory loss to pain and temperature in the limbs. Weber syndrome presents with ipsilateral CN III palsy and contralateral hemiparesis.

21. **b. Rivastigmine** – Based on his MMSE score it would be appropriate to consider treatment in this patient. NICE guidelines recommend donepezil or rivastigmine as first line in patients with Dementia with Lewy Bodies; galantamine or memantine are only recommended if these drugs are not tolerated.

<https://www.nice.org.uk/guidance/ng97/chapter/Recommendations#pharmacological-interventions-for-dementia>

22. **a. Raised white cell count and neutrophils unrelated to periods of ill-health or infection** – There is conflicting evidence about the association between shortening of telomeres in frailty. Multiple cross-sectional studies have found no association but a single recent longitudinal study demonstrated baseline telomere length was associated with frailty development at several years. Raised white cell count and neutrophil count within normal parameters are associated with both the presence of frailty and the development of frailty at ten years. This has been demonstrated numerous times. The role of chronic CMV infection is not fully characterised. The high prevalence of chronic CMV infection in this population make it difficult to study. Collapse of B cell repertoire diversity and increased expression of pro-inflammatory monocyte phenotypes have both been demonstrated with ageing but are yet to be investigated in frailty.

*Wilson D, Jackson T, Sapey E, Lord J. Frailty and Sarcopenia: The potential role of an aged immune system. Ageing Research Reviews. Feb 2017*

*Zhou et al. The association between telomere length and frailty: A systematic review and meta-analysis. Experimental Gerontology. June 2018.*

23. **b. Admit and arrange a monitored telemetry bed** – ESC guidelines recommend in-hospital telemetry for patients presenting with syncope with high risk features. This patient has evidence of Mobitz Type 2 (2:1) block and a probable history of previous cardiac ischaemia, which suggests she may be high risk and require a permanent pacemaker. High risk features as defined by ESC guidelines include the following:

- Syncope during exertion or when supine
- Sudden onset palpitation immediately followed by syncope
- Severe structural or coronary artery disease (heart failure, low LVEF, previous myocardial infarction)
  - Unexplained sBP <90mmHg
  - Persistent bradycardia (<40 bpm) in awake state and in absence of physical training
  - ECG changes consistent with acute ischaemia
  - Mobitz II second and third degree AV block
  - Sustained and non-sustained VT

<http://www.heartrhythmalliance.org/files/files/stars/180320-dm-2018%20Syncope%20Guidelines.pdf>

24. **b. Medial temporal** – Medial temporal lobe atrophy can help distinguish Alzheimer's from other dementia subtypes.

25. **d. Negligible senescence; Red sea urchin** – There are a number of organisms, both plants and animals, which demonstrate negligible senescence. Hayflick's phenomenon is the number of times a normal human cell population will divide before cell division stops. Replicative lifespan is the same phenomenon in non-human cells.

*Bodnar. Cellular and molecular mechanisms of negligible senescence: insight from the sea urchin. Invertebr Reprod Dev. Jan 2015.*

26. **b. Section 3** – Section 2 refers to detention for assessment (up to 28 days), Section 3 refers to detention for treatment (up to 6 months), Section 4 refers to emergency detention for treatment where only one doctor is present (up to 72 hours), Section 5(2) refers to temporary holding powers by medical (non-psychiatric) staff (up to 72 hours), and Section 5(4) are temporary holding powers by psychiatric or learning disability nurses (up to 6 hours). This patient requires admission for treatment and a second psychiatrist is already available.

27. **c. Docusate and senna** – NICE guidelines recommend starting initial treatment with a stimulant and softening laxative for faecal loading/ impaction. If the response is insufficient and there is hard impacted stool in the rectum, either a sodium phosphate enema or arachnis oil retention enema should be considered, and repeated as necessary. Bulk-forming laxatives should be avoided in the palliative care setting, especially with opioid-induced constipation.

<https://cks.nice.org.uk/palliative-care-constipation#!scenariorecommendation:3>

28. **a. Cognitive impairment** – The CURB65 score is a risk stratification tool that predicts a patient's risk of death within seven days in patients with pneumonia. It is often used to guide antibiotic therapy, although does not necessarily correlate with severity, as it also incorporates measures of frailty/comorbidity (cognitive impairment and raised urea can be acute or chronic, older age likely a surrogate for increased odds of frailty). Fever, WCC, and positive sputum growth do not form part of the CURB65 score and are not predictors of mortality.

<https://www.nice.org.uk/guidance/qs110/chapter/quality-statement-4-mortality-risk-assessment-in-hospital-using-curb65-score>

29. **d. New costovertebral tenderness** – The diagnosis of clinically significant urinary tract infections in catheterised patients can be challenging. Urine dipstick in catheterised patients is considered unhelpful (poor positive predictive value but good negative predictive value in un-catheterised older adults; catheterised older adults more likely to develop nitrate negative infections, thus urine dipstick neither rules in or rules out UTI in this population). Cloudy urine, dysuria, and frequency are non-specific findings in catheterised patients, and loss of balance would be a highly atypical presentation. SIGN guidelines suggest that the presence of one or more of the following symptoms should stimulate

consideration for antibiotic therapy in catheterised patients: the presence of one of the following symptoms should stimulate antibiotic therapy (<https://www.sign.ac.uk/assets/sign88.pdf>):

- new costovertebral tenderness
- rigors
- new onset delirium
- fever greater than 37.9°C or 1.5°C above baseline on two occasions during 12 hours

The following links also provide further overview of this topic:

<https://www.sciencedirect.com/science/article/pii/S0163445318301907>

<https://www.sciencedirect.com/science/article/pii/S1525861018302378>

30. **c. 60%** - According a Cochrane review of antidepressant use. Older adults are considered to be more susceptible to relapse/ recurrence upon stopping antidepressants and continuation for a minimum of 12 months is normally recommended.

<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD006727.pub3/full>

31. **e. Mutations in LRRK2 gene** – Mutations in MAPT gene, PGRN gene and family history of FTD are all risk factors for FTD. Mutations in LRRK2 gene are associated with Parkinson's Disease. See: <https://bestpractice.bmj.com/topics/en-gb/968>

32. **d. Stereotactic Ablative Body Radiotherapy** – The NHS has commissioned stereotactic ablative body radiotherapy for the treatment of non-small cell lung carcinoma. This is radiotherapy with curative intent given where surgery is otherwise contraindicated. This patient has a localised peripheral cancer with performance status 2 and has expressed a wish to proceed with life-prolonging treatment as much as possible. Surgery is contraindicated due to medical comorbidity (low FEV1). FOLFOX chemotherapy is a treatment for gastrointestinal malignancies. Patients meeting all the following criteria will be routinely funded for SBRT /SABR:

- Multidisciplinary Team (MDT) confirmed diagnosis of NSCLC based on findings of positive histology, positive PET scan or growth on serial CT scan AND
- Clinical stages of:
  - T1 N0 M0 T2 (≤5cm)/ T2 N0 M0/ T3 (≤5cm) N0 M0 AND
- Not suitable for surgery because of medical co-morbidity or lesion is technically inoperable AND
- WHO performance status 0-2 AND
- Peripheral lesions outside a 2cm radius of main airways and proximal bronchial tree. This is defined as 2cm from the bifurcation of the second order bronchus e.g. where the right upper lobe bronchus splits

#### Exclusion criteria

- Any tumour not clinically definable on treatment planning CT scan e.g. surrounded by consolidation or atelectasis
- Significant overlap with previous radiotherapy fields

- Advanced interstitial lung disease

<https://www.england.nhs.uk/wp-content/uploads/2018/07/Stereotactic-ablative-body-radiotherapy-for-non-small-cell-lung-cancer-adults.pdf>

<https://thorax.bmj.com/content/thoraxjnl/56/2/89.full.pdf>

**33. a. Tolterodine** – NICE recommend that if a first-line antimuscarinic (anticholinergic) is not effective or well tolerated, that alternative (second-line) antimuscarinic drug with the lowest acquisition cost may be considered. This includes: an untried first-line antimuscarinic – oxybutynin (immediate release), tolterodine (immediate release), or darifenacin (once daily preparation), OR one of the following: Fesoterodine; Oxybutynin extended release; Oxybutynin transdermal; Propiverine or popiverine; Solifenacin; Tolterodine (extended release); Trosipium and trosipium (extended release). Oral oxybutynin is contraindicated in adults aged 65 years and older due to frequent side-effects and increased risk of cognitive impairment. NICE recommends mirabegron, based on evidence from a technology appraisal, as a treatment for people with overactive bladder syndrome in whom antimuscarinic drugs are contraindicated, ineffective, or not tolerated. Absorbent products are not recommended as a treatment for incontinence by NICE.

<https://cks.nice.org.uk/incontinence-urinary-in-women#!scenario:1>

**34. b. Admission to day unit for intravenous iron infusion** – This case describes a typical case of a frail older adult (reduced gait speed, dependence on walking aids) and iron deficiency anaemia. She has evidence of systemic inflammation (raised CRP, frailty itself), and thus a ferritin of 40 represents probably iron deficiency. Oral iron is likely to be ineffective due to upregulation of hepcidin (secondary to inflammation) decreasing intestinal absorption of iron. She may benefit from community physiotherapy but realistically this would take some time to arrange and would not be the first step in management in this case. She will require holistic consideration of appropriateness of further investigations for the underlying cause, but there is no clear indication for a transvaginal ultrasound specifically. Whilst she may benefit from drug rationalisation this should be done with each medication in turn and there is no clear indication for dietician referral from the information given. The most appropriate initial step would be to arrange an intravenous iron infusion, which may provide some symptomatic benefit.

**35. c. Concurrent treatment with apomorphine** – Contraindications to midodrine according to the BNF are as follows: Aortic aneurysm; blood vessel spasm; bradycardia; cardiac conduction disturbances; cerebrovascular occlusion; congestive heart failure; hypertension; hyperthyroidism; myocardial infarction; narrow-angle glaucoma; pheochromocytoma; proliferative diabetic retinopathy; serious obliterative blood vessel disease; serious prostate disorder; urinary retention. There are cautions in: Atherosclerotic cardiovascular disease (especially with symptoms of intestinal angina or claudication of the legs); autonomic dysfunction; elderly (manufacturer recommends cautious dose titration); prostate disorders. The second line medication is fludrocortisone.

**36. c. Delusions with cognitive impairment and olanzapine** – NICE guidelines recommend all of the listed pharmacological managements with the exception of olanzapine in delusions.



<https://pathways.nice.org.uk/pathways/parkinsons-disease/managing-non-motor-symptoms-in-parkinsons-disease>

37. **c. She has possible cognitive impairment** – The scoring system for the 4-AT is as follows: 4 or above: possible delirium +/- cognitive impairment, 1-3: possible cognitive impairment, 0: delirium or cognitive impairment unlikely.

38. **c. Stop aspirin, start treatment dose enoxaparin** – In this case, the risk of deterioration from his bilateral pulmonary emboli outweighs the risk of haemorrhagic transformation of his lacunar infarct. He should be treated with treatment dose enoxaparin. However, continuing aspirin alongside this would be associated with significant risk of bleeding that would outweigh any benefits.

39. **d. (Acute) sarcopenia** – The European Working Group on Sarcopenia 2 (EWGSOP2) now makes a distinction between acute and chronic sarcopenia. Acute sarcopenia is defined as incident sarcopenia within six months, normally preceded by a stressor event. Research is ongoing to characterise this condition within the UK and across Europe, however, it is considered to be secondary to a combination of muscle disuse, heightened inflammation, and ineffective utilisation of protein. There is nothing in the history to suggest acute myositis; Kwashiorkor is a form of severe protein malnutrition characterised by oedema associated with famine. She has only mild anaemia and hypokalaemia, which would not explain her symptoms. Following her fracture, she will have suffered heightened inflammation and a period of bedrest. EWGSOP2 defines a time of greater than 15 seconds in conducting five chair stands as probable sarcopenia.

<https://academic.oup.com/ageing/article/48/1/16/5126243> (EWGSOP2)

<http://www.aginganddisease.org/EN/10.14336/AD.2017.0315> (Acute sarcopenia)

40. **b. Cataracts** – Glare sensitivity is associated with early posterior subcapsular cataracts; the other problems listed are not commonly affected by sunlight.

<https://versanthealth.com/visionreferencelibrary/2018/03/05/understanding-glare-effect-on-your-vision/>

<https://bjo.bmj.com/content/bjophthalmol/77/8/489.full.pdf>

41. **a. Suppress bone resorption by inhibiting the action of osteoclasts** – The bisphosphonates inhibit osteoclastic bone resorption via a mechanism that differs from that of other antiresorptive agents. Bisphosphonates attach to hydroxyapatite binding sites on bony surfaces, especially surfaces undergoing active resorption. When osteoclasts begin to resorb bone that is impregnated with bisphosphonate, the bisphosphonate released during resorption impairs the ability of the osteoclasts to form the ruffled border, to adhere to the bony surface, and to produce the protons necessary for continued bone resorption. Bisphosphonates also reduce osteoclast activity by decreasing osteoclast progenitor development and recruitment and by promoting osteoclast apoptosis.

<https://www.uptodate.com/contents/pharmacology-of-bisphosphonates>

42. **e. Zoledronic acid** – NICE guidance states that oral bisphosphonates are first line treatment for secondary prevention of fragility fractures in osteoporosis. However, achalasia is a contraindication to oral bisphosphonates. NICE recommend that when oral bisphosphonates may be contraindicated or not tolerated, intravenous bisphosphonates are prescribed.

<https://www.nice.org.uk/guidance/ta464/chapter/1-Recommendations>

<https://pathways.nice.org.uk/pathways/osteoporosis#content=view-node%3Anodes-alternative-secondary-prevention-treatments-for-postmenopausal-women>

43. **c. Arms flexed to 15 degrees, measure height from wrist crease to floor** – The most effective method of checking the height is to stand in their regular footwear with their arms hanging relaxed with a slight natural bend at the elbow (flexed at 15 degrees). Measure the distance between the wrist crease and the ground (Elmamoun and Mulley 2007). This should be the height of their walking aid.

<https://www.dlf.org.uk/factsheets/walking#five4>

44. **d. Walking speed** – The Barthel Index is a measure of basic activities of daily living (BADLs). These can be considered as all the activities that are needed to survive on a basic level, whereas instrumental activities of daily living are higher order activities (e.g. using public transport, using the telephone, doing laundry). Transferring and mobilisation are considered BADLs but the Barthel Index does not measure this by walking speed, and instead focusses on the need for assistance of others in conducting these activities.

<https://www.mdcalc.com/barthel-index-activities-daily-living-adl>

45. **d. Walk 3 metres in total** – To perform the TUG test as described in the original derivation study, the patient is timed while they rise from an arm chair (approximate seat height 46 cm), walk at a comfortable and safe pace to a line on the floor three metres away, turn and walk back to the chair and sit down again. The subject walks through the test once before being timed to become familiar with the test. The subject wears his regular footwear and uses his customary walking aid (cane or walker) if necessary. The total distance walked is therefore six metres.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3924230/>

46. **e. All patients presenting with hip fracture should be seen by an orthogeriatrician within 36 hours of admission** – The original blue book did not actually include any targets for orthogeriatrician review, although the blue book has since been used to develop the national “Best practice tariff” criteria for care of patients with hip fractures. In best practice tariff, the time to surgery was set at 36 hours rather than the 48 hours outlined in the BOA/BGS Blue Book, as this is considered a more appropriate level for best practice, while 48 hours was a minimum standard. Best practice tariff requires assessment by a geriatrician within 72 hours of admission. Ideally, this should be preoperative, but it is recognised that most centres do not have 7 day geriatric medicine availability;

72 hours was set to allow for patients admitted on Friday evening who could not be reviewed until Monday morning.

[https://www.nhfd.co.uk/20/hipfractureR.nsf/4e9601565a8ebbaa802579ea0035b25d/74ae78030e6ffa3a8025779f0041fbcc/\\$FILE/Blue%20Book%20Executive%20Summary.pdf](https://www.nhfd.co.uk/20/hipfractureR.nsf/4e9601565a8ebbaa802579ea0035b25d/74ae78030e6ffa3a8025779f0041fbcc/$FILE/Blue%20Book%20Executive%20Summary.pdf)

[https://www.nhfd.co.uk/20/hipfractureR.nsf/0/9b0c5ea2e986ff56802577af0046b1df/\\$FILE/Best%20Practice%20Tariff%20User%20Guide.pdf](https://www.nhfd.co.uk/20/hipfractureR.nsf/0/9b0c5ea2e986ff56802577af0046b1df/$FILE/Best%20Practice%20Tariff%20User%20Guide.pdf)

47. **b. C curve** – A variety of different shaped handles are available including:

**Crook handles:** These may be less comfortable to hold than a right-angled handle, but can easily be hooked over the arm when not in use.

**Right angled or T-shaped handles:** These are often more comfortable to use than a crook handle. The addition of a wrist strap may be useful to secure the stick when it is not in use.

**Swan necked shafts:** Handles with swan necked shafts (pictured) are offset above the stick, which allows your weight to be evenly spread centrally over the base of the stick - this may be helpful if you require more stability.

<https://www.dlf.org.uk/factsheets/walking#five2>

48. **c. Arrange a bone mineral density scan** – All women over the age of 65 should be assessed for fragility fracture risk. Their 10-year risk of fragility fracture should be calculated prior to arranging further imaging or starting pharmacological treatment. Their risk of vitamin D deficiency should be assessed. Lifestyle advice should also be offered, including smoking cessation, a balanced diet, regular exercise and drinking alcohol within recommended limits. BMD scanning would only be indicated in the case of an intermediate risk score.

<https://cks.nice.org.uk/osteoporosis-prevention-of-fragility-fractures#!management>

49. **b. Wheeled pulpit** – Sometimes referred to a wheeled zimmer frame, the wheeled pulpit is a simple pulpit/zimmer frame with two wheels at the front. This differs from a rollator frame (although the terms are sometimes used interchangeably in practice) in that a rollator frame tends to be more sophisticated with 3 (i.e. delta) or 4 wheels, breaks, and often a seat or shopping basket

<https://www.dlf.org.uk/factsheets/walking#seven>

50. **a. IV fluids** – This is a difficult scenario. Without seeing the written document, it is not possible to be sure that the advance decision exists. However, there is nothing in this scenario that suggests that his son may have an ulterior motive, and indeed these wishes would be in keeping with his religious beliefs as a Jehovah's witness. In this case, the patient is in hypovolaemic shock and his priority is volume resuscitation; commencing IV fluids and withholding blood until the advance directive has been seen would be the most appropriate initial course of action.

NHS England has provided the following guidance for healthcare professionals in relation to advance decisions:

Does an ADRT apply in emergencies?

- A healthcare professional must provide treatment in the patient's best interests, unless they are satisfied that there is an advance decision that is:
  - valid, and
  - applicable in the circumstances.
- Healthcare professionals should not delay emergency treatment to look for an advance decision if there is no clear indication that one exists. But if it is clear that a person has made an advance decision that is likely to be relevant, healthcare professionals should assess its validity and applicability as soon as possible. Sometimes the urgency of treatment decisions will make this difficult.

When can healthcare professionals be found liable?

- Healthcare professionals must follow an advance decision if they are satisfied that it exists, is valid and is applicable to their circumstances. Failure to follow an advance decision in this situation could lead to a claim for damages for battery or a criminal charge of assault.
- But they are protected from liability if they are not:
  - aware of an advance decision, or
  - satisfied that an advance decision exists, is valid and is applicable to the particular treatment and the current circumstances (section 26(2)).
- If healthcare professionals have genuine doubts, and are therefore not 'satisfied', about the existence, validity or applicability of the advance decision, treatment can be provided without incurring liability.
- Healthcare professionals will be protected from liability for failing to provide treatment if they 'reasonably believe' that a valid and applicable advance decision to refuse that treatment exists.
- But they must be able to demonstrate that their belief was reasonable (section 26(3)) and point to reasonable grounds showing why they believe this. Healthcare professionals can only base their decision on the evidence that is available at the time they need consider an advance decision.

[https://www.england.nhs.uk/improvement-hub/wp-content/uploads/sites/44/2017/11/Advance-  
Decisions-to-Refuse-Treatment-Guide.pdf](https://www.england.nhs.uk/improvement-hub/wp-content/uploads/sites/44/2017/11/Advance-Decisions-to-Refuse-Treatment-Guide.pdf)