



**Case Based
Learning**



Year 3 Case-based Learning 2024-25

Case 4 Part 2 Facilitator Guide



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Case overview: Chronic problems

Part 1:	Multimorbidity
Part 2:	Falls assessment

Student timeline

This timeline outlines when the Case materials will be released on the portal. Your CBL sessions may not coordinate exactly with this timeline as these details will be decided by each LIC site, but students should have the relevant session content available on the portal for each session.

27/1/25:	Y3 LIC2 begins
17/4/25:	Part 1 information released on portal
From 5/5/25:	Part 1 Independent Session 1
From 12/5/25:	Part 1 Facilitated Session 2
16/5/25:	Part 2 information released on portal
From 19/5/25:	Part 2 Independent Session 1
From 26/5/25:	Part 2 Facilitated Session 2

Part 2 presentation

An 82-year-old man gets in touch with his GP due to unsteadiness in his feet and other non-specific complaints.

Summary

Richard is an 82-year-old retired PE teacher living with his wife. Last year he had a prolonged hospital admission with community acquired pneumonia and NSTEMI. Past medical history includes type 2 diabetes, hypertension, osteoarthritis, and knee and hip replacements. He presented to his GP with unsteadiness on his feet in Part 1. There were multiple contributing factors including instability due to arthritis, postural hypotension, polypharmacy, hypothyroidism and nutritional deficiencies. In Part 2 he is reviewed at a Falls Clinic regarding sarcopenia and frailty, assessed by the

MDT and the case finishes with a repeat review from his GP, when things have improved, and he is better supported in a range of ways.

Learning outcomes

Essential

Note that not all of these will be able to be covered in every session, but students should consider:

- How should we approach a falls assessment? (history and examination)
- How do you interpret and evaluate a pain history?
- In this case, what is our problem list and how might we critique it?
- How might we apply the clinical reasoning process to multifactorial problems?
- In this case, how should we interpret his investigations, including bedside and laboratory tests?
- What therapeutic principles are relevant to patients living with multimorbidity and affected by polypharmacy?
- Can you give me management plans for some of his symptoms and problems? Is there an evidence base for these?
- In what ways is prescribing in the elderly different from younger populations?

Desirable

- Can you see how clinical care is integrated across different teams in this case?
 - What are the challenges to achieving this?
- When looking at patients with multi-morbidity, how can the multidisciplinary team affect management?
- What are some of the complications of diabetes, and how might they arise?
 - Do you know of any relevant screening?
- What are some of the consequences of an ageing population on healthcare systems, on wider society and economy?
 - Do you know of any healthy ageing policy strategies?
- How might the socio-economic burden of chronic disease look in the community? How might integrated care be helpful here?
- What skills are required to treat patients with multiple issues?
 - Are these skills easy to develop and use?

Student guidance

There are two types of sessions – *independent* and *facilitated*. Students have been provided with a case guide and supporting materials, which includes medical documents and investigations. They should have met prior to the facilitated session and worked through the patient materials as a group, using the framework provided in the general guide to write learning outcomes. These should reflect the cognitive processes underlying the case. Students should also consider any additions they would make to the assessment and why, interpret the investigation results available, formulate a differential diagnosis, and suggest a management plan. They should have agreed how to present their learning to each other and their facilitator ahead of the facilitated session.

Key areas for discussion

The main topics for discussion during this session are:

- Falls assessment and management
- Falls prevention (primary, secondary, tertiary)
- Sarcopenia and frailty
- Polypharmacy
- Monitoring and follow-up

Facilitator guidance

The general guide outlines expectations about how both independent and facilitated sessions should be conducted. Students should present their learning from the independent session at the start of the facilitated session. You have been provided with a copy of the student materials.

In your facilitated session, there are a number of learning areas to be highlighted. The materials have intentional gaps which should be explored. Students should explore these in their discussions, facilitated by their Chair, however, we have *suggested some prompts* to stimulate discussion if required.

Falls clinic

Multidisciplinary assessment and management: Gold standard falls assessment includes medical, nursing, pharmacy, physiotherapy (PT), occupational therapy (OT), dietitian and social work review,

each as indicated. These professionals would review the patient at the clinic and then the PT and OT in particular may want to arrange community visits. Multifactorial assessment may include falls history, assessment of gait, balance and mobility, muscle weakness, osteoporosis risk, perceived functional ability, fear of falling, visual impairment, cognitive impairment, neurological impairment, urinary incontinence, home hazards, cardiovascular status and medication review.

Nursing assessment

- Nurses will often check patient observations, including lying/standing BP and patient weight and height to calculate BMI, and will perform a skin check for evidence of pressure sores. They also take a brief social history (home set up, support, carers, mobility and sensory aids, continence).
- Lying blood pressure (BP) reading is much more useful than sitting in assessment for postural hypotension. A standing BP and heart rate should be checked within 1min of standing and then again at 3mins. It is important to note if the patient is symptomatic at any point, and often there is a drop present without symptoms.

Medical assessment

- Falls assessment: Falls are often multifactorial, so the history is key in identifying the underlying cause. Circumstances of the fall should be ascertained, including location, activity at the time, symptoms before the fall (particularly related to cardiac, neurological and musculoskeletal systems) and any injuries sustained. Factors associated with greater risk of future falls include motor problems, sensory impairment, cognitive or mood impairment, orthostatic hypotension, polypharmacy and certain medicines, impairment of activities of daily living, environmental hazards, age and comorbidities. Examination should include cardiovascular, neurological and musculoskeletal systems, as well as vision and gait.
- Sarcopenia: Sarcopenia is characterized by progressive and generalised loss of skeletal muscle mass and strength. Risk factors include age, gender and level of physical activity. It is associated with physical disability, poor quality of life, and death. Interventions for sarcopenia focus on exercise and nutrition.
- Frailty: Frailty is a state related to ageing in which body systems progressively lose their reserves and intrinsic capacity declines. Older people with frailty have a higher risk of adverse outcomes and seemingly minor events can cause severe changes to their physical

and mental wellbeing. There are five frailty syndromes; falls, immobility, delirium, incontinence and susceptibility to side effects of medications. Encountering one of these should raise suspicion about a diagnosis of frailty, but these can also exist without a diagnosis of frailty. The purpose in identifying frailty is to prevent harm. There are a range of tests that can be used to diagnose frailty, but their accuracy is unclear. These include the PRISMA 7 Questionnaire, assessment of gait speed, timed up and go test, the electronic Frailty Index (eFI), and the Rockwood Clinical Frailty Scale (CFS), the latter which was designed to measure frailty after a comprehensive geriatric assessment. Frailty management requires a holistic multidisciplinary assessment and an individualised plan.

- Complications of diabetes: Students should consider the underlying science relating to diabetic complications. Diabetic neuropathy is the most common chronic complication affecting the nervous system with a range of presentations including sensory loss, ulcers, pain, or no symptoms at all. Diabetic retinopathy is associated with diabetic nephropathy and albuminuria and results from progressive microvascular leakage and occlusion. It is classified into different stages according to proliferative disease and maculopathy. He is also at risk of autonomic dysfunction which may contribute to postural hypotension.
- Neuropathic pain: The inclusion of a brief description of a neuropathic pain aims to encourage students to consider what key features make a pain 'neuropathic'. According to the Leeds Assessment of Neuropathic Symptoms and Signs (LANSS), symptoms associated with neuropathic pain include strange unpleasant sensations like prickling or pins and needles, hyperalgesia (abnormal increased sensitivity to pain), allodynia (pain evoked from a stimulus that does not normally cause pain), electric-shock/sudden bursts of pain, and changes in the appearance or temperature of the painful area. Students should consider the pathophysiology of neuropathic pain and its management. According to NICE guidelines, antiepileptics like gabapentin and antidepressants like amitriptyline are recommended. This patient does not have a confirmed cause of pain, and it is worth therefore exploring the use of gabapentin in this patient given its side effect profile.
- Osteoporosis risk: Any elderly patient presenting with falls or risk of falls should have their osteoporosis risk evaluated. The Fracture Risk Assessment Tool (FRAX) was developed by the World Health Organisation to assess fracture risk, and it integrates clinical risk factors for fracture and Bone Mineral Density (BMD) scores at the femoral neck to calculate a 10-year fracture probability. Richard has a few risk factors since he has recently been vitamin D deficient and has a low BMI. Awareness of the need to assess for osteoporosis risk is the

main learning point here, and FRAX scores can be used to determine if bone protection is required.

- Medication list: Encourage students to work through the list and identify the indication for each medicine and how it may contribute to falls risk. Medications that especially increase the risk of falls include benzodiazepines, antidepressants, anxiolytics and drugs associated with orthostatic hypotension. For Richard, although amitriptyline has been stopped (which risks postural drop through its anticholinergic action), antihypertensives, beta-blockers and opioids also increase risk. Amlodipine should be specifically noted as a potential cause for peripheral oedema, especially since there are no signs of fluid overload elsewhere to suggest cardiac failure. Polypharmacy is in itself a risk factor, where the use of five or more medications increases falls risk by 30% in patients in their own home. STOPP START criteria can be applied during medication review.
- Fear of falling: Fear of falling itself increases the risk of falls. Risk factors include a previous fall, female gender and older age. It can lead to decline in physical and mental performance and quality of life. Multidimensional strategies and individualised goals are required to support the patient with fear of falling.
- Social history: This section is especially important in a geriatric assessment. Students should note assessment aims to build a picture of the patient's current function, any carer stress, and how they might be supported further. Questions about mobility aids, handrails/stairlift, steps into house, upstairs/downstairs arrangements, abilities to undertake specific activities of daily living (ADLs), continence, package of care, medication management, driving, visual and hearing aids. These discussions can support consideration of the person's preferences for future care.
- Examination: This includes observation and brief cardiovascular, neurological and musculoskeletal examinations. Students should be encouraged to consider that despite intervention, orthostatic hypotension remains a problem in the falls clinic, as aetiology is likely multifactorial. Further interventions are required. The patient's leg swelling and venous eczema are likely partly attributable to the Amlodipine. Compression stockings may be useful in management point for both postural hypotension and leg swelling, and there is no clinical evidence of peripheral arterial disease so stockings should be safe to use.
- Impression, problem list and plan: These have been left blank for students to consider. Suggestions are as follows:
 - Impression: Multifactorial falls

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- Problem list: Sarcopenia, frailty, postural hypotension, fear of falling, multimorbidity, polypharmacy, leg pain and swelling, venous eczema, osteoporosis risk
- Plan:
 - Postural hypotension – Multiple contributing meds. Stop amlodipine and monitor BP. Advice provided re fluid intake and compression stockings.
 - Leg swelling and venous eczema – stop amlodipine, emollients and compression stockings
 - Wean to stop tramadol – likely of little benefit
 - Due repeat bloods with GP next week with thanks
 - Ongoing input from diabetes team with thanks ?diabetic neuropathy
 - MDT input – OT/PT/dietician
 - Patient education – advice on falls alarm provided
 - Psychological support

Multidisciplinary assessment summaries

- A multidisciplinary falls risk assessment aims to identify individual risk factors so interventions can be targeted and the risk of future falls reduced. These summaries aim to encourage students to appreciate the important input of the MDT in contributing to overall holistic patient care.
- Physiotherapy: PT assessment will comment on any gait or foot abnormalities. This patient may have an antalgic gait secondary to pain from osteoarthritis, or a neuropathic gait given the stocking distribution neuropathy. A timed up and go test is commonly used to screen patients at risk of falls and acts as a measure of frailty. Other recommendations may include supervision, mobility aids and footwear advice. Orthotics may be useful in this case given the presence of neuropathy. Ageing and reduced use can cause balance impairment and muscle weakness, which are common modifiable risk factors. Strength and balance training can be an effective single intervention.
- Occupational therapy: A cognitive assessment is often completed for all patients in a gold standard falls assessment, even if there are no cognitive concerns. This is helpful to have a baseline function documented. There are many different cognitive assessment tools. Examples include the Mini Mental State Examination or the Montreal Cognitive Assessment. The OT will also review what aids are present in the house with the patient and their next of kin, regarding continence (pads, commode, catheters or convenes, location of bathroom

upstairs/downstairs), bedroom (mattress given pressure sore risk, bed rails, hospital bed), bathroom (stools, shower seats, non-slip mats), stairs (hand rails, stair lift), cooking/feeding (adapted crockery, kitchen assessment), home hazards (rugs, trip steps). They will likely also recommend a falls alarm.

- Dietitian: The dietician will carry out a nutritional assessment, including review of food intake and times, and recommend changes according to the risk of sarcopenia. High calorie and protein intake will be recommended for this patient.
- Pharmacy: The pharmacist will have a key role in managing polypharmacy, which is a big issue in the elderly. Documentation around blister packs, pill packs and who administers medication is important. They will also calculate the patient's anticholinergic burden. Richard scores only 1 due to Tramadol which is being stopped anyway. A score of 3+ is associated with increased cognitive impairment and mortality.

Additional materials for facilitated session

GP follow-up

- Chronic management and follow-up: Students should appreciate the role of the GP in monitoring long-term conditions and in repeat assessment following interventions.
- Blood work: TFTs and folate have normalised. HbA1c remains high but it is on a downward trend.
- Telephone assessment: The case ends with the patient in a better place overall, involved with the appropriate services and showing an improved physical and mental state.

Conclusion

Ask the students to summarise the session and direct them to areas where they should undertake more research.

Useful resources

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Age and Ageing. (2019, May). *Falls in older people*. <https://www.bgs.org.uk/resources/falls-in-older-people>

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<https://www.bgs.org.uk/sites/default/files/content/resources/files/2018-05-23>

British Geriatrics Society (2020, January). More is less and less is more? Breaking the cycle of polypharmacy with deprescribing. <https://www.bgs.org.uk/blog/more-is-less-and-less-is-more-breaking-the-cycle-of-polypharmacy-with-deprescribing>

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World Health Organisation (2017). *Integrated care for older people: Guidelines on community level interventions to manage declines in intrinsic capacity*.

<https://www.who.int/publications/i/item/9789241550109>

Yanai H. (2015). Nutrition for Sarcopenia. *Journal of clinical medicine research*, 7(12), 926–931. <https://doi.org/10.14740/jocmr2361w>

Learning opportunities for students

Lectures

Surgery – Malnutrition and nutrition support

Specialties – Endocrinology - Diabetes

Specialities – MSK – Rehabilitation medicine

Other opportunities

Specialties – Endocrinology and Diabetes – Diabetes

Specialties – Musculoskeletal – Orthopaedics: rehabilitation medicine, Rheumatology: osteoporosis,

Medicine - Clinical decision making

Scientific basis of clinical practice – clinical biochemistry, pathology

Foundations for Practice

- Fundamentals of Clinical Science: Pharmacology and therapeutics, sociology/psychology, public health, clinical biochemistry
- Blood, Cardiovascular and Respiratory Systems: Nutrition, pharmacology
- Musculoskeletal: Treatment of pain, osteoporosis, injuries and falls prevention
- Gastrointestinal, Endocrine, Renal and Reproductive Systems: Chemical pathology, diabetes
- Neurological system: Pain
- Family medicine

Previous cases

- Case 21 – ‘I think I need a new knee.’

Acknowledgements

Michael Trimble	Academic Lead for Year 3 CBL
Amy Taylor	ADEPT Fellow CME 2021-22
Andrew Spence	Academic Clinical Lecturer
Philip Toner	Deputy Academic Lead for Year 3
Robin Baker	Academic Lead for Year 3
Jenny Johnston	Academic Lead for Year 3 GP
Paul Hamilton	Academic Lead for CBL Years 1 & 2
Charles Mullan	Honorary Lecturer, Radiology
James Irvine	Geriatric Medicine ST4
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