Year 3 Case-based Learning 2024-25

Case 1 Part 1 Facilitator Guide

Key Contributors:

Michael Trimble – Academic Lead for Year 3 CBL

Amy Taylor – ADEPT Fellow 2021-22

Michael McMahon – ADEPT Fellow 2022-23

Contents

Case summary

A 64-year-old woman presents with PR bleeding and anaemia on a Saturday. She is assessed in ED and admitted to a medical ward. She is reviewed by gastroenterology and investigations reveal colon cancer. She proceeds to an elective right hemicolectomy and suffers a post-operative pulmonary embolism.

Part 1:	Altered bowel habit
Part 2:	Peri-operative care and complications

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.

2/9/24:	Y3 LIC1 begins
6/9/24:	Part 1 information released on portal
From 9/9/24:	Part 1 Independent Session 1 (with facilitator for Case 1)
From 16/9/24:	Part 1 Facilitated Session 2
27/9/24:	Part 2 information released on portal
From 30/9/24:	Part 2 Independent Session 1 (with facilitator for Case 1)
From 7/10/24:	Part 2 Facilitated Session 2

Case 1: Introduction to CBL

The first CBL case introduces students to the change in **process** of CBL from Years 1 and 2. Students have become very proficient at the CBL model, but Year 3 CBL provides new challenges. The format of the first case differs from the rest to support the transition. Students will have a facilitator for all sessions in case 1, aiming to support students with adjustments to the Year 3 framework and clinical reasoning process. The other 3 cases will have independent and facilitated sessions. During the first meeting of the case, students should allocate roles, agendas and agree how to work together as a group.

Part 1 summary

Farah Bibi is a 64-year-old Muslim woman from Bangladesh. She is a widow and lives with her daughter Aysha Chowdhury and her family. Her husband was a taxi driver, her daughter works as a retail assistant and her son in law works in a restaurant. English is her second language. She has a short history of bloody diarrhoea for which she has previously attended her GP. It is the weekend and she is concerned her symptoms are getting worse, so she self-presents to the Emergency Department (ED). The ED doctor refers her medically for a GI opinion given her clinical observations and vulnerabilities. Medical assessment provides a limited history and examination, with a problem list and management plan left blank. Important negatives in the social and family history have been left out. Investigations reveal iron deficiency anaemia. X-ray images are normal. Facilitators are provided with an additional note from the post-take ward round, which students have not been given. This aims to help 'reveal' a more complete history and management plan following student discussion. After a short inpatient stay, the patient is discharged for further outpatient investigation and red-flag surgical review. Results reveal colon carcinoma.

Learning outcomes

Essential

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

- How would you approach to a patient presenting with altered bowel habit and anaemia including history, examination and preliminary investigations?
- How do you formulate a differential diagnosis for a patient presenting to hospital?
- How do you formulate a problem list for a patient presenting to hospital?
- In this case, how would you interpret her laboratory tests and radiological images?
- Suggest an appropriate management plan for a patient with altered bowel habit.
- What principles of pharmacology and therapeutics are important when a patient comes in with an acute illness? Is she on any drugs that should be amended?
- Which sources of best medical practice guidelines are relevant here, and how might we apply them appropriately?
- Demonstrate and apply the clinical reasoning process.
- What does normal bowel histology consist of? What are the histopathological changes pertaining to dysplasia and carcinoma?
- Do you remember epithelial cell biology, cell-cell junctions and how normal epithelial sheets are disrupted in cancer?

- How might this patient's beliefs, social and cultural context (biopsychosocial model) or language barriers impact health behaviours and outcomes?
    - What about participation in screening?
- Can you visualise the patient journey with this case? Look at the process of referral and coordination of care between community services, the emergency department, and medical and surgical inpatient and outpatient care. Are there different options available in and out of hours?

Desirable

- Can you describe the global and local burden of colorectal cancer?
- What are some of the principles of screening criteria for a screening programme, and specifically the screening programme for colorectal cancer?
- Using inspection of cells and bloods counts, how can we work through the differential diagnosis of anaemia?
- What sources of information and support relating to cancer are available for professionals and the public?
- Can you explore the cultural implications of widowhood?
- How might we best communicate across cultures?
- How should we work with professional interpreters, and what are the disadvantages of using family to interpret?
- Have you heard of the "Mrs Bibi / Begum Syndrome"? How might racism, sexism and classism contribute to health inequities?
- How might social determinants affect health?

Student guidance

Students are advised to work through the patient materials as a group during the first session using the framework provided in the general guide to write learning outcomes. In the CBL model, this first session is the independent session, but facilitators are present for all sessions in this first case. In future cases students will write learning outcomes independently.

Learning outcomes should reflect the cognitive processes underlying the case. Students should 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. It is likely that

facilitators may need to orientate students to the right types of outcomes as they adjust to this new style in Year 3.

Key areas of discussion

The main topics for discussion during this session are:

- Interface of services
- Cancer screening services
- Clinical reasoning
- Differential diagnosis
- Problem lists
- Evidence-based investigation and management

Facilitator guidance

The general guide outlines expectations of how both independent and facilitated sessions should be conducted. Students have been provided with a case guide and supporting materials, which includes medical documents and investigations. They have been advised to work through these together and write learning outcomes to help them prepare for the facilitated session. In the first session, your main role is to keep the students on track and ensure they identify the relevant learning outcomes. Orientate them towards cognitive processes, since after this first case the students will be undertaking this session by themselves. It is not about information delivery, but identifying what information needs to be considered.

In the second session, which is the typical facilitated session, there are a number of learning areas to be highlighted. You have been provided with the same materials as students, and additional materials to share with them in the second session as the case progresses. The materials have intentional gaps which should be explored by the students in their discussions, facilitated by their Chair, however, we have *suggested some prompts* to stimulate discussion if required.

NIECR record: GP Outpatient Referral Letter

- Bowel cancer screening:

- Students should revise principles of criteria for a screening programme, and specifically consider the screening programme for colorectal cancer.
- Health behaviour: Students should recognise that participation in a screening programme is a 'health behaviour', and uptake is influenced by socio-behavioural factors. The extent to which people are likely to engage with screening services can be explained with reference to health behaviour models, particularly the Health Belief Model (HBM). The HBM explains participation in bowel screening in terms of the **patient's perceptions/ beliefs,** including ideas about perceived threat (perceived susceptibility to bowel cancer and its perceived severity as a disease), perceived benefits and barriers to screening, cues to action and health motivation. So, perceived benefits of screening might include peace of mind, reassurance, reduced worry, and early detection and higher chance of cure. Some patients may not recognise the benefits to early detection. Perceived barriers include embarrassment associated with screening, inconvenience, perceived discomfort / pain etc. Research has found that a doctor's recommendation to participate in screening, and advice from family and friends are the most effective cues to action (Lau et al., 2020), emphasising the important role that doctors play in continuing to advise their patients to be screening-adherent. Other factors such as age, gender, health literacy and culture also influence uptake. Lower rates of colorectal screening and surveillance are found among racial and ethnic minority groups.
- Chemical pathology: The Quantitative Faecal Immunochemical Test (qFIT) test. The Northern Ireland Cancer Network (NICaN) recommends that qFIT is carried out where possible on all patients with new lower GI symptoms as part of initial investigation in general practice. The qFIT is a test to detect blood in stool samples which uses antibodies that specifically recognise human haemoglobin released from lysed or broken-down red cells. NICaN amended the Lower GI Suspected Cancer criteria/pathway in conjunction with the availability of this new test in primary care, and it is used to risk stratify patients to determine urgency of investigation in secondary care.
- Chemical pathology: Tumour markers. This topic may come up in student discussions. It is important that students realise these are not screening tests but used to monitor treatment response, assess for recurrence and estimate prognosis.
- Public health: Students should consider the global and local burden of colorectal cancer. This includes epidemiology, aetiology, and the role of the NI Cancer registry.
- Social determinants of health: The social conditions in which people live influence their chances to be healthy. Factors such as poverty, food insecurity, social exclusion and

discrimination, poor housing, unhealthy early childhood conditions and low occupational status are important determinants of most diseases, deaths and health inequalities between and within countries. While minority ethnic groups in the UK are more likely to live in poverty, this is highest among Bangladeshis, including those in employment. While rates of poverty among Bangladeshis has been decreasing over recent years, a report by the Joseph Rowntree Trust found that in 2019/2020, 53% of Bangladeshis were living in poverty compared with 48% of Pakistanis and 19% of whites. The economic situation of Bangladeshis has been improving because more women are in employment, however low wages received by Bangladeshis in the UK is contributing to poverty.

Emergency Department (ED) flimsy

- Triage: Students should familiarise themselves with the structure of an ED flimsy. Triage assessment is an important aspect. Patients are asked a series of mandatory questions and have some initial actions undertaken based on their observations, such as an ECG if they have tachycardia. They are then placed in a category according to the Manchester Triage System, a clinical risk management tool. Triage categories in ED are Category 1 (resuscitation), Category 2 (very urgent), Category 3 (urgent), Category 4 (standard), and Category 5 (non-emergency). Patients will then be streamed to the relevant area. This patient will likely go to Majors given her tachycardia.
- ED assessment: Students should critique the ED assessment and identify how it might be improved.
- Working with interpreters: The BSO Health and Social Care Interpreting Service provide face-to-face interpreting in NI 24 hours a day. It's free of charge to use for both practitioner & patient. Bigword is an interpreter service that can be accessed over the telephone. Providing an interpreter eliminates language and cultural barriers, improves access to services, reduces the risk of misdiagnosis, misunderstanding and non-consent, raises awareness in relation to religious/cultural needs and different health belief systems, enables patients to make choices, increases patient satisfaction and reduces repeat visits, complies with legislative requirements. Dangers of using untrained interpreters include lack of fluency, inaccurate interpreting, lack of obligation to maintain confidentiality, honesty and impartiality, lack of knowledge in the subject matter and terminology, possible misuse of trust, power and information, and conflict of interest. Friends, relatives or other persons should not be used as interpreters unless in an emergency, or for very routine administration tasks such as setting up an appointment.

- Differential diagnosis: Students should consider a variety of medical and surgical causes. Ask students to explain their underlying clinical reasoning process and rationalise why some possibilities are more or less likely. This list should include inflammatory bowel disease (IBD) and an infective cause, particularly if the patient has recently travelled home.
- Management: *What investigations should be requested in ED?* ED would likely require routine blood tests including a venous blood gas, which they would use to get a lactate and risk stratify the patient's presentation. Stool samples x3 would be requested given the infective differential. The team would aim to nurse the patient in a side room until this was ruled out. Students should consider the relevance of requesting a Chest X-ray (CXR) and an Abdominal X-ray (AXR). An erect CXR assesses for free air. AXRs are not indicated for non-specific abdominal pain. Main indications include clinical suspicion of bowel obstruction or following ingestion of certain foreign bodies. An AXR may be acceptable in this case given the concern about IBD. Whatever students suggest, enquire into their reasoning for each part and ensure they critique their own plan. A notable missing investigation in the plan is a Chest X-ray.
- Admission: *Should the patient be admitted?* Encourage students to discuss the approach to deciding whether to admit a patient from ED. It may not be ideal to admit this patient, but factors supporting admission include, clinical observations (tachycardia), the weekend presentation and potential vulnerabilities, including a language barrier and cultural understanding.

  Would admission differ if she presented on a weekday? Patients who attend ED should be critically unwell and require resuscitation. The outcome may have been different on a weekday. She may have presented to her GP instead and if she was well enough options would have included onward referral to a rapid access clinic. If she had attended ED on a weekday, she may have been triaged to an acute assessment area for same day assessment from GI (Same Day Emergency Care (SDEC)) rather than admission.
- Mrs Bibi Syndrome: Many South Asian women in the UK are disproportionately victims of racist, sexist and often classist, medical stereotypes such as "Mrs Bibi Syndrome". "Bibi-itis" or "Mrs Bibi" is a derogatory term, derived from the surname "Bibi." It refers to female patients of south Asian heritage who are said to present with exaggerated subjective complaints, backed up by few objective findings. Usually, the term is applied to older women with limited English. It's also used more widely, referring to seemingly inexplicable complaints in south Asian women. It's used by white doctors as well as those from minority groups. Use of the term is compounded by the belief that older Asian women express

psychological distress through physical symptoms. The term serves as an example of casual clinical stereotyping that can cause unrecognised bias leading to missed diagnoses, delayed treatment, and preventable unwanted outcomes (Ali, 2020). The “Mrs Bibi Syndrome” is an example of intersectionality when people’s multiple minority statuses intersect to create multiple disadvantages e.g. Mrs Bibi’s ethnicity, gender and social class.

Medical assessment document

The medical clerk-in is incomplete and does not describe all relevant points in the history. The students should identify areas that are missing, including relevant negatives e.g. family history of colon cancer, and details in the social history. They should form a differential diagnosis, problem list and appropriate management plan. The ‘answers’ can be revealed in the post-take ward round note.

- History: Students should critique the history and identify that further information would be helpful, including a description of the PR bleeding and other symptoms such as appetite and nausea/vomiting. Key negatives have been left out, including infectious contacts, recent travel and family history of cancer. The importance of establishing baseline function in social history is also relevant, a crucial step in deciding fitness for surgery or escalation of care. Social history should also assess the patient’s support system and occupation to help build a picture of the social determinants of her health. It is also an opportunity to screen for alcohol misuse.
- Medications and pharmacology: Students should consider the process of medicine reconciliation. In particular, students should consider ACE-inhibitor effects on afferent and efferent renal arterioles (intraglomerular pressure) and how that generates the need for ‘sick day rules’ for drugs that block the renin-angiotensin-aldosterone system. This patient’s ramipril should therefore be held as the patient is at risk of Acute Kidney Injury.
- Investigations:

- Blood work – *How do the blood results help diagnosis? What do they rule in or out? How do they inform the differential diagnosis of anaemia?* The haematology profile, haematinics and blood film are consistent with iron deficiency anaemia. This provides a chance for students to think about the guidelines for investigating and managing microcytic hypochromic anaemias, which they encountered in Year 1 CBL Case 3, ‘I just don’t have the energy.’ Students should also be able to describe why these blood tests have been sent, and what other tests are indicated for further investigation.
- ECG – Sinus tachycardia, consistent with a dehydrated and stressed patient.

- X-rays – Normal CXR and AXRs are shown, although the ED only specified AXR. Students should rationalise why these have been requested and describe how to present them.
- Differential diagnosis: Students should consider a variety of medical and surgical causes. Ask students to explain their underlying clinical reasoning process and rationalise why some possibilities are more or less likely. This list should include inflammatory bowel disease, colorectal cancer, infectious colitis and ischaemic colitis.
- Problem list – How to form a problem list and its advantages should be discussed. Problem lists identify the acute issues and helps direct management. This includes bloody diarrhoea; iron deficiency anaemia; dehydration raised WCC and CRP ?inflammation/infection; weight loss.
- Management plan:
- This should include stool cultures, stool chart, faecal calprotectin, further bloods (Tissue Transglutaminase (TTG) for Coeliac disease, thyroid function tests), CXR, AXR, venous blood gas, ECG, IVF, prophylactic clexane, hold ramipril, dietician review, red flag outpatient colonoscopy.
- Investigations for altered bowel habit with PR bleeding – Students should acknowledge there are NICE/BSG guidelines regarding referral for red flag investigations such as colonoscopy.
- Anaemia – Considering chemical pathology, students should recognise the need for additional blood tests such as haematinics (iron profile, vitamin B12 and folate levels) to identify the likely cause of the anaemia. Students should reference guidelines for the management of iron deficiency anaemia and acknowledge that the anaemia is not severe enough for blood transfusion.

Additional materials for facilitated session

Post-take ward round (PTWR)

You are given a small amount of additional materials to reveal to students by way of 'answers' during the facilitated session. This should not be new information for students, but provides supplementary information about record-keeping and continuing the patient 'story'. Share the PTWR entry with them and reveal the missing information from the clerk-in to help students consider what they left out. Do not share this with the students in the independent session.

Outpatient diagnostic investigation results provided for students

After the PTWR note has been discussed and colonoscopy suggested, students should discuss the endoscopy report and image and pathology results. They have been provided with these.

- Endoscopy – this image and report shows a caecal tumour.
- Pathology/micro-anatomy – High grade dysplasia is confirmed in the biopsy of caecal tissue. Students should reflect on how this suspicion of malignancy will be taken forward to MDM discussion. Encourage students to review normal histology and the changes pertaining to dysplasia and colorectal adenocarcinoma. This can be reviewed instead in Part 2 if students do not identify this in Part 1. Similarly, normal and abnormal epithelial cell biology can be explored here or in Part 2.
- Diagnosis and management: *What is the diagnosis? What is the next stage in management? What information is relevant in these decisions?* The likely diagnosis is colon cancer, so the patient should have a red flag CT chest abdomen and pelvis to assess for metastases and should be referred to the lower GI MDM. The patient's performance status should be discussed, particularly as this information was missing from the clerk-in, which can influence the most appropriate management strategy. Given the patient has a performance status of 0 then surgical referral is the likely outcome.
- Public health related to colorectal cancer: Sources of information on cancer for professionals and the public and the role of the cancer registry in NI could be highlighted.

Conclusion

Ask the students to summarise the session and direct them to areas where they should undertake more research. Advise them that the patient proceeds to MDM discussion and outpatient surgical review.

Useful resources

Alam, T. A. I., Hossen, S., Hasan, I., Akhtaruzzaman, M., & Arefin, M. (2021). Hemoglobin and Nutritional Status among the Elderly in Selected Rural Area of Bangladesh. *International Journal of Research and Reports in Hematology, 4*,3, 8-16.

Ali F. (2020). Don't call me Bibi-or anybody else, for that matter. *BMJ (Clinical Research ed.)*, *368*, m535. https://doi.org/10.1136/bmj.m535

Arasaradnam, R. P., Brown, S., Forbes, A., Fox, M. R., Hungin, P., Kelman, L., Major, G., O'Connor, M., Sanders, D. S., Sinha, R., Smith, S. C., Thomas, P., & Walters, J. (2018). Guidelines for the investigation of chronic diarrhoea in adults: British Society of Gastroenterology, 3rd edition. *Gut*, 67(8), 1380–1399. https://doi.org/10.1136/gutjnl-2017-315909

Campbell, C., Douglas, A., Williams, L., Cezard, G., Brewster, D. H., Buchanan, D., Robb, K., Stanners, G., Weller, D., Steele, R. J., Steiner, M., & Bhopal, R. (2020). Are there ethnic and religious variations in uptake of bowel cancer screening? A retrospective cohort study among 1.7 million people in Scotland. *BMJ Open*, *10*(10), e037011. https://doi.org/10.1136/bmjopen-2020-037011

Goddard, A. F., James, M. W., McIntyre, A. S., Scott, B. B., & British Society of Gastroenterology (2011). Guidelines for the management of iron deficiency anaemia. *Gut*, 60(10), 1309–1316. https://doi.org/10.1136/gut.2010.228874

Joseph Rowntree Foundation. (2022) *Poverty rates by ethnicity.* https://www.jrf.org.uk/data/poverty-rates-ethnicity

International Criminal Police Organisation. (2006, March). *A guide to names and naming practices.* https://www.fbiic.gov/public/2008/nov/Naming_practice_guide_UK_2006.pdf

Lau, J., Lim, T. Z., Jianlin Wong, G., & Tan, K. K. (2020). The health belief model and colorectal cancer screening in the general population: A systematic review. *Preventive Medicine Reports*, *20*, 101223. https://doi.org/10.1016/j.pmedr.2020.101223

National Institute for Health and Care Excellence. (2020, January). *Colorectal cancer*. Overview | Colorectal cancer | Guidance | NICE

Northern Ireland Cancer Network (2021, June). *Northern Ireland Referral Guidance for Suspected Cancer – Red Flag Criteria.* NICaN-GP-Suspect-Cancer-Referral-Guidance-Revised-25.6.21.pdf (hscni.net)

Northern Ireland Cancer Network (2021, July). *qFIT for lower GI symptoms.* (qFIT for lower GI symptoms | Northern Ireland Cancer Network (hscni.net)

Northern Ireland Cancer Registry (2022, March). *Northern Ireland Cancer Registry* (Northern Ireland Cancer Registry | N. Ireland Cancer Registry (qub.ac.uk)

Northern Ireland Public Health Agency. Colorectal Screening Programme (HSC Public Health Agency | Bowel Cancer Screening)

Queen's University Belfast (2021, September). *Northern Ireland Cancer Registry Official Statistics.* Official Statistics | N. Ireland Cancer Registry (qub.ac.uk)

Oakland, K., Chadwick, G., East, J. E., Guy, R., Humphries, A., Jairath, V., McPherson, S., Metzner, M., Morris, A. J., Murphy, M. F., Tham, T., Uberoi, R., Veitch, A. M., Wheeler, J., Regan, C., & Hoare, J. (2019). Diagnosis and management of acute lower gastrointestinal bleeding: guidelines from the British Society of Gastroenterology. *Gut*, 68(5), 776–789. https://doi.org/10.1136/gutjnl-2018-317807

Royal College of Emergency Medicine. (2019, November). *Joint Statement RCEM and SAM regarding Same Day Emergency Care*. https://rcem.ac.uk/joint-statement-rcem-and-sam-regarding-same-day-emergency-care/

The Royal College of Radiologists (2016, February). *Indications for Plain Abdominal films from the Emergency Department*. https://www.rcr.ac.uk/audit/indications-plain-abdominal-films-emergency-department

Learning opportunities for students

Lectures

- Medicine - Gastroenterology – Altered bowel habit and abdominal pain
- Medicine - Gastroenterology – Weight loss
- Surgery – Inflammatory bowel disease
- Surgery – Blood Transfusion
- Specialities – Haematology – Anaemia

Other opportunities

- Scientific basis of clinical practice – Haematology – The full blood count resources
- Medicine – An introduction to ECG interpretation
- Medicine – Chest X-ray
- Medicine – Practical therapeutics
- Medicine – Using laboratory tests
- Medicine – Clinical decision making
- Surgery – Key links – Abdominal X-ray
- Medicine – Case presentations in internal medicine – Gastrointestinal

Foundations for Practice

- Fundamentals of Clinical Science: Microanatomy, Cell biology, Behavioural science/Psychology, Neoplastic pathology

- Blood, Cardiovascular and Respiratory Systems: Anaemia, Renin Angiotensin System, ACE Inhibitors and Angiotensin Receptor Blockers
- Gastrointestinal, Endocrine, Renal and Reproductive Systems: Anatomy of gastrointestinal tract, chemical pathology

Previous cases

- Y1 CBL Case 3, 'I just don't have the energy.'

Acknowledgements

Michael Trimble	Academic Lead for Year 3 CBL
Amy Taylor	ADEPT Fellow CME 2021-22
Michael McMahon	ADEPT Fellow CME 2022-23
Andrew Spence	Academic Clinical Lecturer
Philip Toner	Academic Lead for Year 3
Robin Baker	Deputy 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
Sophie Davidson	General Surgery ST6
Rick Plumb	Academic Lead C Theme
Mark Harbinson	Academic Lead A Theme
Grainne Kearney	Deputy Academic Lead A Theme
Tom Bourke	Academic Lead T Theme
Helen Reid	Academic Lead T Theme
Diarmuid O'Donovan	Academic Lead G Theme
Vivienne Crawford	Deputy Academic Lead G Theme
Nigel Hart	Academic Lead for GP

Mairead Corrigan	Academic Lead for Equality & Diversity
Noleen McCorry	Lecturer in Population Health & Health Care
Laura McGowan	Lecturer in Nutrition and Behaviour Change

Legacy Subject Science Leads