

Clinical knowledge measurement tool about drug-related problems

Gender: (M) Male (F) Female Age (years): _____ Code: _____

Instructions: Clinical cases 1 – 3.

For each of the proposed statements, please indicate how relevant it is for each clinical case, by circling the appropriate number on 7-point scale (higher number indicates greater relevance).

Clinical case 1

A slightly overweight, 51-year-old female patient who regularly visits your pharmacy presents a prescription for perindopril 5 mg. The dispensing records indicate that the last antihypertensive agent prescribed for this patient was the perindopril/indapamide combination and it was last dispensed 3 months ago. Please indicate how relevant each piece of additional information would be in this case.

	Totally irrelevant	Moderately irrelevant	Only slightly irrelevant	Neutral	Only slightly relevant	Moderately relevant	Very relevant
1. Discuss with the patient whether the medication change was intentional.	1	2	3	4	5	6	7
2. Discuss with the patient's doctor whether the medication change was intentional.	1	2	3	4	5	6	7
3. Discuss with the patient their compliance with the antihypertensive agent.	1	2	3	4	5	6	7

Clinical case 2

A frail 80-year-old male patient presents to collect his last repeat from his glyceryl trinitrate (GTN) sublingual spray prescription. On dispensing, the pharmacist notices that this is the third time this medication has been dispensed in the last 2 weeks. Please indicate how relevant each piece of additional information would be in this case.

	Totally irrelevant	Moderately irrelevant	Only slightly irrelevant	Neutral	Only slightly relevant	Moderately relevant	Very relevant
4. Determine if the pain the patient is feeling is actually due to angina.	1	2	3	4	5	6	7
5. Ask the patient to demonstrate his administration technique.	1	2	3	4	5	6	7
6. Determine how long since the patient's general practitioner has reviewed his angina treatment.	1	2	3	4	5	6	7
7. Determine how efficacious the GTN spray is.	1	2	3	4	5	6	7

Clinical case 3

A 58 kg, 35-year-old woman presents to the pharmacy to collect a prescription for methotrexate 10 mg weekly from her rheumatologist, which is a new medication for her. Please indicate how relevant each piece of additional information would be in this case.

	Totally irrelevant	Moderately irrelevant	Only slightly irrelevant	Neutral	Only slightly relevant	Moderately relevant	Very relevant
8. Determine if the patient has had baseline liver function tests.	1	2	3	4	5	6	7
9. Determine if the patient has had a negative pregnancy test and is currently taking/using adequate contraception.	1	2	3	4	5	6	7
10. Determine if the side effects of methotrexate have been explained to the patient.	1	2	3	4	5	6	7
11. Determine if the patient has been instructed to take folic acid.	1	2	3	4	5	6	7
12. Determine how often the patient drinks alcohol.	1	2	3	4	5	6	7

Instructions: Clinical cases 4 – 6.

For each of the proposed statements, please indicate how likely it is for each clinical case, by circling the appropriate number on 7-point scale (higher number indicates higher likelihood).

Clinical case 4

A 65 kg, 45-year-old female patient comes into the pharmacy to enquire about possible side effects. She was commenced on paroxetine 20 mg daily a few days ago and has been experiencing increasing anxiety (which is the reason the paroxetine was initially started), sweating and tachycardia. She has a medical history of atrial fibrillation and severe lower back pain, and is also taking digoxin, ramipril, tramadol and methadone. Please indicate how likely each drug-related problem would be in this case.

	Highly unlikely	Moderately unlikely	Only slightly unlikely	Neutral	Only slightly likely	Moderately likely	Highly likely
13. The commencement of the paroxetine may have resulted in an increase in anxiety for the patient.	1	2	3	4	5	6	7
14. This dose of paroxetine is unlikely to be controlling the patient's anxiety symptoms and an increase in her dose should be considered.	1	2	3	4	5	6	7
15. The paroxetine may have interacted with the tramadol to cause the patient's symptoms.	1	2	3	4	5	6	7
16. The paroxetine may have interacted with the digoxin to cause the patient's symptoms.	1	2	3	4	5	6	7

Clinical case 5

A slightly overweight, 78 year-old female patient with a history of hypertension and mild heart failure presents with prescription for furosemide 20 mg daily to treat her swollen ankles. She is also currently taking lercanidipine 20 mg ramipril 2.5 mg daily, plus amitriptyline 10 mg nightly for sleep. Please indicate how likely each drug-related problem would be in this case.

	Highly unlikely	Moderately unlikely	Only slightly unlikely	Neutral	Only slightly likely	Moderately likely	Highly likely
17. The patient's symptoms are likely to indicate a worsening of her heart failure.	1	2	3	4	5	6	7
18. Lercanidipine could be causing peripheral edema.	1	2	3	4	5	6	7
19. The swollen ankles may be due to an increased fluid intake resulting from hyperglycemia.	1	2	3	4	5	6	7
20. The patient may have syndrome of inappropriate antidiuretic hormone secretion which has led to swollen ankles.	1	2	3	4	5	6	7

Clinical case 6

A woman comes into the pharmacy to collect her elderly husband's prescriptions for him while he is recuperating at home. She states there is a new prescription for 'Imdur (isosorbide mononitrate) 60 mg in the morning' that was started in the hospital last week. The new medication doesn't seem to be working and her husband is still experiencing chest pain. The husband's history shows regular dispensing of pantoprazole 40 mg nightly, clopidogrel 75 mg in the morning, atorvastatin 20 mg nightly, Duride (isosorbide mononitrate) 60 mg nightly, perindopril 5 mg and tiotropium 18 µg in the morning and glyceril trinitrate spray p.r.n. Please indicate how likely each drug-related problem would be in this case.

	Highly unlikely	Moderately unlikely	Only slightly unlikely	Neutral	Only slightly likely	Moderately likely	Highly likely
21. Her husband may be experiencing a decrease in symptom control for his chronic obstructive pulmonary disease and his shortness of breath is causing the chest pain.	1	2	3	4	5	6	7
22. Her husband may be experiencing nitrate tolerance if he has continued to take the Duride brand that he was initially prescribed, as well as the Imdur from the hospital.	1	2	3	4	5	6	7
23. Her husband should have aspirin added to decrease his chest pain symptoms.	1	2	3	4	5	6	7

Instructions: Clinical cases 7 – 9.

For each of the proposed statements, please indicate how appropriate it is for each clinical case, by circling the appropriate number on 7-point scale (higher number indicates higher appropriateness).

Clinical case 7

A slightly overweight, 70-year-old male patient is currently taking warfarin (dose is 5 mg/4 mg on alternate days). He has a dental prescription for an abscess for amoxicillin 500 mg three times a day and metronidazole 400 mg three times a day. Please indicate how appropriate each recommendation would be in this case.

	Totally inappropriate	Moderately inappropriate	Only slightly inappropriate	Neutral	Only slightly appropriate	Moderately appropriate	Very appropriate
24. Cease the warfarin while taking the antibiotics.	1	2	3	4	5	6	7
25. Discuss the interaction with the patient and recommend an increase in international normalised ratio (INR) monitoring while taking the antibiotics.	1	2	3	4	5	6	7
26. Discuss the signs and symptoms of an increased INR with the patient.	1	2	3	4	5	6	7
27. Recommend ibuprofen for pain relief for the dental abscess.	1	2	3	4	5	6	7
28. Halve the warfarin dose while taking the antibiotics.	1	2	3	4	5	6	7
29. Change the warfarin to aspirin while using the antibiotics.	1	2	3	4	5	6	7

Clinical case 8

A 65 year-old female with airways disease has a recent dispensing history containing Seretide 250/25 (two puffs twice a day and Ventolin inhaler (1–2 p.r.n.). She presents a 3-monthold prescription to the pharmacist for prednisolone 25 mg, which reads '25 mg twice a day for three days, then 12.5 mg twice a day for three days'. On further discussion, the pharmacist determines that the patient is currently experiencing a worsening of the respiratory symptoms and is unsure what dose of prednisolone she should be taking. Please indicate how appropriate each recommendation would be in this case.

	Totally inappropriate	Moderately inappropriate	Only slightly inappropriate	Neutral	Only slightly appropriate	Moderately appropriate	Very appropriate
30. Advise the patient not to take the prednisolone 25 mg at all.	1	2	3	4	5	6	7
31. Commence over-the-counter pantoprazole 20 mg daily to decrease the risk of gastrointestinal bleeds while taking the prednisolone.	1	2	3	4	5	6	7
32. Contact the patient's general practitioner and determine what prednisolone dose she should currently be taking.	1	2	3	4	5	6	7
33. Advise the patient to cease the Seretide while she is taking the prednisolone tablets.	1	2	3	4	5	6	7
34. Advise the patient to increase the use of her Ventolin inhaler in preference to using the prednisolone.	1	2	3	4	5	6	7

Clinical case 9

120 kg, 40-year-old male smoker with osteoarthritis is taking esomeprazole 40 mg daily, but currently has no gastrointestinal symptoms. The only other medication he is currently taking is regular paracetamol for his osteoarthritis pain that he buys over the counter, and his dispensing history shows ketoprofen and cephalexin dispensed several months ago. Please indicate how appropriate each recommendation would be in this case.

	Totally inappropriate	Moderately inappropriate	Only slightly inappropriate	Neutral	Only slightly appropriate	Moderately appropriate	Very appropriate
35. Recommend the patient return to the general practitioner to reduce his dose to 20 mg daily.	1	2	3	4	5	6	7
36. Recommend the patient return to the general practitioner to trial using esomeprazole on a p.r.n. basis.	1	2	3	4	5	6	7
37. Discuss a weight management programme with the patient.	1	2	3	4	5	6	7
38. Discuss smoking cessation with the patient.	1	2	3	4	5	6	7
39. Recommend the patient have his vitamin B12 levels checked.	1	2	3	4	5	6	7
40. Recommend the patient stop the regular paracetamol and change back to ketoprofen to control his osteoarthritis pain.	1	2	3	4	5	6	7

Disclaimer: All clinical cases are fictional, they do not represent real patients, and were made for the purpose of clinical knowledge measurement tool about drug-related problems.