



NZREX Clinical

- **Sample questions**

NZREX Clinical is an examination that specifically focuses on the **application of clinical knowledge and clinical decision making**. The stations will be structured to examine the candidate's ability in these areas. In preparing for NZREX Clinical, candidates are encouraged to focus on the management of common clinical conditions encountered at intern level.

NZREX Clinical will have dynamic and static stations. The majority of stations will be dynamic stations where an actor plays the role of a simulated patient. An examiner will also be present at these stations.

Dynamic stations will focus on

- appropriate physical examination in a given clinical scenario
- communication skills
- history taking appropriate to the presenting clinical problem or
- other tasks that demonstrate the application of clinical knowledge.

Static stations will be paper based and will not have an actor present. These stations will focus on application of clinical knowledge and clinical decision making related to activities such as:

- interpreting x rays of common conditions and deciding on the appropriate management
- interpretation of common abnormal blood tests and deciding on correct management
- interpretation of other investigative tests such as ECGs, spirometry etc and deciding on appropriate management.

Many of these stations will have a patient scenario. Candidates will be required to choose the correct clinical management from relevant investigations for that scenario.

The following sample questions are typical examples of stations that candidates may encounter in NZREX Clinical. These questions are provided to give candidates an understanding of what will be expected of them during the exam and how to approach the various types of stations. The questions are intended as a guide only. Candidates are advised not to focus excessively on the clinical detail contained in these questions as they prepare for NZREX Clinical.

COMMUNICATION STATION

Typical circumstances requiring good communication skills that interns would encounter include:

- communication with other staff such as nurses
- giving informed consent for standard procedures
- patient consultations where there is a psychosocial component
- giving bad news to a patient
- telephoning a registrar or consultant for advice
- writing discharge letters.

This list is not exhaustive but is given to illustrate the range of situations in which a candidate would be expected to demonstrate good communication skills.

The following case is given as an example.

Instructions for actors

Scenario

You were admitted to hospital three days ago with quite severe tummy pain. You had numerous investigations and yesterday you were told that the cause is gallstones and that you would probably be discharged today. Your pain has gone. You also need to get a repeat of your oral contraceptive pill and have decided to ask the doctor who is going to discharge you for this. You have been on Microgynon for many years and are quite happy on it. You are aware that your blood pressure has been getting higher over the last few years but you have never been told that it is too high.

Background

You are 35 years of age. You smoke 20 a day and have done so for years. Currently you have no intention of giving up smoking. You are divorced and look after your 12 and 14 year old kids. As far as you are concerned you are fit and healthy apart from the problem with gallstones. You are aware that there is a bad family history of heart disease, your father died of a heart attack at 49 years of age and many uncles and aunts died of heart disease at similar ages.

Instructions

From your perspective you need more contraceptive pills and are not aware that there should be any difficulty in getting them. Indeed you would be quite put out if told you will not be getting a repeat prescription from the doctor who will be discharging you.

Instructions for candidates

You are discharging a patient from hospital. She has been diagnosed with gallstones as a cause of her abdominal pain.

You need to:

- inform her of follow up arrangements at an outpatient clinic in one month,
- ensure she sees her general practitioner should she get further pains
- answer any further questions she may have.

Do not undertake a physical examination or retake her history as there are no marks available for this.

Examiner marking sheet

	Performed competently		Performed but not fully competent		Not performed or incompetent	
Initial approach to the patient (introduces him-her self, explains what he/she will be doing)	2		1		0	
Gives clear instructions regarding seeing a general practitioner	2		1		0	
Gives clear instructions regarding outpatient appointment	2		1		0	
Allows patient to discuss issues of concern	2		1		0	
Obtains contraceptive history	2		1		0	
Obtains information regarding risk factors for combined oral contraceptive pill	2		1		0	
Informs patient of risks of combined oral contraceptive pill	2		1		0	
Declines to prescribe combined oral contraceptive pill	2		1		0	
Ensures patient is not at increased risk of pregnancy by discussing alternative methods	2		1		0	
Suggests seeing general practitioner for further contraceptive advice	2		1		0	
Overall approach to the task	4	3	2	1	0	
Communication – patient mark	4	3	2	1	0	
Total (max 28)						

HISTORY STATION

A history station is solely concerned with examining a candidate's ability to take an adequate history. If the instruction is to take a history, there will be no marks available for physical examination or discussing treatment options. The examiners are looking for a directed approach from the candidate that indicates selective questioning appropriate to the clinical problem that is likely to lead to an accurate diagnosis. In some stations, the candidate will be asked what the differential diagnosis is at the end of the station.

The following case is given as an example.

Instructions for actors

You are a 65 year old man who has been sent by your general practitioner to outpatients at a hospital for an opinion. You have had increasing pain in your right leg for 9 months now. It started as an ache when walking that you felt mainly in your calf. If you stopped walking the pain would go in a couple of minutes. Although you used to be able to walk about a kilometre, the pain seems to come on much sooner now and you find that walking more than 100 meters will bring the pain on. Over the last month or so you have also noticed that your foot feels very cold at night. You have not had any pain in your leg or foot that has come on when resting.

Past history

You have had high blood pressure for about 10 years. You take bendrofluazide for this. More recently your general practitioner put you on a medication called felodipine to assist with your blood pressure and to help with the leg pain. It seems to have made little difference to the pain. You had your appendix removed as a young man and had a fractured ankle many years ago that required you to be in cast for six weeks. You smoke 20 cigarettes a day and have done so since you were 20 years of age. You go to the RSA club on a Friday night and have 3-4 glasses of beer but do not drink alcohol apart from this. You are retired from your job as an electrician and live with your wife. She keeps good health.

Instructions for candidates

You are seeing a patient in outpatients who has been referred by his general practitioner because of leg pain. Please take a history from the patient.

Do not undertake a physical examination and do not discuss treatment options as there are no marks available for either of these.

Examiner marking sheet

	Performed competently		Performed but not fully competent		Not performed or incompetent	
Initial approach to the patient (introduces him-herself, explains what he/she will be doing)	2		1		0	
History of increasing pain in calf	2		1		0	
Pain worse with exercise, relieved with rest	2		1		0	
No rest pain	4		2		0	
Cold foot at night	2		1		0	
History of smoking 45 pack years	2		1		0	
Alcohol history	2		1		0	
Previous work	2		1		0	
History of 10 years of hypertension	2		1		0	
Medications	2		1		0	
Diagnosis of peripheral arterial disease	4		2		0	
Overall approach to task	4	3	2	1	0	
Patients mark	4	3	2	1	0	
Total (max 30)						

PHYSICAL EXAMINATION STATION

The physical examination station is a test of the candidate's ability to undertake a competent physical examination to the standard required of a new graduate from a New Zealand medical school.

Candidates must remember to focus only on the physical examination requested and not on history taking or other parts of a consultation. Apart from the initial introduction, no marks will be awarded for anything other than physical examination.

Typical scenarios for an intern to examine would be:

- musculoskeletal clinical problem (such as the injured knee, back pain etc)
- a focused examination that may span several organ systems (such as an unwell child, the diabetic patient, severe headache, increasing shortness of breath, chest pain etc).

The following two cases are given as examples.

CASE 1

Instructions for candidates

This patient has suffered a minor trauma to their right knee two days ago. Please examine this patient's knee joint. There may or may not be discoverable pathology. Please tell the examiner what you are doing. Do not take a history or do an examination outside the request of the examiner as there will be no marks available for such activities.

Instructions for actors

Please comply with the request of the doctor as he or she examines you.

Examiner marking sheet

	Performed competently		Performed but not competent		Not performed or incompetent	
Initial approach to the patient (introduces him-herself, explains what he/she will be doing)	2		1		0	
Observes patient walking and observes muscle wasting, bruising and swelling	2		1		0	
Active range of movement	2		1		0	
Passive range of movement	2		1		0	
Tests for joint effusion	2		1		0	
Tests collateral ligaments	2		1		0	
Tests cruciate ligaments	2		1		0	
Palpates joint margin						
Overall approach to task	4	3	2	1	0	
Actors score	4	3	2	1	0	
Total (max 24)						

CASE 2

Instructions for candidates

A 56 year old man presents to casualty with sudden onset of shortness of breath. Please undertake a physical examination appropriate to his symptoms. There may or may not be discoverable pathology. Please tell the examiner what you are doing. Do not take a history or do an examination outside the request of the examiner as there will be no marks available for such activities.

Instructions for actors

Please comply with the request of the doctor as he or she examines you.

Examiner marking sheet

	Performed competently		Performed but not competent		Not performed or incompetent	
Initial approach to the patient (introduces him-herself, explains what he/she will be doing)	2		1		0	
Blood pressure lying and standing	2		1		0	
Pulse	2		1		0	
Comments on cyanosis	2		1		0	
Comments on respiratory rate and depth	2		1		0	
Position of trachea	2		1		0	
Chest auscultation	2		1		0	
Chest percussion	2		1		0	
Heart sounds	4		2		0	
Peripheral oedema	2		1		0	
Overall approach to task	4	3	2	1	0	
Actors score	4	3	2	1	0	
Total (max 30)						

TESTS AND PROCEDURES

These stations may be static stations with no actor involved or the station may have an actor present to examine the candidate's ability to perform a test or procedure.

This example is a static station.

Instructions for candidates

There are five questions in this station. Please read the following and enter in the mark sheet your answer.

1. X ray interpretation

A 45 year old man is brought to casualty with a three hour history of increasing shortness of breath. His chest x ray is shown. The most correct initial course of action is:

- Treat with frusemide intravenously
- Insert a chest drain
- Admit for parenteral antibiotics
- Refer to respiratory outpatients
- Treat with oral antibiotic and review in outpatients in 24 hours

2. X ray interpretation

A 62 year old woman is brought to casualty as a result of a fall. She complains of pain in her right wrist. Her x ray is shown. The most correct initial course of action is

- Admit for open reduction and internal fixation
- Admit for closed reduction under general anaesthetic
- Closed reduction in casualty and backslab
- Cast with no reduction required
- Supportive bandage and refer to physiotherapist for mobilisation

3. ECG interpretation

A 67 year old man presents with a four hour history of feeling lightheaded. He is a diabetic controlled on oral medication. He doesn't have chest pains. Routine bloods are normal including Troponin. Physical examination is normal. His ECG is shown: The most appropriate course of action is:

- Admit acutely to coronary care
- Refer to cardiology outpatients
- Commence aspirin and refer to general practitioner
- Admit for heparin

4. Blood test interpretation

A 24 year old woman presents to casualty with fatigue and vague upper abdominal pain for the previous week.

Her blood tests show:

FBC

Hb =	140 (N = 135 – 175 g/l)
Platelets =	180 (N = 160 – 400 X 10 ⁹)
MCV =	88 (N = 80 – 96 fL)
MCH =	28 (N = 24 – 32 pg)
WBC =	6.8 (N = 4.0 – 14.0 X 10 ⁹)
Neutrophils =	8.1 (N = 2.0 – 6.0 X 10 ⁹)
Lymphocytes =	5.8 (N = 1.0 – 4.0 X 10 ⁹) ***
Monocytes =	0.9 (N = 0.5 – 1.5 X 10 ⁹)
Eosinophils =	0.02 (N = 0.0 – 0.6 x 10 ⁹)

Film shows atypical lymphocytes of 15%

Liver function tests

Bilirubin	27	(RR <20 µmol/L)
ALT	110	(RR <50 U/L) ***
AST	51	(RR < 35 U/L) ***
GGT	35	(RR <50 U/L)
ALP	92	(RR 30-120 U/L)
Albumin	38	(RR 35-50 g/L)
Total Protein	89	(RR 60-80 g/L)

The most appropriate course of action is:

- a. Admit for investigation
- b. Arrange ultrasound of her abdomen on an outpatient basis
- c. Refer to gastroenterology outpatients for liver biopsy
- d. Refer to general practitioner
- e. Arrange bone marrow biopsy

ACUTE SERIOUS DETERIORATION

Stations that test the candidate's knowledge and ability to manage acute serious deterioration may be static or dynamic.

This example is a static station.

Instructions for candidates

For each of the scenarios below, list up to five of the most important tests that should be undertaken.

Listing more than five will result in zero marks for that scenario.

Case A

A 60 year old woman is recovering from a laparoscopic cholecystectomy. The nurses report her to be confused over the last six hours. Examination shows her blood pressure to be 140/82, her temperature to be normal, her pulse is 94, her abdomen is soft and minimally tender and her chest is clear. She is tachypnoeic with a respiratory rate of 20.

Case B

A 32 year old man presents at casualty with three hours of severe upper abdominal pain radiating to his back and vomiting that has occurred after drinking alcohol. Examination shows his blood pressure to be 104/60, bowel sounds are hypoactive, pulse of 110 and his upper abdomen is markedly tender.

Case C

A 20 year old woman presents with four hours of left sided abdominal pain and vaginal bleeding. She tells you that she is six weeks pregnant. Examination of her abdomen reveals tenderness in her left iliac fossa and internal examination shows adnexal tenderness with cervical excitation.

Case D

A 45 year old man is seen at casualty. He has a midshaft fracture of his tibia and fibula that needs internal fixation. He is a diabetic and has hypertension controlled on medication.

Case E

An 18 year old woman presents with a history of five days dysuria and frequency. Over the last 24 hours she has developed moderately severe right sided back pain. Examination shows her to be febrile with a temperature of 38.2 C and she is markedly tender to percussion over her right renal angle.

Examiner marking sheet

Tick a maximum of five options for each case.

Listing more than five options will result in no marks for that case.

	Case A	Case B	Case C	Case D	Case E
Chest x ray					
Liver function tests					
ECG					
Serum sodium and potassium					
Cross match of blood					
Serum uric acid					
Serum creatinine					
Serum glucose					
Blood gas					
Serum amylase					
Swab of surgical wounds for culture					
Abdominal x ray					
Thyroid function tests					
ESR					
C reactive protein					
CT scan of head					
Full blood count					
Blood cultures					
Mid stream urine					
Ultrasound of abdomen					

NOTES

In a question structured as above, the examiners will have decided upon the most important investigations to be undertaken for each scenario. It may be that there are less than five tests considered to be crucial by the examiners.

For example, in scenario C, the crucial tests may be ultrasound, full blood count and cross match. The candidate would gain full marks if all three were included in the five tests ticked.

It is important that candidates do not tick more options than is indicated as doing so will result in no marks being awarded for that case.

PROBLEM PRIORITISATION

Scenarios that test the candidate's ability to prioritise in a clinical setting may be static or actor based stations. The examiners are looking for appropriate management that would indicate good clinical reasoning. The following example is given as being representative of a static station.

Instructions for candidates

For the following scenarios, indicate the most appropriate course of action.

Admit acutely to hospital	
Refer to geriatric outpatients	
Review in two days	
Refer to social workers	
Commence treatment with antibiotics	

Part 1

An 82 year old man presents with increasing confusion for one week. Examination is unhelpful. His notes indicate minor head trauma three weeks ago but are otherwise unhelpful. Examination shows him to be afebrile, his pulse is 72 and regular.

Part 2

You are called to see a 72 year old woman in a rest home. She has been generally unwell for two days with mild fever. She has mild dementia and type 2 diabetes. Treatment with trimethoprim for presumed cystitis was initiated yesterday. Examination shows a temperature of 37.6, her blood sugar is 8.4, blood pressure is 168/86, and her pulse is 74 and regular. There are no other findings of note.

Part 3

A 74 year old man living with his family has become disruptive at times over the last two weeks, particularly at night. When you see him at home he is aggressive and uncooperative. His pulse is 92 and regular, BP is 132/68 and his temperature is 37.9.

Part 4

A 68 year old woman is recovering from surgery to pin a fracture of her left neck of femur 2 weeks ago. Her daughter is concerned as her mother appears to be confused. Examination shows a mildly confused elderly woman, her pulse is 84 and regular, BP 156/82, her respiratory rate is 22 and regular, her temperature is 37.4, her chest is clear. The surgical site is healthy. There are no other abnormal findings on examination.

Part 5

A 73 year old man living alone at home has become progressively more forgetful. He has left the hot plate of the stove going on several occasions. There is documented evidence of several previous small strokes. He has a history of hypertension but no other major medical problems. Examination shows mild L hemiparesis as previously noted and a blood pressure of 172/90. There are no other examination findings of note.