An Overview to Clinical Diagnosis

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LEARNING OUTCOMES
At the end of this chapter, the reader will be able to:

❏ list the objectives of history taking,
❏ discuss establishing a rapport with the patient,
❏ describe the importance of effective listening skills,
❏ discuss the sequence of history taking,
❏ provide an overview to clinical examination,
❏ discuss the symptoms of disease and
❏ outline the role of tests and investigations.

INTRODUCTION
The term ‘clinical’ originates from the Greek word klinike meaning bedside (Soanes & Stevenson 2006). Diagnosis, which originates from the Greek word diagignosein meaning distinguish or discern, can be defined as the identification of the nature of an illness or other problem by examination of the symptoms (Soanes & Stevenson 2006).

History taking (discussing the patients’ complaints with them) and clinical examination, together with performing or ordering relevant investigations, are essential for clinical diagnosis (Cox & Roper 2006). Despite the advances in modern diagnostic tests, history taking and clinical examination remain...
Clinical Diagnosis

fundamental in determining the most appropriate treatment (if any) for the patient. History taking is considered one of the most important aspects of patient assessment and is being increasingly undertaken by nurses (Crumbie 2006).

History taking and clinical examination require a structured, logical approach to ensure that all the relevant information is obtained and that nothing important is overlooked. History taking and clinical examination skills are difficult to acquire and, above all, require practice (Gleadle 2004).

The aim of this chapter is to provide an overview to clinical diagnosis.

OBJECTIVES OF HISTORY TAKING
History taking is like being a detective: ‘searching for clues, collecting information without bias, yet staying on track to solve the puzzle’ (Clark 1999). It is important for making a provisional diagnosis; clinical examination and investigations can then help to confirm or refute it. The history will provide information about the illness as well as the disease; the illness is the subjective component and describes the patient’s experience of the disease (Shah 2005a). A carefully taken medical history will provide the diagnosis or diagnostic possibilities in 78% of patients (Stride & Scally 2005).

The objectives of history taking are to

- establish a rapport with the patient,
- elicit the patient’s presenting symptoms,
- identify signs of disease,
- make a diagnosis or differential diagnosis and
- place the diagnosis in the context of the patient’s life.

ESTABLISHING A RAPPORT WITH THE PATIENT
Establishing a rapport with the patient is essential. Rapport can be defined as the ability to being on the same wavelength and to connect both mentally and emotionally with a person, thus promoting trust and mutual respect (Moulton 2007). If the patients believe that they are getting the nurse’s full attention, they are more likely to try to accurately answer questions and recall past events.
To establish a rapport and to put the patient at ease, it will be helpful to start the examination/interview by considering such issues as the following:

- **Physical distance between the patient and the nurse.** This can have a direct impact on rapport (Kaufman 2008). It is important to get the balance right between not being too close to the patient, which could be interpreted as over-familiarity, and not being too far from the patient, for example behind a large desk.
- **Positive initial contact.** Shake the patient’s hand while introducing yourself.
- **Privacy.** Reassure the patient that their privacy and dignity will be maintained.
- **Patient’s name.** Establish how the patient would like to be addressed (forename or surname). It is particularly important to know the patient’s name (Clark 1999).
- **Patient’s physical comfort.** Ensure that the patient is in a comfortable position, and position yourself so that the patient is not sitting at an awkward angle.
- **Confidentiality.** Reassure the patient that all their information will be treated as confidential.
- **Posture.** Avoid standing up, towering over the patient; ideally, sit down at the same level as the patient (Figure 1.1).
- **Effective communication skills (Box 1.1).** In particular, allow time to listen to what the patient is saying and avoid appearing to be rushed.
- **Appropriate language.** Appropriate language and understanding are important aspects of history taking; as the patient may not understand a particular word or phrase, always have an alternative available, for example ‘phlegm’ in place of ‘sputum’. Ensure that the patient understands the question or any information given to them (Shah 2005b). Also, if the patient does not understand English, communicate through an interpreter, if possible.

**IMPORTANCE OF EFFECTIVE LISTENING SKILLS**

As mentioned above, communication is an essential part of history taking. Active listening is particularly important (Kaufman
2008), especially when trying to establish a reliable and accurate clinical diagnosis. There is good evidence linking effective communication with improved patient outcomes (Gask & Usherwood 2002).

The SOLER framework has been suggested by Egan (2007) to reinforce the non-verbal elements of active listening (Box 1.2).

### Box 1.1 Effective communication skills involved in history taking (Shah 2005a)

- Opening and closing a consultation
- Using open and closed questions
- Using non-verbal language
- Active listening
- Showing respect and courtesy
- Showing empathy
- Being culturally sensitive
An Overview to Clinical Diagnosis

Box 1.2 The SOLER framework for non-verbal components of active listening (Egan 2007)

Sit Square onto the patient.
Adopt an Open position.
Lean slightly forward.
Maintain Eye contact.
Adopt a Relaxed posture.

SEQUENCE OF HISTORY TAKING
The following sequence of history taking is recommended (Ford et al. 2005):

• introduction;
• presenting complaint and history of current illness;
• systemic enquiry;
• past medical history;
• drugs;
• allergies;
• family history;
• social and personal history;
• patient’s ideas, concerns and expectations.

Introduction
It is important to introduce yourself to the patient, for example stating your name and position. Confirm the identity of the patient: ask their name and how they prefer to be addressed. Consent should then be sought for history taking and clinical examination.

Presenting complaint and history of current illness
By far the most important part of history taking and clinical examination is the history of the patient’s presenting complaint and history of current illness; the information elicited usually helps to make a differential diagnosis and provides a vital insight into the features of the complaints that the patient is particularly concerned about (Gleadle 2004).
Clinical Diagnosis

Therefore, a large part of history taking involves asking questions concerning the patient’s presenting complaint(s) to establish the main symptom(s). The objective is to obtain a chronological account of the relevant events, including any interventions and outcomes, together with a detailed description of the patient’s main symptoms (Ford et al. 2005).

Ask the patient to describe what has happened to bring them to the hospital or to make them seek medical help. Their narrative will provide important clues as to the diagnosis and their perspective of their illness. Do allow the patient ample time to do this; it is important not to interrupt. Clinicians often interrupt to enquire about the first issue raised by the patient (Kaufman 2008). However, the first issue may not actually be the main problem concerning the patient, and once the clinician has interrupted, the patient often does not introduce new issues (Gask & Usherwood 2002).

Short responses such as ‘Please tell me more’ and ‘Go on’ will encourage the patient to elaborate. Once the presenting complaint has been established, it must be carefully evaluated in detail (Shah 2005a):

- What was the start date/time?
- Who noticed the problem (patient, relative, caregiver, health care professional)?
- What initial action did the patient take (any self-treatment)? Did it help?
- When was medical help sought and why?
- What action was taken by the health care professional?
- What has happened since then?
- What investigations have been undertaken, and what are planned?
- What treatment has been given?
- What has the patient been told about their problem?

Systemic enquiry
Systemic enquiry is a series of questions related to the bodily systems which allows more information that can be linked to the presenting complaint to be obtained; considered a safety net,
Table 1.1  Units of alcohol in common drinks  
(Department of Heath 2008)

<table>
<thead>
<tr>
<th>Drink</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 pint of ordinary strength beer</td>
<td>2</td>
</tr>
<tr>
<td>1 pint of ordinary strength cider</td>
<td>2</td>
</tr>
<tr>
<td>1 pub measure of spirit</td>
<td>1</td>
</tr>
<tr>
<td>1 glass of wine</td>
<td>2</td>
</tr>
<tr>
<td>1 alcopop</td>
<td>1.5</td>
</tr>
</tbody>
</table>

it reduces the risk of missing an important symptom or disease (Shah 2005b).

However, systemic enquiry can cause confusion and misdirect the clinician if the patient has multiple symptoms or is garrulous. It should therefore be undertaken systematically and carefully: a suggested ‘checklist approach’ is detailed in Table 1.2.

It is standard practice to start with the most relevant system(s) to the presenting complaint; for example if the patient presents with chest pain, questions about the cardiovascular and respiratory systems should initially be asked (Shah 2005b). The depth of questioning will depend on personal experience, the individual patient, their presenting complaint, the situation and circumstances.

Past medical history
It is useful to establish the patient’s past medical history because of the following:

- If they have a longstanding disease, there is a strong possibility that any new symptom could relate to it.
- It could help with making the correct diagnosis.
- It is helpful when establishing the most appropriate treatment for the patient.

Ask the patient if they have ever had any serious illness or been admitted to hospital previously or had surgery. It is a usual practice to record whether they have suffered from/suffer from any of the following illnesses (Gleadle 2004):

- jaundice,
- anaemia,
Table 1.2  Systemic enquiry

<table>
<thead>
<tr>
<th>General</th>
<th>Gastrointestinal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well/unwell</td>
<td>Nausea</td>
</tr>
<tr>
<td>Weight gain or loss</td>
<td>Vomiting</td>
</tr>
<tr>
<td>Appetite good or poor</td>
<td>Diarrhoea</td>
</tr>
<tr>
<td>Fivers</td>
<td>Abdominal pain</td>
</tr>
<tr>
<td>Sweats</td>
<td>Mass</td>
</tr>
<tr>
<td>Rigours</td>
<td>Rectal bleeding</td>
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<tr>
<td></td>
<td>Change in bowel habit</td>
</tr>
<tr>
<td></td>
<td>Dysphagia</td>
</tr>
<tr>
<td></td>
<td>Heartburn</td>
</tr>
<tr>
<td></td>
<td>Jaundice</td>
</tr>
<tr>
<td></td>
<td>Anorexia/weight loss</td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>Musculoskeletal</td>
</tr>
<tr>
<td>Chest pain</td>
<td>Weakness</td>
</tr>
<tr>
<td>Breathlessness</td>
<td>Joint stiffness</td>
</tr>
<tr>
<td>Orthopnoea</td>
<td>Joint pain/swelling</td>
</tr>
<tr>
<td>Paroxysmal nocturnal dyspnoea</td>
<td>Hot/red joints</td>
</tr>
<tr>
<td>Ankle swelling</td>
<td>Reduced mobility</td>
</tr>
<tr>
<td>Palpitations</td>
<td>Loss of function</td>
</tr>
<tr>
<td>Collapse</td>
<td></td>
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<tr>
<td>Exercise tolerance</td>
<td></td>
</tr>
<tr>
<td>Syncope</td>
<td></td>
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<tr>
<td>Respiratory</td>
<td></td>
</tr>
<tr>
<td>Cough</td>
<td></td>
</tr>
<tr>
<td>Shortness of breath</td>
<td></td>
</tr>
<tr>
<td>Haemoptysis</td>
<td></td>
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<tr>
<td>Sputum</td>
<td></td>
</tr>
<tr>
<td>Wheeze</td>
<td></td>
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<tr>
<td>Pleuritic pain</td>
<td></td>
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<tr>
<td>Nervous system</td>
<td></td>
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<tr>
<td>Headaches</td>
<td></td>
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<tr>
<td>Fits</td>
<td></td>
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<tr>
<td>Blackouts</td>
<td></td>
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<tr>
<td>Collapses</td>
<td></td>
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<tr>
<td>Falls</td>
<td></td>
</tr>
<tr>
<td>Weakness</td>
<td></td>
</tr>
<tr>
<td>Unsteadiness</td>
<td></td>
</tr>
<tr>
<td>Tremor</td>
<td></td>
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<tr>
<td>Visual and sensory disorders</td>
<td></td>
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<tr>
<td>Hearing disorder</td>
<td></td>
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</tbody>
</table>

- tuberculosis,
- rheumatic fever,
- diabetes,
- bronchitis,
- myocardial infarction/ chest pain,
stroke, epilepsy, asthma and problems with anaesthesia.

Drugs

Obtaining a drug history is helpful because of the following:

- Side effects of drug therapy could be the cause of the patient’s presenting complaint.
- Before starting or adjusting drug treatment, it is important to be aware of what the patient is already taking; for example old drug therapy could be ineffective or may interact with new drug therapy.

Establish if the patient is taking any of the following (Shah 2005b):

- prescription drugs;
- over-the-counter drugs, that is, drugs bought without a prescription, for example aspirin;
- herbal or ‘natural’ treatments;
- illegal or recreational drugs.

If the patient is taking medications, establish the dose, route of administration, frequency and period of time they have been taking the medications. The possibility of non-compliance with prescription drugs should also be considered.

The patient may be unsure what drugs they are taking. Under these circumstances, it is worthwhile using the medical history and asking them if they are taking any treatment for each problem; for example ‘Do you take anything for your arthritis?’ (Shah 2005b).

In addition, if the patient knows what drugs they are taking, it can be helpful to ask them what they are taking the drugs for, because this may sometimes provide helpful additional information related to the patient’s illnesses (Shah 2005b).
Clinical Diagnosis

Allergies
An accurate and detailed description of any allergic responses the patient may have to drugs or other allergens should be recorded; in particular, the patient should be asked whether they are allergic to penicillin. If the patient has an allergy, try to determine what actually happened, in order to differentiate between an allergy and a side effect (Shah 2005b); ‘side effect’ refers to an effect of a drug which is not that which the doctor and the patient require, while ‘allergy’ is a term usually used to describe an adverse reaction by the body to a substance it has been exposed to (Marcovitch 2005). The wearing of a ‘medic-alert’ bracelet and the reason for doing so should be noted.

Family history
It is important to establish the diseases that have affected the patient’s relatives because there is a strong genetic contribution to many diseases (Gleadle 2004).

Shah (2005b) recommends the following approach to taking a family history:

- Ascertain who has the problem: is it a first- or second-degree relative?
- Determine how many family members are affected by the problem.
- Clarify what exactly the problem is: for example ‘a problem with the heart’ could be several things – hypertension, ischaemia, valve problems and the like. Be exact as to the nature of the problem because several family members may have ‘heart problems’, but they may be completely different and, therefore, not relevant to the patient’s particular problem.
- Determine at what age the relative developed the problem; obviously, early presentation is more likely to be important than one presenting later in life.
- Ascertain if the patient’s parents are still alive and, if not, at what age they died and the cause of death.
Social and personal history

Social history
It is important to understand the patient’s social history: their background, the effect of their illness on their life and on the lives of their family (Gleadle 2004).

- Marital status and children. Ask whether they are married/have a partner and whether they have children. This is particularly important if the patient is frail and elderly because it will help to ascertain whether the family will be able to look after them if required (Cox & Roper 2006).
- Occupation. Establish the patient’s occupation (or previous occupation if they have retired). As certain occupations are at risk of particular illnesses, a full occupational history is paramount (Gleadle 2004); for example construction workers may suffer from asbestos-related diseases. Some occupations can be affected by certain diseases; for example a lorry driver diagnosed with epilepsy will need to give up his job (Cox & Roper 2005).
- Living accommodation. Ascertain where the patient lives and the type of accommodation they live in, for example a bungalow, a house with an upstairs bathroom or a block of flats, as this could be pertinent as both a contributing factor to their presenting complaint and a consideration when discharging the patient.
- Travel history. Nowadays, with illnesses such as SARS (severe acute respiratory syndrome) and avian flu, a travel history is essential (Shah 2005b), particularly if infection is suspected.
- Patient’s hobbies/interests. Having a knowledge of these allows a clinician to understand the patient better and to determine what is important to them (Shah 2005b).

Smoking and alcohol
It is important to establish the patient’s current and past smoking and alcohol history because both are implicated in many illnesses:

- Smoking. Ask the patient if they smoke; if they do, confirm details of what they smoke, that is, cigarettes, cigars or a pipe,
Clinical Diagnosis

including the quantity that they smoke and how long they have been a smoker; if the patient does not smoke but has smoked previously, again confirm the details of what they smoked, that is, cigarettes, cigars or a pipe, the quantity that they smoked, for how long they smoked and when they gave it up.

- *Alcohol.* Ask the patient if they drink alcohol; use the standard unit as a measure (Table 1.1). As there is a tendency to underestimate alcohol intake, separate weekday and weekend intake should be established, together with any history of binge drinking (do not forget to include wine taken with meals, as this is often forgotten; Shah 2005b). Adopt a non-judgemental approach, but get to the point, for example by asking, ‘How much alcohol do you normally drink?’ or, if there is no clear answer, ‘How much did you drink in the last week/fortnight?’ (Shah 2005b).

Patient’s ideas, concerns and expectations

An appropriate and sound history-taking technique will help to identify the patient’s ideas, concerns and expectations. Effective communication techniques (listed in Box 1.1) are paramount. The most common cause of patient dissatisfaction following a consultation is a failure in communication (Ford *et al.* 2005). To help to avoid this situation, it would be helpful to do the following:

- Thank the patient for their cooperation (Shah 2005b).
- Ask the patient if there is anything else they would like to say. This allows the patient a final opportunity to add any additional information (Lloyd & Craig 2007).
- Provide a short summary outlining the patient’s problem or symptoms – this will help to confirm a mutual understanding, reducing the risks of a misunderstanding; it also allows the patient to clarify details and make any corrections if necessary (Moulton 2007).

AN OVERVIEW OF CLINICAL EXAMINATION

Having completed history taking, a differential diagnosis will be possible, which will help to direct the focus of clinical
examination (Ford et al. 2005). A suggested approach to clinical examination will now be described.

**Preparation**

- Assemble any necessary equipment and aids required for the examination.
- Adhere to local infection control protocols as appropriate; for example wear appropriate clothing and wash and dry hands.
- Ensure privacy: screen the bed or the couch.
- Consider the need for a chaperone who should be of the same gender as the patient (Thomas & Monaghan 2007). The patient has a right to request a chaperone when undergoing any procedure or examination; where intimate procedures or examinations are required, the nurse should ensure that she is aware of any cultural or religious beliefs or restrictions the patient may have which prohibit this being done by a member of the opposite sex (NMC 2008).
- Clear the left side of the bed (the right side of the patient) – always perform the examination from the left side of the bed (Cox & Roper 2006), unless left-handed in which case approach from the right, as this will provide the nurse with a feeling of control over the situation (Thomas & Monaghan 2007).
- While exposing the area that needs to be examined, avoid embarrassing the patient; ensure that there are no draughts, and close any open windows if necessary. It is important that the patient does not get cold during the examination: shivering will cause muscle sounds which will interfere with auscultation (Ford et al. 2005).
- Position the patient appropriately on the couch/bed: initially, this will be sitting at an angle of 45° for the examination of the cardiovascular system. The position will usually be changed for other aspects of the examination; for example for the examination of the abdomen, the patient will need to be in a supine position. Sometimes the patient position will be determined by their condition; for example if they are very
Clinical Diagnosis

breathless, they will probably need to sit at 90°; if they are unconscious, they will be flat throughout the examination.
• Ensure that the hands are warm before examining the patient: palpating using cold hands can result in the contraction of abdominal muscles, impairing the examination (Ford et al. 2005).

Procedure for clinical examination
The procedure for clinical examination can be broken down into bodily systems. These bodily systems should be examined in turn:
• cardiovascular system;
• respiratory system;
• gastrointestinal system;
• genitourinary systems;
• neurological system;
• skeletal system;
• ear, nose and throat.

Examination of each system should encompass the following (Gleadle 2004):
• inspection (looking),
• palpation (feeling),
• percussion (tapping) and
• auscultation (listening).

Although described separately in different chapters, the examination routines for each system should not be considered as entirely separate entities: when examining several systems at once, a single fluid routine should be used throughout the clinical examination.

Following clinical examination
Following clinical examination, it is important to
• thank the patient for their help and co-operation;
• invite and answer any questions they may have;
• ensure that the examination routine is formally closed so that the patient knows that it has finished;
• leave the patient in a comfortable position and not exposed;
• ensure appropriate documentation (NMC 2004, Chapter 9).
SYMPTOMS OF DISEASE
A symptom can be defined as an indication of a disease or disorder noticed by the patient (a sign is an indication of a particular disease or disorder that is observed during clinical examination; McFerran & Martin 2003). A comprehensive and effective history-taking technique will help to elicit the patient’s symptoms.

Each symptom must be methodically analysed. It is important to encourage the patient to describe their symptoms in an expansive manner (Kaufman 2008). A number of frameworks have been developed to help this process.

Ford et al. (2005) suggest the TINA system approach:

- Timing – onset, duration, pattern and progression.
- Influences – precipitating, aggravating and relieving factors.
- Associations – any other associated signs and symptoms.

Perhaps a more helpful framework is the mnemonic PQRST suggested by Zator Estes (2002):

- Provocation and Palliation – what exacerbates and what relieves the symptom; this information in particular can provide important clues to assist in diagnostic decision-making (Kaufman 2008).
- Quality – how the symptom appears to the patient.
- Region and Radiation – ascertaining the region and radiation can again help with diagnosis.
- Severity – a scale of 0–10 is usually used to describe the severity of the pain or the symptom (Kaufman 2008).
- Timing – it is helpful to establish when the symptom started, its timing during the day, its pattern and consistency and whether it is continual or intermittent (Kaufman 2008).

TESTS AND INVESTIGATIONS
Try to follow the sequence of history taking, then clinical examination and then tests and investigations when seeing a patient; a common mistake is to rush into investigations before considering the history or clinical examination (Stride & Scally 2005).
Clinical Diagnosis

When ordering tests and investigations, it is easy to mindlessly order a whole range of them. However, there are many problems with this approach (Stride & Scally 2005):

- Investigations cannot be used in isolation – is the X-ray finding or blood test result relevant or an incidental finding?
- Investigations can be inaccurate – there can be problems with the technique, reagents or interpretation of the findings.
- Investigations pose risks – radiation exposure, unnecessary further procedures and so on.
- Investigations can be costly, to the patient and to society.

Therefore, after history taking and clinical examination, order or perform tests and investigations relevant to the case (Beasley et al. 2005).

CONCLUSION
This chapter has provided an overview to clinical diagnosis. The objectives of history taking have been listed, and how to establish a rapport with the patient has been described. The sequence of history taking, together with symptoms of the disease, has been discussed. Furthermore, an overview to clinical examination has been provided.

REFERENCES
An Overview to Clinical Diagnosis


