ENGLISH FOR ACADEMIC PURPOSES SERIES

General Editor: C. Vaughan James

MEDICINE

David V. James

MEDICINE

David V. James

MA, MBBS, MRCPsych

ACKNOWLEDGEMENTS

INTRODUCTION

This course has three purposes. It is intended:
- to introduce you to the **contents** of Medicine:
- to provide examples of authentic texts written in the **language** typical of the subject:
- to help you to practise the **skills** you will need in order to study the subject via English and to use it when you have learned it.

No knowledge of Medicine is assumed, but if you work through the book carefully you will certainly learn a great deal about it. We do not set out to give comprehensive coverage, but the material does embrace many of the basic concepts.

All the texts are taken from publications about Medicine. They are not simplified for learners of English: the language you will encounter in them is exactly what you will meet in real life. We assume that you will have already taken a course of general English and are familiar with the main grammatical structures and much of the vocabulary of everyday use. There may be no such thing as Medical English, but there are a number of words and expressions commonly used in Medical contexts and there are a number of structures also in common use, and these have been isolated for you to practise. So in this sense, this is a textbook of English.

The most important aim of the course, however, is to help you to acquire and develop the skills you will need in order to learn your subject and, when you have finished the course, to use what you will have learned.

When you begin to study a new subject, you do so in two main ways: by **reading** and by **listening**. These are the major means of access to new knowledge and it is on these that we concentrate, via the **book** — for reading, and the **tapes** — for listening. In order to attack all these aims, we have divided each of the 15 units into 8 sections, closely related but each with a slightly different emphasis. Below we give a brief description of each section, so that at any point in any unit you will know exactly what you are expected to do and why you are doing it. The pattern is the same for all units.

A. UNDERSTANDING A PRINTED TEXT (1): In this section you are given a passage to read, usually including a diagram or table, to introduce the topic of the unit. You should first read it through, even if you do not understand it all, looking especially at the way it is set out in paragraphs, with side headings, marginal notes, captions, etc. This will give you a general idea of what it is about and how it is arranged. To help you to identify the most important points in the reading passage, a small number of questions are given, the answers to which you can look out for as you read. You will probably need to read it several times.

B. CHECK YOUR UNDERSTANDING: When you are clear about the general meaning of the passage, you can work through it in more detail with your dictionary. In this section you will be asked to answer a number of detailed questions. You could tackle them by jotting down a few notes and then turning your notes into complete answers, which your teacher will check. You should *always* have a dictionary handy and *never* be too proud (or too lazy!) to look things up.

C. INCREASE YOUR VOCABULARY: In this section you are asked to look at certain words which are used in the text, and there are several kinds of activity to help you remember them. Notice that they are not all new or technical terms; it is often familiar words used in an unfamiliar way that will cause you trouble.

D. CHECK YOUR GRAMMAR: There are probably no new grammatical structures in the texts, but you may need reminding of some of them. The most important ones arising from the texts are revised and practised in this section.

E. UNDERSTANDING A LECTURE / H. UNDERSTANDING DISCOURSE: Sections A–D are all concerned with gaining access to new information through reading, but an important source of information is through listening — to lectures, talks, discussions, even simple conversations between fellow students — so sections E and H are both based on the recordings, to which you should listen (usually several times) before attempting to answer the questions or perform the activities given in your book. You will hear a variety of voices and accents, all speaking at the sort of speed that is customary in an English-speaking environment.

F. UNDERSTANDING A PRINTED TEXT (2) / G. CHECK YOUR UNDERSTANDING: These two sections are very similar to A and B, but the questions in section G are far more detailed and you will need to study the text very carefully in order to answer them.

Although we hope that you will enjoy working through this course, we do not expect you to find it easy. At various times you will probably start wondering how much you have been learning — or your teacher will want to find out what progress you are making. So after Units 5 and 10 we have included progress checks (not tests!) so that you can get a fairly clear idea of this. By the time you have completed Unit 15, you will be ready for anything!

NB:
Medical texts contain much specialised terminology. Whereas some of the expressions encountered in this book are explained in the units in which they occur, students may find it helpful to have access to a dictionary of medical English. Although some large reference volumes are available, the smaller and cheaper pocket versions are probably more appropriate for all but the most advanced students. Examples are: the *Concise Medical Dictionary*, ed. E.A. Martin, 2nd edition, 1985, Oxford University Press; The *Churchill Livingstone Pocket Medical Dictionary*, ed. N. Roper, 14th edition, 1987.

Vaughan James   Oxford, 1989

CONTENTS

EPIDEMIOLOGY (1)

A. Understanding a printed text (1)

The following text will introduce you to the topic of **health and disease**. Look at the way it is divided into paragraphs. Pay attention to the notes in the margins and to the illustrations, tables and captions.

Now look at these questions.

1. How has the World Health Organisation defined health?
2. What is the range of the 'clinical spectrum'?

3. What percentage of symptoms are self-treated?
4. Which group forms the tip of the 'clinical iceberg'?
5. What is the size of the hypothetical 'average practice'?

Read the passage through and find the answers to the questions. Remember that you do not have to understand every word or technical term in order to be able to answer them.

The Clinical Spectrum

1 In the field of health care, normality and health are synonymous. Both states are difficult to define and are, therefore, not easy to measure. The World Health Organisation has defined health as 'a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'. This is an idealistic definition and, if it were possible to quantify any of these terms, perhaps few people could be regarded as truly healthy.

The WHO's definition of health

2 However, in the population at any one time the majority of people will probably have no detectable abnormality and would, therefore, be regarded as normal. Some of the remainder will be apparently normal and yet will possess some characteristic, for example over-weight, which will put them in a high risk category in relation to the future chances of developing disease. Others will possess some precursor morbid state like atheroma, which has not yet given rise to any clinical circulatory impairment. A further group will show, on examination, signs of disease not previously recognised and not yet giving rise to symptoms. Some will have overt, recognisable signs and symptoms of disease and a few will have such advanced disease that they are in the process of dying. There is thus a 'clinical spectrum' of disease in populations, ranging from health to terminal illness. In general it is only those with recognised disease that tend to be seen as patients in hospital. They represent the tip of what has become known as the 'clinical iceberg'. Much disease, and most people who are at high risk of developing disease, remain undetected in the community (Fig. 1.1).

The 'clinical spectrum'

3 Many people with health problems do not consult a doctor. They either treat themselves or seek help from a neighbour or perhaps the local chemist (Table 1.1).

4 Of the people who seek medical advice and help, most will first of all consult a general medical practitioner. Some two-thirds, 64 per cent, of illnesses seen can be considered minor and do not require referral to hospital (Table 1.2). On the other hand 15 per cent are major, life threatening, illnesses (Table 1.3) and the remainder chronic illnesses. As can be seen from these two tables respiratory illnesses, mostly of the upper respiratory tract, and mental disturbances make up the two main illness groups seen in general practice. Against the background
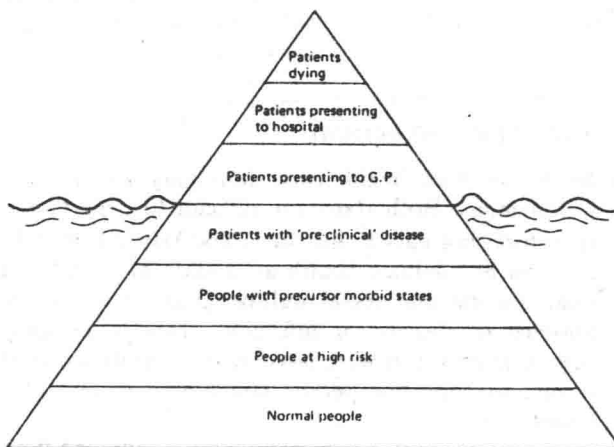
Fig 1.1 The clinical iceberg.

Table 1.1. Symptoms self-treated and doctor-treated (Wadsworth, Butterfield and Blaney, 1971)

Groups of symptoms	Per cent of all symptoms	Per cent self-treated	Per cent doctor-treated
Respiratory	26	63	37
Mental	21	80	20
Locomotor	15	61	39
Gastrointestinal	11	78	22
Central nervous system	8	59	41
Skin	5	73	27
Cardiovascular system	4	58	42
Accidents	3	78	22
Others	7	47	53
	100	72	28

of such minor illness skill is needed to recognise patients in the early stages of more serious diseases; a time when symptoms and clinical signs may be inconclusive.

5   Patients with serious illnesses or whose illness is difficult to diagnose will tend to be sent to hospital for either outpatient or inpatient treatment. Thus the hospital clinician is confronted with a highly selected sample of patients and disease states. A house surgeon working in a general hospital may see and deal with two or three cases of acute appendicitis each day, whereas a general practitioner will only come across four or five cases in the course of a year.

What hospital doctors see

6   The tip of the 'iceberg' are those who are in a terminal state.

The tip of the iceberg

7   The importance of a disease in medical practice, in terms of how common and how severe it is, thus varies markedly from one level of presentation to another.

Table 1.2. Persons consulting for minor illnesses in a year in a hypothetical average practice of 2,500

Conditions	Minor illness Consultations per 2,500 patients
General	
Upper respiratory infections	500
Emotional disorders	300
Gastrointestinal disorders	250
Skin disorders	225
Specific	
Acute tonsilitis	100
Acute otitis media	75
Cerumen	50
Acute urinary infections	50
'Acute back' syndrome	50
Migraine	30
Hay fever	25

Table 1.3. Persons consulting for acute major illnesses in a year in a hypothetical average practice of 2,500

Acute major (life-threatening) illness

Conditions		Consultations per 2,500 patients
Acute bronchitis and pneumonia		50
Severe depression		12
Acute myocardial infarction		7
Acute appendicitis		5
Acute strokes		5
All new cancers		5
Cancer of lung	1–2 per year	
Cancer of breast	1 per year	
Cancer of large bowel	2 every 3 years	
Cancer of stomach	1 every 2 years	
Cancer of bladder	1 every 3 years	
Cancer of cervix	1 every 4 years	
Cancer of ovary	1 every 5 years	
Cancer of oesophagus	1 every 7 years	
Cancer of brain	1 every 10 years	
Cancer of uterine body	1 every 12 years	
Lymphadenoma	1 every 15 years	
Cancer of thyroid	1 every 20 years	
Suicide attempts		3
Deaths in road traffic accidents	1 every 3 years	
Suicide	1 every 4 years	

B. Check your understanding

Now read the text carefully, looking up any new items in a dictionary or reference book. Then answer the following questions:

1. In health care, is there a difference between health and normality?

2. How many people are truly healthy, using the World Health Organisation's definition?

3. What do many people with health problems do instead of consulting a doctor?

4. What percentage of patients seen by a general practitioner do not need to be referred to a hospital?

5. What are the two main groups of illness seen in general practice?

6. When may the symptoms and signs of serious illness be inconclusive?

7. Which patients tend to be sent to hospital for treatment?

8. How many cases of appendicitis does a general practitioner see every twelve months?

9. Which is more commonly seen in general practice, cancer of the lung or cancer of the brain?

10. Into which category do those people who are overweight fall?

C. Increase your vocabulary

In this section you should use your dictionary to help you answer the questions about the text.

1. Look at the first paragraph. Using your dictionary, say which words or expressions in the text you could replace with:
- simple
- total
- simply
- measure
- really

2. Look at paragraph 4 and say what these words refer to:
- line 1: most
- line 5: 15 per cent

3. Look at paragraph 2. Using the information in the text, how much of the diagram can you label? Try to label it without looking at the diagram in the reading text.
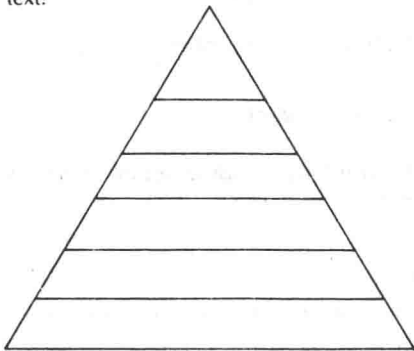
4. Look at paragraph 2. Which words or expressions mean the same as:
- most
- considered
- for instance
- produced
- undiscovered

5. Look at paragraph 2 and try to explain the following words.
- abnormality
- category
- risk
- spectrum
- iceberg

6. Look at these definitions. Which words in the first three paragraphs correspond to the definitions?
- have the same meaning
- a body of interdependent persons living in a social unit (as opposed to within a hospital)
- a deterioration in function or efficiency
- the people living in a certain area at a certain time

D. Check your grammar

MAKING STATEMENTS

> **Do you remember?**
> Medical students *study* many different subjects. Anatomy *is taught* in medical schools.

1. Use the following words to complete the paragraph below:

work, concentrate, be, see, feel, consult, call, refer, examine, give, treat

In the developed world, most doctors_____ in the community, rather than in hospitals. Textbooks of medicine_____ on the more serious forms of disease. These_____ the ones which_____ most commonly in hospitals. A person who_____ ill usually_____ a doctor in

the community, who_____ a general practitioner. If the disease_____ serious, the general
practitioner often_____ the patient to a hospital where he_____ by a specialist. The
specialist_____ an expert opinion. If necessary, the patient_____ in hospital.

> **Do you remember?**
> Fleming *performed* experiments in a laboratory.
> Bacterial colonies *were destroyed* by the fungus.

2. Now write the following sentences out in full, as in this example:

Fleming/hospital/a/in/large . . . . (work)
Fleming worked in a large hospital.

- Chain and Florey/antibiotics/investigation/1939/an/in/of . . . . (undertake)

- Accident/discovery/by/this . . . . (make)

- Penicillin/1928/Fleming/in . . . . (discover)

- Curiosity/a/it/he/as . . . . (put aside)

- Fungus/bacteria/to kill/a/is/penicillin/which . . . . (find)

- Mice/penicillin/they/the/in/of/properties . . . . (describe)

- Potential/penicillin/recognise/Fleming/of/to/the . . . . (fail)

- War/USA/production/because of/the/the/to . . . . (transfer)

- USA/made/penicillin/casualties/in/war/the/years/last/in/of/the/to treat/the . . . .
  (use)

- Humans/Oxford/first/penicillin/1941/in/in/to . . . . (give).

3. Now arrange the sentences that you have constructed into a single paragraph. Make sure
that the order in which you put them makes sense.

E. Understanding a lecture

1. You are now going to hear part of a lecture, divided into sections to help you understand
it. As you listen, answer the following questions:

Section 1
- What does the lecturer say his talk will be about?
- What examples of disease does the lecturer give?

Section 2
- What does 'hypertension' mean?
- What is the name of the instrument which is used for examining eyes?

Section 3
- What is the name for an abnormality found by a doctor when examining a patient?
- Name the process by which a doctor finds out what is wrong with a patient?

Section 4
- Which is cheaper, prevention or treatment?
- For which sort of disease are cures quite common?

2. Now wind the tape back to the beginning of the lecture and listen to it again. This time, instead of answering questions, take notes. The questions you have already answered will help you do this. When you have listened to the whole of the lecture, you will be asked to make a short oral summary of it, using your notes as a guide. Make sure you note down what is meant by *illness*, *disease*, *symptom*, *sign* and *diagnosis*.

F. Understanding a printed text (2)

Read the following text carefully, looking up anything you do not understand.

The Epidemiological Approach to Medicine

Populations and Diseases

Epidemiology may be defined as the study of the distribution and determinants of disease in populations. The study of disease patterns in human populations is an early step in a chain of processes that ends in identifying the cause of disease. If cause can be identified, then it may be a relatively easy matter to prevent a disease from occurring. It makes sense to prevent, rather than to try to treat, often inadequately, the late effects of disease processes. Yet at present, and in most countries, far more money is spent on 'curative medicine' than on 'preventive medicine'.

Time, Place, Persons

It has been known since the time of Hippocrates that personal, place and time factors influence whether or not people become ill.

Age and Sex Of the personal factors, age is one of the most important. In developed countries death rates, except in the first year of life, are very low until middle age or late middle age, when they begin to rise steeply (Fig. 1.7).

Because of this marked association, the age structure of populations must be taken into account when attempts are made to compare death rates. Various standardisation techniques are available to make this possible. In developing countries, death rates in the first few years of life are usually very high: in some areas more than 50 per cent of children die before the age of five. Infant mortality rates – deaths in the first year of life – are a useful index of the 'healthiness' or otherwise of a country.

The sex of an individual is also an important determinant of health or disease. The male appears to be the biologically weaker sex, and death rates are higher for males than for females at almost every age.
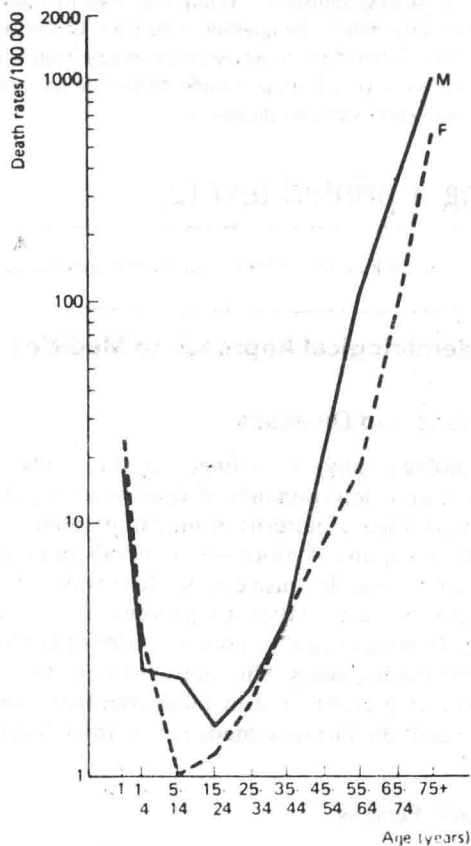
Fig 1.7 Death rates from pneumonia and bronchitis in The Netherlands, 1969.

Ethnic and Cultural Factors These factors have important influences, though it is often difficult to separate their individual effects. Death rates among the non-white population of the United States are higher, age for age, than among the white. The differences are mostly explainable in terms of a poorer total environment rather than in 'racial' terms. Few Seventh Day Adventists die of lung cancer; cigarette smoking is not encouraged in that sect.

Social Class Some striking patterns emerge when social class and morbidity or mortality are examined. Because death rates vary so considerably with age and between the sexes, when the mortality experiences of two or more groups are compared it is necessary to take their age and sex structure into account. The standardised mortality ratio (SMR) is one of the measures mentioned above which compensates for such variations. Table 1.5 shows

Table 1.5. SMR and social class: men aged 15 to 64, England and Wales 1970 to 1972

Cause of Death	Social Class					
	I	*II*	*IIIN**	*IIIM**	*IV*	*V*
Malignant neoplasm, all sites	75	80	91	113	116	131
Stomach cancer	50	66	79	118	125	147
Lung cancer	53	68	84	118	123	143
Ischaemic heart disease	88	91	114	107	108	111
Polyarteritis nodosa	126	117	109	94	111	81
Bronchitis and emphysema	36	51	82	113	128	188
Stomach ulcer	54	53	99	102	117	209
Prostatic hyperplasia	57	92	97	93	107	156
Motor vehicle accidents	77	83	89	105	121	174

* *N*: non-manual, *M*: manual

SMRs for selected causes of death for men aged 15 to 64 in England and Wales. The average experience for the whole population of employed men between those ages is defined as 100 and the higher the figure, the greater is the risk.

Occupation Occupation affects health in a variety of ways. First, there are jobs which are dangerous in that physical, chemical or biological hazards are directly involved. Second, there are jobs that are relatively poorly paid, so that in societies where health care or education have to be purchased directly, individuals and their families are at a disadvantage. There are also occupations that are mentally stressful but which demand little physical activity, a combination which may lead to an increased likelihood of the development of coronary artery disease.

Geography Patterns of disease and death tend to vary throughout the world. The patterns are largely determined by the state of economic and other development of the country concerned. In developing countries the major problems are those of infections, parasitism and under-nutrition, though little reliable data are available for what amounts to about 70 per cent of the world's population. Health services in developed countries, on the other hand, will deal mainly with diseases of ageing populations, of wear and tear, of stress and overindulgence.

Time Trends Variations in disease patterns also occur with time. Fig. 1.9 shows how lung cancer deaths in males have increased dramatically in Britain during this century and how some of the factors that have been suspected as being causal have varied over the same period. The only factor that precedes the rise in lung cancer mortality by the right time interval and increases in parallel is cigarette consumption.
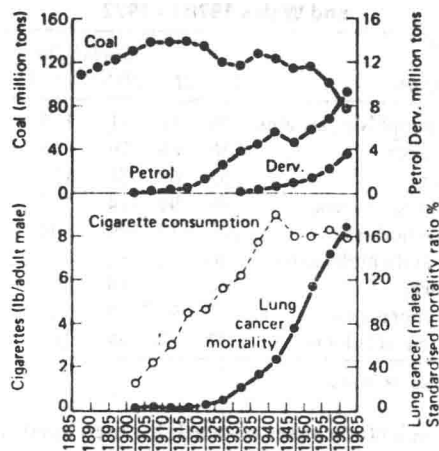
Fig 1.9 Trends in fuel used, cigarette smoking and lung cancer mortality in men.

This variation is a long term one. Others occur over short periods of time. Epidemics of infectious diseases have been of importance since early in man's history and are still familiar events in most countries of the world. Epidemics of non-infectious disease may also occur: Fig. 1.10 illustrates the sudden increase in deaths that occurred during the week or so of the great London Smog in December 1952.

Many of the excess deaths were of elderly people already chronically ill. However, the death rate from bronchitis in persons under 45 was also higher than expected.
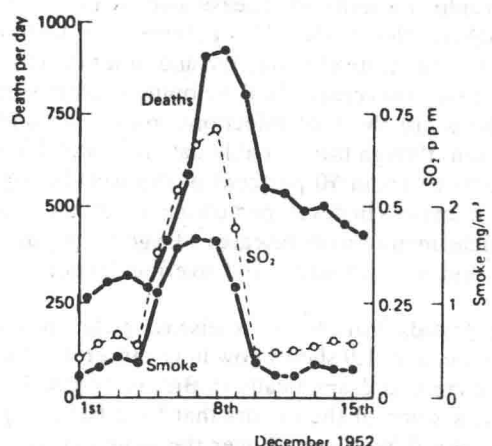

Fig 1.10 Death and pollution levels in the fog of December 1952.