also be similarly covered by other members of the group. The result of such "boxing and coxing" is good for the doctors' interests but means that in some practices patients find continuous personal care a problem unless they work out exactly when "their doctor" is going to be there.

The "charter"

In the late 'fifties and early 'sixties general practitioners were becoming more and more interested in the management, organisation, and dynamics of general practice. At the same time however, the general morale of many doctors was suffering a steady decline. They felt overworked, underpaid, lacking in prestige, and at the back and end of demanding patients. Good practices were penalised financially as there was no incentive to practise well or to employ ancillary staff. The aspirations of the College of General Practitioners seemed inspired but unrealistic. Was it possible that the Collins report of 1959 (which severely criticised general practice in this country) was true? The increasing emigration by doctors was worrying. Why he exploited here when there was big money and pastures green and pleasant in the rest of the English-speaking world? Fortunately for general practice Kenneth Robinson was a sympathetic and interested Minister of Health. The result of much discussion by the leaders of the Ministry of Health was the issue of a new "charter of general practice" in the mid-'sixties. A new method of payment evolved. Doctors were encouraged to work in groups, employ ancillary staff, and purchase or rent adequate premises. Health centre planning became the vogue, and general practice became not only respectable but exciting, and at times the envy of hard-pressed hospital colleagues.

The introduction of more payments related to items of service forced doctors to look more critically at their bookkeeping. They found that they were not very efficient. So, over the ensuing years a new species has arisen to organise us—the practice manager, and the text that he or she needs to know by heart is the "red book"—*Statement of Fees and Allowances Payable by General Practitioners in England and Wales*. As important as knowing it is the need to keep it up to date with all the amendments that are constantly issued if the maximum financial advantage is to be obtained from the system. With the advent of adequately paid ancillary staff and the increased co-operation from local authority public health departments, which in many areas attached nurses and health visitors to practices, came the concept of the "practice team". It was obvious at first that the doctor was the team leader by virtue of his knowledge, experience, and prestige. As the years went by such attributes were not necessarily accepted, and consensus leadership is now regarded as being more appropriate, though the doctor still knows where he really stands—or does he?

The casual employment of untrained secretarial and reception staff continues, but over the years standards have risen and training courses exist in many areas. Staff are better organised, and there is now a national association which they may join. They have a right to payments at adequate rates rather than at the derisory levels that used to exist before the introduction of the "charter". The criticism of receptionists "dragging" continues but has at least deflected the attacks that used to be directed at the doctor's wife. Nowadays she should, in the main, be free of the practice on-call system and able to lead her own life untroubled by manning the telephone except for the occasional weekend or evening. It is, has been, and will always be a constant struggle to ensure that the reception team function adequately in their difficult job of serving patients and doctors. They need to be polite, pleasant, sympathetic, and understanding without taking on a nursing, medical, or social work role. They sometimes need to block patients and also equally have a right to bully or caulk the medical team into doing extra if they perceive the need. Over the years they have been increasingly appreciated by the doctors, though I think that the patients still see them as a barrier to quick and easy access to the service.

Patients are right, but none would go back to the "open door" surgery and a queuing system that resulted in stultified waiting rooms and the people arriving late standing outside in the rain.

Leisure

Most of us feel that we need time off and wish to know exactly when this is to be. Gone are the days when the senior partner always took the weeks off before and after Christmas. There is equality now in most practices, though some are more equal than others. Most general practitioners now expect four to six weeks off a year as against three to four weeks for the senior 30 years ago and the same or less for the juniors, depending on the practice agreement. Assistants (usually overworked and inevitably underpaid) now hardly exist as the "charter" offers a positive financial inducement to offer early or immediate partnership. The assistants were the waiting men, hoping for a partnership where they worked or looking around for a local or distant vacancy. Forced to behave themselves to ease their way in or obtain a good reference, there was an undercurrent of resentment in the offices that vanished after 1958 as the bold young doctors were absorbed as principals in general practice. For their leisure was offered a breathing space grabbed when offered and savoured. Now we have the increasing rejection of personal on-call duty at night and weekends.

Rotas have been superseded by, or supplemented with, the deputising services. For a few general practitioners do opt out in most big cities most of the time, if they can. In 1975—85% of doctors were using deputising services in Nottingham and Sheffield, and though they were used to a greater extent by single-handed doctors those who practised in groups were not at all against using such services at times. Pious words are spoken about personal commitment by lay committees and doctors unable to avail themselves of these services. In practice, most of us, given the opportunity, relish the thought of an undisturbed night's sleep and a weekend's pottering about the garden troubled by the cares of the practice. As the clinical and organisational standards of the deputising services vary so much it is necessary for the service that they offer to be monitored carefully, and there is a similar need to monitor the use made by certain practices to off-load day-time work. In the 'fifties, however, these same doctors would probably have used other dodges to escape the onerous job of visiting patients. One such effective method was of course to shift the work load on to the assistants.

Training

Then a new device developed that gave the seniors help at no cost at all—and they were even paid for the privilege of having a "trainee" in the practice. The early years of exploitation were due to the lack of awareness of teaching methods combined with a simple belief in the apprentice system. Steadily, over the years, it has become recognised that the trainee general practitioner should be helped, guided, and encouraged to pursue his own interests. As a group the trainees are motivated and are well able to stand up for their rights. They should be able to discuss problems as they arise with their trainers or seek the help of a local "course organiser". The Royal College of General Practitioners, from small beginnings in the 'fifties has been concerned with the educational development of general practice. The group of farsighted general practitioners who founded the college had as one of their main aims the belief in continuous education in medicine. The college defined general practice and produced a standard text and reference *The Future General Practitioner*, which has been a cornerstone in many of the educational programmes in general practice ever since.

The 'fifties saw the start of officially backed postgraduate programmes for general practitioners. At first many were on

Chemotherapy

Drug treatment is often seen as the mainstay of long-term management. The importance placed on using antibiotics is often exaggerated, mainly because this is one of the few ways in which the GP feels (rightly or wrongly) he can make some impact on the course of the disease. No study has ever shown that treatment or non-treatment of exacerbations has any influence upon the rate of deterioration of respiratory function. Despite this, no-one would deny the importance of antibiotics when there is clear evidence of bronchial infection.

As we mentioned in the first article two main organisms are responsible for bacterial infections in chronic bronchitis. *Haemophilus influenzae* is isolated most frequently from sputum during exacerbations and less frequently during periods of remission. It is probably the main cause of persistently purulent sputum: bronchoscopic evidence suggests it may persist for long periods in the chronic bronchitis' lower respiratory tract, which is sterile in normal people.

Bacteriological examination of sputum for haemophilus may be difficult because the sputum must get to the laboratory without delay: it is a delicate organism and may die or be overgrown on culture by other organisms.

The other organism most often isolated particularly during an exacerbation, *Streptococcus pneumoniae*, is sensitive to most antibiotics, but it is showing increasing resistance to tetracyclines. Sputum culture is useful only if the condition is not responding or if it is suspected that other organisms are responsible for the exacerbation—such as staphylococcus or a complicating influenza. Lack of response, however, could suggest that the patient is not taking his drugs properly, or that there is another cause for the condition.

Chemotherapy for ad hoc relief can be managed perfectly well if the choice is made in a logical manner (figure). In general

After: May J.R. *Chemotherapy of Chronic Bronchitis*

Prescribing for chronic bronchitis.

chemotherapy usually offers little to patients whose sputum does not contain pus. Sometimes if the sputum is thick and opaque this may be mistaken for purulence. The prophylactic use of antibiotics might help, however, if the patient has further deterioration might prove false. Some of these patients can be given antibiotics throughout the winter months. Others can be given a supply of antibiotics and instructed to start taking them at the very earliest sign of infection.

In patients with early bronchitis, intermittent therapy given as required is all that is needed, and bactericidal antibiotics have no advantage over those that are bacteriostatic. Once the multiplication of organisms has been arrested by the antibiotic the host defences, which can be assumed to be still more or less intact, can deal with the infection.

Although the aim is to give a dose providing the most effective tissue concentrations needed, nobody really knows what factors decide these concentrations. So for the most part decisions on dosage are really made by rule of thumb. It has been suggested that there is nothing to be gained by increasing the dose above the conventional levels suggested by the manufacturers, but there is good evidence that very high doses of ampicillin (up to 4000 mg daily) can eradicate *Haemophilus influenzae* at least for short periods of time—when smaller doses fail to do so.

Arthur again

Now let's look back at Arthur Cook, our typical patient, who was left suspended between a diagnosis and a decision about what to do about him. The winter is proving a particularly bad one for him. What should he do? Firstly, what advice should he be given, particularly about his 20 cigarettes a day? Secondly, should you prescribe an antibiotic for him, and if so, which one and for what reasons?

SMOKING

Mr Cook may not find it possible to give up smoking altogether. If you fail to get him to stop, try to persuade him to reduce the number he smokes, change his brand of tobacco, or not to inhale. You might also find it useful to define targets by considering the number of cigarettes he is allowed to smoke in relation to the state of his chest. And you must think too about the psychological problems of cigarette withdrawal in a patient with advanced bronchitis.

ANTIBIOTICS

The flow chart illustrates a possible policy for antibiotic prescribing in chronic bronchitis, and the table summarises many studies which have been made on the bacteriology of the disease. When choosing an

Chemotherapy

These rules of thumb are based on the probability that a certain species will be the pathogen in a given situation—that is, the basic pattern is a stable one. The results from a large number of studies can be summarised.

- (1) In patients in remission, if there is no pus present or if the sputum is thin and clear, the probability of infection is low. The causative pathogens are likely to be *Haemophilus influenzae* or *Streptococcus pneumoniae* of both together.
- (2) If pneumonia is complicating an acute exacerbation the commonest bacterial infection is *Streptococcus pneumoniae*. Localised infection of a suspected culture would usually be undertaken.
- (3) Macrolides, such as the spiramycin, are at present the only reliable objective evidence of bacterial infection of the respiratory tract.
- (4) Controlling the infection makes little difference to the rate of deterioration of respiratory function.
- (5) When the bacteriologic treatment is successful, patients may be given an indication for chemotherapy. Many patients benefit objectively and subjectively from suppression of infection, though due to increased efficacy of antibiotics.
- (6) Bacteriostatic antibiotics—adequate concentration to inhibit the infecting organism—are required for suitable for most patients with early chronic bronchitis. Bacteriostatic antibiotics are usually directed at *Haemophilus influenzae*.
- (7) Bactericidal antibiotics need to be given to patients with advanced disease in order to attempt to reduce the local infection and remove and to sterilise respiratory secretions.
- (8) When the bacteriologic treatment is successful, patients may be given an indication for chemotherapy. Many patients benefit objectively and subjectively from suppression of infection, though due to increased efficacy of antibiotics.

antibiotic you must consider the sensitivity of the bacteria you suspect are present, the relative toxicity and side effects of the antibiotics you are considering, any idiosyncrasies the patient might have, and any treatment he might have had before.

Sunday mornings, and then a plethora of weekend courses became available, which continued to be offered for many years. Now Sunday courses to attract and the one-day course on Saturday, lunch-time meetings, or half-day courses have become popular alternatives. Six lectures and a passive audience was and still is the common pattern. But in addition to this traditional method of teaching a whole range of innovative courses have been launched, and the jargon of the educationalist has become the byword of some of the more dedicated course organisers. At times in fact one has the feeling that some general practitioners see themselves so totally in their educational role that their job of patient care appears to have been almost totally forgotten. Regional hospital boards and universities increasingly became part of the postgraduate game, and now there is a hierarchy of regional and associate advisers helping, organising, supervising, and running programmes throughout the country for vocational trainees and general practitioners. In 1981, after years of vacillation, mandatory training for general practice was at last implemented in part and a full programme of postgraduate training consisting of two years in hospital and one year as a trainee in general practice will probably be fully enforced by 1983. The days of the 'fifties, when training was regarded as unnecessary and possibly useless, have finally passed. The modern general practitioner should be better trained, owing to his initiative and the widespread excellent vocational training programmes. It is to be hoped that the knowledge, skill, and attitudes will be more than adequate for the tasks that lie ahead.

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Trainees' Corner: Managing Chronic Disease

Chronic bronchitis

II: Treatment

LEONARD ROGERS, S E JOSSE

This article is based on an audiovisual presentation made for vocational trainees in general practice by the MSD Foundation. Further information about the tape-based programmes on which this series is based is available from the MSD Foundation, Tavistock House, Tavistock Square, London WC1.

There are two aspects of long-term prophylaxis where effort on the part of the general practitioner often leads to frustration but should still be considered: the patient's environment, both at home and at work; and his smoking habits. We cannot do anything about the climate, and not much individually about pollution, but by example and by persistent persuasion we may be able to help to stop the patient with chronic bronchitis

smoking himself to death—especially if he's still a young man. This can be successful if a positive enough attempt is made.

If the working environment—fumes, dust, and exposure to cold, wet, or damp—is having a detrimental effect on the patient's health, a direct approach to the occupational medical officer at the patient's place of work could get the patient moved to a more suitable atmosphere, although this may mean a reduction in his earnings. The disablement resettlement officer of the Department of Employment may be able to assist in training him for another job. Getting a job, however, may be difficult, but it is still worth trying. And the disablement resettlement officer may assist the determined efforts of the GP to find a Government retraining and rehabilitation scheme, as well as help with transfer to more amenable housing where the conditions are better. The local authority may have a "protected" workshop, but one of the major difficulties is that most people with chronic bronchitis are unskilled and usually of an age when they are unsuitable for retraining or a change of job. All in all, it is not an easy part of patient management, but nevertheless for many a necessary one.

VIRAL INFECTIONS

The particular vulnerability of patients with chronic bronchitis to viral infection is probably due to some defect of the protective mechanisms of the lower respiratory tract. It is a counsel of perfection to tell them to avoid people who may have viral infections. The best you can do is to try and reorganise their lifestyle—for example, by reducing travelling on crowded buses and trains. Children often bring viral infections into the house and if it were possible they should be advised to keep away from the bronchitic patient if possible.

Drugs other than antibiotics

Among the other drugs used to treat patients with chronic bronchitis mucolytics are often prescribed with the aim of reducing sputum viscosity, but no studies have produced any really convincing evidence of the benefits.

Even though airflow obstruction in chronic obstructive bronchitis is almost entirely irreversible, a small reversible component is usually present and undeniably most bronchitics derive some benefit from bronchodilators. It is generally preferable to give bronchodilators by aerosol (instructing the patient carefully about their use); oral preparations are more liable to cause side effects. Some patients with chronic obstructive bronchitis may also have coexistent late-onset asthma, in which case some of their airflow obstruction will be reversible, but bronchodilators are not always effective in this form of asthma. Patients in whom asthma is suspected merit a trial of corticosteroids, but in other circumstances there is no justification for its use in patients with chronic obstructive bronchitis or emphysema.

SLEEP PROBLEMS

One of the problems for patients with advanced bronchitis is sleep. Sedatives or hypnotics are contraindicated as they depress the respiratory centre and this in turn increases the degree of carbon dioxide retention leading to increased intracranial pressure, coma, and death.

Problems of advanced disease

Most practices have some patients with bronchitis that is so advanced that the main object is to try to make their remaining

years as comfortable as possible. In an article of this length it is not possible to consider all aspects of such an advanced stage, but there are two conditions which must be mentioned, if only briefly: emphysema and respiratory failure.

EMPHYSEMA

If chronic obstructive bronchitis is complicated by emphysema the patient may not be noticeably short of breath at rest. This is because his respiratory centre has become insensitive, as a result of which he has a considerable tolerance to hypoxaemia (the cause of his cyanosis) and also to a raised PCO_2 . Because a rise in PCO_2 does not cause him to breathe faster, his respiratory centre is not short of breath. These patients eventually develop right-sided heart failure and fluid retention, and thus the term "blue bloaters" is often used to describe them.

On the other hand, if the disease is predominantly emphysema, the dyspnoea is usually distressing. These patients, however, are not cyanosed because their PO_2 is nearly normal, at least until the terminal stages. To achieve this they have to increase the rate and depth of respiration as much as possible, and this causes dyspnoea. These patients, often termed "pink puffers", receive some benefit from oxygen. It reduces the respiratory effort that they have to make and there is no danger of depressing the respiratory centre. Domiciliary oxygen can be prescribed by the GP but difficulties may arise when replacement supplies are needed from a local pharmacist. Pharmacists are not obliged to carry them; the Family Practitioner Committee publishes a list of those who do.

RESPIRATORY FAILURE

Respiratory failure can be said to be present when the patient cannot maintain normal blood gases even at rest. The only reliable signs by which it can be recognised are tremor, mental confusion, and drowsiness. Other signs such as tachycardia and fluid retention may well be due to other causes so it is perhaps wise to assume the presence of respiratory failure from the patient's general clinical situation.

We are grateful to Dr Ian Gregg for his help with this article. The patient discussed is fictitious.

Although the issue was not tried, the power existed of eliminating Dr Kidd altogether. In such a case, the patient would have to exercise the power.

Your correspondent who signs himself "A Member" asks: "Is an ordinary practitioner justified in refusing aid in a dangerous case of labour, where a homoeopathist professed it in attendance?" In answer, let me put a hypothetical illustration. Suppose Mr Gladstone, in his late serious years, had been first attacked by a railway carriage, and that a homoeopathist, travelling in the same carriage, and calling himself a physician, had been invited to take charge of the case. The Prime Minister, who was in the carriage with his own physician, What would Dr Andrew Clark, on arrival at the patient's bedside, have done with the homoeopathist gentleman? Surely, one of two things must have happened. If the homoeopathist was honest, and at once confessed his creed, Dr Clark would simply have ignored him as a medical practitioner. If this revelation were delayed, and the unwelcome truth elicited at a later stage, the homoeopathist would probably have been summarily and ignominiously dismissed. Under either circumstance, professional honour would have been vindicated. —I am, etc, HENRY DAVMAN. (*British Medical Journal*, 1981.)

Buntingford, Hertfordshire
LEONARD ROGERS, formerly deputy director MSD Foundation
London N11 2BD
S E JOSSE, MR, FRCGP, general practitioner