and cryptogenic fibrosis alveolitis—you should examine especially the degree of his chest expansion and his cough. On auscultation you may hear rhonchi, but more importantly you should listen for the prolongation of expiration with wheeze when the patient is told to make forced expiration. Mr Cook had this.

Investigation

Some assessment of his pulmonary function is required, not only to determine the severity of airflow obstruction but also later on to assess his response to treatment. A few practices have invested in a spirometer to measure forced expiratory volume and forced vital capacity. These measurements may be more valuable for assessing chronic obstructive bronchitis and in differentiating it from other diseases, but for almost all purposes the practitioner can manage perfectly well with a Wright peak flow meter or the Wright mini peak flow meter, which is just as accurate and much cheaper. The patient must make a maximal effort, however, if the peak expiratory flow (PEF) is to be of any value.

FIG 4—Arthur Cook's peak expiratory flow reading marked at his age on a theoretical line showing how his ventilatory function has progressively worsened and will probably continue until he is disabled at 60 years.

Fig 4 shows Arthur Cook's reading (270 l/min) marked at a point for his age and matched against what should be expected in a normal person. The lower line is a theoretical line drawn from epidemiological surveys, suggesting the progressive impairment of his ventilatory function over his life time and leading to disability at about 60. If the patient has a reduced PEF (less than 80% of the predicted value) this may suggest irreversible airflow obstruction due to

structural damage to the bronchi. Part of the reduction, however, may be due to reversible causes such as bronchial muscle constriction (asthma); there often is an asthmatic component to the condition. The distinction can sometimes be made by giving the patient an inhalation of isoprenaline from a pressurized meter aerosol. This will not distinguish between the two in every case because sometimes the airflow obstruction characteristic of late-onset asthma is refractory to adrenergic stimulants. The only way you then have of differentiating between them is to give a course of corticosteroids if it is clinically justified.

Mr Cook's chest radiograph showed no important abnormality, which is the case in patients with chronic bronchitis. But at least you have eliminated tuberculosis and malignancy as well as any structural damage. The chest radiograph could also have shown the presence of generalized emphysema or other disease easily confused with chronic bronchitis such as sarcoidosis or fibrosing alveolitis. So Mr Cook's normal radiograph together with his established cough and sputum helps towards making a firm diagnosis. You may have asked for a microscopic examination of his sputum to discover if eosinophilia was present; this might have suggested asthma. Your investigations to date have excluded these possible diagnoses—asthma, fibrosing alveolitis, tuberculosis, and bronchiectasis. So now we can consider Mr Cook as an established chronic bronchitic.

Disease progress

The history of a patient with chronic bronchitis is usually a stereotyped one, the first recognisable symptom being a chronic cough. This is followed by a latent period that may last many years, during which there is gradual and progressive airflow obstruction caused by structural damage to the bronchi. The reserve ventilatory capacity is also gradually eroded over a long time so it could well be many years before the patient first notices shortness of breath on exertion. This leads to an advanced stage when dyspnoea becomes increasingly severe, leading to the patient becoming a respiratory cripple and eventually dying, usually as a result of respiratory or cardiac failure.

By the time most GPs find that their patients have some disability the disease is likely to have reached a moderately severe stage, and any structural damage to the bronchi will be largely irreparable. So there is a strong case to be made for identifying and treating patients as early as possible in order to attempt to prevent further deterioration. Perhaps you may consider screening the groups "at risk" in your practice.

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

so remarkable, indeed, that he took occasion to examine other examples of the same species before accepting it as a general fact of extensive application. Upon returning to some younger specimens of the same gigantic saurian, he was enabled to verify the existence of the cavity in every instance, and to prove that sacral enlargement of the cord in extinct reptilians was an extraordinary fact. If it had appeared in a single instance, it must be regarded as a phenomenon as a phenomenon to injury or disease; but in all cases, since his attention was attracted to the point by this enormous creature, he had found the posterior cavity in extinct reptiles. There was nothing analogous to this sacral enlargement, Professor Marsh continued, in existing vertebrates. The supralumbar had absolutely no brain—that is, no cerebral enlargement of the cord at the anterior extremity, but there was no enlargement of the spinal cavity at the sacrum which answered to what he had observed in extinct species. In answer to an inquiry whether the sacral enlargement was in such a position as to furnish a point of origin for the nerves of the leg, Professor Marsh said that such was the case, and that the animal had very powerful hind legs; but the fore legs were equally stout and there was no corresponding enlargement. (*British Medical Journal*, 1881.)

ONE HUNDRED YEARS AGO At the closing session of the autumn meeting of the National Academy of Science in New York, Professor Marsh read a paper on the "Dimensions of the Brain and Spinal Cord in some Extinct Reptiles," which, from the report in the *New York Medical Record*, appears to have contained some very interesting facts. Professor Marsh first brought the evidence to sustain his proposition that the older the type of mammal, reptile, or fish, the smaller the brain. He then called attention to a very curious development in certain fossils, near the sacral region of the cord. In a gigantic reptile, of the Jurassic formation, an animal nearly thirty feet in length, the brain was scarcely as large as that of an ordinary dog, judged by the size of the cranial cavity. But the spinal canal presented the extraordinary feature of an immense enlargement in the sacral region, where the bone was so excavated as to form an immense vaulted receptacle, several times larger than the cavity of the skull. The sacrum consisted of four vertebrae, which were well ossified and of great solidity, and within this was contained, during the life of the animal, a posterior brain—if he might use the term—which was eight times as large as the encephalon. The point was of very curious interest, not only as a fact of fossil anatomy, but in respect to the physiological inferences that might be drawn from it, into which he did not propose to enter. It was

opportunity to specialise if the group is interested. So that it is possible to find general practitioners with special skills in, for instance, rheumatology, cardiology, dermatology, or ophthalmology, and so are able to save patients time and needless worry by dealing with problems at the surgery rather than having to refer relatively minor problems to outpatient clinics. The need to rationalise has also been beneficial in other clinical fields. Many doctors have introduced special clinics into their practice, and with the help of trained ancillary or attached staff run effective antenatal, well-baby, contraceptive, allergy, and geriatric assessment sessions, for example. Accurate screening of patients is becoming possible in some practices using age and sex registers, allied with a determination to practice effective preventive medicine.

Records

Such efficiency presupposes organisation. Gone for most of us are the days of the 'fifties when the doctor may have had to take out case notes from a chaotic filing system and refile them, feeling despair and tiredness at the end of the day. The present standard of keeping notes in general practice is still poor. The format of patients' notes does not lead one to write descriptive prose, and the need to write little more than most doctors use the card as a personal aide-memoire, which should at least be

legible for our successors. The reaction to this pattern of limited note-keeping has been the growing use over the years of various forms of large folders (A4 size) by individual practices and research groups. But the immense cost of any such nationwide change has stopped official action by the DHSS. Now of course we are supposedly moving into computerisation and micro-processing, so that there is a possibility in the future that we may be pressing buttons and seeing the data on screens on our consulting-room desks. I cannot see this happening in general practice, knowing the general conservatism of my generation. Maybe the younger lads will learn to punch keys correctly between or while seeing patients, but I would be ever fearful of my own mechanical incompetence wrecking the system by incorrect recording or erasing total records. I also visualise the day when everything is on tape and no notes are taken at all and the electricity supply fails at the start of the morning surgery when an influenza epidemic is just developing.

This is the first of two articles on the changing face of general practice.

Reference

¹ Druy V.M. Premises and organisation. In: Fry J, ed. *Trends in general practice*. 2nd ed. London: Royal College of General Practitioners, 1979.

Beyond the Surgery

General practitioner in rescue helicopters

J D BEALE

The working life of a doctor may place him in strange circumstances. Twenty minutes after finishing a December morning surgery I was in rough weather, suspended by a cable above the pitching deck of a small Belgian trawler 15 miles north-east of the North Foreland. On the trawler a badly injured man was said to be dying.

The initial training flight had been straightforward enough. The RAF crew had patiently taught me how to get strapped into the aircraft from the airfield, having shown me how to put on an immersion suit and communication helmet. It was a new experience and an exciting change from the daily routine. But the real thing was quite different. I just could not believe that we were going to land safely on the small deck of the vessel, which was continually changing position and height in the heavy seas. I did not, however, reckon on the skill of the crew, who practice daily to achieve pinpoint accuracy in such conditions. After landing on the deck in a crumpled heap, helped by the willing hands of the fishermen, I tended the patient, who lay face down on a wave-swept deck among the fishy debris of a morning trawl. He had a fractured skull, a fracture dislocation of the upper thoracic vertebrae, and several fractured ribs from being hit by a five cwt block that had been dislodged in the rough

conditions. His injuries had caused a paraplegia, and his level of consciousness was fluctuating alarmingly. He was winched up into the aircraft on a Neil Robertson stretcher and taken to the nearest hospital at Margate. Since that time I have flown on several missions but none as memorable—no doubt a characteristic of first experiences.

RAF search and rescue

The RAF man stations that are strategically placed around the coast of Britain for search and rescue. They share this task with units from the Royal Navy, US Air Force, and Bristow (the private firm). Though they are there to help military personnel, they respond to distress calls from civilians, working closely with HM Coastguard, the Royal National Lifeboat Institution, and the police. Some stations call on civilian doctors as the need arises. These doctors are cleared with the Ministry of Defence for insurance and are regularly trained in service procedures—the main requirement being to keep out of the way when not wanted.

The RAF Manston station is two miles from Ramsgate, adjacent to both the Straits of Dover and the Thames estuary, a sea area through which many vessels sail daily. The E Flight 22 Squadron uses two twin-engined Wessex helicopters, which have a range of 190 miles and maximum speed of 140 mph. The aircraft takes a crew of three and can carry up to 10 survivors.

Ramsgate, Kent
J D BEALE, MB, BCH, general practitioner

Organising a Practice

Changing face of general practice

K G DICKINSON

Two memories of general practice spring to mind when I recall the late 1940s. The first was when the doctor visited: clean shirts and pillow slips, clean pyjamas, and everything in readiness in case... The dark double-breasted suit of the portly authoritarian doctor impressed me, and later in the day the bedroom was full of the smell of the ichthammol ointment prescribed for the discharging leg abscess. Later, when I was a medical student, a painful sore throat led to a visit to a local surgery: a small, cramped waiting-room, a dozen assorted wooden chairs, a hatstand, a few old magazines, brown linen and wallpaper. The consulting room was dark and poorly lit, the window glass opaque. One would want to see the street outside, the table between us cluttered. The tongue depressors were metal and stood in a jam jar of pink fluid. A cursory look at the throat and a script was issued. I remember thinking at the time that surely he should have felt my glands and looked in my ears—the small wizened, unkempt man in a creased suit who was almost indistinguishable from his patients. Has general practice changed so much over the years? The range of personality is as great as ever, but the conditions, attitudes, skills, and knowledge have improved the service that we are now able to provide if we so wish.

Entering practice

The new entrant to general practice in the early 'fifties was a supplicant. He would be expected to work long hours, reach parity in possibly seven years, accept the hierarchical system of his seniors and generally behave himself, and probably do most of the practice obstetrics. Over the years society has changed so the profession has followed. There is now an enter attitude, and few doctors would expect to work a six-day week—let alone do Sunday morning surgeries. This general easing of attitudes and rationalisation of work loads has taken place steadily over the years, helped by alterations in the conditions of service and terms of payment and spurred on by the enlightened self-interest of the doctors.

From 1958 onwards into general practice became considerably easier. The "older man" could now retire with a National Health Service pension, having served 10 years or more from the inception of the Health Service in 1948. Increasingly vacancies occurred, and during the late 'sixties and most of the 'seventies the options open to a reasonably presentable young doctor were great, so that the "young ones" felt able to dictate their terms in relation to pay, priority, duties, roles, and holidays. The pendulum is now swinging again, and as overpopulation builds up in the 'eighties it will be interesting to see how far-minded

the present generation of seniors will be and if the earlier patterns of exploitation so delicately fostered on many of my colleagues in the 'fifties will creep back again.

List size

At the start of the NHS the maximum number of patients that an individual doctor was allowed to have on his list was 4000, but this was reduced in 1952 to 3500. The average list size in 1952 was about 2400 and is now about 2200. These averages conceal wide variations. In the better practice the list size of 'fifties that were sustained by assistants have vanished. Rural practice always tends to have smaller lists, but the doctor is compensated financially by mileage payments and in many instances by the fact that he does his own prescribing. The inner-city practices tend to be a contrast of large and small groups, young and old doctors, health centre premises and single-handed practices. As the older doctors retire new developments may take place encouraged by some local authorities who are keen to have good medical services in areas of great need.

Clinical standards

In the 'fifties antibiotics were readily available, and it was possible to prescribe penicillin orally so that the decision to prescribe antibiotics did not require the trouble of giving an injection. Easy for the patient and the doctor—hardly any need to examine the patient, making it possible therefore for the pattern of laziness and incompetence that existed in some practices to continue to flourish. In the better practice the search for a definitive diagnosis led to an increasing need to liaise with local laboratories, and steadily over the years what started in many cases as a casual friendly contact has developed into a well-organised system of co-operation. By 1973 90% of general practitioners had access to laboratories, the demand having increased by 50% during the preceding five years. There must be few doctors now who do not make wide use of their local laboratory services, and in most instances the laboratory staff who work in district general hospitals welcome this use of their facilities. The result has been that as general practitioners have become more skilled and efficient so have laboratory techniques. It is worth the bother? Some doctors would still argue that it is easier to use antibiotic blunderbuss treatment for everyone, but the majority, I would hope as a matter of personal pride if nothing else, like to be as accurate as possible within the limits available.

In a similar way general practitioners have over the past few years steadily acquired more equipment. Many years ago, of course, some general practitioners used electrocardiograms. It has only been in the past few years, however, that many group practices regard this as a standard piece of equipment. Many doctors have also developed specialised skills. It is one of the advantages of group practice that the members have the

who are lifted by a powerful winch fitted above the hatchway door. Basic resuscitation equipment is carried on board—a pneumatic, dressings, splints, simple drugs, and a Neil Robertson stretcher, which can be attached to the winch cable by a large hook.

THE CREW

The pilot in charge of the aircraft sometimes has to manoeuvre his machine dangerously close to cliffs or a ship's ever-moving masts and rigging. The navigator guides the aircraft to the object he is searching, controls the winch, and guides the pilot, who is unsighted during a lifting operation, so that the winchman is safely landed on and taken off the scene of rescue, whether it is a cliff edge or small heaving boat deck. The winchman is trained in first-aid, and when he rescues the patient he is in charge of the patient's immediate care and safe passage to the aircraft. His work is hazardous and may result in exposure and exhaustion.

When the coastguard stationed at the base requests the attendance of a doctor, he is usually called on en route at a convenient cliff-top site. Doctors participate in one-fifth of medical evacuations (medivacs), as data from the coastguard reports and flight scramble records show. During the period I have had contact with the service an aircraft has been flown on average 90 times a year for general search and rescue, saving about 55 people a year, of whom one-half needed medical attention. Those not needing medical help were fit people removed from places of danger, such as burning and sinking ships and those cut off by the tide.

MEDICAL WORK

Survivors who need medical help receive first-aid at the site of the rescue and are then taken to the nearest hospital, where two-thirds are admitted for an average stay of 10 days. I have visited five hospitals between Ipswich and Hastings, and most of them now have landing areas close to the accident unit, though until recently when using Canterbury Hospital we had the privilege of landing on the Kent County Cricket ground—alas never during a match.

ONE HUNDRED YEARS AGO

A Case of Paracetamol of the Bladder—Mr F J B Quinlan, after briefly alluding to the recent melancholy death of Dr Peck, in company with whom he saw the patient, and performed the operation described in his communication, read the notes of a case which had come under his care in St Vincent's Hospital. An elderly man, grey-haired, had for many years suffered from stricture of the urethra, at intervals more or less protracted. A couple of months' treatment with Dr Williams' Pink Pills, and on that occasion he purchased a quantity of whiskey, and drank himself free from pain. On recovering consciousness, his agony was excruciating, and when Mr Quinlan saw him, he was roaring with the pain. The bladder could be felt hard and bulging, like a large water-melon, in the abdomen. The resident medical officer in the hospital had tried to relieve him by every means: baths, stupor, opium, but without success. The catheter could not be passed beyond the bulb, where a cartilaginous stricture could be felt. Mr Quinlan said to pass the catheter, but with no other effect than the production of more pain and haemorrhage. The case being urgent, and the man's cries for relief undiminished by the previous treatment, Mr Quinlan passed a large trocar and cannula into the bladder, through the line alba, two inches above the pubes; and this drew off a large quantity of urine, giving immediate relief. There was no suction used in evacuating the contents of the bladder; but as the bladder was not contracted, the urine and canula having been drawn off, the canula was removed, the man put to bed with hot jars to his feet, and given one-half grain of acetate of morphia. Next day, the patient expressed himself as quite comfortable, and in a warm bath evacuated his bladder per viam naturalem, and, in a fortnight, left the hospital—able to micturate, to use his own expression, "as well as in his best days." The stricture in this case, was, he

considered, a mixed one—partly organic, and partly spasmodic. He had not employed suction in emptying the bladder, as cystitis might be produced by the mucous membrane of the bladder being sucked into the tube. Nor did he approve of the method of leaving the cannula in for any lengthened period, as it might produce cystitis, if necessary.—The Chairman had that day seen a case in which repeated tapping had been resorted to with the most satisfactory result, after a couple of months' treatment.—Mr Ormrod had some time ago tapped a man through the rectum, for spasmodic stricture of the urethra, which resisted all other treatment. The next day, he could with ease pass a No 5 catheter. This man had been tapped above the pubes, six years before, for a similar attack; but had no attack in the interval, or since the last operation.—Mr A Corley had seen a case some years ago, in company with the chairman, in which an elderly surgeon had endeavoured to tap his own bladder for retention of urine, with unsatisfactory results—indeed that he (Mr Corley) had to do it a couple of months' treatment.—Mr Ormrod had some time ago tapped the prostate epithelium a surgeon could have on his grave was: "I never tapped a bladder." With this Mr Corley did not agree.—Mr W I Wheeler preferred the suprapubic operation to that per rectum. In one case which he had had of contusion stricture, caused by a kick of a horse in the perineum, the man was tapped fourteen times, and the catheter gradually dilated to a No 8 catheter. In another case where there was true traumatic stricture, the man had been tapped twenty times, per rectum, before Mr Wheeler saw him; and also afterwards, over the pubes, by Mr Wheeler, previously to performing Corley's operation.—Dr Fraser, Dr Doyle, Dr Cranmy, and Mr Warren also took part in the discussion. (*British Medical Journal*, 1881.)

University Health Service, University of Birmingham, Birmingham B15 2SE
K G DICKINSON, MB, BSC, general practitioner