(2) Use lip-reading; watching a patient's lips may give sufficient additional clues to enable you to understand.

(3) Encourage the use of the laryngeal vibrator if the patient has one; patients are sometimes self-conscious about using vibrators in unfamiliar surroundings.

Children

If the child is old enough to be attending the surgery alone then the preceding points will apply, and if he is accompanied by an adult the problem of communication will be circumvented, but a few points are worth making.

(1) Talk to the child wherever possible; because he does not speak clearly does not mean that he does not understand.

(2) The presence of a few toys and a relaxed approach will, with the speech-handicapped as with the normal child, prevent an examination turning into a tussle and future visits to the doctor becoming a cause of nightmares.

(3) Do not feel that a child should not be referred for speech therapy because he is too young or he has no speech at all.

Letter from . . . Chicago

Reading aloud

GEORGE DUNEA

At the beginning of a new presidency we may well reflect on Plato's view that the human race will enjoy no respite from evil until its leaders "become genuine and adequate philosophers, and political power and philosophy are brought together." Yet we may at least enjoy the comforting thought that most of the effective leaders of the past, many of whom have conferred great benefits on humanity, were far from being intellectuals. Few of these successful men of action would have understood the raptures of the literary critic who, in a recent review on Jane Austen, extolled the pleasures of reading aloud as a peaceful enriching way of establishing an atmosphere of intimacy between the author and his readers, with frequent pauses for discussion—"especially on the many nights when there is nothing on TV." And I was vicariously reminded of the rather unkind and undoubtedly apochryphal anecdote about a head of state who after his heart attack was confined to complete bed rest, as was the fashion of the times, while the doctors hovered anxiously over his ailing myocardium, periodically tranquilising the populace with reassuring press releases. After a few days, the time of maximal danger having passed, the patient asked to see the newspapers. The doctors, however, denied his request, fearing he might become too tired from moving his lips.

Achiever facilitator

For those who find the written word less of a challenge, however, Jane Austen remains an ever-present source of delight. Not that the liberated twentieth-century woman would readily agree with the observation that, "a woman, especially if she have the misfortune of knowing anything, should conceal it as well as she can." For, unlike the earlier Hanoverian and Regency ladies, the modern executive woman is so busy pursuing her career that she would be well served by having a "wife" in the home. Unfortunately, as Maryanne Vandervelde points out, only 20% of husbands are of the "non-achiever facilitator" kind, who would do the housework, take care of the children, plan their lives around their successful wives, and readily move if their successful better half had an opportunity of promotion in another city. Leaving out the "non-achiever obstructionists," who amount to less than 5% of husbands, we find that most men, over half, conform to the traditional "achiever obstructionist" pattern; and that less than one-quarter belong to that ideal type, the "achiever facilitator," who helps and encourages his wife, shares the household responsibilities, and is not threatened by her success. Some ambitious women, of course, retain the option of never marrying, getting divorced, or having no children.

But returning to the achiever facilitator who reads aloud with his wife, we find that this blissful couple devoured all of Trollope during one summer and all of Miss Austen during the next. A reference to Sanditon, the fragment finished by Another Lady, from Australia, reminded me of the formidable Lady Denham, who at the age of 70 was still opposed to taking physic and had never consulted a doctor. She was determined that no member of that particular tribe should ever set foot in her beloved seaside resort, for, "it would only be encouraging our servants and the poor to fancy themselves ill"; and even her dear Sir Harry might have stayed alive had he not put himself in the hands of a doctor: "Ten fees, one after another, did the man take who sent him out of this world. I beseech you . . . no doctors here."

Crisis of excess

Echoing Lady Denham's view, some 200 years later, are those alarmed by the predicted surplus of doctors in the US, especially as each new doctor generated an additional $300 000 in expenses to an already overinflated annual medical bill of $256 billion. Yet what in the 'sixties was deemed to be a crisis of access is rapidly becoming a crisis of excess; so that an estimated deficit of 50 000 doctors in the late 'sixties could turn into a projected surplus of as many as 130 000 by the year 2000, with one doctor for 200 people. Already the number of doctors has grown from 320 000 in 1970 to 440 000 last year, with a predicted "inexorable" increment to almost 600 000 by the end of this decade. And, while some shortages may persist in unpopular areas, the overall projection is one of too many doctors engaging in cut-throat competition for patients, with an increased focus on the financial aspects of medicine, practising perhaps at a higher cost per patient visit, with more laboratory tests, more

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radiography, more examinations, and a still higher national expenditure on medicine.

Already some observers view with scepticism the growing cost of medical care for the indigent. So that, whereas official government figures still claim that some 25m Americans live in areas short of doctors, Mr Harry Schartz believes, "that the stereotype of the poor being denied medical care in the United States is completely without foundation" and that, "the poor in this country get more care than any other group of Americans," as shown by more visits to doctors, more admissions to hospitals, and more days of hospital care. Yet it was the perception that millions went without medical care that led the Government to enact its first manpower legislation in 1963, and later to encourage the building of new medical schools and hospitals, to pressure universities to expand the size of their classes and reward them with capitation fees of more than $2000 per student, to provide loans and grants to students, and even to subsidise Americans studying abroad, with loans amounting to some $6m by 1979.

Much of the impetus for producing more doctors has come from the cherished view that they not only cured diseases but also maintained health. This illusion is being shattered in an era of greater cost consciousness. And, while much credit is given to an imaginative "medical industrial complex" merchandising care of the sick as "health-care," we are reminded that many of the problems of American medicine stem precisely from the doctors' claim to be selling health when in fact they are (or should be) taking care of the sick. Writing in the *Wall-Street Journal*, Dr Eric Cassel Jr reminds us that health is an ill-defined state having less to do with doctors or medicine than with those boring or abstemious living habits long advocated by mothers but not observed even by them; and that merchandising "sickness care" as "health care," though attractive to the public, interferes as much with caring for the sick as with promoting health. We stand advised then to recognise, the sooner the better, that ours is a "sickness care system," modern, effective, necessary, but expensive, yet consonant with the doctor's traditional role as a healer. And Dr Mike Oppenheim reminds us in the *New England Journal of Medicine* that the fascination with health maintenance is strictly an American aberration, being unknown in Europe, and that doctors are more comfortable in the role of healers than in that of preventing illnesses. Indeed, the most effective way to purchase health would be to have teams of nurses and technicians travelling around the country taking blood pressures, immunising children, doing Pap smears, getting people to exercise, and harassing them to stop smoking and overeating. It is expensive and indeed foolish to use doctors for this purpose, writes Dr Oppenheim, and in fact most doctors do not enjoy this role. "I do not know of any doctor who likes performing physical examinations," he writes, yet at least they are lucrative; and we may safely predict that in the event of a doctor glut more and more will go into the business of maintaining health and squeeze out other health professionals, especially if the alternative is pumping gas or guiding tourists around the art gallery.

The public, meanwhile, has long been ambivalent about the role of the medical profession. "I am not partial to physicians myself," writes Jane Austen's Lady Osborne in *The Watsons*: "In minor matters a proper diet is better than a doctor; and in major matters they do not seem to have much skill. No doctor has yet cured a broken neck. However, they have their place, like others in this world." Yet for the overmedicated public of the twentieth century the concept of having too many doctors is at first appealing. There is the prospect of shorter waiting times, house calls, more personalised care, more doctors assigned to jails, schools, or ghettoes, working in emergency rooms, or moving out to provide care in small towns and remote rural areas. The public can hardly be expected to shed tears at the declining income of physicians; but there remains the fear that a doctor surplus may increase "physician-initiated demand for medical care" and lead to overtreatment. Economists, such as Professor Eli Ginzberg, are less worried about a doctor's high income so long as he stays busy, because busy doctors do not overtreat. He would just as soon have the laws of demand and supply regulate the number and distribution of doctors, being sceptical that the Government can make intelligent decisions on manpower. Yet it was the Government, by its policies, that promoted this increase in the number of doctors; and it is a Government advisory commission that now recommends that the numbers be cut back.

Appointed in 1976 to advise Congress on manpower, fiscal, and educational policies, and consisting of 13 doctors and eight lay members under the chairmanship of the former chief of medicine at the University of Chicago, the Graduate Medical Education National Advisory Committee (GMENAC) recently produced its report after three and a half years of consulting Delphic panels and mathematical models. It foresees 70 000 doctors too many by 1990, with some 10 000 too many surgeons and also obstetrician/gynecologists, with surpluses in radiology, internal medicine, cardiology, and most other medical subspecialties, and with persisting shortages in psychiatry, emergency medicine, and nuclear medicine. Its recommendations, numbering 106 in all, include reducing the number of students entering medical schools (by 10% at first), further decreases in the number of foreign graduates entering the United States, stopping financial aid and "fifth pathway" licensing of Americans studying abroad, incentives to promote entry ino shortage specialties and into primary care, continuation of training nurse practioners and physician assistants, and granting statutory authority to GMENAC.

The reaction to the report, as might be expected, was lively, as admission policies to medical schools have long been a sensitive issue, so that attempts to cut the size of classes are invariably met with cries of indignation by the leaders of urban, minority, and left-wing groups. Some thought that the Government should not interfere but let the economy correct itself by removing artificial interferences with the principles of supply and demand, rather than curtail admissions and do an injustice to many qualified Americans. Others questioned the accuracy of the projections, insisting that an excess of doctors is needed if problems of maldistribution are ever to be corrected, or hoping that more young doctors will enter a career of research. The voice of the antidoctor lobby suggested the need to police the doctors more carefully, to educate the public, and to introduce health insurance programmes, because without such actions, "reducing the number of physicians will only make doctors richer without improving the quality or quantity of health care delivery." And the New York State Board of Regents, equally unimpressed by the portents of a deluge of doctors, went ahead with its proposals to accredit foreign medical schools and allow their preclinical graduates to obtain clinical training in approved New York hospitals.

It remains to be seen, then, whether the recommendations of the Graduate Medical Education National Advisory Committee will be implemented by the new administration, or whether by the year 2000 doctors will be scurrying around the cities looking for work or invading the seaside resorts to fulfil Lady Denham's worst expectations. I am reminded that some 20 years ago, at the seaside in Torremolinos (not at Sanditon) in the days when Spain was just opening up to visitors, a young American woman developed fever and a painful swelling from a dental abscess. A local doctor was called in, and clearly had very little else to do, for he devoted at least an hour to the case. He relaxed, spent a long time discussing world affairs with his new patient, then finally prescribed oral oxytetracycline (Terramycin) as well as daily injections intravenously, to be administered by his "practicante" assistant for the next two weeks.

Authors as dinner guests

Turning once more to the subject of reading aloud, we once equalled the feat of the couple who read Jane Austen and Trollope by covering almost 1000 years of Graeco-Roman

history in English translation while commuting by car from the suburbs. Starting in Egypt with the second book of Herodotus, we covered the Persian and Peloponesian wars, the decline of the City States, the Anabasis of the Ten Thousand and that of Alexander, the quarrels of his successors, and then, skipping from one author to another to maintain the chronology, right through the history of the Roman Republic and Empire.

Somewhere around 350 AD my wife become sick of the whole thing, leaving me to wander on my own through the darkness of the Middle Ages, but not before we reached certain conclusions about which authors we would like to invite for dinner. Herodotus, we thought, would be most entertaining with his stories, some true, some false, for it was not for nothing that he was called the father of lies as well as the father of history. Polybius would probably monopolise the entire conversation, talking in his pedantic manner about the shortcomings of earlier historians—in particular, about the errors of Phylarchus, who, "for the sake of making his narrative sensational composed a tissue of ... improbable falsehoods" as well as betraying his gross ignorance. Xenophon, we agreed, would be a most pleasing guest, jovial and entertaining, talking about hunting and fishing, not too intellectual, never playing "the old culture game." Indeed, we wondered why his *March of the Ten Thousand* was never made into a movie, with some glamorous film star taking the role (albeit expanded) of Queen Synnesis, and with some Kurdish or Armenian princesses added for good measure to increase box office appeal. But Thucydites, perhaps the greatest of historians, might be too serious as a guest; the atmosphere might be too constrained; and he might even refuse the wine and abstain from dessert as he would lapse into reminiscences about the fate of the Athenians in Sicily, who "having done what men could, suffered what men must."

Pollution and People

How much more can we do about air pollution?

DAPHNE GLOAG

With the reduction of smoke and to a lesser extent sulphur dioxide other components of air pollution have gained more prominence. The most important of these pollutants are carbon monoxide,[1] nitrogen dioxide,[2] ozone and other photochemical oxidants,[3] and polycyclic aromatic hydrocarbons.

Carbon monoxide

Haldane experimented on himself with carbon monoxide, reaching a carboxyhaemoglobin concentration as high as 49%—by which time his vision was dim and he had difficulty in moving.[4] Carbon monoxide owes its toxicity to the fact that it has about 240 times greater an affinity for haemoglobin than has oxygen and also impairs the dissociation of oxyhaemoglobin. The two current problems are the toxic concentrations of the gas that still build up occasionally indoors and the question of whether ill effects occur at low concentrations.

People assumed that the lethal effects of carbon monoxide would seldom be seen once natural gas replaced town gas. But even though natural gas contains only 1% of carbon monoxide, inadequate ventilation will lead to its production. Normally natural gas undergoes combustion with the formation of carbon dioxide and water vapour; but if too little oxygen is available combustion is incomplete and carbon monoxide is formed. Appreciable concentrations have been found in kitchens with normal gas cookers but inadequate combustion.[5] The old coal fires had extremely inefficient combustion but there was ample ventilation—and if a flue became blocked smoke acted as a warning. Smokeless fuels can give rise to fatal accidents if a flue becomes obstructed. Gas or oil appliances (often unflued) in confined spaces such as caravans and boats are an especial hazard. Paraffin stoves, moreover, are increasingly used in almost sealed rooms, causing a sudden increase in carbon monoxide concentrations, often while the occupants are asleep. Slow-moving traffic in a tunnel or at the entrance to an indoor car park is also potentially hazardous and the build-up of carbon monoxide has produced early symptoms of poisoning. In such circumstances engines should be switched off whenever possible and workmen should be exposed for only short periods.

In 1979 there appeared to be an increase in fatal cases of carbon monoxide poisoning, though a change in classification makes it difficult to be sure about this (DHSS, unpublished information). In any case the 158 largely avoidable deaths are too many. We need far more publicity about the importance of ventilation and of checking appliances, flues, etc. Equally doctors, especially casualty officers and general practitioners, need to be alert to the possibility of early carbon monoxide poisoning—symptoms such as nausea, headache, and dizziness have been disastrously ascribed to a "flu-like" illness or gastroenteritis. Three deaths in a caravan, for example, followed a visit from a GP who diagnosed gastroenteritis; and previous occupants had also suffered from early symptoms of poisoning.[6]

At lower carbon monoxide concentrations, the point at which the reduction in oxygen transport becomes important clearly differs for different people and circumstances. The breakdown of blood pigments produces enough carbon monoxide to give a carboxyhaemoglobin concentration of 0·1-1·0%; there is then equilibrium between blood and air if the carbon monoxide concentration in the air is about 5 mg/m^3.[1] Smoking usually provides the most important source of carbon monoxide, commonly giving the smoker a carboxyhaemoglobin concentration of 5-15% or even more, whereas non-smokers even when exposed to street air rarely have a carboxyhaemoglobin saturation over 3%.[7] The carboxyhaemoglobin concentrations at which various impairments—notably of the central nervous system and the cardiovascular system—have been found in controlled studies are summarised in the WHO report (table 10).[1]

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