and to change them by using a knowledge editor.

The DILEMMA project, sponsored by the European Community, entails integrating this form of logical and qualitative decision support with a general practice computer program – the Oxford Primary Care Management System. We will use it to provide decision support on prescribing, the management of chronic diseases such as asthma and hyperlipidaemia, and screening for colorectal cancer. We also intend to use this method of decision support to facilitate shared care between hospitals and general practitioners, particularly in oncology.

As these systems develop they will provide more flexible and sensitive decision support than those based entirely on numerical probabilities.

ROBERT WALTON
TONY RANDALL

DILEMMA Project,
Department of Public Health and Primary Care,
Radcliffe Infirmary,
Oxford

- 1 Thornton JG, Linford RJ, Johnson N. Decision analysis in medicine. *BMJ* 1992;304:1099-103. (25 April.)
- 2 O'Neil M, Glowinski A. Evaluating and validating very large knowledge based systems. *Medical Informatics* 1990;15: 237-51.

BUPA and consultants over 70

EDITOR.—The reply from the group medical director of British United Provident Association (BUPA) to D P Choyce's letter concerning payments in respect of consultants' fees for consultants over 70¹ is neither logical nor defensible; it is in line with the content of letters sent to some senior colleagues in which he made similar points and gave gratuitous advice to retire from practice. Like Choyce, I have treated many of my patients for 20 years or more and will continue to see patients who request consultations or are referred and to perform operations that have served well for many years.

Thelwall-Jones's main thesis is the promotion of up to date medical advice of the highest quality. This, he believes, is age related. Then why not choose age 60 or 62 or 65? The equation that he makes with NHS requirements is entirely inappropriate. The NHS insists on retirement at 65 to preserve career structure, not because of deteriorating standards.

The confusion in Thelwall-Jones's argument is apparent when one considers that BUPA accredits younger doctors who are not consultants. Many are well trained but without long years of senior hospital experience. Thus BUPA would reimburse a younger doctor who is not a consultant for performing an occasional complex major operation but not an older, more experienced physician, surgeon, or anaesthetist doing expertly what he or she has done successfully for many years.

Thelwall-Jones seems to be under the impression that consultants aged over 70 mainly carry out long term follow up and surveillance. Since I retired from the NHS my general surgical referrals from practitioners and colleagues have been comparable in range to those of colleagues, and my choice of anaesthetist—some are over 70—depends on who is most suited and skilled. I refer patients to other consultants under or over 70 because of their skill and ability to provide the highest standards of care.

Thelwall-Jones's letter is ill conceived; it is not based on any statistical evidence relating poor practice to age (the medical defence unions do not differentiate on the basis of age) and does not accord with the regulations of the General Medical Council in the United Kingdom or the practice in the United States and Canada, where such restrictive limitations for both patients and doctors are illegal. His directive seems to be bureaucratic meddling rather than a serious attempt to uphold

standards and seems to me and many of my colleagues under and over 70 to be discriminatory and ill thought out.

A E KARK

London W1N 1DJ

- 1 Thelwall-Jones H. BUPA and consultants over 70. *BMJ* 1992;304:1116. (25 April.)
- 2 Choyce DP. BUPA and consultants over 70. *BMJ* 1992;304:1116. (25 April.)

EDITOR.—The decision by British United Provident Association (BUPA) to refuse to pay benefit to members for fees from specialists aged over 70¹ and the subsequent correspondence on the subject² have missed the most important point of principle. A patient who has private treatment enters into a contract with the consultant. The patient may well have medical insurance and, therefore, has a contract with the insurance company or association to settle the medical fees. The consultant, however, does not have a contract with the insurance company.

There is already adequate protection to prevent patients being treated inappropriately by consultants aged over 70. Firstly, all patients should be referred by their general practitioner, and general practitioners should surely know whether such a referral is appropriate to a consultant aged over 70. Secondly, most private hospitals withdraw admitting privileges at the age of 70. Therefore, for a consultant to have admitting privileges over the age of 70 must be exceptional and have the approval of the hospital's management and its medical advisory committee.

It cannot be emphasised too strongly that private medicine is independent medicine. Consultants are not employed by the insurance companies as they are employed for their NHS duties by regional health authorities and trusts. Consultants may well charge fees within guidelines recommended by either the BMA or BUPA. They may accept payment made on behalf of patients by insurance companies, but this does not and must not make consultants contractually responsible to the insurance companies. It is therefore inappropriate for BUPA to refuse to reimburse the fees charged by a consultant to an insured patient referred by that patient's general practitioner, regardless of the consultant's age. To anticipate the suspicion that this may be personal pleading, I emphasise that I am a 52 year old surgeon who has made adequate provision to be able to retire at the age of 60.

RICHARD G FABER

Reading,
Berkshire RG1 6HY

- 1 Choyce DP. BUPA and consultants over 70. *BMJ* 1992;304:1116. (25 April.)
- 2 Thelwall-Jones H. BUPA and consultants over 70. *BMJ* 1992;304:1116. (25 April.)

Agism and merit awards

SIR.—Discrimination of any kind is unacceptable, and the age discrimination shown by British United Provident Association with regard to payment of consultants over 70 should be vigorously contested.¹

Geriatricians have been fighting against agism in clinical practice for over 40 years. We have achieved great successes in removing age limits in cardiac surgery and high tech, expensive treatments. We have managed to educate others that age should not be the only factor they consider when deciding on management.

The worst kind of age discrimination is the age limit introduced by the review body for merit awards: 60 for C awards and 62 for B awards. The reason given is to stop "golden handshakes" before retirement, and what is wrong with that? It means

that the awards are not held for long before retirement, and that adds to the burden on pension and wages. What prevents someone getting an award at 56 and then taking early retirement the year after? The argument is untenable. It also means that the age limit is a cut in the total payments of all consultants and academics. The rule is unfair, demoralising, and counter-productive.

The age limit removes any incentives for consultants aged 60-65. It is, in effect, saying that if you haven't produced any meritorious work at the age of 60 then forget it, which is nonsense. How are good work and achievements or service between the ages of 60 and 65 going to be recognised? Who wants to work for five years with no incentive and no recognition? You might be eligible for an honour from the Queen but not a merit award. The age limit for merit awards is cruel to consultants who wish to continue after the age of 60 and live in hope. We all know that at least 40% of all consultants retire with no merit award, but to take away that flickering hope amounts to inhumanity.

It is surprising that the age rule has not been resisted and contested by the BMA and the Hospital Consultants and Specialists Association. "I'm all right, Jack" could be the answer. "If it doesn't affect me, I'm not bothered." It is about time that the large silent minority voiced an angry reaction. I call on all fair minded consultants and academics to campaign for removing the age limit in the merit award system.

A F RADWAN

Kettering and District General Hospital,
Kettering,
Northamptonshire NN16 8UZ

- 1 Thelwall-Jones H. BUPA and consultants over 70. *BMJ* 1992;304:1116. (25 April.)

This month, a little elementary science

EDITOR.—In answer to Bernard Dixon's article¹ questioning the validity of the burning candle experiment, the answer is that a combination of two main factors causes the water in the jar to rise by about a fifth of the jar's volume.

Firstly, he is wrong in supposing that all the oxygen molecules end up in carbon dioxide molecules. Candle wax is a simple hydrocarbon with a formula approximating closely to (CH₂)_n. In combustion the products of this basic unit are carbon dioxide and steam. To combust a single such unit one molecule of oxygen is required to make the carbon dioxide (CO₂) and half a molecule of oxygen to make water (H₂O)—that is, one third of the oxygen consumed makes steam. This steam condenses on the sides of the cool jar and the surface of the water, to practically zero volume.

The second point is that the combustion products are pretty hot. Holding your hand above even a small candle flame will quickly confirm this. As the jar is placed over the burning flame the average temperature of the gases in the jar might briefly be about 100°C or, say, 370K, with the ambient room temperature at about 300K. When the flame dies and the gases in the jar quickly cool back to 300K their volume would contract by 70/370, or 19%.

A combination of these two effects, varying according to exactly how the experiment is performed, accounts for the wide range of results obtainable from the experiment and explains how the experiment can indicate more than 20% oxygen in air.

W A M SANDERSON

Colchester,
Essex CO5 7EL

- 1 Dixon B. This month, a little elementary science. *BMJ* 1992; 304:1252. (9 May.)