

wonder that they become overloaded with data and can't see the wood for the trees.

So we may well need an automated reminder system. And, unless we consider ourselves better at making decisions than people such as airline pilots, why not? It will, however, be expensive; and we cannot yet afford it. Until we can much can be done to help the clinician, especially by teaching our students to consider *why* they are eliciting each item of patient data and by providing paramedical help to take some of the routine fact-gathering off the clinician's shoulders. Provided that the central role of the clinician in making decisions remains unimpaired, most sensible doctors will welcome anything that helps them to do their job better.

<sup>1</sup> Miller, G A, *Psychological Review*, 1956, **63**, 81.

<sup>2</sup> Macrae, A W, *Psychological Bulletin*, 1970, **73**, 112.

<sup>3</sup> de Dombal, F T, *et al*, *Methods of Information in Medicine*, 1972, **11**, 32.

<sup>4</sup> McDonald, C J, *New England Journal of Medicine*, 1976, **295**, 1351.

<sup>5</sup> Craven, R B, Wenzel, R P, and Atuk, N O, *Annals of Internal Medicine*, 1975, **82**, 628.

<sup>6</sup> Cole, R B, Balmer, J P, and Wilson, T S, *British Medical Journal*, 1974, **1**, 104.

<sup>7</sup> Shapiro, S, *et al*, *Journal of the American Medical Association*, 1971, **216**, 467.

<sup>8</sup> Kelley, C R, and Mamlin, J J, *Journal of the American Medical Association*, 1974, **227**, 1155.

<sup>9</sup> Leaper, D J, *et al*, *British Medical Journal*, 1973, **3**, 569.

<sup>10</sup> Horrocks, J C, and de Dombal, F T, *British Medical Journal*, 1975, **3**, 421.

<sup>11</sup> Horrocks, J C, *et al*, *Gut*, 1976, **17**, 640.

## Warning: smoking may damage your children's health

Most adults who smoke cigarettes should, by now, be well aware of the risks to their health.<sup>1-3</sup> Similarly, pregnant women are told that they may damage the health of their unborn child if they smoke during pregnancy.<sup>4</sup> A recent series of papers<sup>5-7</sup> has now confirmed reports<sup>8-9</sup> that parental smoking may be associated with an increased risk that their children will develop respiratory disease.

Many factors influence the development of respiratory disease in childhood<sup>10</sup>—including atmospheric pollution, social circumstances, and genetic background. Children of parents with respiratory symptoms, such as cough and sputum production, have a higher incidence of respiratory illness themselves, and this is true for both pre-school<sup>8</sup> and school-age<sup>11</sup> children. This may, in part, be due to common genetic factors or to cross-infection. Smoking is relevant in that adults who smoke have a higher incidence of respiratory symptoms than non-smokers<sup>12</sup>; however, no effect solely attributable to parental smoking could be found in the children of school age. On the other hand, a quite definite association has been found between parental smoking and pneumonia or bronchitis in their pre-school children.<sup>8</sup> The work of Leeder and colleagues<sup>5</sup> extends this observation and provides further details. They studied a large cohort of children born in 1963-5 in north-west London and found that infants whose parents had no respiratory symptoms and did not smoke had an incidence of pneumonia and bronchitis of 7.6% in the first year of life compared with an incidence of 17.7% among infants whose parents were smokers. Significant associations were also found between respiratory disease in infants and parental asthma, the number of siblings, and the health of the

siblings,<sup>5 6</sup> but parental smoking stands out as the factor most amenable to change.

Exactly how parental smoking is associated with respiratory illness in infants is not known. The fact that atmospheric conditions can acutely affect the respiratory tract of infants was clearly shown by the excess mortality seen in children under the age of 1 year during the London smog in December 1952.<sup>13</sup> Possibly "passive smoking" by the infant impairs his defence mechanisms against infection. Certainly there is considerable evidence to suggest that cigarette smoke may impair mucociliary transport.<sup>14</sup>

The occurrence of pneumonia and bronchitis in infants under the age of 1 year is worrying. Mortality from respiratory disease in this age group has remained static since the mid-1950s, in contrast to falling mortality rates for respiratory disease in older children.<sup>10</sup> Also there is much evidence that later problems may occur. Leeder and his colleagues<sup>7</sup> showed that ventilatory function was impaired at the age of 5 years in a group of children who had had pneumonia or bronchitis in the first year of life. Their mean peak expiratory flow rate after correction for height was 8.5% lower than that in children without such a history. Also events in childhood may influence the development of disease in adult life. Follow-up of the children in the 1946 National Birth Cohort<sup>15</sup> showed that at the age of 20 those who were non-smokers but had a documented history of chest illness before the age of 2 years had a prevalence of cough of 9.1% compared with a prevalence of 5.2% in those who escaped such illnesses. Such children may be the chronic bronchitics of the future.<sup>16</sup>

Quite apart from the possible toxic effects of cigarette smoke on young children, or the risk to older children of the parents having chronic cough and sputum production, the influence that parents have on their children's smoking habits cannot be underestimated. A study of 10- and 11-year-old children showed that as many as 6.9% of the boys and 2.6% of the girls were regular smokers,<sup>17</sup> and this prevalence rises with age in both sexes, so that half of the boys and 36% of the girls may be smoking by the age of 17.<sup>10</sup> Parental example is an important factor in determining whether or not young people start smoking; an environment where smoking is accepted as normal encourages children to take up the habit.<sup>18</sup>

In summary, parental smoking causes an increased incidence of pneumonia and bronchitis in children under 1 year old and this may risk the life of the child or leave it with residual lung damage for the rest of its life. The presence of respiratory symptoms in parents who smoke may cause respiratory illnesses in their offspring throughout childhood; and the bad example that they set by smoking may lead the children to start smoking at an early age, with all the implications that this carries for their future health. Clearly parents who smoke should be encouraged not to do so in the presence of their children, but, even more important, they should be told of the risks they are taking with their children's health as well as their own if they continue to smoke.

<sup>1</sup> Royal College of Physicians of London, *Smoking and Health*. London, Pitman Medical, 1962.

<sup>2</sup> United States Public Health Service, Surgeon General's Advisory Committee, *Smoking and Health 1964*. Public Health Service Publication No 1103. Washington, PHS, 1964.

<sup>3</sup> Royal College of Physicians of London, *Smoking and Health Now*. London, Pitman Medical, 1971.

<sup>4</sup> Donovan, J W, *et al*, *Journal of the Royal College of General Practitioners*, 1975, **25**, 264.

<sup>5</sup> Leeder, S R, *et al*, *British Journal of Preventive and Social Medicine*, 1976, **30**, 203.

<sup>6</sup> Leeder, S R, *et al*, *British Journal of Preventive and Social Medicine*, 1976, **30**, 213.

- <sup>7</sup> Leeder, S R, *et al*, *British Journal of Preventive and Social Medicine*, 1976, **30**, 219.
- <sup>8</sup> Colley, J R T, Holland, W W, and Corkhill, R T, *Lancet*, 1974, **2**, 1031.
- <sup>9</sup> Harlap, S, and Davies, A M, *Lancet*, 1974, **1**, 529.
- <sup>10</sup> Colley, J R T, in *Recent Advances in Paediatrics*, ed D Hull, p 224. Edinburgh, Churchill Livingstone, 1976.
- <sup>11</sup> Colley, J R T, *British Medical Journal*, 1974, **2**, 201.
- <sup>12</sup> Fletcher, C, *et al*, *The Natural History of Chronic Bronchitis and Emphysema*. London, Oxford University Press, 1976.
- <sup>13</sup> Logan, W P D, *Lancet*, 1953, **1**, 336.
- <sup>14</sup> Newhouse, M, Sanchis, J, and Bienenstock, J, *New England Journal of Medicine*, 1976, **295**, 990.
- <sup>15</sup> Colley, J R T, Douglas, J W B, and Reid, D D, *British Medical Journal*, 1973, **3**, 195.
- <sup>16</sup> Reid, D D, *Proceedings of the Royal Society of Medicine*, 1969, **62**, 311.
- <sup>17</sup> Bewley, B R, Halil, T, and Snaith, A H, *British Journal of Preventive and Social Medicine*, 1973, **27**, 150.
- <sup>18</sup> Government Social Survey. *Adults' and Adolescents' Smoking Habits and Attitudes* by McKennell, A C, and Thomas, R K. London, HMSO, 1967.

## Quality control of laboratories—or of pathologists

Britain has a long tradition of a high standard of pathology services from hospital laboratories. One method of helping to assess and maintain this standard is external quality control. Samples from an outside source are sent to each laboratory for analysis by its routine procedures, and the laboratory returns its results to the sender, who then circulates a list of the results. No laboratory's results can be identified by anyone except the source, but individual laboratories can see themselves where their results are poor and may be sent a comment to draw their attention to unsatisfactory performance.

For several years the DHSS has supported three major schemes that are primarily directed at the analytical rather than the interpretative function of pathology laboratories. Queen Elizabeth Hospital, Birmingham (clinical chemistry), serves more than 450 laboratories, Hammersmith Hospital (haematology) 400 laboratories, and the Public Health Laboratory Service at Neasden (microbiology) 300 laboratories. Some laboratories abroad subscribe to these schemes.

A few laboratories in these schemes are unsatisfactory performers to an extent that could be detrimental to patient care—but it is not known how many laboratories do not take part. The reasons for poor performances are many, but commonly it is due to an increase in work beyond the capabilities of the laboratory in terms of staff, space, and equipment. A limited advisory service for poor performers has been available informally via the organisers of these national schemes.

A more broadly based and independent advisory service has long been seen to be needed. Many pathologists want that assessment and advice to be available within the profession but organised nationally and not from local sources. Agreement has been reached between the responsible professional bodies and with the organisers of the schemes, and expert advisory panels have been set up. All have a representative from the Association of Clinical Pathologists, the Institute of Medical Laboratory Sciences, and the Royal College of Pathologists, with additional representatives from the British Society of Haematology (haematology), the Association of Clinical Biochemists (chemical pathology), and the Pathological Society

(microbiology). As yet there is no scheme or panel for histopathology or for immunology. The panels are responsible through a co-ordinating committee to the professional bodies.

All laboratories who participate in the national quality control schemes have been sent a letter by the organisers telling them of these advisory panels and pointing out that continuation in the scheme will now imply identification of persistently poor performers to the appropriate panel in confidence. The panel will then offer to visit and do all it can to help these few very inaccurate laboratories—for example, by advice on procedure and methods or by support of applications for equipment and staff. This plan should not prove expensive to operate, and it should improve the contribution of pathology services to patient care. The American College of Pathologists produces a set of voluntary self-assessment schemes on theory and interpretation which are widely used in the USA: similar schemes are being examined for possible introduction here.

On the surface these plans seem comprehensive and reasonable, but several questions remain unanswered. How many laboratories take no part in the national quality control schemes, and are these good or poor performers? How many laboratories will drop out of the revised scheme because the panels have been set up? Are these existing poor performers the laboratories who do not want anyone to know, or are these the fiercely independent units which regard any such proposals as an interference with a consultant's traditional clinical freedom to manage his department as he sees fit? Will there be laboratories who are content to learn from the schemes that they are poor performers but refuse to receive advice from the panels or to act on it when given? What should be done about them?

A panel may support the pathologist in his view that his laboratory's poor performance is due to lack of long-required facilities already demanded from the health authorities but without the money being granted. Or the pathologist may have wished to make badly needed changes in the local organisation of the laboratory (such as replacement of unsatisfactory staff) but not been allowed to do so. Should this be publicised? What further action could be taken? The panel may consider that the pathologist is at fault—and this is likely to have been recognised, but not acted on (for what powers have they?) by the rest of the staff. The pathologist's inadequacy may be due to illness, or golf, or alcohol, or failure to keep up-to-date, or lack of supervision of junior staff. What should be done?

Many of these questions are applicable to branches of medicine other than pathology. They raise important issues on the responsibility of the profession for those few who do not realise their full responsibilities to their patients and to the NHS. There is still time for the profession to do something about it—and to be seen by the public to do something about it. The report of the Committee on Competence to Practise<sup>1</sup> recommended that it was for the colleges and other professional bodies to provide continuing education and self-assessment methods for consultants. Certainly, quality control schemes provide objective measures of performance, and they offer a good opportunity for the profession to explore the difficult new territory of professional self-scrutiny.

<sup>1</sup> *Competence to Practise*, the report of the committee of inquiry (Mr E J Alment chairman) set up for the medical profession in the United Kingdom. London, Committee of Enquiry into Competence to Practise, 1976.

<sup>2</sup> *British Medical Journal*, 1976, **2**, 1218.