

leagues outside the department have both the creativity and inclination to undertake an MD if the time and support were available to them. General practitioners outside departments of general practice already contribute one third of all original research papers published in the *Journal*¹ and I hope this letter will encourage more. Protected time is available to all principals in the form of sabbatical leave and the new *Statement of fees and allowances* has simplified the criteria for availability.

Although an MD is by definition a piece of original and unsupervised research, this should not deter the novice. It is not difficult to obtain expert advice from various sources to ensure the success of project design. This expert could be a statistician, epidemiologist, hospital specialist or any number of others. Departments of general practice see the provision of support to research projects as part of their role.²

The philosophical effect of such a return to scientific method is far reaching. The spirit of enquiry generated by this exercise extends into every consultation which has an enigmatic component. This tendency to ask 'why' is the perfect antidote to the helplessness that many of us experience with even the most simple and common conditions presented by our patients.

Buckley describes research as subversive, creative and liberating.¹ The correspondence following his editorial reflects the enthusiasm for research among our ranks. We must fight as a discipline for the unity and support necessary for primary care research pursuits by doctors in the front line, including the continued production of MD theses.

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Diagnosis of urinary tract infections

Sir,

I read with interest Dr Brooks' editorial and the accompanying articles on the diagnosis of urinary tract infections (October *Journal*, p.399, 403, 406). I would endorse the comments about the importance of early diagnosis and treatment in

children to try and prevent renal scarring. However, I was disappointed to see that both Brooks and Ditchburn and Ditchburn have overlooked the value of urine microscopy for bacteria as an aid to the diagnosis of urinary tract infections particularly in view of Brooks' comments that the diagnosis of infection should rest with the demonstration of bacteriuria. Bacteria are easily seen, especially if a modified Fuchs-Rosenthal haemocytometer is used, and it has long been recognized that if combined with a leucocyte count their presence allows the identification of samples that are likely to be infected.¹

A study performed in a hospital paediatric setting showed that the absence of bacteria excluded urinary tract infection (Vickers DW, Coulthard MG, paper presented to British Paediatric Association, 1989). The presence of bacteria, especially in large numbers indicated infection, while bacteria in smaller numbers usually indicated contamination. In practical terms infection could be excluded in 90% of samples. In the remaining samples infection was diagnosed immediately or a repeat examination was arranged. Of particular interest is the fact that if urine culture alone had been used, twice as many infections would have been diagnosed because of the presence of a pure growth of more than 10⁸ bacteria per litre. These samples did not have microscopic bacteriuria and repeat testing confirmed that the urine was indeed sterile, suggesting that the initial culture results were false positives. This has obvious implications in the management of children, as all those with a proven urinary tract infection deserve investigation.

Urine microscopy for bacteria is quick and easy to perform and only a small amount of practice is needed to acquire the skill. The use of a haemocytometer makes it much easier to identify bacteria and cells as the grid enables the operator to focus with certainty. If the grid is seen, but no cells or bacteria are visible, then the sample contains none.

Once this technique has been learnt, it is possible to exclude a urinary tract infection confidently in the vast majority of cases (and thus avoid sending most urine samples for culture) and to institute prompt treatment in the remainder.

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Reference

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New optical microscope

Sir,

The study by Ditchburn and Ditchburn has confirmed the value of low power microscopy on drops of urine in the diagnosis of urinary tract infection (October, *Journal*, p.406). I wish to inform readers about a new optical microscope which is easy to use and is ideal for the general practitioner's black bag.

I have been using the Lensman microscope (Vectra Services) in the surgery and at the patient's bedside for the last month. It is a powerful pocket sized nine element folded optical system with magnification of 80X and 200X. It has an articulated light arc which gives reflected, dark ground or transmission lighting and it won a BBC design award in 1990. Its small size (10 cm in diameter, 2.5 cm in depth and weight 8 ounces) allows it to fit easily into my black bag and it is extremely simple to use. I should add that I do not have associations with the company or its marketing but am simply an enthusiast using this device in my everyday practice.

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FHSA medical advisers

Sir,

We agree with the opinion expressed by Dr Rous (Letters, December *Journal*, p.519) that the range and depth of professional expertise required to fulfil the role of medical adviser to a family health services authority cannot be provided by one person, requiring as it does, experience of epidemiology, public health, general practice and prescribing. This may partly explain the difficulty family health services authorities have had in filling these posts. In addition, the uncertain career prospects for those changing to a full time commitment must deter many suitable applicants from applying.

It is essential that medical advisers keep well abreast of changes in all the fields mentioned above, and particularly in the rapidly changing discipline of therapeutics. The family health services authority also needs access to advice based on a current understanding of the problems and pressures at present being felt by general practitioners. This is difficult, if not impossible, in the professional isolation inherent in a full-time post. The appointment of several part-time advisers ensures that a wider range of expertise is

available to the authority. In addition, the advisers have the security of continuing part time in an established career path, while contributing to a challenging new area of primary care.

In Birmingham the role of medical adviser has been shared by three part-time appointments:

1. A consultant in public health with a specialist interest in primary care.
2. A recently retired general practitioner with longstanding experience of screening in general practice.
3. A practising general practitioner with prescribing experience, obtained with the help of an RCGP prescribing grant, working in conjunction with the local university department of clinical pharmacology.

In this way most of the professional experience required is covered, but is thinly spread in this large family health services authority with one million patients, cared for by 600 doctors, practising in a city with many social and medical problems. This is because the Department of Health has chosen to fund medical advice to family health services authorities in equal amounts with no regard to size of authority, deprivation or need.

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Sir,
We read with interest the letter from Dr Rous (December *Journal*, p.519) on the role of the medical adviser at the family health services authority. The department of general practice at St Mary's Hospital, London is the independent medical adviser to Barnet family health services authority. Our advisory team has five members, all employed by the department. One member works mainly in academic general practice and has a particular interest in health evaluation and planning, two members are based mainly in general practice, one member works in public health (and is based at the family health services authority) and one non-clinical member has a background in medical sociology and has research skills (also based at the family health services authority). We meet regularly both among ourselves and with the family health services authority. Issues arising are referred to the person with the most relevant skills.

We think this is a constructive model and believe it fulfils Dr Rous' re-

quirements of 'good quality advice from several sources'.

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Orchitis as a complication of chicken pox

Sir,
Dr Hunt (Letters, November *Journal*, p.480) described a two year old boy with orchitis secondary to chicken pox. Following a review of the literature, we have identified several other examples of this complication.¹⁻⁴

Sabrazés reported a 20 year old farmer who developed bilateral orchitis and epididymitis in the course of an otherwise mild attack of chicken pox.¹ The orchitis subsided in 18 days without apparent sequelae, but no long-term follow-up examination was reported.

Wesselhoef and Pearson reported a 46 year old salesman with severe chicken pox who developed viral pneumonia, right orchitis and epididymitis.² The orchitis and epididymitis subsided in one week. Physical examination six months later showed that the right testicle was a third smaller, of a softer texture, more irregular and somewhat less sensitive than the unaffected and normal left testicle.

Ormiston reported a seven year old boy with chicken pox and left orchitis and epididymitis.³ The orchitis and epididymitis resolved in five days. Follow-up examination six months later showed definite testicular atrophy on the affected side.

More recently, Turner reported a 14 year old boy with chicken pox and bilateral orchitis.⁴ Physical examination two months later revealed no testicular abnormality or evidence of testicular atrophy.

Orchitis is a known complication of a variety of viral infections, notably mumps and coxsackie virus infection.⁵ Mumps orchitis rarely occurs prior to puberty. Orchitis as a complication of chicken pox is rare. Of the four cases reported, two including the seven year old boy, had testicular atrophy.^{2,3}

We suggest that orchitis should be added to the list of complications of chicken pox which include bacterial superinfection

of the skin, pneumonia, thrombocytopenia, encephalitis and Reye's syndrome.

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Noiseless oxygen concentrator

Sir,
I read with interest the article on oxygen concentrators (October *Journal*, p.415) by Dr Dilworth and colleagues who reported that 34% of patients thought the concentrator was unacceptably noisy. The noise of oxygen concentrators is an important consideration, especially at night,¹ and long-term therapy can pose a serious problem to those who live in small houses. The best solution to this problem is the installation of a noiseless concentrator.

Most oxygen concentrators are based on a 'molecular sieve' system and emit noise of approximately 50 dB. Concentrators which use a 'semipermeable membrane' system emit only 35 dB and this type of concentrator was popular in Japan several years ago, despite the fact that oxygen output is limited to 40%.¹ Recently a new model of concentrator based on the 'molecular sieve' system but with reduced noise (38 dB) has been produced (Teijin Ltd) and is now in widespread use.

In Japan, home oxygen therapy has been covered by social (health) insurance since April 1985,² and it is estimated that about 18 000 patients with chronic respiratory failure are now receiving long-term oxygen treatment throughout the country.

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