Psychiatric Bulletin (1990), **14**, 237–243

Correspondence

General management

DEAR SIRS

Som Soni and his colleagues (*Psychiatric Bulletin*, December 1989, **13**, 657–661) accurately describe the hopeless conflict which characterises the relationship between a multidisciplinary team and its members' professional line managers. The message is obvious – get rid of line management.

It constantly surprises me that the fundamental principles of effective management accepted everywhere else outside the NHS, i.e. a hierarchy of accountable individuals for specific objectives, is thought of within the health service to be new and dangerously anti-professional. Staff in teams need professional guidance and support from senior members of their profession – but the *service* provided by the team should be managed by *one* person, accountable to one other. It's called 'general' management. Good general managers devolve decision making and budgetary control to the lowest possible level: management should feel less remote as a consequence. Why it hasn't percolated down beyond Unit management in many districts is a mystery. Some *one*'s got to be in charge, not some six or seven parallel managers.

As a senior registrar I took time out of the NHS to go to work with sociologist Professor George Brown's Social Research Unit at Bedford College. There wasn't another doctor in sight – the research team was made up of sociologists, nurses, economists and a random selection of other professions. We all consulted senior colleagues outside the Unit for advice and guidance on aspects of our own work but none of us were in any doubt as to who was boss or to whom we were accountable for our work which of course was the Head of Department.

As a doctor I found it perfectly acceptable to be accountable to a non-doctor. Roll on general management throughout the health service. Let's free multidisciplinary teams from the stranglehold of the managerial octopus of line management.

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Neural network technology

DEAR SIRS

I was most encouraged to read of McDonald & McDonald's attempts to use neural networks in clinical diagnosis (*Psychiatric Bulletin*, January 1990, **14**, 45–46). Their reported study, using psychometric data from the WAIS to distinguish between various types of dementia and depression, has unfortunately a few misconceptions.

During the training process, a neural network 'learns' by forming and weighting links between input, hidden and output neurons. With each new training fact the weightings are adjusted so as to give the best possible agreement between the observed input and its expected output. Our experience of using the same software package (Brainmaker V2.0, California Scientific Software) is that training accuracies always approach 100%. This apparent precision is in itself rather meaningless as it refers only to the information used for training. The acid test for a trained network is to assess its efficiency on unseen data. McDonald & McDonald trained the network on 63 cases and then tested it on only four further sets of information. The reported efficiency (50%) of assignment to one of three diagnostic categories is not that impressive.

Two further objections to the reported work exist. The reliability of ante-mortem diagnoses of types of dementia in psychogeriatric patients is not high and most reputable studies of dementia use post-mortem findings as the criteria. Also it is unclear whether the original WAIS testing was done with the administrators blind to the clinical diagnoses. Despite these reservations, the implementation and evaluation of the use of neural networks in clinical decision making is to be supported.

I would like to report my own work also using the Brainmaker package, in patients with affective disorder. Lucas *et al* (1989) described the use of discriminant analysis to predict the occurrence of post-manic depression in a group of bipolar patients using information from case notes. These data have been re-analysed using both discriminant analysis (Fisher's linear discriminant function) and a trained neural network. Data from 98 cases were randomly split for both methods giving 80% for training, and leaving 18 cases (20%) to form an evaluative sample.

During training the neural network had a 99% efficiency, whereas the discriminant analysis had an efficiency of 83%. When applied to the test set of data, however, the neural network had an efficiency of only 67%, with discriminant analysis proving slightly more accurate (72%). What is fascinating is that the two contrasting methods of analysis gave very similar allocations to groups (Depressed or Not depressed). Table 1 shows no significant difference between the ways in which the neural network and

TABLE I
Comparison of allocation into groups by the two methods of analysis

		Neural network	
		Depressed	*Not depressed*
Discriminant function	Depressed	3	3
	Not depressed	0	12

McNemar's Test (Binomial 2 tailed test) $n = 18$ $P = 0{\cdot}25$.

the discriminant function allocated the 18 test cases between the two groups (i.e. agreement between prediction of group membership).

It is clear therefore that this neural network compares favourably with a well established method of case assignment, namely discriminant analysis.

In developing 'Expert Systems' to aid clinical diagnosis and decision making, the technology of pattern recognition used by neural networks is intrinsically suited to the clinical process. This is in contrast to earlier attempts to implement rule-based logical systems which, apart from a few specialised applications, have not lived up to their initial promise. The use of neural network technology and its application to a wide variety of clinical problems merits further study.

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Reference

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Difficulties facing post MRCPsych registrars

DEAR SIRS

I would like to report the findings of a CTC working party which was set up to look at the difficulties facing post MRCPsych registrars. The initial difficulty that faced the working party was in identifying the 'pool' of these registrars. No adequate details of numbers were available. A recent survey (Bhate, to be published) did suggest that out of a total of 1034 registrars (for whom information was available) 26 were still registrars after eight years in psychiatry.

Following a letter in the *Psychiatric Bulletin*, eight post MRCPsych registrars agreed to answer a few questions on their experiences. Half had been 18 months post MRCPsych and the rest for a longer period. The number of jobs applied for varied from 3–60 and the times respondents had been shortlisted varied from none to eight. All were advised to "do some research – any research"; "publish something – anything!". The tutors had been instrumental in giving career advice. Three of the registrars were working as locum consultants.

The working party would like to make the following recommendations:

(a) An inbuilt mechanism ought to be created to look at the actual numbers of post MRCPsych registrars.
(b) Appointments at SR levels should be monitored and suitable advice available to the unsuccessful candidates.
(c) The College through the Tutors' Committee or Education Committee could take on the task of advising such registrars on presentation, interview techniques and skills.
(d) Closer links with teaching and nonteaching hospitals, easy access to research supervisors and an increase in research training either through the College or The Regional Health Authorities (RHAs) should be encouraged.
(e) Regional advisers could be asked to monitor the numbers of post MRCPsych registrars in various regions.
(f) The time table of such registrars should reflect their status and each case could be assessed on an individual basis for the possibility of accreditation in deserving cases.

The members of the working party were Drs D. Double, S. Griffin and O. Junaid.

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Registrar training

DEAR SIRS

I would like to make some comments in support of Drs Haigh & Wear's article in Trainees' Forum (*Psychiatric Bulletin*, October 1989, **13**, 556–557) entitled 'Training for An Uncertain Future'. Specifically, they were presenting some suggestions for change in registrar training, especially including some time as a general practice trainee.

Following my psychiatric training at Maindiff Court and Pen-y-fal Hospitals in the mid-seventies under the auspices of the University of Wales, I spent ten months as a GP trainee attached to a rural practice centred on Abergavenny. This experience