

The solution to chaos is not chaos

It is difficult to find anyone who has much good to say about Modernising Medical Careers and the Medical Training Application Service process. The process promised:

'Recruitment and selection will be fair, open and legally robust. Selection methods will be specialty specific, but the minimum requirement will be a formal interview. The methodology is being designed by leading educationalists and recruitment specialists.'¹

Earlier documents had also stated:

'Reform is also about securing our workforce for the future as our medical school output rises and is about giving doctors in training a chance of a fulfilling career to their own and to patients' benefit.'²

And that:

'It is not acceptable that they should at this stage fall out of the training system.'²

So why has it gone wrong and why have so many junior doctors have lost confidence in the system? The system was introduced hurriedly; juniors saw the rules changing by the week and saw their options become ever more limited as they waded through the online instructions. Perhaps the Department of Health's touching faith in computerized systems added to the problems that were, by and large, predictable. With over 30 000 applicants, the system was flooded. Predictably, it crashed or froze while so many struggled to get their applications in. Most of the applications were not completed in working hours—the junior doctors were far too busy looking after patients—so peak usage occurred on Sunday evenings. Then the online short listing systems failed, so forms were printed off and scored. This removed the quality assurance step of one assessor scoring the same question on every form, and the requisite secondary scoring of about 10% of forms to detect hawks and doves in the scorers did not happen across the board. Some forms reportedly were missed altogether, and for others the paper score was not transferred to the website. Initial undertakings that every form would be scored twice did not materialize.

But how secure is online scoring anyway? Could anyone with a password get online and alter a score? At least there are no reports of hackers getting to the website applications. Of course, even perfect short listing

procedures require that the form was initially filled in by the applicant alone and reflects their own work. But early panic fuelled 'ghost writer' commerce, with rumours that the 'going rate' was £15 per question or £250 per form to be filled in in such a way as to slip past the plagiarism software: rumour has it that the cost of a model answer has now risen to £600. Short listing picked up some of these, spotting remarkable similarities in case descriptions.

Co-ordination of interview dates across the country failed, so that doctors could not attend interviews in all the Deaneries that selected them. Some interview panels have seen doctors who should never have got to interview because the long-listing process to check basic qualifications has been by-passed, probably due to pressures of time, more applications than anticipated and too few administrative staff. Deaneries are now so bowed down that some are refusing to answer the phone, and one interview panel was so disillusioned that they refused to proceed, despite one applicant having travelled from New Zealand for interview.

Some excellent doctors see their dreams in tatters; despite years of work and higher exams they have not had a single interview. They have no faith in 'the system' and see unemployment looming.

This is disastrous. The Minister, Lord Hunt, is right to demand immediate remedial action and is right to continue with the process that has started. To abandon it now would be to abandon all those applicants who are part way through the process, and to abandon restorative justice for those not yet short listed but whose forms are being rescored. Time is on the side of MTAS. Much work has been put in to the benefit of training—job profiles and person specifications are standardized, entry criteria for training grades are better defined than before and the use of questions about experience attempt to clarify much that is absent from a curriculum vitae or an NHS Trust application form. The interviews of multiple stations should allow candidates flexibility to demonstrate skills, avoiding the drift in bias within the 30 minute single interview. How often has an excellent but nervous candidate dug a hole ever deeper in interview, never to recover, or a charmer wooed a committee?

The most important step towards restorative justice has been taken by rescoring the forms of all those not short listed, but CVs also need to be looked at. Good candidates must be able to enter the process for interview, effectively starting a second round immediately. The planned second round must become a third round. Interview panels need to scrutinize portfolios with care. The poor wording of the online reference form and the inability of a referee to correct the form after submitting it means the interview panel also need to

collate any additional information such as a referee's correction note.

Single transferable voting systems have been deemed too complicated for national elections, so attempts to rank the applicant, merge rankings and produce a single post are over-ambitious and untested. It also removes choice over place of work, as a second choice discipline in an excellent place may be vastly preferred to the discipline listed first. A hierarchy in each discipline and each Deanery would allow juniors some choice if they have done exceptionally well in all their interviews. The idea of only one job offer—'take it or leave medicine'—treats these applicants as if they are conscripts in the army. These professionals have trained long and hard; an end-stage lottery does nothing to ensure that we are getting the best match of applicants' aptitude to each discipline, for the benefit of patients.

In other walks of life, and in medicine until this year, unsuccessful applicants were allowed feedback. At the end of the process the individual scores should be available, with a possibility to appeal over process. Those whose appeal is upheld must be able to reapply next year without prejudice for the 'gap' in their CV, with a guarantee that their forms will be reviewed by an independent scrutineer.

When the Universities Central Council on Admissions was introduced in 1961 there was much concern about its operations; Oxford and Cambridge did not join until 1966 and London medical schools followed a year later. It operated initially with punched cards and despite all its teething and subsequent problems, no-one would advocate returning to multiple individual applications to universities.

This is the first year of a new system and it is flawed. But the old endless, unsynchronized rounds of job applications, with each job having its own application forms, was far from perfect. Doctors in training have shown a great commitment to the NHS; they deserve a fair system to enter higher training and now they deserve restorative justice. Many consultants have worked long and hard to define the job profiles and entry requirements at each level. The Minister is well aware of the crisis; he has personally intervened to take charge, demanding immediate action and a comprehensive review. That review must report fully and openly.

The greatest tragedy of all is that medical unemployment is with us and whatever the appointment system, there are not enough jobs in the long term. Even those that get trained have no assurance of a consultant post at the end of it all. The juniors feel let down by everyone. They will be polled to ascertain their views, but further calls to boycott the system may backfire—our junior doctors deserve training, not chaos.

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The treatment of enteric fever

Enteric fever (typhoid and paratyphoid fevers) is caused by fecal oral transmission of *Salmonella enterica* serotypes Typhi or Paratyphi A. About 27 million people suffer from enteric fever each year, with about 200 000 deaths, almost exclusively in the developing world.¹ The incidence of this neglected illness in some parts of South Asia is as high 1600 per 100 000 population. Because of the ready availability of over-the-counter antibiotics and subsequent resistance to these drugs in areas of endemicity, enteric fever is becoming harder to treat.²

Fluroquinolone (ciprofloxacin and ofloxacin) have for some years been the drugs of choice for enteric fever,³ but resistance to these drugs has become very common in South Asia and have sporadically been reported in sub-Saharan Africa. Strains resistant to ciprofloxacin are not detected by current disc susceptibility breakpoints but are usually nalidixic acid resistant. Nalidixic acid sensitivity has to be carried out in all enteric fever organisms isolated from South Asia, and if resistance is noted ciprofloxacin should not be used. Gatifloxacin (10 mg/kg), azithromycin (10 mg/kg) or ceftriaxone (1–2 g/day) would be optimal choices in the treatment of enteric fever.³ Cefixime, an oral third generation cephalosporin recommended by the WHO⁴ for treatment of enteric fever, is not only expensive but appears relatively ineffective in comparison to gatifloxacin, a new generation fluroquinolone, as shown by recent unpublished trials (personal correspondence, Jeremy Farrar, Vietnam).

Gatifloxacin, a relatively inexpensive fluroquinolone antibiotic with once a day oral administration, is a new broad spectrum synthetic 8-methoxyfluroquinolone which has the lowest minimum inhibitory concentration (MIC) of any antibiotic against *S. typhi* from Nepal and Vietnam.² It appears effective for the treatment of enteric fever in the developing world. The different binding motif of gatifloxacin⁵ clearly enables it to retain activity against *S. enterica* serovars Typhi and Paratyphi A, even in the presence of marked reduction in sensitivity to the older fluroquinolones. Dysglycaemia has been reported with the usage of gatifloxacin in an elderly population;⁶ this drug therefore has to be used with caution, even if randomized trials currently being carried out show it to be effective against enteric fever. However, in the developing world enteric fever is usually a young persons' disease, and

dysglycaemia with gatifloxacin has not been noted in the younger population; further trials with glucose monitoring of enteric fever patients being treated with gatifloxacin are underway.

Azithromycin and gatifloxacin appear to be equally effective as oral agents, but ofloxacin even in higher doses (20 mg/kg) is now ineffective.⁷ Ceftriaxone is useful as a parenteral agent, although *in vitro* resistance has been documented to *S. enterica* serovar Paratyphi A.² Trying to determine resistance to azithromycin has been difficult, partly due to its marked intracellular concentration.

Gentamycin is ineffective against enteric fever, although *S. enterica* may appear to be sensitive *in vitro*. Anecdotally, isolates are reverting to susceptibility to older drugs like chloramphenicol, which news has been very welcome in parts of South Asia where chloramphenicol is inexpensive. On the basis of syndrome of fever for three or four days with constitutional symptoms and no known source of infection, antibiotic treatment of typhoid fever is often started empirically in areas of endemicity without blood cultures. Concurrent treatment with doxycycline to cover for typhus and leptospirosis may also be necessary in such a setting, and malaria may also need to be ruled out. The potential for new drugs for enteric fever is not encouraging, as there are very few potential targets in *Salmonella*⁸ against which new drugs could be designed, and thus we need to use what we have as effectively as possible.

In the treatment of severe typhoid, the 1986 Jakarta study is often quoted.⁹ It was shown that high-dose dexamethasone (3 mg/kg infused intravenously over half an hour, followed by eight doses of 1 mg/kg six-hourly) resulted in a 10% case fatality, compared to 55.6% in controls, in severe typhoid (defined as shock or confusion in addition to typhoid fever). This was a single study which now appears almost impossible to duplicate in a single center because of the fewer number of severe typhoid patients, probably due to ready availability of over-the-counter antibiotics.

Perforation of ileal ulcers occurs in less than 5% of typhoid patients and presents with restlessness, hypotension and tachycardia.^{3,10} Treatment is fluid correction and prompt surgery, which results in almost 97% survival in some series, compared to only 30% in conservatively managed patients.

Relapse rates of 10% have been described in patients treated with chloramphenicol; these patients respond very well to the same therapy used in the initial episode. Reinfection can be distinguished from relapse by molecular typing of isolates. There are no recent studies of typhoid carriers, but among carriers detected by screening about 25% give no history of typhoid fever. Patients discharged after treatment with six negative stools, three negative urine samples and negative Vi serology are considered free of infection. Antibiotics for eradication of carriage may be indicated if patients continue to excrete the organism after three months.

Recent reports² suggest that the clinical symptoms and complication rates are similar in Typhi and Paratyphi A infections, in contrast to the belief that Paratyphi A was a milder infection. Hence the treatment of paratyphoid fever needs to be carried out as aggressively as treatment for typhoid fever. Crucially, current typhoid vaccines do not protect against paratyphoid fever—a major drawback of the present vaccine, especially because paratyphoid is on the rise in South Asia.

In Western countries, typhoid is mostly seen in returning travelers—usually from South Asia—who were visiting friends and relatives.¹¹ Prevention is better than cure, so counselling about prevention of typhoid needs to be targeted to this latter group; however, travel medicine has evolved around the tourist industry and this vulnerable group is often missed. Even travellers who are staying for less than a week in areas of endemicity will benefit from the vaccine.

Finally although in areas of endemicity, clean water supply and adequate public health infrastructure with useful vaccine are what we need to aim for, the effective treatment of this neglected disease with available antibiotics is equally pivotal.

Competing interests None declared.

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