For almost anyone involved in training junior doctors in the last few months, the fiasco over the Medical Training Application System (MTAS) has been terribly demoralizing. The system failed at so many levels that it became impossible at times to keep track of what was going wrong. For those of you who have found the whole saga too convoluted or agonising to follow in detail, here is a highly selective summary up to summer 2007, although more awfulness may have followed since then.

To start with, total job numbers for juniors were calculated on the assumption that most overseas graduates would be ineligible to apply. A legal muddle of tragic proportions, probably combined with poor communication between government departments, meant that the exact regulations remained uncertain when the system came into operation. Several thousand extra doctors put in applications as a result. The computerized application form then turned out to be cumbersome and inflexible, and included some questions that many regarded as preposterous and lacking in any validation, while offering people no chance of recording significant academic achievements. Applicants had to limit their choice to four stated combinations of speciality-plus-region, and to prioritise these more or less irrevocably. At one stage, hackers also managed to gain access to confidential information. Reports then started to circulate that excellent candidates were failing to get shortlisted for a single job.

An urgent review took place, followed by a retrospective change in the rules, leading to a prodigious number of interviews in a very short space of time, with literally tons of paper being transported around Britain because the electronic systems had become so untrustworthy. Almost every consultant in the country can now tell stories about gifted juniors who have failed to get into their speciality or region of choice - or both - or who have been separated from friends, fiancés or families by the rigidities of the system. For those of us in general practice education, it has been little consolation that the national selection system for GP training programmes used a far more robust and established approach than our hospital colleagues did, and the majority of candidates who put general practice as their first choice have got what they wanted.

Beyond the specific mistakes and the personal miseries, the disaster is a grandiloquent metaphor for many of the things that have been attempted in the health service over the last ten years and then gone horribly and expensively wrong. The whole scheme began because of a Splendid Idea, indeed a whole package of Splendid Ideas. A national application system, it was argued, would match job aspirants against career opportunities, so that young doctors (or not so young ones) would no longer float around in limbo as staff grades or perpetual senior house officers. A co-ordinated start date would mean that the best people would get the best jobs, rather than leaving everything to random timetabling and luck. The application form would make sure that no-one was penalised for being on the wrong side of the tracks in terms of their medical school, previous workplaces, ethnicity, opportunities for academic development, and so on. As an added bonus, the scheme would begin alongside the final completion of another grand and ambitious project: Modernising Medical Careers. Taken altogether, there would be an end to all muddle, uncertainty and unpredictability as far as junior jobs were concerned.

The whole idea was magnificent. It was also systemically illiterate, as many people tried to warn the organisers in advance. Complex adaptive systems like job markets work on evolutionary principles. They depend on continuous feedback loops, on self-regulating calibrations, and on the passage of time. They are inhabited by choice, by chance, and by chaos. From a manager's point of view it may look awfully messy if Dr Faith Hopeful applies for three registrar jobs in cardiology in London over the course of six months and then settles for a dermatology rotation in north Wales. From the point of view of a systems theorist, a social psychologist or the average intelligent citizen, it looks like quite a sensible way of sorting matters out. More important, it will probably be much easier for Dr Hopeful to adjust to her altered trajectory, and to accept the vicissitudes of fate and competition, if she has had time to digest the experience and learn from it. It may of course be possible for managers to make focussed and gradual interventions in order to alter single aspects of such a system (for example, gender bias against women entering cardiology). However, there is a huge amount of theory, research, historical evidence and common wisdom to support the idea that massive, centralised, protocol-driven attempts to render such systems entirely rational and manageable are generally futile and often destructive.

The destructive effects of so-called 'rational' policy-making have been brilliantly exposed by Jake Chapman in his book 'System Failure: Why governments must learn to think differently'[1]. Chapman shows how centralised initiatives in the public sector are always likely to fail because of unintended consequences, alienation of professionals involved in delivery, and long-term failure to improve overall system performance. He argues that systems thinking offers an alternative route to developing solutions and increasing performance, especially when dealing with 'messes'. He recommends changes based on learning processes, rather than specifying outcomes or targets. He advocates an increased tolerance of failure, continuous feedback on effectiveness and a willingness to foster diversity and innovation. Chapman proposes that the aim of any intervention should be to provide a *minimum* specification, creating an environment in which innovative, complex behaviours can emerge, and based more upon listening and coresearching rather than telling and instructing. A key part of any evaluation and reflection process, he argues, should be 'the selection of successful approaches and, equally importantly, the demise of those that have not succeeded.' Let us hope that the demise, if nothing else, happens in relation to MTAS.

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[1] Chapman J (2004) *System Failure: Why governments must learn to think differently* (2nd ed) Demos: London. http://www.demos.co.uk/files/systemfailure2.pdf (accessed 4 August 2007)