

THE INDUSTRIALISATION OF SURGERY

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What's in a name? For over 500 years those practising the art of surgery in the UK have been styled 'Mr'. Initially, their field was mainly trauma, particularly on the battlefield. Individuals were trained by apprenticeship to become highly skilled technically and fast workers. Indeed, they had to be, given the lack of anaesthesia and the sheer numbers to be dealt with on a battlefield or on board a warship. However, the training was by service commitment and exponents of the art did not require a university degree. They were not therefore reputed as 'educated men' and, when the College of Physicians received its charter in 1518, those practising the art of surgery were not regarded as being worthy of the title 'Dr'.

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These men were trained to make decisions quickly and to take action with their repertoire of skills. The emphasis was on what specific procedures were required under a given set of circumstances. There is little evidence of much in the way of reflection and audit on patient outcomes. Instead, they mostly carried out a simple menu of conditions and treatments passed down through the

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generations. In a way, that sums up the concept of skills training as opposed to going through an educational process. Skills training is concerned with a question of *what* to do (in practice) whereas education is more concerned with the question of *why*, involving experience and reflection on that experience to invent new paradigms.

The teaching of skills 'how to' as opposed to an educational 'when to' can be clearly seen on a factory production line. Certainly, industrial workers need knowledge of how to carry out a task and the skill to do so. They also require an appropriate attitude or behaviour to ensure the task is carried out in a diligent manner, thus ensuring there are fewer 'rejects' at the end of the process. Similarly, in surgery it is not difficult to teach the skills of endoscopy, hernia repair or even more complex procedures such as bowel anastomosis or insertion of a heart valve. However, what is not

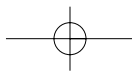
required on a production line is freedom of thought or the utilisation of judgement, which is the preserve of others in 'management' positions.

This industrial paradigm fits well with the concept of management by evidenced-based medicine, which assumes not a normal distribution but an unchanging population with similar characteristics and

no individuality. This has more in keeping with training airline pilots than surgeons.

Unfortunately, a politically driven strategy of de-professionalisation and industrialisation in surgery appears to be gathering momentum. However, this lack of an educational base with consequent lessening of understanding, and therefore judgement, will lead to tragic outcomes for patients. It has to be recognised that surgical skills are practised in a particular context and with individual patients. Proper medical treatment dictates variations in management, dependent on that context.

The Modernising Medical Careers (MMC) initiative has been introduced to try and streamline surgical training and yet continue to produce highly competent consultant staff. The title is really a misnomer since it does not apply to a lifelong career but rather just the foreshortened training phase.



Unfortunately, this gives credence to the notion that technical skill is all that is required of a surgeon and can be quickly taught. The Joint Committee for Higher Surgical Training website contains a list of conditions that the trainee surgeon at various levels must be taught to treat. Inherent is the idea that at a specific point in time, a surgeon is finally finished with training and thereafter is ready for lifelong service commitment.

The whole direction of the MMC initiative, coupled with the restrictions imposed by the European Working Time Directive, will inevitably lead to early specialisation within a narrow field. This will produce practitioners who have difficulty adapting to the radical changes in practice that will occur over a surgical lifetime, in an era when the government wishes surgeons to practise for up to 40 years after their training. Inevitably, this will give rise to early professional obsolescence with highly qualified surgical staff becoming potentially unemployable.

The industrial paradigm would further suggest that virtually all of a practitioner's time following an initial training period should be in service that simply has to be overseen by a management group in order to ensure quality and quantity. Again, this ignores the fact that lifelong learning is required. There is a tendency

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to see service in the NHS and training as two distinct activities; they do actually considerably overlap. In early years, emphasis may be less on generic education and more on skill acquisition. Skills mastery and the more generic components can be developed in the context of service commitment, coupled with coaching or mentoring as appropriate from more senior staff. In later training and throughout consultant life there is obviously a high service component but, nevertheless, continuing time for educational activities is essential if the practitioner is to keep up to date and maintain sound professional

judgement.

In the modern era, targets are increasingly being set by management which puts various processes into operation to oversee the quality of the output. Once more, this is an industrial model and should not automatically be translated into medical care. It removes primary responsibility from individual practitioners, which in a knowledge-based professional leads to demotivation. This drive towards the achievement of targets tends to ignore the clinical needs of individual patients until the outcomes become politically unacceptable. Such goals are generally reactive to external influences, such as the length of the waiting list, rather than proactive as dictated by the professionals who deal with patients on a one-to-one basis.

In order to ensure compliance, management imposes increasingly restrictive rules with penalties, either financial or otherwise, for non-achievement. This in turn leads to a progressive demotivation of the workforce so that further controls are placed in order to ensure the dictated outcome, causing a catch-22 situation which is becoming ever more apparent within the health service. Those who control the process are responsible for the outcome. Therefore, if control of the

process is removed from the professionals, the feeling of responsibility for what happens is removed at the same time.

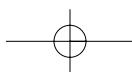
Professionalism implies a corporate body of knowledge handed down from generation to generation. Evidence for various modalities of treatment certainly comes from published trials and also, very importantly, from collections of anecdotes passed from one generation to the next. Lessons learnt from the past provide very clear guidance for the future and many of these have been handed down through the ages from the men whose pictures

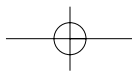
adorn the walls of the four surgical royal colleges in the British Isles. This collective experience is extremely important, especially in areas where randomised trials would be totally inappropriate, for instance with mangled limbs on a battlefield.

Anecdotal evidence is also gathered in educational meetings at local, national and international level. Patient management and various techniques are robustly discussed in a critical manner in open forum, thereby leading to the dissemination of best practice. Such activities, including teaching and assessing, are vital to the progress of surgery and yet there is increasing evidence of the difficulties experienced by practitioners who become involved in other aspects of work vital to the NHS at a national or international level. Health service management is severely restricting the ability of consultant surgeons to be involved in any such activities outside of the Trust, regarding them as 'not real work'. This control, keeping surgeons tied to the work place and refusing to sanction study and professional leave, is another very clear marker of an industrialisation process.

The art and practice of surgery is concerned not just with the acquisition of knowledge and skills but with how and in what manner these are delivered to the population. Knowledge and skills can be acquired by training. Attitude and judgement require education. If training provides the fundamental building blocks of knowledge and skills, then education provides the cement, giving cohesion and purpose for the building as well as providing the strong fundamental foundations of judgement and ethics, without which the building will fall. It would appear we are producing ever more complex and sophisticated bricks but are in danger of developing concrete cancer.

Apprenticeship and the relationship between the generations is the soul of medicine. It needs to be strengthened, not weakened. This is how the ethics of the profession developed and how the trainee can develop professionalism and judgement under the guidance of those





who have gone before. Perhaps it is true that some seniors need further training as teachers in order to promote acquisition of knowledge and skills in the modern, fast-paced era. However, ethics and judgement are timeless. Unfortunately, these essentially internalised attributes are being replaced by a system of regulation and external control within an increasingly legislative framework, which only serves to decrease motivation. The royal colleges, as guardians of the heritage and ethos of the surgical craft, must actively defend against any further erosion in the professionalism of surgical practice.

