

when so many doctors from the services were looking for jobs. When I qualified in 1952 none of my classmates worried unduly about their careers. Medical services were expanding. Job opportunities existed all over the world. It took no great courage or determination to spend a few years in a research post. If the research proved unproductive the training was useful anyway. If one's originally chosen career in hospital practice was unattractive or unattainable it was not too difficult to switch to another training ladder, and entry into general practice was not unduly restricted.

The present rigidity of training schemes has brought many benefits. In hospitals the dead end junior jobs, offering no effective training at all, are being rapidly eliminated by proper inspection and rejection of unsatisfactory posts. In general practice the statutory requirement for adequate training of principals and the higher standards for employment of assistants have already led to tremendous improvements in recruitment. This will be reflected in higher standards in the next two or three decades. But these benefits have been bought at a fearful price. Highly trained people are waiting for many years stuck at senior registrar level. Entry into the registrar grade is becoming more and more difficult as the posts are cut back. It now takes the greatest courage to deviate in the slightest degree from the rigid training ladders either for hospital medicine or for general practice. Any prolonged research activity is viewed as the most risky option of all. Yet almost all the best work in clinically relevant research has been done by young full time workers who have been able and willing to give several years of their undiluted time to research. As yet the higher training committees have not been able to devise more flexible schemes allowing credit for partial but useful training in more than one major specialty. The sabbath of formal accreditation was surely intended for man; but it now seems that man is being forced to observe this particularly restrictive sabbath.

The long term ill effects of the present government policies are difficult to estimate, but I shall try to do so, realising that only economic arguments are likely to carry much weight. Probably the most important aspect concerns our visible export potential in medical equipment and expertise and our invisible export activities in the provision of medical services. Outside the United States (in which the achievements of the NHS are continually denigrated and misrepresented) the reputation of our health services still stands high—though admiration for their adequacy is now supplanted by admiration for their cost effectiveness. But when another country is looking for architects and contractors to build a new hospital is it going to take seriously the skills available in a country recognised as medically backward? When another country's young doctors have gone to the United States, Canada, Germany, or Australia for specialist training, is it likely when they return that they will recommend surgical instruments, imaging equipment, pharmaceutical supplies, and computer software systems from a country recognised as medically backward? When another country's citizens need personal medical help not available in their own country is it likely that they will seek this from a country recognised as medically backward? When postgraduates from abroad stop coming to this country for training not only shall we lose the money they spend here: we shall also lose their substantial contribution to the clinical services of the NHS.

Many of medicine's problems are not so dissimilar from those of science as a whole. A committee chaired by Sir John Kendrew is about to decide whether it would be better

for Britain to pull out of CERN (the European Organisation for Nuclear Research) and in effect bring to an end high energy physics research in Britain—rather than have other aspects of scientific research suffer continuing, demoralising, and seemingly relentless contraction. A medical analogy would be for the NHS to decide to close down all cardiac investigation and cardiac surgery, making one big cut in a service to a minority of patients rather than a lot of small ones in services to the majority. The total immediate impact on health would be small, just as the total immediate impact of winding up elementary particle research would be small. The long term effects of both actions would be utterly disastrous in their effects on morale. We should be stamped as a country which had finally abandoned any pretensions to greatness, and which was prepared simply to go down in history as a perfectly preserved fossilised example of the effects of an extreme and unyielding doctrinaire monetarist policy. To emigrate will soon be the only sensible thing that a young ambitious scientist, engineer, architect—or medical researcher—can be recommended to do. The contrast between Britain and the rest of the developed world in respect of scientific research is already horrifying; but I am puzzled by other contrasts. West Germany seems to be doing well despite being in the grip of the most rigid egalitarianism with the unions holding almost absolute power; to secure its future prosperity Japan has given top priority to higher education and is spending huge sums of public money in expanding it; the United States, with the greatest budget deficit in history, continues to escape the anticipated retribution, while its economy is booming.

Meanwhile Britain continues to spend enormous sums on applied scientific research on armaments. When an American scientist working in some esoteric subject was recently rebuked for contributing nothing to his country's defence he is said to have replied that his work was one of the things that made the country worth defending. British medical research has often led the world in the past. It is surely worth trying harder to defend it in the future.

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Radical cystectomy

British urologists do not appear to share their American colleagues' enthusiasm for radical cystectomy for elderly patients with advanced bladder cancer. This approach has, however, yielded promising results, and a recent study from southern California of 77 elderly patients who underwent radical cystectomy reported a three year survival free of disease of 60% in those aged 65-75 and 40% in the older patients aged 75-82 with an overall perioperative mortality of 4%.¹ Further studies from North America have supported the view that radical cystectomy is safe and beneficial for elderly patients with advanced cancer of the bladder provided that they are carefully selected.^{2,3}

British practice has been influenced by the results of a controlled trial of preoperative radiotherapy and radical cystectomy versus radical radiotherapy from the clinical trials group of the Institute of Urology.⁴ The three year survival rates were 45% for those who received 40 Gy (4000 rads) followed by cystectomy and 33% for those who received 60 Gy alone. Entry to the trial was restricted to patients under 70, but despite this restriction operative mortality was age related, being 6% in patients under 60, 9% for those of 60-64, and 11% for those of 65-70. For patients aged 65-69 survival was marginally better in those who received radical radiotherapy alone.

The results from the two countries cannot, however, be compared because there are no British figures for survival after radical cystectomy alone in patients over 70. The good survival figures from California are almost certainly due to a combination of surgical skill and careful selection of patients. Thus the study on patients with invasive cancer included those with invasion of superficial muscle (category T₂) as well as those with invasion of deep muscle (category T₃).⁵ Entry to the Institute of Urology trial was restricted to T₃ cases. Furthermore, the Californian study did not mention the histological grade of the tumours even though this is known to influence prognosis. Finally, selected elderly patients attending a secondary referral centre in California may be fitter than their British counterparts attending a teaching hospital or district general hospital which services a fixed catchment area.

Comparison between the two countries is confounded further by the continuing debate on the optimum treatment for invasive bladder cancer. Urologists in Britain are divided between two main schools of thought. One advocates a policy of combined preoperative radiotherapy and cystectomy—as evaluated in the Institute of Urology trial⁴ and as widely practised in North America.⁶ The other advocates primary radical radiotherapy with secondary (salvage) cystectomy for patients with persistent or recurrent tumour. In a series of patients who underwent this form of treatment at the London Hospital the five year survival rate for T₃ tumours was 51% for those aged under 55, 47% for those aged 55-64, 33% for those aged 65-74, and 22% for those over 74.⁷ An important advantage of primary radiotherapy is that most patients retain good bladder function. The desire to avoid cystectomy coupled with doubts about the marginal advantage of the combined regimen has resulted in most British hospitals adopting the policy of primary radical radiotherapy. For patients over 65 the Institute of Urology trial showed no advantage for the combined regimen of preoperative radiotherapy and cystectomy.

Whether primary treatment for patients with T₃ bladder tumours is radiotherapy or surgery two thirds will die within five years irrespective of their age, usually as the result of metastatic spread.⁸ This knowledge, combined with a desire to save patients from mutilating surgery, has led to a search for other methods of treatment. The early results of cancer chemotherapy have, however, been disappointing. Cisplatin, hexamethylamine, and methotrexate as single agents are active against transitional cell carcinoma but at best have only 20% activity.⁹ The Yorkshire Urological Cancer Research Group has reported a trial of patients with T₃, N_x, M₀ disease treated with radical radiotherapy and subsequently randomised to receive doxorubicin (Adriamycin) and fluorouracil or no additional treatment.¹⁰ The survival curves showed no significant difference. The most encouraging results have come from the Sloan Kettering Memorial Cancer Center, which reported that M-VAC (methotrexate, vinblastine,

Adriamycin, and cisplatin) induced a complete response in 12 of 24 patients with metastatic or unresectable tumour.¹¹ Unfortunately, the toxicity of this regimen is likely to restrict its use to specialist chemotherapy units.

In the future more effective chemotherapy regimens may allow more conservative surgery such as partial cystectomy or endoscopic ablation. Until then the good results and low operative mortality reported from California should encourage British urologists to consider cystectomy more frequently. They should also be aware that the authors attribute their low mortality rates to the routine use of prophylactic digitalis, effective bowel preparation, pre-operative hydration with intravenous fluids, good surgical technique, the routine use of a gastrostomy tube instead of nasogastric suction, early management in the intensive care unit, and routine prophylactic anticoagulation.

Bladder cancer is a disease of the elderly, yet many treatment protocols restrict entry to patients under 70. The Californian results suggest that that age might reasonably be increased to 79 even if radical cystectomy is a treatment option. Furthermore, it may be advisable for hospitals with a low cystectomy rate to refer patients to centres that have developed a special interest and skill in the treatment of patients with bladder cancer.

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Preventing infant deaths

A long awaited study of deaths in 988 infants aged between 1 week and 2 years of age has concluded that two thirds of the 131 infants seen by general practitioners and a quarter of the 69 admitted to hospital had received inadequate management. Furthermore, there were 297 infants in the study who developed terminal illnesses while in the community, and in a quarter of these cases the families had not recognised the severity of illnesses.¹ Are these conclusions scientifically sound and what should be done?

All 988 deaths (1976-9) in eight urban centres were studied prospectively with information from hospital records, general practitioners, health visitors, and a home interview. Detailed necropsies by paediatric pathologists were a crucial contribution to the confidential case conferences held at each