

so that in practice solanine poisoning appears to be rare except in times of food shortage. A few outbreaks, however, have been due to catering errors or unusual conditions.²

Such an error caused an outbreak of poisoning that affected 78 schoolboys in South London, recently reported in carefully documented detail by McMillan and Thompson.³ The onset of symptoms occurred some four to 14 hours after the boys had eaten boiled potatoes. Vomiting and diarrhoea were predominant symptoms, preceded or accompanied by abdominal pain. Fever was not invariable and was often only slight, tending to subside early in the illness. Depression of the central nervous system occurred in the more serious cases, and several patients were comatose with episodes of convulsive twitching. These boys also showed signs of peripheral circulatory collapse, even when dehydration was only slight. Little blood was lost in the stools or vomitus, even though symptoms continued for up to six days. Death has occurred in previous outbreaks, usually within 24 hours^{4 5}; but those cases were mainly in undernourished patients who may not have received adequate treatment. In the recent London

episode all patients recovered fully, though some were confused and hallucinated for several days.

The treatment for solanine poisoning is replacement of fluid and electrolyte losses; anticonvulsants (diazepam or paraldehyde) may also be needed. Avoiding inappropriate treatment (for example, for supposed bacterial enteritis or acute appendicitis) is, however, no less important; this means speedy diagnosis based on the history and symptoms, backed by negative laboratory tests for infection. The diagnosis can then be confirmed by examining the remaining potatoes or potato waste. Possibly unrecognised mild solanine poisoning may be the cause of many mild episodes of "gastro-enteritis." Perhaps greater awareness of this possibility will lead to further reports.

¹ Willimott, S G, *The Analyst*, 1933, 58, 431.

² Wilson, G S, *Monthly Bulletin of the Ministry of Health Public Health Laboratory Service*, 1959, 18, 207.

³ McMillan, M, and Thompson, J C, *Quarterly Journal of Medicine*, 1979, 48, 227.

⁴ Pfuhl, E, *Deutsche Medicinische Wochenschrift*, 1899, 25, 753.

⁵ Hansen, A A, *Science*, 1925, No 1578, 340.

Regular Review

Surgery in outpatients

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A surgeon who worked at the Royal Glasgow Hospital for Sick Children any time after the turn of the century might, if he could now read the many publications on day care, be surprised at how much attention it receives. For there and in other large institutions north and south of the border not only minor surgery but also herniotomies, cleft lip repairs, and operations for spina bifida were customarily performed on outpatients.¹

"Office" or "clinic" surgery for minor conditions has long been a feature of European and North American practice, and more recently has been used to a varying degree in Britain.² Nevertheless, the acceptance of day surgery for relatively major operations such as inguino-femoral hernias requiring any type of repair, definitive procedures in the groin for varicose veins, and excision of breast lumps has been a more recent development. Farquharson in Edinburgh³ is generally held to be one of the pioneers (though in fact he was interested in early ambulation as much as early discharge), followed by a group in Aberdeen.⁴ Since then more systematic exploration and evaluation of day surgery have been undertaken by surgeons at the Western General Hospital, Edinburgh,^{5 6} by Devlin and his colleagues in Stockton-on-Tees,⁷ and by Calnan and Martin at Hammersmith Hospital.⁸ Day units with a wider scope than general and plastic surgery have also been described,⁹ and both paediatric¹⁰ and gynaecological¹¹ surgery are also handled in some centres on a day-care basis. Indeed, there now exists a continuous range of function within special organisations and units, which range from five-day wards dispensing relatively conventional but organised care,¹² through short-stay and day-

care surgery, to the programmed investigation unit, whose role is diagnostic and organisational rather than therapeutic.¹³

The diversity of approach found in different hospitals reflects varying needs and different constraints. No solution should be regarded as all embracing, and, indeed, the growth of day care in Britain has been ad hoc with individual units largely tailored to local need.

This review is concerned primarily with the concept of day surgery, in which the traditional hotel and nursing support functions of the hospital are either abandoned or transferred elsewhere. Our attitudes towards illness and surgery are very much a product of cultural inheritance and contemporary experience, so that both those giving and those receiving care accept certain norms that tend to change only slowly. Surgeons in Britain have usually reserved hospital inpatient care, followed by a period of gradual convalescence, for patients requiring general anaesthesia and a cut on the trunk or near to it (such as a groin ligation for varicose veins). Change in this norm has come only slowly from both patients and their surgeons. Despite the enthusiasm of the pioneers and the demonstrated feasibility of their methods, the national average hospital stay in 1976 in England and Wales for patients with hernia was 7.8 days and for varicose veins 10.7 days.¹⁴ The apparent conservatism indicated by these figures presumably relates not only to surgical reluctance to change but also to cultural concepts of feeling ill when in fact one is suffering only from a technical hitch. True, between 1964 and 1974 there was a considerable improvement—in the 1960s the hernia

figure stood at 14.¹⁵ Surgeons have, however, also been reluctant to accept local anaesthesia for hernia repair or groin ligation as a means of making the patient marginally more able to leave hospital early,¹⁶ though its enthusiastic practitioners have been promulgating its use for many years.¹⁷⁻¹⁹

Two years ago²⁰ no one challenged the claim that it had been shown "beyond peradventure that the methods of day and short stay surgery are safe, comparable in cost, or slightly cheaper, than inpatient work." Two recent *BMJ* prospective studies^{21 22} have shown that patients who have been properly selected, who are adequately briefed, who enter a well-designed system, and who are ensured of nursing and family practitioner support have nothing to fear, and possibly something to gain, from going home after their operation. Their incidence of complications (all trivial) will be the same as if they had stayed in hospital; only about 1 in 100 needs readmission; and, as others have shown,⁷ their return to work will follow the same pattern as that of inpatients.

Just how many patients are in all ways suitable for day care after surgery for hernia or varicose veins is uncertain; probably it varies from place to place. In Edinburgh and Aberdeen the proportion seems to be about 70-80% of patients conventionally treated as inpatients. Because there is no information on how length of inpatient stay is distributed in statistical terms only rough calculations can be made on potential financial savings. Nevertheless, if—as the Stockton group⁷ emphasises—resources are not just absorbed elsewhere there are potential annual economies of £20 000 000 a year for hernia alone. In practice, of course, this money is not actually saved, since changing the pattern of delivery of surgery merely shifts resources elsewhere into more major inpatient work and increased use of expensive hospital facilities—for example, intensive care units.²³ In the end more patients are treated at greater cost to the NHS. As distinct from their economic effects and the shortening of waiting lists, however, the new patterns of care are also more flexibly adapted to the needs of the clientele, and more efficient in terms of having the right things happen at the right time. As such, day care surgery, integrated into the practice of a surgical unit, should be seen primarily as an advance in the appropriate provision of care.

Missing so far from the studies of day beds and their implications are wholly independent studies of patients' response—

the internal studies can never be wholly free of the taint that patients on the whole (and *mirabile dictu*) like to please their physicians. Doubtless such a study would not throw up any very contrary trends from those already established, but it might suggest that there are subgroups who as consumers would be either more or less likely to stay in hospital or go home. The patient's voice should be heard in deciding what seems appropriate for the system. Nor has any attempt been made to undertake a more macroeconomic study of the possible implications of day care on the Health Service. Such a study would first have to define concepts such as productivity and incentive. There is little point in showing increased throughput and potential or actual savings in money if these are not actually seen to influence the overall service or to redound on the organisation which has bettered itself. Allied to this is the problem of injecting capital, say, into a special day-bed organisation without being able to measure the return. Perhaps the most important consequence of day surgery and the associated service of short-stay and programmed investigation is that the need is now apparent for some way of measuring productivity in acute services. Unfortunately, to date there has been little response from the economic-administrative axis.

Revolution, as distinct from evolution, would probably be undesirable in day care. Those who have carried the standard of day surgery and worked at its proper application so assiduously must be content to believe that time is certainly on their side. Furthermore, since the behaviour of queues is non-linear²⁴ there may possibly be a relatively sudden effect on waiting lists for hernia and varicose veins in Britain, as the impact of day care and short stay increases. And, though some commentators claim that waiting lists are an inappropriate statistic, their disappearance is often associated with an overall reduction in work load and a chance to take a more measured approach to other problems.

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⁴ Stephens, F O, and Dudley, H A F, An organisation for outpatient surgery, *Lancet*, 1961, **1**, 1042.

⁵ Ruckley, C V, *et al*, Major outpatient surgery, *Lancet*, 1973, **2**, 1193.

⁶ Ruckley, C V, *et al*, Day care after operation for hernia or varicose veins: a controlled trial, *British Journal of Surgery*, 1978, **65**, 456.

⁷ Russell, I T, *et al*, Day-case surgery for hernias and haemorrhoids, *Lancet*, 1977, **1**, 844.

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⁹ Berrill, T H, A year in the life of a surgical day unit, *British Medical Journal*, 1972, **4**, 348.

¹⁰ Atwell, J D, *et al*, Paediatric day-case surgery, *Lancet*, 1973, **2**, 895.

¹¹ Craig, G A, Use of day beds in gynaecology, *British Medical Journal*, 1970, **2**, 786.

¹² Aldridge, L W, Co-operative effort to reduce a waiting list, *British Medical Journal*, 1965, **1**, 183.

¹³ Longson, D, and Young, B, The Manchester Royal Infirmary Programmed Investigation Unit, *British Medical Journal*, 1973, **4**, 528.

¹⁴ *Hospital Inpatient Enquiry England and Wales, 1976*. Welsh Office, OPCS, DHSS, MB4 No 6.

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¹⁶ Iles, J D H, Length of stay in hospital, *Lancet*, 1964, **1**, 605.

¹⁷ Corlette, C E, *A Surgeon's Guide to Local Anaesthesia*. Bristol, John Wright, 1948.

¹⁸ Tanner, N C, Local analgesics, *British Medical Journal*, 1964, **2**, 1529.

¹⁹ Barclay, S, The use of local anaesthesia, *British Journal of Surgery*, 1965, **52**, 866.

²⁰ Dudley, H A F, Loosening patient immobility, *Lancet*, **1**, 1251.

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²² Rainey, J B, and Ruckley, C V, Work of a day-bed unit 1972-8, *British Medical Journal*, 1979, **2**, 714.

²³ Ruckley, C V, *et al*, Team approach to early discharge and outpatient surgery, *Lancet*, 1971, **1**, 177.

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