

the "gaiter" area of the leg, where in chronic venous insufficiency the skin and subcutaneous tissues are so vulnerable, accounted for most of these problems. Among patients treated for hernia only eight required dressings because of bleeding or discharge, although in a further four the wounds were described as inflamed, two had minor skin-edge necrosis, and nine had haematoma.

Discussion

This is not a retrospective study in the conventional sense in which that term is used, since the record-keeping systems were set up from the beginning to make continuous evaluation easier.

The study has shown that over eight years outpatient surgery for hernia and varicose veins has continued to be satisfactory in selected patients. Although complications were common (averaging 25%), they were mostly medically trivial and, in the main, easily managed by the community nursing sister or general practitioner. Clearly, the main requirements for hospital supervision occur from the time of induction of anaesthesia to the time the patient is fully awake. The risk from later post-operative events is small. The low rates of readmission (1%) and of delayed discharge (2.5%) confirm this and suggest that patients were appropriately selected. The process of selection for all grades of surgical care is the subject of current research.

We have found that few patients undergoing operation for hernia or varicose veins need the facilities of a conventional "full-time" surgical ward. Two trials^{7,10} have proved the economic advantages of day care. It would not be right, however, to claim efficiency in health care without taking account of the views of patients and of colleagues whose practices may be

affected. These aspects are the subject of separate reports, but it can be said that patients appreciate a policy of selection of surgical care for their individual needs¹¹; general practitioners are usually very willing to co-operate with the system,¹² while district nursing sisters are pleased with the new scope for their skills in the community.¹³ Indeed, without the help and support of these colleagues day care on this scale would not succeed.

Mr C W A Falconer, Mr W P Small, and Mr A N Smith kindly allowed us to include their patients and gave encouragement throughout. We thank them any nursing, secretarial, anaesthetic, and general-practitioner colleagues who shared the care of these patients and helped in their evaluation.

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Work of a day-bed unit 1972-8

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Summary and conclusions

From 1972 to 1978 inclusive 32 311 patients were managed in a 24-bedded day-bed unit in a district general hospital. The principal specialties using this were urology, gastroenterology, general surgery, gynaecology, haematology, orthopaedics, and radiology. Patient selection, a high standard of secretarial work, and good liaison with general practitioners, the community nursing service, and the ambulance service are most important.

Day care forms a large, important, and increasing part of the work of the hospital, and without it many of the specialties would be unable to cope with the demand, and their waiting lists would lengthen continuously.

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Introduction

So far as we can tell from published reports, the concept of day care originated in 1908 in Glasgow. Nicol reported that he had operated successfully on 2392 children as outpatients for conditions such as hernia, mastoiditis, and talipes, achieving results comparable with those treated as inpatients.¹

His success and ideas were not repeated or followed up until 1955, when Farquharson reported an Edinburgh series of 482 herniorrhaphies carried out on outpatients under local anaesthesia.² He showed that these patients who would conventionally have been kept in hospital for 10 to 14 days were at no greater risk, postoperatively, if they were cared for in suitable home conditions, under supervision from the general practitioner. He emphasised the value to cardiorespiratory function of early ambulation.

In the late 1960s, with a view to reducing waiting lists and to using precious facilities more efficiently, these ideas began to be put into wider practice, and several specifically designed day-bed units were built. It soon became apparent that systems of short-stay and day-care surgery for hernia and varicose veins were safe and convenient in carefully selected patients in experienced hands.³⁻⁶ This was confirmed by controlled trials, which also showed economic benefits.^{7,8} With the development of these units, other specialties such as urology, gynaecology, gastroenterology, haematology, and radiology began to use the offered day-care facilities to widen the scope of their outpatient

work. A report from Hammersmith Hospital described the development of day care in plastic, dental, orthopaedic, and paediatric surgery.⁹ In Bradford, over a 10-year period, more than 3000 women underwent routine gynaecological operations as day patients with no adverse effect on postoperative morbidity.¹⁰ Atwell *et al* reported on 3349 paediatric operations carried out over four years on outpatients in a day-bed unit in Southampton.¹¹

Accounts of the overall work of a day-bed unit are surprisingly few. Berill analysed one year's work in such a unit¹² and Kemp in a study for the Scottish Home and Health Department described the functions of a day-bed unit in a Scottish district general hospital over one year.¹³ Neither study, in our view, showed anything approaching the scope and scale of the work that can be achieved. We have therefore analysed the work of the day-bed unit at the Western General Hospital from its inception on 1 January 1972 to 31 December 1978.

The unit

The Western General Hospital has 524 beds, and most of the specialties normally found in a teaching hospital are represented. The day-bed unit comprises 24 beds arranged as three wards, each of six beds, and six single rooms. This enables any ratio of male to female patients to be catered for and any patient needing segregation for a particular procedure to be nursed separately. The suite includes twin operating theatres and gastrointestinal and urological endoscopy suites with recovery areas. There is also a gastrointestinal motility laboratory.

Accommodation within the unit includes a treatment room for dressings and minor procedures; a sitting room for patients and relatives; a sluice room, lavatories, shower, and bathroom; a small kitchen; a storage room; and offices for reception, secretarial, nursing, and medical staff.

STAFFING AND ADMINISTRATION

The unit is open from 8 am to 4.30 pm Monday to Friday. Recently the hours have been extended into the evening on two days a week to accommodate the oncology chemotherapy service. On these days the beds are used twice over. The nursing staff consist of a sister, a full-time staff nurse, two part-time staff nurses, and a nursing auxiliary. The unit is situated in an outpatient block supervised by a unit nursing officer (Salmon grade 7). There is also a full-time secretary and a part-time receptionist. There is no specific medical staffing, since all specialties have access to the unit. A committee consisting of senior medical, surgical nursing, administrative, and records staff supervises the unit.

When the unit was commissioned the staff of all departments were invited to bid for allocations of beds, and experience has shown that many were wrong in their original estimates of how they would use the unit. Bed allocations have therefore been adjusted according to need over the years. Operating and endoscopy theatre timetables have also been tailored to meet the requirements of all specialties, at the same time ensuring that the unit is used to its optimal capacity and efficiency.

LIAISON WITH COMMUNITY SERVICES

A district nursing liaison officer visits the unit several times a week to discuss with the nursing staff the arrangements for the ensuing days. She then briefs the district nursing sisters accordingly. She feeds back to the medical staff early reports on the postoperative progress of the patients, and any difficulties arising are readily resolved. This co-operation is particularly valuable in the care of gynaecological patients and those undergoing general surgical operations, such as multiple ligation and stripping of varicose veins or the repair of inguinal hernia, when considerable nursing aftercare may be required. The system of preoperative home visits by the district nursing sister before general surgical operations has been described.⁶

Special arrangements have been made with the ambulance service to ensure that patients who have had general anaesthetics and relatively major procedures are transported punctually and directly to their homes.

TOTAL WORK IN THE UNIT, 1972-8

In the seven years covered by the survey a total of 32 311 day cases were investigated or treated in the unit. In 1972, 3629 patients were seen, and the annual number has risen steadily, reaching a total of 5988 in 1977, a rise of 65%. The number decreased in 1978 mainly because of industrial disputes occurring that year.

The work of each specialty using the day-bed unit is expressed as a percentage of the total number of day cases managed in the unit in 1972 (fig 1), and this is compared in the same figure with the work distribution in the unit in 1978. The distribution of the yearly case loads has altered with some specialties, notably haematology, radiotherapy, chest medicine, and orthopaedics, steadily increasing their outpatient work relative to other specialties. Figure 2 shows trends in yearly case loads for the six main users of the unit.

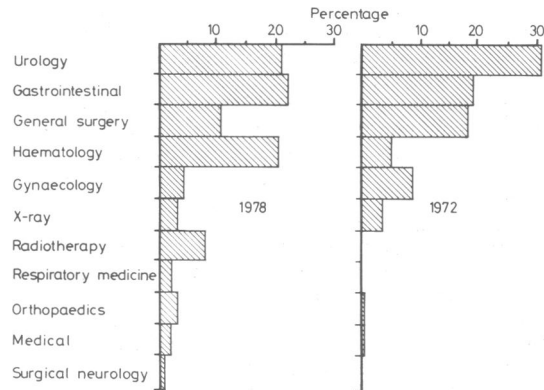


FIG 1—Distribution of yearly day-care load between specialties using unit in 1972 compared with 1978.

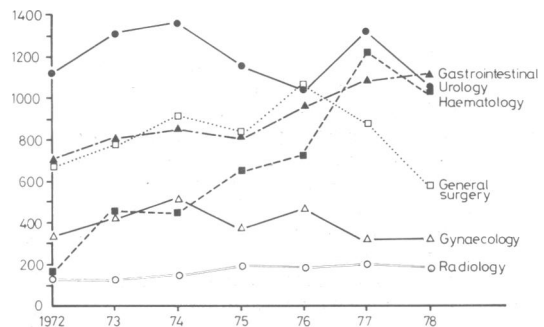


FIG 2—Yearly case loads for each specialty 1972-8 (top six users).

UROLOGY

Urology is the specialty that has consistently managed the largest number of day patients over the seven years. The most common procedures carried out are cystoscopy, vasectomy, bougienage, and change of catheter, all of which usually need general anaesthesia and consequently the use of a bed for at least part of a day.

This specialty has only 28 beds in the main hospital, which are occupied by patients needing major surgery and more intensive nursing care. The availability of day beds and day-theatre facilities enables the main ward to have a much higher turnover of acutely or seriously ill patients. Such is the size of the waiting list for such procedures as vasectomy and routine investigations that the urologists believe that they could use effectively a much larger proportion of the day-unit beds and theatre time. As it is, the urology department deals with, on average, 1035 day patients every year.

GASTROENTEROLOGY

The combined medical and surgical gastrointestinal unit has 32 inpatient beds, and all its routine investigations are carried out in the day-bed unit. The number of patients investigated in this way

has risen from 703 in 1972 to 1100 in 1978, a rise of 63%. The most commonly performed procedures are various endoscopies and Crosby-capsule jejunal biopsy. The endoscopies are usually carried out under heavy sedation and occasionally general anaesthesia and thus a bed is needed for recovery, while patients having a jejunal biopsy may need a bed or may be managed in a chair.

The only gastrointestinal investigation that is not routinely carried out in the day-bed unit is endoscopic retrograde pancreaticocholangiography. Patients needing this investigation are usually admitted to the main ward.

GENERAL SURGERY

The general surgical unit has 36 inpatient beds that are used for acute and major surgical cases needing intensive medical and nursing care and also eight beds in a five-day ward for intermediate grades of operations and investigations necessitating overnight stay.

The development and integration of short stay and day care in the unit have been described previously.^{6 8}

Outpatient operations are described under two headings: "major" day operations and "minor" operations. Major day operations include saphenofemoral ligation (with or without stripping) with multiple ligations of varicose veins, and inguinal or femoral herniorrhaphy. On average, 128 major varicose vein procedures and 32 herniorrhaphies are performed each year, giving a total of 1211 major day operations since the unit opened. There are, usually, one or two major day cases together with four or five minor procedures on each of the three operation lists each week.

Minor operations include such procedures as breast biopsy, Lord's dilatation or cryotherapy for haemorrhoids, Zadik's nail-bed excision, and the removal of various lumps and bumps.

The unit has also proved very useful in investigating patients with peripheral vascular disease who attend for routine blood tests, ECGs, chest radiographs, and exercise treadmill tests as part of their assessment.

HAEMATOLOGY

The haematology department has only seven inpatient beds but is one of the main users of the day-care facility. The number of day patients cared for by the haematologists has risen from 171 in 1972 to 1203 in 1977, a rise of 600%. The procedures carried out include chemotherapy infusion, lumbar puncture, sternal marrow aspiration, blood transfusion, venesection, and marrow trephine, all of which require the patient to be in a bed for at least some part of the day. Simpler procedures such as Schilling's test and routine blood sampling are done on sitting patients.

The introduction of new treatments and the growing appreciation of the value of the system have resulted in a major part of the haematologist's practice now being carried out in the day-bed area.

GYNAECOLOGY

Each year from 300 to 500 patients undergo gynaecological operations in the day-bed unit. The gynaecologists have 22 inpatient beds that they use for major gynaecological surgery and routine procedures in older women with concurrent medical problems. They do, however, perform bilateral tubal diathermy, dilatation and curettage, cautery, polypectomy, hysterosalpingography, and suction evacuation under general anaesthesia in the day-bed unit. For example, in 1976, out of 1337 women undergoing these procedures, 948 (71%) were treated as inpatients and 389 (29%) were managed as day patients.

RADIOLOGY

The radiologists have admitted on average 159 patients a year to the unit. Investigations include intravenous cholangiography, cystography, intravenous pyelography, venography, and various scanning techniques. In the absence of day beds these patients would occupy trolleys in the x-ray department for up to several hours during the day of their investigations. It is therefore more convenient for the staff and much more comfortable for the patients if they are allocated beds in the unit where they can rest between different phases of their investigations and recover afterwards.

ORTHOPAEDICS

The orthopaedic surgeons have only 12 inpatient beds, for what is essentially only a trauma service, and these have a slow turnover rate as several of the beds at any one time may be occupied by patients on prolonged traction. The waiting list for non-urgent orthopaedic procedures is therefore so long that, were it not for the day-bed unit, patients would be on the list indefinitely.

An average of only 15 orthopaedic operations a year were performed on day patients during the first five years. Over the past two years, however, they have performed an average of 177 operations on day patients, which have included carpal-tunnel release, fasciotomy, meniscectomy, and removal of Kirch wires.

OTHER SPECIALTIES

The radiotherapy department began to admit patients to the unit for chemotherapy infusions in 1977. In the past two years an average of 460 day beds a year were used in this way, and evening sessions have been introduced recently.

There is no respiratory unit in the hospital, but a visiting physician from another hospital has performed on average 130 bronchoscopies a year in the unit over the past three years.

The department of neurosurgery has occasionally admitted patients to the unit to undergo investigations such as myelography and radiculography.

The cardiologists have performed a few procedures, including cardioversion. Many of their procedures, however, are more appropriate for short-stay than day care.

Discussion

The picture that emerges is one of rising awareness of the value and scope of day care; increasing productivity (except when hampered by strikes); and a greater proportion of hospital work being conducted on an outpatient basis. The vast majority of procedures in the unit formerly necessitated admission. Some specialties, notably haematology, have made spectacular increases in day care, reflecting important therapeutic advances. Among the specialties represented at this hospital, as judged by our data, day care would appear to have the least relevance to general medicine.

A common theme in discussing the unit with colleagues is that without day-care facilities many of the specialties could not cope with the demands of their practice, and their waiting lists would lengthen continuously. Patients at the bottom of the list awaiting minor procedures would have to wait almost indefinitely as others with more acute or serious conditions were added to the list ahead of them.

It has become evident on reviewing the use of the unit over the years by the different specialties, that even for a relatively small district general hospital such as this, a 24-bedded unit is now not big enough.

The day-care system frees hospital inpatient facilities for those who need them most. This obviously increases the load on the staff of the inpatient hospital and ancillary services, and should be recognised in staffing allocations. Until a proper balance is achieved between the needs of the population and the services provided, the economic benefits of what is certainly a cost-effective system are apparent rather than real, since the overall effect has been to increase the intensity of work in all hospital departments. Alternatively, if day care is to be developed without any further investment in the service, particularly of staff, then there should be a corresponding contraction of inpatient facilities.

The day-bed unit itself has proved a popular area for nursing and auxiliary staff, particularly for those who are married or who wish to work part-time during the day because the unit is always closed overnight and at weekends. It has therefore readily attracted the mature and experienced senior nursing staff so vital for such a unit.

This review has shown that the unit has a high turnover of patients under the care of many specialties. Its success depends

on several crucial factors. Patients must be carefully selected and well informed. There must be sufficient staff, especially senior nursing staff, to care for the patients in a relaxed and confident manner. Since no medical staff are appointed specifically to the unit, staff from the various specialties concerned must be readily available at all times. There must be sufficient flexibility to allow delayed discharge or admission to a parent ward whenever necessary. Communications with relatives, general practitioners, and district nurses must be prompt and thorough. Secretarial work must be painstaking, careful, and efficient. The secretary assumes much responsibility, and the post should be graded accordingly. When patients are managed as inpatients, errors in organisation or communication can usually be retrieved. With day care, there is no such latitude. It follows that this is not a department in which stringent economies in staffing should for a moment be accepted.

In conclusion, the facilities of the day-bed unit have been beneficial to patients under the care of a wide range of specialties. Over the seven years day care has come to play an increasingly large and important part in the service that this hospital offers to the community.

We thank the many nursing, medical, and secretarial colleagues who have assisted with the preparation of this review. In particular, we are very grateful to Sister E Gray of the day-bed unit for her invaluable help in collecting the data.

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Clinical Topics

Recommended terminology of urinary-tract infection

A REPORT BY THE MEMBERS OF THE MEDICAL RESEARCH COUNCIL BACTERIURIA COMMITTEE*

British Medical Journal, 1979, **2**, 717-719

In 1975 the Medical Research Council's Systems Board recommended that a bacteriuria committee be set up with the following terms of reference: (1) to co-ordinate present research on bacteriuria in the United Kingdom, (2) to consider what further studies should be undertaken in the field and to make recommendations to the systems board, and (3) to organise and monitor studies approved by the board.

During its review of past and present work on bacteriuria the committee recognised that many difficulties of interpretation have arisen because different workers attached different meanings to some of the relevant terms. The committee believed that future work on urinary-tract infections (UTI) would benefit and be better understood if agreement could be reached on the meaning of these terms. In this paper the members of the committee set out their recommendations.

*The membership of the Committee was as follows: Dr R Blowers (chairman), Professor A W Asscher, Professor W Brumfitt, Professor J R T Colley, Dr H M Saxton, Mr J E S Scott, Dr J B Selkon, Dr J M Smellie, Dr R H R White (secretary).

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Clinical and bacteriological definitions

Note—Terms marked ** are not recommended because the members of the Committee consider that their use has led to confusion.

URINARY-TRACT INFECTION (UTI)

The presence of micro-organisms in the urinary tract.

BACTERIURIA

The presence of bacteria in bladder urine. For epidemiological purposes this may be detected by quantitative urine culture; its presence is usually indicated by the finding of $\geq 100\ 000$ colony forming units (cfu) per ml of freshly voided urine and any growth from urine obtained by suprapubic aspiration. In infants the suprapubic aspiration needle may occasionally be advanced into the rectum, resulting in a false-positive culture; this can be recognised as the cause of a positive culture when urine is aspirated on withdrawal rather than advancement of the needle.

BLADDER BACTERIURIA

The presence of bacteria in urine obtained from the bladder by catheter or by suprapubic aspiration.