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for Ambulatory Surgery

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on Health Systems and Policies

# Policy Brief

## Day Surgery: Making it Happen

by

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with the collaboration of IAAS  
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The International Association for Ambulatory Surgery (IAAS) is dedicated to the global exchange of information and advancement of ambulatory surgery, encouraging the development and expansion of high-quality ambulatory surgery across the world. It acts as an advisory body for the development and maintenance of high standards of patient care in ambulatory surgery facilities.

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# Policy brief

## Day Surgery: making it happen<sup>1</sup>

### INTRODUCTION

The term “day surgery”, or “ambulatory surgery”, refers to the practice of admitting into hospital on the day of surgery carefully-selected and prepared patients for a planned, non-emergency surgical procedure and their discharge within hours of that surgery (Box 1). “True” day-surgery patients are those who require full operating theatre facilities. For statistical purposes, procedures which were previously performed as inpatient cases are now considered appropriate for day surgery, while minor outpatient procedures and most day-case endoscopic procedures, which would never have involved admission, are excluded.

*A surgical day case is a patient who is admitted for an operation on a planned non-resident basis and who nonetheless requires facilities for recovery. The whole procedure should not require an overnight stay in a hospital bed.*

The foundations of modern day surgery were laid by James Nicoll (1864–1921) at the turn of the 20th century, with his work at the Sick Children’s Hospital and Dispensary in Glasgow, Scotland (Nicoll 1909). However, his report led to little immediate progress, mostly owing to professional inertia and opposition (Jarrett and Staniszewski 2006). The situation has, however, changed and an impressive growth in day surgery has been recorded during the last two decades, following the development of short-acting anaesthetics and new surgical techniques. Day surgery is now a high-quality, safe and cost-effective approach to surgical health care, enjoying a high rate of patient satisfaction. It is fast becoming the norm for nearly all elective surgery; in countries such as the United States and Canada, it accounts for nearly 90% of all surgery performed (Toftgaard and Parmentier 2006), but remains much less common in many other countries.

An understanding of the scope of day surgery is of critical importance for health policy makers. An expansion of day surgery will have profound implications for the design of health facilities and the composition of the health care workforce. To take one obvious example, increased day surgery

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<sup>1</sup> Some of the material for this Policy Brief has been drawn from the book *Day Surgery – Development and Practice*, Lemos P, Jarret PEM and Philip B, eds. International Association for Ambulatory Surgery (IAAS), and from material presented at the International Course, organized by the IAAS, *Day Surgery: Making it Happen*, Venice Italy, October 25–27, 2006.



**Box 1: Internationally agreed terminology, abbreviations and definitions as proposed by the International Association for Ambulatory Surgery (IAAS)**

<i>Terminology</i>	<i>Synonyms and definitions</i>
Day surgery (DS)	Ambulatory surgery (AS), same-day surgery, day only
Day surgery centre (DSC)	Ambulatory surgery centre (ASC), day-surgery unit (DSU), ambulatory surgery unit, day clinic A centre or facility designed for the optimum management of an ambulatory surgery patient
Extended recovery	23 hours, overnight stay, single night Treatments requiring an overnight stay before discharge
Short stay	Treatments requiring 24–72 hours in hospital before discharge
Outpatient	A patient treated at a hospital who is not admitted for a stay of 24 hours or more
Inpatient	A patient admitted into a hospital, public or private, for a stay of 24 hours or more
Office-based surgery/office procedure	An operation or procedure carried out in a medical practitioner's professional premises, which provide an appropriately-designed, equipped service room(s) for its safe performance
Day surgery procedure, ambulatory surgery procedure	An operation or procedure which is not outpatient- or office-based, where the patient is discharged on the same working day

Source: Adapted from Toftgaard and Parmentier (2006)

means that the hospital of the future will need more operating theatres but fewer beds. Day surgery, combined with new methods of imaging and near-patient testing, will allow many more procedures to be carried out in a primary care context. These developments will require a change in the roles undertaken by health professionals and their training requirements.

The expansion of day surgery entails a change in mindset. Often, changes in national policies and regulations will be necessary, such as the removal of incentives that promote unnecessary hospital stays or obsolete professional demarcations. Once these changes have been put in place, it

will often be necessary to reorganize and/or redesignate existing structures, extend the roles of health professionals and other staff, explore ways of achieving better integration with primary care services to ensure optimal pre- and postoperative care, and develop appropriate financial and non-financial incentives.

Below we will examine how day surgery can respond both to the policy needs of hospital administrators and to the surgical care needs of specific patients. We will also review the barriers that some countries are experiencing in day-surgery development and explore what needs to be put in place so that day surgery can achieve its full potential.

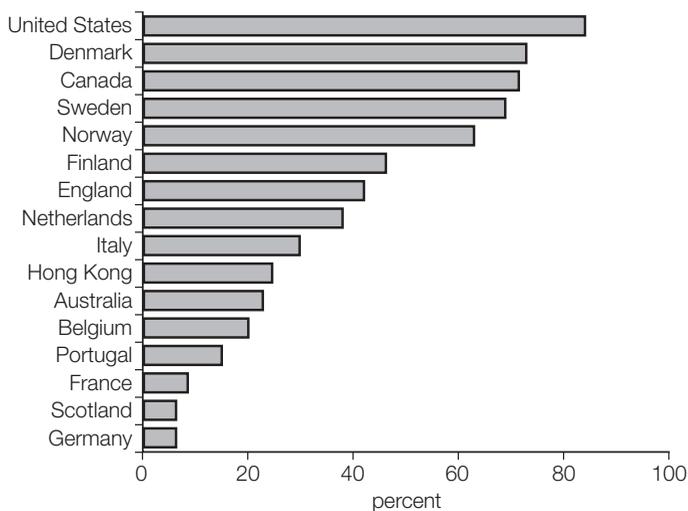
## **STATE OF THE ART**

Many are the advantages of day surgery over inpatient surgery for the health system, including an increased throughput of patients, improved surgery scheduling, reductions in staff and hospital costs, and a consequent decrease in waiting lists. Day surgery bears fewer risks of hospital-related infections, and patients can receive more individual attention when they are kept separate from seriously-ill patients in conventional inpatient wards. Complications arising after day surgery are usually minor, and mortality is extremely rare.

As noted above, there is a wide variation in the proportion of day-surgery cases performed in different countries (Figures 1 and 2). This variation can also be seen within countries, between hospitals in the same country and between departments and specialisms in the same hospital.

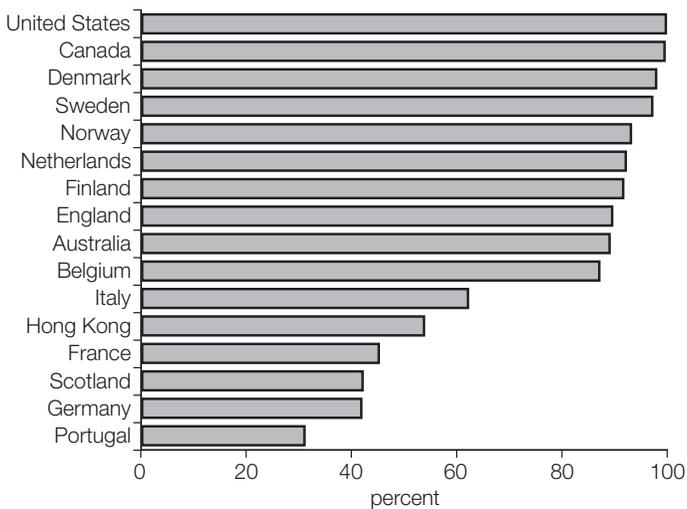
Results of a recent survey conducted in 19 countries showed an extremely wide variation in the percentage of day cases among countries (Toftgaard and Parmentier 2006). The procedures surveyed are shown in Table 1. The range varies between less than 10% (Poland) and over 80% (United States and Canada). A closer look at these figures also reveals large variations between procedures in the various countries, ranging from 0% to over 90%.

Setting aside the potential limitations of data completeness, which cannot be of sufficient magnitude to explain the observed variation, there are a number of plausible reasons for this diversity. These include: financial reimbursement of day cases; regulations and incentives in different countries; and individual practices of surgeons and anaesthetists. The latter is often a



**Figure 1: Percentage of hernia repairs performed as day cases (2002–2004)**

Source: Toftgaard (2003)



**Figure 2: Percentage of cataract removals performed as day cases (2002–2004)**

Source: Toftgaard (2003)

**Table 1: Procedures surveyed in a 2004 international day surgery survey**

Cataract	Knee arthroscopy	Laparoscopic antireflux
Squint	Arthroscopic meniscus	Haemorrhoidectomy
Myringotomy with tube insertion	Removal of bone implants	Inguinal hernia
Tonsillectomy	Repair of deform on foot	Circumcision
Rhinoplasty	Carpal tunnel release	Orchidectomy + -pexy
Broncho-mediastinoscopy	Baker's cyst	Male sterilization TURP
Surgical removal of tooth	Dupuytren's contracture	Colonoscopy with/without biopsy
Endoscopic female sterilization	Cruciate ligament repair	Removal of colon polyps
Legal abortion	Disc operations	Varicose veins
Dilatation and curettage of the uterus	Local excision of breast	Bilateral breast reduction
Hysterectomy (LAVH)	Mastectomy	Abdominoplasty
Repair of cysto- and rectocele	Laparoscopic cholecystectomy	Pilonidal cyst

Source: Toftgaard and Parmentier (2006)

factor in variations within the same country. Further barriers to the development of day surgery will be addressed later.

## WHAT IS THE SCOPE OF DAY SURGERY?

### Which procedures?

Day surgery covers a wide spectrum of surgical procedures, embracing all surgical specialties, from operations under local anaesthesia to major ones under general anaesthesia. Table 1 lists some of the more frequently performed procedures along with some that are increasingly being undertaken on a day basis.



Improvements in surgical and anaesthetic techniques and pain control have brought about an ever-widening range of procedures which are suitable for day surgery. The basic principles to be applied when considering what procedures to include are:

- the degree of surgical trauma should be carefully assessed;
- abdominal and thoracic cavities should only be opened with minimally invasive techniques;
- postoperative pain should be manageable with oral analgesia (or increasingly with extended regional anaesthetic techniques);
- there should be no significant risk of blood loss or requirement for fluid therapy;
- time limits are relatively unimportant with modern anaesthesia, but length of procedure should usually be restricted to less than two hours (and one study of laparoscopic cholecystectomies found that the probability of subsequent admission was increased fourfold among patients whose operations lasted over 60 minutes (Lau and Brooks 2001)).

### Which patients?

Day surgery, rather than inpatient surgery, is increasingly being considered the norm for all patients undergoing elective surgery (NHS Modernisation Agency 2004), rather than simply an alternative form of treatment for a few. However, it is also important to recognize that the model of provision should be geared to the patient's needs, since not all patients can be treated on a day-surgery basis. It is necessary to have a system in place for selecting patients carefully, taking into account surgical, medical (co-morbidity) and social criteria.

#### *Selection criteria: surgical*

All patients scheduled for a suitable day-surgery procedure should be referred to a preassessment clinic where the decision on day surgery or inpatient care can be made on an individual basis. The only surgical criterion that would preclude day surgery would be if the surgeon foresaw a specific instance where the operation would be too complex or extensive in a particular patient.

#### *Selection criteria: medical*

Selection of patients should be based on their overall physiological status and not arbitrarily limited by age, weight or anaesthetic risk. For every patient who is not completely healthy, the nature of any pre-existing condition, its

stability and functional limitation should be evaluated. A fundamental, pragmatic question to consider is whether the management or outcome would be improved by pre- or postoperative hospitalization. If not, the patient should undergo treatment on a day basis. Preoperative assessment also provides an opportunity to offer support for cessation to patients who smoke, with evidence that, when it incorporates nicotine replacement therapy, it is effective in reducing smoking prior to surgery, so enhancing wound healing and reducing the risk of postoperative chest infections (McKee et al. 2003).

#### *Selection criteria: social*

Patients usually require support from a responsible, physically able adult who can care for them overnight (or longer for more invasive procedures). The caregiver must also understand the planned procedure and postoperative care and be willing to accept responsibility for providing further supervision of the patient. It is usually recommended that patients undergo day surgery at a facility within an hour's journey of their home in order to ensure easy return for emergency medical care and to minimize distressing symptoms on the way home. Patients are also advised not to drive for at least 24 hours. Home circumstances and easy access to a telephone are also important elements to consider.

Surveys have shown that almost all day-surgery patients are able to follow the advice they are given following surgery (Cheng et al. 2002; Correa et al. 2001). However, there is no reliable evidence about how many patients are denied day surgery because they cannot meet social selection criteria.

### **THE RATIONALE FOR DAY SURGERY**

The rationale for day surgery is that it is as safe, if not safer, and of the same quality as those procedures done as inpatient surgery.

#### **Medical outcomes**

Although there are very few clinical trials comparing traditional inpatient and day surgery, those that have been undertaken show no significant difference in outcomes (Castells et al. 2001; Corvera et al. 1996; Dirksen et al. 2001; Fedorowicz et al. 2005; Hollington et al. 1999). These, along with a number of non-randomized studies, demonstrate that day surgery is a safe approach when all the recommended guidelines and organizational principles of a day-surgery programme are followed.



The incidence of death and major morbidity directly associated with day surgery is extremely low (<1%) (Lemos and Regalado 2006; Shnaider and Chung 2006). Unplanned return visits to hospital and re-admissions within 30 days directly related to day-surgery procedures range from 0.28% to 1.5% (Coley et al. 2002; Mezei and Chung 1999; Twersky et al. 1997). Unplanned admissions following surgery can be decreased through the use of appropriate clinical pathways, with one study finding that pathway implementation was associated with an increase in same-day discharges from 21% to 72% and a steady reduction in unplanned postoperative admissions as experience with the pathway increased (Calland et al. 2001).

Minor complications are, however, quite frequent. Postoperative pain, nausea, vomiting, drowsiness, fatigue, headache and sore throat represent the most common symptoms. The presence of these symptoms can affect the length of stay and time to discharge and, later, may cause difficulties in the resumption of normal daily activities and functions at home.

### **Social outcomes**

A number of studies have reported high levels of patient (and parental, in the case of young children) satisfaction with day surgery (Fan et al. 1997; Hicklin et al. 1999; Hunt et al. 1999; Lau et al. 2000).

Patient satisfaction can be optimized by achieving or avoiding certain circumstances, such as:

- good postoperative pain control (McHugh and Thoms 2002);
- short waiting time before surgery;
- courtesy of staff and friendly environment;
- avoidance of patients feeling that they are being discharged too early or rushed;
- follow-up by telephone on the following day.

### **Economic outcomes**

The financial benefits of day surgery over inpatient surgery are now well established; hospital costs are from 25% to 68% lower for day surgery than for the same procedures on an inpatient basis (Table 2). In addition, there are many economic evaluations that have addressed the choice of drugs and devices, and effects of recovery times on cost.

**Table 2: Savings in outpatient costs as compared to inpatient costs for the same procedure reported in the literature**

Source	Country	Procedure(s)	Unit cost saving
Babson 1972	United Kingdom	Hernia repair & varicose vein surgery	40–44%
Prescott et al. 1978	United Kingdom	Hernia repair & varicose vein surgery	65%
Evans and Robinson 1980	Canada	Paediatric surgery	70%
Coe 1981	United States	Hernia repair	65%
Flanagan and Bascom 1981	United States	Hernia repair	70%
Rockwell 1982	United States	Hernia repair	45%
Caldamone and Rabinowitz 1982	United States	Orchidopexy	56%
Pineault et al. 1985	Canada	Hernia repair & tubal ligation	12–26%
Heath et al. 1990	United Kingdom	Laparoscopy, arthroscopy & cystoscopy	49–68%
Arregui et al. 1991	United States	Laparoscopic cholecystectomy	46%
Mitchell and Harrow 1994	United States	Hernia repair	36%
Kao et al. 1995	United States	Anterior cruciate ligament repair	58%
Mowschenson and Hodin 1995	United States	Thyroidectomy & para-thyroidectomy	30%
van den Oever and Debbaut 1996	Belgium	Inguinal hernia repair	43%
Zegarra et al. 1997	United States	Laparoscopic cholecystectomy	25%
Levy and Mashoof 2000	United States	Open Bankart repair	56%
Kumar et al. 2001	United Kingdom	Anterior cruciate ligament repair	20–25%
Rosen et al. 2001	United States	Laparoscopic cholecystectomy	11%
Lemos et al. 2003	Portugal	Laparoscopic sterilization	62.4%



The economic benefits of day surgery include the following.

- Shorter hospital stays, which enables a higher number of patients to be treated, thereby reducing waiting lists.
- The release of inpatient facilities for more complex and emergency cases.
- In dedicated facilities, a reduction in the number of patients removed from operating lists on the day of surgery because of emergency cases or bed shortages in inpatient facilities.
- Fixed scheduling, reducing cancellations by patients and thus more efficient theatre use.
- Reduced disruption of patients' daily routines, with lower levels of absence from work or problems providing care for others.
- Staff reductions, as overnight staffing is usually not necessary.
- A decrease in both the time taken to perform surgical procedures and their cost, taking advantage of advances in surgical and anaesthetic care.
- Better use of high-cost operating room apparatus and supplies.

It is, however, important to recognize that substantial sums of money are only saved when cases are transferred from the inpatient unit to the day unit and inpatient beds are closed. In other words, when inpatient surgery is replaced case for case by day surgery. On the other hand, if day-surgery activity increases without a similar reduction in inpatient activity, total expenditure rises, although average unit costs reduce. A critical mass of beds needs to be closed before staffing levels can be reduced and significant savings made. However, following bed closure owing to a transfer to day surgery, remaining beds occupied by severely-ill patients will require higher nurse–patient ratios. Moreover, empty unused wards attract a service costs if they are not written off, sold or used for some purpose which will meet this cost.

The overall burden of day surgery on community health services has raised concern; it has been perceived simply as a means to transfer costs from secondary care (hospital) to primary or community care. This is not, however, supported by the available evidence (Lewis and Bryson 1998), and clearly this will depend upon the precise configuration of services developed.

Concern has also been raised about day surgery transferring extra costs to patients or caregivers. The lower risk of cancellation and the earlier return to work associated with day surgery may actually reduce costs for the

patient. For caregivers, day surgery reduces the number of visits to the hospital, even though it is necessary that they be with the patient for the first 24 hours following surgery, which is an increased cost compared to inpatient surgery.

## DESIGNING THE MODEL

The introduction of day surgery should take account of both local needs and existing surgical provision and configuration of facilities.

### In-hospital and free-standing day-surgery services

Day surgery today is largely carried out in one of four organizational models, as follows.

- *Hospital-integrated facility* – dedicated day-surgery beds in an inpatient facility, sharing operating theatres, recovery facilities, and medical and nursing personnel with the inpatient department.
- *Self-contained unit on hospital site* – operating theatres and ward dedicated to day-case surgery and functionally separate from the inpatient areas of the hospital. Nurses and administrative personnel are dedicated to the day unit. Many surgical specialties working in the same unit share facilities and nonmedical personnel.
- *Free-standing self-contained unit* – identical to self-contained units but not on a hospital site. They may be more cost-effective than self-contained units on hospital sites. Free-standing units have the potential to provide day surgery near to where the patient lives.
- *Physician's office-based unit* – small, self-contained surgical annexes in surgeon's consulting rooms.

Expansion of day surgery can take place in existing hospitals using various permutations of inpatient or day wards with inpatient or dedicated operating theatres (hospital-integrated facilities). However, these facilities, based on configurations created for traditional surgery, often present physical barriers to the establishment of integrated pathways, and the separation of staff and functions can make it difficult to develop the necessary cohesion and teamwork among staff, making them less than ideal in terms of cost-effectiveness and quality of care. The ideal day-surgery service on a hospital site is provided by a self-contained day unit (self-contained unit on hospital site) which is functionally and structurally separate from the inpatient unit and has its own operating theatres, ward



areas, entrance, reception, staff and management structure. It is, however, possible for existing inpatient facilities to be redesigned and reorganized to accommodate independent on-site day-surgery units. This strategy would help to avoid unnecessary closure of hospital facilities, to increase throughput of surgical patients and to free inpatient beds for more complicated cases.

Self-contained day units away from the site of an inpatient unit are termed “free-standing” day units. With appropriate systems in place, they can undertake the same range of surgery as those on hospital sites. Compared to a self-contained unit on a hospital site, free-standing units pose fewer risks of hospital-acquired infection, ensure a faster turnaround of cases and have been associated with higher patient satisfaction. However, compared with on-site hospital facilities, they require larger storage space, their own sterilizing facilities and sterilized laparotomy and thoracotomy sets for immediate use in case of an emergency. Free-standing units must have immediate access to beds in an inpatient hospital and transport (with portable ventilator and resuscitation equipment) that can move seriously-ill patients to them. In a free-standing unit, a specialist anaesthetist or surgeon must be available in the facility until the last patient is fit for discharge. Like hospital units, free-standing units must provide access to advice 24 hours a day for patients once they have returned home. Free-standing day units are increasing in number in many countries in order to increase access for patients, in some cases compensating for the longer travel distances resulting from concentration of acute services in larger hospitals.

Mobile free-standing day units have been developed to provide surgical care in remote communities and as a temporary expansion to normal free-standing and hospital facilities.

Both free-standing and hospital day units may be supplemented by hospital hotels, 23-hour wards and medical day units.

### **Leadership and management**

It is the leadership and management as well as staff members, and not the physical structure or the quality of the equipment, that determine the success of a day-surgery service. Success requires the implementation of policies that extend all of the advantages of day surgery to the patient, the health care professional and the community at large.

Leadership is needed at all levels of the day-surgery unit. Leaders create a path for hospital administrators, physicians, nurse managers and staff to follow and then assist in the coordination of their efforts to develop and maintain a day-surgery programme.

On the basis of experience from several countries, the most effective organizational structure for a day-surgery unit involves the creation of a distinct service, led by an experienced manager, who has the day-to-day responsibility for providing efficient, effective and high-quality day-surgery services. A critical success factor seems to be the maintenance of a high level of communication between the manager and the health professionals working in the facility.

Day-surgery units tend to achieve maximum efficiency and effectiveness when management and staff are specific to that service, are goal-oriented and innovative, enjoy the fast-paced environment and continually strive for perfection.

### **Human resources**

Day surgery requires a multidisciplinary approach. For a successful outcome it requires active participation by all players – managers, nurses, surgeons, anaesthetists and general practitioners. There is a need for a flexible approach, with regular re-evaluation of practice to provide a level of care that reflects individual patient needs. However, there is limited evidence on the most appropriate staffing models for the different types of day-surgery units. In the United Kingdom, staffing levels range from 0.2 to 3.2 whole time equivalent (WTE) staff for each staffed bed, chair or trolley (Wales Audit Office, 2006). Personnel include nurses, porters, operating department practitioners and assistants, housekeepers, and administrative and clerical staff; medical staff are excluded. These staffing levels appear to be adequate for day surgery and not to be a barrier to performance.

Experience also suggests that optimal performance is achieved where the day-surgery unit has its own administrative infrastructure to manage patient flows and scheduling.

Nursing in day-surgery facilities requires a multiskilled approach. Employing well-trained nurses in the different aspects of day surgery, from pre-admission assessment to patient discharge, not only improves the efficiency of the day-surgery unit but also results in increased job



satisfaction. Benefits of multiskilling include a more cohesive, motivated team through appreciation and understanding of their roles and responsibilities (Meaden and Solly 2003). Improved job satisfaction and enhanced staff competency through investment in training and development in turn leads to:

- a low rate of staff turnover (staff will stay in post longer if the job is interesting and varied);
- flexibility of the workforce to cover sickness and absence;
- control of staffing costs by minimizing use of nursing pools or agencies;
- better informed and educated patients and carers because staff are familiar with the entire patient experience.

### Quality assurance

Developments in anaesthesia and surgery have allowed an impressive growth in day surgery since the early 1990s. Day surgery has the potential to improve quality of care while posing no extra risk to the patient. Yet, there have been concerns in the United States, where day surgery is much more common than in Europe, that some patients are being forced to have operations as day cases when an overnight stay would be more appropriate (Anon 1997). In addition, as seen above, to achieve the benefits associated with day surgery it is necessary to make changes to the system within which patients are treated, going beyond physical reconfigurations to embrace staff skills and attitudes. It is therefore important that day-surgery programmes incorporate continuous quality improvement systems to ensure that those being treated continue to receive optimal care. The following elements may play a role in ensuring quality of day surgery.

### Accreditation

Accreditation is an evaluation by external, independent, trained surveyors, aimed at demonstrating significant achievements in relation to established, recognized health care standards. Accreditation is a dynamic, periodic health care quality process that demonstrates, with documented evidence, that a centre provides high-quality health care. The nature of accreditation depends greatly on the health system within which facilities operate. In some cases it is an entirely voluntary system, with accreditation being a badge of quality that makes the facility more attractive to staff and patients, or it may be linked to the payment system, with health funders making accreditation a requirement for a facility to be reimbursed.

## **Certification**

Certification is a system of process standardization that originates from the manufacturing industry. An example is the International Standards Organization (ISO) 9000 standard, which sets out requirements for quality management systems.

## **Clinical indicators**

Clinical indicators are quantitative measurements related to one or more dimensions of performance; they can be used to monitor, evaluate and improve the quality of patient care. The identification of universally acceptable clinical indicators for quality assurance in day surgery is being undertaken by the International Association for Ambulatory Surgery (IAAS). It is, however, important that clinical indicators are both valid and reliable, and that the system in which they are embedded does not give rise to perverse incentives that allow targets to be achieved formally, while care does not improve.

## **Cycle for improving performance**

The key for improving performance (for example, outcomes, satisfaction, quality and value) is in systematically designing, measuring, assessing and improving the organization's functions and processes in order to achieve a maximum of excellence in the health care provided.

## **Clinical pathways**

The need for consistency in clinical practice to gain in efficiency, effectiveness and efficacy led to the development of evidence-based integrated care pathways, also known as "clinical pathways", "care maps" or "multidisciplinary care pathways". These terms imply that documents are designed through consensus between multidisciplinary groups of professionals, are supported by evidence and provide clear recommendations for action.

## **Integration of hospitals and social/community support**

Community health services are an integral part of the context within which day surgery must operate because pre- and postoperative care is transferred to the home environment. Policy makers, general practitioners, community nurses, family caregivers and social services must be involved, directly and indirectly.



In countries with well-developed primary care systems, general practitioners play a key role in the day-surgery process. The general practitioner is the first step in providing access to day surgery for the patient. He or she has a critical role in determining whether the patient's condition is appropriate for day surgery, in helping patients through the decision-making process and in referring them to specialized care. General practitioners can provide community-based pre-admission (blood test, chest X-ray, electrocardiograms, etc), share information with both the patient and caregiver about the operation and postoperative care, and plan appropriate postoperative procedures in collaboration with community nursing services or the immediate family, thus ensuring continuity of care.

### **Patient information**

Compared to those undergoing traditional surgery, patients undergoing day surgery have an increased responsibility for their preoperative preparation and their recovery from surgery at home. The time spent preparing a patient for day surgery in a surgical facility is less than that for inpatient surgery. Therefore, provision of appropriate information about all phases of the surgical process is important, not only to ensure the success of the procedure, but also for patient safety (Castoro et al. 2006). An effective policy for information provision aims to:

- prepare a patient psychologically for surgery;
- educate the patient about the particular procedure and pre- and postoperative care;
- minimize risks in the postoperative period;
- improve patient satisfaction with the overall day-surgery experience and aid anxiety reduction;
- obtain informed consent for surgery.

An informed patient is able to better adjust to surgery and is less likely to cause cancellations or delays or return for emergency room visits or hospital re-admission.

Information about medical and organizational aspects should be provided to the patient in a structured manner. The use of both oral and written information is essential; one informs, while the other reinforces and vice versa. Other media forms, such as video clips or the internet, may also be considered. The information must be consistent across the entire process of care, from the referring physician to the staff of the facility and those involved

in aftercare. It should empower patients to take charge of their own care as far as possible. Finally, the role of each staff member in information provision should be identified and the timing of information provision coordinated since patients will come in contact with and receive information, at different stages, from administrative, nursing and surgical staff.

## **MAKING IT HAPPEN**

### **Overcoming barriers – fear and resistance to change**

Day surgery is an innovative approach to surgical health care and, as in all innovative situations, there may be initial resistance to change (Jarrett and Staniszewski 2006). In France, the publication of a major study by the National Insurance Company (CNAM) on the experience with day surgery in that country was important in changing the prevailing opinion, showing as it did that the advantages obtained elsewhere were equally relevant in France (Toftgaard and Parmentier 2006). There may also be legal and regulatory barriers to be overcome. For example, until the end of the 1990s, day surgery was prohibited in public hospitals in Germany.

The barriers to expansion of day surgery include the following.

- *Regulatory* – national regulations and legislation may preclude a shift to day surgery.
- *Economic* – reimbursement may be more advantageous for hospitals or surgeons if patients are hospitalized for 24 hours or more, or patients may be obliged to pay a percentage of the total fee for day surgery, as opposed to full coverage by health plans for regular hospitalization.
- *Educational* – lack of educational programmes for undergraduate and postgraduate medical students may reduce awareness of the benefits of day surgery.
- *Facility design* – available health facilities may not be configured in ways that facilitate the development of day surgery, in terms of both their internal configuration (ensuring ease of patient flows) and their external configuration (ease of access by patients).
- *Local, home and community support* – lack of adequate community services may preclude some patients from obtaining day surgery.
- *Information* – prospective patients and their referring physicians may not be fully aware of the opportunity to have day surgery.
- *Organizational* – weak multidisciplinary teamwork.



Even where there is considerable support for the expansion of day surgery, growth can be slow. England offers an example. The increase in day surgery rates is somewhat slower than that set out in the national targets. The English NHS Plan (2000) set a target of 75% of elective procedures being carried out as day cases. Overall rates for a combined collection of 25 procedures only increased from 55.7% to 67.2% between 1996–1997 and 2003–2004. A review published by the English Healthcare Commission (2005) identified a failure to utilize available resources to their full potential, with almost 50% of theatre time designated for day cases not being used. Areas needing improvement cited by the report include avoidance of cancellations, more suitable pre-assessment of patients and better process management.

The Welsh Audit Office reached similar conclusions, noting that rates are improving yet remain low (Wales Audit Office 2006). Improvements were mostly due to improved day-case rates for cataracts. The report cites the lack of a clear strategy for change, with ambiguity about the status of existing policies, a lack of focus on delivering improvements in day-surgery rates by key players, and inconsistent application of good practice in key processes. The report recommends a focus on five elements of change based on the European Foundation for Quality Management Excellence (2003) model: strategy, processes, leadership, capacity and people.

It is essential to harmonize the financial incentives with the process of change especially where reimbursement for procedures undertaken on a day-case basis is lower than for inpatient treatment. Slovenia offers an example of what can be achieved. The implementation of a diagnosis-related group (DRG)-based reimbursement system, in which the price paid for each patient undergoing a particular procedure was fixed, was associated with an increase of 70% in procedures undertaken as day cases during a three-year period (Ceglar 2006, personal communication). This is a model being used by a number of other authorities, such as the Veneto Region of Italy, which has recently put in place regulations that will limit reimbursement for procedures identified as appropriate for day surgery.

### **Communication with the community**

The available experience indicates that day surgery is well accepted by both the general public and primary care physicians, once they understand how it works and what it offers. Good communication with relevant groups is the key to success. General practitioners require up-to-date information about

the services available for their patients and how they can ensure smooth access to these services; this can be facilitated by involvement of those providing day surgery in continuing professional development programmes.

Other mechanisms include the production of information materials such as brochures, booklets and web sites for the general public.

### **Education – training issues**

Day surgery is expected to continue to grow in many countries; existing services are expanding, and new services are beginning to develop in eastern Europe and in many low-income countries. This creates a need for enhanced training of undergraduate medical students and residents, linked to continuing professional development for existing staff, from all of the professional backgrounds involved in the provision of day surgery.

Undergraduate teaching in a day-surgery facility is, however, sometimes difficult and costly. There is a need to ensure consistency in the learning experience, demanding new educational approaches that take account of the fact that, unlike a traditional surgical facility, patients are only on site for a short time (Seabrook et al. 1998).

Day surgery makes demands on the different skills of each professional involved, and each professional needs to keep abreast of the advances being made in surgery, anaesthesia and nursing. Appropriate continuing professional development programmes are essential to maintaining safe day surgery. Continuing medical education and professional societies are well established in many countries and provide opportunities for the experienced day-surgery professional to remain up to date. Events should be multidisciplinary to facilitate communication within teams.

### **Aligning incentives**

In spite of its many benefits, day surgery cannot and will not develop in isolation. A change in behaviour requires encouragement. Therefore, incentives are needed on all levels to overcome the barriers to its growth and development. Incentives may be aimed at hospitals, managers, professionals or patients. Examples include:

- *financial incentives* – a change in reimbursement schedules can promote day surgery;



- *educational* – continuing medical education and continuing professional developments provide opportunities for staff members, helping to create champions for change;
- *quality incentives* – improvements in safety and quality will bring preferential referrals and thus more income and greater financial rewards.

## **NEW FRONTIERS: THE FUTURE OF SURGICAL SERVICES**

The considerable diversity in the utilization of day surgery, both within and among countries, indicates that day surgery is likely to expand further, even assuming no change in technology. Yet science is changing. Further developments in day-surgery processes, patient selection, pre- and postoperative procedures and pain relief as well as progress in minimally invasive clinical and anaesthetic techniques are likely to reduce surgery time and increase the number and type of procedures suitable for day surgery.

### **More complex procedures and mini-invasive surgery**

Advances in mini-invasive techniques and improvements in anaesthesia and analgesia are making many types of surgeries more appropriate for day surgery. Reducing the invasiveness of some procedures can make recovery more rapid and help lessen postoperative pain.

Key factors for success are careful selection of patients, taking into account medical, social and surgical criteria, a standardized anaesthetic protocol, an experienced surgeon, a motivated patient with a positive attitude and a well-trained day-care team. However, many factors must be considered to minimize any postoperative complications. Adequate pain management is important to facilitate rehabilitation and return to normal function by reducing complications after discharge home. It is important to recognize that anxiety and uncertainty at the time of discharge may prevent patients from obtaining adequate information on expected pain levels and their management (Dewar et al. 2004).

### **Office-based surgery – advantages and risks**

Office-based surgery is carried out in self-contained surgical annexes in medical practitioners' premises. From the patient's viewpoint, office units are smaller and thus can be more personal and closer to where they live, compared with dedicated facilities in hospitals.

Problems in office-based surgery can arise where there is a weak system of regulation or accreditation. Where this occurs, there may be pressure to reduce costs, leading to poor facilities, inadequate patient monitoring, absence of a specialist anaesthetist, and surgeons undertaking procedures for which they are not fully trained. In the United States, where office-based practice is not subject to the same degree of regulation as hospital practice, there was a ten-fold greater risk of an adverse event or death in an office unit, compared to a day-surgery centre in 2004 (Vila 2004).

## **CONCLUSION**

Day surgery will be an integral component of health care in the future. The treatment of appropriate non-emergency cases by day surgery can be advantageous for health care providers and the communities they serve – more patients can be treated more effectively and more efficiently.

This policy brief is intended to help those who wish to expand the provision of day surgery. It identifies the major prerequisites for a successful expansion of day surgery and will be of particular value to health professionals and policy makers where day surgery is still in its infancy. It highlights considerable variation in the rates of day surgery across Europe. However, it is unable to provide a comprehensive explanation for why this variation exists. The uptake of day surgery provides a measure of the ability of health systems to respond to changing circumstances. There is now a need to understand the factors that have promoted or inhibited the expansion of day surgery across Europe and thus to learn more about how Europe's health systems will be able to respond to the many other changes they will face in the next few decades.

Please see overleaf for a list of 10 key recommendations to make day surgery happen.



## **10 KEY RECOMMENDATIONS IN MAKING DAY SURGERY HAPPEN**

- 1. Consider day surgery, rather than inpatient surgery, the norm for all elective procedures**
- 2. Separate flows of day-surgery patients from inpatients**
- 3. Design day-surgery facilities according to local needs, structurally separate from inpatient facilities whenever possible**
- 4. Provide day-surgery units with independent management structures and dedicated nursing staff**
- 5. Take advantage of motivated surgeons and anaesthetists to lead the change**
- 6. Achieve economies by ensuring that expansion of day-surgery facilities is accompanied by reductions in inpatient capacity**
- 7. Invest in educational programmes for hospital and community staff**
- 8. Remove regulatory and economic barriers**
- 9. Align incentives**
- 10. Monitor and provide feedback on results (including patients' views)**

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This policy brief is intended for policy-makers and health care professionals exploring how day surgery can respond both to the policy needs of hospital administrators and to the surgical care needs of specific patients.