Policy-Brief

Day Surgery
as the new paradigm of surgery

best practices and recommendations
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Day surgery is constantly taking a bigger place in the health system. It is so true that the question ‘Is this patient suitable for day surgery’ can easily be replaced by ‘Is there any justification for admitting this case as an inpatient?’ as stated several times in this policy brief.

The EU Health programme has given its support to Day Surgery projects and there is a strong rationale for the European Commission to do so. Indeed Day Surgery’s development is a priority for most European countries because it represents an important opportunity for health systems’ reorganisation. There is strong evidence suggesting that Day Surgery is the best option for 80% of elective surgical operations providing a safe, high quality and cost-effective approach. There is a great potential for further expansion of Day Surgery in Europe. To support this expansion, a few steps are really important.

The first one is to produce and collect good and relevant data on the topic. Of course producing data is not enough. It is important to transform data into information and mostly to use this information to empower the community to improve health. And this is exactly what it is about: knowledge production coming from good and valid data, use of sound evidence and finally decision making. In that regard, it has to be stressed that policy decision is always a difficult process. It should take into account high quality information based on relevant topic areas and based on professionals with skills in data analysis and policy evaluation. Also it is important to create political incentives for using evidence based analysis and advice in governmental decision making processes. The political decision should also take into account the diverse basis of knowledge, the political strategies, the tactics, the agenda of political leaders in setting the ‘big picture’ of priorities and approaches. Finally the process of decision making has to consider the professional knowledge of service delivery practitioners and program coordinators which is vital for advising on feasibility.

The second step is to list the main relevant questions whose answers will lead the development plans. These questions are for example:
• Why do the differences exist in the use of Day Surgery among age groups, among diagnosis groups, among regions, among countries?
• What are the determinants of such facts and what could be done to correct these differences?
• What is the quality in the different day Surgery settings and how to increase it when necessary?
• What could be added in the indications list for Day Surgery?
• What are the expected innovations in the 5 – 10 coming years?
• What is the economic efficiency of Day Surgery?

The answer to these questions should be based on evidence based recommendations and the definition of best practices in Day Surgery. This is the third step of expansion activities and it is exactly the objective of this policy brief: to propose best practices and recommendations in relation with the expansion of Day Surgery across Europe and with the way to organise, monitor and optimise the quality of Day Surgery. There is no doubt the reader will find here a strong framework to develop Day Surgery activities in its own environment. Finally it is a very important outcome of the Day Safe projects because this practical tool will certainly ease the dissemination of the project results and doing so will fulfill one of the important objectives of all EC Health programme funded actions.

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1. **Introduction**

Day surgery is an innovative approach to the delivery of surgical care that implies hospitalization of carefully selected patients on the day of surgery and their subsequently discharge within hours of the surgical procedure. The international definition of a surgical day case was adopted by the IAAS Executive Committee in 2003 and states that,

‘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’.

Day surgery is therefore similar to ‘no overnight stay’, ‘ambulatory surgery’, ‘same-day surgery’, and ‘day-only surgery’. The concept of ‘day’ here is to be interpreted as working day and is similar to ‘no overnight stay’. Day surgery is used in contrast to the term ‘inpatient’, which is management in a public, non-profit or private hospital with at least one night of hospital admission. Beyond this strict definition, day surgery is an organizational concept: ‘Organization is central to the

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1. This policy brief represents an output of the DaySafe project. Its general objective is to improve patient safety and quality of hospital care through the promotion of DS best practices and standards. The project aims to improve safety of hospital care for the about thirty five millions European citizens undergoing surgical treatment every year in EU through easier access to safer and higher quality surgical services of shorter duration without night stay. The policy brief is mainly based on Work Package 5 of DaySafe, which consisted of a study of a convenience sample of 23 day surgery units considered benchmarks, in 9 European countries. Such sample was not designed to ensure representativeness, either considering practices at European (i.e., key countries missing), nor at country level (i.e., sample size with regards the number of existing day surgery units). Research tools included in-depth face-to-face interviews based on a semi-structured questionnaire presented to key informants, i.e. managers and professionals carrying out various functions. The analysis looked at facilities layout, planning documents, patient clinical pathways, safety procedures, change strategies, and leadership. Interviews have been completed and enriched with documents designed for patients (e.g., leaflets, brochures, etc.) and professionals (e.g., checklists, scores, etc.) and layouts, photos and maps describing the DS unit and its context.

2. The founding father of modern day surgery was the Scottish surgeon James Nicoll (1864-1921). He started treating patients in a one-day surgical setup at the beginning of the 20th century at the Sick Children’s Hospital and Dispensary in Glasgow, Scotland, and later published a scientific report based on results from his work (Nicoll, 1909).
concept and the patient is central to the organizational structure’. Day surgery is therefore clearly different from other types of surgery, such as:

- ‘extended recovery’, also known as ‘23 hours’, ‘overnight stay’ or ‘single night’;
- ‘short stay’, i.e. surgery involving an admission of between 24 and 72 hours.

Although the origins of day surgery are one century old, due to prevalent professional inertia and opposition not much progress was made in this area up until the 1960’s when so-called freestanding units appeared in the USA (Jarrett and Staniszewski, 2006). The concept of day surgery then slowly started spreading to Europe and especially during the last two decades there has been an impressive growth in the scope of this way of organizing services, chiefly due to the development of short-acting anaesthetics and new surgical procedures. Thus, physicians, anaesthetists, and surgeons have made great progress in terms of risk management, and, moreover, they have developed better prevention and treatment of post-operative pain, bleeding, nausea and urinary problems resulting in a large reduction in the time of recovery and a faster restoration of the autonomy of patients.

Day surgery is now a high quality, safe, and cost-efficient approach to surgical healthcare. It is thus becoming the norm for nearly all elective surgery in many countries with the USA and Canada as the most prominent examples where nearly 90% of all elective procedures are performed as day surgery (Toftgaard and Parmentier, 2006), followed by the Scandinavian countries which perform approximately 75% of all elective procedures as day surgery (Toftgaard, 2011).

Besides routine and common surgical procedures such as surgery for cataracts, hernias, varicose veins, and hand conditions, more complex interventions such as surgery on the shoulder, thyroid, gallbladder, for gastro-oesophageal reflux and obesity are today being performed as day cases in these countries.

However, when looking across Europe there is great variation in the use of day surgery with especially the East European countries lagging behind. There is also a gradient from north to south Europe. This is because several Anglo-saxon coun-

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3 The two IOM reports are:


tries have formulated comprehensive and solid day surgery policies, taking into account the full range of instruments necessary to bring about strategic change, i.e. financing, payment, organization, regulation and behaviour. In some countries, day surgery has yet to enter the health sector agendas, and what is largely implemented are local initiatives promoted by local surgeons and/or managers. Their focus is typically at the clinical and unit level where they try to overcome substantial barriers as they move in a policy void. In some case, even if taken into account, the five policy tools do not mutually strengthen each other through a coherent approach. Other challenges with day surgery can be attributed to the lack of careful attention to policy implementation effort (Bardach, 1977). Finally, a challenge concerning day surgery is that services are not constantly enhanced, because not all organizations are aware about the need to focus on continuous progress and are not equipped with a culture and tools allowing them to learn systematically from what they do.

Using Bohmer’s words, ‘Since the Institute Of Medicine’s reports\(^3\), advancing quality will mean more than business as usual’ (Bloom et al., 2009)

A problems lies in the introduction of day surgery to healthcare systems in which overnight stay has been the rule, and always has constituted a crucial part of the care process often being prioritized over medical progress and therapeutic efficacy. In order to fully embrace day surgery as the common medical approach, a cultural revolution, a paradigm shift, must therefore occur in healthcare systems by replacing the question, ‘is this patient suitable for day surgery?’ with ‘is there any justification for admitting this case as an inpatient?’.

The rationale for day surgery goes well beyond a cost reducing approach to healthcare. This policy brief will review the rationale for day surgery, looking also to the challenges faced by those organizations which decide to adopt this approach. Recommendations on how to design, organize, monitor and optimize day surgery services will be suggested with the aim to improve their quality and safety. Based on the results of the DAYSAFE Project WP5 2013 (Daysafe 2013a; Daysafe 2013b) clinical and patient management best practices and standards of day surgery will be described. Finally, the policy brief will contain a status report on day surgery from a Danish perspective wherein achievements as well as future challenges will be addressed.
2. The rationale for day surgery

Presently DS represents a high quality and cost-effective approach, and will do even more so in the future as the prevalence of surgical needs of ageing societies, in particular hernias, varicose veins and cataracts, will continually increase. However, the DS model is not merely a new way of delivering surgical procedures but a system of care integrating different health micro-systems which include: patients and their families; general practitioners who select, inform and empower patients; DS surgical teams, ideally placed in a self-contained unit; community nurses, who assist patients at home; and hospital-based surgical teams serving as back-up in case of serious complications. DS places patients at centre stage, both designing care processes around their needs and expectations, and promoting new roles for patients and citizens, i.e. more active tasks in managing pre- and post-procedure phases. DS represents not only an appropriate response to the current segmentation of care delivery but, more generally and importantly, to demographic, epidemiological, social and economic pressures.

DS constitutes a missed opportunity for the improvement of surgical services, especially within the public sector component of many health systems, typifying the huge know-do gap between clinical and organizational evidence and service provision. In the future, European health systems will increasingly face an ethical and political dilemma regarding approaches that assure sustainable and equitable access to effective and safe procedures. DS adoption is part of the answer to such complexity and this policy brief intends to elucidate the main issues and offer realistic solutions. Optimising the delivery of health care to European Citizens through the development of DS Systems and Services represents a considerable technical and managerial challenge, which requires the contribution of multiple disciplines, professionals and policy makers across different European countries and beyond.

DS is an activity for patients who wish for treatment of a very high standard in terms of being safe, efficient and causing a minimal disruption to their lives. In comparison with inpatient surgery a whole range of advantages for day surgery in relation to medical, social and economic dimensions can be identified. These advantages will be reviewed in the following pages.
2.1 Medical outcomes

Investigations of medical outcomes show that the safety of day surgery is similar if not better than procedures performed on an inpatient basis. DS leads to improved safety, in particular a much lower incidence of hospital infections, especially of the most hazardous variety such as methicillin resistant Staphylococcus aureus. Reduced incidence of hospital infection is due to the separation of sicker inpatients from one day patients and represents an enormous benefit in view of an increasingly widespread and severe antibiotic resistance. A lower bed occupancy within hospital wards allows the isolation of inpatients affected by nosocomial infections from those not infected thus eliminating a key risk factor for such life threatening conditions. Moreover, the quality of day surgery procedures is equivalent to the quality of inpatient surgical procedures. The mortality rate is extremely low, and post-operative complications are generally minor, although rather frequent as we will detail further on.

2.2 Social outcomes

Day surgery poses the least possible disruptions to the everyday life of the patient, because the patient returns home the same day as the surgical procedure has been performed. Due to the fact that fewer operations are suspended in day surgery, than is the case with inpatient surgery, the patients will thereby be spared the frustrating procedure postponements or cancellation due to emergencies. Other advantages of day surgery include the shortening in the separation time from family members, diminished anxiety, and the possibility of recovery in a familiar setting. DS is especially important for minors who are only separated from their parents for a few hours or less, and for the elderly. It is known that nearly a third of elderly patients experiences new or worsened mental confusion from staying in anonymous hospital settings and more so in the course of post-surgical recovery. Mental distress can develop into delirium which increases the risk of falls or even death. Elderly patients can take days or weeks to recuperate their mental function and may never return to their previous cognitive and physical abilities.

Moreover, an essential element of day surgery is the focus on patient empowerment in terms of involving the patient in the process by providing in depth information about the surgical procedure and the post-operative situation. Thereby
the patient can act in a more informed manner. More generally, a high degree of patients satisfaction with DS derives from the fact that such services are designed around the needs of the users, unlike hospital wards which primarily function around providers. Finally, shorter hospital stays allow the possibility of an increased throughput of patients, which thereby reduces waiting lists. This represents one of the greatest advantages for patients. Greater throughput reduces surgical waiting lists, improving also access and possibly equity. In summary, the adoption and consistent use of standardised pathways by DS result in a fast, safe and as untroubled as possible patient’s experience through the health services.

2.3 Economic advantages

Very convincing evidence exists demonstrating that DS enhances the efficient use of health resources, i.e. staff, technology and operating rooms (NHS Modernization Agency, 2004). Separating simple scheduled procedures from emergencies and complex cases prevents the disruption of surgical lists thereby increasing throughput and improving productivity of staff and equipment. In the vast majority of surgical procedures day surgery is a less costly approach than inpatient surgery due to shorter hospital stays and staff reductions, as overnight staffing is not necessary. In exclusively day surgery units, a smaller number of operations are being cancelled due to the fact that emergency cases are not being performed at the unit and thus are not displacing non-emergency cases from the operating list. This also enables fixed scheduling and thereby a more efficient utilization of facilities. Thus DS brings about major improvements in technical efficiency of surgical services, i.e. new and less costly ways of providing surgical procedures usually delivered to hospitalised patients.

2.4 Managerial advantages

Day surgery allows modes of employment preferred by nurses, i.e. part-time positions or jobs not requiring night shifts. Such arrangements facilitate retention of nurses, a key resource currently in short supply, characterized by increasing mean age and frequent juggling of roles as mothers and professionals. As a result DS also represents a significant advancement from a gender perspective. From the clinical science perspective, the rationale behind DS is that different
conditions present divergent complexity and uncertainty. At one extreme some disorders are thoroughly understood in terms of physiopathology and clinical solutions, e.g. inguinal hernia, while at the opposite end of the spectrum, other conditions are highly complex and the diagnostic and therapeutic processes associated with them are difficult and uncertain, e.g. major traumas. Organizational theory suggests that these two groups of conditions should be met by different surgical service designs. The former group calls for sequential, standardized processes of care and systems capable of delivering such care reliably, effectively and safely. DS employs a single operating system focused on common surgical conditions, whose diagnostic and procedural processes are highly structured and thus standardizable. The second group of conditions requires iterative, exploratory processes of testing and retesting, progressively reducing uncertainty and managing complexity. The stratification of diverse groups of patients and the separation of different processes of care enables the delivery of reliable and efficient surgical services.

Day surgery also entails more complexity in consequence of the need for pre- and post-operative services outside the hospital. This is an often overlooked aspect of the DS strategy and implies integration, coordination, and cooperation between the DS unit and the surrounding micro-systems.
3. **Day surgery – clinical best practices**

In the following section clinical best practices will be reviewed, largely based on the results from the Work Package of the DAYSAFE project, carried out by two French national institutions, i.e. Haute Autorité de Santé (HAS) and Agence Nationale d’appui à la performance des établissements de santé et médico-sociaux (ANAP), with the contribution of several associated (ADR, AOP, ARSS, CAHIAQ, CHP, EUROP MED, GZA, MHH, NIHDl and SCJUT) and collaborating partners (IAAS, BADS, BAO, DSDK, AFCA, APCA).

3.1 **The scope of day surgery**

Today, eight out of every ten surgical operations should in fact be performed as day cases. The question therefore arises: is overnight accommodation necessary or appropriate? Consideration must be given not only to the appropriateness of care, but also to the appropriateness of an overnight stay; this should be based on a risk/benefit assessment of each patient on a case-to-case basis.
3.1.1 Which patients are suitable for day surgery?

According to guidelines, day surgery can now be considered as the first resort. Instead of asking whether the patient is suitable for day surgery, a healthcare professional should ask whether the patient has special demands that require inpatient admission. In order to reduce intra-operative and post-operative complications and adverse events, as well as to avoid delays and cancellations, it is crucial to identify medical, surgical, psychosocial and environmental problems in the pre-operative assessment of the patient. Therefore, careful selection of patients is a key to success. Patients who are eligible for day surgery and those who require inpatient admission should be distinguished on a case-by-case basis. The final decision as to whether a patient is eligible for day surgery is the responsibility of the surgeon and/or anaesthesiologist involved. Additionally, eligibility criteria can vary, depending on the surgeon, the patient and the facility and can be set out in a formalized protocol. Pre-operative assessment is based on the following three categories:

- **Medical and surgical selection criteria**, including Physical status score, or ASA, age, comorbidities, etc.;
- **Psychological selection criteria**, including ability to understand and consent to the procedure, legal aspects for children, psychiatric disorders or dementia, etc.;
- **Environmental selection criteria**, including being accompanied for driving back home, surveillance, home care, and specific situations related to poverty and social disintegration, homeless, migrants, etc.

Length of procedure, post-operative monitoring period and the time it takes to achieve early rehabilitation should also be taken into account, keeping in mind how long the centre is open each day. In summary, the decision must be based on a cost/benefit assessment of individual patients, as well as the individual procedure, and individual organization in terms of medical, surgical, psychosocial, and environmental criteria.
3.1.1.1 Medical and surgical criteria

Selection of patients should be based on their overall physiological status and not be arbitrarily limited by age, weight or anaesthetic risk. Thus obesity and age are not per se exclusion criteria. A fundamental question to consider is whether the management or outcome would be improved by pre- or post-operative hospitalization. Most importantly, it must be possible to carry out the procedure safely. Finally, predictions should be made as to post-operative progress.

3.1.1.2 Psychosocial and environmental selection criteria

Patients must consent to surgery as well as to day case management. If a patient has a psychiatric disorder that prevents cooperation with the medical team the patient should not be permitted to undergo day surgery. After the surgical procedure the patients are obliged to be accompanied to their home by a responsible and physically able adult, who can take care of them at least for the first night after discharge, even if these obligations may be deselected in selected cases. The caregiver must understand the post-operative care procedures and accept the responsibility for monitoring the patient. Moreover, patients are advised not to drive for at least 24 hours after their surgical procedure. It is also recommended, that the procedure be done at a facility that lies less than one hour’s drive from the patients’ home. However, this is a limit that is debatable and not possible to overcome in many countries with long distances and dispersed population. Finally, the equipment available and telephone access in the home of the patient are also important factors to consider.

3.2 Which procedures can be included as day surgery?

Throughout the last two decades there has been an enormous growth in the number of ambulatory procedures, chiefly due to developments in anaesthesia as short acting anaesthetics with minimal side effects, improvements in regional anaesthesia, the laryngeal mask, new halogenated anaesthetic gases, and new approaches in peri-operative pain management. Moreover, improvements in operative techniques such as endoscopic surgery and other types of minimal access surgery have also contributed to the great expansion of ambulatory procedures. In order to further expand the development of day surgery, some ‘baskets’ of procedures that can frequently be performed as day cases, have been devel-
oped by different Surgical Associations and Healthcare Agencies. These ‘baskets’ of procedures should not be considered as ultimate lists, because the scientific, technological, and managerial basis of practice continuously evolve.

3.3 Anaesthesia to be used in day surgery

In relation to the use of anaesthesia, all types of anaesthetic can be used. However, it is recommended to use agents that act quickly and have a short-termed as well as reduced adverse effect, depending on the procedure and the requirements of the patient. If postoperative complications related to anaesthesia arise immediately after the procedure and/or the discharge of the patient, anaesthesia and resuscitation specialists must be promptly accessible. The decision of which anaesthesia to use, is the responsibility of the anaesthetist, based on a holistic assessment of the procedure, the patient, and the patient’s experience, as well as the features of the day surgery unit. During recovery from anaesthesia guidelines stress that information should not be given to the patient.
3.4 Guidelines for paediatric management in day surgery

Guidelines stress that children are well-suited candidates for day surgery. In fact, the code of practice states, that for children, day surgery should be chosen over inpatient admission if possible. For very young children and infants who are born prematurely, no consensus exists in the literature on whether this should be an exclusion criteria, and the risk of sudden death and post-operative apnoea should be considered. Children should be treated apart from adults on separate lists, or at least as a separated group on lists. Also, operations should be performed by surgeons and anaesthetists that have experience with care of children. Children should moreover be nursed in paediatric areas with play facilities available and registered children’s nurses should be present.

The information given to parents and to children patients too should be appropriate, personalized and understandable. Especially, information about the risk of the procedure being postponed, depending on the child’s clinical condition, should be provided and moreover parents should be informed that a person, in addition to the driver, is required to accompany children under the age of 10 years to their home. Studies reveal that parents generally are very satisfied with the day surgery procedure, but approximately 45% report high levels of anxiety.

Specific attention should be given to children and their anxious parents. Children over 5-6 year old may have specific questions about risks of death, inappropriate wake-up or being totally naked during the procedure, etc. and the team should tackle them before the day of surgery to minimize anxiety. Parents should also be managed and the team should be aware about typical fears with no medical significance like fasting, size of scars, and hair shaving. This stresses the need for accurate and satisfactory information given to the parents, as a mean of keeping in check this apprehension.

3.4.1 Safety for children

Studies show that life-threatening complications and adverse events are very rare for children. However, post-operative complications are rather common, with pain being the most frequent.
3.5 Guidelines for elderly management in day surgery

Guidelines specify that advanced age is not in itself an exclusion criterion for day surgery. In fact, due to indications that day surgery reduces the incidence of cognitive dysfunction in comparison with inpatient admission, it is recommended that elderly patients are treated as day cases if the risk-benefit ratio is favourable, if such management is possible and if the appropriate organization is in place, particularly constant staff availability and continuity of care.

The French Society of Anaesthesia and Intensive Care (SFAR) states that there are no data, which suggest that one anaesthetic technique, or agent should be favoured over any other. It nevertheless recommends avoiding benzodiazepines in the pre-operative period. These drugs increase behavioural disorders in the post-operative period.

3.5.1 Is day surgery safe for elderly?

A large study by Fleisher et al. examining 564.267 day surgery procedures in patients aged over 65 years illustrated that the mortality rates for outpatient surgery were 2.5 and 5.0 per 100,000 procedures on the day of the procedure and on day 7 respectively (Fleisher et al., 2004). The authors of this study concluded that advanced age, history of hospitalization in the previous six months, and invasiveness of surgery increased the risk of death. Other studies found that elderly patients experienced a higher incidence of all intra-operative events and cardiovascular intra-operative events. Elderly patients have an increased risk of haemodynamic instability during the surgical procedure but otherwise can safely undergo day surgery. This population may thus require more careful intra-operative cardiovascular management. On the other hand they had a lower incidence of any post-operative events: pain, nausea and vomiting, and dizziness.

3.6 How to handle post-operative complications and adverse events

One of the challenges for upholding high quality day surgery is possible post-operative complications. The most frequent post-operative problems are minor,
most commonly post-operative pain, nausea and vomiting, sickness, tiredness, headache and a sore throat. In the following section the occurrence, impact, and predictive factors of each of these post-operative problems will be reviewed. Furthermore guidelines for management of the symptoms will be outlined. Complications during surgery can prolong the length of stay, delay discharge, reduce the patient satisfaction, and increase the risk of unplanned admission. The day surgery unit staff must therefore be aware of these problems in order to limit them as much as possible.

The subject of post-operative complications is of utmost importance as some authors predict an increase in post-operative complications due to a future broadening of selection criteria, an increase in the volume of procedures performed, and an enhanced technical complexity of the procedures performed.
3.6.1  Post-operative pain

In the post-operative phase, pain is the most commonly reported symptom of day surgery and moreover a prevalent source of patient dissatisfaction. Based on reviews of thirteen observational studies the occurrence of moderate to severe post-operative pain was approximately 25-40%, whereas 5-20% experienced severe pain. When looking at the post-operative pain from a time perspective, 95%, 83% and 64% of the patients felt pain after 24 hours, 48 hours and 7 days, respectively.

3.6.1.1 Impact of post-operative pain

In relation to the impact of post-operative pain, studies have found that pain most commonly implies an increasing overnight admission rate as well as increasing time spent in the recovery room. Moreover pain has been found to be a factor in patient dissatisfaction and a reduction in the patient’s level of activity.

3.6.1.2 Predictive factors of post-operative pain

Age, sex, level of education, pre-operative pain, anaesthesia, and the level of anticipation of pain, have all been found to be predictive factors associated with post-operative pain (Gramke et al, 2009).

3.6.1.3 Current guidelines for post-operative pain management

The following actions should be considered in order to lessen the problem with post-operative pain:

- An assessment should be performed at a specialist pre-operative consultation in order to identify the factors predicting post-operative pain. Also, analgesics for use post-operatively at home should be prescribed during this pre-operative consultation.
- Procedures for administering oral analgesics should be explained to the patient early in the process, and a prescription for analgesics can be given, along with the dosing schedule and the conditions, under which stronger analgesics can be used if necessary.
• Individual patient requirements should always be considered, keeping in mind the physiopathological variation among individuals.

The IAAS stresses that the development of clinical guidelines for pain management should be procedure specific. Therefore, it is recommended to write and test such guidelines in order to offer the most effective pain relief for a specific procedure.

3.6.2 Post-operative nausea and vomiting

Nausea and vomiting are also rather frequent post-operative symptoms occurring in approximately 17% of all patients. The symptoms mainly appear in the immediate post-operative phase, however studies show that some patients also have these symptoms until late recovery at home.

3.6.2.1 Impact of post-operative nausea and vomiting

Post-operative nausea and vomiting is one of the most unpleasant experiences associated with anaesthesia. Even though it is usually of minor degree, vomiting can also be associated with more serious outcomes including increased risk of aspiration, suture dehiscence, oesophageal rupture, subcutaneous emphysema, and bilateral pneumothoraces. Post-operative nausea and vomiting have been found to cause increased length of stay in the PACU and in the day surgery unit, unplanned overnight hospital admission, and to a lesser extent, readmission, and dissatisfaction.

3.6.2.2 Predictive factors of post-operative nausea and vomiting

In a literature review by Gan et al. following factors were found to be predictive of post-operative nausea and vomiting: female sex, general anaesthesia, and surgical procedure (Gan et al., 2007).
3.6.2.3 Current guidelines for management of post-operative nausea and vomiting

Current guidelines stress no specific strategy for prevention of PONV in a day surgery setting. The management of PONV depends on the evaluated risk. The measurement of this risk is based on an algorithm that includes risk factors, the specific procedure, and the context of the facility. For the management of PONV multimodal protocols should be developed, depending on the evaluated risk.

Guidelines identify some general peri-operative measures that should be taken, mainly based on PONV prophylaxis:

- Prevention of dehydration related to pre-operative fasting,
- Use of anaesthesia techniques that cause the least problems with vomiting, particularly loco-regional anaesthesia, and effective management of post-operative pain using a multimodal approach which enables a reduction in the use of morphine analgesia
- Multimodal antiemetic prophylactic strategy for day surgery patients who are identified as being at risk of post-operative nausea and vomiting,
- Determination of rescue treatment for patients presenting PONV despite prophylaxis

With regard to the discharge phase, current guidelines stress that the treatment of PONV should be based on the prescription of antiemetics that are licensed for use in prophylaxis, and that other classes and pharmaceutical forms be used in case the first treatment fails.

3.6.3 Thromboembolism risk

In the future elderly patients with comorbidity, younger patients with risk factors for venous thromboembolism, and complex procedures can be performed in an ambulatory setting. Therefore, the indication for thromboprophylaxis needs assessment.
Generally, studies show that the risk of thromboembolic complications in day surgery is rather low. Specifically, only 0.0-0.4% of the patients was diagnosed with thromboembolism after surgery. The risk therefore appears to be quite low compared to general surgery, as the current estimated risk of symptomatic thromboembolic events in the three months following surgery is close to 1% (average risk for all procedures (Engbaek et al., 2006; Mattila et al., 2009). However, results should be interpreted with caution. As evidence-based indications for thromboprophylaxis are lacking, the practice is based on opinion.

3.6.3.1 Current guidelines for management of thromboembolism risk

The SFAR guidelines specify that a combination of the individual patient’s risk and the risk associated with surgery should be taken into account. There is no routine prophylaxis of venous thromboembolism. When prescribed, it is recommended that drug treatment lasts a minimum of five days and that it should be adjusted on a case-by-case basis. If the overall risk is low or moderate, mechanical prophylaxis with compression stockings is effective.

3.6.4 Management of bladder function

Certain types of anaesthesia, surgery, and underlying medical conditions may predispose patients to develop urinary retention after surgery. The reported incidence of urinary retention after day surgery was 0.5% in low-risk patients and 5% in high-risk patients (Pavlin et al., 1999a; Pavlin et al. 1999b) However, there are not enough evidence-based data to draw conclusions on the causes of urinary retention and also there exist no guidelines about strategies to manage the bladder function in day surgery.
4. Patient management best practices

After having reviewed the clinical best practices in day surgery the following sections will shed light on best practices concerning the organization and monitoring of patients in day surgery in order to offer care of a very high quality. Whereas the procedure in day surgery is similar to inpatient admission the organization of the two units is rather different. Thus in day surgery the process of care is centred on the patient and this is illustrated by the clinical pathway being an essential part of day surgery.

4.1 Patient information

In order to perform day surgery care of high quality, patient information throughout the process plays an essential part. In comparison with inpatient admission the patient is given a bigger responsibility in day surgery in terms of managing the pre-operative preparation and recovery from the surgery at home. In facilitating this, it is of utmost importance that the day surgery unit, and other professionals, in particular the primary care physician, provides the patient with relevant and exhaustive information at every stage of management making sure that the patient fully understands the information given.
It is of great importance that the patient, at a very early stage, is provided with adequate information. In the pre-operative phase information should be given about:

- fasting,
- management of medications,
- requirements of various anaesthetic techniques,
- discharge conditions and the need to be accompanied by someone when returning home,
- predictable post-operative symptoms such as pain, nausea, vomiting, drowsiness dizziness headache and weakness,
- how to obtain additional information before and after the procedure
- possible adverse effects of anaesthesia,
- post-operative analgesia methods,
- possible action if unplanned events occur (contact with the day surgery unit etc.).

In connection with the latter point, patients should be reassured that in case of serious post-operative complications they will be admitted overnight. Day surgery units should provide patients with an emergency phone number. Ideally, Day surgery unit number during working hours and during night and weekend, the person in charge of dealing with the phone call should be able to access to the patient file).

When providing the patient with adequate information multiple purposes are achieved:

- The patient is psychologically prepared for surgery, thereby anxiety is diminished,
- Cancellations, delays and readmissions are reduced,
- The risks both during surgery and in the post-operative period are prevented due to patients being well-informed about the particular procedure and pre- and post-operative care,
- Improvement of patient satisfaction with the overall day surgery experience.
As a way of ensuring comprehension on the part of the patients, they should at any point be given the opportunity to ask questions about the procedure and its management. In other words, an important component of a safe environment is fostering an atmosphere in which questions are welcomed. A helpful communication tool for both physicians and patients is Ask Me 3, developed by the Partnership for Clear Health Communication (National Patient Safety Foundation, North Adams, MA). This tool specifies three essential questions to which patients should know the answer after every health care encounter:

1) What is my main problem?
2) What do I need to do?
3) Why is it important for me to do this?

Teach-back is a technique used by caregivers to ensure that the patient has understood the information provided.

Largely, the information to be provided to day surgery patients can be divided into two categories: procedure specific and general information. Whereas the former consists of clinical information related to the surgical procedure and the condition of the patient, the latter is related to the more general practice and procedures of the day surgery unit.

4.2 Patient admission

As is the case for traditional inpatient admission, cancellations and delays can pose a heavy financial burden on day surgery units. In this context, patient scheduling is a key to minimize both cancellation and delays, as well as enabling efficient utilization of operating theatres and reducing waiting times. Furthermore, checking of patients’ records must be done prior to admission in order to make sure that all relevant items are collected.

Moreover, it can be of great advantage to contact the patient in the days prior to the surgical procedure to remind the patient of the date of surgery, thereby preventing non-appearance of the patient. When contacting the patient, information about fasting, the discharge process, etc. can also be repeated in order to make sure that the patient will be in appropriate condition for surgery.
The causes of cancellations and delays should be identified, through clinical assessment protocols. Root causes should be studied and short, sequential experiments should be carried out, using for example the Plan-Do-Study-Act (PDSA) approach suggested by Deming (Deming, 1986).

4.3 How should patient discharge be managed?

4.3.1 Discharge procedures

When being discharged all patients must receive a standard operation summary and a discharge note containing advice about post-operative management and monitoring, the contact details of the hospital that is providing continuity of care, and a number that can be called in case of emergency. It is the responsibility of the surgeon and/or anaesthetist to authorize discharge. Patient discharge, as well as scheduling and cancelling procedures, should be supported by an electronic IT system.

4.3.2 Continuity of care and unplanned inpatient admission management

Continuity of care is necessary, and is defined in the current guidelines. If the facility cannot guarantee continuity of care itself, it is obliged to reach an agreement with another healthcare facility. Moreover, if the day surgery unit is not located on an acute hospital site, the unit must have agreed arrangements to transfer unplanned stay-in patients to inpatient care.

The day after surgery the patient must be contacted partly in order to repeat post-operative advice about how to handle post-operative pain, tolerance of food etc., and partly to check that the patient is not suffering from any adverse event that require readmission. If complications or adverse event do occur and readmission is needed, procedures need to be in place to deal with unplanned admission of day case patients.
4.4  How to ensure quality and safety of day surgery

One of the challenges to day surgery is to offer management that provides a surgical procedure at least as safely and of better quality than under inpatient admission. In order to optimize quality in day surgery units the establishment of clinical pathways and definitions of indicators for analysis and management, can help identify critical areas to be improved.

4.4.1  Clinical pathways

The need for consistency in clinical practice as a way of gaining efficiency, effectiveness and improved quality and safety has led to development of clinical pathways. Based on multidisciplinary research and analysis using data from the literature and from observation of actual practices, clinical pathways enable planning, implementation, measurement and adjustment in the surgical procedures of day surgery. Thus clinical pathways are means to

- standardize and simplify the flow of patients, providers, and resources,
- gain knowledge and control of the management process,
• associate clear guidelines with every action that is carried out,
• plan and organize patient management with consensus from team members,
• coordinate the various people involved in a day surgery unit,
• clarify the information that is given to patients.

Clinical pathways divide day surgery into the following phases:
• **pre-operative assessment.** It takes place weeks or days before the surgery and aims at:
  • assessing the patient’s general medical status and his/her fitness for anaesthesia, i.e. selecting the right patient for the right procedure with the right anaesthesia type and appraisal of the patient’s home situation;
  • informing the patient about the procedure, the requirements of the various surgical and anaesthetic techniques, and their likely post-operative course,
  • scheduling the procedure, i.e., a specific date and time must be given to the patient to prevent frustrating waiting and bottlenecks,
  • confirming the patient status and attendance, through a previous day phone call.

• **day of surgery assessment:** this step takes place the day of surgical procedure and aims at: o checking patient physical status, i.e., patient records, compliance with the preoperative instructions,
  • admitting the patient (i.e., administrative tasks and checks),
  • management of surgical site infections, post-operative pain, nausea and vomiting, urinary retention and prevention of thromboembolism (e.g., post-anaesthesia care unit (PACU), most frequent postoperative symptoms),
  • discharge of the patient (e.g., standard operation summary given to the patient and discharge note signed
  • by a legitimate DSU representative like surgeon and/or anaesthesiologist with emergency procedure and phone numbers),

• **the procedure;**
• **the discharge process;**
• **after discharge,** when continuity of care becomes essential and the day surgery unit should be able to manage complications, adverse events and possible re-admission if needed
  • day after phone call, e.g., postoperative advice can be repeated, ensuring compliance,
• monitoring postoperative pain, tolerance of food, ability to walk, and anxiety. It also enables the team to check that the patient is not suffering from any adverse events that would require readmission,

• unplanned overnight admission, i.e., some patients will require additional time to recover from anaesthesia, nausea and vomiting and/or pain,

• unplanned return to hospital and/or readmission, i.e., planned or emergency readmission, most common causes are surgical,

• follow-up, ensuring post-operative support.

In order for the clinical pathway to be efficient it must be known and used by all professionals in the day surgery unit.

4.4.2 Quality indicators

In measuring the quality of care in day surgery The International Association for Ambulatory Surgery has defined the following quality indicators:

1) % cancellation of booked procedures, 
2) % unplanned return to the operation room on the same day, 
3) % unplanned overnight admission, 
4) % unplanned return of the patient to an ambulatory surgery unit or hospital, 
5) % unplanned readmission of the patient to an ambulatory surgery unit or hospital.

Moreover, delayed discharge, patient satisfaction, return to normal activity, use of the healthcare system and the healthcare professionals’ point of view are indicators that are commonly used to assess the quality of care in day surgery. In terms of measuring the organizational quality indicators such as waiting time between decision to operate and scheduling of the procedure and cancellation before admission are used. Whereas indicators of mortality and infection rates are common measures of quality in normal inpatient surgery, several studies have found them to be inadequate indicators of quality in day surgery, which will be elaborated on in the following section.
4.4.2.1 Major mortality and infection rates as quality indicators

Whereas indicators of mortality and infection rates are common measures of quality in normal inpatient surgeries the International Association for Ambulatory Surgery find them to be inadequate indicators of quality in day surgery due to the fact that these rates are very low and therefore make up rather insecure parameters of quality. This view is supported by several authors, expressing that mortality and infection rates do not ‘necessarily reflect the quality of care, but rather reflect the overall state of health of the population that undergo day surgery. Moreover, following Shnaider ‘these criteria adopt a medical perspective. It is now also necessary to consider the patient’s perspective when analyzing the benefits of day surgery. (Verma et al, 2011).

Of course the mortality and infection rates must be documented but in order to achieve a truer and fair measurement of quality they should be supplemented with the above mentioned quality indicators.

Based on several studies of the mortality rate it is found that death is a very rare event in day surgery. A similar picture is found in studies of morbidity; only very few occurrences of severe morbidity takes place in day surgery. Thus across studies the morbidity rate turned out to be 0,03-1,7 % (Majholm et al. 2012; Mattila et al., 2009; Engbaek et al.; 2006; Natof et al., 1980; Osborne et al., 1993; Warner et al.,1993; Duncan et al., 1992). As regards infection rates a frequently cited benefit in day surgery is the markedly lower number of healthcare associated infections – Surgical site infection as well as nosocomial infections – compared to the frequency in inpatient surgeries, due to the shorter time of hospitalization.

4.4.3 Clinical indicators

An important clinical factor that is to be taken into consideration in the assessment of the results of day surgery is the overall condition of the patient because this affects the clinical outcome of the surgery, including comorbidity before and after the surgery such as nosocomial infections that a patient can contract in the process of the treatment.
4.4.3.1 Patient satisfaction

The level of patient satisfaction with the surgery performed is incontrovertibly a very important factor. Overall the level of patient satisfaction in day surgery is high⁴. However, caution must be taken in terms of measuring quality through the level of patient satisfaction. Thus patient satisfaction is very much dependent on the prior expectations of the patient and therefore it should be compared with the level of patient information and the overall service provided. In terms of assessing the clinical quality of their surgery studies have shown that patients only to some degree are capable of this. Moreover, a recent literature review found that there is still no valid or reliable questionnaire for measuring patient satisfaction in ambulatory anaesthesia (Chanthong et al., 2009).

The IAAS recommends that in order to have more complete and reliable results, feedback needs to assess all aspects of the quality of care that impinge on patient satisfaction:
- the structure of the institution of DSU;
- the process that enables the services to be delivered;
- and the outcome.

Also it recommends:
- that data be collected especially on two different occasions: on in the immediate postoperative period (concerning the first two aspects) and the other later, around one month, postoperatively to evaluate global patient satisfaction;
- to have a long follow-up evaluation in order to have a real feedback of the final outcome

4.4.3.2 Functional recovery

The return to normal activity is an important indicator – also seen from a broader perspective in society. However, this parameter too has its limitations as indicator of quality due to the fact that functional recovery highly depends on the overall social and employment situation of the patient.

⁴However, it is not clear how the satisfaction level in day surgery is in comparison with inpatient admission.
4.4.3.3 Satisfaction of healthcare professionals

Both from the perspective of the employer as well as society it is of great importance that the employees are satisfied with their job. However, only very few studies have investigated the satisfaction level of healthcare professionals in day surgery units and more examinations are needed in this area.

4.4.3.4 Primary care

Due to the shorter period of hospitalization in day surgery a concern exists as to whether this puts an extra burden on the primary care. However, there exists no scientific survey that confirm or disprove whether this concern is legitimate. In any case, it is of great importance that day surgery units and the primary sector commit themselves to a binding co-operation which will be elaborated in the following section.

4.5 The designing and planning of a day surgery unit

Co-ordination between those involved in patient care is critical in order to ensure an optimal process for the patient. The coordinator is responsible for implementing the rules that govern the center, and for ensuring that all people involved apply these rules. However, co-ordination goes beyond the in-house co-ordination at the day surgery unit as cooperation with primary care is crucial for the continuity of care. In this context it will be of great advantage if the team in the day surgery unit set up procedures for joint working with primary care for when patients are discharged home and for follow-up after discharge, taking into account the predicted availability of operating theatres, and the patient’s medical, surgical, psychosocial and environmental history.

It must be stressed that day surgery does not create demand for specific postoperative care at home and so the primary care is not laid upon an extra burden in relation to day cases. If postoperative care is necessary and is predicted by the patient selection procedure, then day surgery management will be ruled out from the start, as the patient will need the environment provided by inpatient admission.
4.5.1  **The design of a day surgery unit**

Appropriate accommodation and facilities should be made available for day surgery. Four different models of how to organize day surgery units exists:

1. **Hospital integrated facilities**
   Integrated facility is the oldest model and also the most common set-up in day surgery. This type of facility has its own reception and admission facilities, but it is located in an inpatient ward, and the operating theatres are shared with inpatient admissions. The advantage of integrated facilities is that it is easy to introduce them into an existing organization. Their drawback is that they can often hold back the development of day surgery, as this situation is one in which conventional types of management (as a inpatient) still prevail.

2. **Self contained unit on a hospital site**
   A self contained unit on a hospital site is very similar to the integrated facilities with the one exception that they have their own operating theatre, situated in a conventional theatre wing.

3. **‘Satellite’ facilities**
   ‘Satellite’ facilities are also located on the site of a hospital, but they have their own operating theatres and moreover exclusive use of all the material and human resources they need to carry out day surgery.

4. **Free-standing self contained units**
   Free-standing self contained units are, as the name indicates, free-standing in terms of not being located on a hospital site. Thus they are entirely detached from inpatient admission facilities and have their own operating theatres and exclusive use of all material and human resources they need to carry out day surgery.

   In reality, we observe some hybrid models, and characterisation of each model is not so straightforward. Physician’s office-based units represent a model different from Day Surgery, being small, self-contained operation annexed to surgeons consulting rooms. In some countries (France for example), they are not allowed while in Australia there are specific standards for such facilities.
4.5.2 Architectural models

There exists no architectural model for day surgery units as well as there is no ‘one best way’ to organize the unit. However the day surgery unit must have at its disposal:

- entry and exit areas (for patients, staff and equipment)
- admission rooms
- admission and discharge office;
- waiting room
- consultation rooms
- preoperative treatment rooms
- changing rooms for patients and staff
- operating theatre(s)
- recovery room and postoperative treatment room
- space for sterilizing instruments
- space for storing equipment
- toilets for patients and families and toilets for staff
- in some cases, a meeting or conference room and a staff break room;
- if necessary, pediatric pre- and postoperative rooms.

Moreover, day surgery units are obliged to have a sterilization system, hygiene protocols and a waste management system. Emergency evacuation system must also be in place.
4.5.3 Operating suites

A facility offering day surgery and anaesthesia must have an operating suite as defined in the legislation. A day surgery operating suite is subject to the same standards as those used for inpatient admission. The following separate parts must be contained in an operating suite:

- changing room: entry and exit area to the protected zone for staff and visitors;
- transfer area: room in which the patient is transferred from bed or stretcher to a stretcher or trolley;
- induction room: a room near the operating room, designed to prepare the patient for the procedure and to prepare the anaesthesia;
- surgical preparation area: an area for surgical hand-washing and surgical hand disinfection using friction;
- the operating room itself;
- post-anaesthetic care unit (PACU): a recovery room required by legislation, designed for monitoring of patients after surgery;
- storage rooms in which to keep sterile and clean materials and pharmaceutical products.

A facility that provides day surgery or anaesthesia must also contain all equipment and materials for administering and monitoring anaesthesia. Appropriate conditions must also be provided for receiving medical fluids, for vacuum aspiration and administration of anaesthetic gases and vapours, as well as the evacuation of anaesthetic gases that cannot be reused (French ISO quality standards 7396 2).

For all patients it must be possible to carry out tracheal intubation, artificial ventilation and continuous monitoring of flow rate of oxygen that is being administered and oxygen content of inhaled gases.

4.5.4 Types of throughput

Throughputs in day surgery must be flexible, consistent and controlled. The patient’s pathway must be simple and flexible. Such pathways will result if a logistical approach is adopted, from admission to discharge. The various stages are as follows: arrival, reception, registration, preparation, pre-anaesthesia transfer, procedure in the operating theatre, exit from operating theatre, a stay in the
recovery room (post-aneasthetic and / or surgical), rehabilitation, assessment of discharge, handover to supporting adult and, finally follow-up at home. There are two basic types of throughput: single-direction (racetrack) and crossing (non-racetrack).

- In a racetrack model there is a uni-directional flow path which imply that patients never pass through the same place twice: admission, preoperative area, operating theatre, postoperative recovery and discharge. The advantage of this model is that pre- and postoperative patients do not meet whereby occurrence of tension where patient pathways cross is prevented. The disadvantage is that this model requires two distinct areas for pre- and postoperative care which implies that more space and more nurses for the same number of patients is needed.

- In the non-racetrack model, the pre- and postoperative care room will be on a single location. The advantage is that just one area can be used for both pre- and postoperative patients as well as one area can be used for both admission and discharge. The disadvantage is the fact that there will be points at which patients’ pathways cross. In such cases wide corridors are needed so that two trolleys can pass each other.

### 4.5.5 Key elements for the creation of a day surgery unit (DSU)

#### 4.5.5.1 The planning phase

When a day surgery unit is created the following aspects needs to be considered:

- What kind of facility that is needed (integrated, self contained, ‘satellite’ or free-standing self contained unit)

- Whether the day surgery unit should be multidisciplinary or specialized. Whereas the first can serve a larger number of patients the latter has the advantage of being able to concentrate expert knowledge and expensive equipment in one place.

- An analysis must be taken out to identify: 1) the number of potential patients 2) the number of potential procedures per year 4) the case mix (types of procedures) 5) any other day surgery unit that might be a competitor, and 6) the demographic composition. These factors will ensure that the day surgery unit is viable, and will determine its size and the number of operating theatres that are needed.
• Equipment and staff requirements can also be evaluated in the initial planning stage.
• Finally, using the above information, a projection of events over the coming five years (e.g. potential number of patients, market share, case mix, planned spending on infrastructure, equipment, staff, maintenance, budget, impact of the DSU on hospitals) can be created.

4.5.5.2 Design phase

It is recommended that the leading team of the project should include at a minimum one surgeon, one anaesthetist and one nurse manager who are going to work in the center. A pre-project phase can be launched before the architect is brought on board wherein the requirements of the day surgery unit and of the care team can be set out. The general design of the major areas and description of patient throughput are important items that should be included in this. Then the number and size of operating theatres, and the type and size of other rooms, can be determined. One of the keys to success is a design that is as flexible as possible.

If a day surgery unit is being built from scratch it is recommended that the site must be large enough to hold the DCS allowing room for possible extension, with easy access and sufficient parking. Moreover a day surgery unit in one level will be ideal. If the DSU is established in a building with several stories it is important to plan a suitable system of lifts and hoists and appropriate lighting for the operating theatres.
5. **A case-study: Day surgery from a Danish perspective**

Today approximately 70-75 % of all surgical procedures in Denmark are being performed as day surgery. Moreover, in resemblance to the previously mentioned investigations of patient satisfaction in relation to day surgery, the rate of patient satisfaction is very high in Denmark. Thus approximately 96 % of all day surgery patients state that they are satisfied with the day surgery procedure. However, as earlier mentioned, patient satisfaction levels should not be interpreted in isolation as a quality-indicator.

In relation to the safety of patients, a large Danish study from 2012 with the title ‘Is day surgery safe’ has investigated the safety of day surgery by investigating the mortality rate and rate of readmissions in 57,709 surgeries performed in eight Danish day surgery centers during a three-year period. The conclusion of this study is that the safety of day surgery is very high, and that day surgery does not pose a risk of mortality that could have been avoided, if the patient had been admitted to in-patient surgery instead (Majholm et al, 2012). Moreover the study indicates that still more surgical procedures could be performed as day surgery without thereby posing a threat to the safety of the patients.
6. Future visions and challenges in a Danish context

In the future development of day surgery in a Danish context consensus exists on integrating more areas in the day surgery regime. In order to expand the scope of day surgery a paradigm shift is however needed. Instead of equalizing surgical procedures with inpatient admission, a new paradigm is necessary in which surgery by definition is day surgery and where surgery only rarely will implicate inpatient admission for example in cases of trauma, oncologic, or transplantation patients.

It is not a discussion about whether day surgery as such is to be developed or whether all surgery should be called day surgery. What is central is that the successful method used in day surgery is to be applied to all types of surgery. This will together with the fast track surgery principles lead to more day surgery and also it will minimize the length of stay in hospital in the remaining areas, thereby both increasing the efficiency of the treatment in general as well as enhancing the quality and patient satisfaction.

In order to obtain a paradigm shift it is of utmost importance that the management in the hospitals focuses on implementing initiatives that promote day surgery in their own unit or hospital. In this context, comparisons with other hospitals or units in terms of benchmarking exercises are seen as a key tool to enhance the quality of day surgery. Although day surgery is a widely integrated part of the Danish health care system with approximately 70-75 % of all surgical procedures being performed as day surgery, not much progress has been made during the last decade. Following elements have been identified as barriers to the further development of day surgery: Economic incentive structure, inertia and reluctance from conservative doctors, and finally the impaired cooperation between hospitals and municipalities. Going forward an important objective is to bring day surgery on the agenda and have a public debate on the subject, instead of discussing the management method in more or less closed clinical circles. Finally, it is important to remember that the principles used in surgery can be applied to other therapies in health care too. In this context the Danish example may be useful for other countries as well.
Literature


