

SHORT REPORT

PROPOSALS FOR A FURTHER EXPANSION OF DAY SURGERY IN BELGIUM



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■ FOREWORD

"Hello, madam, so you're here on the scheduled appointment three weeks before your elective surgery. We can now perhaps see what you prefer: either the procedure takes place in the day-surgery centre and you can go home towards the end of the afternoon, or else you choose an inpatient admission with an overnight stay and this means you go home the second day shortly after noon."

How often would such a conversation take place? Our guess: not often. Moreover, it will be difficult for the patient to form a firm opinion on this subject. Accidental, contextual factors will easily tilt the preference in the one or the other direction. But, let us face it, usually the patient will comply without a murmur to the customs of the house.

And those customs of the house - so taught us already our study on day care in 2012 – are often also driven by the incentives of an overly complicated and illogical payment system. Who are we anyway, to expect that hospitals and medical doctors would queer their own pitch while the government reaps the financial profits and the final result for the patient may be the same?

A policy that opts for more ambulatory care - enrolling in an internationally widely supported trend - therefore must resolutely put incentives in the right place, install the necessary safety nets and bring the capacity of primary care at the desired level. The ongoing comprehensive reform of the hospital payment system, even of the entire hospital landscape, offers perhaps a historic opportunity. We sense that this is also considered an opportunity window by the people in the field. Proof of this is the massive response we received from clinicians: 145 surgeons and anaesthetists found time in spite of their busy practices to provide feedback in an online survey and in 11 working groups, where they reflected together with us on the future of day surgery. This undoubtedly contributed to a broad base for this report. We herewith want to thank them once again for their input and for the interesting discussions we had with them.

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■ KEY MESSAGES

- In the last decades, day surgery has steadily and significantly grown in Western countries. Yet, there are **large variations** in day-surgery activity **between countries** and in countries between hospitals. For some surgical procedures (e.g. cataract surgery, tonsillectomy) Belgium keeps pace with other Western European countries, while for other procedures (e.g. laparoscopic cholecystectomy, partial excision of a mammary gland) it falls far behind.
- The **variability** in day-care share **between Belgian hospitals** is **considerable**. High national day-care rates (e.g. lithotripsy and tonsillectomy with adenotomy) do not preclude room for improvement for certain hospitals as for the majority of these procedures there are “low performers”. For several elective surgical procedures the variability in day-care rate between Belgian hospitals ranged between 0 and 100% over the three-year period (2001-2013).
- **Several factors impede a further growth** of day surgery in Belgium. The current payment system fails to give clear incentives in favour of day surgery; it is very complex and not transparent. Organisational barriers in the hospital as well as in the ambulatory setting constitute a major obstacle. The force of habit and the lack of (the implementation of) evidence-based guidelines should not be underrated.
- If a further expansion of day surgery is envisaged in Belgium, it should be accompanied by:
 - **One coherent payment system** that encourages day surgery and that avoids a “suction effect” on procedures that can easily be performed in the doctor’s room;
 - A **clear division** between the surgical day centre (with an autonomous organisation of the care processes) on the one hand and the inpatient department of the hospital on the other hand;
 - The development of **clinical guidelines and care pathways** and the pursuit (of) their implementation;
 - Proper **communication** with the patient and his (informal) carer, general practitioner, home nurse, physiotherapist and pharmacist as well as offering appropriate **training** so that optimal postoperative care can be achieved;
 - A **feedback system** in which hospitals and health care providers have the figures on their percentage of procedures carried out in day surgery compared to other hospitals and care providers (benchmarking) and the **monitoring** of a number of quality indicators (e.g. unplanned readmission, unplanned inpatient stay, ER visit);
 - And this shift should not be accompanied by a shift of costs towards the patient.



■ SHORT REPORT

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1. INTRODUCTION

1.1. Background, objectives & scope

In the last decades, **day surgery has steadily and significantly grown** in countries with established stable economies.¹ Advances in surgery (e.g. the diffusion of minimally invasive techniques), in anaesthesia (e.g. short acting anaesthetics with minimal side effects) and analgesia, changes in clinical practice (e.g. steady reduction of the length of stay following surgery) and in the attitude of the surgical team, as well as the establishment of dedicated day-surgery facilities (with dedicated staff and well-defined care pathways), together with financial incentives have made this development possible.¹⁻⁷ Coincidentally, the financial and economic crisis provided an impetus to speed up the existing processes of restructuring the hospital sector through, among others, the reduction of the hospital capacity and a shift towards day care and outpatient care.^{8, 9}

The **rationale for the shift from inpatient towards day surgery** is multifactorial. In comparison with inpatient surgery, day surgery is considered to be cost effective as hospitalisation time is diminished, (evening,) night and weekend staffing is not needed, the hotel element of treatment is reduced and capital facilities and staff are used more intensively and effectively.¹ By moving surgical procedures to a dedicated surgical unit, inpatient beds can be unblocked for more extensive surgical cases or other medical usage, or closed with consequent savings.¹ Although a systematic literature search on the efficacy and safety issues of day surgery revealed that the quality of the retrieved scientific evidence was low,¹⁰ day surgery can be considered safe.^{11, 12} Patients with stable chronic diseases (e.g. diabetes, asthma, epilepsy) are often better managed as day cases because their daily routine is minimally disrupted.¹³ In addition, day surgery reduces the risk of cross-infection since day-surgery patients are kept separate from

sicker patients, spend less time in hospital, return quicker to mobility and recover further at home.^{1, 14} Last but not least: patient (and relatives') satisfaction rates following day surgery are high; most people would rather recover from surgery in the comfort of their own homes than in hospital.^{1, 15-17}

Whether a patient is eligible for day surgery depends entirely on an accurate individual preoperative assessment, which should be based on social and medical criteria according to recent guidelines. Arbitrary cut-offs (e.g. for age and BMI/weight) are considered inappropriate.¹⁸ The assessment should be performed in time to correct any abnormalities and allow the patient to be adequately informed and prepared for surgery.¹⁸ For example, patients at higher risk of surgical site infection (e.g. smokers, obese and diabetic patients) require special attention during the preoperative consultation; in some patient groups (e.g. patients with a known diagnosis of obstructive sleep apnoea) postoperative pain control is a matter of concern^{a, 19}

There are large variations in day-surgery activity between countries and in countries between hospitals. Also in Belgium there is still **room for a further expansion of day surgery**.²⁰ Even more, current Belgian payment rules for day-care activities fail to give clear incentives in favour of day care.^{20, 21} These concerns were adopted in the Action Plan for a reform of the Belgian hospital payment system of the minister of Social Affairs and Public Health (April 2015), in which the following was stated: "In Belgium there is still room for a reduction of the number of inpatient stays (and this way for a cutback of the acute hospital infrastructure) and the transition towards day care, indeed on the understanding that sufficient after-hospital care is provided."²²

^a Since opioids have a significant propensity to exacerbate OSA and to prevent arousal, painful surgery may not be suitable for a day-care setting if postoperative pain relief cannot be predominantly provided with non-opioid analgesic techniques.

The answer to the question "Which patient characteristics (e.g. comorbidities, socioeconomic status (SES)) preclude patients from undergoing elective surgical interventions in a day-care setting?" is thoroughly elaborated in the Scientific Report, Chapter 4.



The present study was commissioned by the minister of Social Affairs and Public Health, and fits within the above mentioned Action Plan. Two major **objectives** were addressed:

1. Define **which elective surgical interventions** can safely be performed in a day-care approach as an alternative for inpatient care;
2. Investigate how the **day-care share** for these procedures can be **increased**.

For frequently conducted interventions, the impact of substituting day care for inpatient care on the needed hospital capacity (for example, measured in terms of beds) will be assessed in a subsequent study.

The scope of this report is limited to **elective (i.e. planned) surgical** procedures.

Due to human resources and time constraints, only elective surgical interventions (i.e. operating room procedures) were considered; hence, non-surgical procedures also performed in day care (e.g. dialysis, oncological therapies) were considered out of scope. Likewise, emergency surgical interventions and in-office interventions were considered out of scope.

1.2. Methods

To meet the aforesaid objectives, the following research methods were applied:

- A review of the international literature on risks and safety of day surgery (see Scientific Report, Chapter 4)
- An online survey with Belgian medical specialists on the eligibility of a selection of surgical procedures for day surgery (see Scientific Report, Chapter 5)
- The analysis of current day-surgery practice based on Belgian administrative 2011-2013 Technical Cell data^b (see Scientific Report, Chapter 5 and below)
- Expert meetings to discuss the eligibility of a selection of surgical procedures for day surgery and the current day-care practice with 11 ad-hoc surgical expert groups (see Scientific Report, Chapter 5 and below)
- The consultation of stakeholders involved in the organisation of day surgery in Belgium (see Colophon)
- A review of this report by three independent scientific experts (see Colophon)

^b For each patient seen in a Belgian hospital (inpatient and day care), hospitals have to send medical data (more precisely, Minimal Hospital Data (MZG – RHM)) to the Federal Ministry of Health (FOD – SPF).^{23, 24} The MZG – RHM are based on the International Classification of Diseases-9th Revision-Clinical Modification (ICD-9-CM).²⁵ In addition, information about the

administered care and the related tariff, more precisely, Hospital Billing Data (inpatient: AZV – SHA (“Anonieme ziekenhuisverblijven – Séjours hospitaliers anonymes”) and day care: “Anonieme daghospitalisatie – Hospitalisation de jour anonyme” (ADH – HJA)) have to be sent to the RIZIV – INAMI. The Technical Cell couples both data sources at the level of each hospital stay (inpatient and day care).



1.3. Terminology

In the international literature the terms “day surgery” and “ambulatory surgery” are used as synonyms. The term “outpatient surgery” equates to these two terms in some countries, but in others it is used in another setting. In order to avoid Babel-like confusions, for the present report we will slightly deviate from the definitions issued by the International Association for Ambulatory Surgery (IAAS, see Scientific Report, Introduction). More precisely, we opted to use the term “day surgery” and to avoid the term “ambulatory surgery” as the latter may cause confusion in a Belgian context where the Dutch word “ambulant” and the French word “ambulatoire” rather refer to office-based procedures (i.e. provided in a doctor’s consulting room or office), which can be outside or inside the hospital premises. Hence, for the present report we apply the following terms and definitions:

Term	Definition applied in the present report
Inpatient	A patient admitted into a hospital, public or private, who is not discharged on the day of admission.
Day-surgery patient	A patient having an elective surgical intervention that requires a full operating theatre facility, excluding an office intervention, who is admitted and discharged on the same day.
Outpatient	A patient having an intervention in a doctor’s consulting room or office (i.e. not in a full operating theatre facility), which can be outside or inside the hospital premises.

^c The International Classification of Health Interventions (ICHI) is being developed to provide a common tool for reporting and analysing health interventions for statistical purposes; so far it has not been released yet (<http://www.who.int/classifications/ichi/en/>).

^d In the final report of the Hospital Data Project Phase 2 the count of all procedures was recommended, but with the important caveat that only one

2. ELECTIVE DAY SURGERY IN AN INTERNATIONAL CONTEXT

2.1. Challenges and difficulties in comparing international day-surgery data

Before elaborating on international day-surgery data, it is wise to realise that these data should be handled with care. Elective day surgery is undertaken in various settings in different countries; procedures performed in a hospital operating room in one country may be done in a doctor’s office in another, which makes the comparison of international data hard.²⁶ But there are many more reasons why interpreting international day-surgery data should be performed with caution:

- Currently there is **no single international classification of procedures^c** which is implemented across all countries. The “granularity” of nationally implemented classification systems differ, more precisely on the structure, grouping and number of codes for recording different procedures.²⁷
- Internationally, at least three different methods are used to **count surgical procedures²⁷**:
 - A count of all procedures that are registered on the hospital discharge record (without any restriction) may result in a much higher number of procedures reported than a count based only on the main procedure or on the number of patients treated.^d
 - A count limited to the main procedures (excluding any secondary procedures) will provide in most cases a number equal or close to

procedure code per procedure category should be counted to avoid any double-counting arising from the different granularity of national classification systems.²⁸ This approach (i.e. only one procedure code per procedure category) was introduced by the OECD in the 2011 data collection.²⁷



a count based on the number of patients receiving the operation, except if the operation is not recorded as the main procedure.²⁷ However, the practice of recording a “main” procedure only exists in about half of European countries (e.g. it does not exist in Belgium) and second, this approach may result in an under-reporting of those procedures which are not recorded as the “main” procedure.²⁸

- *A count of the number of patients* who have received a certain procedure during their hospital stay.
- There are **differences in data coverage** across countries, particularly for surgical procedures that do not require any overnight stay in hospital.²⁷ For some countries international day-surgery data are limited to patients formally admitted to hospitals and discharged the same day, while for other countries the dataset also includes patients having an intervention in a doctor’s consulting room (inside or outside the hospital premises).^{10, 27} Similarly, since some countries (e.g. the USA) consider a stay of less than 24 hours as day surgery, their day-surgery databases also include these patient stays.¹
- The need to **report performed procedures** in various facilities (e.g. private clinics, extramural surgery centres) differs among countries.²⁶ For instance for Belgium the cataract procedures performed in extramural surgery centres are not included in the Technical Cell dataset (see Scientific Report, Chapter 5). Likewise, **data completeness is variable** since the original data sources are very different from one country to another.^{26, 29}
- There are **differences in perspectives**: day-surgery rates may be looked at as a proportion of the total number of surgical procedures or as a proportion of elective surgical procedures.²⁶

The interpretation and comparison of international day-surgery data should be performed cautiously.

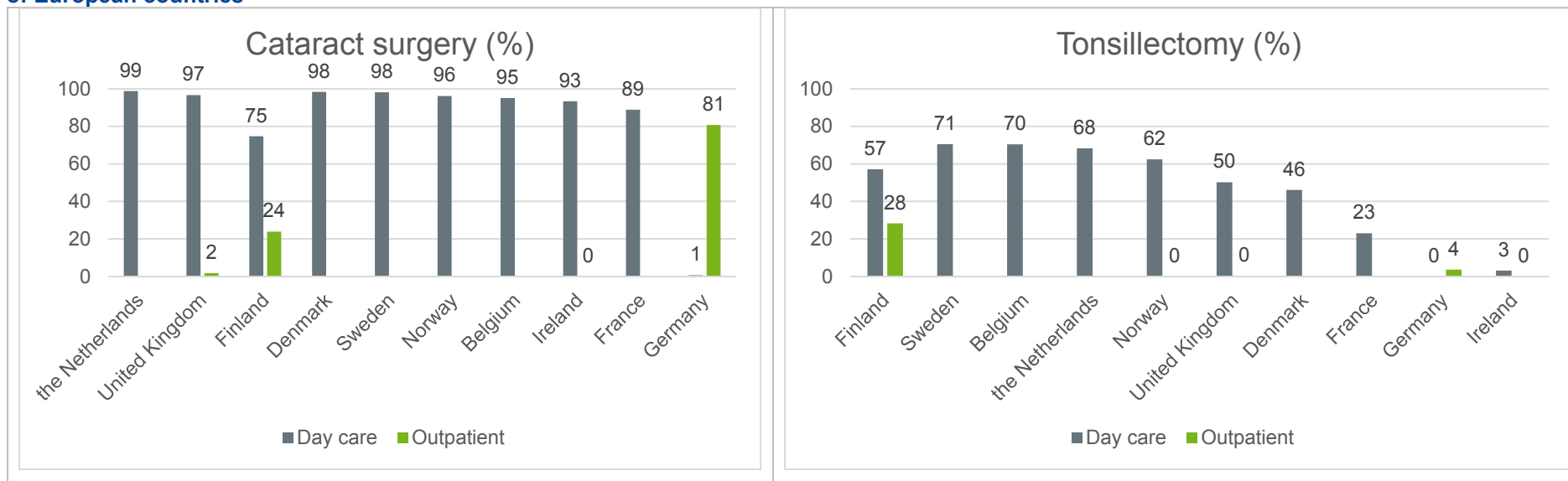
2.2. International variability in day-care share of elective surgical procedures

The geographical variation in day-care share for a set of elective surgical procedures for a selection of Western European countries is illustrated in the following paragraphs and figures; they are based on the most recent (2014) OECD data. More information on the limitations of these data (e.g. with respect to the count of procedures and the coverage of the data) is described in the Scientific Report, Chapter 2 and the definitions applied by the OECD can be found in Appendix 1. For more details on the sources and methods of the OECD survey the reader is referred to the OECD website (http://stats.oecd.org/index.aspx?DataSetCode=HEALTH_STAT).

Cataract surgery consists of the removal of the natural lens of the eye which has become “cloudy” (because of the presence of cataracts) and (in most cases) of the replacement with an artificial lens. The target patient group consists of elderly people. As illustrated in Figure 1, cataract surgery provides a good example of procedures which are currently mainly performed in day care in many European countries, including Belgium (95%). The situation is slightly different for **tonsillectomy** (mainly performed in children): at least half of the patients returned home the same day in Finland (57% day surgery and 28% outpatient), Sweden (71%), Belgium (70%), the Netherlands (68%), Norway (62%), and the United Kingdom (50%), while on the other side of the spectrum one can see that in Germany none and in Ireland virtually none of the patients were treated in day care. These large differences in day-care rates have been attributed to differences in the perceived risks of postoperative complications, as well as to clinical traditions of keeping children for at least one night in hospital after the operation.^{9, 27} For both procedures it is important to mention that for several countries (including Belgium) no data were provided on outpatient cases (in hospital or outside the hospital), which may result in some under-estimation.



Figure 1 – Cataract surgery and tonsillectomy in 2014 (or nearest year): proportion (%) performed in day care and in outpatient care for a selection of European countries



Day care: proportion performed as day case; Outpatient: proportion performed as outpatient; Belgium: data for 2013 (i.e. most recent data); the Netherlands: data for 2010 (i.e. most recent data); Norway: data for 2012 (i.e. most recent data); for Ireland and the United Kingdom: only cataract surgeries carried out in public or publicly funded hospitals included; outpatient data not available for Sweden, Belgium, Denmark, France, Norway (cataract surgery) and the Netherlands; outpatient data for the United Kingdom only refer to England, Scotland and Wales.

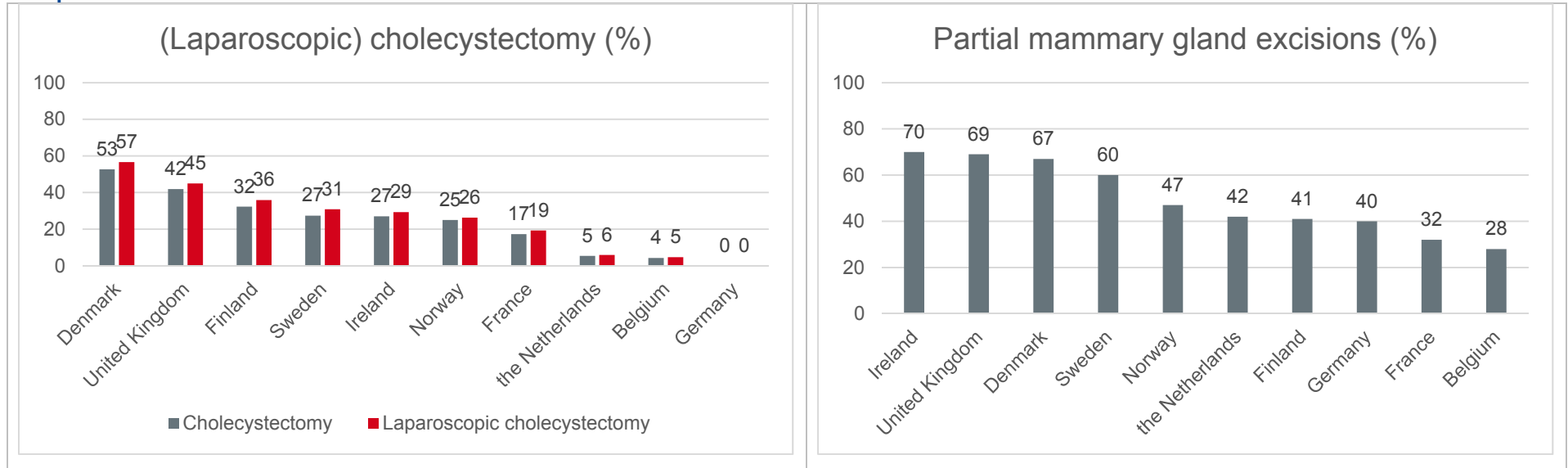
Source: OECD 2016 health database - Data extracted on 19 Oct 2016 (for more info on applied definitions see Appendix 1; more info on sources and methods can be found on http://stats.oecd.org/index.aspx?DataSetCode=HEALTH_STAT)

The variability in day-care share is also outspoken for (laparoscopic) **cholecystectomy**, a common surgical treatment of symptomatic gallstones or other gallbladder conditions, which can either be performed as an open, thus more invasive, surgical procedure, or as a laparoscopic (minimally invasive) procedure, the latter being more eligible for a day-care approach. While in Denmark more than half of all open and laparoscopic cholecystectomies (53% and 57%, respectively; Figure 2) were performed

in day care, this was only the case in a minority of procedures in Belgium (4% and 5%), the Netherlands (5% and 6%) and Germany (0% and 0%). The same holds for the **partial mammary gland excisions**: while in Ireland (70%), the United Kingdom (69%), Denmark (67%) and Sweden (60%) the majority of these procedures were performed in day care, Belgium was far behind with a day-care rate of only 28%.



Figure 2 – Cholecystectomy and partial mammary gland excisions in 2014 (or nearest year): proportion (%) performed in day care for a selection of European countries



Belgium: data for 2013 (i.e. most recent data); the Netherlands: data for 2010 (i.e. most recent data).

Source: OECD 2016 health database - Data extracted on 19 Oct 2016 (for more info on applied definitions see Appendix 1; more info on sources and methods can be found on http://stats.oecd.org/index.aspx?DataSetCode=HEALTH_STAT).



The choice of care setting (day surgery vs. inpatient) varies widely between countries as well as between hospitals within countries. For some surgical procedures (e.g. cataract surgery, tonsillectomy) Belgium keeps pace with other Western European countries, while for other procedures (e.g. laparoscopic cholecystectomy, partial excision of a mammary gland) it falls far behind.

Apart from the data comparability issues discussed above (e.g. count of procedures, data coverage, countries unable to report data on outpatient cases) there are other factors that explain the big differences in day-surgery activity between (and within) countries. In the literature, the observed **variations in clinical practice** have among others been attributed to a different appreciation of possible risks of complications after surgery, but even simply to traditions among surgeons and anaesthetists.^{26, 27} This was also suggested in an American study, where the wide variation in day-surgery utilization could not be explained by patient comorbidities, case mix, or hospital characteristics; most variation was explained by effects at the surgeon level.³⁰

A key factor explaining the (sometimes huge) differences between countries is the level of reimbursement of day surgery, where there may be more or less incentives built into the system.²⁶ In Germany, for instance, the **incentive for day care** was initially much lower as the payment for day surgery was only 25% of the equivalent tariff for conventional hospitalisation. Only since 2004, and more precisely with the introduction of a new law on integrated care (“Integrierte Versorgung”) day surgery was paid at a tariff of between 50 and 90% of the inpatient tariff.³¹ In other countries, like Denmark, Spain, France, Italy and England, the incentive for day care is higher since the pay for procedures performed in day care is in many cases (almost) the same as for inpatient care.^{26, 32}

In addition to reimbursement schemes, other incentives may encourage a shift towards day surgery: in England the Department of Health set up a task force on day surgery along with £15 million (€ 21 million) of capital funds to expand the number of dedicated day-surgery units, so that by 2001, almost all trusts had at least one unit.^(<https://www.kingsfund.org.uk/>) The British Association of Day Surgery (BADS), for its part, provides on a regular basis national day-surgery performance data, including the 5th, 25th and 50th centile performance, so that hospitals may be encouraged with this information to review and optimize their local performance.^{(www.bads.co.uk)} In France, the promotion of day surgery has been financially encouraged by three instruments: the utilisation of a single tariff for day surgery and inpatient stays for a growing number of diagnosis groups, the suppression of existing minimum length of stay thresholds and the implementation of a prior agreement procedure^e. While the implementation of the unique tariff has been associated with an increase of day-care rates, it is not clear whether the new payment system really caused the change or simply accompanied it. A recent report illustrated that the increase of day-care rates can in some cases (such as the repair of inguinal hernias) be attributed to the single tariff, but not in others (such as interventions on vulva, vagina and cervix, circumcision, carpal tunnel release).³³ The absence of a visible effect of the unique payment may also be due to the fact it was established simultaneously with other changes in the payment structure. But also, it has been changed many times which also implies a lack of visibility as well as of predictability. Similarly, it is difficult to isolate the effect of the prior agreement procedure on day-care rates, as for the concerned procedures day care is also encouraged through the single tariff. Also, the prior agreement procedure was only imposed to a small number of hospitals. Yet, recently it has been reported that for some procedures the involved hospitals had a higher day-care rate once the prior agreement procedure was imposed. Even more, involved hospitals had for inguinal hernia for example, a higher day-care rate than their peers.³³

^e The prior agreement procedure (“Mise sous accord préalable”, MSAP), introduced in 2008, applies for a maximum duration of six months to hospitals which have low day-care rates (i.e. below the regional or national average)

for well-defined surgical procedures. In case the medical team wants to perform one of these procedures as a planned intervention in the inpatient setting, it has to ask permission from the sickness fund.



3. CURRENT DAY-SURGERY PRACTICE IN BELGIUM

3.1. Complex payment system without a clear policy supporting day surgery

In Belgium, the payment system for day-surgery activities is complex. Moreover, **responsibility is shared** between the National Institute for Health and Disability Insurance (RIZIV – INAMI) and the Federal Public Service (FOD – SPF) for Health, Food Chain Safety and Environment which makes it difficult to realise a coherent policy and issuing of rules. Surgical day care is in part financed through the hospital budget, called the Budget of Financial Means (BFM – BMF) and calculated by the FOD – SPF, and in part by lump sums which are not included in the Budget of Financial Means but are the responsibility of the RIZIV – INAMI.

Calculation and payment of the hospital budget

Since the last major hospital payment reform of 1 July 2002, the general costs for day surgery are included in part B1 of the BFM – BMF and the costs specific to the day-surgery centre and its activities in the operating room are included in part B2. The distribution of the national hospital budget to the individual hospitals is based on a multifaceted calculation with a specific calculation method and parameters for each part of the national budget. The calculation for part B2 is based on “justified activities” (see Box 1).

The payment of the individual hospital budget consists of a fixed and a variable part.^f The fixed part is paid on the basis of monthly advances (called ‘provisional twelfths’). It includes (theoretically) 80% of the components B1 and B2 and 100% of all other parts. The remaining variable part includes (theoretically) 20% of components B1 and B2 and is paid according to the number of admissions (10% of the budget) and the number of nursing days (10% of the budget). Hospitals receive a lump sum payment per admission

and per diem for an inpatient and day-care stay; both lump sum amounts are hospital-specific.

Box 1 – The APR-DRG (All Patient Refined Diagnosis Related Group) system and justified activities

The **APR-DRG system** is a type of patient classification system that aims to define medically coherent and cost homogeneous groups. APR-DRGs extend the basic DRG structure by adding two sets of subclasses to each base APR-DRG, i.e. severity of illness (SOI) and risk of mortality (ROM). Within each APR-DRG there are four grades of SOI: 1 = minor; 2 = moderate; 3 = major; 4 = extreme. Patients are allocated to an APR-DRG-SOI group on the basis of principal diagnosis, secondary diagnoses and procedures, age and sex of the patient and, for some APR-DRGs (e.g. burns), type of discharge.³⁴

Justified activities are based on the national average length of stay (LOS) per pathology group (APR-DRG-SOI), which is then applied to the case-mix of each hospital. Multiplying the national average LOS per pathology group with the case-mix of a hospital, gives the number of justified patient-days for the hospital. Per department or group of departments, the number of justified patient-days is divided by the “normative occupancy rate” of the department (in general 80%).^{21, 34}

^f Only for patients who are entitled to reimbursement from the health insurance.



In order to estimate the day-surgery share in the calculation of the hospital budget, two types of stays were defined:

- **Justified stays in day surgery^g:** these are stays during which a surgical procedure is performed for which at least one nomenclature code is included in the so-called nominative List A (see Appendix 4). For these stays, the hospital is *assigned* a justified length of stay (LOS) equal to 0.81 days for a surgery nursing unit (C-bed) and to the lump sum per admission and per diem (see Table 1).²⁴
- **Inappropriate inpatient stays^h:** The FOD – SPF specified some conditions in which an inpatient stay is considered “inappropriate” and the hospital is *penalized* when the patient is not treated in the surgical day-care unit. These conditions comprise the following:

- The patient’s stay is classified in one of the 24 selected surgical APR-DRGs or in one of the three selected medical APR-DRGs (see Appendix 5).

And all the following criteria are met:

- It concerns a scheduled inpatient admission;
- The length of stay is no longer than three days;
- The patient is younger than 75 years old;
- The stay is assigned a severity of illness (SOI) level of 1 (i.e. minor);
- The stay is assigned a risk of mortality (ROM) level of 1 (i.e. low);
- The patient leaves the hospital aliveⁱ.

^g Verantwoorde gerealiseerde dagactiviteit // “L’activité de jour réalisée justifiée”; in the Scientific Report, Chapter 3, the Belgian legislation with respect to day surgery is further elaborated.

^h Oneigenlijke klassieke verblijven // “Séjours classiques inappropriés”

For the 24 selected surgical APR-DRGs, the FOD – SPF calculates the national day-care rate for each included procedure (identified by an ICD-9-CM code). If the national day-care rate for a certain procedure is higher than 33% and the national volume of inappropriate stays is at least 90 stays, then an inpatient stay is considered “inappropriate”. In other words, the hospital is penalized when the procedure is not performed in day care and therefore it only receives a LOS of 0.81 justified days, irrespective of the real length of stay of the patient.

For the three selected medical APR-DRGs, the selected procedures are identified by a nomenclature code. The inventory of these nomenclature codes is called the nominative List B (see Appendix 6). For these procedures no substitution or volume criteria are applied. In real terms, if a procedure from List B is not performed in day care and the stay meets all six criteria mentioned above, the inpatient stay is considered “inappropriate” and the hospital is penalized: it only receives a LOS of 0.81 justified days, irrespective of the real length of stay of the patient.

Lump sum payments for day-care activities

For some procedures which are not included in List A, lump sum amounts can be charged per patient. This open-end payment mechanism contrasts with the BFM which is a closed-end budget. In principle, the lump sum payments are meant for non-surgical day-care activities, but the seven lists also include some surgical procedures.

- **Group 1 to 7 lump sums^j:** fixed (hence non-hospital specific) lump sums, which can be charged for 7 nominative lists of procedures (identified by nomenclature codes; see Appendix 2);

For some surgical procedures the hospital may charge the

ⁱ For the sake of completeness, for stays classified in APR-DRG 097 (Tonsils and adenoid procedures), there is one additional criterion: the patient is younger than 14 years.

^j The amount of the lump sums in 2017 was defined as follows: Group 1: € 165.02; Group 2: € 201.57; Group 3: € 291.14; Group 4: € 207.45; Group 5: € 215.70; Group 6: € 256.97; Group 7: € 212.17.



- **Maxi lump sum^k**: a hospital specific (hence variable) lump sum, with a minimum of € 25, which can be charged for medical and nursing surveillance for any procedure needing a general anaesthesia supervised by an anaesthetist (or for the administration of specific chemotherapeutic agents).

Strict rules apply with regard to the cumulative charging of lump sums.³⁵ The Maxi lump sum and the group 1 to 7 lump sums cannot be cumulatively charged: only the lump sum with the highest amount can be charged. Similarly, for stays in which a procedure included in List A is performed, neither the Maxi lump sum nor group 1 to 7 lump sums can be charged. The reimbursement of different types of day-surgery stays is summarised in Table 1.

The amount of the lump sums and the corresponding nominative lists are determined by the National Commission of Sickness Funds and Hospitals, whereas the physician fees are negotiated in the National Commission of Sickness Funds and Providers, the so-called “Medico-Mut” (see Box 2). Both commissions operate within the healthcare department of RIZIV – INAMI. Within the FOD – SPF, the financing department of the Federal Council for Hospital Facilities gives advice to the minister on matters related to the hospital budget.

Box 2 – Physician fees and fee supplements

Physicians are mainly paid fee-for-service but some lump sum fees exist.

The medical activities for **laboratory tests** for inpatient stays and stays in day surgery are reimbursed as follows:

- A lump sum fee per admission which is determined at the national level and consists of a basic lump sum and an additional lump sum depending on certain characteristics of the clinical laboratory of the hospital (e.g. the number of staff, guarantee of continuity).

- A lump sum fee per day which is hospital-specific and partially depends on case-mix data (only for inpatient stays).
- A fee-for service component which has been reduced to 25% of its original value since the introduction of the (per admission and per day) lump sums.

The lump sum fees per admission and per day are both independent of whether or not tests were performed and of the number of those tests. The lump sum fees per admission can be charged for all procedures on List A or for which a Maxi lump sum can be charged as well as for procedures on a limitative list of 64 codes for which a Group 1 to 7 lump sum can be charged (see Table 1).

In addition, for all stays during which a surgical procedure is performed for which at least one nomenclature code is included in a limitative list of 71 codes, a **coordination fee** (for the head of the day-surgery department) and a **surveillance fee** can be charged. The majority of these 71 codes are on List A, some are on the nominative lists for a Group 1 to 7 lump sum, one code is on List B and for one code a Maxi lump sum can be charged if the procedure is performed under general anaesthesia.

On top of the official fees, physicians are allowed to charge **fee supplements**. However, over the years, possibilities to charge fee supplements for a hospital stay have been reduced. Since August 2015, fee supplements can only be charged in a single room for inpatient as well as for day-care stays. A maximum fee supplement is determined in the compulsory financial agreement between the hospital management and the physicians. There are large differences between medical disciplines and between hospitals in the share of stays in a single room and in the actual fee supplement that is charged. For example, for a surgical day-care stay in a single room the average percentage for the top-10 hospitals with the highest fee supplements ranges from 150% to 221%.

^k In 2017 the amount of the Maxi lump sum (nomenclature code 761235) ranged between € 64.26 and € 284.46.

**Table 1 – The reimbursement of day-surgery stays**

Procedure included in List A	Procedure included in Group 1 to 7 lump sum nominative lists	Procedure not included in List A nor on the group 1 to 7 lump sum nominative lists
Hospital		
LOS of 0.81 justified days (C-bed; varies between hospitals)	Lump sum Group 1 to 7*	Maxi lump sum in case of general anaesthesia*
Amount per admission (varies between hospitals) [§]	/	/
Amount per day (varies between hospitals) [#]	/	/
Physicians		
Fee for service for surgeons and anaesthetists	Fee for service for surgeons and anaesthetists	Fee for service for surgeons and anaesthetists
Lump sum fee per admission for clinical biology [°]	Lump sum fee per admission for clinical biology [°]	Lump sum fee per admission for clinical biology [°]
Coordination fee (€ 16.36) if procedure is on limitative list of 71 procedures	Coordination fee (€ 16.36) if procedure is on limitative list of 71 procedures	Coordination fee (€ 16.36) if procedure is on limitative list of 71 procedures
Surveillance fee (€ 16.36) if procedure is on limitative list of 71 procedures	Surveillance fee (€ 16.36) if procedure is on limitative list of 71 procedures	Surveillance fee (€ 16.36) if procedure is on limitative list of 71 procedures

LOS: length of stay; C-bed: a bed on a C-ward (i.e. a surgery unit); the Maxi lump sum and the group 1 to 7 lump sums cannot be cumulatively charged: only the lump sum with the highest amount can be charged; § between € 105.88 and € 335.38 in 2017 (nomenclature codes 768036-768040); # between € 22.05 and € 60.64 in 2017 (nomenclature codes 768051-768062); ° basic lump sum (nomenclature code 519091) € 34.20 in 2017, plus one of the following additional lump sums, depending on certain characteristics of the clinical laboratory of the hospital: code 591076 (€ 53.58) or code 591113 (€ 47.03) or code 591135 (€ 25.65).*

In Table 2 some examples are presented to illustrate the complexity of the system and actually the lack of a clear policy supporting day surgery. For instance, a tonsillectomy in an adult whether combined with an adenoidectomy or not, entitles the hospital to a group 7 lump sum, while the hospital is entitled to a LOS of 0.81 justified days and the amount per admission and per diem when the same procedure is performed in a child. For the repair of a bilateral inguinal hernia the hospital is entitled a group 6 lump sum, while for a unilateral repair it can only charge the Maxi lump sum for general anaesthesia which is lower for most hospitals. When an anal fissurectomy is combined with a sphincterotomy, the hospital is entitled to a LOS of 0.81 justified days and the lump sums per admission and per diem

(as the combination of both procedures is included in List A), while a fissurectomy alone entitles the hospital only to charge the group 6 lump sum. Cholecystectomy (like many other procedures which are according to the consulted experts eligible for day care) is not on List A nor on the group 1 to 7 lump sum nominative lists. As a consequence, hospitals have no interest at all (say, are financially penalized) when they perform this procedure in day care, in which case they can charge the Maxi lump sum. In case they admit the patient in hospital for at least one night they can charge the respective justified length of stay and lump sums per admission and per diem as well as the respective lump sums for medication, radiology and clinical biology.


Table 2 – Examples to illustrate the complex payment system of day surgery (nomenclature code; key identifier[§])

Procedure included in List A	Procedure included in Group 1 to 7 lump sum nominative lists	Procedure not included in List A nor on the group 1 to 7 lump sum nominative lists
Tonsillectomy with adenoidectomy (child) (256491/502; K50)	Tonsillectomy with or without adenoidectomy (adult) (256535/546; K100; group 7)	
	Repair of a bilateral inguinal hernia (241894/905; N325; group 6)	Repair of a unilateral inguinal hernia (241872/883; N200)
Anal fissurectomy with sphincterotomy (244473/484; N125)	Anal fissurectomy (244510/521; N90; group 6)	
Cataract surgery (e.g. 246606/595; N425)		Cholecystectomy (242454/465, N350 ; 242476/480, N400)
Excision of a tendon sheath (280534/545; N100)	Incision of a tendon sheath (280512/523; N75; group 5) Exploration of a tendon (280556/560; N75; group 6)	
Osteotomy for a retained tooth (312410/421; K120)	Tooth transplantation (312373/384; K180; group 1)	

§: the fee of a nomenclature code is determined by multiplying the value of the key identifier (e.g. 1.15 for 'K') with a nomenclature code specific coefficient (e.g. 63).

In Belgium, the payment system for day-care activities is complex as it is based on a combination of different payment systems. The fact that it is a shared RIZIV – INAMI and FOD – SPF responsibility makes it even more difficult to realise a coherent policy and issuing of rules.



3.2. Variability in day-care share for elective surgical procedures

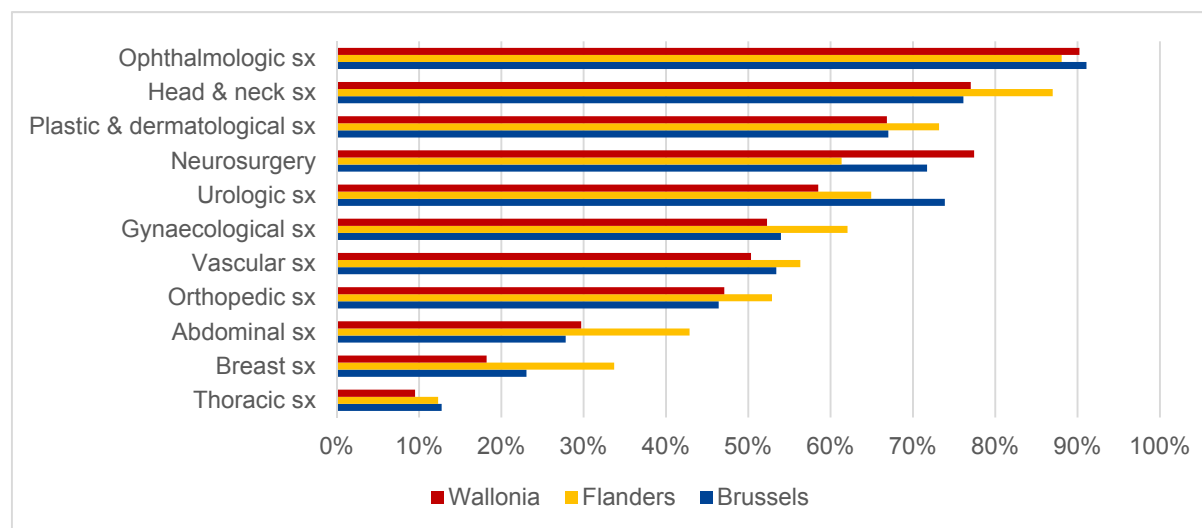
For each of the eleven surgical disciplines (see Figure 3), a list of surgical procedures was evaluated for their eligibility for a day-care approach in the online survey. The respondents were asked to add all missing procedures (For more details on the composition and validation of the lists of interventions eligible for a day-care approach, the reader is referred to the Scientific Report section 5.2.3; the results of the online survey are summarized per discipline in Supplement 14). With each of the eleven expert groups a dedicated meeting was scheduled during which the eligibility for a day-care approach of surgical procedures was thoroughly discussed. The starting point of these discussions was the current variability in care setting (i.e. day surgery vs. inpatient), illustrated in bubble graphs (e.g. Figure 4 and Figure 5), in which each Belgian hospital is represented by a circle.

The size of the circles corresponds to the total number of non-urgent severity of illness (SOI) 1 and 2 stays (i.e. inpatient and day-care stays) for the procedure of interest. Only hospitals which performed at least 10 procedures of interest over the 2011-2013 period are presented. It is important to mention that surgical procedures performed in extramural surgery centres (e.g. in case of cataract surgery) are not captured by the data and hence are not presented in the graphs nor tables.

3.2.1. Differences among disciplines and between regions

Among the 486 surgical procedures under study, the highest day-care rate is observed for ophthalmologic surgery and the lowest for thoracic surgery. Regional differences exist: for the majority of surgical disciplines the elective day-care rate was higher for hospitals in Flanders than in Wallonia or Brussels. Differences between Wallonia and Brussels were limited for most disciplines. In-depth statistical analyses on these differences were considered beyond the scope of this project.

Figure 3 – Regional differences in day-care rate among 11 surgical disciplines, 2011-2013



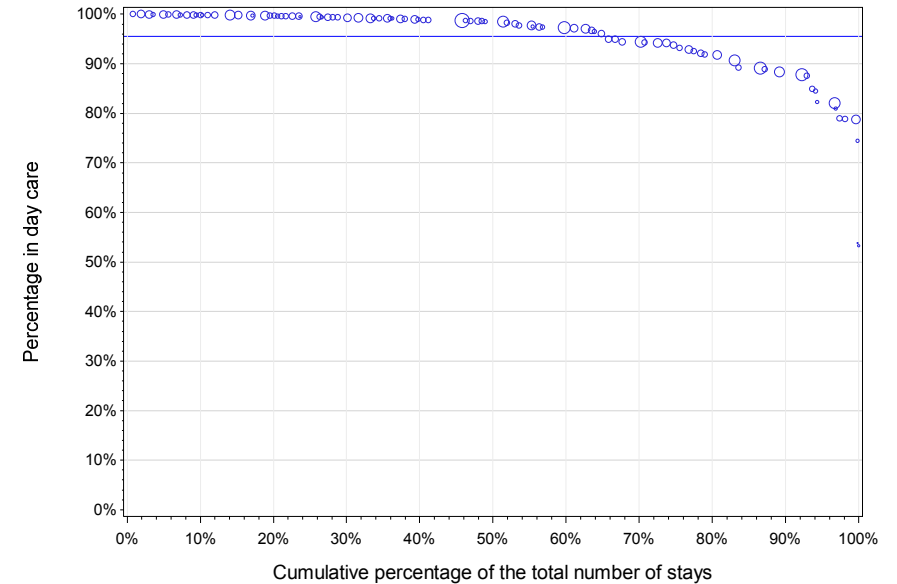
Sx: surgery.



3.2.2. Variability in day-care share between Belgian hospitals

The variability in day-care share between hospitals is considerable. As was illustrated above, Belgium performs well for **cataract surgery** compared to other Western European countries. Indeed, the 100 hospitals that performed at least 10 cataract surgeries (more precisely, a lens extraction followed by the insertion of an intraocular lens) in the period 2011-2013, achieved an average day-care rate of 95.5% (Figure 4). But this high day-care rate does not mean that there is no room for improvement left with regard to substitution towards day care: the graph illustrates that there are still a few hospitals with a day-care rate below 90%, including a hospital with a day-care rate of only 53.3%.

Figure 4 – Lens extraction with insertion of an intraocular lens prosthesis, 2011-2013



Horizontal line drawn at National %: 95.5 %
Number of hospitals with 0% in Day care: 0

Comparable bubble graphs, with high national day-care rates and some hospitals with a much lower day-care rate, were obtained for several other procedures, also from other disciplines. Some examples (i.e. a non-exhaustive list) are presented in Table 3.

**Table 3 – Elective surgical procedures with high national day-care rates and outliers, 2011-2013**

Procedure	# Stays (all)	# Day-care stays	% Day care	Min % day care	Max % day care	P25 (%)	P75 (%)
Carpal tunnel release	92 526	90 606	97.9	42.9	100.0	97.0	99.1
Lithotripsy	36 626	35 180	96.1	0.0	99.4	92.7	97.4
Lens extraction with insertion of an intraocular lens prosthesis	336 763	321 764	95.5	53.3	100.0	94.0	99.6
Blepharoptosis repair	5 893	5 585	94.8	63.6	100.0	92.3	100.0
Arthroscopic meniscectomy	113 946	106 847	93.8	51.3	99.4	91.2	95.8
Endometrial biopsy/aspiration with hysteroscopy	23 168	21 647	93.4	30.2	100.0	88.4	96.5
Tonsillectomy with adenoidectomy	41 828	37 133	88.8	2.7	100.0	86.3	96.3
Uni- or bilateral orchidopexy	6 973	5 867	84.1	16.0	100.0	78.9	96.0

#: total number; %: percentage; Min: minimal; Max: maximal; data limited to hospitals which performed at least 10 procedures of interest in 2011-2013.

Similarly, several elective surgical procedures were identified for which the variability in day-care rate between Belgian hospitals ranged between 0 and 100% over the three-year period; some examples (i.e. a non-exhaustive list) are presented in Table 4.


Table 4 – Elective surgical procedures with day-care rates ranging between 0 and 100%, 2011-2013

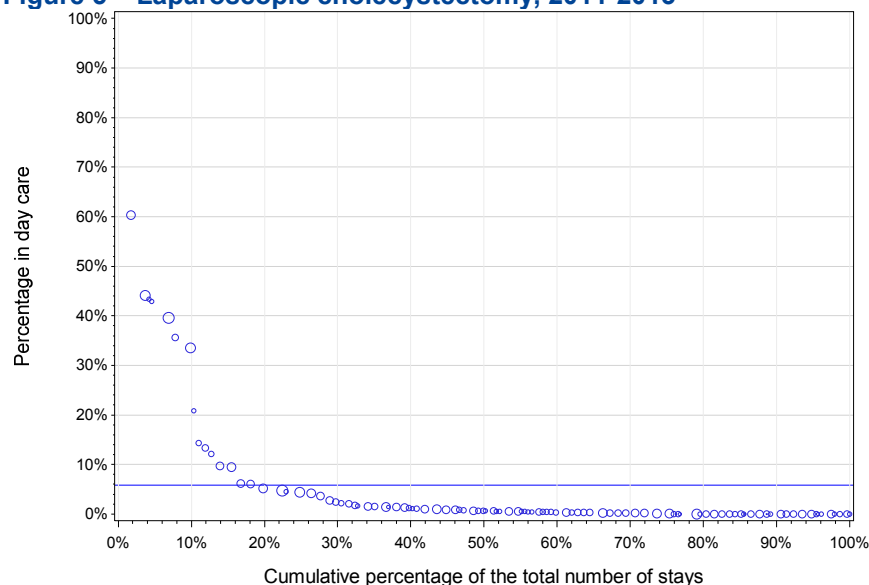
Procedure	# Stays (all)	# Day-care stays	% Day care	Min % day care	Max % day care	P25 (%)	P75 (%)
Facial bone graft	6 198	4 524	73.0	0.0	100.0	46.6	88.5
Dacryocystorhinostomy	2 455	1 522	62.0	0.0	100.0	34.1	82.6
Excision of breast tissue in men	1 495	893	59.7	0.0	100.0	31.3	80.0
Insufflation of Fallopian tubes	5 592	3 048	54.5	0.0	100.0	29.9	80.3
Turbinectomy	19 558	9 623	49.2	0.0	100.0	24.5	69.9
Trabeculectomy	2 788	1 300	46.6	0.0	100.0	51.0	100.0
Facial rhytidectomy	1 523	369	24.2	0.0	100.0	8.2	48.2
Laser photocoagulation of retinal tear or detachment	3 016	522	17.3	0.0	100.0	3.1	80.2
Corneal graft	1 246	208	16.7	0.0	100.0	0.9	46.3

#: total number; %: percentage; Min: minimal; Max: maximal; data limited to hospitals which performed at least 10 procedures of interest in 2011-2013.

As mentioned above, Belgium does not perform well for **laparoscopic cholecystectomies** compared to other Western European countries with regard to day-care share. Indeed, in the period 2011-2013 the national day-care rate was 5.9%. Yet, one hospital achieved a day-care rate of 60.3%, while 31 hospitals performed not a single laparoscopic cholecystectomy in day care (Figure 5). The consulted experts suggested that in 40-50% of the cases laparoscopic cholecystectomy is eligible for day care. But because of the lack of financial incentives towards day surgery (see section 3.1) many refrain from performing it in day care.



Figure 5 – Laparoscopic cholecystectomy, 2011-2013



Horizontal line drawn at National %: 5.9 %

Number of hospitals with 0% in Day care: 31

Exploration of hospitals with systematic low day-care rates

Logistic regression analyses revealed that some patient characteristics are associated with day-surgery use. As expected, over all the selected procedures, patient age and severity of illness were negatively associated with day-surgery use: elderly had less chance to be admitted in day care than younger patients and patients with a moderate severity of illness tended to be less treated in day care than those with a minor severity of illness. The association is modest for age but it is substantial for severity of illness.

Further, we observed that university hospitals and hospitals located in Wallonia (and to a smaller extent in Brussels) most often tended to have a day-care rate below the national 25th percentile. Case-mix in terms of severity of illness did not explain these patterns. Unfortunately, available

administrative data do not allow to further explore whether this was due to mere differences in clinical or admission practice, in availability of primary and home care after discharge, or in patient socioeconomic profiles. It was, however, striking that 14 of the 15 hospitals that most often had a day-care rate below the national 25th percentile, receive supplementary payments to compensate for the extra costs they generate as they treat more patients with a low socioeconomic status (part B8 in the BFM).

Also the discussions in the expert meetings clearly revealed the importance of socioeconomic and sociodemographic variables in the decision to admit a patient in day surgery or not. Unfortunately, this information at the individual level is lacking in the available databases.

The variability in day-care share between hospitals is considerable. High national day-care rates do not preclude room for improvement for certain hospitals as for the majority of these procedures there are “low performers”.

3.2.3. Call for a careful interpretation of the administrative data

During all expert meetings, the consulted experts recommended some prudence when interpreting the administrative data. Here we rather give an overview of the most frequently cited reasons; in Appendix 16 an overview is provided of the procedures for which the interpretation of the administrative data should be performed with caution and the reason why.

- The **same nomenclature or ICD-9-CM code** may in essence cover a **variety of indications, procedures, techniques and/or severities**. An example is a corneal graft, which can be performed with a whole cornea being transplanted (which leads to a lot of complications) or the newer technique where pieces of cornea are being transplanted (leading to less complications and hence eligible for day care).
- Certain descriptions of procedures (or procedure labels) are **too vague** and may include very distinct procedures (which may or may not all be eligible for day care). Examples are the curettage procedures in orthopaedics (which may in certain instances be linked to severe sepsis, in which case the patient needs close monitoring and (among



others) intravenous antibiotherapy and hence is not suitable for day care).

- In general, the administrative data (RIZIV – INAMI or ICD-9-CM codes) rarely allow to make a **distinction between primary and revision surgery**, which is a serious shortcoming. For some procedures (e.g. in orthopaedic surgery) it is extremely important to make a distinction between primary surgery and recurrent/revision surgery, the latter rendering more severe surgery and hence a smaller chance for day care. As the administrative data do not allow to make that distinction, they should be interpreted with caution. Likewise, the 2011-2013 administrative data do not allow to make a distinction between open surgery and minimally invasive surgery. The ICD-10-PCS (applied from 2015 onwards) will allow to make that distinction.
- Certain **nomenclature codes are “used” for other procedures than the ones intended**, due to a lack of proper codes for the procedure that was performed (e.g. because the updates of the nomenclature do not keep pace with current practice) or because the reimbursement provided is considered too low. Although the analyses of this project were based on APR-DRG and ICD-9-CM codes, this issue was raised in several expert groups and is applicable, among others, for radical endometriosis excision, which according to the experts should only be done in specialised centres (note: it has been attested in 80 hospitals, 57 of them not performing more than 10 cases over the 3-years period) and which definitely needs an inpatient approach. According to the consulted experts, the 119 cases that were performed in day care most probably reflect miss-use of the nomenclature.
- In some hospitals, certain procedures are often done in the doctor’s office situated on the hospital premises, hence in principle **not eligible for day-care lump sums yet still coded (illegally) as day surgery**. In this respect several maxillofacial procedures were cited. For the gynaecologists, for instance, it was astonishing that each year more than 500 women are admitted in hospital for the marsupialization of a Bartholin’s gland and 17% even for an inpatient stay, while they were convinced that this procedure can safely be performed in the doctor’s office in 95% of cases. Based on the administrative data it is not

possible to unravel which proportion of these procedures is really done in a full operating room and which proportion is actually done in the doctor’s office.

3.3. Barriers to an increase of the day-care share for elective surgical procedures

The barriers discussed in the following paragraphs were for the greater part identified during the 11 expert meetings we had with the clinical experts. They are very well in line with the barriers raised in the international literature^{1, 3, 6, 7, 36} summarized in the Scientific Report (Introductory Chapter).

Financial barriers

- Current payment rules for day-surgery activities fail to give clear incentives in favour of day surgery; this was also stated in previous KCE reports.^{20, 21} List A, initially intended as an incentive for day surgery, has become an impediment for a further growth in day surgery: it has not been updated for a long time and it does not keep pace with current practice, nor with the nomenclature. Currently hospitals are financially penalized when they perform a procedure which has not been included in List A (e.g. cholecystectomy) in a surgical day-care unit: they do not receive a justified length of stay (LOS) equal to 0.81 days (which they receive when the procedure is included in List A) nor the lump sums per admission and per diem, but the Maxi lump sum (for the general anaesthesia). Hence, for these procedures hospitals have no interest at all to shift towards day surgery. Even worse, some nomenclature codes (e.g. in orthopaedic surgery) are still on List A, while they are no longer reimbursed (and hence not used) because they have been replaced by updated codes, which have not been included in List A. Apparently, the interplay between RIZIV – INAMI (responsible for the nomenclature) and FOD – SPF (responsible for List A) on this matter is far from ideal. In some hospitals medical teams are kindly requested by the hospital management to admit their patients for one night, also for procedures actually eligible for day care.

In addition to the current payment rules, some more financial barriers were raised by the consulted experts:



- Since August 2015, fee supplements cannot be charged anymore for day-care patients staying in a common or a two-person room. Some specialists working in hospitals where there are no or only a limited number of single rooms available in the day-care unit, prefer not to admit their patients in day surgery, so that they can charge fee supplements.
- In some hospitals the anaesthetists demand that certain procedures are done under general anaesthesia while local anaesthesia (administered by the surgeon himself) is perfectly possible and renders the procedure more eligible for a day-care approach.

At last, some experts claimed that their patients ask for inpatient care, since some hospital insurance companies only refund their clients when procedures are performed in an inpatient approach; an allegation that turned out to be unfounded.

Hospital-related organisational barriers

According to the majority of consulted experts, higher day-care rates are possible on the condition that organisational and logistic barriers are tackled. For instance, procedures scheduled late in the afternoon do not qualify for a day-care approach when the expected post-operative observation period is too short. Similarly, semi-urgent procedures, eligible for day care, are currently often performed in the inpatient setting because in many hospitals the waiting list for day surgery is much longer. Hence, when day-surgery units stay open longer at night and more operating rooms are available, the potential for day surgery can be increased.

Additional organisational issues:

- The order in which surgical procedures are performed is not in all hospitals/surgical disciplines organised in favour of day care, in spite of the legislation on day-surgery centres (see Scientific Report, Chapter 3). Many surgical teams prefer to start in the morning with the heaviest procedures (usually not eligible for day care) as they demand most concentration and wish to finish the day with the least demanding procedures, which are actually often eligible for day care. In the same way, anaesthetists generally ask that cases performed under general anaesthesia are performed first and that procedures under local

anaesthesia (for which they are most often not needed anymore) are performed afterwards. As the recovery time for the last patients is then too short, they have to be admitted in hospital.

- In some hospitals, emergency surgical interventions throw the day-care schedule into confusion, which results in the last patient(s) being admitted in hospital as the remaining recovery time is too short. Therefore, when the surgeon who is working in the day-care surgery unit is not on call and the handling of emergencies and the day-surgery schedule are better geared to one another, this will definitely result in an increase in the day-care share.

Organisational and medico-legal barriers related to the ambulatory setting

When patients go back home after surgery, they need dedicated post-surgical medical and paramedical care at home (e.g. wound care, pain control, monitoring of complications, appropriate and timely physiotherapy). Experts sense post-surgical medical, nursing, physiotherapy and paramedical care in the ambulatory setting as not sufficiently developed yet, and hence are inclined to keep their patients e.g. for a night or two in hospital until the highest risk for complications is over. Experts also raise the issue that in some areas in Belgium, general practitioners are overloaded and do not have the time (nor the expertise) to deal with post-surgical complications. In some areas, there are too few nurses in the ambulatory setting. Last but not least, in this context the issue of legal responsibility was highlighted in nearly every expert group: who has the medico-legal responsibility when a patient is affected by post-surgical complications at home, which are not in time and/or correctly diagnosed and/or taken care of by the ambulatory setting?



Clinical preferences, lack of evidence based guidelines and/or traditions among medical teams

The factor customs & traditions should not be underrated: for several procedures in nearly all surgical disciplines the consulted experts admitted that they are routinely not done in day care, just because this is the tradition of the surgical and/or anaesthetic team or the way they were trained. In addition, some specialists may lack sufficient training and/or experience with newer techniques (e.g. minimally invasive approaches) and/or are reluctant to adopt innovative approaches, while others are not inclined to organise their work in a different way (e.g. operation schedule, discharge administration, local instead of general anaesthesia, per os instead of intravenous administration of post-operative drugs).

Patients living alone, with insufficient support from informal caregivers, with a weak social network not eligible for a day-care approach

In the Belgian law it is clearly stipulated^{1 37}: only patients who have at home someone at their disposal for care and supervision during the first 24 hours after surgery, can be treated in a day-care setting. Hence, when patients state that they cannot provide anyone for supervision after being discharged from the day-surgery unit, there is no alternative other than admitting the patient for at least one night. With increasing numbers of inhabitants living alone and a further crumbling of social networks, the experts expect that this problem will further expand. Another group of patients for whom day care will be difficult is the growing number of elderly, of whom many have no or no fit caregiver.

Patient preferences and “comfort”

According to the consulted experts some patients just want to stay one night in hospital as they assume they have that right. In some hospitals patients are offered the option to stay the night before surgery in hospital so that the OR schedule is not turned upside down due to late arrivals (e.g. when patients live far from hospital or when there is a high chance of traffic jams). In the same way, in some hospitals patients are kept for one or two nights solely “for the patient’s comfort”, for instance when patients have to return to the hospital on the first or second post-operative day (e.g. for post-operative care, for intravenous administration of drugs). In other hospitals patients are kept for one or two nights as it is regarded as psychological support for the patient (e.g. after oncological procedures).

¹ http://www.ejustice.just.fgov.be/cgi_loi/change_lg.pl?language=nl&la=N&cn=1997112533&table_name=wet Chapter III, Art. 8. De functie "chirurgische daghospitalisatie" beschikt over schriftelijk vastgelegde selectiecriteria betreffende zowel de patiënten als de ingrepen. Eén van de in het vorig lid bedoelde selectiecriteria bestaat erin dat er in de functie "chirurgische daghospitalisatie" enkel patiënten worden opgenomen die

this, tot 24 uur na hun ontslag, over de nodige opvang beschikken. // La fonction " hospitalisation chirurgicale de jour " dispose de critères de sélection fixés par écrit, concernant à la fois les patients et les interventions. Un des critères de sélection précités consiste en ce que la fonction " hospitalisation chirurgicale de jour " n'admette que les patients qui chez eux, peuvent bénéficier d'une prise en charge adéquate, pendant au moins 24 heures après leur sortie.



4. PROPOSALS FOR A FURTHER EXPANSION OF DAY SURGERY IN BELGIUM

Based on the analyses of the Belgian administrative data, the discussions with the experts and the stakeholders, the literature review and the experience from abroad, proposals for a further expansion of day surgery in Belgium are elaborated in the following paragraphs. Out of these proposals concrete policy recommendations for the Belgian context were distilled.

4.1. Support day surgery through financial incentives and the abolition of day-surgery discouraging rules

As was elaborated on in section 3.1, the current payment system for day-surgery activities is complex, is a shared RIZIV – INAMI and FOD – SPF responsibility and misses clear incentives in favour of day surgery. A payment system that is (in part) based on nominative lists of procedures bears the important disadvantage that those lists need to be kept updated regularly and adapted to clinical guidelines, current practice and reimbursement rules. Experience with List A for example shows that the use of antiquated lists may soon become an impediment towards a change in care setting. Also the fact that for some procedures hospitals are reimbursed through the closed-end Budget of Financial Means (procedures on List A), while for other procedures hospitals receive a lump sum for which the budget is not closed-end (Group 1 to 7 lump sums and the Maxi lump sum), makes the payment system unnecessarily complex.

It would be beneficial to bring the current payment systems together in one transparent payment system that supports day surgery. Different reimbursement levels can be provided within the system, preferably based on objective parameters (e.g. duration, complexity, (disposable) material used).

A financial impulse towards day surgery will certainly increase the day-surgery share for many procedures. On the other hand, when adapting the payment system, one should make sure that procedures that can easily be done in the doctor's office are not attracted to day surgery. In order to avoid

this undesirable "suction effect", the consulted experts suggested to increase the current fee schedules for those "minor" procedures which they currently consider as financially under-valued (but the revision of the fee schedule is out of scope for this project). A pragmatic solution is to assign a (preferred) care setting to each elective surgical procedure. This is exactly what the British Association of Day Surgery (BADs) already did.³⁸ In the BADs Directory of Procedures, a publication which is regularly updated, over 200 surgical procedures have been assigned to four treatment options: procedure room (i.e. the doctor's office), zero night stay, one night stay and two nights stay (<http://daysurgeryuk.net/en/shop/publications/>).

For certain procedures, eligible for day care, medical teams are kindly requested by the hospital management to admit their patients for one night. A correct financing of day surgery should avoid these problems, so that the choice of care setting is solely based on the patient characteristics and the complexity of the procedure(s).

Parallel to the above items, it would help if the reimbursement scheme of procedures would keep pace with surgical technological innovations that bear a thorough evaluation of the harms and benefits. And although the latter was considered out of scope of this study, a couple of examples are given to illustrate the point the experts raised. Laparoscopic oophorectomy is a very painful operation if performed "the old way" (i.e. coagulation resulting in more necrosis) while newer techniques (e.g. sonicision, ultracision, ligasure, thunderbeat), result in a significant reduction of peri-operative pain and of operating time, which renders the procedure more eligible for day care (achievable day-care rate suggested by the experts: up to 70-80%). However, currently the disposable material is not reimbursed by RIZIV – INAMI, which impedes a day-care approach. Similarly, the use of a fibre renders the electro-fulguration or ligation and stripping of lower limb veins eligible for in-office care and allows the patient to go back to work the day afterwards (in contrast with the technique without the fibre where the patient is unfit for labour for three weeks). Yet, as of today, only one fibre per patient (in a lifetime) is reimbursed.



Last, for the assignment of inappropriate inpatient stays the FOD – SPF selected 24 surgical APR-DRGs and three medical APR-DRGs (see section 3.1). For the present study we selected elective surgical procedures from 71 surgical APR-DRGs. If the system of the inappropriate inpatient stays is kept, it should be extended to the other surgical APR-DRGs too.

4.2. Improve and support organisation and logistics

In many hospitals day-surgery schedules are overloaded and waiting lists are long. Hence, when a further substitution of inpatient care by day care for elective surgical procedures is pursued, the day-surgery units' capacities should be increased, by longer opening hours (e.g. until 10 pm instead of the current 5-7 pm) and the augmentation of the number of operating rooms and dedicated infrastructure. Also a broader interpretation of the concept "day surgery" should be evaluated. More precisely, a shift towards an approach that takes the (maximum) stay in the hospital (of e.g. 12, 24 or 36 hours) into account, instead of focusing on the overnight stay in the hospital, should be explored. In this way, patients who had surgery late in the afternoon and stay overnight are still considered "day-care patients". Experts are convinced that this broader approach (a.o. in the hospital payment system) will certainly generate a further growth of the eligibility of elective surgical procedures as well as of patients for a "day-care approach". As was mentioned before, the British Association of Day Surgery (BADS) for instance, makes a difference between "day surgery" (i.e. traditional day surgery), "23 hour stay" (patients admitted and discharged within 24 hours) and "under 72 hour stays" (i.e. patients admitted and discharged within 72 hours).³⁸

According to the consulted experts, the organisation of day-care surgical units costs extra time and personnel; a raise in the substitution rate depends also on policy makers' and the hospital managements' willingness to make and reward these efforts. For a smooth organisation of a day-care unit and the guarantee of high quality care sufficient administrative and nursing staff (e.g. day-care "planners") is essential. They schedule the procedures according to the instructions of the surgeons and anaesthetists, contact patients a day in advance (and hence reduce the number of no-shows), make sure the necessary staff and equipment are provided, contact the patients after their return home to give additional advice and record potential

problems, etc. In short, they enable a smooth organisation of care (smooth for patients, physicians and staff) and an optimal use of the day-care unit's capacity. Experts warn that a further decrease of the length of stay results in a higher number of patients with a higher care need. Combined with an increase of the number of patients assigned to a single nurse and the increasing flexibility that is demanded from nurses (leading a.o. to a loss of the knack of specialised care), this may jeopardize safe and high quality care within the hospitals.

4.3. Provide clinical guidelines & support the development of care pathways

The care setting (day surgery versus classical hospitalisation) offered to each individual patient should whenever possible be based on evidence-based clinical guidelines. In practice however, this choice is according to the consulted experts often primarily based on other factors, such as personal preferences, customs of the medical team, kind requests of the hospital management etc. Notable examples discussed during the expert meetings include the administration of perioperative antibiotherapy, the use of drains and the positioning of the patient (e.g. after ophthalmologic surgery), which are for some experts the sole reason to keep the patient one night in hospital while their peers perform the same procedures in day care and claim that they do not observe more complications. Guidelines and care pathways would also be useful to guide the optimal post-operative observation time as this turned out as a topic on which there was no consensus in several expert groups. Last but not least, clinical guidelines should also be the guiding principle when it comes to the choice between a surgical intervention and very good non-surgical alternatives. Just one example: for many patients a hormonal intrauterine device is a good alternative for endometrial ablation by hysteroscopy. Yet, the latter is equally well reimbursed as a hysterectomy and hence very attractive to advocate.



4.4. Inform all parties involved

Inform and offer where needed dedicated training to medical teams

For the majority of experts consulted in the expert groups it was the very first time they were presented data on how they perform with regard to day surgery vs. inpatient care. In that sense, the charts were considered very informative and in some cases even surprising. Several experts admitted that the medical team is not always fully aware of the financial consequences of admitting the patient in hospital for one night. Many experts suggested that more feedback (incl. benchmarking) could definitively help in sensibilizing their peers on the (o.a. financial) consequences of the care choices (e.g. day care vs. inpatient care) made and thus help in stimulating towards more day care.

On a different matter, the expansion of day surgery has (among others) been enabled by the advance of various medical technologies, like minimally invasive surgical approaches. While the younger generation of surgeons is thoroughly trained in these minimally invasive approaches, some surgeons may not. If a further expansion of day surgery is envisaged, it should be evaluated whether it is realistic (and safe) to force (e.g. senior) surgeons to shift completely towards minimally invasive techniques.

Similarly, a further growth of day surgery may be realised when more anaesthetic teams have more expertise in managing postoperative pain outside the hospital. According to the consulted experts, not all anaesthetic teams have expertise with e.g. the post-operative administration of opioids and hence the patient is admitted in hospital for the first post-operative night. If day-care rates are to be increased, better training in postoperative pain management will be needed.

Inform patients and informal caregivers

It is very important that sufficient time is spent and expertise mobilised before and after the procedure to fully inform the patient and his informal caregiver(s): what does the surgery entail, how much pain can be expected and how can pain be prevented and/or subdued, what other potential complications can crop up and how can they be tackled, who can they reach in the postoperative phase in case of problems or additional questions, ... In this respect, it should be verified that patients are well awake and

accompanied by an informal caregiver when they get the post-operative instructions so that they understand and capture the instructions given. Experts experience difficulty in convincing hospital management to invest in patient information (e.g. organisation of multidisciplinary preoperative consultations aiming, for instance, to assess the patient's eligibility for day care, to give self-management instructions for the post-operative period which are currently not profitable according to the consulted experts). Among the experts, there are advocates and opponents of patient leaflets (e.g. easy to transfer correct information vs. difficult to know whether everything is well understood and whether the patient will comply with the instructions).

Provide dedicated training to the ambulatory setting

The consulted experts saw a high need for better education of the ambulatory sector in post-operative care, as (according to them) too few ambulatory nurses ("district nurses", "community nurses") are specifically trained to provide post-surgical care and not many general practitioners follow the new principles of day care, enhanced recovery etc. Every patient sent home after day surgery should be guaranteed optimal post-operative care, regardless of his place of residence.

Provide clarity with regard to the medico-legal responsibility

The issue of medico-legal responsibility was a major concern among the consulted experts: who has the medico-legal responsibility when a patient is affected by post-surgical complications at home, which are not in time and/or correctly diagnosed and/or taken care of by the ambulatory setting? If one wants to convince medical specialists to shift towards day surgery, this issue should not be ignored.



4.5. Set up a monitoring & auditing system

As suggested by the experts, the instalment of a monitoring system with systematic feedback about centres' and surgeons' day-care rates compared to their peers, may in itself give the incentive towards day surgery. But also, when the clinical activity is further moved from the inpatient setting to the day-surgery setting, it is important that this clinical activity is monitored and audited to ensure that problems experienced (e.g. by patients or primary health care professionals) are quickly identified and rectified. Several clinical indicators (e.g. cancellation of booked procedures, unplanned return to the operating room on the day of surgery, unplanned overnight admission, readmission to the ambulatory surgery unit or the hospital, patient satisfaction) have internationally been recommended for the evaluation of quality and benchmarking in day surgery.³⁹ Within the Day Surgery Data Project (2009-2012), co-funded by the European Commission, standard lists of essential and ideal day-surgery indicators were proposed and an approach explicitly integrating a standardized day-surgery information system with a continuous quality improvement strategy was elaborated.²⁹

As was mentioned in the final report of that project a streamlined day-surgery information system represents one of the most important preconditions for improving the whole day-surgery system and its components.²⁹ Auditing and benchmarking are essential to ensure a consistent quality of care. Outcome registration (e.g. unintended admission and readmission rates, emergency rooms visits, complication rates, patient experience) and case-mix adjusted feedback to individual hospitals are certainly recommended: mirror-information may act as a catalyst for quality improvement in care.⁴⁰ In addition, a state-of-the-art day-surgery information system will also improve accountability of clinicians, hospital managers and policy-makers.²⁹ Indeed, the consulted experts also suggested that feedback on how the hospital/medical team is performing in comparison to the peers would also help in sensibilizing and stimulating towards more day care. The comparison of outcomes and processes between hospitals may further elucidate why certain hospitals have lower day-surgery rates than others and how they can be assisted in tackling remaining barriers.

Day-surgery functioning depends, among other factors, on the availability of reliable and valid data and their transformation into knowledge. Without measures it is impossible to build a picture beyond intuition.²⁹ Yet, as was explained in section 3.2.3 during the numerous expert meetings for this project it was repeated several times that currently (e.g. RIZIV – INAMI) codes are being (mis-)used and that in some hospitals lump sums are charged for (especially) minor procedures that are not performed in the day-surgery unit (but in the doctor's office). Addressing these irregularities should be a first step.

4.6. Points of particular interest

- As was explained above, only patients who have at home someone ready to provide care and supervision during the first 24 hours after surgery, can be treated in a day-care setting, and are thus admitted in hospital for at least one night. It could be explored whether so-called **hospital hotels** where patients post-operatively can recover (common in Scandinavian countries and the USA¹) could be an answer for these patients as well as for patients who live a long distance from the day-care unit, but only under the express condition that this care concept does not lead to a shift of costs towards the patient and/or his hospitalization insurance.
- In the same respect, it would be very useful if more **patient characteristics** (e.g. patient living alone, capacity to take care of himself, socioeconomic background), are also collected in a systematic way and included in the current data flows so that they can be taken into account when analysing e.g. day-surgery rates. Currently these data may already be included in the patient files in some hospitals, but as these data are not transferred a systematic way yet, they are not linkable with other data for analysis.



- If targets for day surgery are defined (e.g. to define inappropriateness of an inpatient stay), then exceptions should be made (or adapted targets defined) for **combined procedures**. In many expert groups the consulted experts agreed that for several elective surgical procedures higher day-care rates can be obtained on the condition that the procedure in question is not combined with another surgical procedure. In many cases, the combination of two or more procedures renders it too heavy for the patient to return home the same evening. Likewise, adapted targets should be defined for revision surgery because these procedures are often more complex and hence less eligible for day care.^m
- In line with the above, it should be kept in mind that in the present report only SOI 1 and 2 stays were included in the analyses, because SOI 3 and 4 stays refer to patients who have severe comorbidities and hence are most probably less eligible for a day-care approach. If targets for day surgery are defined, then exceptions should be made (or adapted targets defined) for **SOI 3 and 4** stays.
- Currently, some hospitals have already an overloaded day-surgery unit; they will need time to set up and/or increase **dedicated infrastructure**. In case negative incentives are installed, these organisational issues should be taken into account.
- An important item to bear in mind when a further shift towards day surgery is encouraged is that this shift should **not** be accompanied by a **shift of costs towards the patient**. In the inpatient setting the cost for medical products (e.g. wound dressing material) and several medicines is reimbursed, which is not the case for the patient at home. Likewise, the number of visits and nursing acts at home is restricted for those patients who are not assigned a “nursing lump sum A, B or C”, beyond which nursing acts and visits are no longer reimbursed. For some patients these extra costs are covered by their private hospitalization insurance, but this depends on the contract type and it should be realised that many patients do not have such insurance. Similar concerns apply to patient transportation to and from the hospital for post-surgical follow-up.
- If targets for day surgery are defined (e.g. to define inappropriateness of an inpatient stay), then the **case mix** of the hospital/surgical department should be taken into account. Certain surgeons are very experienced in the treatment of a certain pathology and hence are referred the more severe cases, who may be less eligible for a day-care approach and which may thus result in low day-care rates. On the contrary, other surgeons confine themselves to the least severe cases, which is reflected in high day-care rates.

^m In the BADS directory of procedures, exclusion codes were provided for more complex revision procedures, for which the defined targets were thus not applicable.³⁸



RECOMMENDATIONS

To the Minister of Social Affairs and Public Health, after advice of the competent bodies:

- For the rollout of a new payment system, the current lists (List A, lists for lump sums Group 1 to 7 and the Maxi lump sum) should be replaced by a new global list of elective (planned) surgical procedures which can safely be performed in day surgery. In addition, the preferred treatment option (outpatient, day surgery, inpatient stay of one night or two nights) and achievable substitution levels should be defined. The list is compiled by an advisory board, which appeals to working groups for each specialty. International data on day-surgery use will also be taken into account.
- The list should be reviewed annually and, where necessary, be revised:
 - To add or remove procedures from the list and to assess developments in treatment options and substitution;
 - To remedy registration and coding issues (e.g. vague nomenclature) and, where necessary, to propose suggestions for modifications to the nomenclature.
- A financial incentive should be created for procedures on the list. The elaboration of this payment mechanism should fit in and should be consistent with other planned reforms of the hospital payment system (i.e. low, medium and high variability payment clusters).
 - For elective procedures (and limited to severity of illness (SOI) 1 and 2) included in the low variability cluster (fixed amount per admission):
 - For each procedure on the list a single amount per admission should be calculated regardless of the admission type. The amount should be a weighted average of the real costs per inpatient and per day-surgery admission for the respective procedure. The weights should be based on the current and desired day-surgery and inpatient rates.
 - It should be evaluated whether the same amount for SOI 1 and 2 is appropriate.
 - For elective procedures (and limited to SOI 1 and 2) included in the medium variability cluster (Budget of Financial Means) two scenarios are proposed. The choice between both depends on the incentive that is given to day surgery:
 - In the first scenario the current length of stay (LOS) of 0.81 justified days (C-bed) varies according to the financial incentive that one wants to give to day surgery in



comparison with an inpatient stay (higher or lower than 0.81). In this scenario, the current calculation of the justified length of stay of inpatient stays is continued.

- In the second scenario a weighted average of the justified length of stay of inpatient stays and the 0.81 justified days for day-surgery stays is calculated. The weights should be based on the current and desired day-surgery and inpatient rates.
- Inpatient stays can be discouraged by replacing the list of APR-DRGs as current criterion in the definition of inappropriate inpatient stays, by a list of interventions for which the day-surgery rate is already very high or for which it is desirable that the day-surgery rate becomes very high (e.g. target level of 75th percentile). The advisory board will assess the extent to which the other criteria in the current definition (e.g. age) should be maintained.
- Pending a hospital payment reform, the principles of the medium variability cluster can be applied to the full list of elective surgical procedures.
 - For elective procedures (and limited to SOI 1 and 2) included in the high variability payment cluster the results of a subsequent KCE report on payment systems for hospital stays with a large variability in the care process are awaited (June 2017).
 - It must be ensured that the choice between day surgery and an inpatient stay is cost neutral for the patient, more precisely for the costs outside the hospital.
- A feedback system should be developed that provides hospitals and health care providers with data on their percentage of procedures carried out in day surgery compared to other hospitals and care providers (benchmarking). In addition, a number of quality parameters should also be included in the system (e.g. unplanned second procedure, unplanned readmission, unplanned inpatient admission, emergency department visits and patient satisfaction) that allow to monitor the quality and safety of the substitution of inpatient stays by day surgery and to adjust where necessary. This information can also be made publicly available.

To the National Institute for Health and Disability Insurance (RIZIV – INAMI) and the Federal Public Service (FOD – SPF) for Health, Food Chain Safety and Environment

- To minimize the risk of up-coding and fraud an ongoing audit and monitoring of the coding of stays, both statistically as well as in the field, remains appropriate. The audit and monitoring are jointly carried out by the RIZIV – INAMI and FOD – SPF. In addition, financial



sanctions are to be imposed when fraud or systematic misapplication of coding and accounting rules is identified.

- To avoid that certain nomenclature codes are used for other procedures than those for which they are specified because of the absence of proper codes (e.g. because the nomenclature has not yet been adapted to the current practice), it is important to keep the nomenclature up-to-date. This is done in consultation with the FOD – SPF so that full coherence with the list of elective surgical procedures that can safely be performed in day surgery, can be ensured.

To the hospitals

- The day-surgery unit should evolve into an infrastructure and organisation model where day surgery does not longer have to compete with inpatient stays (e.g. OR staffing, surgeons' and anaesthetists' activities).
- In addition, attention should be given to organisational and process optimization as from the preoperative consultation, where the patient is well informed, to discharge management, follow-up and coordination with primary care.



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COLOPHON

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