original article

Eur Surg
https://doi.org/10.1007/s10353-020-00656-x

european surgery
ACA Acta Chirurgica Austriaca

Outpatient before inpatient—the good, the bad and the ugly

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Received: 12 May 2020 / Accepted: 17 July 2020

Summary
Background In January 2019 the Swiss Federal Department of Home Affairs defined a group of six selected surgical interventions to be performed on an outpatient basis. The aim of this paper is to assess surgeons' opinions on patient safety, costs and treatment based on this new regulation.
Methods An online survey was sent electronically to all 942 members of the Swiss Society of Surgery between August and October 2019.
Results About half of the participants think the new regulation could harm patients (52%) and will lead to lower patient satisfaction (49%). Whereas half of the participants expect a reduction in health care costs (52%), most expect surgeons to earn less due to the new regulation (82%). About three quarters (73%) of the participants expect the new regulation to negatively affect surgical resident education. More than half (62%) of the participants assume that diagnoses allowing reimbursement for inpatient treatment (such as, e.g., bilateral instead of unilateral inguinal hernia) could be made more generously. Accordingly, 70% assume that the new regulation may result in not necessarily indispensable or possibly unnecessarily extended interventions (such as, e.g., bilateral inguinal hernia repair). Furthermore, most (86%) participants fear that the new regulation could possibly lead to hospitals/surgeons rejecting patients.
Conclusion Whereas about half of the participants expect a reduction in health care costs, about two thirds fear that more generous diagnoses and not necessarily indispensable or possibly unnecessarily extended interventions could be performed due to the new regulation demanding outpatient care for said surgical interventions.

Keywords Surgery · Survey · Regulation · Switzerland · Public Health

Main novel aspects

- The new *outpatient before inpatient* regulation might lead to more generous diagnoses according to Swiss surgeons
- The new *outpatient before inpatient* regulation could further lead to not necessarily indispensable or possibly unnecessarily extended interventions
- Most Swiss surgeons fear that patients will be rejected by hospitals due to the new *outpatient before inpatient* regulation.

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Electronic supplementary material The online version of this article (https://doi.org/10.1007/s10353-020-00656-x) contains supplementary material, which is available to authorized users.

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Published online: 20 October 2020

Introduction

On 1 January 2019, the amended Health Care Benefits Ordinance (KLV) providing for the principle *outpatient before inpatient* entered into force in Switzerland [1]. Thereby, the Federal Department of Home Affairs, to which the Office of Public Health (BAG) belongs, defined a group of six selected surgical interventions to be performed on an outpatient basis. These include: varicose vein surgery of the lower limb, interventions on haemorrhoids, unilateral primary inguinal hernia repair, examination and/or intervention of/on the cervix uteri or uterus, knee arthroscopy (including surgeries of the meniscus) and removal of tonsils and adenoids. The costs of these six interventions will only be covered by health insurance on an inpatient basis under certain predefined circumstances [2]. These circumstances include: age of 3 years or younger (i); severe comorbidities such as hereditary abnormalities of the cardiovascular system (ii) and/or pulmonary system (iii); heart failure (iv); arterial hypertension not or barely amendable to medical treatment (v); chronic obstructive pulmonary disease (COPD; vi); unstable or exacerbated asthma (vii); severe obstructive sleep apnoea (viii); long-term oxygen therapy (ix); coagulopathies (x); purpura or other bleeding diathesis (xi); therapeutic anticoagulation (xii); dual antiplatelet therapy (xiii); renal failure (xiv); diabetes mellitus barely amendable to treatment (xv); obesity class III (body mass index, BMI, ≥40 kg/m^2; xvi); underweight (BMI <17.5 kg/m^2; xvii); severe metabolic disorders (xviii); addictive disorders (xix); as well as severe mental illness (xx). In addition to these circumstances, the necessity of permanent supervision (xxi), communication disorders (xxii), absence of a caring person at home (xxiii), lack of transport capacity back home (xxiv), or a travelling time to a hospital of more than 60 min (xxv) are further reasons for inpatient treatment. The regulation aims to create a nationwide standard, ultimately to reduce healthcare costs. In the past, only about 15% of the aforementioned interventions were performed on an outpatient basis in Switzerland, as compared to over 60% in Canada or the US [3]. According to the Swiss Federal Office of Public Health, more than three quarters of all interventions currently performed on an inpatient basis could be performed as an outpatient procedure [4]. In 2016 this would have affected 33,000 interventions in total, corresponding to an estimated cost saving potential of around 90 mio Swiss Francs (= EUR 82,605,000 = USD 91,797,000) [5].

However, the financial motivation of hospitals and healthcare providers might be different. Since 2012, inpatient care has been paid for by diagnosis related grouping (DRG), with each case being allotted to a specific DRG based on medical (diagnosis, treatment, etc.) and other criteria (gender, age, etc.). Costs are divided among the insurance and the government. Costs for outpatient care have been regulated by Tarmed (*tarif médical)* since 2004, which labels and assesses services provided by doctors. Reimbursement to health care providers for the same service are different for outpatient versus inpatient care. The health insurance *Santésuisse* calculated their costs for unilateral primary inguinal hernia surgery to be more than 5000 CHF as an inpatient intervention and around half of the costs for the insurance company if the procedure is performed as an outpatient treatment [6].

The hypothesis of the present study was that the new *outpatient before inpatient* regulation might affect and change practice patterns of surgeons in Switzerland. Therefore, an online questionnaire was prepared to assess opinions about the new regulation and its expected impact on surgeons' income as well as patients' safety and treatment.

Methods

Questionnaire

An anonymous online survey was conducted from August to October 2019. The questions were transmitted through an online platform (surveymonkey.com, Survey Monkey Europe UC, Dublin, Ireland). The questionnaire consisted of 13 questions with two or three possible responses and the possibility of abstention. The questions were divided into two sections: baseline demographics of the participant followed by eight questions about the new regulation and its implications for the treatment of patients, and possible changes in the participants' attitude and practice.

Participants

The invitation for participation of the survey was sent to 942 members of the Swiss Society of Surgery (SGC), representing the majority of surgeons in Switzerland [7]. An email with a short introduction and a hyperlink to the online survey was sent directly to the participants. A reminder was sent after 3 weeks. The survey was open for participation for 64 days in total.

Survey

The survey was written in German and French. Questions covered general information about the participants (age, gender, board certification [yes/no], employed vs. self-employed, and type of hospital [public vs. private]) and eight questions concerning the new *outpatient before inpatient* regulation (supplementary material).

The survey was conducted between August and October 2019.

Table 1 Participants' data

Age (years)	207 (56%) ≥50 years	161 (44%) <50 years
Gender (M, F)	294 (80%) males	73 (20%) females
Board certification	359 (98%) certified	8 (2%) not certified
Employed vs. self-employed	227 (62%) employed	139 (38%) self-employed
Public vs. private hospital	237 (68%) public	114 (32%) private

Statistical analysis

Descriptive statistics were used to summarize baseline characteristics.

Results

In total, 365/942 (39%) surgeons completed the survey. As displayed in Table 1, more than half (56%) of the participants are over 50 years old. Most (80%) are males and almost all (98%) are board certified. About two thirds (62%) are employed and work in a public hospital (68%).

The majority of participants think that the new *outpatient before inpatient* regulation could harm the patient (52%), while 38% were undecided. Similarly, 49% think that the new regulation will lead to lower patient satisfaction, with 39% being undecided.

Whereas a slim majority of the participants expects a reduction in health care costs (52%), 82% expect hospitals and surgeons to earn less due to the new regulation. Accordingly, 73% of the participants expect the new regulation to negatively affect surgical resident education.

More than half (62%) of the participants assume that diagnoses allowing reimbursement for inpatient treatment (such as, e.g., a contralateral inguinal hernia) could be made more generously. Accordingly, 70% assume that the new regulation may result in not necessarily indispensable or possibly unnecessarily extended interventions (such as, e.g., bilateral inguinal hernia repair or additional closure of a small umbilical hernia). Furthermore, most (86%) participants fear that the new regulation could possibly lead to hospitals/surgeons rejecting particular patients.

Discussion

The present survey assessed Swiss surgeons' view on the new *outpatient before inpatient* regulation. Most surgeons think that this regulation might negatively affect residents' training (73%) and lead to lower income of surgeons and hospitals (82%), whereas only slightly more than half (52%) believe that it might reduce health care costs in Switzerland. Importantly, 52% think that the regulation could harm patients, with more than half (62%) of the participants assuming that diagnoses allowing reimbursement for inpatient treatment (such as, e.g., a contralateral inguinal hernia) could possibly be made more generously. Furthermore, two thirds assume that the new regulation may result in not necessarily indispensable or possibly unnecessarily extended interventions (such as, e.g., bilateral inguinal hernia repair or additional closure of a small asymptomatic umbilical hernia). Finally, most (86%) participants think that the new regulation could possibly lead to hospitals/surgeons rejecting particular patients.

The overall response rate of the present survey was 39%. The hereby obtained results may hence not be representative for all Swiss surgeons. However, compared to published response rates from previous surveys among physicians, the present response rate was rather high [8–10]. This especially since response rates from surgeons seem to be even lower than the average from non-operative specialties [8]. Nevertheless, in the present survey, almost all participants were board certified (whereas about 85% of all members of the Swiss Society of Surgery are board certified), meaning that surgical residents were underrepresented. Furthermore, 80% were male, which corresponds to the rate of 79% males in the whole cohort of members of the Swiss Society of Surgery. Questions in the present survey were asked in a neutral way in order to avoid surgeons accusing themselves or others for two reasons: first, to avoid any legal issues with surgeons reporting potential malpractice examples, and second, as more honest answers and a higher response rate were expected by using neutral questions.

The new *outpatient before inpatient* regulation intends to reduce health care costs in Switzerland. Six surgical procedures (including varicose vein surgery of the lower limb, interventions on haemorrhoids, unilateral primary inguinal hernia repair, interventions on the uterus, knee arthroscopies and tonsillectomies) should be performed on an outpatient basis in healthy patients (not fulfilling certain stringent criteria). Previous reports from other countries mostly confirm the feasibility of these procedures as outpatient treatment without harming patients.

Outpatient treatments on varicose veins of the lower limb, including endovenous treatments (e.g., endovenous laser ablation) [11–15], as well as interventions on haemorrhoids [16] have been shown to be feasible without putting patients at risk. Similarly, outcomes following outpatient laparoscopic sacrocolpopexies [17] and knee arthroscopies [18, 19] were not different from inpatient treatments. Several studies show that outpatient tonsillectomies in children are safe [20]. Hence, in, e.g., Belgium and Spain, the outpatient treatment of tonsillectomy and adenectomy is standard care. Nevertheless, in a systematic review, 350 of a total of 6698 (5.2%) patients showed major complications (such as major haemorrhage) within 24 h following tonsillectomy [20, 21]. Hence, in Austria, after a rise of postoperative bleeding complications, tonsillectomies have been performed in an inpatient setting since 2007, with a minimum hospi-

talization time of two to three days [22, 23]. The repair of primary unilateral inguinal hernias has repeatedly been shown to be safe in an outpatient setting [24–27]. Nevertheless, current practice varies among different countries: whereas, e.g., Germany performs only 14% of unilateral inguinal hernia repairs as an outpatient procedure, in Denmark, since 2015, more than 80% of all inguinal hernias have been operated upon in an outpatient setting [24]. Early postoperative discharge even after major surgical procedures is common practice in the US despite length of hospital stay being a known predictive factor for readmission [28]. The median 30-day readmission rate after colectomy, hip replacement, coronary artery bypass graft, pulmonary lobectomy, and endovascular and open abdominal aortic aneurysm repair was 13.1% as assessed using Medicare data [28, 29].

Similarly, patient satisfaction does not seem to be negatively affected by outpatient treatment, as it has been shown for outpatient varicose vein surgery [14], outpatient treatment of haemorrhoids [30], outpatient unilateral inguinal hernia repair [24], interventions on tonsils and adenoids [31–33] and knee arthroscopies [34]. Taken together, patient satisfaction was high if patients were well informed in advance about the outpatient procedure, possible complications and risks [33].

While in a perfect world, the interest of the patient is the sole objective in a physician's professional practice—in a completely altruistic way—financial interests have been shown to impact patient care in a number of ways: poor renumeration, informal payments, relationships with the pharmaceutical industry and manufactures of medical products, conflicts of interest, to cite but a few examples [35]. The present survey shows that a new regulation directing outpatient treatment for different surgical procedures in Switzerland might add a new dimension of medical considerations to be taken into account. Swiss surgeons fear that, e.g., diagnoses of contralateral hernias could be made more generously and that bilateral repairs may be performed in patients with unilateral inguinal hernias. Furthermore, this could lead to patients being rejected and education of surgical residents being afflicted (by reducing the surgical volume in certain hospitals and by omitting these procedures from resident teaching to spare time and costs). Past examples in foreign health systems such as in the US have shown the surgeons tendency to compensate for lost income by increasing diagnostics, therapeutic services and additional interventions [36]. Rationalising health care resources is an essential everyday practice of physicians. Doctors are known to discharge patients early, to deflect and defer costly patients to other hospitals, and to stay silent about expensive treatments. They also limit their time spent with the patients in order to be cost-efficient [37].

On the other hand, the *outpatient before inpatient* regulation is meant to generate a cost saving of approximately CHF 90 million for the Swiss cantons and thus for the taxpayer [5].

Conclusion

Based on the survey performed, most Swiss surgeons fear that the new *outpatient before inpatient* regulation could negatively affect patients' treatment and residents' education. The regulation is expected to possibly result in more generous medical diagnoses and not necessarily indispensable medical interventions.

Funding Open access funding provided by University of Basel

Conflict of interest K.T. Vuong, L.C. Guglielmetti, T.G. Albert, W. Brillat Arce, R. F. Staerkle and R.N. Vuille-dit-Bille declare that they have no competing interests.

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