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The more I meet and work with international colleagues the more I feel that we face many common problems.

It seems that **wherever we work and whichever** healthcare system we work in, that we have common ground around issues of finance, hospital-related harm including infections and the introduction of new techniques. Successful ambulatory surgery can make sound financial sense although payment systems in some countries do not promote ambulatory surgery and may even prejudice against it. Minimising the length of hospital stay reduces the risk or exposure to hospital related infections and so reduces patient harm. However one area where we all have a responsibility relates to the introduction of new techniques or new technology in our practice. The recent metal on metal hip joint scare is a timely reminder of that responsibility. Innovation in healthcare has improved the quality of life for many but we must all ensure the evidence is incontrovertible before we introduce new techniques.

In this edition we have articles from across the globe and from a variety of specialists.

From the UK we have articles on the management of incisional hernias – demonstrating that laparoscopic repair reduces length of stay and another looking at patients' perception of risk around the time of surgery. From Australia we have a comparison of patients undergoing assessment for endoscopy procedures by telephone or in a dedicated clinic setting. It is interesting to note that there was no difference between the two groups – perhaps this is a sign of the modern 'mobile phone' culture. From Germany we have two articles. The first provides an explanation of the funding system which appears to promote inpatient rather than ambulatory care through perverse financial incentives. The other looks at a comparison between hospital and office based surgery. To round things off my Editor in Chief colleague Beverly Philip describes the funding and management of ambulatory surgery in the USA.

Laparoscopic Incisional Hernia Repair reduces length of In-Hospital Stay

A. Bajwa & H Khaira

Abstract

Incisional hernias develop in approximately 25% of patients following abdominal surgery. Symptomatic hernias require mesh repair which is increasingly being performed laparoscopically. The advantages of a laparoscopic approach include a full inspection of the abdominal wall and accurate placement of an intra-peritoneal mesh. It is also reported to be associated with a shorter in-hospital stay. In this study, we performed an audit of laparoscopic incisional hernia repair at a district general hospital to assess its feasibility and compare in-hospital stay with open surgery. All procedures were performed by the same surgeon. Patients' names were obtained from the surgeon's logbook. Demographics and operating times were provided by computerized theatre data (Galaxy, iSOFT, Sydney, Australia) and length of stay and complications obtained from

patient records. Eighty-five incisional hernia repairs were identified, 67 being performed laparoscopically and 18 open. Mean in-hospital stay was significantly higher in the open group (mean (sd) stay (days) open versus laparoscopic group respectively: 5.1(3.8) versus 1.6(1.4) $p=0.001$). Mean operating time was longer in the open group, but was not statistically different (mean (sd) time (minutes) open versus laparoscopic group respectively: 99.5(83.46) versus 78.18 (31.28), $p=0.67$). Complications were rare and similar in both groups. Laparoscopic incisional hernia repair is associated with significantly shorter in-hospital stay compared to open surgery with similar complication rates and holds promise as the treatment of choice for uncomplicated incisional hernias.

Keywords: Incisional hernia, laparoscopic, hospital stay.

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Introduction

Incisional hernias will develop after approximately 25% of all abdominal procedures [1]. Where symptoms warrant intervention, mesh repair is essential for all but small defects due to unacceptable recurrence rates with suture repair alone [2]. First described in 1993 [3], laparoscopic incisional hernia repair (LIHR) is gaining acceptance as an alternative to the open technique [4]. The ability to assess the entire abdominal wall detecting even small fascial defects and the biomechanical advantage of placing mesh by an intra-peritoneal route may offer better long term outcomes. A major additional benefit of LIHR is in the potential for reduced in-patient stay and conversion to day case surgery [5]. Concerns regarding a higher enterotomy rate seem unfounded with being an extremely rare complications with both laparoscopic and open techniques [4]. The aim of this study was to assess the feasibility of LIHR and to compare the length of in-hospital stay of with open repair performed in a District General Hospital. All procedures were performed by the same surgeon.

Methods

The names of patients treated by a single surgeon were obtained from his logbook and from computerized theatre data (Galaxy, iSOFT, Sydney, Australia) covering a three year period. Demographics and operating times were provided by this system and length of stay obtained from patient hospital notes. LIHR was performed using a three or four port technique with placement of an intra-peritoneal mesh (PROCEEDTM, Ethicon, USA) fixed with metal tackers (PROTACKTM, Tyco USA). Open repair consisted of abdominal wall dissection and tension free repair with suture fixation of a pre peritoneal polypropylene mesh. Open repairs were performed only where laparoscopic repair was contraindicated either due to a hostile abdomen or where the fascial defect was small.

Results

85 incisional hernia repairs were identified in this period, with 67 being performed laparoscopically and 18 open. One laparoscopic case was converted to open and has been included in the open group. Patients were marginally older in the open group (median (range) age (years) of open versus laparoscopic groups respectively: 69(29–76) and 60(28–89)) although this difference was not statistically significant ($p=0.95$). The male to female ratio was similar in both groups (35 male versus 32 female and 8 male versus 10 female in open and laparoscopic groups respectively). The mean in-hospital stay and mean operating time in both groups is shown in Table 1. Mean in-hospital stay was significantly higher in open group (mean (sd) stay (days) open versus laparoscopic group respectively: 5.1(3.8) versus 1.6(1.4) $p=0.001$). Mean operating time was slightly longer in the open group, a difference that was not statistically different (mean (sd) time (minutes) open and laparoscopic group respectively: 99.5(83.46) versus 78.18 (31.28), $p=0.67$). 15 (22.4%) patients in the laparoscopic group went home on the day of their surgery compared with 3 (16.7%) in the open group.

The in-hospital complications and complications at 3 months follow up are shown in Table 2 and were similar in both groups.

Table 2 Complication rates during in-hospital stay and at 3 months follow up.

	Open	LIHR
Wound Infection	1/18(6%)	4/67(6%)
Haemo-Seroma	3/18(17%)	7/67(10%)
Persistent Bulge	0	3/67(4%)
Chronic Pain	1/18(6%)	5/67(7%)
Enterotomy rate	0	0

Table 1 Comparison of operating time and in hospital stay of open versus LIHR.

	Open	LIHR	p value
Numbers	18	67	
Median (range) age (years)	69(29-76)	60(28-89)	p=0.9528
Male : Female ratio	8:10	35:32	
Mean (sd) operating time (minutes)	78.18 (31.28)	99.5(83.46)	p= 0.6688
Mean (sd) in-hospital stay (days)	5.1(3.8)	1.6(1.4)	p=0.001

Discussion

Two recent meta analysis have shown that that LIHR is associated with a shorter in-hospital stay compared to open surgery (4; 6). This is consistent with the findings of this audit where the mean in-hospital stay was on average 2.4 days longer with the open technique (p=0.001). This difference was not due to prolonged duration of surgery or immediate and early complications of surgery with these outcomes similar in both groups. This difference almost certainly relates to post operative pain secondary to dissection of the abdominal wall layers that are required with open pre peritoneal mesh incisional hernia repair. The laparoscopic approach allows for a full assessment of the abdominal wall, involves minimal dissection and allows for the intra-peritoneal placement of mesh. Although there is no data to date that has shown better recurrence rates with LIHR with this procedure only being described in 1993, studies with sufficient follow up intervals have yet to be performed. LIHR is associated with lower rates of wound infection with comparable other complication rates including inadvertent enterotomy [4, 6]. Concern about intra-abdominal adhesion formation also seems unwarranted. Minimal bowel handling, decreased peritoneal ischemia and lower exposure to other foreign bodies including glove powder and gauze fibres are all reasons why adhesion formation might actually be less than open techniques [7]. In fact with improvements in mesh technology, over 90% of repairs are adhesion free over one year after surgery [8]. Thus the available evidence points to LIHR to be the treatment of choice for all routine incisional hernia repairs, a choice that should be conferred to patients during the consenting process. This study has shown that not only is LIHR feasible and associated with similar complications to open surgery, but that it also has the advantage of considerably shorter in-hospital stay benefiting both patient and health service providers.

Conclusion

LIHR has several theoretical technical advantages over open surgery. It is also associated with reduced in-hospital stay with similar operative time. It is a relatively easy technique and should be increasingly offered as the treatment of choice for all un-complicated incisional hernias.

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Day surgery patients' perceptions of risk: a qualitative research study

A. Mottram

Abstract

Aim: The aim of the study was to gain new insight into the perceptions of day surgery patients.

Method: 145 patients aged 18-70 years and 100 carers were recruited from the pre-operative assessment clinics in 2 public hospitals in the United Kingdom. They participated in semi-structured interviews on 3 occasions over a two year period.

Findings: Patients' preferred day surgery because they saw it as a form of risk management. Fears of cross-infection and neglect in in-patient care

generated by high profile press reports made them believe day surgery was a less risky option for surgical care. They also needed "to have a say" in their treatment options especially in relation to anaesthesia.

Conclusion: Patients are no longer passive recipients of health care but wish to have a say in their treatment options. Risk is linked to trust so day surgery personnel must ensure that full information, welcoming attitude and pleasant environment is presented to patients.

This study was funded by the University of Salford..

Keywords: Risk, Trust, Day Surgery, Qualitative research, Patient Perceptions.

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Introduction

Internationally day surgery has proved to be a popular choice for patients. It is perceived to be efficient, speedy and causes less disruption to personal lives [1, 2]. However the study below presents new insights into patient perceptions of day surgery in that they perceive day surgery as a form of risk management.

This paper, discusses how sensationalist media reports of poor health care may cause considerable anxiety and influences perceptions of risk. It also demonstrates the importance of patients developing trust with service providers and gaining the confidence to 'have a say' in their treatment options. An appreciation of the intricate nature of risk perception is appropriate to enable day surgery professionals to provide holistic patient care for their patients.

Alaszewski & Manthorpe [3] define risk as the chance that a particular course of action will not accomplish its preferred effect but instead some unwanted outcome may ensue. The modern environment is considered to be riskier than ever before. Indeed, writing towards the end of the twentieth century, Douglas wrote that 'risks clamours for attention; probable dangers crowd in from all sides, in every mouthful and in every step' [4].

It has been suggested that risk awareness has arisen as a consequence of the dissolution of traditional societies which has prevented their customs and habits being passed down through the generations [5,6,7,8]. These shaped peoples lives and gave them meaning and purpose. Now globalization has led to an increase in anxiety because much of the power to act effectively has moved away from localities to an uncontrolled global arena. In the face of this uncertainty, trust in institutions and experts has diminished and their legitimacy questioned [7]. This sense of fear and risk aversion has been accentuated by the international financial crisis of recent years and has led to a state of permanent anxiety [7]. A result of this anxiety is the motivating force to attempt to calculate every action in order to predict the gains and losses of any proposed activity under conditions of extreme uncertainty [8].

It has been suggested that individuals often manage risk in two, often overlapping, ways: by searching for scientific facts for reassurance, the so-named 'rational actor model'; and other non-rational ways such as superstition, faith and trust [8].

Role of the Media

Particular attention has been paid to the role of the media in constructing representations of risk which sometimes results in creating hysteria and panic. Petts et al [9] in a major study of the influence of the media on public perception of risk found that the reporting of the tabloid newspapers was image-intensive, sensationalist and incited emotions. The editorial content of these newspapers looks for causes and apportion blame whether personal, organisational or political. Internationally the top risk stories reported in the media are medical risks. Lurid newspaper headlines may incite fear in prospective patients: 'Despicable and chaotic-Coroners verdict on hospital.' This damning newspaper report concerning reported episodes of neglect in a local hospital caused fear and led to patients requesting to go elsewhere for treatment [10].

As well as newspapers, the entertainment media may also influence individuals' perceptions of risk. Internationally television dramas are often accused of delivering inaccurate and demeaning portrayals of nursing and medical personnel [11].

Recently the internet has become a source of health information and advice with a wide range of material available. However a considerable number of unregulated internet sites may display unreliable information; and may offer sensational images of surgical errors [12].

In health care, lay experiences may provide a powerful source of evidence for risk beliefs, hence anecdotal stories of poor care may influence others' decisions to request a different location, different practitioner or different treatment modality.

The existing day surgery literature examines risk largely from a bio-medical perspective. This is essential to ensuring the safety of the patient undergoing day surgery. However they rarely examine the wider influences of patients' risk perception and implications for

practice. This paper therefore seeks to make a modest contribution to the day surgery literature by considering these factors.

Method

A qualitative study which involved interviewing patients on three occasions over a two year period, took place in two day surgery units in two urban public hospitals in the United Kingdom. A sample of 145 patients and 100 carers agreed to take part in the study. Patients were recruited from the orthopaedic, ear nose and throat and general surgical lists (see Table 1). They were aged between 18 years of age and 75 years and from various socioeconomic backgrounds (see Table 2 for employment characteristics). The patients had not undergone day surgery before; but several of them had experienced in-patient care.

Table 1 Patients recruited from surgical specialities.

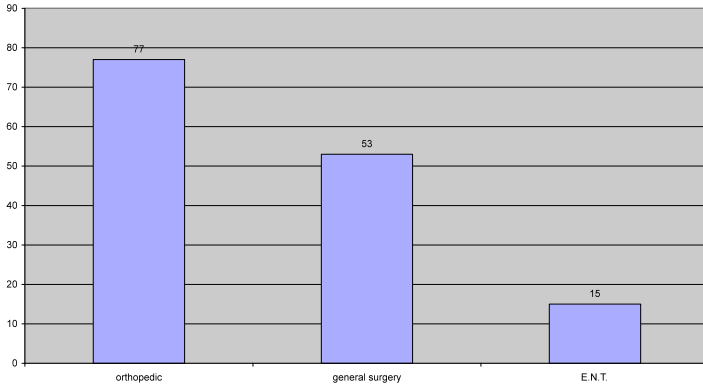
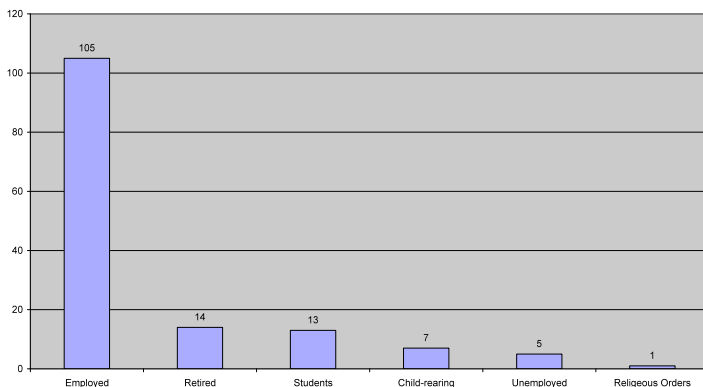


Table 2 Employment status of participants.



A qualitative research design was chosen because it is the preferred method for investigating thoughts, feelings and attitudes which are not easily measured by controlled trials and statistical analysis [13].

The study received ethical approval from the local research ethics committee and patients were given an information leaflet explaining the study and their right to withdraw at any time. They then signed a consent form, agreeing to take part in the study.

Data collection involved the tape recording of semi-structured interviews which took place on three occasions: before surgery, 48 after discharge and finally 4 weeks following discharge. It was considered necessary to interview patients at intervals to gain as much information as possible concerning the day surgery patient journey. After completion of interviews, data were transcribed and stored in a secure database. Interviews were semi-structured and usually lasted between 30-60 minutes. Interviews were designed to be as loosely structured as possible to allow the patients space to elaborate upon their concerns (see Table 3 for a sample of questions that may be asked). Analysis of the interviews took place by reading the transcripts on many occasions and line by line examination in which lists of key words and phrases were noted. This process was reviewed by

experienced researchers independent of this study and some patients who had participated.

Table 3 1st interview (recruitment) in Pre-Operative Assessment Clinic.

- After welcome and introduction of researcher:
- What do the words “day surgery” mean to you?
- Are you happy to be having day surgery?
- Would you prefer to be admitted to an in-patient ward?
- Have you had hospital care before?
- In-patient? Day Surgery? Out-Patient?
- Are your family happy for you to have day surgery?
- Who will be looking after you after discharge?
- How long do you think you may be away from work/college?
- Have you got any help with the children?
- How long have you been suffering from . . . ?
- How has it affected your everyday life?

Findings

All patient names have been changed to protect anonymity.

A major finding to emerge from this study was that patients felt that undergoing surgery in a day surgery unit was a less risky enterprise than undergoing surgery as an in-patient in hospital. They saw day surgery as a form of risk management.

Patients perceived anaesthesia, surgery and the associated assault on their bodies as a ‘risky business’. However they appeared to desire day surgery as a means of managing this risk. The perceived risk to their personal autonomy; risk of anaesthetic and risk to their families, if they were to be separated for a long period, were all thought, by the patients, to be minimised if they could have day surgery as opposed to in-patient care.

Rational Actor Model

Many patients demonstrated the ‘rational actor’ model of risk management in that they asked directly for statistical information to support their choice of undergoing surgery in a day. When asked was he happy to undergo day surgery, David, a physics teacher, enquired as to how many patients had died undergoing day surgery since the unit had opened 7 years previously. When told that none had died in this time he replied: ‘What do I have to be frightened of then?’

With news of hospital acquired infections caused by Methicillin Resistant Streptococcus Aureus and C-Difficile receiving copious amounts of press coverage many patients asked for evidence to demonstrate that stringent precautions existed to prevent cross-infection. This group of patients saw day surgery as minimising the risk of acquiring hospital infections.

Minimising risk of loss of personal autonomy

Many patients had been hospital in-patients before and feared the risk of losing their personal autonomy. Their ability to make their own choices was threatened when receiving in-patient care.

When asked whether he would prefer to have day surgery as an in-patient Karl replied:

I can just about manage to be in for one day. Any more than that and I would just flip! You are not in control of anything, even your own body when you are in hospital. I mean you have to get up at a certain time,

wear certain clothes. If I couldn't have it done by day surgery Then I wouldn't bother having at all even though it is so painful.
(Male, Achilles tendon repair, age 37)

Personal habits and routines are very important in the maintenance of a sense of self and creation of 'ontological security' a business as usual approach to life [5]. When these are taken away feelings of deep anxiety may prevail.

Having a Say- Anaesthetic choices

By far the biggest risk, expressed by patients, was their fears of anaesthesia. These included: the risk of waking up in the middle of surgery, or never waking up again, dislike of the anaesthetic mask covering the face, fear of needles, the risk of sustaining brain-damage during anaesthesia and the risk of nausea and vomiting. As well as this many patients were worried in case their bodies would act outside of their control, causing them embarrassment. As Smith et al [1] state, in the United Kingdom patients expect to have a general anaesthetic and the patients in this study were no exception to this. However even though, on the morning of surgery, the anaesthetist spent time explaining anaesthesia – a practice that was valued highly by patients- anaesthesia still appeared to be a mysterious process to them. They pondered over their vulnerability whilst under anaesthesia:

I mean you are asleep but not really asleep. I really wonder what happens inside your brain when you're under ... It seems to me to be like being dead ... only you are not.
(Female, age 25, excision breast fibroma)

Several patients recalled cinema films where patients were murdered by the administration of the wrong anaesthetic gases. Although these comments were raised in a jocular fashion they could not hide the underlying fear of death or mutilation. These fears, it could be said, were of the non-rational. They were not based upon sound bio-medical evidence but ideas constructed from a non-scientific narrative of cinema and lurid tabloid press. Patients needed the staff to disavow these films as mere entertainment and to give them some concrete evidence of safety. In an attempt to cope with these fears and minimise the perceived risk, the patients often wished to negotiate certain aspects of anaesthetic practice. They appeared to feel they had more bargaining power when they were undergoing day surgery than when they were having in-patient care. Many used the pre-operative assessment clinic as the site for securing their preferences. Some patients confided that they had come to pre-operative assessment specifically to ask for a certain mode of anaesthesia:

I am here for one thing only. That is to make sure I am going to have a general anaesthetic. It was so painful last time under local anaesthetic.
(Female, excision anal abscess, age 50).

Patients expressed a choice of anaesthesia based on previous experiences. Colin requested a general anaesthetic because of previous in-patient surgery where he had undergone a spinal anaesthetic which he had not liked at all:

I thought that I would never get the feeling right in my legs. They were numb for days. I don't want that feeling again. I would rather have the pain.
(Male, hernia repair age 44).

As well as a fear of pain during surgery, patients feared the risk that their bodies may act in a way over which they had no control. They did not want to suffer the humiliation of uncontrollable events which may cause them embarrassment. If they were asleep they would not be aware of these embarrassing events of which the body was capable. Thus Pat, a patient who was about to undergo a procedure on her lower bowel said she 'pleaded' with the consultant 'to let me have it done under a general anaesthetic', because she was so embarrassed

about the large amount of flatulence exuded from her bowel during previous bowel surgery:

It was something for which I had absolutely no control. I never anticipated it at all. The pain was bad but that was even worse. I never felt so humiliated. At least if they put me to sleep I won't be aware of it. I cannot risk it happening again.

(Female, age 60, removal of rectal polyps)

Margaret, a retired schoolteacher, was undergoing an examination of her oesophagus. She too had come to ensure that she would be having a general anaesthetic after the previous examination, as an in-patient, had to be abandoned due to her inability to swallow the tube:

I felt terrible. I just could not swallow it. Oh ... and the saliva! That was terrible. It kept coming and coming. I felt quite desperate. I couldn't swallow and I could not stop the flow of saliva. I thought this is what it must be like drowning.

(Female, age 70)

She had been assured after the previous attempt to examine her had failed; that she would have it performed this time under a general anaesthetic. That was some weeks ago. Now, in the pre-operative assessment clinic, she needed to reassure herself that the promise still held.

Patients reported that they felt reassured when they left the pre-operative assessment clinic that their anaesthetic choices would as far as possible be respected. They expressed an optimistic outlook which Giddens [5] says is a way of coping with a stressful situation and is an adaptive reaction to risk. This sense of optimism is engendered by the belief that rational scientific thought and technology offers a sense of safety to them and trust in the institution of which they will surrender themselves.

Risk to Families

A forceful reason for preferring day surgery was caring responsibilities patients felt towards significant family members. 11 of the patients interviewed were over the age of 66 years. Several of these had either ill partners or dependant parents. Although they had been in pain for some time they had delayed surgery because of concern for their loved ones' well being. As well as caring for the elderly, the worry of caring for young children was also a strong reason for choosing day surgery:

I'm leaving him with his dad. Just for the day. He's not reliable at the best of times. But he should be able to manage a day!

(Female, anterior cruciate ligament repairage, age 42)

Trust

The patients in this study had developed trust in the day surgery units. This trust began to be developed when they attended the pre-operative assessment clinic:

That's why I came to that clinic ... to suss it out. I wanted to see if I could trust my body to it.

(Male, repair achilles tendon, age 33)

It was not just trust in the ability of the staff to care for the patient but in the environment also:

My eyes were everywhere. I even asked to go to the toilet to see if it was clean. When I was in hospital last time it was filthy. How can you trust them to look after patients if they can't keep the place clean.

(Female, age 70).

Ethel suggested that, as far as health care is concerned, patients have no choice but to trust their providers:

You have no choice really. You have to trust your doctors and nurses. What else can you do? But I must say I feel far readier to trust the staff in day

surgery than the main part of the hospital. Things can be missed there. Here the staff seem so much more prepared to listen and discuss with you.

(Female, sinus washout and removal of nasal polyps age 53)

Patients commented that feelings of trust were engendered in them by the friendliness of the staff and general “chit-chat” as well as a calm and relaxing environment.

Discussion

Risk and Trust

The inter-connectedness of risk and trust are one facet of the complex character of risk perception and was an important underlying theme which emerged in this study.

Luhmann [14, 15] suggests that trust reduces uncertainties and enables the individual to feel more secure. This security is threatened when unusual circumstances occur and routines are threatened. Then an individual must place their trust in individuals or institutions outside of their control. Giddens speaks of the development of trust in these ‘expert systems’ being influenced by encounters at ‘access points’ where individuals assess the trustworthiness of the experts [5]. For the day surgery patient, this access point occurs in the pre-operative assessment clinic. Here the staff in both units worked very hard at what Goffman calls ‘face work’ Here interactions are guided by the image a professional displays whereby they may make a good impression of themselves and the profession they represent [16]. In this situation the formation of trust would begin in the patient. This was certainly demonstrated in the patient narratives described above. The nurses and medical staff in both day surgery units had a very positive ‘face’. Cheerful and professional in their demeanour they welcomed the patients warmly. Time was given for the patients to express their concerns and ask questions. Risks of unexpected events concerning their treatment were explained. They were invited to explore the environment which was warm, calm and inviting. Information leaflets were given. The impression given was that there was nothing to hide here.

Strategies for managing risk have been seen as a dichotomy between cognitive rationality – a belief in scientific objective facts, the so called ‘rational actor’ model of risk assessment and other non-rational strategies such as hope, trust, belief and faith [8]. It has been demonstrated in this study that patients often used a combination of the two strategies when assessing the risk of their forthcoming surgery. However the professionalism of staff was of vital importance in the development of trust in the day surgery patient.

However where trust and risk are concerned alternate courses of action are always considered by individuals and decisions made on the basis of which course appears to present the least risk to an individual. As has been suggested, these included rational gathering of information, though not always from reputable sources, and the arguably more assertive demand for their choice of anaesthesia. They appeared to feel more comfortable requesting their preferences in the day surgery unit in contrast to the in-patient wards where they felt that, because of the pressures placed upon the staff by emergency admissions, their preferences could not be respected.

As a defence against risks of health care interventions the development of evidence based medicine has led increasingly to care planned on the basis of guidelines and codes of behaviour ;in other words according to ‘rules’ to be used from context to context. However patients in this sample appeared increasingly to use a new-found autonomy in negotiating variations of these treatment procedures in order to manage their own perceptions of intervention

risk. This could be seen as a new era of collaboration in which a balance is struck between lay and professional expectations.

Day Surgery personnel need to be aware of these perceptions to plan care accordingly. The environment in the two day surgery units under study encouraged this negotiation of care by listening to the patient fears, the provision of good information, effective inter-personal skills, therapeutic use of self and calm environment. The two day surgery units in this study succeeded in creating an environment that the patients trusted.

In health care an understanding of the concept of risk is central to the provision of good quality care. Often within healthcare, and in the general population, risk is viewed with negative connotations. However it is important to recognize that risk is not always a negative concept as without risk creative developments and practical improvements to health and everyday living would not occur.

Risk perception is based on many different assumptions and experiences and it is important to try to understand these. It is therefore of paramount importance within the short space of time day surgery nurses and medical staff have to spend with patients that a trusting atmosphere is created so patients can confide their worries and express their treatment options.

Study Limitations

The study took place in only two day surgery units in two hospitals in an urban area in the United Kingdom. Therefore the findings may not be applicable to rural areas or to day surgery taking place outside the UK. Patients were selected from only three surgical specialities; moreover the sample selected did not represent diverse ethnic groups. However the researcher is confident that the data gives a vivid and reliable account of patients’ perceptions of day surgery in the current economic and cultural climate.

Conflict of Interest

No conflict of interest has been declared.

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Comparison of preparedness after preadmission telephone screening or clinic assessment in patients undergoing endoscopic surgery by day surgery procedure: a pilot study

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Abstract

Aim: To compare the effectiveness of preadmission telephone screening versus clinic assessment for preparedness of patients undergoing endoscopy during day surgery procedure.

Method: Data was collected from participants by completion of an explicit questionnaire.

Results: Forty-nine patients participated. No differences were observed in preparedness for surgery in patients who are assessed by telephone screening or clinic assessment in the pre-operative period.

Keywords: Day surgery, patient preparedness, patient anxiety.

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Conclusion: In general telephone screening and clinic assessment of patients ensured preparedness for surgery. Future research might demonstrate a difference with a larger study.

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Introduction

Day Surgery is an increasingly popular choice for individuals who are able to recover independently or have support at home. Differences exist in how patients are assessed and informed about day surgery procedures, particularly between private and public facilities. The former is frequently performed by the private surgeon, whilst the latter is often nurse initiated.

Research during the 1990's clearly demonstrates that education is a key component to compliance to treatment [1]. There are numerous nursing frameworks to aid admission and discharge information from a nursing perspective [1, 2].

There is however, no firm evidence regarding the extent and method of relaying information and education to patients. Some studies have found that poor compliance results from inadequate education [3,4,5]. Recent studies suggest that whilst there was less requirement for nurses to provide physical interventions during day surgery assessment and preparation, there was an increased need for emotional support to the patient [6,7,8].

Both types of venues present with two reoccurring themes, one is streamlining information to manage time constraints on admission and the other is the accuracy of patient provided information in questionnaire format which may not be understood or interpreted correctly by the patient. As a result the responsibility falls to the patient concerning the giving of information.

A pilot study was undertaken in a day surgery centre in Melbourne, Victoria, Australia to evaluate which preadmission care intervention was more effective in enhancing the physical and emotional preparedness for patients undergoing day surgery: preadmission telephone screening or preadmission clinic assessment.

Methods

Design

This was an observational study that evaluated two [2] preadmission interventions: preadmission telephone screening or preadmission clinic assessment. Preadmission clinic assessment usually occurred following the patients appointment with the surgeon where the decision was made for surgery. Telephone screening usually occurred several days before the procedure. Data was collected on admission to the operating suite, following the surgery in the recovery room and within 24 hours post-operative and after the surgical procedure.

Setting

The study was conducted at a public day surgery centre in Melbourne, Victoria, Australia. This centre performs some 7,000 procedures annually, comprising mostly eye surgery and endoscopy procedures.

Sample

A purposeful sample was selected of patients undergoing endoscopic surgery as a day surgery procedure during the study period May 2009 to June 2010.

Patients were ineligible if they had previous day surgery within two years, if they had any form of cognitive impairment, were not independent with activities of daily living or did not provide voluntary consent.

Participants were recruited over the 12 month period by a nursing staff member of the day surgery unit. Information was provided to eligible participants regarding the study and their potential involvement in the form of a Participant Information Form. Information was provided by a staff member of the day surgery facility either in person (during clinic assessment) or by telephone (during telephone screening). Written consent was obtained prior to data collection.

The in-balance in the two sample groups (telephone screening, n=12; clinic assessment, n=37) occurred as a result of a change in management practices from when the study commenced with a preference for clinic assessment by a registered nurse, rather than telephone screening.

Data Collection

Data was collected from participants on two occasions:

- 1 On the day of their surgery, and
- 2 During a post-operative telephone interview 24 hours following the surgery. Data was collected by medical record review and the completion of a questionnaire.

The questionnaire was developed specifically for the purpose of this study in collaboration with clinicians who were members of the Day Surgery Special Interest Group (DSSIG). The questionnaire was trialled in a small pilot study involving five patients to assess usability and readability. Minor changes were made to improve the questionnaire in terms of readability after the pilot study.

The nurse administered the questionnaire by reading all questions to the participant and documenting the responses on the hard copy data-form. Information collected comprised demographics such as age, gender, co-morbidities, ethnicity, language spoken, living arrangements and type of pre-admission assessment (preadmission clinic or preadmission telephone assessment). Also collected was the patients' compliance with the appropriate preparation for the day surgery procedure such as fasting, medication administration and plan for transport home after the procedure. Information regarding the patient's pre-operative knowledge of their procedure and post-operative recovery was elicited. For example, participants were asked to explain in their own words the procedure they were having, if they had obtained information on their procedure from other sources and the restrictions on their activities post-discharge. Data on the patient's satisfaction with the information provided pre-operatively as well as their post-operative recovery was collected 24 hours later in a post-operative follow-up telephone interview. Included in this interview was the patient's overall satisfaction with the procedure and follow-up.

Data analysis

Data was analysed using descriptive statistics (mean, range, numbers, proportions and univariate statistics). Fischer's Exact test was used to compare knowledge and preparation for categorical variables for the two pre-operative assessment techniques (clinic assessment and telephone screening) using SPSS.

Results

Forty-nine patients agreed to participate including thirty-two women (65.3%) and seventeen men (34.7%). The median age was 52 years. The majority of participants (83.7%) used English as their first language. Most participants (83.7%) lived with someone else. Approximately half (51.0%) were responsible for dependents.

Most participants (98.0%) had a block anaesthetic agent. One participant (2.0%) had a general anaesthetic agent. Nineteen participants (38.8%) had a colonoscopy and gastroscopy, twenty had a gastroscopy (40.8%) and ten (20.4%) had a colonoscopy. Approximately one third (34.7%) of participants had a relative who had experienced a day surgery procedure in the past and about half (47.1%) of the relatives had experienced a prior gastroscopy or colonoscopy. Table 1 outlines the demographic characteristics of the sample.

Telephone screening was provided to twelve (24.5%) participants, compared with 37 (75.5%) participants who had a clinic assessment.

Participants demonstrated excellent knowledge regarding type of surgery (100%) and location of venue prior to departure from home (85.7%). The majority presented for day surgery in a timely manner (47, 95.9%). All participants (49, 100%) had organised transport home by carers and self-administered their regular medication as requested prior to hospital arrival.

In regards to preparation for the day surgery procedure, all participants (49, 100%) had consent organised prior to arrival and a discharge plan prepared. Only 7 participants (14.3%) reported obtaining information regarding surgery or day procedure from other sources prior to presentation for day surgery procedures. Most (40, 81.6%) reported being questioned about their medication prior to hospital admission.

Knowledge and preparation prior to day surgery procedure were compared for patients who received telephone screening and clinic assessment, as shown in Table 2. There were no statistically significant differences between the two groups. Patients who received telephone screening were more likely to obtain additional information regarding the surgery and day procedure from additional resources prior to hospital presentation, but the difference was not statistically significant (Telephone Screening: 33.3% vs. Clinic assessment: 8.1%; p=0.051).

Recovery after day procedure surgery was compared for patients who received telephone screening and clinic assessment, as shown in Table 3. The majority reported adequate preparation (45, 91.8%) for the day procedure. There were no statistically significant differences between the two groups. Twenty (40.8%) participants reported some pain and/or discomfort in the first 24 hours after surgery. Twenty-nine (59.2%) reported driving within 24 hours after surgery. Some participants did not report full recovery within 24 hours from the procedure (10, 20.4%). Most participants (48, 98.0%) had an uneventful recovery from the surgical procedure and were discharged with their carer as scheduled. One participant had a vasovagal event after the procedure and was admitted overnight for assessment and monitoring. The patient was discharged the following day.

Table 3 Comparison of recovery after surgery for phone call and clinical groups.

Variable	Telephone N (%)	Clinic N (%)	p
Pain in previous 24 hours	6 (50.0)	14 (37.8)	0.512
Driving in previous 24 hours	6 (50.0)	23 (62.2)	0.512

One patient suggested that he should have been informed to not attend work during the period of bowel preparation. Several participants reported that there was a lack of communication, reassurance and feedback throughout their hospital stay. One participant requested entertainment in the waiting area.

Discussion

The primary study objective was to compare two pre-operative interventions for physical and emotional preparedness (adequate preparation for day surgery, level of knowledge/ information provided, and post-operative recovery) for patients undergoing day surgery for endoscopic procedures. Preoperative assessment is

Table I Demographic Characteristics of the Sample.

Variables			
Age	Mean (years)	54.5	
	Range	20 to 82	
		n	%
Gender	Female	32	65.3
	Male	17	34.7
Country of birth	Australia	20	40.8
	Europe	18	36.7
	Asia	3	6.1
	United Kingdom	2	4.1
	Other	6	12.2
Primary Language Spoken	English	41	83.7
	Italian	1	2.0
	Greek	2	4.1
	Other	5	10.2
Living circumstances	Family	29	59.2
	Couple	12	24.5
	Alone	8	16.3
Marital Status	Married/partner	35	71.4
	Single	14	28.6
Education level	Secondary	29	59.2
	Certificate	9	18.4
	Primary	6	12.2
	Bachelor	5	10.2
Employment	Full/Part time	22	44.9
	Retired	15	30.6
	Home	9	18.4
	Unemployed	3	6.1
Dependents	0	>4	49.0
	2 - 3	>4	16.3
	1	>4	12.2
	4	>4	4.1
	8	<4	2.0
Anaesthetic	Block	48	98.0
	General Anaesthetic	1	2.0
Procedure	Gastroscopy & Colonoscopy	19	38.8
	Gastroscopy	20	40.8
	Colonoscopy	10	20.4
Relative had prior day surgery	Yes	17	34.7
Relative had prior gastroscopy or colonoscopy	Yes	8	47.1

Table 2 Comparison of knowledge and preparation.

Variable	Phone N=12 n (%)	Clinic N=37 n (%)	p
Knowledge of surgery	12 (100)	37 (100)	1.000
Consent obtained	12 (100)	37 (100)	1.000
Medication administered as requested	12 (100)	37 (100)	1.000
Fasted for appropriate length of time	12 (100)	36 (97.3)	1.000
Discharge plan prepared	12 (100)	37 (100)	1.000
Carer organised for patient pick-up and timing appropriate	12 (100)	37 (100)	1.000
Transported self today surgery unit	2 (18.2)	9 (24.3)	0.708
Knowledge of location of day surgery procedure prior to departure from home	11 (91.7)	31 (83.8)	0.665
Questioned about medications prior to admission	8 (80.0)	32 (86.5)	0.195
Information about procedure obtained from other sources prior to admission	4 (33.3)	3 (8.1)	0.051
Presented in a timely manner	12 (100.0)	35 (94.6)	1.000
Paperwork prepared prior to presentation	11 (91.7)	38 (100.0)	0.245

particularly important for patients selected for day surgery to ensure the patient is appropriately prepared physically, psychologically and socially. One important aim of preoperative assessment is to reduce the risk of same day cancellations. There were no cancellations of surgery in this study. All patients had fasted for the appropriate length of time and their medication was administered as per the treatment plan.

One point of difference was that patients who were assessed by telephone were more likely to obtain additional information regarding the proposed surgery from other sources prior to admission. However, this study was too small to make inference from the data. A larger, randomised controlled study might investigate this difference in the future.

Whilst this small pilot study failed to show any difference for pre-admission clinic assessment and telephone screening there are some implications for nursing practice and patient care to consider.

The face to face interaction with patients in the pre-assessment clinic allows the nurse to read the patient's body language and to check the patients understanding of preoperative preparation and post operative instructions. Patients are also able to clarify any problems there and then and hence understand the processes required to be correctly prepared for the procedure. A telephone screening process has convenience factors such as time cost and availability.

In conclusion this small pilot study failed to show any difference for pre-admission clinic assessment and telephone screening but confirms

the direction of previous studies that patient education is integral in ensuring compliance and better patient outcomes.

Recommendations

This study did not investigate cultural differences within Australia's large multicultural and multilingual population and further investigation would be warranted. Further investigations to elicit where clients find further information and the impact this may or may not have on their experience. There is also scope for a study of personal and relationship response to the Day surgery experience.

A larger 360 degree investigation incorporating all stakeholders investigating these gaps would give further information on reliability, feasibility and compliance to guidelines and protocols in place to minimise risk and improve patient outcomes.

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Private Contra Public Health: The German System

Jörg Rüggeberg

Abstract

In Germany 90 % of the population is covered by a Statutory Health System (SHI) which claims to be one of the best in the world. Fees for procedures are budgeted, be they ambulatory or inpatient, in free standing units or in hospitals.

Keywords: statutory health system, demographic factor, budgeting, ambulatory surgery.

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As reimbursement for the same procedure is much higher as inpatient than as ambulatory treatment the system favors expensive inpatient treatment because of non-medical reasons.

Principles of the German Health System

About 90 % of the German population is insured by the Statutory Health System (SHI) called Gesetzliche Krankenversicherung (GKV); 10 % are members of private insurance companies (PKV).

SHI is financed by a certain percentage fee of the individual salary which today is 15.5 %.

Those who do not get a salary like family members (e.g. children) and unemployed persons are insured anyway: The public will have to pay for them – either the local community in the case of unemployed or - in the case of family members - the state government by general taxes.

Demographic prognosis

Due to the demographic development the German population will decrease from 82 million in 2008 to 65 to 67 million in 2060. The expected decrease in the age group 0 – 19 years is 5 million and in the age group 20 – 66 years it will be 17 million. For those over 67 years an increase of 5 – 7 million is prognosticated.

Prognosis

The actual health costs are for a 10-year-old person the fee will be about 966 Euro per year, for 40-year-old persons up to about 1.200 Euro, for 70-year-old seniors about 3.673 Euro and for 90-year-old citizens to about 5.343 Euro per year. Due to the demographic development those cost will rise substantially.

In 2008 about 51 million active members and thus contributors to the SHI paid 160 billion Euro. In the year 2060 only 40 million contributors will exist. They will have to bring up a sum about three times that of 2008, namely 486 billion Euro.

In 2010 the average monthly contribution of SHI members was 142 Euro. The demographic factor will increase this fee up to 182 Euro in 2060. Taking into account an increase of costs by medical progress of 1 % or 2 % the monthly contribution for each member will rise to 300 or 490 Euro, respectively.

German problem

The German SHI offers the most extended service of medical procedures and benefits and claims to cover all necessary treatments like private insurances do. The German population is so accustomed to these offerings that people do not accept any reduction of services in the SHI.

Due to almost permanent elections in one of the many states of the Federal Republic of Germany politicians are reluctant to even debate any reduction in the SHI. Because of this and in consequence of the demographic factor the costs for the health system are rising and continually less money is available for the sick.

Remuneration for medical treatment

The lack of money in the system has led to budgets. Thus any free practicing doctor receives a defined sum (a budget) for which he has to treat a patient for the running quarter irrespective of the number and types of treatments.

For ambulatory treatment the surgeons have a quarterly budget between 20 and 35 Euro depending upon the district they are working in. For this flat rate they have to perform any diagnostic and postoperative treatment except the ambulatory procedure itself.

Payment for Ambulatory Surgery

The fees for ambulatory procedures are fixed at the level of 2009, the number of procedures are budgeted, too. This leads to the awkward situation that the more procedures are done the lesser the fee for each procedure will be.

Basically the fees for surgical procedures were once calculated by economic methods. But due to the budget system the fees dropped by 30 % in the last five years.

Comparison of in-patient versus ambulatory procedures

The same surgical procedures like e.g. hernia repair performed in a hospital as in-patient procedure will bring the hospital approximately a sevenfold increase in revenues over ambulatory treatment. Thus

hospitals are not motivated to perform these procedures on an ambulatory basis.

On the other hand free standing surgical units do not increase the number of surgical procedures because of decreasing fees per procedure in the budgeted system.

This leads to the situation that ambulatory surgery is halted in free standing units, whereas hospitals only switch to ambulatory performance if their budgets for in-patient procedures has been exhausted.

Day Care Surgery: The United States Model of Health Care

Beverly K. Philip MD *Founding Director, Day Surgery Unit, Brigham and Women's Hospital, Professor of Anaesthesia, Harvard Medical School, Boston, USA*

Abstract

In the USA, "Ambulatory Surgery" means that the patient goes home at the end of the working day. Facilities for surgery in the USA are primarily owned by the private sector, and are provided in hospital outpatient departments (HOP), freestanding ambulatory surgery centers (ASC), and office-based surgeries. Most citizens in the US get their health insurance from private for-profit plans from their employer, and in addition a government program for citizens 65 years and older (Medicare). HOPs and ASCs are paid under a prospective payment system called ambulatory

payment classifications (APCs). APC payments are primarily based on actual reported costs, minus a percentage to encourage efficiency, and the amount paid to ASCs is based on a fixed fraction of HOP costs. Office based ambulatory surgery is paid under the physician reimbursement system. Ambulatory surgery in the US is successful because we have developed and utilize different evaluation, education and perioperative processes for care of these patients, and because there are no governmental payment obstacles.

Keywords: ambulatory surgery, health care system, payment systems.

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Day Care Surgery: The United States Ambulatory Health Care

Definitions

In the USA: "Ambulatory Surgery" means that the patient goes home at the end of the working day. There is no overnight stay. In the USA there is no extra payment for overnight stay, and there is no system of patient "recovery hotels".

We can look for a non-USA definition from the International Association for Ambulatory Surgery (IAAS), which defines ambulatory surgical care to cover a similar group of circumstances. In the "IAAS Recommendations for the Development of Ambulatory Surgery Programmes"*, Tom Ogg wrote: "A surgical day case is a patient who is admitted for investigation or operation on a planned non-resident basis and who none the less requires facilities for recovery. The whole procedure should not require an overnight stay in a hospital bed."

Facilities for Surgery in the USA

Facilities for surgery in the USA are primarily owned by the private sector and not by the government. Most hospitals treat a mix of both private and public patients. By law hospitals must provide urgent care for everyone, independent of any payment. The public hospitals, often managed by large city governments, do a similar percentage of ambulatory surgery as private-sector hospitals.

Ambulatory surgery is provided in three different categories of facilities: Hospital Outpatient departments (HOP), freestanding ambulatory surgery centers (ASC), and office-based surgeries (OBS).

In 1981, it was estimated that 80% of surgery in the US was done on inpatients and 20% was done on outpatients. By 2001, those percentages had essentially reversed, with an estimated 24% inpatient and 76% outpatient. The percentage of ambulatory is still continuing to grow, to an estimated 83% in 2006, or approximately

41.6 million ambulatory surgery procedures a year. The location of these operations has also changed over time. In the first decade after 1981, the growth was in HOP, from 18% to 44% of all surgery, and this percentage has remained essentially stable. My unit at the Brigham and Women's Hospital was opened in 1980. In the next decade, the growth was in ASCs, from 10% to 17%. Subsequently the growth has primarily been in the OBS sector, from 14% to 20% in the following decade, and growth continues in that sector. (SMG Marketing Group, Chicago) We are seeing the continuing shift of more complex operations and procedures from the inpatient hospital to the outpatient settings in all the various forms.

Health Insurance for Patients

Most citizens in the US get their health insurance primarily from private for-profit plans from their employer. Most private plans require some patient co-payment and paid facilities negotiate amounts and have some restrictions on benefits in order to limit expenditures.

In addition, the US federal (national) government provides healthcare for some citizens. The major government payer is the program for citizens 65 years and older, called Medicare. There are additional government-supported programs including one for the poor and disabled (called Medicaid), for veterans and for active military.

Healthcare Facility Payment

U.S. healthcare facilities are paid by private and government payers. The largest payer is Medicare, from the federal government. It pays inpatient hospital care under a prospective payment cost-based system, using diagnosis related groups (DRGs), a payment that includes preoperative and postoperative care. Physicians and other individual providers are paid separately also with a combination of private and government sources.

Hospital-based ambulatory care overall is paid under a different prospective payment system. Here, surgical and medical care is grouped into ambulatory payment classifications (APCs) by clinical similarity and similar resource use. Payment under the APC system is primarily based on actual reported costs. Each APC has a relative

weight, based on median costs and made budget neutral with a weight scaler. An annual conversion factor is calculated based on wage index and market basket with a rural adjustment. Payment is then calculated by multiplying the scaled weight by the conversion factor. The budget neutrality of the APC system means that if payment to some APCs increase, others will decrease. Finally, calculated payment under the APC system is reduced by a percentage to encourage efficiency. Initially the payment was 82% of actual costs but the exact amount varies from year to year.

Payment for ambulatory surgery in freestanding ASCs is part of the same APC system. The amount paid to ASCs is based on a fixed fraction of hospital-based ambulatory costs, which is currently at 65%. This payment differential exists because freestanding facilities do not provide full coverage nights or weekends, have emergency rooms, or provide free care. Office based ambulatory surgery is paid under the physician reimbursement system. The physician is given a “site of service payment” in addition to his professional fee.

Why is Ambulatory Surgery in the USA So Successful?

Ambulatory surgery in the US is successful because we have developed and utilize a different process for care of these patients. The ambulatory surgery process consists of a patient evaluation process, a patient education process and a perioperative care process, all different from the inpatient pathways. In addition, there are separate systems to promote and assess quality of care for ambulatory surgery patients. Ambulatory surgery processes in the US have two primary focuses. One is a focus on efficiency, quality, and cost of care. The second is a focus on patient and humanism in medicine.

The second major reason for the success of ambulatory surgery in the US is the lack of payment obstacles. The success of ambulatory surgery worldwide is not dependent on patient acceptance. Patients prefer to be back to normal, to feel healthier sooner rather than later. The major determinant of ambulatory surgery growth worldwide is, instead, governmental. The difference is in the method of funding health services. In the US the government only needed to make the economic incentives equal to make ambulatory surgery an outstanding success. In the 1980s, when surgeons were newly paid the same whether they provided care on an inpatient basis or an outpatient basis, and when hospitals were paid the same for patient stays of two hours or two days, this removed the obstacles and ambulatory surgery in the US grew dramatically.

Comparison of Hospital- and Office-Based Ambulatory Surgery in Germany: Surgery in small free standing units offers many advantages

Jost Brökelmann

Abstract

Aim: To compare ambulatory surgery (AS) in hospitals and free standing units with regard to efficiency, quality and other indicators.

Results: Two-thirds of ambulatory procedures in Germany are performed in day clinics, one third in hospitals. There are equal competitive conditions for AS concerning structural quality, hygiene and payment. Diverging conditions exist in the fields of ownership

Keywords: Ambulatory surgery, office based surgery, health care system, payment system.

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structure, capital investment and training of workforce. A number of studies shows that ambulatory surgery in small free standing units is the most efficient way to perform surgery with high patient satisfaction.

Conclusion: Political and economic interests are the main obstacles on the way to a more efficient health care system.

Introduction

Germany has a long history of both hospital surgery and surgery in specialized doctors' offices called day clinics. Thus ambulatory surgery (AS) was performed in polyclinics of university hospitals since the 19th century. Also workers' accidents have been treated in small surgical units since 1884 when a compulsory accident insurance for workers was introduced by parliament. AS was practiced in pediatrics since 1968 and the first congress on AS took place in Mainz, Germany in 1979[1]. Additional fees for AS ("OP-Zuschläge") existed since 1981[2]. Thus Germany has lots of experiences in the performance of AS in various institutions. This situation offers itself to compare the efficiency of AS under various conditions.

Results

Framework of ambulatory surgery (AS) in Germany

Where is AS performed?

1. Specialized doctors' offices The majority of AS, namely 69 %, is performed in specialized doctors' offices called day clinics, praxis clinics, surgical centers, medical service centers ("MVZ"), and offices for workers' accidents called "D-Arzt-Praxen" (Table 1).

2. Hospitals They contribute 31 % of AS. Hospitals always had in-patient services, that is what they are built for. Since 1993 the majority of them also offers AS as out-patient service. Some hospitals are licensed to treat workers' accidents (in "D-Arzt-Praxen"). University hospitals usually have polyclinics where they can perform ambulatory surgery.

3. General doctors' offices Ambulatory surgical procedures are not allowed any more to be performed in ordinary doctors' offices; only minor wound treatment is permitted there.

Table 1 Ambulatory Surgery in Germany.

Specialized Doctors' Offices	69 %
Hospitals	31 %
General Doctors' Offices	0 %

Type of health insurances in Germany

1. General insurance 89% of the German population is insured by the Social Health Insurance (SHI) which is mainly paid for by fees (at present 15,5 % of wages) of the working population. In addition tax money supports SHI.

2. Workers' Accident Insurance This insurance was installed in 1884 by legislation. It is also called Accident Insurance or Industrial Industries Insurance, in German "Berufsgenossenschaft", shortened BG. This insurance is paid for 100 percent by employers. It comprises a network of 3.458 specialized offices ("D-Arzt-Praxen") in 2.261 licensed day clinics and 1.197 licensed "D-Arzt-Praxen" in hospitals. The number of treatments in 2009 was 2.467.965 [3].

The regulations and fees for the accident insurance are similar to the private medical fee schedule (GOÄ), yet payment will be only 55 to 80% of the full private fees. These fees are still much higher than the fees of SHI. Probably because of this relatively fair payment there have been no noticeable political debates on the payment regulations of the Workers' Accident Insurance in the last decades.

3. Private insurances 11 % of the population is privately insured by a number of companies. There usually is no limitation in using medical services in hospitals, day clinics or doctors' offices. Payment is according to the private medical fee schedule (GOÄ).

The SHI system: Competition between hospitals and day clinics

For decades there has been a permanent competition between hospitals and day clinics. One reason is that hospitals were not allowed to perform ambulatory (AS) surgery until 1993. Then hospitals were opened to AS and real competition started.

Political struggles in the SHI-system are prevailing because of constant underpayment. This is not the case in the Workers' Accident Insurance system or in the private insurance system. Therefore only the SHI-system is analyzed in the following.

Equal conditions for competition

Structural quality The same qualifications are required for surgery in hospitals and in day clinics (see minimal standards[4]).

Hygiene The same rules apply for hygiene in hospitals and in day clinics. Both are controlled by government agencies.

Reimbursement For ambulatory surgery there is equal pay according to the Equal Fee Schedule (EBM)) both for hospitals and day clinics.

Diverging conditions for competition

Ownership structure

The majority of hospitals are public or non-profit organizations. On the other hand most day clinics are privately owned.

Capital investment

Hospitals are reimbursed about 10 % of capital investments by the local state. Day clinics are not supported.

Size of operating room (OR)

In hospitals operating rooms generally are large. In day clinics small ORs prevail in order to reduce costs. The lower limit of OR size is approximately 20 m²[5].

Workforce

Hospitals Their doctors mostly are residents during their postgraduate training. Residents are under supervision of at least one specialist. Hospitals traditionally are engaging nurses instead of medical assistants.

Day clinics They are run by certified specialists. Doctors usually work with special medical assistants who amongst others have received training in OR management. Their wages often are lower than those for nurses.

Studies on the efficiency of ambulatory surgery in the SHI system

Total costs of procedures

In 1999 Eichhorn and Eversmeier published a book on total costs of surgical procedures in hospitals and day clinics including postoperative treatment [6]. Some of their results are summarized in Table 2. Their conclusions were:

- Endoscopic procedures using re-usable instruments are less costly than conservative open surgery.
- Ambulatory surgery is less expensive than in-patient treatment.
- Costs for AS in hospitals are higher than in free standing day clinics.

Inability to Work

Table 3 shows the time of disability after tubal sterilization a) as in-patient procedure in a hospital and b) as ambulatory procedure in a day clinic. The disability time is much shorter after ambulatory surgery.

Table 3 Days of disability after Endoscopic Tubal Sterilization (600 patients) [7].

Hospitals	7.23 days
Day clinics	2.63 days
General Doctors' Offices	0 %

Wound infections

Postoperative wound infections in hospitals occur in about 16 % of surgical cases (Table 4) and are said to be mostly caused by nosocomial infections[8]. After ambulatory surgery in day clinics the wound infection rate in about 500.000 procedures was 3,1 % [9]. In some day clinics wound infection rate can be even lower than 1 %[10].

Table 4 Postoperative wound infections. National Surveys [9].

Hospitals	16%
Day clinics	3,1%

Process quality

Schulze showed in 2008 that process quality is lowest in a large hospital and gets better in a smaller hospital and is best in a day clinic. This is reflected in the costs for this indicator procedure (Table 5). Thus extirpation of varicose veins is most efficiently performed in day clinics.

Table 5 Process Quality – Costs of Extirpation of Varicose Veins [11].

Hospitals	666€
Day clinic at hospital	507€
Day clinic	284€

Patient satisfaction

Patient questionnaires prove that patient satisfaction is about 98 % after ambulatory surgery in day clinics [16]. Results of similar studies in hospitals have not been published yet as the corresponding quality assurance system SQS1 has only recently been introduced and results are not available yet.

Number of operating rooms (OR)

Smaller units with only one OR can be more efficient than larger ones with several ORs (Table 6). What obviously counts is the efficiency of one OR-team. This could be called the Airbus phenomenon. Only the full Airbus and the OR used to capacity will be most profitable.

Table 6 Number of Operating Rooms (OR) and Costs per Hour per OR [12].

Day clinic III	1 OR	339,- €/OR/h
Day clinic I	4 OR	348,- €/OR/h
Day clinic II	2 OR	447,- €/OR/h

Table 2 Total Costs per Case (in €)[6].

Type of Unit	Hospital - open surgery	Hospital - endoscopic	Day Clinic - endoscopic
Cholecystectomy	5294,-	3869,-	1601,-
Adnexectomy	4753,-	2711,-	1415,-
Tubal sterilization		1832,-	998,-
Subacromial decompression	6101,-	4656,-	3059,-

Payment

Most hospitals can perform the same procedure either as ambulatory or as in-patient procedure. Actually they are urged by law to perform the procedure as ambulatory if indicated. However, the fee for in-patient treatment paid as DRG procedure is about 4 x as high as the fee for the same ambulatory procedure in the EBM-system. Thus ambulatory surgery in Germany is heavily underpaid, at about 25 % of the DRG fees (Table 7).

Table 7 International questionnaire on reimbursement of AS in percentage of DRG [13].

Country	Reimbursement of DRG
Australia	<100%
Hungary	100%
Denmark	100%
Italy	80–100%
Portugal	72–100%
Finland	50-67%
Germany [14]	25% (14–38%)

Discussion

The afore mentioned studies on the SHI-system allow the following conclusions:

From the medical point of view Wound infection rates after ambulatory surgery are lower in day clinics than in hospitals. This possibly is due to the fact that in day clinics all surgery is performed by specialists, not by residents.

From the economical point of view There is evidence for a higher process quality in day clinics because procedures are performed by trained specialists who at the same time bear the financial risks for their enterprise. The efficiency of a surgical unit probably depends a) upon the cooperation among one OR team and b) upon the occupancy rate of that OR.

From the political point of view A switch from in-patient to ambulatory surgery could save the SHI system up to 515 million Euro[15].

From the patient point of view The patient satisfaction rate after AS in day clinics is very high, about 98 % [16]. This is probably caused by a good process quality and a fast recovery.

Despite these medical and economic advantages of AS over in-patient treatment for the same procedure Germany does not reach high percentages of AS like 80 % or even higher, as e.g. in the USA, but only about 50 %. One of the reasons for this lies in the chronic underpayment of AS in hospitals and day clinics.

It is interesting to note that both AS for diseases and AS for workers' accidents show a similar distribution between day clinics and hospitals, namely 2:1. This occurs despite the fact that both are paid for by different fee schedules. The similar distribution of ambulatory surgery and accident treatment in the country may reflect a pragmatic distribution of health services in an industrialized country.

Conclusion

It is feasible and recommendable to require and to enforce the same qualifications for smaller surgical units (like day clinics) and for larger ones (like hospitals). Quality in day clinics and hospitals has to be controlled by health authorities to meet high international standards.

What is necessary for achieving higher efficiency is a change in the management system of hospitals, i.e. from a hierarchical staff organization to team management around one OR unit.

Many people in Germany do not want to accept that performing in-patient treatment is much more expensive than ambulatory treatment especially if it is the same surgical procedure. Perhaps the present political pressure to reduce national debts will bring about a re-thinking in the direction that efficiency and patient satisfaction should play the main role in a health system.

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