Outpatient surgery capacities - Overview of rental models and pricing

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Abstract

This paper deals with outpatient surgery, specifically with outpatient surgery capacities. Interviews were conducted to try to find out how rental models differ and how the rental amount is defined. It was found that there is no standard and that there are often completely different rent levels due to a lack of cost transparency.

Keywords: Outpatient surgery, rental model, healthcare

JEL codes: I11, I13

1. Introduction

This paper takes a closer look at outpatient surgery. In detail, the rental models and the associated cost allocation models for operating capacities.

The field of outpatient surgery has not been researched in great detail in terms of structures and statistics. Particularly with regard to the number of outpatient operations and the exact structures in the individual facilities, there is still much need for research. Not much meaningful and usable literature can be found on exact charging and rental models as well as costs. Based on this fact, expert interviews were conducted to address this research gap accordingly and to lay a foundation for further and more in-depth research.

Two research questions are in the focus of this work:

1. Which rental models for outpatient surgery capacities exist and which are used in practice?

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2. How high is the rent for outpatient operating room capacity and how is it calculated?

It stands to reason that it can be assumed that the rental models vary depending on the provider and interest, and that there is no uniform approach here. It can also be assumed that the amount of rent varies according to interest and is not calculated consistently according to economic aspects. The following chapters of this paper provide an overview of current developments in outpatient surgery and explain the importance and topicality of this issue. This is followed by a description of the methodology and the presentation of the results and a conclusion. In addition to answering the research questions, the objective is to show what further research is needed on this topic.

2. Theoretical Background

The "outpatientization" of the German healthcare system has once again come into sharper focus in 2022. In various articles in the medical journal and on the pages of the Association of Statutory Health Insurance Physicians, the topic is currently very frequent. The German Minister of Health, Karl Lauterbach, also has the topic on his agenda and wants to shift approx. 25% of the procedures currently performed in the inpatient sector to the outpatient sector as early as 2023 (cf. Lau, 2022). The topic is therefore more topical than ever and it is therefore worth taking a more detailed look at the prevailing structures.

2.1. Outpatient Surgery in Germany - Current status and future development

This chapter presents the current situation of outpatient surgery. The aim is to describe the general conditions under which the topic dealt with in this paper is taking place. This includes the legal framework, the most important players and decision-makers, and the basic remuneration system. The National Association of Public Health Insurance Physicians (KBB), roughly defined as the entity that administers the outpatient sector, provides some information and perspectives on the topic of outpatient surgery. The goal is to attain the highest level of "outpatientization" in accordance with the tenet "outpatient before inpatient." Numerous surgeries can be done without an inpatient setting. These include biopsies, cataract surgeries, and arthroscopies (cf. Kassenärztliche Bundesvereinigung, 2022). To see the potential for shifting inpatient procedures to the outpatient operating room, a comparison can be made with other countries. For this purpose OECD data can be used as shown in the following figure 1:
Three possible operation types are compared in the figure. The partial removal of mammary gland, tonsillectomy and cataract surgery. Three types of surgery that can potentially be performed on an outpatient basis. In Germany, the partial removal of mammary gland is performed almost exclusively as an inpatient procedure (99.7%), whereas in other EU countries it is performed much less frequently as an inpatient procedure and more frequently as an outpatient procedure. For example, in Spain only about half of these operations are performed as inpatient procedures, 54.4%, and in Denmark only 9%. For tonsillectomy and cataract surgery, the difference is not as large, but still substantial. In Germany, 84.2% of tonsillectomies are performed as inpatient procedures, whereas only two-thirds are performed as inpatient procedures in Spain and 42.6% in Denmark. In cataract surgery, Germany is also far ahead with 13.5% of inpatient procedures, while Spain and Denmark have less than 1% of inpatient procedures.

These figures clearly show that the topic of outpatient surgery has a lot of potential for the future and that there is still room for development in Germany compared to other countries.

How the area of outpatient operations is structured and how an expansion could look like will now be discussed.

To define which surgery may be performed and reimbursed on an outpatient basis in Germany, a catalog with a list of all surgeries and hospital treatments that may be done on an outpatient basis was created. KBV, the German National Association of Public Health Insurance and the German Hospital Federation put together this catalog (cf. Kassenärztliche Bundesvereinigung, 2022). They also decided on standard payments for these services to hospitals and contract physicians. Contract physicians must receive permission from their respective

Going into 2019, the catalog for outpatient surgery included 2,879 surgical procedures. These were both the procedures that could be performed on an outpatient basis and those that usually have to be performed on an outpatient basis (cf. Albrecht, Mansky, Sander & Schiffhorst, 2022). Since then, the catalog has been further developed and will be developed even further in the future.

As described, the topic of outpatient surgery is becoming increasingly important and will likely continue to be an area where there are many developments. The report by the IGES Institute from 2022 is particularly interesting here. In this report, the Institute recommends that the catalog of potential outpatient surgeries can be expanded by 2,476 procedures. In relation to the existing 2,879, this would be an increase of 86% (cf. Albrecht et al., 2022).

2.2. State of research and literature review

This chapter presents the current state of research and existing literature on the topic. It will show what information is available on rented outpatient operating capacities and how this was determined. For this purpose, various literature databases and sources were used, and different keywords were selected in the literature search. Since the topic relates more to the German health system, the search terms were entered in both English and German in order to get a comprehensive overview. The respective number of search results are presented by language in the first step. Afterwards, the results were combined according to relevance in order to provide an overview of the absolute number of relevant results. Search terms used:

1. “Rental of outpatient surgery capacities” / German: “Vermietung ambulante OP-Kapazitäten”
2. “Rental model surgery capacities” / German: “Mietmodell OP-Räume”
3. “Outpatient surgery” / German: “Ambulante Operation”
4. “Outpatient rent” / German: “Miete ambulant”
5. “Rent surgery capacities” / German: “Miete OP-Kapazitäten”

The following sources and databases were used for the relevant literature:

1. Google Search
2. SpringerLink
3. Springer Medizin
4. Google Scholar
5. Pubmed

The results of the literature search are presented in the following tables.
The tables show the results of the literature search with the corresponding keyterms. It shows that the more general the search source, such as Google Search, the more results there are. As soon as it goes more into the scientific databases, such as PubMed and Springer, the number of results decreases. The same can be said for the search terms, here too it can be seen that the more specific the term becomes, the fewer results are generated. In concrete numbers, it can be seen that the specific search terms 1, 2 and 5 in PubMed, for example, produce no results in German and very few in English. The somewhat general search terms 3 and 4 generate significantly more results.

The next step is to further analyse the literature found. For this purpose, quality criteria were defined to narrow down the results and limit them to the literature relevant for this paper. The following quality criteria were defined:

1. Only sources that contain at least one paragraph on the topic are relevant
2. Only sources that consider the German health care system are relevant, as other systems contain other systems and would thus distort the results

If one applies these quality criteria and looks at the results in detail and content, the results clearly fall out. So far, there has been no real scientific elaboration on the topic discussed here. Only Google Search provides some information, e.g. on providers of outpatient surgery. So far, there have been no scientific papers on renting or leasing models of outpatient surgery capacities. Due to the lack of research on this topic, a look is taken at foreign industries.
In order to nevertheless have a comparative aspect to the results of the interviews, the following paragraphs will look at rental models in the automotive industry.

2.3. Rental of cars as a comparison to OP capacities

A comparison to car rental is made at this point, as the following parameters are considered comparable:

1. Something is rented that is used and incurs different costs (e.g. tyre wear, interior space and others).
2. Different models of renting are possible, differentiated for example by time, amount of use etc.
3. The provider market is relatively limited, as there are, for example, financing hurdles for market entry.

Some of the different types of car rental models are shown in the following.

2.3.1. Car leasing

The first type of rental is the typical car lease. The car belongs to the leaseholder. Normally, he is obliged to ensure timely maintenance, carry out repairs on his own, pay taxes and purchase the necessary insurances (cf. ADAC, 2023). Car leasing can be divided into two categories: Residual value leasing and kilometre leasing. The differences are stated. With residual value leasing, the value of the vehicle is calculated at the beginning of the contract, which is what it should have when it is returned. The calculation takes into account various factors, such as the technical condition of the vehicle and the forecast market situation. With kilometre leasing, it is somewhat simpler, as only how many kilometres the lessee is allowed to drive during the contract period is specified (abcfinance, 2023). In the car leasing model, various additional costs are covered by the user or lessee. These include, for example, taxes, insurance and, unless otherwise agreed, any repair and maintenance costs.

2.3.2. Car rental and car subscription

Car rental and car subscription are concepts where all costs are included in the rental. Car rental tends to be for shorter periods of time and therefore tends to be slightly more expensive than subscription, which is for long-term ownership. With a car subscription, the vehicle is usually configured for a specific end user and has a delivery time, unlike a rental (cf. Ewen & Maltzan, 2023).

In summary, the differences between leasing and renting can be stated as follows. Normally, the monthly leasing instalment only includes the direct use of the car, but not insurance and additional ancillary costs as with a subscription. As a result, the actual costs are not as obvious as with the rental. It is necessary to take into account the costs of registration, insurance, taxes, inspections and maintenance, including the replacement of wear parts (cf. Ewen & Maltzan, 2023).
3. Methodology

As shown in the previous chapters, it is difficult to find details and accurate information on the leasing of outpatient surgical capacities in the existing literature. The basis of this work is therefore to conduct interviews with experts in order to shed light on the topic and gather relevant information. In the end, the current market situation and the development of the coming years will be shown.

In the coming subsections, the approach and methodology within qualitative empirical social research will be explained and the procedure will be described.

3.1. Methods in this Paper

In this paper, five expert interviews were used that can be found in the appendix. The interviews were all conducted by telephone, recorded, and transcribed after the interview. A question guide was used for the interviews, which can also be found in the appendix. This was adapted slightly, if necessary, depending on the working environment of the expert. The experts were sent the guidelines prior to the interviews. The following rules were established for transcribing the recordings:

- The answers were written down as accurately as possible.
- Colloquial expressions were only changed if they did not alter the expressiveness.
- Emotions such as laughter were not written down, since in this work purely content things are in the foreground.
- Sentences, which were awkward or grammatically wrong in the use of language, were separated, without changing the sense.

The aim of the content analysis will be to obtain an overview of the content-related statements and to identify the points on which there is agreement and which points are viewed differently. This is how reliable certain statements and facts are, or how a certain point of view influences the experts' personal impressions.

The interviews were anonymized at the request of the interviewees. The interviewees are various people from management positions in ambulatory healthcare, for example managing directors of ambulatory surgery centers and medical directors. A detailed and non-anonymized list can be provided upon request.

The results from the procedure described here are presented and evaluated in the form of Qualitative Empirical Social Research. In the following a short outlook on this method is given.
3.2. QUALITATIVE EMPIRICAL SOCIAL RESEARCH

The procedure of a qualitative content analysis according to Mayring will shortly be described.
First, the material to be analyzed must be determined. The scope of the material should only be changed if absolutely necessary. This is followed by an analysis of the circumstances under which the material was created. Also a description of what form the material is in must be made. As a rule text, which does not necessarily have been written by the analyst. It must also be recorded in which way the material was the "original material", e.g. tape recordings, has been changed during transcription. It is important to determine in advance of the analysis what effect is being achieved and which intention lies behind the content analysis, this serves above all the structural Classification of the available material (cf. Mayring, 2010).

For a better presentation and evaluation of the statements of the different interviewees, a content-based structuring will be done in this work.

4. Results

This chapter will now look at the design of the rent of surgery capacities.
For this purpose, different possibilities for renting are shown.
In addition, an overview is given of the criteria that are relevant in determining the rent.

4.1. Rental models at a glance

Physicians in private practices have various possibilities to perform surgery themselves. They have various options for this, some of which are outlined in this chapter.
One possibility is for doctors to act as affiliated doctors. An affiliated doctor is defined as follows:
"The affiliated doctor is a contract doctor who is not employed by a hospital and who is entitled to treat his patients in so-called affiliated beds on an inpatient or day-care basis. The affiliated doctor can use the infrastructure (services, facilities and means) of the hospital for this purpose, but receives no remuneration from the hospital (Cf. AOK-Bundesverband, 2023)."

It is important for affiliated doctors that their main activity is not in the inpatient area and that they must apply for a licence as an affiliated doctor. Then the doctor can bill his activities in the hospital with the respective KV, here the EBM is taken as a benchmark (Cf. Bundesmantelvertrag-Ärzte, §39). The aim of establishing affiliated doctors is to improve coordination between the outpatient and inpatient sectors (Cf. AOK-Bundesverband, 2023).

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2 Original in German: "Der Belegarzt ist ein nicht in einem Krankenhaus angestellter Vertragsarzt, der berechtigt ist, seine Patienten in sogenannten Belegbetten stationär oder teilstationär zu behandeln. Der Belegarzt kann hierfür die Infrastruktur (Dienste, Einrichtungen und Mittel) des Krankenhauses nutzen, erhält aber keine Vergütung durch das Krankenhaus."
Furthermore, there is the possibility for doctors to rent an operating theatre; this can be done in different models. There is the possibility of levy per operation, which means that the surgeon gives a part of his EBM fee, which he receives for the respective operation, to the operating theatre operator. This leads to problems if the amount is less than the costs of the operation for the operator (Cf. Frielingsdorf, 2006). A flat-rate charge per patient is also conceivable; this is a very simple way of structuring the rent, but it is a very imprecise calculation and can probably only be carried out if losses on individual operations can be cross-subsidised (Cf. Zeiler, 2022, Interview 1).

A monthly cost allocation to the surgeons by the operating theatre operator is also a conceivable variant. In this case, all costs are allocated to the operating surgeons by means of a distribution key, e.g. operating theatre minutes used or number of certain types of surgery (Cf. Frielingsdorf, 2006). A more precise division of costs is also possible here, e.g. division of fixed costs according to fixed time slots and division of variable costs according to the number of operating theatres; this ensures a fairer division, since the number of operating theatres in a fixed time slot can vary greatly depending on the specialty (Cf. Zeiler, 2022, Interview 1).

It is also possible to charge a rent per operating theatre hour or per operating theatre minute. It is also possible to rent out fixed time slots, e.g. either the morning or the afternoon can be rented out; this is particularly interesting in view of the fact that the risk of time use is passed on to the doctor. With these options, a precise cost calculation is necessary in order to determine an exact price for the minutes/hours or for the slots (Cf. Zeiler, 2022, Interview 1).

With the time-dependent variants, there is the additional option of charging rent according to "cut-suture-time". This is positive for the surgeon, as the time spent on the operation, such as changeover time, is not at his expense. For the operator, however, there is a financial risk, as the operating theatre may remain unused for too long because the surgeon is not working efficiently (Cf. Zeiler, 2022, Interview 2).

A simple variant is to allocate the costs or income to the individual "Participants" in the operation. In the outpatient sector, it is possible for the surgeon and the anaesthetist to bill their services separately. In addition, there are services that could be billed by both, e.g. post-operative care, which can be billed by the person where the operation takes place. Rarely does the case arise that a completely uninvolved third party, a pure operating theatre operator, is also involved; in this case, the costs must then be apportioned accordingly to all three participants. From an economic point of view, this model is questionable, since the actual costs and cost causers are not determined (Cf. Zeiler, 2022, Interview 3/ Cf. Zeiler, 2022, Interview 5).

There are differences not only in the charging for use itself, but also in the scope of use that the tenant makes use of. For example, there is the option of renting a complete operating theatre, including staff and instruments, in which case the surgeon does not have to take care of anything else. Accordingly, there are also models where the staff can be brought along or where the instruments are sterilised outside. In this case, the rent must be adjusted accordingly and there must be knowledge about the amounts of the individual cost centres in order to be able to increase or decrease the rent accordingly (Cf. Zeiler, 2022, Interview 4/ Cf. Zeiler, 2022, Interview 5).

The choice of the appropriate rental model must be decided according to individual
circumstances and the corresponding requirements of the environment. Each form has its advantages and disadvantages. In the following chapter, the most frequently used models will be named and the "best practice" models will be discussed.

4.2. Common models for renting outpatient surgery capacities

The most commonly used method in hospitals is to charge rent per unit of time or per patient. This is a method that basically involves little effort, but poses a financial risk, as the operator does not know whether the ORs will be used and may be stuck with his costs, and if the cost calculation is poor, losses are quickly incurred. The risk for the tenant is very low with this model (Cf. Zeiler, 2022, Interview 1/ Cf. Zeiler, 2022, Interview 4).

As a second model, the revenues are usually simply divided up. The surgeon bills his part and the anaesthetist his part; the part that could be billed by both, e.g. post-operative care, is billed by the one where the operation takes place. This is a system that is very collegial and simple, but it does not take into account cost structures and business management standards, so it seems rather unsuitable for "best practice" (Cf. Zeiler, 2022, Interview 3).

A rather rare model, but one, that also occurs in practice, is the share of the fee. This has the advantage that the financial risk of the tenant is reduced because the fee for the respective type of surgery is taken into account, which is not the case with fixed prices per time unit, for example. For an operator, this model is rather unsuitable, as here the costs are only taken into account on a small scale (Cf. Zeiler, 2022, Interview 2/ Cf. Zeiler, 2022, Interview 4).

A generally valid statement about which model is best cannot be made, as the individual circumstances of an operator must always be considered. Nevertheless, it can be stated that renting out fixed time slots is a highly recommendable model for operators. Here, the risk that operating times are not used is passed on to the tenant. However, with this model it is important to have a precise overview of the cost structures so that the rent is set appropriately. Ignorance of one’s own costs can result in a rental amount below the contribution margin and thus losses are recorded for each OP. This precise cost calculation makes time slots initially very costly for the operator, yet it is probably the most sensible option from a business point of view (Cf. Zeiler, 2022, Interview 1/ Cf. Zeiler, 2022, Interview 3).

4.3. Criteria for setting rents

There are also different models for setting rents, depending on the provider and the environment. In general, outside tenants naturally negotiate the price, according to normal market rules. The rule here is that outside tenants do not usually cover their costs, but earn additional income. When setting the price, the following must also be taken into account:

- the difference between fixed costs and variable costs (Cf. Zeiler, 2022, Interview 1). Cost centres to be considered in the determination are personnel costs, room costs including investment costs and ancillary costs, material costs, e.g. for the sterilisation of instruments. In total, an operating theatre hour is then approximately 300€, whereby
e.g. staff or instruments brought along must be deducted from this (Cf. Zeiler, 2022, Interview 3).

In the overall view, it is clear that in the area of rent levels, it is very much a matter of empirical values and approximate calculations. Only very rarely are business calculations carried out, resulting in "rule of thumb" prices and the real costs remaining in the dark. Only rough calculations are made that are easy to see without much effort, a complete calculation of an operation is rejected because of the effort involved.

5. Discussion

The interviews revealed some interesting aspects about the renting of outpatient operating rooms. The aspect of cross-subsidisation that hospitals undertake is quite realistic, especially in view of the economic problems in the hospital landscape. It nevertheless remains to be seen whether this will be the case in the future or whether, in the course of outpatientisation, hospitals will also rely on income from operating theatre rentals in the future. The competitive situation between hospitals and outpatient surgery centres can be viewed critically, since procedures and infrastructure should be different after all. The leaner structures and simpler processes should actually lead to lower costs and thus rents, which would definitely also be a contribution to the efficiency of the health care system. The fact that hospitals use this area for referral management is questionable in this context. What is surprising is the finding that there is no detailed cost accounting behind many surgery rents and that there are often still non-transparent cost structures. With regard to standard or normal rents, this is a major obstacle.

The comparison to car rental shows a very big difference, when offering cars two models have become standard, the all-in subscription or rental or leasing, where all costs are borne by the user and only the pure car is provided for a fee. Due to the many costs, which are often not transparent in the health sector, as well as the additional personnel component, a comparison with a car is of course not directly possible, but this also shows the difficulties in answering the research questions; there are many unknown parameters.

For the future, this topic will be very important, if outpatientisation increases and inpatient interventions become fewer as a result, the topic of outpatient surgical capacities will become more important and good cost calculation, also in the hospitals, will become very important. This paper has provided the basis for possible models and initial indications for pricing, but there is still a lot of work to be done and information to be gathered.

6. Conclusion and Limitations

In summary, it can be stated that the field of outpatient surgical capacities is still very intransparent and that in practice there is obviously a wide range of rental models and also rental amounts. In contrast to the rental of cars, no clear models have yet become
established and can be regarded as standard. There is a wide range of rental models, from cost-sharing to all-inclusive rental to special forms, e.g. bringing your own staff. With the rental models themselves, there is also a whole range of possibilities, from fixed time slots to billing by time or by number of operations. The amount of rent seems to depend not only on the real costs, which are around €300, but also on the purpose of the rental. There are differences here depending on the provider. While hospitals seem to take less rent and cross-subsidise this through the income in the inpatient sector, the outpatient surgery centres have to look at the costs and calculate more economically, which generally leads to higher rental costs for the surgery rooms. This work has shown which possibilities there are and which models are used, but at the same time it has also shown that there is still a need for much more research and that there are still large gaps in knowledge. Thus, the two research questions of the thesis have been answered in principle, but the thesis is subject to some limitations.

This work is subject to various limitations, for which the study design and the basic significance must be considered. On the one hand, different personalities were interviewed for the interviews, but mainly from management. In order to obtain a broader view of the topic, other professional groups could also be included in the future. In addition, five interviews were conducted for the first time, so that in the future a better significance and a deeper insight can be gained, the information gathering should be broadened. This work thus provides a basis for further research on the topic.
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Appendix

The appendix of this paper, the original interviews and the questionnaire can be found at the following link: https://doi.org/10.7910/DVN/BW1HLW

Harvard Dataverse
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