

# IMPROPER USE OF HOSPITAL BEDS IN GERMANY<sup>1</sup>

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## **abstract**

During the nineties several reforms have taken place in the German health care system. In the hospital sector the reforms were stimulated by the discussion on improper use of hospital beds. This study presents main results of this discussion and the following regulatory reforms which aimed to increase efficiency and effectiveness in the health sector. Also basic figures on the development of the hospital sector are shown. In the beginning of the discussion high expectations on potential savings were raised. In favour for the implementation of the obligatory long-term insurance for nursing care the government based its argumentation on savings in the hospital sector, too. Within this paper first results on this savings within the hospital sector but also additional expenditures by long-term-care insurance are presented. Also the role of the reform of the hospital payment system is discussed. In 1994, the year before the implementation of the long-term care insurance, 3.21% of GDP were devoted to hospital care. In 1997, the year after the fully implementation this was 3.18%. At the same time, expenditures devoted to long-term care increased from 0.63 to 0.98 per cent of GDP. This means, that savings and efficiency gains in the hospital sector in consequence of several measures to reduce improper use of hospital beds were compensated by additional expenditures in long-term care.

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## **1 Introduction**

The public discussion on improper use of hospital beds started in Germany in autumn 1989 as the daily newspaper "Welt" published results of a study which the Concerted Action of Health Care (Konzertierte Aktion im Gesundheitswesen) initiated in 1986. This so called "Fehlbelegungsstudie" (Study on the improper use of hospitals beds) reviewed records of selected sample of hospital patients in order to find causes for the increasing number of hospital patients as well as the scope of improper use of hospital beds. The study was financed by the Minister of Labour and Social Affairs who had the responsibility of the health sector at that time. Supposing that a reduction of improper use of hospital beds would lead to a reduction of expenditure on hospital treatment, in the following years, several adjustments of the regulations were made. Particularly sickness funds were pressing the government for changes in the regulation. They claimed that there are improper used beds and in consequence over-capacities within the in-patient sector and that they will only pay for those patients, which really require in-patient treatment. Improper used of hospital beds were seen as major factor for the high share of expenditures for inpatient treatment.

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However, it took time until a control instrument and procedures were developed to measure and to deal with improper use of hospital beds. In February 1997, the medical control service of the sickness funds published their results of controlling improper use of hospital beds based on medical records<sup>2</sup>. The discussion has not stopped since that time, because of several reasons. The first one is the methodical issue: "How to define a case of 'improper use?'" The second one is the measurement problem: "How to discover these hospital cases?" The third reason is related to the outcome of improper use: What should be the consequences for the providers of health care?

There are several reasons for improper use of hospital beds outside and inside the hospital(Kotter/Focke 1995).

Factors outside the hospital are

- deficits in the psycho-social supply (e.g. outpatient addictive aid)
- economic and social situation of the patients
- lack partly of in-patient and out-patient post-inpatient care supplies (supply has increased since 1995)
- lack of co-operation between hospitals and post-inpatient care institutions.

Factors inside the hospital are

- economic motivation of the hospital holder or medical motivation of the medical service
- lack of organisation of the admission station.

Additionally, there were also financial reasons for a long stay in hospital. Before introduction of long-term insurance, sickness funds paid for the stay in hospital but not for a stay in a nursing home. Therefore, by the introduction of the long-term care insurance the government assumed to realise savings in expenditures for hospital care.

The following chapter exhibits, firstly, legal and economic background information on inpatient care. Chapter 3 introduces definitions for the improper use of hospital beds and the concepts to measure it. Then, in chapter 4 the results of the major studies will be presented. Chapter 5 discusses the results and the economic and legal consequences. Finally, in chapter 6, an outlook is given to the current issues and the health reform 2000.

## **2 Economic and Legal Framework**

International comparisons show that the German acute sector has the second highest acute bed density in the European Union (Schneider et al. 1998). In 1997, 6.2 acute beds were available per 1,000 inhabitants as compared to 4.4 in the European Union. Germans spend about 3.4% of their GDP on hospital inpatient care including cures

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<sup>2</sup> Medical records is a standardised transcript which gives information on patients diagnoses, treatment and other characteristics.

and inpatient rehabilitation services (44% of total health expenditures). This share is below the European Union's for hospital care, which is mainly the consequence of a lower staff bed ratio than in the most other Member States (BASYS 2000).

In 1998, totally, there were 3,658 inpatient institutions in German including units of rehabilitation and cures, but excluding nursing homes. Out of the total 3,658 in-patient institutions in the hospital sector 2,263 units are "hospitals" defined by the hospital financing law (KHG), around 90 per cent of that general hospitals (2,030). The discussion on improper use of hospital beds were mainly focusing on patient's treatment in these general hospitals. Therefore, inpatient care in specialised hospitals as well as in the prevention and rehabilitation hospitals are not particularly considered in this study.

In 1998, around 15.6 million cases of inpatient treatment were registered in the 2030 general hospital with a total of 533,770 beds. Since 1991, the first year with regular statistical information for the unified Germany, the number of inpatient cases increased 14.2%, at the same time the average length-of stay sank from 13.4 to 10.2 days. The above average fall in the length-of stay led, despite an increase in the number of cases, to a reduction of hospital occupancy rates (see table 1).

No wonder, that sickness funds are demanding more reduction in hospital beds. In the Health Care Structure Law of December 21st, 1992 this demand was considered among others by the insertion of § 275a in the social security code V (SGB V). The elaboration of an evaluation basis across the states (Länder) should enable on pilot basis an assessment of improperly used hospital beds across the Länder - an assessment at national level corresponding to the legal bases (MDS 1996).

In 1995, the medical review board of the sickness funds received also the task to take over control services of the long-term insurance on nursing care. In law the reduction of improper use of hospital beds is not limited to the nursing cases. In § 17a of the hospital financing law (KHG) all kind of improper use is mentioned. Here the removal of the whole improper use is demanded, not only of the nursing cases. The medical review board of the leading organizations of the sickness funds considers § 17a KHG<sup>3</sup> the legitimate basis for that program. This paragraph allows employees of the medical review board of the sickness funds to look at the medical files. The medical review board of the leading organisations of the sickness funds wanted to achieve an examination of improper use of hospital beds to equal conditions in all hospitals under examination. This should solve the problem of different examination guidelines and different assessment of the factors, which led to different results

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<sup>3</sup> KHG § 17 a: (2) The sickness funds act on avoidance of improper use of hospital beds and swift reduction of existing improper use especially by selective calling of the medical review board of the health insurance. For this purpose the medical review board of the health insurance is allowed to see the medical files. The medical review board has to inform the health insurance about the result of the assessment and about the necessary details of the findings.

in the previous survey. To reach this aim the leading organisations of the sickness funds and the medical review board of the leading organisations of the sickness funds passed a guideline on the basis of § 282 SGB V<sup>4</sup>. The examinations should be carried out on this basis. The guideline is put on examination standards. Some important standards are:

- catalogue of operations, which can be carried out on the basis of the catalogue for out-patient operations (§ 115 b SGB V<sup>5</sup>, version of 01.07.1996) to 20% at least in the out-patient department
- fixing the possibility of pre-inpatient treatment
- catalogue about practicable out-patient therapies in internal medicine

The analysis of the examination results were also standardized.

There are several complementary regulations focusing on control, financing and hospital planning which are aiming to reduce and avoid improper use of hospital beds. The § 6 III KHG<sup>6</sup> is aiming to reduce the number of hospital beds by those beds used only for nursing cases. Since 1st July 1996, when long-term sickness funds started to pay for long-term-inpatient care, the number of hospital beds included in the hospital plan had immediately to be reduced by the number of improper used beds, which will be dispensable especially due to the foreseen measurements in § 17a. The support under KHG § 9 section 2 no. 6, which serves this aim, should be given primarily to these hospital representatives, who carried out by themselves a change of dedication to nursing institutions under clause 1. The supply of post-inpatient care institutions and the financial consequences of need of care have changed fundamentally since the introduction of long-term care insurance. Now, these patients can and must be taken care of out of hospital.

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<sup>4</sup> SGB V § 282: Co-ordination on federal level: The leading organisations of the sickness funds have to support the effective running of the tasks and the co-ordination between the medical review boards. For this purpose they form a team. The leading organizations of the sickness funds decide together and unified guidelines for the co-operation of the sickness funds with the medical review boards for guarantee a standardized assessment, and for principles about further education. Incidentally they can give recommendations.

<sup>5</sup> SGB V § 115 b: Out-patient operation in hospital: (1) The leading organizations of the sickness funds together the German hospital association (Deutsche Krankenhausgesellschaft) or the federal association of the hospital representatives together and the panel physicians federal associations agree on

1. a catalogue of practicable out-patient operations
2. standardized payments for hospitals and registered physicians and
3. measurements for quality and economy assurance.

In the agreement the quality requirements under § 135 section 2 and the guidelines under § 135 section 3 have to be considered.

<sup>6</sup> Introduced 1994.

### 3 Definitions and methods of measuring of improper use of hospital beds

#### 3-1 Definition of improper use of hospital beds

Improper use of hospital beds is from the medical perspective the use of inpatient care without medical necessity. Improper use of hospital beds includes the following three aspects (Hailer/Jeschke 1994):

- improper admission (out-patient care is possible, nursing home care is more appropriate)
- improper duration of stay in hospital (too long length of stay)
- improper level of care in hospital (intensity and type of care)

Ad (1) Savings are possible, if e.g. treatment of patients in the outpatient sector is cheaper. That holds in general for patients with not severe diseases short stay hospitals which can be treated in out-patient facilities.

Ad (2) Potentials for shifting patients from the in-patient to the out-patient department can also be found especially with patients, who need only very little care at the end of their hospital stay. The greatest part of these patients is staying in small hospitals.

Ad (3) Some patients do not need the level of care they receive. Or they are treated in a hospital with too high of a level of service. For example it is not necessary that a woman with an uncomplicated pregnancy is referred to a university hospital. The appropriate intensity of care is often closely connected to the improper length of stay (2).

Measuring causes and the extent of improper use of hospital beds two basic methods of assessment patients in hospitals might be distinguished:

- individual assessment by physicians (implicit criteria)
- assessment of medical records based on standards and treatment guidelines (explicit criteria).

#### 3-2 Individual assessment by physicians (expert rating)

The intention of this method is the careful assessment of a complex special case with taking into account the medical and social knowledge of an expert (physician). The assumption is that physicians can assess best and most reliable, if an assessment and the duration of a hospital stay are medically appropriate (textit{Hailer/Jeschke} 1994).

This method can be carried out by retrospective or prospective analysis of medical files or on the basis of individual knowledge of patients. It allows the consideration of all aspects relating to improper use of hospital beds (place, time, extent, intensity of medical care) as well as the detailed focus in case of more precise questions.

Principle: Only the physicians decide from their personal estimation on the existence of improper use of hospital beds. Depending on the organisation of the survey they receive systemic support. Depending on this support the following three types of individual assessment can be distinguished:

- The first type gives no indications and trusts the medical judgement of the physician. The validity of this evaluation strongly depends on the ability and experience of the judging physician.
- To receive more standardised and valid results physicians receive criteria or standards regarding the length of stay.
- The third type is the so-called Delphi-Method. This method tries to get reliable results by confronting the physicians repeatedly with their own and foreign decisions.

This expert rating requires in practice a catalogue of questions related to the context, the treatment itself and the status of the patient by carefully selected and trained physicians as well as a minimum of documentation. Such criteria might include

Diagnoses: Special (ICD-) diagnoses are indications for improper use of hospital beds, for example stroke or fracture of the neck of the femur.

- Special wards: Medical wards, psychiatric and geriatric wards might be examined in detail.
- Age structure: With respect to long-term nursing cases one's attention might especially be directed at patients older than 65 years.
- Length of stay: If the length of stay, for example, is more than 15 days (in connection with other criteria), improper use can be assumed.
- Care levels: A high level of general care in combination with a low level of special care allows the conclusion that there could be a case for long-term nursing care.

However, despite the consideration of criteria this measurement procedure is weak with respect to comparability among hospitals and regions. The reliability of the assessment is difficult confirm. For example, the length of stay is not the same in different hospitals and regions. The use of length-of- stay method ascertains the real improper use of hospital beds of differences from the lowest value. However, the length of stay depends very much on hospital organisation and available staff. Therefore, the first method leads to the second method.

### **3-4 Using medical records and explicit criteria**

The review of medical records by explicit criteria is the basis of the second method of discovering improper use of hospital beds, initiating sensible reduction of beds and making corresponding applications to the planning authority. For a good comparison, it is important to consider the influence of "Case-Mix" and "Outcome" and to

carry out a statistical standardisation.

However there are some problems, as different patients can not be easily compared. One argument is the "Case-Mix": Patients of a hospital or a region are different in many features, influencing admission and length of stay (for example age, kind and seriousness of illness, socio-economic status, the ability of convalescence). Case-Mix also includes patient-individual characteristics, which can not be influenced by hospitals or health systems.

The other argument against direct comparisons is "Outcome": The length of stay can be influenced by different service standards. Patients leave hospitals in different health states (improvement or restoration).

The special intention of protocols is, that these give evidence based formulated facts. A definite number of applicable criteria out of the selected list decides over improper use of hospital beds. The aim is to do it without subjective and global assessment and to receive easy comprehensible, inter-subjective equal results.

The critical point of this method is, however, the medical documentation on the side and availability of evidence based protocols on the other side. To solve the gaps handing over the cases of suspected improper use of hospital beds to physicians for definite assessment is therefore required additionally. In the end, this leads in practice to a combination of method one and two.

## **4 Studies and Results**

### **4-1 The BMA Study**

#### **4-1-1 Design**

In autumn 1986, the concerted action of health care (Konzertierte Aktion im Gesundheitswesen) made a survey regarding causes and reasons of the increasing number of hospital patients as well as the scope and the reasons of improper use of hospital beds. The German Government granted the study because for many years a rather high extent of medically unnecessary hospitalisation was assumed. In this first part of the investigation, the study was limited to patients over 60 years. Patients were assessed by six doctors which analysed a sample medical records of about 5300 patients. In autumn 1988, the Federal Ministry of Labour and Social Affairs ordered the extension of the analysis to patient under 60 years based also on the data of the Infratest-Institute (textit{Klar, Infratest} 1989).

The rating was performed by 3 pairs of physicians (2 internal and one surgical), each pair consisting of one physician nominated by the hospital association and one physician nominated by the sickness fund association. The medical records where assessed by implicit criteria based on common West German diagnostic and medical treatment practice (textit{Klar, Muller, Schulte Monting} 1990).

#### **4-1-2 Improper used beds**

The first part of the study showed that the length of stay of 38% of hospital cases of older patients were too long. However, one result of this study was also, that about 90% of this improper use were not in the responsibility of the hospitals (textit{Deutsche Krankenhausgesellschaft} 1989). It is interesting that the second study came to similar results for the younger patients, about 40% of patients under the age of 60 were staying too long in hospital.

With respect to hospital capacities the studies concluded that, in the West-German acute hospitals, about 18% of all hospital days were not necessary for medical reasons. As a consequence 85,000 beds of about 460,000 beds in acute hospitals could be closed, particularly in small and middle hospitals. The reasons for a too long length of stay in hospitals particularly are both with older people and with younger patients, frequently in deficits of the post-inpatient care.

In 57.7% of all investigated hospital cases the consultants considered the necessity and the duration for the hospital admission completely necessary. According to the consultants, 39.5% of all patients - under the criterion of the medical necessity - had a too long length of stay, while for 1.6% of the patients there was no need for a hospital stay at all.

On the average, there were 2.1 improper used hospital days per patient under 60 years and 3 days for older patients. In 1986, the actual average length of stay of patients under 60 years in acute hospitals was 10.9 days. The average length of stay of these patients would have been 8.8 days minus the 2.1 medically not necessary days.

In 1986, the average length of stay of patients over 60 years in acute hospitals was 17.4 days. Minus the medically not necessary days the average length of stay was 14.4 days. Over all age groups the average length of stay in acute hospitals could have been 10.6 days instead of 13 days.

A differentiation according to the age of the patients shows a remarkably high share of improper use of hospital beds with patients aged 10-19 years (26.6%) and patients aged 50-59 years (20.9%). For patients over 60 years the relative proportion of improper used days continuously decreased.

A concentration of improper use of hospital beds were found in medical wards of small hospitals. The surveys came to 35 000 improper used beds in acute hospitals by patients, who are more than 60 years old (*Klar, Muller* 1988). For patients, under age 60, 50 800 improper used beds were assumed (*Klar, Infratest* 1989). Against the background of the reunification, the reduction of the average length of stay, the reforms of the hospital sector as well as shortages in the methodology of the study the above figures are nowadays seen many as obsolete.



## 4-2 The MDS Study 1996

### 4-2-1 Design

The medical review board of the federal associations of the sickness funds carried out a survey on the examination of the necessity of in-patient care based on § 275 a SGB V in 1996. 40 hospitals of 11 states with data of 63,665 patients were included in this survey. The fields of internal medicine (29,859 patients) and surgery (25,263 patients) were in the centre of attention. A smaller but also important group was in gynaecology (3,313 patients). The first three days of in-patient care were under examination. The interest focused especially on substitution potential of in-patient care and improper use of hospital beds because of long waiting periods (inefficient organization) or non-utilization of pre-inpatient care (§ 115a SGB V<sup>7</sup>) by out-patient, home care and day care.

The examination of improper use of hospital beds was carried out by employees of the medical review board of the sickness funds in the states, who were special instructed by the responsible sickness funds on the state and regional level. The sickness funds decided from suitable statistic codes which hospitals should be examined (Rogge 1997).

subsubsection{Improper used beds}

About 66% of admissions in internal medicine and surgery result from referrals of outpatient physicians. In this group a substitution potential of 25% was found. 25% of all admissions were emergencies (substitution potential: 19%). The others were transfers (substitution potential: 11%) and self-admitted cases with the highest substitution potential (43%).

In internal medicine (n = 28,988 cases) the most frequent diagnoses occurred were diseases of the cardiovascular system (ICD 390-459: 40%), neoplasms (ICD 140-239: 13 %), diseases of the intestinal tract (ICD 520-579: 12%), of the respiratory system (ICD 460-519: 8%) and non-specific symptoms and affections (ICD 780-799: 7%). These five main groups cover 80% of all diagnoses in internal medicine. The substitution potential was 39% for maximum in the group of non-specific symptoms and affections and at least 15% for the group of cardiovascular diseases (Buck 1997).

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<sup>7</sup> SGB V § 115 a: Pre- and post-inpatient treatment in hospital: (1) In the case of prescription of hospital treatment the hospital can treat the insured without board and lodging in medical suitable cases.

1. to verify the necessity of in-patient hospital treatment or to prepare the in-patient treatment (pre-inpatient treatment) or
2. following an in-patient treatment, to protect or to strengthen the treatment result (pre-inpatient treatment).

In surgery (n = 24,723 cases) the main emphasis was put on injuries and intoxications (ICD 800-999: 32%), diseases of the intestinal tract (ICD 520-579: 25%), diseases of the cardiovascular system (ICD 390-459: 10%), neoplasms (ICD 140-239: 10%) and diseases of the skeleton, muscles and connective tissue (ICD 710-739: 7%). These groups describe 84% of all diagnoses. The substitution potential varied from 41% for maximum the group of diseases of the skeleton, muscles and connective tissue to 16% for the group of diseases of the intestinal tract (*Buck 1997*).

In gynaecology (n = 3,197 cases) patients distributed over the diseases of the urinary and genital system (ICD 580-629: 41%), neoplasms (ICD 140-239: 36%) and complications during pregnancy, delivery and childbed (ICD 630-676: 14%). These three groups cover 91% of all diagnoses in gynaecology. The highest substitution potential was found in the group of diseases of the urinary and genital system with 19%, and the lowest in the group of neoplasms with 11% (*Buck 1997*).

### **4-3 The WIdO Study 1996**

#### **4-3-1 Design**

In this study the medical records of 11.6 million hospital cases of 1,650 hospital of all Lander were checked. For these cases a medical records according regulation of nursing staff (Pfleger-PR) was available.

#### **4-3-2 Results**

5.2% of all patients stay three days in hospital at the most and requiring almost no care. Their portion comes converted to 0.9% of the total care days. In some hospitals the portion of such easy-care patients with a short stay increased for more than 50%. The most mentioned diagnoses are general symptoms like dizziness and insomnia or other forms of chronic ischaemic heart diseases (*Gerste 1997*).

Some patients could be discharged earlier to their homes or should be transferred to a nursing home. After introduction of the long-term care insurance law it should be possible to organise the care of these patients at home by a domiciliary service or at a nursing home. If this co-operation works well, patients could be discharged earlier and the hospital sector would be relieved. The estimated saving comes to about 2.7 billion marks based on the average per diem (*Statistisches Bundesamt 1998*).

Patients requiring only a minimum of care during the last five days of a hospital stay cause 15.2% of all in-patient cases. Since 1993 this portion has fallen for 8.9 points. Here it is discernible that the hospitals have started to reduce the length of stay at the end of the hospital stay. But there is also a clear indication for the possibility in more shortening (*Gerste 1997*).

## 5 Discussion

### 5-1 Methodical Issues

The study was based on a retrospective approach because a previous prospective test showed that a prospective design influenced the discharge practice due to the knowledge about the inappropriateness review (*Herzog, Pfisterer, Watrinet 1988*). With respect to all patients the sample of the BMA study was small, representing only 0.05% of all cases. Also the authors were not satisfied by the size (*Infratest, Klar 1989*). One major problem of the study is furthermore the incompleteness of the records. Results of diagnostic investigations were often not completely documented. Not all assessment criteria were clear at the beginning of the study. About 75% of the cases were assessed without sufficient qualification of the doctors in the particular speciality.

The sample size of the second study is with 40 hospitals out of more than 2000 hospitals also relatively small, however, much more emphasis is given to the criteria and assessment procedures and the proper documentation. A "good" documentation should have the following characteristics( see *Ruffing 1999*):

- Readability, understandability and orientation to the diagnist and treatment process.
- Consideration of phraseology.
- Documentation of dates, proper signment.
- No falsification, continuous updating.
- Clarity, value-free and topicality.

In Germany, hospital care provided by nurses has to be documented. In a recent study of 50 nursing documentations the importance of these records for the assessment of improper use of hospital beds were shown by the medical review board. For the survey they used a questionnaire with items to the nursing plan, nursing report and to the examination of improper used beds ("documented improper use of hospital beds") under the RUMBA-rule. The RUMBA-rule said that the items have to be relevant, understandable, measurable, expressed in observable actions and reachable. The questions could be answered with "yes" or "no".

Direct consequences on the improper use of hospital beds have an inconsistent documentation about the necessity of the care in a hospital, lack of continuity in the reporting and inconsistency in the documentation. An insufficient orientation to the nursing process and formal faults could have indirect consequences. Therefore it was the requested that nursing documentation should play a more important role in the documentation process and the nursing personnel has to take it more serious.

### 5-2 Economic Effects

### **5-2-1 Savings**

The public and scientific discussion of the study results made clear that it is not easy to reduce improper use of hospitals because of the difficulties to remove the many external factors which cause the improper use of beds. The Scientific Council of the Concerted Action emphasised from the beginning that showing the degree of improper use will not resolve the problem. Thus, estimated savings were more hypothetical but not real. During the period 1991 to 1997, the total share of the GDP devoted to hospital expenditures excluding cures and adjusted on booking errors increased from 2.93 to 3.18 per cent of GDP (see annex Table 2) . There were savings in 1992 and 1993 in consequence of the measures of the Health Care Structure Act (GSG), and also savings in 1997, the first year when the long-term care insurance was fully implemented. The question remain do these savings result from measures against the improper use of hospital beds.

According to a report of the Federal Government on the improper use of hospital beds the reduction of the average length of hospital stay from 13.4 days in 1991 to 11.9 days in 1994 is not connected with improper use of hospital beds by nursing cases (*Deutscher Bundestag* 1996). Instead the argument is that the reduction of length of stay was stimulated by the establishment of fixed budgets in the years 1993 to 1995 and other factors. As table 1 of the annex exhibits, in Germany, the reduction of length-of stay was accompanied by an increase of hospital cases. This increase of hospital cases is not a sign of a reduction of improper use of hospital care.

In addition, international comparisons show, that the Nordic European countries, Denmark, Finland, Sweden, but also the Mediterranean country Italy reduced the acute hospital beds during the nineties relatively more than Germany, although the density of acute hospital beds is in those countries below the German level. In some European countries as Denmark, United Kingdom and Sweden the number of hospital cases were even falling.

In the United States evaluations of programmes of the Professional Standard Review Organisation (PSRO) have not produced consistent findings. Some studies reported a reduction of hospital inpatient admission rates by 10 to 15 per cent, others did not detect any significant effect. Likewise, projections of cost savings differed considerably (*Edwards, Hensher, Werneke* 1998).

Sometimes, it is argued, savings can hardly be expected by the reduction of individual beds in hospitals. The closure or changed dedication of complete sections or wards against the background of the supply structure in the region would be a better option (*Kotter, Focke* 1995). In Germany, about 150 hospitals were closed or their dedication changed in the period 1991 - 1998. That means a reduction of 6%. In the same time beds were falling 14%.

### **5-2-2 Long-term care insurance**

However it has to be stated that the introduction of long-term insurance has led to new supplies and in

consequence to the shift of expenditures. In 1996, hospitals started to reduce their staff. This can be seen as result of several measures including the introduction of long-term care insurance.

The obligatory long-term care insurance was introduced in two steps. In January 1995 members were entitled to outpatient long term care benefit as home care and to nursing cash benefits, in July 1996 to inpatient care in nursing homes. In 1995, this new pillar of the German social security system spent 11.1 billion DM for outpatient benefits including administration and in 1996 21.9 billion DM including inpatient benefits. The full implementation of inpatient benefits was reached in 1997, in which the long-term care insurance spent totally 29.8 billion DM.

In arguments for the long-term care insurance the government estimated the improper use by long-term nursing cases at 5% of all care days in the Germany-West and at 20% in Germany-East (Vollmer 1994). The Federal Government considered this as cautious estimation based on the above mentioned Infratest Surveys. That estimate means, referring to the number of care days in the year 1993 amounting to 156.5 million in the old and 33.5 million in the new states, in total about 7.8 millions of care days and 6.7 millions could be avoided, respectively (*Statistisches Bundesamt* 1997).

As table 2 of the annex exhibits there was a saving by the cumulative expenditures of long-term care and hospital care when the 1996 expenditure ratio of 4.24 as % of GDP is taken as benchmark. In this case savings would be about 2.8 billion DM in 1997 as in this case total spending for long-term care and hospital care was only 4.16 of GDP. But if the figure for 1994 is taken as benchmark, which represents the year before introduction of long-term care insurance, then the additional expenditures came to 11.6 billion DM in 1997.

### **5-3 Payment system and incentives**

#### **5-3-1 Evaluation of services at case payment rates and procedural rates**

When the revised federal hospital payment decree (Bundespfllegesatzverordnung) came into effect on 1.1.1996, the agencies of the GKV saw themselves confronted with a number of accounts of case payment<sup>8</sup> footnote{ } rates and procedural rates footnote{Procedural rates is the remuneration system for certain surgical procedures. In this case other services can be calculated additionally (e.g. accommodation, catering, etc.)}, whose agreement appeared doubtful with the specifications of the regulation<sup>9</sup> footnote{ }. In this situation the medical review board

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<sup>8</sup> Case payment is part of the remuneration system for hospital services. It covers the costs of the whole hospital stay of a patient. In general, there is no possibility to receive further payments.

<sup>9</sup> BPflV § 11: Case payments and procedural rates: (1) The general hospital services for one case, for which a payment is determined in the payment catalogue under § 15 section 1 no. 1 or §16 section 2, are paid by case payment rates.

of the sickness funds (MDK) in Hesse was assigned to advise the sickness funds (textit{Medizinischer Dienst der Krankenversicherung in Hessen} 1999).

The certified hospitals are legally committed to transmit in case of inpatient treatment, among other things the diagnoses (ICD-9) as well as the treatment according to ICPM (OPS-301) in a machine-readable way to the sickness funds.

According to the medical review board, however, the exclusive knowledge of these data usually is not sufficient for the correct classification of a service to case payments. Therefore, the hospitals are asked to submit the operation and the discharge summary<sup>10</sup> for assessment to the MDK, whereby, however, in some cases even these documents do not give clear results. Therefore, even in such justified exceptional cases the patient document must be consulted for assessment.

The consultation takes place via particularly trained specialists, who are regularly trained with respect to the topic of the classification of services to case rates and procedural rates. In Hesse, until 31.7.1998 2,919 cases were submitted in total for assessment, of which on the part of the hospitals 928 case rates (16.2%), 2,998 procedural rates (52.2%) and connected with 1,807 times per diems (31.6%) were taken as a basis. In order to ensure a comparability between hospital's financial demands and the record's assessment by the MDK, it was necessary to define the entire basis of remuneration for each investigated area. For each patient the sum of case rates, procedural rates and per diems calculated (called cases in total) and multiplied with the real monetary value of the case payment or an averaged value for the per diems.

Only in 770 cases (27.1%) consent between the hospital financial demands and the classification results of the MDK existed. The total justified hospital cases were reduced by the assessment and the distribution among the types of payments was shifted. For the justified cases a reclassification took place. By this the number of case payments rose from 928 (16.2%) to 1,500 (33.4%). On the other side the number the procedural rates decreased from 2,998 (52.2%) to 1,411 (31.4%). The number of associated per diems cases decreased from 1,807 (31.6%) to 1,585 (35.3%). The total number of remuneration required by the hospitals was reduced by around 21.5% by the assessment.

The highest value among the case payments required was code 15.02 (hysterectomy) with 135 cases. The corresponding procedural code 15.02 was in the second place. By the assessment of the MDK the procedural code

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(2) A part of the general hospital services for a special complex of a case, which is determined in the payment catalogue under § 15 section 1 no.1 or § 16 section 2, are paid by procedural rates. ...

<sup>10</sup> Operation summary is a report of the operation of a hospital patient and a discharge summary is a report of the therapeutic services provided to hospital patients at the end of the hospital stay.

15.02 slipped down to the rank 26 with 4 cases and the total number of the case payment code 15.02 rose to 242 cases. Similar shifts appear regarding other remunerations shown in table 7 and 8.

Particularly frequently the procedural rate 21.01 (left cardiac catheters with coronary angiography) was inquired. By the MDK assessment the number of approved hospital cases was reduced from 150 to 90.

The emphasis of the remuneration inquiries was clearly in the gynaecological, cardiological, surgical (appendectomy, hernia), traumatological and ENT area (SE 05.01 - septum). The cost-intensive payments of the group 9 (cardiac surgery) and 11 (transplantation surgery) were inquired only rarely.

In the monetary view it was estimated a saving potential of approximately 30% of the examined payment with respect to the investigated group.

### **5-3-2 Incentives**

German hospitals had a long time no incentives to reduce their number of beds, their cases, or their services, quite the reverse. The financing system stimulated hospital managers for as much hospital cases with as much services as possible and a long length of stay. The situation has changed. Hospitals are facing now fixed budgets and deductions from their budget because of improper used beds. They have to increase their out-patient, pre- and post-inpatient services and must decrease their in-patient services. The nursing cases have to be referred to nursing institutions.

Some authors argue that the adjustment of the budget is not sufficient for reducing the improper use of hospital beds. It is important to determine the capacity surplus of the care region. The first step should be the determination of the location with the lowest efficiency in one region. Then the care contract should be cancelled based on the volume of the capacity surplus (with involvement of the government of the Land) and the adaptation of the hospital plans. This procedure is chosen, because it is pointless to examine hospitals with good quality and big service spectrum, although there can also be found improper use of hospital beds and saving potentials. By closure of less efficient capacities in other hospitals these potentials could be removed in medium-term (*Rogge* 1997).

It has to be mentioned that by the introduction of case payments in 1995 mainly surgical services were covered, in total only about 20% of all hospital cases. Thus the incentives to organise hospital care more efficiently are still limited.

## **6 Outlook**

The results of this paper show that improper use of hospital beds is far away of being solved in Germany.

Therefore on various levels of the health care system activities were undertaken stimulate more efficient inpatient services.

At the level of control the medical review board of the leading organizations of the sickness funds started the program "Saving potentials with reduction of improper use of hospital beds" in March 1997. This program should help to justify the changed § 17a section 3 KHG<sup>11</sup> footnote, which provides a reduction of the budget and also of the case payment rates and procedural rates (see S 11 federal hospital payment regulation BPfIV) about at least 1% in the years 1997 to 1999. The conversion of the results of the MDS survey 1996 was planned as follows:

- The hospital's service volume has to be resolved by the portion of out-patient operations, which was ascertained in the L-5-Statistic, and together with the budget new determined.
- The budget should be cut by the portion of capacities, which is tied by improper use of hospital beds.

The MDS further recommended

- establishment of specialised diabetic and oncological ambulatory practices in rural areas
- opening of hospitals for pre-inpatient and semi-inpatient diagnostic
- extension of ambulatory care.

In the health structure reform 2000 the government followed this recommendation by allowing to built integrated forms of outpatient and inpatient care and by the further reform of hospital remuneration toward diagnosis related case payments for all hospital services. It is intended to implement a complete DRG-based payment system. However, especially ambulatory surgery is presently not appropriate paid as compared to inpatient surgery. The future reduction of improper utilisation of hospital beds will be very much depend on these relative prices.

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<sup>11</sup> KHG § 17 a: (3) The parties of the hospital payment negotiations ( § 18 section 2) are obliged, with appropriate calculation of the budget under § 12 of the federal hospital and nursing charges law, to guarantee that improper use of hospital beds will be reduced; with that, in each of the years 1997 to 1999 at least 1 per cent is to subtract from the budget, which is cleared up by compensations and supplements and as it would be agreed on without deduction for improper use. The amount of flat rates and procedural rates under § S 11 of the federal hospital and nursing charges law will be cut by 1 per cent in the years 1997 to 1999. As far as parts of the hospital are changed into nursing institutions, arrangements should be taken in the nursing charge agreement to support a takeover of hospital personnel by the new nursing institutions as smooth as possible.



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## **Annex 1: methodology of MDS study**

The following three-part standardised questionnaire served as basis for the actual data gathering:

Part 1 covers data on structure and sphere of the catchment area of each participating hospital. In particular, the following parameters should be registered in this part of the questionnaire:

- ✧ demographic data of the catchment area,
- ✧ number of established general practitioners,
- ✧ number of special radiological practices (incl. existing large-scale instruments),
- ✧ number of specialists incl. additional branch-indications,
- ✧ number and main services of out-patient operating practices,
- ✧ structure of hospital care in the catchment area of the project hospital,
- ✧ complementary service structures as e.g. rehabilitation clinics, care facilities, specialist ambulances, day care units/partly in-patient institutions, practice clinics, health and advice centres, community nurses etc.,
- ✧ organisation of the emergency service in the catchment area,
- ✧ structural data of the project hospital.

Part 2 of the national questionnaire anonymously registers the patient's relevant social and medical data. Therefore, the MDK-BuAG developed a national software for the data gathering. In this part 2 not only data e.g. regarding personal ones of the patient, kind of admission, different kinds of diagnostics are registered, but also social sphere and, especially, the clinical view of the patient when admitting to hospital.

For judging the state at admission, evaluation categories were set up for the most important clinical parameters on the basis of a score system to reach a standardised evaluation of the patient's admission state in the different hospitals. The evaluation of this score system is correlating with the necessity of the individual hospital admission. The correlation degree can be examined. It allows conclusions in how far a judgement of the necessity of a hospital admission by the ascertaining MDK-specialist is plausible.

In particular, in part 2 the following parameters were ascertained:

- ✧ identification of the each participating hospital and the specialist department,
- ✧ date of capture,
- ✧ patient's year of birth,
- ✧ sex,
- ✧ postal code of place of residence,
- ✧ purchasers,
- ✧ insured Ls state,
- ✧ date and time of admission,

- ✧ kind of admission,
- ✧ admission and accommodation diagnosis,
- ✧ main diagnosis and up to four side-diagnoses,
- ✧ social situation of the patient,
- ✧ quality of housing,
- ✧ patient's admission state: state of consciousness, pre-existent cerebral permanent state of affairs, general condition, pre-existent state of mobility, present state of mobility, outside and internal hospital pre-results,
- ✧ category of care dependency according to PPR for the first three days,
- ✧ if OP within the first three days: OP-date, operation, ICPM-classification,
- ✧ cause of admission,
- ✧ seriousness of diseases-score: with 10 criteria the degree of the seriousness of diseases shall be ascertained.

Part 3 of the inquiry requires the qualified statement of a MDK-medical consultant with clinical experience on the necessity of each ascertained inpatient hospital admission case.

Was the inpatient admission necessary only by medical reasons? If no, on which conditions - to be named - it would have been avoidable?

Answering these questions, not only the possibilities of adequate provision regarding the out-patient background of the hospital should be taken into consideration. Rather, an overview should be obtained on out-patient or partly in-patient facilities possibly to be expanded or newly to be created in order to avoid in-patient hospital admissions at the same way of looking at a problem in the future.

The number of these hospital admissions retrospectively not meant to have been required by the MDK-physician, does not necessarily infer from, if the responsible hospital doctor's decision for an in-patient treatment of the patient relevant to the current situation was justified.

Part 3 provides for supply alternatives in the out-patient, partly in-patient and inpatient field to be named by the assessing physician, in case the necessity of an in-patient hospital admission was negative. There, it was decisive which alternatives would have existed for the patient preserving a sufficient, suitable, not exceeding necessity and economic supply. Alternatively, the following supply structures for an in-patient treatment was named by the MDK-experts:

1. Further out-patient diagnostics and/or therapy: The procedures to be applied are available or shall be created in the out-patient sector.
2. Referral to specialist: Diagnostics and/or therapy need special medical qualification, but could be carried out out-patient.
3. Local availability of out-patient diagnostic special proceedings: e.g. CAT scan, nuclear magnetic resonance

(NMR) scan or digital subtraction angiography (DSA)

4. Special out-patient therapy proceedings e.g. use of possibilities created by § 115b SGB V for out-patient operating
5. Use of pre in-patient possibilities (diagnostic and/or therapeutic): Use of diagnostic and/or therapeutic possibilities created by § 115a SGB V
6. Specific medical care, also at emergency service times: This could be true, if patients went to hospital directly and diseases have been present which could have been treated within the general framework of the SHI-accredited emergency care.
7. Possibility of short-time observation right round the clock in medical care facilities outside the hospital: e.g. monitoring ambulance, central ambulance for drunk people: short-time observation and medical monitoring, where no intensive care is required, as e.g. monitoring of circulation parameters.
8. Local availability of partly in-patient or day hospital treatment: That is e.g. the specific therapeutic exercise after complex joint injuries. Also part of this is a diabetic training optimising diabetic therapy.
9. Intensive out-patient training possibilities for patients: e.g. training for diabetics, rheumatics, patients with artificial anus.
10. Care by relatives: In domestic sector care is not possible.
11. Professional domestic health care: Certain nursing measures need professional execution.
12. Care in a day care facility: Concerning contents and extent, need of care exceeds domestic health care and seems to be temporally limited.
13. Admission to nursing home: Health care right around the clock seems to be necessary in the long term.
14. Field free of text for further experts L alternatives: e.g. introduction of rehabilitation measures at chronic diseases

Regarding the experts L assessment, the actual supply structure of the project hospitals L sphere was not taken into consideration; it was postulated that all substitutive care structures are existing. The above mentioned three-part federal questionnaire was basis of the evaluation at Lander level.