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Angaben zur Veröffentlichung / Publication details:

Wild, Verina, E. Pfister, and N. Biller-Andorno. 2012. "Ethical research on the implementation of DRGs in Switzerland - a challenging project." Swiss Medical Weekly 2012 (142): w13610. <https://doi.org/10.4414/smw.2012.13610>.

Ethical research on the implementation of DRGs in Switzerland – a challenging project

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Summary

Diagnosis Related Groups (DRGs) are currently being introduced on a national scale as a prospective reimbursement scheme in Swiss in-patient hospital care, replacing any remaining retrospective day-rate arrangements. DRGs are expected to promote transparency and efficiency while helping to contain health care costs. The governmental decision to introduce DRGs has caused considerable controversy among different stakeholders, due to diverging appraisals of what will happen when DRGs are introduced as an economic management tool in Switzerland. The controversial discourse on DRGs is particularly interesting from an ethical point of view, since all arguments inevitably contain ethical considerations. In this paper we summarise the results of our exploratory ethical studies that have led to a larger research project funded by the Swiss National Science Foundation: “Impact of Diagnosis-Related Groups (DRGs) on patient care and professional practice” (IDoC). In section 1: ‘Developing an understanding of the ethical issues at stake’ we briefly explain how DRGs work, what the intended effects are, what the public is concerned about and what the scientific research tells us so far. In section 2: ‘Developing an ethical framework for research on DRGs in Switzerland’ we summarise the ethical issues and explain the ethical framework we will use in order to perform research on the complex issue of DRGs in Switzerland. Only once a profound understanding of the challenges exists can research on the ethical implications of DRGs be successful.

Key words: DRG; prospective payment system; ethics; research

Introduction

Diagnosis Related Groups (DRGs) are currently being introduced on a national scale as a prospective reimbursement scheme in Swiss in-patient hospital care, thereby replacing any remaining retrospective day-rate arrangements. DRGs are expected to promote transparency and efficiency while helping to contain health care costs. At the same time, compromised quality of patient care, less equitable access to health care services, shifting delivery of health care to inadequately prepared institutions such as nursing homes, and decreasing job satisfaction among nurses and

physicians are anticipated problems. The governmental decision to introduce DRGs has caused considerable controversy among different stakeholders, due to the diverging appraisals of what will happen when DRGs are introduced as an economic management tool throughout Switzerland. The controversial discourse on DRGs is particularly interesting from an ethical point of view, since all arguments inevitably contain ethical considerations. The expected positive or negative effects of DRGs touch on moral norms and values such as the patient’s welfare, professional autonomy or distributive justice in health care. This is the reason why the Institute of Biomedical Ethics, at the University of Zurich, has launched an interdisciplinary study on ethically relevant effects of DRGs in Switzerland, entitled “Impact of Diagnosis-Related Groups (DRGs) on patient care and professional practice” (IDoC; SNF funded Sinergia-Project. cf. <http://www.ethik.uzh.ch/ibme/forschung/drg.html>). However, to date there are no sophisticated ethical tools that would allow research on cost containment instruments. Furthermore, the challenging issue of DRGs cannot be addressed by bioethicists alone, but depends on exchange with other disciplines and perspectives. In preparation for the IDoC study we therefore conducted a three-year long exploratory study in order to (1.) develop an ethical understanding of the issues at stake and to (2.) design an ethical framework for the research project. Our methods for the development of the research project were varied; among them, we conducted a literature review which included publications on DRGs from the 1960s in the USA. Furthermore we built up a national and international network of experts from different disciplines, such as health economics, law, nursing, public health research, medicine and sociology. We conducted several empirical studies, including pilot qualitative interview studies in Swiss hospitals (covering internal medicine, paediatrics, surgery, geriatrics) and qualitative interviews with stakeholders on DRGs in Switzerland (<http://www.research-projects.uzh.ch/p12264.htm>), as well as a small Delphi study in Switzerland in order to refine and confirm the results [1].

In this paper we will summarise the results of the exploratory studies that served as a basis for the current IDoC project. In section 1: ‘Developing an understanding for the ethical issues at stake’, we will briefly explain how DRGs work, what the intended effects are, what the public is con-

cerned about, and what the scientific research tells us so far. In section 2: 'Developing an ethical framework for research on DRGs in Switzerland', we will summarise the ethical issues and explain the ethical frame that we will use in order to perform research on the complex issue of DRGs in Switzerland. Only once a profound understanding of the challenges involved exists can research on the ethical implications of DRGs be successful.

Developing an understanding of the ethical issues at stake

How do DRGs work?

DRGs as a reimbursement system are a standardising system (see for example <http://www.fischer-zim.ch/artikel-pdf/DRG-CH-Modellwahl-0404.pdf>). Depending on the main diagnosis, which is based on the International Statistical Classification of Diseases and Related Health Problems (ICD-10), each patient case is assigned to a Major Diagnostic Category (MDC; in German: Hauptdiagnosegruppe). For the calculation of the actual DRG, the MDC is the most important factor. Other factors that are included in the calculation are secondary diagnoses, procedures, age, the degree of difficulty and others. The resulting DRG is linked to a prospectively calculated average length of stay (LOS) with a minimum and maximum limit. The cost weight of the DRG is multiplied by the politically defined base rate. The hospital can charge this amount for the treatment of the relevant patient. A hospital can only have costs under control if the actual LOS of its patients remains around the average LOS, that is, above the minimum and below the maximum LOS. DRGs thus encourage physicians to focus on the main diagnosis, to run procedures as efficiently as possible and to discharge the patient within the average LOS in order to remain profitable.

The increasingly detailed documentation of diagnoses and procedures, aimed at contributing to the transparency regarding costs and health services, can be used to facilitate benchmarking and controlling and is expected to lead to further competition between hospitals. This process is intended to cut overcapacities.

In summary, the health economic tool "DRGs" is a standardising system that implements incentives with the ultimate aims of efficient procedures, cost-containment, benchmarking, controlling, transparency, competition and responsibility.

Why implement DRGs?

For an ethical analysis it is important to investigate the expected benefits of DRGs. What were the initial ideas leading to the development of DRGs in the 1960s and what are the current positive aims that are connected with the implementation of DRGs in Switzerland?

The prospective payment system (PPS) "Diagnosis Related Groups" has its roots in the USA. Facing excessively increasing costs in health care, a new "incentive method of reimbursement was to be studied" [2]. The traditional retrospective payment system had led to several problems because of its inherent incentives, namely to keep patients longer in hospital than necessary and to provide avoidable

tests and services (this system has been in use in some hospitals in Switzerland up to the year 2011). The choice fell on DRGs, which had been developed in the early 1960s at Yale University in the context of quality control as a tool for patient classification [3]. In 1983 DRGs were introduced for the first time as the new reimbursement system for Medicare patients in the USA [4]. The stated objectives of the federal government were to standardise prices of services and to control federal costs by providing incentives for the hospitals and physicians to work more efficiently and to use resources parsimoniously [2].

Subsequently DRGs have been implemented in different versions in several other countries (such as Australia, Germany, Scandinavia including Latvia, France, Ireland, Romania, Slovenia, Croatia, Spain, Turkey, Italy and others). Several Asian countries are currently considering the implementation of DRGs as well. In most countries the process of implementation is relatively recent or even just starting, and thus still fairly experimental.

Similarly to other countries the implementation of DRGs in Germany in 2004 was motivated by the search for measures to contain health care costs. The German DRG system (G-DRG) is currently the most complex and comprehensive system worldwide.

After a detailed health economics assessment, which began as early as 1985 the decision to develop a Swiss version of DRGs was made in 2003 (http://www.swissdrg.org/de/07_casemix_office/Entwicklungsprozess.asp?navid=10).

In 2006 the Swiss Government bought the G-DRG system from the German DRG-institution, InEK gGmbH, including all rights for further development and modification. Subsequently, in 2007 the Swiss Parliament decided to change the national health insurance law (KVG, Bundesgesetz über die Krankenversicherung) in order to regulate hospital reimbursement through prospectively calculated Diagnosis Related Groups (<http://www.admin.ch/ch/d/as/2008/2049.pdf>). From the beginning, an academic analysis accompanied the process of introducing DRGs in Switzerland (e.g. [5, 6]; see also <http://www.fischer-zim.ch/artikel-pdf/DRG-CH-Modellwahl-0404.pdf>).

In 2008 the non-profit incorporated company "SwissDRG AG" (SwissDRG AG is a non-profit incorporated company. <http://www.swissdrg.org>) was founded with the aim of developing and calculating the structure of tariffs for DRGs in Switzerland. The administrative board includes members from cantonal governments (Gesundheitsdirektoren), hospitals, medical associations and insurance companies. As stipulated by "SwissDRG AG" the aim of implementing DRGs in Switzerland is to improve transparency and comparability of hospital costs, economic viability of the Swiss health care system, optimisation of processes, cooperation among different disciplines and institutions, national planning of hospitals, efficiency and standardisation of health care professionals' work and patient care through optimised working procedures and higher competition of quality among the hospitals (http://www.swissdrg.org/de/07_casemix_office/Ziele.asp?navid=7).

Anticipated problems in Germany and Switzerland

We will now turn to the tensions that accompanied the implementation of DRGs by looking at the public perception of DRGs and pointing towards selected scientific research results. In terms of DRGs, Germany is an important reference point for Switzerland in many aspects. Swiss DRGs are based on G-DRGs which – like in Switzerland – serve not only as an accounting system but also as a reimbursement instrument for almost all in-patient health covered by basic health insurance. Both health care systems have similarities, and also the historical and cultural backgrounds are partially comparable.

The implementation of DRGs provoked a wave of protest among physicians in Germany [7, 8]. It triggered a fierce debate between proponents of professional medical thinking on the one side and economic thinking on the other side [9]. Speaking of “modern factories of medicine” one physician pointed to what he perceived as the industrialisation of health care, with emotionless engineers functioning only in terms of standardisation and profit, and he evoked individuality and relationships as the essential elements of medicine [10]. According to another statement core elements like medical competence and social skills could be subordinated in an enterprise that was steered by “controlling” [11]. In an open letter to the Federal Chancellor, the “Workshop Group of Scientific Associations of Germany” fought against what it saw as the imminent collapse of academic medicine, caused by inappropriately developed structures for reimbursing education and training under DRG conditions [12]. Students shared these concerns about the new developments in medicine that seemed to move away from a relationship-oriented health care [13]. In Switzerland the introduction of DRGs was also awaited with some apprehension concerning possible negative consequences [14].

Critical voices pointed to several ethical issues such as the rise of economically motivated decisions leading to patient harm, the rising pressure on physicians, and an increasing administrative work load that might be prioritised over the contact with patients [15]. Some anticipated a climate of growing mistrust and feared a reduction of physicians’ autonomy [16]. Many of these concerns also applied to nursing, including an anticipated lack of human resources as one of the prominent worries [17]. At the same time the importance of scientific research on the impact of DRG was emphasised [6].

Over the past years and in light of the upcoming implementation, the number of training seminars, conferences and published materials to familiarise Swiss health care workers – and future DRG controllers in particular – has increased, focusing mainly on explaining how the system works [4] (examples for conferences, workshops and exchange: http://www.swissdrg.org/de/02_projekt/veranstaltungen.asp?navid=8, <http://www.fasmed.ch/fileadmin/pdf/fasmed/Zeno%20Swiss%20DRG.pdf>, http://www.intensivpflege.ch/fileadmin/redaktion/Downloads/Kongress_2010/Alpiger_R.pdf). These events and materials are usually matter-of-fact training, with a certain publicity element to them, in many cases conveying DRGs as a rational, modern management tool. Possible moral

conflicts typically remain unmentioned in these teaching seminars.

Research on the effects of DRGs

Given the rapid spread of DRGs in many countries and the anticipated and also anecdotally reported ethical problems it is remarkable that only few scientific studies have been or are being conducted. No country has so far developed a comprehensive monitoring system that evaluates expected benefits and problems, and which reflects the results from an ethical perspective. However, taken together there is a substantial body of literature that can guide the development of a larger study on DRGs, and which also takes moral problems into account.

The most prominent research projects from the USA were studies that anticipated ethical tensions: A two-year Hastings Center project on “Ethics and DRG” carried out in the late 1980s assumed that the cost containment strategy would leave no sector or participant in the health care system untouched [18]. For example, the impact on nurses and social work [19], or on the doctor-patient-relationship and the transformation of ethical practice [20] were discussed. Some feared drastic human cost: “If our concerns are valid, the human cost will be unconscionable. Access, quality of care, medical progress and the autonomy of hospitals will all be sacrificed in the name of efficiency.” [21]. No systematic evaluation of the ethical concerns that were raised in these early papers has been conducted.

Germany has legal requirements for a systematic scientific evaluation of the implementation of DRGs, but this has so far not been fully implemented (Krankenhausfinanzierungsgesetz § 17 b Abs. 8). The IGES institute in Germany is responsible for monitoring the effects of DRGs. So far, a decrease in health care quality has not been reported. Yet publications state that it is too early to make a final statement on the effects of DRG; an explicit mention of ethical aspects is missing (IGES Institut, 2010. *G-DRG-Begleitforschung gemäss § 17b Abs. 8 KHG. Endbericht des ersten Forschungszyklus (2004-2006)*, Berlin and IGES Institut, 2011. *G-DRG-Begleitforschung gemäss § 17b Abs. 8 KHG. Endbericht des zweiten Forschungszyklus (2006-2008)*, Berlin).

However, some isolated studies are helpful for identifying ethically relevant criteria when implementing DRGs. These studies are concerned with (1.) quality of health care [22–24], (2.) working conditions of health care workers [24–27] and (3.) access to health care [28–30].

We structured the ethical concerns which we could find in our extensive literature research and compiled them in one document. In order to refine and confirm the relevance of these ethical issues for the Swiss context we sent the document in a small Delphi Study to 67 Swiss experts from medicine, nursing, hospital management, politics, health insurances, advocacy groups for patients and disabled people, medical ethics and SwissDRG AG. In a process of written and oral exchange with the experts we developed a detailed plan by grouping the identified areas of concern into three clusters.

1. Patient care and relatives, including criteria such as access to health care, coding effects on treatment and out-patient care.

2. Professional ethos, asking for example whether there are conflicts of interest between the professional ethos and the actual working conditions and if yes, what consequences they might have.
3. The institutional and societal conditions were considered as the context within which issues related to patients and professionals should be situated, and also which have to be addressed when discussing DRGs. The result of this study was our first step for a specific ethical evaluation of DRGs in Switzerland [1].

In general, one frequently mentioned major problem related to research on DRGs is the lack of data prior to the introduction of DRGs. This means that an objective comparison before and after implementation is almost impossible (it is questionable whether this is ever possible due to complex processes parallel to the introduction of DRGs, which also affect the health care system and the health care workers). We could not gather comprehensive data long before the first versions of DRGs were introduced in Switzerland. However, we did conduct 30 qualitative interviews at three different hospitals in Switzerland in 2008/2009 in which we asked questions about ideal professional values and competences, the possibility to pursue them under the actual working conditions and the influence of economic considerations on daily work (see for example: <http://www.research-projects.uzh.ch/p15580.htm>). The publication of the analysis of the 30 interviews is currently in preparation). Furthermore, our IDoC-project started on 1.1.2011, thus some data were collected prior to the Swiss-wide implementation on 1.1.2012. In contrast to many other countries with experience of DRGs, the early start of our research will provide at least some information of the situation before introduction.

Developing an ethical framework for research on DRGs in Switzerland

Our preparatory studies, and especially the Delphi study, were important for compiling a comprehensive list of ethically relevant aspects in the Swiss context. However, it is insufficient to merely identify ethically relevant aspects without developing a road map of how to actually perform research on the specific issues. In a secondary step we therefore developed a framework within which we included all the relevant aspects. Our current aim is that this framework captures the issues arising in the concrete Swiss context. Our long-term aim is to develop a more general framework, which can also be used in different countries and for different cost containment systems (currently we are conducting a satellite project on case-based payment in China which is also based on this research framework: <http://www.research-projects.uzh.ch/p15523.htm>). In the following section, we will introduce the framework for an ethical evaluation of DRGs in Switzerland, based upon a systematic synopsis of all aspects identified so far. DRGs are a management tool which aim at all levels of a health care system. At the macro level it is intended to serve the economic viability of the health care system through the efficient delivery of health care, cost-transparency and competition between hospitals. At the same time,

the quality of health care should not decrease for certain subpopulations or even the entire population.

The implementation of the tool can only be enabled through cooperation on the meso-level: Hospital management has to ensure that DRGs are being put into place properly.

Finally, DRGs have an effect on the micro-level: health care workers can be directly and easily motivated or even coerced to work more efficiently. In addition, most health care workers are likely to experience an increase in administrative workload.

With its influence on all three levels of health care, DRGs can thus be examined from different ethical perspectives: public health ethics, organisational ethics, and clinical or nursing ethics. Such an ethical reflection on DRGs is challenging: The main task is to discuss specific ethical values and possible conflicts from a certain perspective without losing sight of the bigger picture. Ethical research should thus contribute to a comprehensive ethical assessment of DRGs on each specific level in relation to the other levels. In order to achieve this, ethical research has to describe the possible ethical conflicts on each of the above-mentioned levels (macro, meso and micro). Such descriptive, empirical research is in itself a complex task and requires the cooperative commitment of more than one discipline. Possible questions from a descriptive view could be “Who are vulnerable subpopulations that need special attention?” (macro), or “Are institutional timeframes set in a way that caring relationships can be built and that medically necessary interventions can be performed?” (meso), or “What ideas of good patient care do physicians/nurses embrace regarding quality of care, and do DRGs lead them into conflict with their professional ideals?” (micro).

Ethical research has another normative element: it must identify the ethical assumptions that are being made within empirical ethical research and it must evaluate the gathered empirical data in light of ethical values. Which are the ethical values at stake and why? Normative questions could be for example “What trade-offs between cost-efficiency, quality and fairness are acceptable in the Swiss health care system?” (macro), or “How can fairness in hospital management best be defined?” (meso), or “What role should health care professionals play in cost containment?” (micro).

Finally, ethical research on DRGs has a methodological component: Given the complexity of the research topic, ethical research has to keep a keen eye on the methods involved: How should all experts involved work together and how can the research contribute to the ethically relevant questions? How can research deal with the problem that the effects of DRGs can often not be isolated? Methodological questions are for example: “How can effects on access to health care be measured?” (macro), or “Can ethically relevant tools be implemented in routine quality monitoring in hospitals?” (meso), or “Can significant evidence in a diverse and heterogeneous field such as in-patient care be reached?” (micro).

Currently five IDoC research subgroups are conducting research on specific questions contained in this framework (funding by the Swiss National Science Foundation is se-

	Descriptive	Normative	Methodological
Macro level (Health care system, population effects)	Who are vulnerable subpopulations that need special attention?	What trade-offs between cost-efficiency, quality and fairness are acceptable in the Swiss health care system?	How can effects on access to health care be measured?
Meso level (Hospital organisation, management)	Are institutional timeframes set in a way that caring relationships can be built and that medically necessary interventions can be performed?	How can fairness in hospital management best be defined?	Can ethically relevant tools be implemented in routine quality monitoring in hospitals?
Micro level (Clinical encounter of patient with health care worker)	What ideas of good patient care do physicians/nurses embrace regarding quality of care, and do DRGs lead them into conflict with their professional ideals?	What role should health care professionals play in cost containment?	Can significant evidence in a diverse and heterogeneous field such as in-patient care be reached?

cured for a period of three years: <http://p3.snf.ch/Project-132786> and <http://www.ethik.uzh.ch/ibme/forschung/drg.html>). The project focuses on three themes: (1.) quality of health care (including patient safety), (2.) access to health care and (3.) job satisfaction of nurses and physicians (including also the perceived autonomy at work and the compatibility of working conditions with health care workers' codes of ethics).

We are in the process of adjusting our overall ethical frame and further refining the ethically relevant research questions. This complex type of research is only feasible if different disciplines work hand in hand. Our project therefore includes teams from different disciplines (Medical Ethics, Law, Nursing Science, Health Services Research. Subproject leaders are Nikola Biller-Andorno, Bernard Burnand, Bernice Elger, Thomas Gächter, Dragana Radovanovic, Rebecca Spirig, John-Paul Vader and Verina Wild from the Swiss Universities of Basel, Geneva, Lausanne and Zurich). The groups are using different methodological tools, such as qualitative interviews, quantitative surveys, or analysis of health care monitoring instruments. Regular meetings and workshops are organised in order to achieve the best cooperation and synergies possible between the subgroups, external experts and stakeholders. As a result we hope to produce some answers to questions raised in the light of DRGs. We also aim to produce easy to use research tools that manage to condense a complex matter to the most urgent and necessary issues and that can be adapted and implemented in future evaluations of cost containment instruments.

Conclusion

Ethical research on DRGs is certainly not a trivial endeavour, and many questions might remain unanswered, but it is worthwhile. Economic viability will be one of the main future challenges for any health care system in the world – and at the same time the provision of good medical care for individual patients will remain at the heart of medicine and nursing. The introduction of DRGs may have profound, ethically relevant effects on health care at a macro-, meso- and microlevel of a health care system. A systematic ethical evaluation that meets the requirements outlined in this paper is thus necessary. In this way, ethical research will contribute to the fundamental questions, including what the overall aims of a health care system are, how it can work in light of rising costs in health care, what “good” health care should consist of and what is at stake. These questions

are essential for the future development of health care systems and ultimately affect every person. Ethical research on DRGs should therefore not be understood as a “nice-to-have” or “add-on”, which might or might not be considered; instead it is a complex, essential element for the evaluation of the introduction of cost containment instruments.

Acknowledgments: We would like to thank Caroline Clarinval, Margrit Fässler and Carina Fourie for their contributions to the IDoC project and for their comments on this paper.

Funding / potential competing interests: The project “Impact of Diagnosis-Related Groups (DRGs) on patient care and professional practice” (IDoC) is funded by the Swiss National Science Foundation (Sinergia programme). The Delphi study among 67 Swiss experts was funded by the Swiss Academy of Medical Sciences.

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References

- Wild V, Pfister E, Biller-Andorno N. Kriterien für die DRG-Begleitforschung aus ethischer Perspektive. Schweiz Ärztezeitung. 2009;40:S.1553–6.
- Rayburn JM. History and process of the Medicare reimbursement programs. Health Mark Q. 1992;9(3-4):115–31.
- Fetter RB, Freeman JL, et al. DRGs: how they evolved and are changing the way hospitals are managed. Pathologist.1985;39(6):17–21.
- Malk R, Kampmann T, Indra P. DRG-Handbuch Schweiz. Grundlagen, Anwendungen, Auswirkungen und praktische Tipps für Anwender. Bern: Verlag Hans Huber; 2006.
- Losa M. Spitalfinanzierung mit Fallpauschalen: Das DRG-System und seine Auswirkungen auf pädiatrischen Einrichtungen. Teil 1: Grundlagen eines fallpauschalierenden Vergütungssystems mittels DRG. Paediatrica. 2006;17(2):33–6.
- Schenker, L. Die DRG werden das Gesundheitssystem grundlegend ändern. le trait d'union. 2007;(38):1–5.
- Flintrop J. Nebenwirkungen der DRG-Einführung: Augen zu und durch. Deutsches Ärzteblatt. 2007;104:34–5.
- Bauer H. Aus Fehlern lernen: Verzerrtes Bild in der Öffentlichkeit. Deutsches Ärzteblatt. 2008;13(105):A-664 / B-583 / C-571.
- Reith HB. Welche Auswirkungen wird die Einführung von G-DRGs auf chirurgische Abteilungen haben? Zentralbl Chir. 2002;127(8):651–5.
- Kroschinsky F. Moderne Medizinfabriken (Leserbrief). Dtsch Arztebl. 2007;104(37):A 2496.
- Storm W. Arztberuf im Wandel: Marionetten im Dienst der Bürokratie. Dtsch Arztebl. 2005;102(37):2508.

- 12 Encke A, Van Aken H, Hiddemann W, Steinau HU. Die universitäre Medizin zwischen Exzellenzinitiative und "Brain Drain": Offener Brief der Wissenschaftlichen Medizinischen Fachgesellschaften in der Bundesrepublik Deutschland an die verantwortlichen Politiker. *GMS Mitt AWMF*. 2007;4: Doc 24.
- 13 Herzer S, Bergmann M. Keine Zeit mehr für Menschlichkeit. *Hess. Ärztebl*. 2008;69(5):280.
- 14 Binswanger RO. Ärztliches Denken und Handeln im Spital im Wandel. *Schweiz Ärztezeitung*. 2007;88(8):318–21.
- 15 Vogt PR. Fallpauschalen – DRG-System: Chance oder die nächste Katastrophe? *Kardiovask Med*. 2007;10:189–91.
- 16 Dratva J. Die Einführung von diagnoseorientierten Fallpauschalen in Deutschland. *Schweiz Ärztezeitung*. 2002;83(34):1786–8.
- 17 Anderegg S. Der Personalmangel in der Pflege wird sich noch verschärfen. *Tagesanzeiger*. 2008 Jan 14.
- 18 Donnelley S. Cost containment, DRGs and the ethics of health care. *Introduction. Hastings Center Report*. 1989;19(1):5.
- 19 Powderly KE, Smith E. The impact of DRGs on health care workers and their clients. *The Hastings Center Report*. 1989;19(1):S.16–8.
- 20 Morreim EH. Cost containment: challenging fidelity and justice. *The Hastings Center Report*. 1988;18(6):20–5.
- 21 Dougherty CJ, Dolenc D. Drgs: the counterrevolution in financing health care. *Hastings Center Report*. 1985;15(June):19–29.
- 22 Niermann, I. Anschlussheilbehandlung: «Blutige Entlassung» verlagert Kosten in die Reha. *Dtsch Ärztebl*. 2007;104(14):A-923 / B-825 / C-787.
- 23 Wood JB, Estes CL. The impact of DRGs on community-based service providers: implications for the elderly. *Am J Public Health*. 1990;80(7):840–3.
- 24 Braun B, Buhr P, Klinke S, et al. Pauschalpatienten, Kurzlieger und Draufzähler – Auswirkungen der DRGs auf Versorgungsqualität und Arbeitsbedingungen im Krankenhaus. 1. Aufl. Bern: Huber; 2009.
- 25 Manzeschke A. Diakonie und Ökonomie. Die Auswirkungen von DRG und fallpauschalierendem Medizin- und Qualitätsmanagement auf das Handeln in Krankenhäusern. Eine sozialwissenschaftliche Untersuchung und sozialetische Bewertung. Ein Auszug [Internet]. 2007. Available from: http://www.ethik.uni-bayreuth.de/downloads/abschlussbericht_Dia_Oeko_Auszuege.pdf.
- 26 Manzeschke A. Dem einzelnen und der Gesellschaft gerecht werden. Ethische Überlegungen zu den DRG und der Ökonomisierung im Krankenhaus. In: Wild V, Pfister E, Biller-Andorno N, editors. *DRG und Ethik. Ethische Auswirkungen von ökonomischen Steuerungselementen im Gesundheitswesen*. MuttENZ: EMH Schweizerischer Ärzteverlag; 2011.
- 27 Klinke, Sebastian. Auswirkungen des deutschen DRG-Systems auf Arbeitsbedingungen und Versorgungsqualität in Krankenhäusern: Reaktionen von Krankenhausärzten und Pflegefachkräften. In: Wild V, Pfister E, Biller-Andorno N, editors. *DRG und Ethik. Ethische Auswirkungen von ökonomischen Steuerungselementen im Gesundheitswesen*. MuttENZ: EMH Schweizerischer Ärzteverlag; 2011.
- 28 Chuang KH, Covinsky KE, Sands LP, Fortinsky RH, Palmer RM, Landefeld CS. Diagnosis-related group-adjusted hospital costs are higher in older medical patients with lower functional status. *J Am Geriatr Soc*. 2003;51(12):1729–34.
- 29 Muñoz E, Soldano R, Gross H, Chalfin D, Mulloy LW. Diagnosis related groups and the transfer of general surgical patients between hospitals. *Arch Surg*. 1988;123:68–71.
- 30 Pape HC, Mahlke L, Schaefer O, Krettek C. Gedanken zu ökonomischen Aspekten der Behandlung Schwerverletzter unter den Bedingungen der "diagnosis related groups" (DRG). *Unfallchirurg*. 2003;10:869–73.