How can we explain the use of evidence by policymakers and experts leading up to the introduction of the G-DRG healthcare financing system?

A Process Tracing Investigation

BACHELOR THESIS

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Abstract

The thesis investigates the use of evidence by experts and policymakers leading up to the introduction of the current healthcare financing mechanism, the G-DRG. Starting point are three theoretical considerations explaining the use of evidence by policymakers and experts: Cherry picking of evidence by policymakers, Loss of epistemic Diversity within scientific practice and Policy paradigms. The different explanations were captured in three hypotheses. The analysis concerned qualitative policy and expert documents, which were coded for economic, social and quality of care values. Furthermore, the discussion of alternatives and the relationship between the actors stand at the center of the process tracing investigation. With the help of a timeline, values and assumptions inherent in the evidence used in the process of introducing the G-DRG were retraced from 1985-2003. The findings partly support the cherry picking as well as the policy paradigm explanation, while a loss of epistemic diversity could not be detected. Looking back, the research finds the origin of values and path dependencies, which still influence the G-DRG. Thinking about further development of the German healthcare system, a new balance between economic and medical values has to be found in order to tackle the negative effects of the system.

List of Abbreviations

DRG Diagnosis-Related Groups System

G-DRG German-Diagnosis Related Groups System

EBP Evidence based Policymaking

SVRKiG Advisory Council for the Concerted Action in Healthcare "The Council"

GSC German Social Code

SHI Social Health Insurance

QAM Quality Assurance Measures

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1. Introduction: Background

In Germany, healthcare financing follows the German-Diagnosed Related Groups System (G-DRG). The performance-oriented system works through a fixed case-fee, which social health insurance (SHI) funds pay to hospitals. A case is determined by a combination of diagnosis key and procedure code. One of 1.500 diagnosis codes is taken to identify a patient's condition and one of 2.600 codes describes the operative/clinical interventions. The cases are organized in a total of 1.320 groups. Each group contains similar cases and is assigned a fixed fee (Beivers & Emde 2020, p.10), using the federal average cost for the treatment as point of reference.

The G-DRG-reform was a fundamental reorganization. It is still considered the most profound change in the history of German-healthcare, which is the reason it's scientific and normative legitimization requires particularly careful consideration (Simon, 2007, p.42). The G-DRG-reform was introduced as a response to continuously rising healthcare costs. After the start of an incremental restructuring of the healthcare system in 1985, it was introduced through the SHI-Healthcare Reform Act 2000 and specifies through the *Fallpauschalengesetz 2002*. Since 2003, reform steps were implemented incrementally as a 'learning system' until it applied to every hospital in Germany in 2004. Central objectives of the G-DRG system were (1) economically driven inpatient hospital care (2) transparency about costs and performances of hospitals and (3) balancing the financing of the social health insurance through economic efficiency reserves (Beivers & Emde 2020, p.6). Expected effects also included shortening the length of stay of patients, establishing competition between hospitals as well as generally improving infrastructure in Germany (Beivers & Emde 2020, p.6). Before the G-DRG, healthcare financing had mainly worked through daily rates for each used hospital bed, so that the price was not pinned on the diagnosed condition.

Perceptions of the G-DRG are highly controversial.

Critics argue that the system imposes "misleading incentives" causing "dramatic misdevelopments" (Beivers & Emde 2020, p.6) within the healthcare sector.

For instance, they refer to the induced pressure on doctors to make profits by operating not only within but also below the monetary boundary of the fixed fee per case. This negatively impacts the doctor's decisions regarding treatment plans because decisions are no longer taken solely according to the well being of the patient but involve economic aspects (Beivers & Emde 2020, p. 13). Flintrop (2006) explains that in practice, this causes the splitting of different conditions of the same patient into more operations than medically required. This way, costs can be settled as two separate cases.

Adding onto that, the G-DRG induces pressure to keep the length of stay as short as possible, which in cases leads to too early, "bloody" releases (Flintrop, 2006).

Furthermore, opponents criticize the enhanced competition between hospitals, which drove the process towards their increased privatization. In 2018 private hospitals made up 38% of all hospitals in Germany, while there were only 21,7% in 2000 (Statistisches Bundesamt, 2020).

Proponents of the G-DRG argue that privatization and competition not only increased efficiency in service delivery and the allocation of resources, but also the quality of care. Health economists praise the successful establishment of transparency, detailed calculations and improved economic goals (Beivers & Emde 2020, p.7). With the detailed definition and calculation of cases, the G-DRG allows a "worldwide unique degree of differentiation" (Roeder, Fiori and Bunzemeier, 2020, p.92).

Critics argue, however, that the increase in efficiency and resource allocation is mainly achieved through the reduction of staff (Tiemann & Schreyögg, 2012, p.12). Indeed, privatization led to a substantial shortage of skilled hospital workers. Most affected are those that do not primarily contribute to profits but are nevertheless essential for providing good general care, for example nurses (Beivers & Emde 2020, p.7).

Over the years, incremental changes were introduced to intervene 'false incentives' e.g. the *Hospital Structure Act (KHSG) 2016*. Officially, the policy responded to demographic change, regional developments, and the medical progress (Deutscher Bundestag, 2015). It aimed at safeguarding accessible and high-quality hospital care and enforcing requirements for nursing staff (Deutscher Bundestag, 2015). Quality was added as a criterion relevant for hospital management, and remuneration linked to indicators of quality (Deutscher Bundestag, 2015). However, the coalition agreement from 2017 set an extensive reform, which was recently introduced. The care sector is now excluded from the fee-per-case financing mechanism, which actually resembles the system from 1972 to 1992. Adding to the controversy, this change has strengthened demands of the medical professional community to also be excluded from the G-DRG. Hypothetically, this results in 40% to 50% of the costs in hospitals being excluded form the current system. The demands about completely abolishing the system gain popularity and Beivers and Emde (2020, p. 16) even foresee the beginning of the end of the G-DRG.

Considering the negative impact of G-DRG on healthcare provision and quality of care, the societal relevance of research on the G-DRG becomes clear. For instance, the effect of the loss of skilled workers was illustrated in the covid-19 pandemic. In Germany, not the number of available beds or the material resources limited the capacity for hospitals to take in covid-19-patients, but the shortage of staff. Furthermore, due to the large amount of private hospitals, the state could not intervene in hospital planning to ensure enough free beds for covid-19 patients, but needed to offer financial compensation payments to hospitals, of at least 50.000 € a bed from March to September 2020 (BAS, 2021). This is crucial for citizens because the state is obligated to ensure healthcare for the population, which is included in "the right to life and physical integrity" (Art. 2 II 1 BL) and the principle of a

welfare state (Art. 20 BL). Self-evidently not only the legal regulations highlight the need for a functioning high-quality healthcare system, but the societal interest of a healthy population. Among citizens, this research raises awareness of economic features in the healthcare system at the expense of quality.

Having established that a change in the healthcare system is necessary and likely, the questions arises what needs to be changed. Here, scientific evidence can by helpful. In the scientific community, there already exists elaborate research on the current status of the G-DRG and its effects e.g. on efficiency, hospital management or quality of care. However, when a reform is introduced, not only current effects but also basic assumptions and incentives are crucial. Otherwise, reforms solely mitigate symptoms instead of the tackling root causes of problems. For this reason, it is necessary to carefully examine the guiding principles and values inherent in the G-DRG, before introducing new measures. Also, policymaking is always influenced by path-dependency and therefore, past healthcare policy influences present and future policies.

Considering the theoretical relevance, the research investigates the G-DRG as an economic policy instrument in the public sector. The research contributes to more historical and sociological analysis of economic policy instruments, which is still marginal to STS research (Dix, 2019, p.202).

While looking back time offers the aforementioned possibilities, some aspects of the system investigated in the thesis might have already changed. The historical focus considers the time leading up to the G-DRG, from 1985 to 2003. Any subsequent changes in the G-DRG are not considered.

The considerations above about the divers scientific evidence on the G-DRG that exists now, and the need to investigate basic assumptions of the G-DRG have resulted in the following research question:

How can we explain the use of evidence by policymakers and experts leading up to the introduction of the G-DRG system?

In the next chapter, the research question is specified by three hypotheses that are formed on the basis of theoretical concepts explaining the use of evidence and policy decision-making: *cherry-picking*, *loss of epistemic diversity* and *policy paradigms*. The analysis takes the approach of a process tracing investigation. First, a timeline of significant developments is constructed, in order to prepare the hypotheses testing. This research is qualitative and data used is derived from document analysis of original politics and expert documents.

For the G-DRG reform, the expert body providing evidence was the *Advisory Council for the Concerted Action in Healthcare* ('the council'). For the political actors involved, the thesis looks at governmental parties as well as the federal minister for health.

2. Theoretical Concepts

Theoretical starting point is *Evidence-based Policymaking* (EBP). The concept holds the view that policy decisions should "follow from rigorous and accurate uses of scientific evidence" (Parkhurst, 2017, p.4). Advocates argue that by offering strategies for reaching social goals and avoiding harm, evidence can improve policy outcomes (Parkhurst, 2017, p.14; Parkhurst & Leir, 2016, p.1). In its essence, evidence is about "what works" (Parkhurst, 2017, p.14). Furthermore, evidence can enhance accountability because it offers "expectation[s] against which political actors can be judged" (Parkhurst, 2017, p.4). EBP establishes a common ground between divers actors, which is needed for successful policymaking (King, 2016, p.1510). Following EBP, two groups of actors are central in the policy process: Policymakers and Scientific experts. For a decision to be made, they need to come to a common understanding about possible courses of action. Critiques of EBP fear that evidence might undermine fundamental function of politics as a "mechanism" (Parkhurst & Leir, 2016, p.1) for debate and competition of social values (Parkhurst & Leir, 2016, p.1). Further critique adheres to the concern EBP possibly "impos[es] de facto policy priority on those concerns which have been measured, or those which are conducive to measuring in particular ways" (Parkhurst & Leir, 2016, p.1).

In order to understand how a consensus in favor of the G-DRG emerged, three theoretical concepts are considered: (1) *Cherry picking of Evidence*, (2) *Loss of epistemic diversity* and (3) *Policy Paradigm*. All refer to the relationship between experts and policymakers and the use of evidence in different ways. Thus, they relate to EBP. The first, cherry picking focuses primarily on policymakers. The second, loss of epistemic diversity, refers primarily to the work of scientific experts. Policy Paradigms, finally, draw a larger picture, which includes both actors.

From each concept a hypothesis is derived translating the concept to the G-DRG decision.

2.1. Consensus between policy-makers: Cherry-picking of evidence

Justin Parkhurst takes a political perspective on the science-policy relationship in policymaking. Policymaking is perceived as "competition between multiple social goals and the pursuit of social values" (Parkhurst, 2017, p.8) and therefore naturally involves trade-offs (Parkhurst, 2017, p.5). Pursuing EBP, policymakers use evidence in order to justify their choices and claims. However, this bears the risk of misuse of evidence, either due to technical or issue bias (Parkhurst, 2017, p.7f.) Technical bias refers to the *politicization of scientific knowledge*. Here, evidence is not used along the "principles of scientific best practice" (Parkhurst, 2017, p.7) but rather manipulated to fit the predetermined political position. This brings policymakers to systematically *cherry-pick evidence*. In cherry picking evidence, policymakers not only disregard *all* relevant evidence concerning the problem, but also use individual pieces of evidence invalidly and out of context (Parkhurst, 2017, p.7).

Technical bias is oftentimes connected to issue bias. Analog to technical bias, issue bias describes the *depoliticization of politics* (Parkhurst, 2017, p.7). This occurs when policymakers present their (cherry-picked) evidence as objective truths not connected to values or political standpoints (Parkhurst, 2015). On the surface, policymakers discuss scientific evidence and form their decision "in the name of methodological best practice" (Parkhurst, 2015). The debate seemingly shifts from political values to scientific facts. However, seeing that the evidence is cherry-picked, it does not eliminate values, but only disguises them in a non-transparent way. Like this, particular questions become the center of the debate while unwanted "social values can be obscured or marginalized" (Parkhurst, 2017, p.7f). *Cherry picking of evidence* not only applies to evidence in form of hard data but also includes the work of scientists and expert committees. Primack and Hippel warn that government agencies deliberately "misused, ignored or concealed the opinions of their scientific advisors" (Jasanoff, 1990, p.7). Both, technical and issue bias negatively affect the quality of the policy and lead to poorer policy outcomes.

Hypothesis 1: The G-DRG was implemented because policymakers cherry-picked evidence in favor of the G-DRG and presented it as objective, methodological best practice.

2.2. Consensus within Experts: Loss of epistemic diversity

This concept explains the emergence of consensus with the *loss of epistemic diversity* within the scientific community that provides evidence to policymakers. Consequently, the evidence that reaches policymakers is already restricted and limits policy options. In order to explain what is meant, basic assumptions about the values in scientific practice need to be clarified.

Today, it is widely accepted that science is not value-free (Sober, 2007, p.109f; Douglas, 2007, p.120ff; Jasanoff, 1990, p.7). Value judgments are inherent in scientific practice, specifically in the choices scientists make (Douglas, 2007, p.122) e.g. about theory, methodology and data. This occurs especially in the policy context, when scientists are asked to provide precise error estimates or estimated effects. Douglas argues that this way to deal with uncertainty "obscure[s] the important choices and values involved" (2007, p.126). Note that this does not discredit the objectivity or validity of the scientific work in question, but the essence of the problem lies in the in absence of consciousness and transparency (Primack & Hippel in Jasanoff, 1990 p.7). Dix (2019) also observes that valuable information about a policy gets lost in "the endeavor to construct commensurable futures" (Dix, 2019, p.201). His research was conducted in the field of Dutch educational policy, where micro-economic forecasting was used to calculate economic effects of educational policies. He describes that the dominance of "economics-infused sociotechnical tools" (Dix, 2019, p.202) marginalizes other epistemic practices in the production of evidence for policy. Like this, "the variety

in knowledge claims that is necessary to assess policy measures" (Dix, 2019, p.197) is no longer achieved, which leads to mediocre policy outcomes.

The *loss of epistemic diversity* shows that scientific experts can not only enrich but also limit perspectives on policy and policy-relevant evidence (Dix, 2019, p.202). The evidence gathered for policymaking becomes one-sided and homogenous. Thereby, experts present a single way to for policy makers to characterize or deal with a certain problem.

Hypothesis 2: The G-DRG was implemented because the loss of epistemic diversity in the council led to the dominance of evidence in favor of the G-DRG in the policy process.

2.3. Consensus within Policy-makers and Experts: Policy Paradigm

The third concept explaining the consensus among political actors is a *Policy Paradigm*. It provides a more holistic view, incorporating experts and policymakers.

It was Thomas Kuhn (1970) who first introduced the idea of paradigms in his controversial book *The Structure of Scientific Revolutions*. Being a historian and philosopher of science, he was interested in the historic progress driven by scientific developments. Kuhn perceived history in periods of time, divided into scientific paradigms, paradigm shifts and scientific revolutions.

A paradigm can be understood as a "specific framework of ideas and standards" (Hall, 1993, p.279), which depicts "how the world [...] operates" (Hall, 1993, p.280). It provides "fundamental ideas, methods, language, and theories" which are used by the scientists within the paradigm (Anhand, Larson & Mahony, 2020, p.1650). These elements make up the reality of the scientists, as well as their tools to investigate it. The paradigm determines what is accepted as legitimate, valued as important and worth being pursued. This science, which follows a "cogent shared schema" (Anhand, Larson & Mahony, 2020, p. 1651), is called *normal science*. Normal science determines the direction of research in each field, setting clear boundaries between relevant and irrelevant. By "narrowly concentrating [their] efforts", the scientific community of a paradigm achieves highly detailed research on selected problems. At the same time, rival ideas, methods, and theories are considered irrelevant for the *normal scientist* and pushed aside. Therefore, paradigms limit creativity (Anhand, Larson & Mahony, 2020, p. 1651) in the definition of problems and search for solutions. Kuhn argues that within a paradigm, "solutions to [...] puzzles are predetermined, although requiring effort to be discovered or created" (Anhand, Larson & Mahony, 2020, p. 1651). This explains why progress within a paradigm is argued to be incremental (Anhand, Larson & Mahony, 2020, p. 1651).

Two decades later, Hall (1993) applied the concept of paradigms to the policy context. Halls definition of policy contains the three components of the policy process: Overall goals, techniques or policy

instruments serving to attain these goals, and the setting or level of these instruments (Hall, 1993, p.278). Referring back to Kuhn, all of the three elements are inevitably influenced by the prevalent paradigm of the time. A *Policy Paradigm* refers to a dominant perception of the goals of policy, preferred instruments, as well as the "nature of the problems" faced or the "terminology" used by policymakers and experts to discuss them (Hall, 1993, p.279). Within a *Policy Paradigm*, policymakers practice *normal policymaking*, recalling Kuhn's *normal science*. Introduced changes tend to be limited to changes in the level of the policy instruments used, or rarely take up to new techniques. However, overall policy goals remain the same (Hall, 1993, p.278). A *Policy Paradigm* makes up the reality of policymakers and experts within the policy process. This reality is "taken for granted and unamenable to scrutiny as a whole" (1993, p.279). Within this line of argumentation, Hall refers to policy paradigms as a "prism" through which the world is seen (1993, p.279). Policy proceeds within boundaries that are neither reflected not challenged by *normal policymakers*.

The idea of something that is not subject of debate and just accepted as a given circumstance is in line with Marcuse's concept of a one-dimensional society. In his book *The one-dimensional man* (1964), Marcuse describes how in a capitalist society "technical rationality of production and consumption is so dominant that people forget about alternative values and ways of organizing themselves" (Box, 2011, p.170). Box argues that Marcuse's idea is "especially applicable to today's circumstances" (Box, 2011, p.170). He strongly criticizes the dominance of paradigm that, in his eyes, penetrates the public sphere through the [a]pplication of market ideology", in form of "privatize[ing] and contract[ing] out public services to elevate efficiency" (Box, 2011, p.182). This immensely limits the debate about potential policy change, as it limits the discussed alternatives (Box, 2011, p.182).

Hypothesis 3: Policymakers and scientists of the council are part of the same policy paradigm pursuing the same policy goal of introducing economic values to the public sphere, legitimizing the G-DRG as a good policy instrument

3. Operationalization and Data

Having established the hypothesis, this section reflects on the methodology, operationalization and data that will be used in the analysis.

3.1. Methodology

This historical research is qualitative and follows the design of a theory-testing process tracing investigation. This implies a threefold research structure: (1) Developing Expectations (2) Descriptive analysis and (3) Hypotheses Testing. Both, Ricks and Liu (2018) and Collier (2011) have described models of process tracing, which have influenced this research design.

The first step is to develop theory-based expectations, which has been done through the formulation of hypotheses (Ricks & Liu, 2018, p.842). Subsequently, a descriptive analysis provides a detailed description of the "unfolding of events or situation *over time*" (Collier, 2011, p.824). This step includes constructing a timeline (Ricks & Liu, 2018, p.843) tracing the events leading up the G-DRGs introduction from roughly 15-years prior to the policy (1985-2003). Focus is put on detecting discussion or conflicts between and within political and expert bodies as well as relating political and expert 'events' to one another. Paying close attention to the discussion of alternatives picks up the idea of counterfactuals, which is typical for process tracing. Alternative explanations of the cause and effects influencing the decision to introduce the G-DGR are also discussed by the three different hypotheses. The descriptive analysis serves as a "crucial building block" (Collier, 2011, p.823) for the final step, hypotheses-testing. The gained insights are used to falsify or confirm each hypothesis.

A process tracing investigation is the best option for this research as it recognizes the complexity inherent in policy decisions by acknowledging theoretical pluralism (Kay & Baker, 2015 p. 2,4). Process tracing offers the tools to "gain a greater understanding of the causal dynamics that produced the outcome of a particular historical case" (Beach, 2017). It specifically focuses on "the link between an outcome of interest and an explanation based on the rigorous assessing and weighting of evidence for and against causal inference" (Ricks & Liu, 2018, p.842). The method opens up the "black box of causality" (Kay & Baker, 2015, p.3) depicting narratives and path-dependency inherent in policymaking.

While process tracing offers various advantages, qualitative research like this limits the generalizability of the results (Turner et al. 2011 p.270, 279). The findings are very context specific (Turner et al. 2011 p.270, 279). In this case, they are only valuable for German healthcare policy and potentially for the theoretical analysis of economic policy instruments in the public sphere.

3.2. Operationalization

In order to connect the expectations to the data, the hypotheses must be operationalized. All three provide very different expectations and therefore different criteria to look for in the documents and timeline. H1 focuses on policymakers, H2 on scientific experts and the H3 incorporates both actors.

3.2.1. Hypothesis 1: Cherry-picking of Evidence

Operationalizing H1, specific behavior of experts and policymakers is derived from the theory.

In case of this hypothesis, experts are expected to present elaborate evidence on both, pros and cons of the G-DGR. Furthermore, a variety of backgrounds, values, methodologies and theories might be found in the expert documents. As a result, experts discuss alternative policy measures. Policymakers would formulate clear standpoints and support them evidence. However, I expect that only evidence in

line with this standpoint is used, while other evidence is disregarded. Among policymakers, this standpoint is expected to be in favor of the G-DGR. Seeing that policymakers established the council to create and accumulate policy relevant evidence, it is also possible that the council is a cherry picked body of evidence.

3.2.2. Hypothesis 2: Loss of epistemic diversity

Testing H2, the focus is on scientific expertise embodied in the council. Here, central data source are the scientific documents. In case of this hypothesis, a narrow range of epistemic practices and values is expected. Furthermore, over time scientists will agree on the dominance of the advantages of the G-DRG and neglect presenting counter arguments and alternatives thoroughly. Sings for this hypothesis are also that experts do not transparently reflect shortcomings of data and uncertainty. Policymakers proceed to follow the advice of the council, promoting the G-DRG.

3.2.3. Hypothesis 3: Policy Paradigm

Combining what I could be learnt about policymakers and scientific practice H3 about Hall's *policy paradigm* can be tested. To confirm it, I expect little controversy regarding policy goals, policy instruments and potential smaller changes to the instruments. Both groups of actors should stress the pros of the G-DRG system. Seeing that policymakers act as 'normal policymakers' and experts act as 'normal scientists', they probably make use of theories and methodologies that are predominant within their community, which approve of economic tools in public policy. Underlying values and premises about the way policy should be or how research is conducted are not subject of debate. In the documents I might notice broad consensus, aiming to determine characteristics of the paradigm, involving predominant assumptions, priorities, and values, theories, and methodologies.

3.3. Coding Scheme

This paragraph goes more into detail about how signs of each hypothesis will be recognized in the data. For that, the research takes the approach of deductive coding. Coding can be seen as the "critical link" (Charmaz, 2001 as quoted in Saldana, 2016, p.3) between raw data and analysis.

The process of designing codes and actually coding is inherently interpretative and flexible towards researcher and data (Linneberg & Korsgaard, 2019 p.13). The benefit of coding lays in its ability to provide transparency and structure (Linneberg & Korsgaard, 2019 p.5) while allowing detailed, context-specific findings (Saldana, 2016, p.2). By coding, the researcher reduces data and "symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute", aiming to capture the essence of the information without oversimplifying (Saldana, 2016, p.3). At the end, codes allow for "pattern detection, categorization, assertion or proposition development, theory building, and

other analytic processes" (Saldana, 2016, p.3). Patterns occur when data appears repetitively, regularly or even consistently, but at least more than twice (Saldana, 2016). They count as "trustworthy evidence" (Saldana, 2016) useful to inform the verification or falsification of the three hypotheses.

In this research, each hypothesis comes with different expectations regarding patterns in the qualitative data, which describe the behavior of experts and policymakers. This is summarized in Table 1.

Hypothesis	Group	Themes/ Patterns
Cherry-picking	Experts	Diversity of values, evidence and policy alternatives - Social values and evidence - Patient and Quality values and evidence - Economic values and evidence - Pro's and Con's of the G-DRG - Alternative policy measures considered
	Policymakers	Biased use of evidence by political actors - Evidence used according to prioritized values in favor of G-DRG
Loss of Epistemic Diversity	Experts	Narrowing of values, evidence and policy alternatives over time - Rise of economic values in favor of the G-DRG - Increased homogeneity in research practices and methods (dominance of economic science) - Decrease in discussion of policy alternatives
	Policymakers	References to narrower set of values -In favor of the G-DRG -G-DRG as the only option
Policy Paradigms	Experts	Experts respond to the needs and wishes of policymakers - Produce economic evidence that agrees with Policy Goals
	Policymakers	Clear Aims, Goals, Priorities e.g Economic considerations in the public sphere - Efficiency

Table 1: Expected findings of coding sorted by hypotheses

However, patterns cannot be directly coded for. Instead, they result from the codes listed in Table 2. In this case, the codes are mostly values because they guide the expert or policymakers behavior. The codes have assigned terms, which are expected to appear in the documents. The terms specify the

codes, but do not limit them. In case terms that are not yet mentioned appear as significant in the documents, they can be added in the process ("In Vivo Coding", Saldana, 2016, p.7). At the end, combination and frequency of the codes can be evaluated so that patterns predicted by the hypotheses might be recognized.

Code	Terms
Economic Values	Market-orientation, Cost-orientation, Efficiency,
	Capacity, Rationality, Productivity
Social Values	Affordability, Accessibility, Working Conditions
	for Medical Staff, Equality, Solidarity
Quality of Care and Medical Treatment	Patient Orientation, Clinical Guidelines, Medical
	Considerations
Discussion of Alternatives/Uncertainty	Reflecting Methodology, Errors, Uncertainty or
	Alternatives
For scientific documents:	Any reference to the other group, particularly
Relationship with politicians	expressions of agreement or disagreement, and
For Political Documents:	evaluation of the G-DRG
Relationship with scientists	

Table 2: Coding Scheme

3.4. Data Selection

In order to test the hypothesis, elaborate data that offers insights into the use of evidence by policymakers and experts as well as their behavior, motivations, and values is required. All data used is qualitative and collected through document analysis and literature research. Original political and expert documents were chosen, which are listed in the data appendix.

To find out the expert opinions, various reports of the Advisory Council for the Concerted Action in Healthcare were analyzed (SVRKAiG, 1995, 1996, 1997, 2000/2001, 2003). In sum, the documents allow the retracing of the evolution of the council and its evidence production over time. The documents reveal recommendations and research of the council.

For the political side, health policy guidelines set out in coalition agreements, are expected to offer insights into general policy goals, political opinions, and values. The actual policy documents are taken to show how politicians used evidence to support their argumentation for the G-DRG. Furthermore, the establishment decree of the council and commission by the health minister for reports are particularly important to gain insights into the relationship between the two actors.

Both, the political and expert documents have the benefit of delivering first-hand information.

4. Analysis

In the analysis, policy and expert documents were investigated in terms of inherent values, and assumptions. Special attention was paid to economic and social values as well as considerations of the Quality of Care and Medical Treatment. Further, the transparent discussion of alternatives and uncertainty were coded for in the documents. The last code concerned any insights into the relationship of the two actors.

In the first step, the analysis retraces the reform discussion from 1985 to 2003. Then, the hypotheses can be tested.

Prior to starting the timeline, the initial situation is shortly recalled. Since 1972, the *Hospitals Financing Act* (KHG) regulated hospitals financing. The policy was written in reaction to supply shortages outdated healthcare infrastructure. It aimed to secure that hospitals were economically viable and thereby to ensure a needs-based and capable provision of hospital care (§ 1 KHG). The KHG initiated a dualistic hospital financing, where investment costs were tax-funded, while operating expenses were covered by socially tenable insurance contributions. The state influenced hospital planning by linking monetary investments to medical requirements (§8 KHG). The motivation for the law came from the idea that a strong and paternalistic state is responsible to take care of its citizens. Prioritizing cost reduction and an efficient use of resources, hospitals were pushed to operate needs based and performance-oriented. Lastly, stable contribution rates for the population were also an aim of health policy making.

4.1. Process tracing: A descriptive timeline of healthcare advice and reform

1985: Establishment of the Advisory Council (SVRKAiG)

The timeline begins in 1985 with the formal *Establishment decree* of the Advisory Council. The council was established to support the Concerted Action in Healthcare (KAiG), which consisted of representatives from associations involved in the healthcare provision e.g. from Social and Private Health Insurance, doctors and other health providers as well as the responsible ministry. Since 1991 the mandate is derived from § 142 II GSC, Book V. The council was assigned four main tasks (Seehofer, 1992):

- (1) To provide an analysis of medical and economic developments in healthcare provision.
- (2) To determine priorities under consideration of financial conditions and efficiency reserves, in order to avoid deficient care provision.

- (3) To suggest medical and economic reference data.
- (4) To explore the possible enhancement of the Healthcare System.

Looking at the tasks, the council might seem very dependent on political actors and their values, which might give the impression that the council is not able to provide unbiased evidence. Indeed, the decree clearly inherits economic and medical values, which the council is obliged to take up on. While that council fulfills its tasks, and in that sense following politically pre-determined values, its ability to act autonomously is upheld by the power to suggest further developments, set priorities, and evaluate in its own ways. Furthermore, § 3 of the decree grants the council independence in its remaining activity.

Overall, the decree shows that, at least on the surface, policymakers prioritize economic and medical values equally. These medical values can be understood as quality of care considerations. On the other hand, the term quality is not directly mentioned, which indicates less assigned importance compared to economic considerations.

1987: CDU/CSU and FDP Coalition Agreement

Looking further into governmental healthcare perceptions, the CDU/ CSU and FDP Coalition Agreement of 1987 planned a structural healthcare reform, setting aims and guidelines. The parties also announced that they would be taking into account the first expert report in the process of planning the reform. In the agreement, economic, social and quality of care values are incorporated. Economic values are of high priority. The parties agreed on the aim of setting incentives for all actors in the healthcare system to curb costs and encouraging the economic use of resources (CDU-Dokumentation 9/1987, p.11). Going further, "establishing and enhancing elements of competition and social market economy" (CDU-Dokumentation 9/1987, p.11f) was explicitly planned. For the involved actors, freedom of choice e.g. of doctors or profession is reiterated, accompanied by the call for more selfresponsibility. This indicates a change of mindset compared to the motivation for the KHG 1972 in the sense that the state seeks to decrease its responsibility. One of the main issues at that time was to stabilize the social insurance contribution rate, which was one priority (CDU-Dokumentation 9/1987, p.11). This can be seen as a social value, bearing in mind that it is still a monetary consideration. However, social values like the solidarity principle are inherent in social health insurance, which lied at the heart of the German Healthcare system and policymakers wanted to further develop (CDU-Dokumentation 9/1987, p.11). Regarding quality, "high-quality provision of care" (CDU-Dokumentation 9/1987, p.11) and "Quality and Humanity" (CDU-Dokumentation 9/1987, p.12) were demanded.

1989: The Healthcare Reform Act of 1989

The plans in the coalition agreement were realized in the *Healthcare Reform Act of 1989* (GRG). It was a milestone, recoding social health insurance regulations into the German Social Code, Book V. Policymakers found the ever-rising SHI contribution rates "economically and socially unjustifiable" (Deutscher Bundestag, 1988) so that a reform was perceived to be an "urgent tasks of social policy" (Deutscher Bundestag, 1988) and "one of the most significant policy undertakings" (Deutscher Bundestag, 1988). Policymakers perceived this reform as indispensible, without considering alternatives, in order to reach their most pressing aim: ensuring a stable SHI contribution rate. For that, the following three principals were introduced by the GRG.

- (1) The GRG initiated a "redefinition of solidarity" by cutting services formally paid by the SHI to the "medical necessary" services (Deutscher Bundestag, 1988). At the same time, elderly care at home as well as early detection and prevention strategies were promoted (Deutscher Bundestag, 1988).
- (2) The principle of the GRG enhanced self-responsibility through financial incentives and bonus payments (Deutscher Bundestag, 1988)
- (3) The policy enforced economic healthcare provision e.g through more costs transparency and performance auditing (Deutscher Bundestag, 1988).

Overall, the changes brought by the GRG primarily stem from economic values, even if solidarity as a social value evidently remains at the heart of SHI and healthcare provision. Especially, the first two aims of the GRG diminish the social nature of the system and instead favor economic and liberal values. Quality considerations are part of the German Social Code (GSC, Chapter 9), but they are not at the center of attention.

1991: CDU/CSU and FDP Coalition Agreement

After new elections, the *Coalition Agreement of 1991* stood for a continuation of the GRG aims and values (CDU-Dokumentation 2/1991, p.38). Further savings potentials were planned, and emphasis laid on more economic hospital care provision (CDU-Dokumentation 2/1991, p.38, Nr. 28). In 1993, the *Healthcare Structure Act* (GSG) was adopted, which was another try towards more stable SHI contributions. Policymakers were convinced that the "dramatic cost development in all areas of the SHI" was "forcing structural reforms" (Deutscher Bundestag, 1992). The policy changed the dualist financing mechanism from 1972 towards what can be considered a mixed system. Accordingly, operational hospital costs were split in per-case payments and special remuneration and still supported by individually negotiated per-diem rates. Most per-case payments for inpatient care were linked to a maximum length of stay. Furthermore, fixed budgets were set for all sectors (hospital, outpatient and pharmaceutical). The previous efforts pushing for individual responsibility and freedom as well as

competition were implemented by the introduction of freedom of choice regarding the health insurance and the push for more self-administration within SHI. The GSG enforced values in line with both coalition agreements and the GRG. Economic considerations and focus on costs push away social or quality considerations.

1993: The minister commissions a special report

In 1993, the minister of health commissioned the council to prepare a special report concerning future developments. This commission contained specific questions about the effects of demographic change, change of morbidity and medical progress on the offering and utilization of health services (Seehofer, 1993, No. 1). The minister specifically asks which services are socially or medically "necessary" or "justified" (Seehofer, 1993, No. 1-3). These terms give the impression that the minimization of services is desired. However, it remains clear that solidary and subsidiarity as social values need to be respected in principle, and therefore set boundaries to cost reduction. On the other hand, finance limits on the extent of health and prevention services are assumed (Seehofer, 1993, No.4). Arguably, a minimum of medical and social values are recognizable in the minister's commission, however, cost considerations prevail. In terms of the relationship between the minister and the council, the fact that normative questions, which surpass purely scientific matters of feasibility or developments are asked (Seehofer, 1993, No.5), might reveal a trusting or respecting relationship between the two actors.

1995: The Petersberger Gespräche and the special report

In 1995, the commission published a special report in response to the minister. Before the publication, a series of conferences, the so-called *Petersberger Gespräche* were a meaningful event in the development of the reform. After the GRG and GSG, planning a third step was intended. Next to actors within the healthcare system, such as the insurances and representatives for doctors or hospitals, the minister of health also invited council members. This demonstrates the politician's desire for EBP. But it also shows the close relationship between politicians and experts. In fact, the council included conclusions of meetings in its special report "Health Care and Health Insurance 2000: More Outcome Orientation, More Quality, More Efficiency" which addresses foundations and options of health system reforms (SVRKAiG, 1995 No.5*\frac{1}{2}). In the report's preface the council does not refrain from its proximity to past policies like the GRG or GSG, while emphasizing its autonomy and therefore the validity of its evidence: "Critical indications that the Council would base its report too much on [...] current political interventions in the health care system and the statutory health insurance system, cannot be denied. However, it must be countered that the current framework conditions are seen as

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¹ The star is used when the citation is taken from the preface of a report.

starting points, but by no means as an accepted limit for the further reform process" (SVRKAiG, 1995, No.6*). The council sees its role in enhancing available information about quantity and quality of care in order to support political dialogue (SVRKAiG, 1995, No. 7*).

In the report, the experts emphasize the need for a health care system reform in order to prevent instability emerging from changing circumstances (SVRKAiG, 1995, No.2, 6). In contrast to the policymakers, the experts not only point at the financial problems but also criticize the lack of targetorientation and medical guidelines, care deficiencies in aspects of prevention and quality-assurance as well as distributive aspects (SVRKAiG, 1995, No.2, 4). Here, the expert considerations elaborate more on quality and social values. They clearly advocate the use of medical criteria to evaluate hospital performance in the further development of the healthcare system instead of solely measuring monetary expenses (SVRKAiG, 1995, no.9). Further quality considerations are noticeable throughout the report (SVRKAiG, 1995 No.10*, 4, 9, 23, 28, 51, 58). However, details like quality indicators or quality assurance methods are not discussed. Moving on, the council stresses equal access to care (SVRKAiG, 1995, No.10) and acknowledges "reasonable generation solidarity" (SVRKAiG, 1995, No. 87). However, social considerations are less frequent and seem less important to the council members than those of quality. For instance, it is considered to decouple SHI contribution payment, which was jointly provided by employees and employers. Only one council member opposes the idea due to social values, arguing that this would entail negative consequences for employees (SVRKAiG, 1995, No.72f). While this is true, the report states that a stable SHI contribution rate functions as an economic indicator for the health system, which would make this aim at least partly of economic value in addition to its social component (SVRKAiG, 1995, No.67).

The council welcomes incentives to enhance competition between SHIs to make care provision cheaper and more needs based (SVRKAiG, 1995, No.44, 58). In particular, state-restrictions on competition "are to be gradually reduced to an absolutely necessary extent" (SVRKAiG, 1995, No.51). In that sense, the scientists promote competition as a tool, e.g. for a more efficient use of resources, but not as an aim or purpose itself (SVRKAiG, 1995, No.44). They warn that the economic pressure induced by competition can undermine the quality of care or the "medically necessary" (SVRKAiG, 1995, No. 44, 51). They do not, however, discuss countermeasures. Concerning the discussion of reform options, the council presents two directions: First, tax-based financing and nationalization of healthcare provision, possibly funded through income taxes (SVRKAiG, 1995, No.76). This option contains more social values and encouraged redistribution from high-income to low-income earners. However, for the council this option is not worth considering, because it disregards individual preferences, and also advises against the raise of income taxes, claiming that it disproportionately affects the middle class (SVRKAiG, 1995, No.77). In turn, the experts advocate private insurance or the obligation as "welfare-optimal" (SVRKAiG, 1995, No.78), because it

"harmonizes best with the fundamental principles of market-based coordination" (SVRKAiG, 1995, No.78).

1995: Commission for a new special report

In 1995, the minister ordered a new special report. Three themes were of interest (Seehofer, 1995).

- (1) The effect of changes in morbidity and medical progress on infrastructure, as well as potential for rationalization and utilization of efficiency reserves,
- (2) Trends in expenditure and contribution rates in the SHI,
- (3) Healthcare effects on employment and growth effects as well as the whole economy This commission reveals the intensification of economic values among healthcare policymakers, as former efforts of reducing expenses turned into the efforts to promote growth.

1996: Special Report Volume I is published

In response to this, the expert commission issued two special reports under the title The Health Care System in Germany - Cost Factor and Branch of the Future. Volume I considered Demographics, Morbidity, Efficiency Reserves and Employment (SVRKAiG, 1996). Right at the beginning, the report comments on the minister's commission, which gives some more insight into preferences of policymakers and reveals some conflict between the actors. The council members perceive a "paradigm shift in health care policy" (SVRKAiG, 1996, No.5*). They describe that policymakers now perceive the healthcare system "as an economic factor with growth and productivity impulses" which poses the challenge of balancing cost-containment with economic growth (SVRKAiG, 1996, No.5*). In this context, the council criticizes that "health care policy in our [the German] parliamentary system is [...] in danger of being reduced to the issue of cost containment" (SVRKAiG, 1996, No.1*). Adding onto that, the council is concerned that "social tensions, particularly in times of profound economic change, lead to a situation in which socio-political ideologies increasingly dominate the discussion of reform alternatives" (SVRKAiG, 1996, No.13*). It goes on to explain, "The real challenge, however, is to prepare reform proposals on a scientific basis and to evaluate these proposals objectively during and after their implementation" (SVRKAiG, 1996, No.13*). At this point, the council repeats what was made clear in the previous report: It opposes the introduction of competition as an end (SVRKAiG, 1996, No.13*). Demarcating itself from prioritizing financial considerations, the council reiterates that "the care of the sick" and the "provision of health care services to the general population" lay at the heart of the healthcare sector (SVRKAiG, 1996, No.2*).

Following the minister's demand, the report discusses effects of elevating SHI contribution rates and demographic change, before considering different models of population forecasts (SVRKAiG, 1996,

No.6*). Subsequently, Germany in the face of international competition is analyzed. However, efficiency reserves "remain the major focus of health policy debates" (SVRKAiG, 1996, No.6*) and stand at the center of the report. More specifically, this entails the consideration of "avoiding the inefficient provision of necessary health care and the provision of inappropriate care" (SVRKAiG, 1996, No.6*). Finally, employment in the health sector is reviewed.

Despite the abovementioned signs of conflict, the council seconds economic instruments in healthcare sector. They promote the "need" of rationalization (SVRKAiG, 1996, No.33) and efficiency reserves as "means for avoiding the threat of rationing" (SVRKAiG, 1996, No.37), stressing politicians to put them up "at the forefront" of policy debates (SVRKAiG, 1996, No.52). Rationalization is understood as the "application of the efficiency principle" (SVRKAiG, 1996, No.33). Arguing with the subsidiarity principle, the council encourages privatization, in order for the healthcare sector to "avoid performing functions that the private sector can perform just as well or better, at less cost and above all in forms that are better suited to demand" (SVRKAiG, 1996, No. 46) Here, the council assumes that the private sector is in principle more efficient and flexible. Repeatedly, the lack of quality assurance measures (QAM) and clinical diagnosis guidelines is pointed out (SVRKAiG, 1996, No. 12*, 49), and promoted as "effective instrument[s] for avoiding excesses" (SVRKAiG, 1996, No. 12*).

1997: Minister poses an additional question

After this report, the health minister added one question about "balancing the increasing financial pressure in the SHI system due to demographic trends, medical progress and profound social change with the employment and growth necessities by lowering the costs of labor and by making use of the growth and employment opportunities in health-related sectors" (Seehofer, 1997) Special attention should be paid to feasibility and compatibility with social objectives, and potential economic and financial effects (Seehofer, 1997). Striking is the fact that growth is perceived as a necessity.

1997: Special Report Volume II is published

In Volume II, *Progress and Growth Markets*, *Finance*, *Remuneration* (1997) the council recommends taking action towards more individual responsibility, efficiency oriented competition between insurances and the introduction of outcomes-based remuneration (SVRKAiG, 1997, No.5*). The later entails the quality value, which gains more attention compared to previous reports. However, the focus on health-outcomes raises the problem that "health" as such can "neither [be] directly observed nor quantified"(SVRKAiG, 1997, No.3). Instead, the council suggests measuring the "ultimate outcome" using morbidity, life expectancy, and quality of life (SVRKAiG, 1997, No.3). These are measured

through health service access, information on patients' time costs, functional losses, uncertainty and suffering (SVRKAiG, 1997, No.3). Outcome-orientation serves as a tool to enhance "welfare effects", which decide the justifiability of health care services "in the context of national economy" (SVRKAiG, 1997, No.6). Furthermore, the "overall goal and guiding value is the provision of appropriate and economical care" (SVRKAiG, 1997, No.35). While the relationship between medical and economic perspectives is admitted to be "complex" (SVRKAiG, 1997, No.26), the assumption that market growth and welfare positively correlate prevails (SVRKAiG, 1997, No.27).

Suggesting outcome-based remuneration, the council promotes the end of the dualist financing system, arguing that this would revive investments (SVRKAiG, 1997, No.62). Necessary conditions of such a system should be

- (1) Transparency, because it increases competition, und thus effectiveness and efficiency and patient's self-responsibility (SVRKAiG, 1997, No.102-106, 131) and
- (2) Patient-orientation (SVRKAiG, 1997, No.107-110).

The patient is described in two functions, using concepts of psychosocial health (SVRKAiG, 1997, No.108f) and consumerism theory (SVRKAiG, 1997, No.110). The first approach acknowledges that patients have individual needs and particularly feel quality in functional and psychosocial ways (SVRKAiG, 1997, No.108f). In the second, the patient is perceived in his/her function as a consumer, and quality assured by a "multi-stage, customer-oriented planning process" but not further specified (SVRKAiG, 1997, No.110). Throughout the reports, patients are oftentimes referred to as consumers (e.g. SVRKAiG, 1997, No.1, 86, 89, 107, 110). For outcome and performance based remuneration, the council promotes case-related payments organized in fee-groups, referencing DRG systems in other countries (SVRKAiG, 1997, No.112). Guideline based remuneration, which links treatments to "disease management" guidelines, is presented as an alternative or complementary system (SVRKAiG, 1997 No.122-124). At this point, potential problems of fee-group remuneration are already discussed: There lacks a way of incorporating patients in rehabilitation and fees that are usually split in two parts (SVRKAiG, 1997, No.126, 127).

The report concludes that further development and especially the promotion of outcome focus among involved actors is needed (SVRKAiG, 1997, No.131). In sum, economic values that encourage the introduction of market elements or self-management, individual responsibility, and competition can be found (SVRKAiG, 1997, No.132f). They are argued to "lessen the burden on the state" (SVRKAiG, 1997, No.132) and encourage quality and outcome orientation. Even the potential for making profit is pointed out. Overall, few negative impacts are mentioned and only shortly elaborated on (e.g. SVRKAiG, 1997, No.38, 127,128).

After elections in 1998, the *Coalition Agreement* between socialists (SPD) and the Green Party (Bündnis 90/ Die GRÜNEN) established a new government. It reiterated principles of social justice and affordability, equality and self-responsibility through more health education/information and prevention is promoted (SPD and Bündnis 90/ Die GRÜNEN, 1998, p.24). A two-step structural reform was planned at the beginning of the year 2000 aiming to reach more competition, quality, cost-effectiveness and efficient supply structures (SPD and Bündnis 90/ Die GRÜNEN, 1998, p.25). In that context, they set out to restructure the remuneration system for ambulant and in-patient care into a monist system (SPD and Bündnis 90/ Die GRÜNEN, 1998, p.25). This means that investment and ongoing-cost should no longer be provided by two different sources. Enforcing patient-rights and patient orientation as well as health documentation in order to assure quality is another objective (SPD and Bündnis 90/ Die GRÜNEN, 1998, p.25).

The new health minister Andrea Fischer commissioned a special report from the council, which members were newly appointed. Opportunities for new forms of reimbursement in combination with improving health service delivery and quality assurance should be examined (Fischer, 1999).

1999: SHI Healthcare Reform Act 2000

In 1999, the *SHI Healthcare Reform Act 2000* planned in the coalition agreement was resolved, which came into effect as of 01.01.2000. It determined to make the introduction of DRGs optional as of 01.01.2003 and obligatory as of 2004. Following aims were declared (Deutscher Bundestag, 1999):

- (1) Ensuring high-quality care with reasonable SHI contribution payments
- (2) Enhancing self-responsibility and patient-competence
- (3) Reducing redundant and deficient care

The aims should be reached by incentive systems instead of detailed regulations (Deutscher Bundestag, 1999). Efficiency and quality was to be improved through competition (Deutscher Bundestag, 1999). Along a plan outlined in §17b KHG, healthcare actors were commissioned to design a comprehensive, performance-based prospective payments system for hospitals. The change into a monistic financing planned in the draft law (Deutscher Bundestag, 1999) did not get approval of the opposition-led Bundesrat and therefore failed.

2000: Report Appropriateness and Efficiency Volume I

After the ministers' commission, the three-volume council report *Appropriateness and Efficiency* was published (2000/2001).

The council members once again criticize the narrow political focus on costs; pointing at the fact the stable contribution rates remain a principle of healthcare policy (SVRKAiG, 2000a, No.1). While the experts do not generally oppose a cost-benefit analysis, they clarify that this should only be one health-policy decision-making criterion (SVRKAiG, 2000a, No. 19). They defend the need for more concrete outcome-oriented and indication-based goals, for which more data need to be gathered (SVRKAiG, 2000a, No.3, 6). This includes the need for more research. Also, limitations of healthcare indicators and methods are discussed. For instance, the fact that measuring life expectancy does not reflect on the access or results of care (SVRKAiG, 2000a, No.8). In general, the difficulty to capture the complexity and interplay of factors affecting health and health outcomes is highlighted (SVRKAiG, 2000a, No.18), at the same time, the danger of this entailing "resignation" or favoring traditional measures of care and prevention or ones that are "better suited to modeling exercises and easier to quantify" is acknowledged (SVRKAiG, 2000a, No.21, 44). The council proposes the following dimensions of promoting health prevention: health, competence, social environment, costs, access, capacity building, and marketing (SVRKAiG, 2000a, No.42). A mix of quality, social and economic consideration is apparent.

2000: Report "Appropriateness and Efficiency" Volume II

Volume II *Improving Quality in Medicine and Nursing* highlights special importance of the quality value. Different, complementing ways and methods of quality assurance are analyzed and promoted (SVRKAiG, 2000b, table 5, No.111). The council recommends establishing symptom-based and diagnosis based-guidelines (SVRKAiG, 2000b, no.115) as well as paying more attention to personal interactions in the provision of medical services (SVRKAIG, 2000b, No.137). Here, growing financial pressure, lack of time and heavy workloads are said to "impede" quality (SVRKAiG, 2000b, No.99). The council accepts that quality measures are subject to a cost-effectiveness analysis, an essentially an economic tool (SVRKAiG, 2000b, No.93,147).

The experts also comment on the *SHI Healthcare Reform 2000 Policy*. The planned remuneration is viewed as "a positive development in principle" (SVRKAiG, 2000b, no.157). Its "considerate potential" for more cost and service transparency as well as to increase efficiency in healthcare provision are praised. However, the council has concerns about "false incentives" and negative effects on quality, for instance emerging from cost pressure (SVRKAiG, 2000b, No.158). The experts claim that potential cost saving effects were decisive for policymakers in the decision for DRG (SVRKAiG, 2000b, No.162, 168). Furthermore, the AR-DRG system, which was taken as a role model for the systems design is perceived to summarize cases too broadly and therefore not suitable for effective quality assurance (SVRKAiG, 2000b, No.159). Most importantly, the council fears that the reform is rushed (SVRKAiG, 2000b, No.164). Affects like decrease in hospital length of stay and additional

demands on ambulatory and stationary facilities and post-hospital care are not prepared for, potentially at the expense of patient care (SVRKAiG, 2000b, No.164, 171).

Theses points of criticism do not lead to council to oppose the DRGs introduction, but they call for close observation and countermeasures against the expected effects (SVRKAiG, 2000b, No.171).

2001: Report Appropriateness and Efficiency Volume III

In Volume III *Overuse, underuse and misuse* further quality deficits are elaborated on (SVRKAiG, 2001, No.3*). The report contains qualitative and quantitative research, e.g. conducted surveys with patients and care providers, about selected diseases, assessing treatment. A "somatic fixation" of the health care system is found, the experts advocate viewing conditions more in light of social, psychological, environmental and biographical dimensions, thus to compile a wider understanding of individual patient characteristics (SVRKAiG, 2001, No.8, 98). In sum, the council's research confirms the need for clearly defined objectives, increased prevention, quality and quality assurance measures (SVRKAiG, 2001, No.54). Experts warn that patient education should not "fall victim to the financial considerations" (SVRKAiG, 2001, No.114). Furthermore, the council views with concern that competition between SHIs use quality improvement measures "more as promotional measures for individual health insurance funds than as measures intended to lead to a general improvement in the provision of health care services" (SVRKAiG, 2001, No.128, 141). The detected lack of cooperation and a "holistic treatment approach" is expected to exacerbate in light of the DRG introduction, like the burden falling on rehabilitation services due to earlier releases from hospitals (SVRKAiG, 2001, No.189).

2003: Report Health Care Finance, User Orientation and Quality

In the last report before the full establishment of the G-DRG, the council praises the *SHI Healthcare Reform Act* as "the first serious attempt to increase the self-responsibility and competency of patients and the insured" (SVRKAiG, 2003, No.57) and recognizes policymakers' efforts to put patient at the center of health policy (SVRKAiG, 2003, No.56). However, in the report more patient-orientation is recommended, especially because experts fear that next to legal requirements and economic restraints the main tasks of doctors, patient care, is neglected (SVRKAiG, 2003, No.59).

Concerns about the effect of the DRG that were mentioned in 2000/2001 are repeated (SVRKAiG, 2003, No.56). The council criticized the lack of quality assurance and rehabilitation capacity (SVRKAiG, 2003, No.137, 139, 142, 144, 146, 147, 185, 200). The "overly ambitious time schedule" is once again criticized (SVRKAiG, 2003, No.163). The council openly communicates uncertainty about the effects of hospital privatization on the quality of care (SVRKAiG, 2003, No.203).

2002/3: Fallpauschalen Gesetz (FPG)

Seeing that the commissioned negotiations of healthcare actors to determine case-groups and prices were not successful, the *Fallpauschalen Gesetz* (FPG) came into affect as of 2003. The policy clarified the integration of all hospitals in the G-DRG system, planning the details of a convergent plan and interim targets until the end of 2006 (Deutscher Bundestag, 2001). Also, stable SHI contribution rates and more transparency and QAM were incorporated into the G-DRG (Deutscher Bundestag, 2001).

4.2. Hypotheses Testing

Retracing expert and policymaker considerations in the introduction of the G-DRG, positions and values defended by both actors as well as their interaction could be detected. In this paragraph, the findings will be compared to the three expectations outlined earlier: Cherry picking of evidence, Loss of epistemic Diversity and Policy Paradigms.

4.2.1. Hypothesis 1: Cherry-picking of Evidence

The G-DRG was implemented because policymakers cherry-picked evidence in favor of the G-DRG and presented it as objective, methodological best practice.

Following the first hypothesis, a diversity of values was expected on the side of the council while policymakers were expected to only reference evidence in line with their opinion. This hypothesis was derived from Parkhurst's theory of EBP and policymakers misuse of evidence. Following Parkhurst's considerations, the decision for the introduction of the G-DRG might have resulted from technical and issue bias in the use of evidence by policymakers. In that sense, policymakers would have cherry-picked evidence that confirmed their pre-determined opinions, priorities and values. In addition, evidence opposing or impeding the policymaker's ambitions for the G-DRGs reform would have been disregarded. Taking the cherry-picked evidence, policymakers would then have presented their policy as objectively the best (issue bias), without consideration of alternative measures. Following this hypothesis, the policy documents, would show few values and no thorough consideration of alternatives. In contrast, the evidence presented by the expert council would contain a variety of methods, alternatives, and values.

Going through the timeline, indications for and against this hypothesis can be found.

Supportive of the hypotheses seems the fact that the council was established and its members chosen by the policymakers. In combination with the detailed commissions for reports and the close cooperation in the *Petersberger Gespräche*, the impression arises that the work of the council and its evidence might have been politically influenced. After all, mandate and commissions revealed the policymakers prioritization of economic values, even if medical and social values were also

recognizable. Fulfilling its task, the experts followed the policymakers demands and dealt their questions and priorities. For instance, reducing expenses, improving efficiency and introducing competition focused on.

The second aspect in line with the hypothesis is the narrower focus on economic values by policymakers. In particular cost containment and later on economic growth, is found in the coalition agreements and policy documents. The focus on costs is also apparent in the principle of stable SHI contribution rates. This is something the council criticizes repeatedly. The experts elaborate further on quality considerations than policymakers do. For instance, while policymakers focus on rising-costs as the reason for a reform, the council refers to the lack of target-orientation and medical guidelines and care deficiencies, as well as the need for prevention and quality-assurance and more distributive aspects. Concerning the G-DRGs, policymakers disregarded the council's recommendation to postpone because QAM and the functioning of ambulatory and rehabilitation facilities were not ensured. Also, the evidence about negative effects of competition of quality was neglected.

Contradicting the hypotheses, it needs to be recognized that the members of the council were selected from different backgrounds of research and changed every four years. Health economics, public managing/financing experts as well as doctors or medical scientists were part of the council, with no group having the majority of votes at any point in time. Concerning the work of the council, the commissions did not limit the scope or content of the reports. Its ability to act autonomously is upheld by the power to suggest further developments, set priorities, and evaluate in its own ways. § 3 of the decree grants the council independence in its remaining activity. Acting upon this autonomy, the council criticizes policymakers' priorities. Overall, the circumstances of the establishment and work of the council do not give reason to assume it was a cherry picked body of evidence or produced cherry-picked evidence.

Another point contradicting the hypothesis is the fact that all values that were found in the expert documents were also present in political documents. Both policymakers and experts defended the solidarity principle, as well as more efficient and economic high-quality care. Furthermore, the council reports contain evidence in favor of introducing competition and market-elements to the healthcare system. The council did not generally oppose DGR, but, themselves referenced foreign DRG in their recommendations for potential developments of German healthcare. The council initially approved of the introduction of competition as well as of the consideration of costs-benefit calculations.

In sum, evidence for and against this hypothesis was found. On the hand, all values detected in the expert documents could also be found in policy documents, as well as evidence that welcomed the introduction of the G-DRGs. Furthermore, it was not confirmed that the council produced cherry-picked evidence or was a cherry-picked body of evidence.

However, policymakers disregarded warnings about negative effects competition on quality and lack of QAM planned in the G-DRGs system. Therefore, the first hypothesis is partly supported.

4.2.2. Hypothesis 2: Loss of epistemic Diversity

The G-DRG was implemented because the loss of epistemic diversity in the council led to the dominance of evidence in favor of the G-DRG in the policy process.

Hypothesis 2 focused on scientists and suspected a loss of diversity within the council, which would have led to the presentation of narrowed down evidence to policymakers. A loss of epistemic diversity would have become apparent through a rise of evidence supporting the G-DRG, and the council presenting the introduction of the G-DRG as the only option. Further signs would have been homogenous research methods, dominated by economic elements.

The findings do not confirm a loss of epistemic diversity within the council.

Unlike the hypothesis suggests the reports contain divers values at all times, even if the focus sometimes changed. Economic elements include promoting competition, out-sourcing in order to unburden the state and the assumption that market growth and welfare positively correlate. Social values are mentioned in terms of solidarity and equal access to care. Quality is promoted by more patient-orientation and QAM. That the council acknowledges all values also becomes apparent in its recommendation for dimensions of promoting healthcare prevention: health, competence, social environment, costs, access, capacity building, and marketing.

Another reason against the hypothesis is that the council takes on different perspectives and offers alternatives. For instance, 'users' of the healthcare system are referred to as patients or consumers, depending on the context. Furthermore, different theories e.g. consumerism or psychosocial health concepts are referred to. The council discusses pro and counter arguments of different tools or measures for a same aim, so that policymakers are able to choose between them or use them complementarily, e.g. outcome and guideline-based remuneration. In the discussion of adequate tools the council transparently discusses conflicting viewpoints among the members.

Contradicting a loss of epistemic diversity is also the fact that the council discusses uncertainty and complexity at various points in the reports, e.g. the complex interplay between different factors of the relationship between economic and medical perspectives is highlighted. Advocating more differentiated views, the council also criticizes the "somatic fixation" of the healthcare system emphasizing the significance of personal interactions in the provision of medical services.

Last, the council not only argues in favor but also against the introduction of the G-DRGs. While transparency and self-responsibility are praised, the lack of QAM is held against the 'rushed' introduction.

All in all, the council offers evidence for and against the G-DRGs. A loss of epistemic diversity in favor of the G-DRGs cannot be confirmed. Therefore, hypothesis 2 is rejected.

4.2.3. Hypothesis 3: Policy Paradigm

Policymakers and scientists of the council are part of the same policy paradigm pursuing the same policy goal of introducing economic values to the public sphere, legitimizing the G-DRG as a good policy instrument.

Hypothesis 3 explains the introduction of the G-DRG with a consensus between scientists and policymakers emerging from a policy paradigm. Hall (1993) described three dimensions of a policy paradigm: clear goals, instruments to achieve them and the level or setting of these instruments. Furthermore, specific vocabulary to define problems and solutions are part of a paradigm. Lastly, it is described that members of a community inside a paradigm do not reflect the boundaries. Box (2011) draws attention to a paradigm favoring the economic invasion of the public sphere.

The findings entail arguments for and against the presence of a paradigm.

In line with the paradigm idea, a consensus between experts and policymakers about goals and instruments was found. All values, economic, social and quality were found in both types of documents e.g. through promoting high-quality care and solidarity. The general aim of both actors was the provision of appropriate and economical care. Together with the approval of instruments like competition and incentive systems, it shows that explicitly the idea of introducing economic elements to the healthcare system is shared. This is also in accordance with reducing the role of the state in healthcare, based on the assumption that the private sector is more efficient and flexible in principle.

Refuting the hypothesis is the fact that while the actors generally share goals and instruments, different motivations can be detected behind the approval of market-elements in the public sphere. While experts did not see competition as an end but as a means, policymakers did. This is highlighted by the fact that experts repeatedly warn about potential negative effects of competition. Furthermore, policymakers approved self-responsibility as a more liberal idea, while experts praised the chance for more patient-orientation and information. Regarding rationalization and efficiency, they served as mechanisms of cost containment or later economic growth in the eyes of policymakers, while experts presented them as tools to avoid rationing resources.

Another point contradicting the hypothesis is that the council reflected and criticized negative effects of competition and increasingly the focus on costs and did not support, I

For the third hypothesis, the results are therefore mixed. In favor of the paradigm are the general support of the importance of economic goals and instruments in the healthcare system. However,

different motivations behind Furthermore, experts were able to criticize and reflect on features of the paradigm e.g. a too narrow focus on costs at the expense of quality, and thus was not

Perhaps supported for the general importance of economic considerations but not fully supported because of the discernable differences in the dominance of such considerations.

5. Conclusion

In light of the controversial effects of the G-DRG and increasing voices demanding the systems abolishment, this research posed the question:

How can we explain the use of evidence by policymakers and experts leading up to the introduction of the G-DRG?

As a starting point, three theoretical frameworks explaining the use of evidence of policymakers and experts were considered: *Cherry picking* of evidence by policymakers, *Loss of epistemic Diversity* within scientific practice and *Policy Paradigms*. The different explanations were captured in three hypotheses. The subsequent analysis concerned qualitative, original documents by policymakers and the expert council, which were coded and investigated following the method of process tracing. With the help of a timeline, values and assumptions inherent in the evidence used in the process of introducing the G-DRG was retraced from 1985-2003. The results partly support the hypotheses about cherry picking and policy paradigm, while the loss of epistemic diversity was not confirmed. So how do the findings explain the use of evidence by policymakers and experts leading up to the introduction of the G-DRG?

The results report that a policy paradigm was complemented by policymaker's cherry picking of evidence, which together lead to the introduction of the G-DRGs. The different theories and expectations do not exclude one another, but in order to understand the interaction of experts and policymakers, different aspects of each theory are helpful. Explaining the introduction of the G-DRGs system, different factors have played a role. Experts and policymakers agreed overall that healthcare provision should be efficient, appropriate and following medical requirements. For that, experts produce and policymakers use evidence that favors the introduction of market elements into the public sphere. This is the policy paradigm. While policymakers were slightly more focused on costs, and experts slightly more on quality, policymakers started to disregard evidence about the lack of QAM. They pushed for the introduction, even though experts warned about negative consequences.

Looking at this research, the process tracing investigation allowed a very detailed insight into considerations of federal healthcare policymakers and council experts. However, other important actors of the healthcare system were not considered. In fact, German healthcare is organized in network of various other actors: Social and private health insurance funds, hospital and doctor

associations, state governments and municipalities. Possibly, these actors have influenced the decision of the G-DRGs, which was not considered in this research.

Thinking about further development, societal pressure of having a well-functioning healthcare sector is growing. Challenges are posed by increasingly expensive medical technologies and improved health care systems, which have increased the life expectancy rate and also reinforced the effects of demographic change brought by the aging population. Adding onto that, the covid-19 pandemic has illustrated a new dimension of challenges that healthcare systems need to cope with.

If the end of the G-DRG really is as close as Beivers and Emde (2020) predict the question of what could follow instead naturally arises. It can be said that as long as policymakers prioritize economic growth and profits, quality of care and patient-orientation can never truly be at the center of healthcare. However, this does not advocate the ignorance of cost considerations or complete abolishment of economic values. Referring back to Parkhurst (2017) policymaking is a competition of different values and goals. In the planning of a new reform or further development, a new balance of medical and economic consideration needs to found. Otherwise, no measure brings about the demanded change. A reform would need to break out of the path-dependencies favoring economic considerations.

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