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Bachelor Thesis

What are the National Health Policy Responses to the COVID-19 Pandemic in Germany?

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Abstract

The present paper analyzed 17 laws and ordinances implemented in Germany, a highly deceralized country, during the COVID-19 pandemic using content analysis. The framework suggested by Saltman et al. (2002), classifying health regulations into quantity, capacity, and quality management was used as inclusion criteria.
It was found that the COVID-19 regulations included in this analysis addressed the following topics: Price management related to regulations targeted at increasing patients's contributions and price caps regarding the distribution of tests and medication. Supply-side price management included payments to hospitals, accredited service providers, doctor offices, and preventive care and rehabilitation facilities, as well as bonuses paid to healthcare staff, federal budget subsidies, and the financing of vaccination-related services. A quantity regulation in the private sector was the possibility to transform care and rehabilitation facilities into licensed hospitals. Public quantity management encompassed hospital capacity expansion, medical personnel expansion, the expansion of the supply of medical products, and pharmacy regulations. Lastly, quality management in the public sector included regulations pertaining to the workforce, healthcare provision, and medical products for civil servants. The discussion of key findings included a tradeoff in quantity for quality, as well as problematic implications of the implemented compensation payments to hospitals. It is recommended to gear health policy towards the provision of high quality healthcare, as well as preparedness and resilience.

Keywords: COVID-19, health policy responses, policy analysis, Germany

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What are the National Health Policy Responses to the COVID-19 Pandemic in Germany?

The COVID-19 pandemic imposed an unprecedented challenge to contemporary societies, policymakers, and especially healthcare systems worldwide (Köppen et al., 2021). As countries were faced with the spread of the virus, various policies were implemented in order to cope with, coordinate, and overcome the crisis. In the post-pandemic era, it is seen as imperative to analyse and understand different responses to the pandemic in order to draw lessons for future policymaking and hence improve health systems' resilience and preparedness for future pandemics (Tsalampouni, 2022).

According to Köppen et al. (2021), there is limited research on the responses of countries with decentralized governance systems. Furthermore, Greer et al. (2020) assert that in order to fully comprehend and evaluate COVID-19 responses and to derive lessons for the future, in-depth analyses of policies, politics, and governance systems of specific countries are necessary. This is seen as crucial, as in this way the crisis of the COVID-19 pandemic can be used to initiate and promote political learning and hence institutional progress and reform (Kuhlmann et al., 2021).

In fact, assessments of Germany's response to the COVID-19 pandemic thus far- a prime example of a highly decentralized country (Kuhlmann et al., 2021) - have been primarily concentrated on cross-national comparisons such as comparing Germany's response to Austria and Switzerland (Greer et al. (2021), Sweden and Greece (Tsalampouni 2022), France and Sweden (Kuhlmann et al. 2021), Brazil,

India and the US (Greer, Jarman, et al. 2021), or to Austria, the Czech Republic, Denmark, Italy, and the Netherlands (Burau et al. 2024). Furthermore, the analysis timeframe in each study is restricted to the pandemic's early phases.

Considering the above-mentioned need for research on the COVID-19 responses of countries with decentralized governance systems and the lack of country-specific in-depth analyses of Germany's policy response to COVID-19, this paper aims to contribute to filling this existing gap by answering the question "What are the national health policy responses to the COVID-19 pandemic in Germany?". This is done by providing a content based health policy analysis of German legislation, based on 17 laws and ordinances implemented in Germany during the COVID-19 pandemic (see Table 1).

The analysis is based on the framework suggested by Saltman et al. (2002), categorizing regulatory approaches to managing healthcare systems into price, capacity and quality management. Further elaboration can be found in the methods section.

The first section of this work provides an overview of the principles and challenges of the German healthcare system. Next, the paper goes into detail about the analysis's terminology and methodology. This is followed by the presentation of the results. Then, the discussion involves topics such as the trade-off between quantity and quality, and the issues regarding the implemented compensation payments to hospitals. Furthermore, this paper's limitations are listed, such as the restricted number of included laws and ordinances, as well as the implications of the

limited scope. Moreover, policy suggestions and recommendations for future research is provided. The paper ends with the conclusion.

Context - the German Healthcare System

As the institutional context and starting conditions of each country had an impact on how they responded to the pandemic, the following part will provide a brief overview of the German healthcare system (Kuhlmann et al., 2021).

First of all, the German healthcare system is embedded in the federal and hence heavily decentralized system of Germany. The country is divided into 16 federal states. States have their own constitutions, parliaments, minister presidents, administrative structures and responsibilities. State authority is divided between the federal government and the federal states by the German Basic Law. (Statistisches Bundesamt, n.d.)

According to the German Federal Ministry of Health, five basic principles form the framework of the German healthcare system: Firstly, health insurance is compulsory: everyone is required to have statutory health insurance. However, people above a certain income level, the self-employed, or civil servants are exempt from this. They can obtain private insurance. Second, both statutory and private health insurance are financed by their members' contributions. Thirdly, the idea of solidarity underlies the German healthcare system. This means that all those with statutory health insurance jointly carry the costs arising from the illnesses of the individual members. In other words, members of statutory health insurance pay contributions according to their financial capacity, while their entitlement to benefits is determined by their needs, independent of the amount of contributions made.

Fourthly, medical care is provided to those who have statutory health insurance without requiring them to make advance payments. Therapies and medicines are billed directly to the health insurance companies. Lastly, the healthcare system is organized according to self-administration. This means that while the state provides the legal framework, healthcare providers organize themselves to ensure health care on their own responsibility. (Bundesministerium für Gesundheit, 2022)

The German healthcare system has been operating under the paradigm of cost containment, i.e. focusing on austerity measures, since the middle of the 1970s. In the 1990s there was a paradigm shift towards cost containment through competition-oriented structural reforms, e.g. free choice of ones health insurance company. Both approaches continue to shape German health policy today. (Bundeszentrale für politische Bildung, 2022b).

In the last years, there has been a growing gap and difference in terms of access to and quality of health care between those with public and private insurance (Bundeszentrale für politische Bildung, 2022a). Also, the German healthcare sector has been facing a severe shortage of skilled workers (PwC, 2022).

This overview has to conclude due to the limited scope of this paper; however, the information presented should aid in placing the subsequent research in context. In the following, this research’s methodology will be elaborated on.

Methodology

Terminology

Laws: In German Federal Law there is a distinction between different types of norms. These norms are organized according to the following hierarchy: The highest norm of German Federal Law is the German Basic Law, forming the German constitution. This is followed by federal laws as second and ordinances as third. Formal laws are passed by the parliamentary legislature following the procedure provided for in the constitution. There is a distinction between simple formal laws on the one hand and formal laws amending the Basic Law on the other, which amend the German constitution. Acts amending the constitution require a two-thirds majority in both the German Federal Parliament ("*Bundestag"*) and the German Federal Council ("*Bundesrat*") to be passed. For this paper, when referring to the term *law* simple formal laws are relevant. (Bundesministerium für Gesundheit, 2016a)

Ordinances: By contrast, ordinances are not issued by the parliamentary legislature, but by the executive - the government. They are issued based on an authorization granted by a formal law. The requirements for the authorization to issue ordinances can be found - the same as for laws- in the German Basic Law. According to this, only the Federal Government, individual Federal Ministers, or state governments can be authorized to issue ordinances. (Bundesministerium für Gesundheit, 2016a)

Liquidity reserve of the health fund: Since 2009, the German Federal Social Security Office is in charge of managing the health funds, a special fund used for financing public health insurance. These health funds consist of other income,

federal subsidies, and incoming health insurance contributions (including supplemental contributions). The health insurance funds receive money from income equalization and calculated allocations to cover their expenses from this inflow. The health fund is required to preserve liquid assets as a liquidity reserve, the amount of which must be at least 20% of the average monthly expenditure of the health fund at the end of a financial year.(Bundesamt für soziale Sicherung, 2023). The liquidity reserve is therefore money that is set aside for unexpected financial challenges. (S. Meier, 2024)

The Associations of Statutory Health Insurance Physicians These associations are corporations under public law and are subject to the supervision of the highest administrative authorities of the federal states responsible for social insurance (e.g. health or social ministries of the federal states). Collectively, they form the National Association of Statutory Health Insurance Physicians at the federal level. The associations are responsible for organizing nationwide outpatient medical and psychotherapeutic care for people with statutory health insurance. They agree on the remuneration of services provided by statutory health insurance physicians. Furthermore, it is their task to distribute the remunerations paid by the health insurance funds to the individual doctors and psychotherapists according to the services provided. At the federal level, the associations conclude agreements in particular on the organization of care provided by panel doctors. Every psychotherapist and doctor who is licensed to participate in SHI-accredited medical care is automatically a member of the association in their region. (Bundesministerium für Gesundheit, 2024b)

Social Nursing Care Insurance This insurance was introduced in 1995 as an independent branch of German social insurance. Compulsory insurance applies to all those with statutory and private health insurance. Everyone with statutory health insurance is automatically insured in the nursing care insurance scheme. Those with private health insurance must obtain nursing care insurance independently. (Bundesministerium für Gesundheit, 2024a). The social nursing care insurance providers are financed by the nursing care insurance funds, which are part of the health insurance funds. Nursing care insurance offers insured persons financial assistance in the event of a need for long-term care. It supports the people in need of care, as well as their nursing family members with a wide range of services tailored to their needs. The level of benefits depends on the degree of care. (Allgemeine Ortskrankenkasse, 2024)

National Association of Statutory Health Insurance Funds This association is the central representative of the interests of the statutory health and nursing care insurance funds in Germany and at the European and international levels. It shapes the framework conditions for the intensive competition for quality and efficiency in healthcare and nursing care and supports the health insurance funds and their regional associations in fulfilling their tasks and protecting their interests. The contracts concluded by the National Association of Statutory Health Insurance Funds and its other decisions apply to all health insurance funds, their regional associations, and subsequently to all those with statutory health insurance. (GKV-Spitzenverband, 2022)

National Health Protection Reserve This Reserve is a national reserve for medical material, in particular for personal protective equipment, disinfectants, ventilators and certain medicines. It was created in 2020 in response to the considerable shortage of these materials due to the sharp increase in demand and the simultaneous lack of supplies, as Germany was largely purchasing them from abroad. (Steffens & Gauchel-Petrovic, 2020)

Having defined key concepts, the next section will elaborate on this paper's methods.

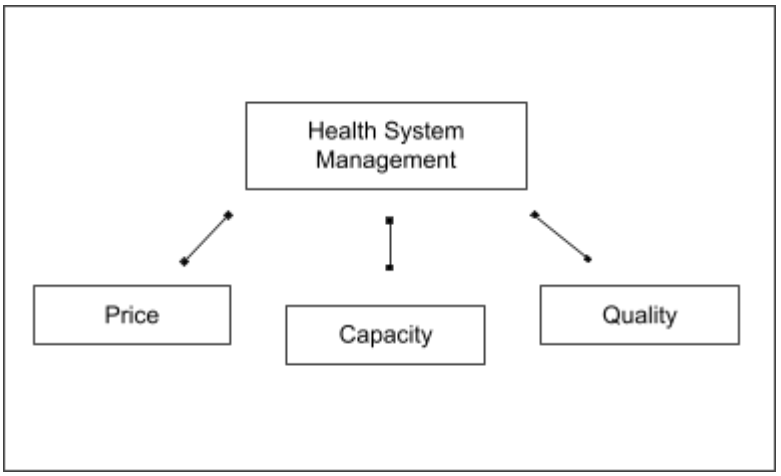
Methods

This paper is based on a health policy analysis of German legislation with a content analysis.

The primary inclusion criteria was that the regulations had to be directly connected to healthcare. More specifically, content that could be allocated to the framework proposed by Saltman et al. (2002) was included. Saltman et al. (2002) discussed three regulatory approaches to managing health systems: price management, which encompasses the administration of fees, payments, costs, contributions, and premiums; capacity (quantity) management, which includes regulations governing expansion; and quality management, covering instructions on provider performance, patient rights, and health care standards. The framework is visualized in Figure 1.

Figure 1

Regulatory Approaches to Managing Health Systems by Saltman et al. (2002)



Note. Author's visualization based on Saltman et al. (2002)

The laws to be analyzed were derived from the website of the German National Archive of Laws and Ordinances provided by the German Federal Ministry of Health (Bundesministerium für Gesundheit, n.d.). First, in order to find Covid-19 specific regulations, the following predetermined keywords provided by the website's searchtool were selected to filter the search for regulations relevant to this study: "Corona" was selected to narrow down the theme, and "laws" and "ordinances" (German: "*Gesetz*" und "*Verordnung*") were chosen to specify the type. In terms of the relevant period "come into effect" (German: "*Inkrafttreten*") was selected and the timeframe from January 1, 2020 to April 1, 2024 was determined. Applying these search parameters generated a list of 39 COVID-19 and health-related laws and ordinances that were implemented in Germany between March 27, 2020, and April 5, 2023.

These 39 laws and ordinances formed the first basis of this policy analysis. In the first step, these laws and ordinances were examined for the above described

inclusion and exclusion criteria. 17 laws and ordinances remained to be included in this research. They are comprehensively listed in Table 1.

Table 1

Laws and Ordinances Included in the Analysis (Bundesministerium für Gesundheit, n.d.)

Date	Law
27.03.20	Hospital Relief Law
27.03.20	First Law to Protect the Population in the Event of an Epidemic Situation of National Scope
10.04.2020	Ordinance on the Procurement of Medical Products and Personal Protective Equipment During the Epidemic caused by the Coronavirus SARS-COV-2
23.05.2020	Second Law to Protect the Population in the Event of an Epidemic Situation of National Scope
03.07.2020	COVID-19 - Compensation Payment-Alignment-Ordinance
19.11.2020	Third Law for the Protection of the Population in an Epidemic Situation of National Scope
09.12.2020	Price Ordinance for SARS-CoV-2 Antigen-Tests for Near-Patient Use (Antigen Price Ordinance)
31.03.2021	Epidemic Situation - Continuation - Law
01.06.2021	Second Law Amending the Infection Protection Law and Other Laws
24.11.2021	Law Amending the Infection Protection Law and Other Laws on the Occasion of the Cancellation of the Declaration of the Epidemic Situation of National Scope
12.12.2021	Law to Strengthen Vaccination Prevention Against COVID-19 and to Amend Further Regulations in Connection with the COVID-19 Pandemic

23.02.2022	Ordinance on the Prolongation of Measures Maintaining Nursing Care During the Pandemic Caused by the SARS-CoV-2 Coronavirus
31.03.2022	Pandemic Costs - Reimbursement Ordinance
04.05.2022	COVID-19 - Supply Structures - Protection Ordinance
17.08.2022	SARS-CoV-2 Pharmaceutical Supply Ordinance
16.09.2022	COVID-19 Protection Law
31.12.2022	Coronavirus - Vaccination Ordinance

Note. Created by the author of this paper

Next, the legal sections of these 17 laws and ordinances that apply to this framework were translated. Then, the relevant content was organized into three categories based on the type of regulation they aim at: price, quantity, or quality management (see Figure 1). In addition, the regulations on price management were separated according to whether they impacted the demand or supply side (Table 2 & 3), and quantity and quality regulations were classified based on whether they affected the public or private sector (Table 4 & 5).

Apart from this, for writing the result section, the content was further analyzed for and assigned to recurring themes. This resulted in the following subcategories: Price management on the demand side was split into two categories: regulations targeted at patients and the distribution of tests and medication. Supply-side price management included payments to hospitals, accredited service providers, doctor offices, and preventive care and rehabilitation facilities, as well as bonuses paid to healthcare staff, federal budget subsidies, and the financing of vaccination-related

services. A quantity regulation in the private sector was the possibility to transform care and rehabilitation facilities into licensed hospitals. Public quantity management encompassed hospital capacity expansion, medical personnel expansion, supply of medical products, and pharmacy regulations. Lastly, quality management in the public sector was subdivided into the following themes: regulations pertaining to the workforce, healthcare provision, and medical products for civil servants.

Results

Using the framework by Saltman et al. (2002) the 17 laws and ordinances included in this research were organized into three categories based on the type of regulation they aim to achieve: price, quantity, or quality management. 26 measures were found to be aimed at price management (Table 2 & 3), 18 measures at quantity management (Table 4), and 6 measures aimed at quality management (Table 5).

In addition, the regulations on price management were separated according to whether they impacted the demand or supply side, and quantity and quality regulations were classified based on whether they affected the public or private sector. Within the scope of this study, no quality regulations affecting the private sector were found, therefore not further considered in this paper.

Price Management - Demand Side

6 regulations were found to target the demand side of price management. The regulations were divided into two categories: regulations targeted at increasing patients' contributions and price caps regarding the distribution of tests and medication. A brief overview of the regulations pertaining to price management on the demand side discussed in the following is given in Table 2.

Table 2

Regulations on Price Management - Demand Side

Regulation	Details
Increase of patients' contributions	● Liscensed hospitals surcharged 50/100€ to patients/their payer ● Remaining fees for centrally procured products charged to the patient receiving them ● Nursing care fee increased
Price caps on tests and medication	● 40ct plus VAT on producer's actual selling price per test if dispensed by distributor, 60cts plus VAT if dispensed by pharmacy ● Charge of 5€ plus VAT per location and day for medication dispense via courier services by pharmacies ● Manufacturers & distributors obliged to base prices of healthcare products on cost of provision

Note. Created by the author of this paper

Patients' Contributions

Patients were affected by the following measures:

i) A surcharge of 50€ by licensed hospitals towards patients or their payers was implemented for price and volume increases due to the COVID-19 pandemic, particularly for personal protective equipment (The Third Law for the Protection of the Population in an Epidemic Situation of National Scope, 2020, Article 1 Section 21). This surcharge was later increased to 100€ for people receiving full or partial inpatient treatment and are infected with the COVID-19 virus (The COVID-19 - Compensation Payment-Alignment-Ordinance, 2020, Section 2).

ii) If patients received full or partial inpatient hospital treatment and their care involved the use of products that were centrally procured by the federal government,

passed on to the hospitals for a fee, and not otherwise financed, the remaining costs were charged to the patient or their payer (Third Law for the Protection of the Population in an Epidemic Situation of National Scope, 2020, Article 2a section 26c)

iii) the nursing care fee increased from 146,55€ to 163,09€ (The Third Law for the Protection of the Population in an Epidemic Situation of National Scope, 2020, Article 4 Section 15).

Distribution of Tests & Medication

i) A fixed price for COVID-19-Antigen-Tests for Near-Patient Use was implemented. If the distribution involved the dispense from a distributor to authorized service providers or to pharmacies, a one-time fixed surcharge of 40 cents plus VAT had to be levied on the producer's actual selling price per test. If the distribution concerned the dispense by a pharmacy, the pharmacy could charge a one-time fixed surcharge of 60 cents plus VAT per test. (The Price Ordinance for SARS-CoV-2-Antigen-Tests for Near-Patient Use, 2020, Section 1)

ii) Also the price for medications was standardized. Pharmacies dispensing medications via courier services were allowed to charge an extra 5€ plus VAT (later lowered to 2,50 plus VAT) for each location and day (SARS-CoV-2 Pharmaceutical Supply Ordinance, 2022, Section 4).

iii) A price cap for manufacturers and distributors was introduced. They were obliged to base the prices of healthcare-related products for medical needs on the cost of provision and to not impose surcharges on customers (SARS-CoV-2 Pharmaceutical Supply Ordinance, 2022, section 7).

Price Management - Supply Side

20 regulations were found to target price management on the supply side. These included payments to hospitals, accredited service providers, doctor offices, and preventive care and rehabilitation facilities, as well as bonuses paid to healthcare staff, federal budget subsidies, and the financing of vaccination-related services. A brief overview of the regulations pertaining to price management on the supply side discussed in the following is given in Table 3. .

Table 3

Regulations on Price Management - Supply Side

Regulation	Detail
Payments to hospitals	● Remuneration for testing patients ● Amendment of the flat rates hospitals received ● Reimbursement of costs for medicine containing Remdesivir ● Treatment compensation payments
Payments to accredited service providers	● Compensation payments for loss of revenue and loss of income ● Compensation payments for the costs of hygiene measures
Payments to doctor's offices	● Monetary support to safeguard continuance ● Financial assistance to panel dentists due to reduced demand
Payments to preventive care & rehabilitation facilities	● Compensation payments for loss of income ● Reimbursement of extraordinary expenses
Payments to Pharmacies and Wholesalers	● One time payment of 250€ plus VAT to support pharmacies' courier services ● Remuneration of services in connection with the dispensing of federally procured antiviral medicinal products

Bonus - Payments to healthcare staff	● One time special payment for extraordinary requirements for each employee of liscensed care facilities ● Extended special benefits to nursing staff in direct patient care ● Monthly special benefits for employee(s) responsible for ensuring compliance with covid-related measures
Subsidies from federal budget	● Federal funding for social nursing care ● Reimbursement of costs covered by the Association of private health insurers
Financing of vaccination-related services	● Remuneration of service providers for vaccination-related services ● Reimbursement of necessary costs of vaccination centers ● Remuneration of expenses incurred by wholesalers and pharmacies

Note. Created by the author of this paper

Payments to Hospitals

Several measures ensured compensation payments to hospitals:

i) Testing patients admitted to the hospital for full or partial inpatient hospital treatment for the coronavirus was remunerated. The amount was to be determined by the involved contracting parties (association of public health insurance, association of private health insurance & the German hospital association). (The Second Law to Protect the Population in the Event of an Epidemic Situation of National Scope, 2020, section 26)

ii) Besides the testing compensation payments, also treatment compensation payments to hospitals were implemented. Therefore, approved hospitals received treatment compensation from the liquidity reserve of the health fund for each patient who was admitted to the hospital for full or partial inpatient treatment between

November 2021 and March 2022 and diagnosed with the coronavirus. The treatment compensation payment per patient was calculated by multiplying the daily flat rate applicable to the respective hospital with 0.9 and 13.9.
(Law Amending the Infection Protection Law and other Laws on the Occasion of the Cancellation of the Declaration of the Epidemic Situation of National Scope, 2021, section 21a)

iii) The amount of the daily flare rate that hospitals received was amended as follows (including both public and private): Licensed hospitals received a daily flat rate of 560€, and hospitals providing exclusively day-care services an amount of 280€. Hospitals whose services were remunerated in accordance with the Federal Nursing Care Rate Ordinance and that provided full inpatient or full and partial inpatient services were paid 280€. Hospitals that only provided partial inpatient services were given 190€. The law did not specify were this money came from. (COVID-19 - Compensation Payment - Alignment-Ordinance, 2020, Section 1)

iv) The costs for medicines containing Remdesivir, an anti-covid medicine (National Institutes of Health, 2024) centrally procured by the government were regulated. It was stated that the costs of those products would be reimbursed by the liquidity reserve of the health fund (93%) and by private health insurance companies (7%). (The Third Law for the Protection of the Population in an Epidemic Situation of National Scope, 2020, section 26b)

Payments to Accredited Service Providers

i) If the total revenue of an accredited service provider was reduced by more than 10% compared to the same quarter of the previous year due to the pandemic,

the Association of Statutory Health Insurance Physicians (see terminology) could make a time-limited compensation payment to the service provider. The amount of compensation already received under other laws had to be deducted from the compensation payment. The expenses for the compensation payments were reimbursed to the Association of Statutory Health Insurance Physicians by the health insurance funds. (Hospital Relief Law 2020, Article 3 section 87a (3b))

ii) Approved service providers could receive a compensation payment for April 2020 until June 2020 to compensate for the loss of income due to the pandemic. The compensation payment was staggered based on the service provider's approval date as follows: If the service provider was approved in September 2019, the compensation payment equaled 40 percent of the remuneration that the service provider billed to the health insurance funds for medical products in the fourth quarter of 2019, including the additional payment made by the insured persons. Approved in the period from October 2019 to December 2019, the amount equaled 40% of the remuneration that the service provider billed to the health insurance funds in the fourth quarter of 2019 for curative products, including the additional payment made by the insured persons, at least 4500€. Approval between January 2020 and April 2020 resulted in a payment of 4,500€. If the approval was granted in the period between May 1 2020 to May 31, 2020, the provider received 3,000€. Approval between June 1, 2020 and June 30, 2020 resulted in a payment of 1,500€. Furthermore, service providers were payed a general compensation for the costs of hygiene measures, in particular for personal protective equipment. Hence, they could claim an additional 1,50€ for each prescription for curative products they billed

between May 2020 and September 2020 from the health insurance funds. (COVID-19 - Supply Structures - Protection Ordinance, 2022, section 2)

Payments to Doctor's Offices

i) If the continuation of doctor's offices was threatened due to the pandemic, the Association of Statutory Health Insurance Physicians was obliged to organize to safeguard the continuance with monetary support. The health insurance funds had to reimburse the Association of Statutory Health Insurance Physicians for the additional costs. (Hospital Relief Law , 2020, Article 3 section 87a (3b))

ii) Financial assistance was given to panel dentists to bridge the financial impact of the reduced use of dental services as a result of the COVID-19 epidemic. The total remuneration of panel dentist services for 2020 was set at 90 percent of the total remuneration paid for panel dentist services in 2019 as an advance payment. (COVID-19 - Supply Structures - Protection Ordinance, 2022, Section 1)

Payments to Preventive Care and Rehabilitation Facilities

i) Preventive care and rehabilitation facilities received compensation payments from the liquidity reserve of the health fund for their loss of income that had arisen since March 16, 2020. The amount of the compensation payments was calculated by deducting the number of patients of the health insurances treated as inpatients on the respective day as well as the number of patients treated due to the transformation to a licensed hospital, or admitted for short-term care from the number of patients of the health insurances treated as inpatients per day on average in 2019 (reference value). If the result was greater than zero, it had to be multiplied by the daily flat rate, which is 60 percent of the facility's average remuneration rate

agreed with health insurance companies. This had to be done on a daily basis, for the first time on March 16, 2020. (Hospital Relief Law, 2020, Article 3, Section 11d)

ii) Costs for care facilities and people in need of care were reimbursed. Authorized care facilities were entitled to receive reimbursement for extraordinary expenses incurred by the Covid-19 pandemic, and the reduced income in the context of their service provision that was not otherwise financed by the nursing care insurance. (Hospital Relief Law, 2020, Article 4, Section 150)

Payments to Pharmacies and Wholesalers

i) To promote and extend their courier services, pharmacies could charge a one-off payment of 250€ plus VAT to the statutory health insurance fund. (SARS-CoV-2 Pharmaceutical Supply Ordinance, 2022, section 4)

ii) Further remuneration of services in connection with the dispensing of federally procured antiviral medicinal products was implemented. For the expenses incurred by wholesalers, the wholesaler received a remuneration of 20€ plus VAT per package dispensed. For the expenses incurred by pharmacies, pharmacies received remuneration of 30 € plus VAT per package dispensed. If the dispensing was made to doctors or licensed full inpatient care facilities, pharmacies were granted a remuneration of 15€ plus VAT. If the dispensing was carried out by the pharmacies' courier service, pharmacies were payed an additional remuneration of 8€ including VAT per courier service provided. For the expenses incurred by doctors, doctors were given a remuneration of 15€ per package dispensed. (SARS-CoV-2 Pharmaceutical Supply Ordinance, 2022, section 4a)

Bonus - Payments to Healthcare Staff

i) Licensed care facilities were obliged to pay each of their employees a one-off special benefit in 2020 in recognition of the extraordinary requirements due to the pandemic. The amount of the benefit differed for full-time employees who worked for an approved care facility for at least three months from March 1, 2020, up to October 31, 2020, in the following way: employees who provided direct care or support services received 1000€, employees who spent at least 25% of their working time working with people in need of care in a day-structuring, activating, caring or nursing capacity were paid 667€. All other full-time employees in licensed care facilities were given 334€. Furthermore, volunteers in the Federal Voluntary Service received 100€, and trainees got a payment of 600€. Part-time workers had to be paid a premium on a pro-rata basis. (Second Law to Protect the Population in the Event of an Epidemic Situation of National Scope, 2020, section 150a)

ii) Extended special benefits to nursing staff due to the burdens caused by the pandemic were implemented. Licensed hospitals that were particularly affected in the period from January 2020 to December 2020 were obliged to pay their nursing staff in direct patient care on wards with beds a one-off special benefit. For this, 150 million euros were distributed among the hospitals entitled to claim according to the respective sum of the days of stay of the patients treated as full or partial inpatients who were infected with the SARS-CoV-2 coronavirus and discharged in the particularly affected hospitals. An additional 150 million euros were assigned according to the number of nursing staff employed in 2019 in direct patient care on wards with beds, converted into full-time equivalents. Further 150 million euros were

allocated among the hospitals entitled to claim in which patients infected with the SARS-CoV-2 coronavirus were ventilated for more than 48 hours. The amount of the claim was calculated according to the number of these cases in the respective hospital. The money was taken from the liquidity reserve of the health fund and reimbursed by the confederation. (Epidemic - Situation - Continuation - Law, 2021, Article 9c, section 26d)

iii) Care facilities were obliged to pay monthly special benefits from October 2022 until April 2023. The special benefits were paid to one employee (or more) who were responsible for ensuring compliance with the following requirements, procedures, and measures: hygiene measures, vaccination & testing regulations, and supplying residents of full inpatient care facilities with antiviral COVID-19 drugs. The total amount of the special benefit per care facility and month was 500€ for facilities with up to 40 places, 750€ for facilities with 41 - 80 places, and 1000€ for facilities with more than 80 places. If several persons were entitled, the benefit had to be divided accordingly. Furthermore, a monthly subsidy of 250€ was provided in this time period to support the implementation of the tasks. These benefits were funded by the nursing care insurances. (COVID-19 Protection Law, 2022, section 150c)

Subsidies from the Federal Budget

i) Federal funding for the social nursing care insurance was implemented to avoid the social nursing care insurance funds from falling below the statutory operating funds and reserve target due to additional expenditure caused by the pandemic. The amount deviated: In 2021 it was agreed that in case there was a

foreseeable risk, the federal budget granted the social nursing care insurance funds a subsidy in the required amount in 2021. (Epidemic - Situation - Continuation - Law, 2021, Article 4, section 153)

In 2022, a concrete federal subsidy to the social nursing care insurance of 1.2 billion euros was implemented (Pandemic Costs - Reimbursement Ordinance, 2022, Section 1).

ii) Costs that were covered by the private health insurance companies from January 2021 to December 2021 were reimbursed to the Association of Private Health Insurers from federal funds, i.e. public money (Second Law Amending the Infection Protection Law and Other Laws, 2021, Article 2a, section 20i).

Financing of Vaccination-Related Services

i) The remuneration of service providers for vaccination-related services (except for issuing a vaccination certificate) amounted to 20€ per entitled person and vaccination. If it was necessary to visit a person for the vaccination, the service provider would be reimbursed an additional 35€; for each additional person visited in the same social community or facility, an extra 15€ were paid. The remuneration of service providers for exclusive coronavirus vaccination advice without subsequent vaccination was a one-off payment of 10€ per eligible person.
(Coronavirus-Vaccination Ordinance, 2022, Section 6)

ii) Necessary costs of vaccination centers were reimbursed as follows: Until December 2020 and from January 2022 onwards, 46.5 percent of those costs were financed from the liquidity reserve of the health fund and 3.5 percent from the private health insurance companies. From January 2021 until December 2021, 50% was

financed from the liquidity reserve of the health fund. (Coronavirus-Vaccination Ordinance, 2022, Section 7)

iii) The remuneration of expenses incurred by wholesalers in connection with the distribution of vaccines to pharmacies, in particular for transport, packaging, and organization was settled. For this, the wholesaler received: For the period from April 2021 to May 2021 9.65€ plus VAT per dispensed vial requiring refrigeration and 11.55€ plus VAT per dispensed vial requiring ultra- or deep-freezing. Between May 2021 and July 2021, the wholesaler received 8.60€ per vial. From July 2021 onwards the wholesaler was paid 7.45€ plus VAT per vial, and 1.65€ plus VAT per vial for the distribution of vaccination kits and accessories. Lastly, pharmacies received remuneration in the amount of 7.58€ plus VAT per vial dispensed to service providers (Coronavirus-Vaccination Ordinance, 2022, Section 8).

All above mentioned measures were financed by the healthcare fund (Bundesamt für Soziale Sicherung, 2023).

Quantity Management

17 regulations were found to target quantity management. Regulations pertaining to quantity management were divided into whether they concerned the private or public sector. Measures concerning the public sector were organized according to the topics of the expansion of hospitals' capacity and medical personnel, the supply of medical products an, lastly, pharmacies. An overview of the regulations discussed in the following is given in Table 4.

Table 4

Regulations on Quantiy Management

Regulation	Detail
Private sector	● Transforming rehabilitation & preventive care facilities into liscensed hospitals
Expanding hospitals' capacity	● Compensation payments for increasing (ICU) bed capacity ● 50.000€/bed providing ICU capacities with mechanical respiration
Expanding medical personnel	● Expension of people allowed to perform medical activities ● Commisioning of German aid agencies & associations ● Expansion of people allowed to administer vaccinations
Expanding supply of medical products	● Authority of The Ministry of Health to supply, produce, acquire, store, and sell medical products, as well as establish prioritization regulations. ● Medical products containing Remdesivir centrally procured by the government ● Shortened objection period of the Joint Federal Commitee for clinical studies on medical products ● Permission for hospitals to prescribe larger packages ● Federal Republic of Germany defined as the importer of medical products and PPE
Expanding pharmacies' competence	● Obligation to ensure ongoing supply ● Obligation to stock parenteral medicine equal to ICU's average requirements of four weeks ● Permission to dispense comparable medicine if the prescription was unavailable or not suppliable

Note. Created by the author of this paper

Private Sector

The only capacity regulation impacting the private sector found in this research was the permission to transform rehabilitation and preventive care facilities into licensed hospitals. (Article 1 Section 22 of the COVID-19 Hospital Relief Law, 2020)

Public Sector

The 16 regulations pertaining to public quantity management encompassed the expansion of hospitals' capacity, medical personnel, the supply of medical products, and pharmacies' competence.

Expanding Hospitals' Capacity.

Hospitals' capacity was expanded with the following monetary measures: i) In order to increase bed capacity for the care of patients infected with COVID-19, compensation payments from the liquidity reserve of the health fund to licensed hospitals for their loss of income were guaranteed if they postponed or suspended scheduled admissions, surgeries, and procedures. The amount of the compensation payments was determined by subtracting the number of patients treated on an inpatient basis on the respective day from the average number of patients treated on an inpatient or day-case basis in 2019 (reference value). If the result was greater than zero, it had to be multiplied by 560€. This had to be done on a daily basis, for the first time on March 16, 2020, and the last time on September 30, 2020. The compensation payments were not to be included in the total amount of revenue or the revenue offsets. (Hospital Relief Law, 2020, (Article 1 Section 21)

This measure was later prolonged from November 2020 until January 2021 to increase ICU capacities specifically. For this, the calculation differed: These compensation payments were determined by deducting the number of patients treated on the respective day from the reference value on a daily basis, for the first time on November 18, 2020. If the result was greater than zero, 90 percent of the result was multiplied by the daily flat rate for the hospital. (Third Law for the Protection of the Population in an Epidemic Situation of National Scope, 2020, Article 2a, Section 21 (1a), (2a))

ii) Licensed hospitals that set up or incorporated additional beds to provide intensive care treatment capacities with the possibility of mechanical respiration (with the approval of the responsible authority) received a one-time payment of €50,000 from the liquidity reserve of the healthcare fund for each bed set up or maintained by September 30, 2020 (Hospital Relief Law, 2020, Article 1 Section 21).

Expanding Medical Personnel.

The number of people allowed to perform medical activities during the Covid-19 pandemic was expanded with the following measures: i) geriatric nurses, healthcare and pediatric nurses, emergency paramedics, and nursing experts were allowed to carry out medical practices (The First Law to Protect the Population in the Event of an Epidemic Situation of National Scope, 2020, Article 1 Section 5a).

ii) German aid agencies and associations were commissioned to assist the health system. These included the German Red Cross, the Johanniter Accident-Aid, the Malteser emergency-assistance service, the Arbeiter-Samariter Aid agency, and the German Lifesaving Association (The Third Law for the Protection of the

Population in an Epidemic Situation with National Scope, 2020, Article 1 Section 5 Subsection 8).

iii) The number of people allowed to administer vaccinations was expanded. Therefore, also dentists, veterinarians, and pharmacies were allowed to vaccinate people older than 12 (The Law to Strengthen Vaccination Prevention Against COVID-19 and to Amend Further Regulations in Connection with the COVID-19 Pandemic, 2021, Article 1 Section 20b).

Expanding the Supply of Medical Products.

The supply of medical products was expanded during the COVID-19 pandemic with the following measures: i) The Ministry of Health was enabled to implement a variety of measures to ensure the supply of medical products, such as anesthetics and their ingredients, medical devices, laboratory diagnostics, assistive products, personal protective equipment, and disinfection products (The First Law to Protect the Population in the Event of an Epidemic Situation of National Scope, 2020, Article 1 Section 5 (2) no 4.)

ii) Medical products containing Remdesivir, an anti-covid medicine (National Institutes of Health, 2024), were centrally procured by the federal government (The Third Law for the Protection of the Population in an Epidemic Situation with National Scope, 2020, Article 2a Section 26b).

iii) The Federal Ministry was allowed to produce, acquire, store, and sell medical supplies on the market (or through contracted agencies) if the population's access to healthcare was threatened (The Third Law for the Protection of the

Population in an Epidemic Situation with National Scope, 2020, (Article 2b Section 71).

iv) In the case of limited availability of medicinal products and vaccines, the Federal Ministry of Health was allowed to establish regulations pertaining to prioritization in their use and dispense for the benefit of certain groups of people (Epidemic Situation - Continuation - Law, 2021, Article 1 Section 5).

iv) The objection period of the Joint Federal Committee for clinical studies for medicinal products used to treat COVID-19 beyond the scope of the marketing authorization was shortened to 5 days (The SARS-CoV-2 Pharmaceutical Supply Ordinance, 2022, Section 1).

v) Hospitals were allowed to prescribe larger packages of medical products than usual (The SARS-CoV-2 Pharmaceutical Supply Ordinance, 2022, Section 1).

vi) Protective masks were kept in the National Health Protection Reserve for Infection Protection, regardless of their labeling (Second Law Amending the Infection Protection Law and Other Laws, 2021, Section 5b).

vii) The Federal Republic of Germany was defined as the importer of medical products and personal protective equipment. These products were only allowed to be supplied to the groups of people appointed by the Federal Ministry of Health and could not be placed on the market via the usual distribution channels. (The Ordinance on the Procurement of Medical Products and Personal Protective Equipment During the Epidemic Caused by the Coronavirus SARS-COV-2, 2020)

Expanding Pharmacies' Competence.

The following measures were implemented to expand pharmacies' supply: i) regulations on pharmacies' stocks had to ensure ongoing supply, even in the case of supply bottlenecks or additional requirements. This was particularly true for medicines required in hospitals for intensive medical treatment. (The Epidemic Situation - Continuation - Law, 2021, Article 1 Section 5)

ii) Pharmacies providing hospital supplies were responsible to keep parenteral medications for intensive care stocked in an amount that at least equaled the intensive care departments' average requirements for a period of four weeks (The Epidemic Situation - Continuation - Law, 2021, Article 9b Section 15).

iii) Authorized pharmacies were allowed to dispense a drug with the same active ingredient or a comparable medicine to the insured person if the prescription was not in stock or not suppliable (SARS - CoV-2 Pharmaceutical Supply Ordinance, 2022, Section 1).

Quality Management - Public

No quantity regulation targeting the private sector was found. 6 regulations were found to target quality management in the public sector. They were subdivided into the following themes: regulations pertaining to the healthcare workforce, healthcare provision, and medical products for civil servants. An overview of the implemented regulations pertaining to quality management can be found in Table 5.

Table 5

Regulations on Quality Management

Regulation Regarding:	Details
Healthcare workforce	● Mandatory status of being recovered or vaccinated for all healthcare workers
Healthcare provision	● Permission to carry out the assessment to determine the need for home care without in-person examination & via online consultation ● Entitlement of people medically unable to receive vaccinations to preventive medicines ● Deviations from the Narcotics Prescription Ordinance regarding the medical care for opioid - patients ● Entitlement of all insured people to receive vaccinations, tests, and protective masks ● Omittance of the expiry date for medical products supplied to civil servants

Note. Created by the author of this paper.

Healthcare Workforce

It was mandatory for all people working in healthcare to either be vaccinated or recovered to minimize outages and infections among the workforce (The Law to Strengthen Vaccination Prevention Against COVID-19 and to Amend Further Regulations in Connection with the COVID-19 Pandemic, 2022, Article 1 Section 20a).

Healthcare Provision

The quality of healthcare provision was impacted by the following measures: i) The assessment to determine the need for home care was allowed to be carried out without in-person examination of the insured person, as well as via online consultation (the Ordinance on the Prolongation of Measures Maintaining Nursing Care During the Pandemic Caused by the SARS-CoV-2 Coronavirus, 2022, section 1).

ii) People who had health insurance and could not be vaccinated due to medical reasons were entitled to be supplied with prescription medicines for preventive use to protect against COVID-19 (SARS-CoV-2 Pharmaceutical Supply Ordinance, 2022, section 1a).

iii) The medical care for opioid patients during the pandemic was regulated. Deviations from the Narcotics Prescription Ordinance were allowed, including the possibility of being cared for by a doctor who is not qualified in addiction medicine, handing over the prescription to the patient without personal consultation, and issuing more emergency prescriptions. (The SARS-CoV-2 Pharmaceutical Supply Ordinance, 2022, section 6)

iv) Every person with health insurance was entitled to receive vaccinations, tests, and protective masks (The Third Law for the Protection of the Population in an Epidemic Situation of National Scope, 2020, Article 4 Section 20i).

Medical Products for Civil Servants

i) For medical products purchased and marketed by the Federal Ministry, as well as those supplied to the German Confederation, the Federal Armed Forces, the

Federal Police, and the federal states for civil defense and disaster control purposes, the usual statutory expiration date could be omitted (The Third Law for the Protection of the Population in an Epidemic Situation with National Scope, 2020, (Article 2b Section 71).

Summary of Results

To summarize, the relevant sections in the 17 laws and ordinances included in this analysis were classified into three main regulatory approaches (price, quantity, quality) as per the framework by Saltman et al. (2002). Price management was further subdivided into demand and supply side, and quantity and quality regulations by their impact on the public or private sector.

In this analysis, 26 measures were found to be aimed at price management (Table 2 & 3), 17 measures at quantity management (Table 4), and 6 measures aimed at quality management (Table 5).

Price management on the demand side entailed regulations affecting the patients and the distribution of tests and medication. Measures included the implementation of a surcharge by licensed hospitals towards patients or their payers. In addition, patients receiving full or partial inpatient hospital treatment were charged with the remaining costs of their treatment, if their care involved the use of products centrally procured by the government that were not otherwise financed. Also, the nursing care fee increased. Furthermore, surcharges on the selling price of COVID-19-Antigen-Tests for Near-Patient Use were introduced, and a price cap for healthcare-related products for medical needs dispensed by manufacturers and distributors was introduced.

On the supply side, the introduced price management policies focused on payments to hospitals, accredited service providers, doctors' offices, preventive care and rehabilitation facilities, pharmacies and wholesalers. They further addressed bonuses for healthcare staff, federal budget subsidies, and the financing of vaccination-related services. Payments to hospitals covered the amendment of the daily flat rate/hospital and the reimbursement of expenses associated with testing, treatment, and medicines containing Remdesivir. Financial support was extended to accredited service providers, doctors' offices, and preventive care and rehabilitation facilities to cover their loss of income and their costs. Pharmacies received payments to support their courier services and pharmacies and wholesalers were compensated for their services in connection with the distribution of federally procured antiviral medicinal products. Healthcare employees received bonuses as compensation for their extraordinary efforts during the pandemic. Subsidies from the federal budget were allocated to reimburse costs covered by the private health insurances and to ensure the financial stability of social nursing care insurance funds. Lastly, the costs of vaccination-related services were reimbursed.

Quantity management aimed to increase healthcare capacity, both in the private and public sectors. Efforts in the private sector included the transformation of rehabilitation and preventive care facilities into licensed hospitals. Public capacity was expanded by increasing hospitals' capacity, medical personnel, the supply of medical products, and pharmacy regulations. In order to enhance bed and treatment capacity for COVID-19 patients, hospitals were financially compensated, primarily for their loss in revenue when postponing or suspending scheduled procedures to

increase available beds. The medical workforce was expanded by measures allowing more healthcare professionals and organizations to participate in medical and vaccination activities. The supply of medical products was expanded by enabling the Ministry of Health to implement a variety of measures to ensure the supply of medical products and prioritize their use and dispense. Additionally, the antiviral drug Remdisivir was procured centrally, and the Federal Ministry was given the authority to procure and distribute medical supplies. Hospitals were allowed to prescribe larger packages, masks were kept in the National Health Protection Reserve for Infection Protection, and the Federal Republic of Germany was defined as the importer of medical products and personal protective equipment, which were only allowed to be given to appointed groups of people and could not be placed on the market. Pharmacies were obliged to ensure ongoing stock supply, especially for intensive medical treatment, and allowed to dispense comparable medicine when the prescription was not available or supplyable.

Quality Management focused on regulations affecting the healthcare workforce, healthcare provision, and medical products for civil servants. A mandatory status of being vaccinated or recovered among healthcare workers was introduced. Regarding healthcare provision, the assessment and consultation to determine the need for home care was allowed to be carried out online (Telemedicine). In addition, preventive medicines to insured people who could not be vaccinated due to medical reasons were assured and people with health insurance were entitled to receive vaccinations, tests, and protective masks. Furthermore, relaxations concerning the care for opioid patients were implemented, and the expiration date for medical

products purchased and marketed by the Federal Ministry, as well as those supplied to civil servants, was allowed to be omitted.

Discussion

Several important topics can be extracted from the measurements implemented in Germany that were discussed in the preceding parts. Given the paper's restricted scope, the author decided to concentrate on the discussion of two main topics in the following section: First, the tradeoff between quantity expansion on the one hand and quality decrease on the other, and second, the implementations that related to hospitals' capacity expansion.

Quantity vs Quality

It was found that the expansion of capacity had negative effects on the quality of healthcare for two groups of patients: those not considered medical emergencies, and opioid patients.

Rescheduling Elective Procedures

The decision to reschedule elective procedures to increase ICU capacities had negative implications on the quality of many people’s healthcare.

During the COVID-19 pandemic, German healthcare was reorganized to be geared towards treating COVID-19 patients and to reserve resources in case the number of critical cases increased (Stöß et al., 2020). The pandemic triggered the conversation about how to manage a situation where there are no longer sufficient ventilation options in intensive care units. To keep this from happening and to avoid the need for triage decisions, organizational measures were taken to provide as many intensive care and qualified medical staff capacities as possible (Gehle et al.,

2020). As a result, hospitals were obliged to postpone elective (i.e. plannable) procedures - that is, procedures that were not an emergency (David et al., 2021).

While the rescheduling was a necessity due to the extraordinary circumstances imposed by the pandemic, it is important to analyze and critically reflect on the implications this had. Looking at the measures, it becomes clear that the expansion of ICU capacities for COVID-19 patients was implemented at the expense of the quality of healthcare for those patients who were rescheduled because they did not qualify as a medical emergency. Logically, every planned procedure in hospitals is medically necessary. Thus, the rescheduling of one results in the delay of needed treatment and hence the patient's suffering and compromised well-being, even if not life-threatening. In many cases, the chances for optimal recovery were drastically lowered. (Birke, 2020)

Medical Care for Opioid - Patients

Although only briefly mentioned in the analyzed measures, one group of patients that can be identified as negatively affected by the measurements to increase the healthsystem's capacity are opioid-patients. It can be argued that the relaxations resulting from the imposed deviations from the Narcotics Prescription Ordinance caused a decrease in the quality of care given to opioid patients during the COVID-19 pandemic. These relaxations included the possibility of receiving care from a medical professional who is not qualified in addiction medicine, the ability to hand over an opioid prescription to the patient without consulting a doctor, and the simplified process for issuing emergency prescriptions. Therefore, there was a

trade-off between the increase in capacity and the quality of healthcare provided to opioid-patients.

Hospitals' Capacity Expansion

Looking at the measurements implemented to increase hospitals' capacity it can bee seen that there was a heavy focus on providing additional ICU beds by compensating hospitals' loss of revenue when rescheduling elective procedures.

Overall, compensation payments for the loss of revenue, treatment expenses, and the creation of ICU beds amounted to more than 22.180 billion euros. Nearly 18.5 billion euros were spent in total compensating hospitals for the revenue they lost when delaying scheduled surgeries and more than 3.05 billion euros for the implemented treatment compensation payments. (Bundesamt für soziale Sicherung, 2024)

Following the introduction of compensation payments of 50,000€ per ICU bed made available, approximately 13,700 additional ICU beds for COVID-19 patients were created. The entire amount expended for this totaled 686 million euros (Beerheide & Maybaum, 2021). This, however, can not be reported with certainty. The Federal Ministry of Health is to this day unable to reliably determine the number of intensive care beds actually installed and the number of additional beds purchased (Beerheide, 2021). This had implications:

Concerns were raised, also by the Federal Audit Office, that hospitals that received compensation might have taken advantage of the implemented payments and tricked the number of ICU beds to receive more money than they were actually entitled to (Beerheide, 2021). However, the German Association of Hospitals took a

position, stating that the aim all along was not to use these intensive care beds as standard beds that would be in use permanently and beyond the pandemic, but to quickly procure medical technology and reorganize hospital operations in order to care for COVID patients in these additional beds in an emergency and as a reserve. (Deutsche Ärztezeitung, 2021)

Schubert & Reif (2023) examined these accusations in an event study analysis and came to the conclusion, that “even though the emergency financing scheme leaves room for lucrative strategic behavior, there is no evidence of strategic reporting at an economically meaningful and hence empirically detectable scale”.

The author of this paper sees two underlying causes of this debate: the lack of transparency and control of these payments, as well as the underlying general financing system of hospitals in Germany.

Transparency & Control of Payments

First, regarding transparency and control, the German Minister of Health, Jens Spahn, acknowledged errors in the cost management process but pointed out the time pressure underlying these decisions (Beerheide, 2021). While it is true, that the pandemic confronted politicians and processes with extraordinary circumstances and challenges, this must be learned from and efforts must be taken to maintain transparency and control even in unforeseen circumstances. This is also crucial for maintaining the population’s trust in the country's healthcare, and its political system.

Diagnosis - Related - Groups

Second, the author of this paper argues that the assumption that hospitals might embezzle compensation payments to increase their profit, or that it would be a possibility in the first place, is rooted in the way German hospitals are currently financed. In fact, hospitals in Germany are under economic pressure, as the financing system of hospitals is based on their economic efficiency. This is connected to an austerity measure implemented in 2004 that involved billing hospitals according to diagnosis-related groups (DRGs) instead of daily rates. DRG conditions create a stronger incentive for economic behavior than the previous daily rate system did, as the hospital incurs a loss if a patient's treatment costs exceed the flat-rate payment. However, a profit can be realized if it is made possible to work more economically than calculated. (Flintrop, 2006)

The amount of the DRG flat rates is determined based on the diagnosis, surgery, and severity of the illness. Hence, patients with minor illnesses generate less revenue than those with serious illnesses requiring complex treatment. The flat rate per case is designed to remunerate a precisely defined illness and its treatment within a certain length of stay. Within that, the same flat rate is paid regardless of the patient's actual length of stay. (Bundesministerium für Gesundheit, 2016a)

The Federal Ministry of Health itself acknowledges that this system can create disincentives. In fact, the ministry states: “A hospital's revenue is generated by the cases it treats. It cannot be ruled out that this results in procedures that are not medically necessary or could possibly be performed on an outpatient basis. Treating an increasing number of cases out of economic pressure frustrates doctors and

nursing staff and does not serve the patients either” (Bundesministerium für Gesundheit, 2024c).

The negative implications of this billing system could be discussed extensively, however, due to the limited scope of this paper let us conclude, that with the current billing system, hospitals have to first and foremost prioritize the generation of profit, and not the provision of optimal healthcare (Bundesärztekammer, 2021). This might explain the distrust voiced during the pandemic in relation to the use of compensation payments.

Hospital Reform

Important to note is, that in May 2024 the German Federal Cabinet agreed on a hospital reform, aiming to ensure and increase the quality of treatment, guarantee comprehensive medical care for patients, and reduce bureaucracy (Bundesministerium für Gesundheit, 2024d). One main component of this reform is changing the hospital billing system: Aiming to relieve economic pressure, the reform intends to finance hospitals to 60% with retention payments in the future. The remaining 40% would still be covered with the DRG system. (Deutsches Ärzteblatt, 2024)

Following the cabinet's decision, negotiations now begin in the German parliament. The reform is due to come into force at the beginning of January 2025. (Bundesministerium für Gesundheit, 2024d)

Therefore, it remains to be seen whether this reform to the billing system for hospitals will relieve the aforementioned problems.

Policy suggestions

The author of this paper recommends policies to move away from years of cost-cutting measures and put the well-being of patients and the delivery of high-quality healthcare back in the foreground.

Furthermore, efforts must be made to make Germany's healthcare system more resilient and sustainable. This entails the improvement of working conditions in the healthcare sector hence making them more attractive. It also involves improving Germany's crisis preparedness and management. This means looking ahead and anticipating and preparing for future challenges such as climate change, demographic change, or other pandemics. It should not be shied away from rethinking existing understandings and implementing innovative ideas.

Furthermore, the implications of the new hospital reform need to be monitored and examined closely, and policies must react according to the observed outcomes.

Limitations and Future Research

One limitation of this paper is that not all laws and ordinances implemented in Germany during the pandemic were included in the analysis (17 out of 39, see Table 1) due to the exclusion and inclusion criteria used in this research. Future research should expand upon the present study by either employing different inclusion/exclusion criteria for the laws and ordinances examined here, or by analyzing the laws and ordinances that were left out.

Another limitation was that due to the limited scope of this paper, decisions had to be made on which discussion topics to include. Therefore, the author of this paper was unable to include the discussion of important topics, such as telemedicine

or universal healthcare. Future research shold focus on discussing such topics in relation to the COVID-19 related laws and ordinances implemented in Germany.

This way, as pointed out by Greer et al. (2020,) in depth analyses of policies, politics, and governance systems in relation to COVID-19 will be further provided, which contributes to using the crisis of the COVID-19 pandemic for political learning (Kuhlmann et al., 2021).

Conclusion

In this paper, 17 laws and ordinances (see Table 1) implemented during the COVID-19 pandemic in Germany were analyzed using content analysis. Employing the framework suggested by Saltman et al. (2002) (see Figure 1), it was found that German health policy responses during the pandemic targeted the management of quantity, quality, and price. In fact, COVID-19 regulations included in this analysis addressed the following topics: Price management on the demand side was split into two themes: regulations targeted at increasing patients's contributions and the distribution of tests and medication. Supply-side price management included payments to hospitals, accredited service providers, doctor offices, and preventive care and rehabilitation facilities, as well as bonuses paid to healthcare staff, federal budget subsidies, and the financing of vaccination-related services. A quantity regulation in the private sector was the possibility to transform care and rehabilitation facilities into licensed hospitals. Public quantity management encompassed hospital capacity expansion, medical personnel expansion, the supply of medical products, and pharmacy regulations. Lastly, quality management in the public sector was

subdivided into the following themes: regulations pertaining to the workforce, healthcare provision, and medical products for civil servants.

The discussion covered the topic of the trade-off between increasing quantity while decreasing quality of healthcare. This included the consequences of the implemented rescheduling of medical procedures and the relaxation of the Narcotics Ordinance. Furthermore, problems concerning the compensation payments to hospitals were adressed, such as lack of transparancy and control, and the underlying billing system according to diagnosis related groups, putting economic pressure on hospitals.

Policy suggestions were given, such as putting the well-being of patients and the delivery of high-quality healthcare back in the foreground, as well as making efforts to make Germany's healthcare system more resilient and sustainable.

Limitations of this paper include a restricted number of included laws and ordinances (17 out of 39), as well as the limited scope due to which important discussion topics such as telemedicine or universal healthcare could not be discussed.

Future research should built up on this paper and further contribute to the provision of in depth analyses of country specific policies, politics, and governance systems in relation to the COVID-19 pandemic.

References

Allgemeine Ortskrankenkasse. (2024, January 8). *Die soziale Pflegeversicherung*. Retrieved May 9, 2024, from https://www.aok.de/pk/pflege-im-alltag/pflegeversicherung/

Beerheide, R. (2021, June 18). *Coronapandemie: Rechnungshof tadelt kostspielige Entscheidungen des Bundes*. Deutsches Ärzteblatt. Retrieved May 26, 2024, from https://www.aerzteblatt.de/archiv/219775/Coronapandemie-Rechnungshof-tadelt-kostspielige-Entscheidungen-des-Bundes

Beerheide, R., & Maybaum, T. (2021, July 26). *Intensivbetten: Aufklärung über 13 700 Betten*. Deutsches Ärzteblatt. Retrieved May 26, 2024, from https://www.aerzteblatt.de/archiv/220623/Intensivbetten-Aufklaerung-ueber-13-700-Betten

Birke, B. (2020, July 1). *OP-Stau wegen Corona - "Eine Behandlung, die zu spät erfolgt, ist auch ein Behandlungsfehler."* Deutschlandfunk. Retrieved May 28, 2024, from https://www.deutschlandfunk.de/op-stau-wegen-corona-eine-behandlung-die-zu-spaet-erfolgt-100.html

Bundesamt für Soziale Sicherung. (2023, June 6). *Zahlungen aufgrund der COVID 19-Pandemie*. Bundesamt Für Soziale Sicherung. Retrieved June 2, 2024, from https://www.bundesamtsozialesicherung.de/de/themen/covid-19-krankenhausentlastungsgesetz/ueberblick/

Bundesamt für soziale Sicherung. (2024). Zahlungen für Krankenhäuser unterteilt nach Bundesländern (in Mio. Euro). In *Bundesamt Für Soziale Sicherung*. Retrieved May 26, 2024, from https://www.bundesamtsozialesicherung.de/fileadmin/redaktion/Covid19_Krankenhausentlastungsgesetz/20240326Zahlungen_fuer_Krankenhaeuser_unterteilt_nach_Bundeslaendern__in_Mio._Euro___Stand_15.03.2024_.pdf

Bundesärztekammer. (2021). 12 Punkte, die die neue Bundesregierung sofort angehen muss. In *Bundesärztekammer*. Retrieved February 29, 2024, from https://www.bundesaerztekammer.de/fileadmin/user_upload/_old-files/downloads/pdf-Ordner/Politik/Bundesaerztekammer_Kernforderungen.pdf

Bundesministerium für Gesundheit. (n.d.). *Gesetze und Verordnungen*. Bundesministerium Für Gesundheit. Retrieved April 1, 2024, from https://www.bundesgesundheitsministerium.de/service/gesetze-und-verordnungen

Bundesministerium für Gesundheit. (2016a, January 1). *Abrechnung stationärer Krankenhausleistungen*. Bundesministerium Für Gesundheit. Retrieved May 26, 2024, from https://www.bundesgesundheitsministerium.de/abrechnung-krankenhausleistungen

Bundesministerium für Gesundheit. (2016b, July 29). *Gesetz oder Rechtsverordnung? Das sind die Unterschiede.* Bundesministerium Für Gesundheit. Retrieved April 14, 2024, from

https://www.bundesgesundheitsministerium.de/service/gesetze-und-verordnungen/unterschied-zwischen-foermlichen-gesetzen-und-recht

Bundesministerium für Gesundheit. (2022). Das deutsche Gesundheitssytem. In *Bundesministerium Für Gesundheit*. Retrieved May 29, 2024, from https://www.bundesgesundheitsministerium.de/fileadmin/user_upload/Das-deutsche-Gesundheitssystem_bf.pdf

Bundesministerium für Gesundheit. (2024a, February 15). *Die Pflegeversicherung*. Bundesministerium Für Gesundheit. Retrieved May 9, 2024, from https://www.bundesgesundheitsministerium.de/themen/pflege/online-ratgeber-pflege/die-pflegeversicherung

Bundesministerium für Gesundheit. (2024b, February 28). *Kassenärztliche Vereinigung*. Bundesministerium Für Gesundheit. Retrieved May 9, 2024, from https://www.bundesgesundheitsministerium.de/themen/gesundheitswesen/selbstverwaltung/kassenaerztliche-vereinigungen.html?limit=all&cHash=b094460e7210cf879e817373efb9eba3

Bundesministerium für Gesundheit. (2024c, May 15). *Krankenhausfinanzierung*. Bundesministerium Für Gesundheit. Retrieved May 26, 2024, from https://www.bundesgesundheitsministerium.de/krankenhausfinanzierung#:~:text=Die%20Ausgaben%20f%C3%BCr%20%E2%80%9EKrankenhausbehandlung%20insgesamt,f%C3%BCr%20einzelne%20Leistungsbereiche%20der%20GKV).

Bundesministerium für Gesundheit. (2024d, May 17). *Krankenhausreform*. App TitleBundesministerium Für Gesundheit. Retrieved May 26, 2024, from https://www.bundesgesundheitsministerium.de/themen/krankenhaus/krankenhausreform.html

Bundeszentrale für politische Bildung. (2022a, January 14). *Fazit und Ausblick*. bpb.de. Retrieved March 6, 2024, from https://www.bpb.de/themen/gesundheit/gesundheitspolitik/253809/fazit-und-ausblick/

Bundeszentrale für politische Bildung. (2022b, February 11). *Gesundheitsreformen in Deutschland 1975 bis 2016 im Überblick*. bpb.de. Retrieved February 29, 2024, from https://www.bpb.de/themen/gesundheit/gesundheitspolitik/258105/gesundheitsreformen-in-deutschland-1975-bis-2016-im-ueberblick/

Burau, V., Mejsner, S. B., Falkenbach, M., Fehsenfeld, M., Kotherová, Z., Neri, S., Wallenburg, I., & Kuhlmann, E. (2024). Post-COVID health policy responses to healthcare workforce capacities: a comparative analysis of health system resilience in six European countries. *Health Policy*, *139*, 104962. https://doi.org/10.1016/j.healthpol.2023.104962

COVID-19 - Compensation Payment-Alignment-Ordinance (*COVID - 19 - Ausgleichszahlungs-Anpassungs-Verordnung*), German Federal Ministry of Health, (2020). https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/Gesetze_und_Verordnungen/GuV/C/VO_COVID-19_AusglZAV_bgbl120s15

56_78641.pdf

Covid-19 Hospital Relief Law (*Krankenhausentlastungsgesetz*), German Federal Ministry of Health, (2020a).

https://www.bgbl.de/xaver/bgbl/start.xav?startbk=Bundesanzeiger_BGBl&jumpTo=bgbl120s0580.pdf#__bgbl__%2F%2F*%5B%40attr_id%3D%27bgbl120s0580.pdf%27%5D__1715856868644

COVID-19 - Supply Structures - Protection Ordinance (*COVID - 19 - Versorgungsstrukturen-Schutzverordnung*), German Federal Ministry of Health, (2022).

https://www.bundesanzeiger.de/pub/publication/BL0OwNLPpEn6jKdjbE7/content/BL0OwNLPpEn6jKdjbE7/BAnz%20AT%2004.05.2020%20V1.pdf?inline

COVID-19 Protection Law *(COVID-19-Schutzgesetz)*, German Federal Ministry of Health, (2022).

https://www.bgbl.de/xaver/bgbl/start.xav?startbk=Bundesanzeiger_BGBl&jumpTo=bgbl122s1454.pdf#__bgbl__%2F%2F*%5B%40attr_id%3D%27bgbl122s1454.pdf%27%5D__1715860263170

Coronavirus - Vaccination Ordinance (*Coronavirus-Impfverordnung*), German Federal Ministry of Health, (2022).

https://www.bundesanzeiger.de/pub/publication/eAOaquujTaFsA5RvNYF/content/eAOaquujTaFsA5RvNYF/BAnz%20AT%2002.06.2021%20V2.pdf?inline

David, M., Weimann, J., Bobbert, P., & Gehle, P. (2021, May 7). *Verschiebung elektiver Eingriffe: Wie man priorisieren kann*. Deutsches Ärzteblatt. Retrieved May 27, 2024, from

https://www.aerzteblatt.de/archiv/218938/Verschiebung-elektiver-Eingriffe-Wie-man-priorisieren-kann

Deutsche Ärztezeitung. (2021, July 8). Nach Medienberichten : Streit um Intensivbetten: DKG verteidigt sich. *AerzteZeitung.de*. https://www.aerztezeitung.de/Wirtschaft/Streit-um-Intensivbetten-DKG-verteidigt-sich-421133.html

Deutsches Ärzteblatt. (2024, April 29). *Gesundheitsökonomen schlagen alternative Vorhaltevergütung vor*. Retrieved May 26, 2024, from https://www.aerzteblatt.de/nachrichten/151057/Gesundheitsoekonomen-schlagen-alternative-Vorhalteverguetung-vor

Epidemic Situation - Continuation - Law (*EpiLage-Fortgeltungsgesetz*), German Federal Ministry of Health, (2021). https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/Gesetze_und_Verordnungen/GuV/E/EpiLageG_bgbl_V_30.03.21.pdf

First Law to Protect the Population in the Event of an Epidemic Eituation of National Scope (*erstes Gesetz zum Schutz der Bevölkerung bei einer epidemischen Lage von nationaler Tragweite*), German Federal Ministry of Health, (2020b). https://www.bgbl.de/xaver/bgbl/start.xav?startbk=Bundesanzeiger_BGBl&jumpTo=bgbl120s0587.pdf#__bgbl__%2F%2F*%5B%40attr_id%3D%27bgbl120s0587.pdf%27%5D__1715857297777

Flintrop, J. (2006, November 17). *Auswirkungen der DRG-Einführung: Die ökonomische Logik wird zum Maß der Dinge*. ÄDeutsches Ärzteblatt. Retrieved May 26, 2024, from

https://www.aerzteblatt.de/archiv/53507/Auswirkungen-der-DRG-Einfuehrung-Die-oekonomische-Logik-wird-zum-Mass-der-Dinge

Gehle, P., David, M., Marburger Bund Fraktion der Ärztekammer Berlin, Dr. Matthias Albrecht, Priv. Doz. Dr. Peter Bobbert, Prof. Dr. Christiane Erley, Dr. Claudio Freimark, Dr. Susanne von der Heydt, Priv. Doz. Dr. Ahi Sema Issever, Dr. Günther Jonitz, Prof. Dr. Jörg Oestmann, Dr. Laura Schaad, Dr. Kai Sostmann, Dr. Klaus Thierse, Prof. Dr. Jörg Weimann, & Dr. Thomas Werner. (2020). Vorschläge zur Priorisierung elektiver Eingriffe unter den Bedingungen der Corona-Pandemie im stationären Bereich. In *Marburger Bund*. Retrieved May 27, 2024, from https://www.marburger-bund.de/sites/default/files/files/2020-11/Diskussions-%20und%20Arbeitspapier%20zur%20Priorisierung%20elektiver%20Eingriffe.pdf

GKV-Spitzenverband. (2022, March 30). *der Verband*. Retrieved May 9, 2024, from https://www.gkv-spitzenverband.de/gkv_spitzenverband/der_verband/wir_ueber_uns.jsp

Greer, S. L., Jarman, H., Falkenbach, M., Da Fonseca, E. M., Raj, M., & King, E. J. (2021). Social policy as an integral component of pandemic response: Learning from COVID-19 in Brazil, Germany, India and the United States. *Global Public Health*, *16*(8–9), 1209–1222. https://doi.org/10.1080/17441692.2021.1916831

Greer, S. L., King, E. J., Da Fonseca, E. M., & Peralta‐Santos, A. (2020). The comparative politics of COVID-19: The need to understand government

responses. *Global Public Health*, *15*(9), 1413–1416. https://doi.org/10.1080/17441692.2020.1783340

Greer, S. L., King, E. J., Da Fonseca, E. M., & Peralta-Santos, A. (2021). *Coronavirus politics*. University of Michigan Press. https://doi.org/10.3998/mpub.11927713

Köppen, J., Hartl, K., & Maier, C. B. (2021). Health workforce response to Covid-19: What pandemic preparedness planning and action at the federal and state levels in Germany? *The International Journal of Health Planning and Management*, *36*(S1), 71–91. https://doi.org/10.1002/hpm.3146

Kuhlmann, S., Hellström, M., Ramberg, U., & Reiter, R. (2021). Tracing divergence in crisis governance: responses to the COVID-19 pandemic in France, Germany and Sweden compared. *International Review of Administrative Sciences*, *87*(3), 556–575. https://doi.org/10.1177/0020852320979359

Law Amending the Infection Protection Law and other Laws on the Occasion of the Cancellation of the Declaration of the Epidemic Situation of National Scope: (*Gesetz zur Änderung des Infektionsschutzgesetzes und weiterer Gesetze anlässlich der Aufhebung der Feststellung der epidemischen Lage von nationaler Tragweite*), German FEdral Ministry of Health, (2021). https://www.bgbl.de/xaver/bgbl/start.xav?startbk=Bundesanzeiger_BGBl&start=//*%5B@attr_id=%27bgbl121s4906.pdf%27%5D#__bgbl__%2F%2F*%5B%40attr_id%3D%27bgbl121s4906.pdf%27%5D__1715859662374

Law to Strengthen Vaccination Prevention Against COVID-19 and to Amend Further Regulations in Connection with the COVID-19 Pandemic (*Gesetz zur Stärkung der*

Impfprävention gegen COVID-19 und zur Änderung weiterer Vorschriften im Zusammenhang mit der COVID-19-Pandemie), German Federal Ministry of Health, (2021). https://www.bgbl.de/xaver/bgbl/start.xav#__bgbl__%2F%2F*%5B%40attr_id%3D%27bgbl121s5162.pdf%27%5D__1715857834364

Meier, S. (2024, April 16). *Liquiditätsreserve: Wie Unternehmen sie einsetzen sollten*. Retrieved May 9, 2024, from https://agicap.com/de/artikel/liquiditaetsreserve/#:~:text=Bei%20einer%20Liquidit%C3%A4tsreserve%20f%C3%BCr%20Unternehmen,Reserve%20sichert%20das%20Unternehmen%20ab.

Ordinance on the Procurement of Medical Products and Personal Protective Equipment During the Epidemic Caused by the Coronavirus SARS-COV-2 (*Verordnung zur Beschaffung von Medizinprodukten und persönlicher Schutzausrüstung bei der durch das Coronavirus SARS-COV-2 verursachten Epidemie*), German Federal Minsitry of Health (2020) https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/Gesetze_und_Verordnungen/GuV/M/BAnz_AT_09.04.2020_MP-PSA-Beschaffung.pdf

Ordinance on the Prolongation of Measures Maintaining Nursing Care During the Pandemic Caused by the SARS-CoV-2 Coronavirus (*Verordnung zur Verlängerung von Maßnahmen zur Aufrechterhaltung der pflegerischen Versorgung während der durch das Coronavirus SARS-CoV-2 verursachten Pandemie*), German Ministry of Health, (2022).

https://www.bgbl.de/xaver/bgbl/start.xav?startbk=Bundesanzeiger_BGBl&jumpTo=bgbl122s0475.pdf#__bgbl__%2F%2F*%5B%40attr_id%3D%27bgbl122s0475.pdf%27%5D__1715858302214

Pandemic Costs - Reimbursement Ordinance (*Pandemiekosten -Erstattungsverordnung)*, German Federal Ministry of Health, (2022). https://www.bundesanzeiger.de/pub/publication/vNQomeXRjW2Ttpb6tIv/content/vNQomeXRjW2Ttpb6tIv/BAnz%20AT%2031.03.2022%20V1.pdf?inline

Price Ordinance for SARS-CoV-2-Antigen-Tests for Near-Patient Use (*Antigen-Preisverordnung*), German Federal Ministry of Health, (2020). https://www.bundesanzeiger.de/pub/publication/8qXZUOVeYCDf1Tial7t/content/8qXZUOVeYCDf1Tial7t/BAnz%20AT%2008.12.2020%20V1.pdf?inline

PwC. (2022). *Fachkräftemangel im deutschen Gesundheitswesen 2022*. Retrieved March 6, 2024, from https://www.pwc.de/de/gesundheitswesen-und-pharma/fachkraeftemangel-im-deutschen-gesundheitswesen-2022.html#:~:text=Der%20Fachkr%C3%A4ftemangel%20im%20deutschen%20Gesundheitswesen,Versorgungsengpass%20bei%20rund%20sieben%20Prozent.

Saltman, R. B., Busse, R., & Mossialos, E. (2002). Regulating entrepreneurial behaviour in European health care systems. In *ResearchGate*. https://www.researchgate.net/publication/255479599_Regulating_Entrepreneurial_Behaviour_in_European_Health_Care_Systems

SARS-CoV-2 Pharmaceutical Supply Ordinance (*SARS - CoV - 2 - Arzneimittelversorgungsverordnung*), German Federal Ministry of Health, (2022).

https://www.bundesanzeiger.de/pub/publication/QaOZlOdcoUQVTsFhldi/content/QaOZlOdcoUQVTsFhldi/BAnz%20AT%2017.08.2022%20V2.pdf?inline

Schubert, S., & Reif, S. (2023). Hospital Capacity Reporting in Germany During Covid-19. *SSRN*. https://doi.org/10.2139/ssrn.4547810

Second Law Amending the Infection Protection Law and Other Laws (*Zweites Gesetz zur Änderung des Infektionsschutzgesetzes und weiterer Gesetze*), German Federal Ministry of Health, (2021) https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/Gesetze_und_Verordnungen/GuV/I/2._AendG_IfSG_BGBl.pdf

Second Law to Protect the Population in the Event of an Epidemic Situation of National Scope (*Zweites Gesetz zum Schutz der Bevölkerung bei einer epidemischen Lage von nationaler Tragweite)*, German Federal Ministry of Health, (2020). https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/Gesetze_und_Verordnungen/GuV/Z/Zweites_Gesetz_zum_Schutz_der_Bevoelkerung_bei_einer_epidemischen_Lage_von_nationaler_Tragweite_bgb.pdf

Statistisches Bundesamt. (n.d.). *Bundesländer*. Retrieved May 29, 2024, from https://www.destatis.de/DE/Themen/Laender-Regionen/Regionales/Gemeindeverzeichnis/Glossar/bundeslaender.html

Steffens, U., & Gauchel-Petrovic, D. (2020). Die Nationale Reserve Gesundheitsschutz (NRGS) – widerstandsfähig gegen Krisen. In *Bundesamt Für Bevölkerungsschutz Und Katastrophenhilfe* [Report]. Retrieved May 9, 2024, from

https://www.bbk.bund.de/SharedDocs/Downloads/DE/BSMAG_Artikel/2021-04/2021-04_07.pdf?__blob=publicationFile&v=6

Stöß, C., Haffer, H., Steffani, M., Pergolini, I., Hartmann, D., Nitsche, U., Novotny, A., Friess, H., & Müller, M. W. (2020). Auswirkungen der SARS-COV-2-Pandemie auf die Chirurgie – eine nationale Querschnittsstudie. *PMC - PubMed Central*. https://doi.org/10.1007/s00104-020-01256-x

Third Law for the Protection of the Population in an Epidemic Situation with National Scope (*drittes Gesetz zur Schutz der Bevölkerung bei einer epidemischen Lage von nationaler Tragweite*), German Federal Ministry of Health, (2020c). https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/Gesetze_und_Verordnungen/GuV/B/3._BevSchG_BGBl.pdf

Tsalampouni, A. (2022). Health systems in the European Union and policy responses to Covid-19: A comparative analysis between Germany, Sweden, and Greece. *Sage Journals*, *11*(4), 227990362211294. https://doi.org/10.1177/22799036221129413