

Healthcare in Rural Germany: Barriers and Solutions

Clare Dougherty

German Honors Thesis Winter 2022

German 491/492

Advisor and Primary Reader: Megan Ewing

Second Reader: Tyler Whitney

I'd like to dedicate this thesis to my mom and dad who always encouraged me to pursue my interests regardless of what other people thought. Thank you both for always being my biggest champions and best editors.

And to my grandfather, Frederick Judd. He always believed in me and eagerly supported me in every passion I pursued over the years. Papa, I wish you were here to see all of my efforts come to fruition, but I know you are always watching over me. I will continue to make you proud.

Table of Contents

Introduction	p. 4
Chapter 1	p. 11
Chapter 2	p. 36
Chapter 3	p. 64
Conclusion	p. 87
Bibliography	p. 92
Appendix 1 - Interview Question Responses	p. 107

Introduction

Germany provides healthcare coverage for nearly 100% of its inhabitants. This is thanks to its highly regulated system that includes both Statutory Health Insurance (SHI) and Private Health Insurance (PHI) options.¹ However, equal coverage does not directly equate to equal access to care. In many rural regions throughout the country, citizens face shortages of providers, often leading to long wait times for appointments or requiring them to drive long distances to receive care.² For example, in the Kinzig Valley of Baden-Württemberg, some inhabitants must drive over 45 minutes to reach the nearest hospital.³ Other areas face extremely high patient to provider ratios with some rural pediatricians seeing approximately 2862 patients while their urban counterparts see approximately 2043, a difference of nearly 30%.⁴ In some areas, the supply of general practitioners (GPs) is only 25% of what is needed to adequately care for the area according to the Federal Joint Committee which oversees many aspects of the quality and efficiency of the healthcare system in Germany.⁵ This problem is unlikely to improve without intervention. Many small towns are struggling to attract new physicians to replace those retiring (over 40% of general practitioners in some areas), or to fill existing vacancies.

¹ CNBC (2019), *How Germany's Universal Health-Care System Works*

² Ehmann et al (2020), *The Relationship between Health Literacy, Quality of Life, and Subjective Health: Results of a Cross-Sectional Study in a Rural Region in Germany* and Beyer et al (2020), *Task-Sharing Between Pediatricians and Non-Physician Healthcare Professionals in Outpatient Child Health Care in Germany: Assessment of Need and Acceptance for Concept Development*

³ Ehmann et al (2020), *The Relationship between Health Literacy, Quality of Life, and Subjective Health: Results of a Cross-Sectional Study in a Rural Region in Germany*

⁴ Beyer et al (2020) obtained this data from the Kassenärztliche Bundesvereinigung and used it in their work *Task-Sharing Between Pediatricians and Non-Physician Healthcare Professionals in Outpatient Child Health Care in Germany: Assessment of Need and Acceptance for Concept Development*

⁵ This and the following information comes from Schröder et al (2018), *Mobility concepts and access to health care in a rural district in Germany: a mixed methods approach*

Based on the available data, it is quite clear that Germany is in need of inventive solutions to address this inequity in access to care. Scholars have already posed many potential solutions such as adjusting medical school curriculum or redistributing responsibilities among different types of medical professionals.⁶ My thesis, broadly conceived, explores current deficiencies in healthcare delivery specific to rural regions of Germany. I will also analyze the viability of some of the most frequently stated possible solutions and introduce some that have not yet been well studied. These approaches will be developed in much greater detail throughout the chapters of the thesis.

I engage primarily secondary sources; therefore, the thesis includes a substantial amount of literature review and analysis. Most of these sources are in the format of academic journal articles that analyze small-scale interventions throughout Germany. I also integrate some anecdotal data and quotations from interviews with various medical providers. This qualitative data comes from a German nurse, who has been working in the field for twenty-five years, as well as a current medical student who is in the formative years of her medical training. My goal with incorporating the interviews is to supplement the academic contributions with first-hand accounts. The literature I have reviewed focuses primarily on data and statistical evidence. I wanted to provide my reader with individual perspectives and voices in addition to this data.

⁶ Holst (2015), *Rethinking Medical Training in Germany Towards Rural Health Care* and Beyer et al (2020), *Task-Sharing Between Pediatricians and Non-Physician Healthcare Professionals in Outpatient Child Health Care in Germany: Assessment of Need and Acceptance for Concept Development*

Relevance of the Topic

As a country with a robust healthcare system that provides coverage to nearly its entire population, Germany may not seem like the ideal focus for a study on healthcare disparities and dysfunction. Germany has a solidly developed healthcare system that has been through many phases of change and improvement over the years. Since they have the groundwork of the system well-developed, this allows for a discussion of the best ways to “fine tune” the system. No system is ever perfect, and there will always be individual cases that slip through the cracks. In taking a fine-tooth comb to the German healthcare system and closely examining it for faults, there is the opportunity to improve care for those whom the system is currently under-serving. A system that assumes it is perfect is always far from it. Only through a critical analysis of its faults can the German healthcare system hope to provide efficient, equitable healthcare for all of its citizens.

The American healthcare system can also benefit from an examination of deficiencies in Germany’s system and reflect on similarities and differences within its own system. Although the healthcare system in the United States is structured quite differently than it is in Germany, there have been many calls in recent years for the United States to shift its system towards one that provides universal coverage. Germany’s system could serve as an excellent framework upon which the United States could model its own system. Like Germany, the United States also has a large proportion of rural land with citizens who may face the same barriers to accessing care as their German counterparts. 97% of the land in the United States is considered rural as of 2017, defined as communities with populations of less than 2500 people and

“open-country settings” according to the U.S. Census Bureau.⁷ According to data from the 2010 Census, 19.3% of the total U.S. population resided in rural settings.⁸ Many innovative approaches being implemented and researched in Germany could prove highly beneficial if applied in the United States and many other countries. Examining Germany’s system for both its faults and successes would benefit citizens of many different states looking to improve their healthcare systems.

Connection to German Studies

While the primary goal of this thesis is to analyze the strengths and weaknesses of a healthcare system, it fits into the field of German studies for more reasons than just its focus on healthcare in Germany. Irene Kacandes explores the definition of German studies in her chapter *German Cultural Studies: What is at Stake?*. She defines cultural studies in general as looking at “all aspects of life, from the political to the social and the economic,” and emphasizes that it “draws from whatever fields are necessary to produce the knowledge required for a particular project.”⁹ The work in this thesis will draw from multiple fields simultaneously, including public health, public policy, sociology, and human geography in the German context, to develop a work that examines the German healthcare system. Barriers to care are culturally specific and thus it is necessary to understand the beliefs of the German people, such as the prestige they place upon physicians, in order to assess and address the deficits in their healthcare system.

⁷ Slack and Jensen (2020), *The Changing Demography of Rural and Small-Town America*, p.777 and US Census Bureau (2017), *One in Five Americans Live in Rural Areas*

⁸ Ratcliffe et al (2016), *Defining Rural at the U.S. Census Bureau*, p.1

⁹ Kacandes (1997) takes the information in this quote from Nelson et al, p.2 and Gilman, p.202 for use in her work *A User's Guide to German Cultural Studies*, p.7

By developing a basis of knowledge on the structure of the German healthcare system and then exploring a case study, I hope to illustrate how some of the current problems with the system are unique to Germany. For example, some of the issues exist because of the German mentality of holding doctors in such high esteem that they view the authority of other providers, such as nurses, with some skepticism.¹⁰ This means that German doctors are often overworked, and the solution of delegating tasks to other types of providers may be met with resistance from German patients. However, the German mentality of the “*Solidarprinzip*”¹¹ also means that German citizens are determined to provide for and care for one another- the young provide for the old, the rich help the poor, and employers support employees.¹² This framework allows for innovative solutions and a determination to develop the best system possible that provides all citizens with the care they need to lead healthy, productive lives.

Thesis Roadmap

This thesis will be broken into three main chapters. The first will give a relatively brief yet crucial overview of the structure of the German healthcare system. The purpose of this chapter is to ensure the reader has adequate background knowledge of how the German healthcare system *should* function, to be contrasted in a later chapter

¹⁰ Physicians have long been held in a place of high prestige in German society, often ranking among the top five most respected professions in consumer surveys. This position in society means patients and physicians alike are unlikely to accept any structural changes to the division of responsibilities among medical professionals as it could hurt the image of physicians in German society. However, experiences such as long wait times and short interactions with physicians are currently hurting patients' image of physicians. These problems could be addressed with the solutions I will discuss in later chapters, providing an interesting situation in which the solution, while obvious, may not be well accepted. For more information, see Heier and Marstedt (2012), *Das Arztimage in der Bevölkerung: Im Schatten von „IGeL“ und „Zweiklassenmedizin.“*

¹¹ Solidarprinzip - Solidarity principle

¹² Kuhlmann (2011), *Citizenship and healthcare in Germany: Patchy activation and constrained choices*, p.32

with how it *actually* functions nationwide. I will also lay out its biggest stumbling blocks overall, as well as those that are more pronounced in rural regions. This will allow me to delve into the dysfunction at the state level in a future chapter, as well as to analyze the merits of proposed solutions as well as how realistic they are given the constraints under which they would be operating.

The second chapter will focus on a single *Bundesland*¹³ to examine how the system functions at the state and local levels. I have chosen Mecklenburg-Vorpommern, Germany's most rural state, for this case study due to its large proportion of rural inhabitants and the variety of research pursuits that are currently exploring the improvement of care within the state.¹⁴ I will analyze a variety of graphics in this chapter that nicely visualize gaps in Mecklenburg-Vorpommern's care system.

The third and final chapter will evaluate some of the proposed solutions to the major problems raised in Chapters 1 and 2. I will provide the details of various studies examining applications of these solutions in different settings. My goal is to paint a picture of the innovation in the field and thereby illustrate that a combination of these solutions will be necessary to meet the challenges currently facing the system from all angles.

It is important to note that the issues and solutions I address in the following chapters do not constitute an exhaustive list of those currently at play in Germany. This topic is multifaceted and complex, thus it would be beyond the scope of this thesis to adequately address every relevant feature. For instance, I will discuss the current

¹³ Bundesland - German state

¹⁴ Beyer et al (2020), *Task-Sharing Between Pediatricians and Non-Physician Healthcare Professionals in Outpatient Child Health Care in Germany: Assessment of Need and Acceptance for Concept Development*

financing of the German healthcare system in Chapter One to provide the reader with a basic understanding of how payment responsibility is distributed among relevant parties. I will not, however, delve into the intricacies of how alterations in the healthcare structure could influence remuneration for physicians and financial responsibilities for patients, providers, and insurance companies. This topic, while incredibly important, could easily be a research study in its own right and would overshadow many of the other innovative approaches I hope to illuminate in this thesis.

Although I will not be able to tackle every challenge facing Germany's healthcare system and emerge with a perfect solution, I hope this thesis will inspire researchers and lay readers alike to continue exploring ways to improve healthcare delivery to marginalized populations in Germany and beyond.

Chapter 1: Overview of the German Healthcare System

At first glance, the German healthcare system is a complex web dominated by the interests and powers of groups ranging from patients to hospital administrators to statutory health-accredited physicians. In the following chapter, I will lay out the basic organizational structure of the healthcare system. I will begin with a detailed discussion of Private Health Insurance (PHI) and Statutory Health Insurance (SHI), comparing their similarities and differences to provide a framework upon which I will build in future chapters. I then shift to a discussion of the most salient challenges facing the German healthcare system today, with a focus on rural areas. Germany's Federal Institute for Research or Building, Urban Affairs, and Spatial Development (*Bundesinstitut für Bau-, Stadt-, und Raumforschung*) defines a rural area as having a population density less than one hundred fifty inhabitants per square kilometer.¹⁵ This is the definition I will employ throughout the thesis. According to Statista, approximately 22% of the German population lived in a rural location as of 2019.¹⁶ Finally, I conclude this chapter with a brief introduction to healthcare in the federal state of Mecklenburg-Vorpommern, which sets the stage for the next chapter where I will use the situation there as a case study.

¹⁵ Schröder et al (2018), *Mobility concepts and access to health care in a rural district in Germany: a mixed methods approach*

¹⁶ World Bank (2020), *Urban and rural population of Germany 2019*

Scholars of Note

Before delving into the meat of the topic, I would like to introduce some of the important scholars in this area, whose work I will cite abundantly throughout this chapter. Susan Giaimo is a professor at Marquette University who teaches in both the political science and biomedical sciences departments. This dual appointment gives her a unique perspective into how policy shapes health delivery in a country's healthcare system. She compares the healthcare structures of a variety of countries in her work and offers a realistic analysis of the failures of different systems as well as possible solutions, given the political constraints under which these systems are formed.

Another important voice in this discussion is Jens Holst. Professor Doctor Holst is a professor of medicine with a concentration in global health at the Institute of General Practice and Family Medicine, Magdeburg, Germany. I will reference his work continuously throughout this thesis,¹⁷ as he has written extensively on novel approaches to addressing the physician shortages rural Germany faces.

I also draw a significant amount of information from governmental and non-profit sources such as the Institute for Quality and Efficiency in Healthcare (*das Institut für Qualität und Wirtschaftlichkeit im Gesundheitswesen*) and the Commonwealth Fund, an organization developed to improve health care system quality, access, and efficiency through funding research into healthcare practice and policy.¹⁸ The Institute for Quality and Efficiency in Healthcare was created under the Social Health Insurance Modernization Act of 2004 to look at the “[...] clinical effectiveness of treatments” and

¹⁷ Holst (2015), *Rethinking Medical Training in Germany Towards Rural Health Care* and Holst et al (2015) *Strengthening training in rural practice in Germany: New approach for undergraduate medical curriculum towards sustaining rural health care*

¹⁸ For more information on the work of the Commonwealth Fund, see <https://www.commonwealthfund.org/about-us>

advise the Federal Joint Committee based on its findings.¹⁹ I hope through a synthesis of evidence found in the work of these scholars and sources to illuminate areas where even these experts have outstanding questions.

SHI versus PHI

The German healthcare system has gone through a series of reforms since its inception under Chancellor Otto von Bismarck in the 1880s.²⁰ Despite some changes, such as allowing citizens to choose their sickness fund²¹ beginning in the 1990s, the basic structure of the system has remained relatively constant. As Ellen Kuhlmann puts it in her book *Participation, Responsibility, and Choice* (2011), the two basic pillars of the German healthcare system are sickness funds and medical associations.

Sickness funds are the equivalent of health insurance companies in the American system. They are further divided into those providing statutory health insurance (SHI) and those providing private health insurance (PHI).²² Both types of funds provide similar services and coverage; however, there are some differences in costs to those covered, who can be covered, and what is covered under each type of fund.

As of 2020 there are 42 different private insurance companies.²³ PHI qualification is based on income over three consecutive years. Anyone earning approximately 5212.50 Euros or higher each month, as of 2020, is allowed to opt out of statutory

¹⁹ Giaimo (2016), *Reforming Health Care in the United States, Germany, and South Africa*, pp.123-124

²⁰ Giaimo (2016), *Reforming Health Care in the United States, Germany, and South Africa*, p.97

²¹ *Krankenkasse* - health insurance provider

²² Tikkanen et al (2020), *International Health Care System Profiles: Germany*

²³ This and the following are based on Giaimo (2016), *Reforming Health Care in the United States, Germany, and South Africa*, p.100, the Commonwealth Fund (2021), *International Health Care System Profiles: Germany*, and CNBC (2019), *How Germany's Universal Health-Care System Works*.

coverage and elect private coverage instead.²⁴ In addition, self-employed individuals can elect to have private coverage, yet 75% of people above the income threshold or who are self-employed choose to keep their statutory coverage.²⁵ There are a variety of PHI plans to choose from, ranging from full coverage to supplementary plans elected in addition to standard plans.²⁶ Private insurance is not subsidized by the government and, therefore, prices tend to be slightly higher than those under statutory insurance.²⁷ Whereas SHI premiums and copays are income-dependent, with those in lower income brackets paying lower out-of-pocket costs, PHI premiums are risk-related, and individuals must pay a separate premium for any dependents they wish to add to their coverage.²⁸ In addition, PHI patients must pay for their services at the time they are provided and submit claims for reimbursement. All sickness funds are required to offer a “comprehensive minimum benefits package”, but many private insurers offer additional coverage above these minimum requirements to justify their higher prices.²⁹ Citizens are expected to pay no more than 840 Euros per month under PHI, although this number may look different for different people depending on a person’s income and how much they can afford to pay.³⁰ Monthly premiums are also based on health risks for the insured and increase as a person ages and/or experiences expensive health conditions.

All citizens are automatically enrolled in SHI and must opt out if they fall in any of the categories discussed above. All SHI coverage plans must provide, at a minimum,

²⁴ Federal Ministry of Health (2020), *The German healthcare system*, p.8

²⁵ Tikkanen et al (2020), *International Health Care System Profiles: Germany*

²⁶ The Institute for Quality and Efficiency in Healthcare (2018), *Health care in Germany: The German health care system*

²⁷ Tikkanen et al (2020), *International Health Care System Profiles: Germany*

²⁸ This and the following are based on information from Tikkanen et al (2020), *International Health Care System Profiles: Germany*

²⁹ Giaimo (2016), *Reforming Health Care in the United States, Germany, and South Africa*, p.121

³⁰ This and the following are based on information from CNBC (2019), *How Germany’s Universal Health-Care System Works*.

coverage of preventative services, hospital care, mental health services, dental, vision, physical therapy, hospice, maternity care, and sick leave pay.³¹ Approximately 88% of the German population was enrolled in SHI as their primary coverage in 2020, illustrating the popularity and success of this system. Unlike PHI, SHI coverage includes coverage of dependents at no extra cost to the plan-holder. To keep Statutory Health Insurance affordable while still providing enough income to finance these extensive coverage packages, copays and monthly payments are proportional to the planholders' incomes through a form of "risk pooling" where the healthier and wealthier citizens contribute more to help take care of the sicker and poorer citizens.³²

Approximately 1% of citizens are uninsured or under-insured, such as prisoners, military members, and civil servants working in courts or prisons.³³ This is quite impressive compared to the United States, a country without universal health care, where 8.6% of the population was uninsured in 2020.³⁴ Poland also has universal coverage like Germany; however, 9% of its population is uninsured.³⁵ This number may also be significantly higher than Germany's because it includes Polish citizens living abroad. The state attempts to decrease the number of uninsured citizens by requiring them to return to SHI. It also helps people with low incomes pay for their coverage and prevents insurers from dropping customers who don't pay or who have expensive medical conditions.³⁶ Controlling the number of uninsured people will continue to be a

³¹ This and the following are based on information from Tikkanen et al (2020), *International Health Care System Profiles: Germany*

³² Giaimo (2016), *Reforming Health Care in the United States, Germany, and South Africa*, p.130

³³ Sundmacher and Ozegowski (2016), *Regional distribution of physicians: The role of comprehensive private health insurance in Germany*

³⁴ Keisler-Starkey and Bunch (2021), *Health Insurance Coverage in the United States: 2020*

³⁵ This and the following information are from OECD/European Observatory on Health Systems and Policies (2019), *Poland: Country Health Profile 2019, State of Health in the EU*

³⁶ Giaimo (2016), *Reforming Health Care in the United States, Germany, and South Africa*, p.135

challenge, though, as more and more people switch to less traditional employment, including part-time or free-lance work, that does not afford them access to stable health care through their employers.³⁷ The state will also have to work continuously with providers' organizations, hospital representatives, and sickness funds, among other stakeholder groups, to ensure costs are kept affordable in order to decrease the number of people choosing to have no coverage.

Both SHI and PHI are technically independent entities of the federal and state governments; however, they both work under strict regulations enforced by state agencies, particularly the Federal Joint Committee (FJC) (*Gemeinsamer Bundesausschuss*).³⁸ The FJC was created under the Social Health Insurance Modernization Act of 2004 to ensure quality care delivery and to represent the interests of all health care stakeholders. The FJC receives input from the Institute for Quality and Efficiency in Health Care to provide "clinical guidelines" and determine what services under inpatient, outpatient, and dental care should be covered by sickness funds. The Federal Joint Committee (FJC) also has the critical role of determining how many SHI-licensed physicians can practice in an area, a fact which will become important as I discuss the distribution of providers in future chapters.³⁹

The Federal Joint Committee is composed of health insurance representatives, physicians, hospital association representatives, and other stakeholders in the medical field.⁴⁰ The thirteen appointed members, who do not include non-voting patient representatives, serve six year terms and include the following members:⁴¹

³⁷ Giaimo (2016), *Reforming Health Care in the United States, Germany, and South Africa*, p.115

³⁸ This and the following information are from Giaimo (2016), *Reforming Health Care in the United States, Germany, and South Africa*, pp.123-124

³⁹ Tikkanen et al (2020), *International Health Care System Profiles: Germany*

⁴⁰ Holst (2015), *Rethinking Medical Training in Germany Towards Rural Health Care*

⁴¹ Gemeinsamer Bundesausschuss Members - *Gemeinsamer Bundesausschuss*

- One impartial chair and more two impartial members with no direct affiliation to any stakeholder group
- Five members chosen by the Central Federal Association of Health Insurance Funds (*GKV-Spitzenverband*)
- Two members chose by the German Hospital Federation (*Krankenhausgesellschaft*)
- Two members chosen by the National Association of Statutory Health Insurance Physicians (*Kassenärztliche Bundesvereinigung*)
- One member chosen by the National Association of Statutory Health Insurance Dentists (*Kassenzahnärztliche Bundesvereinigung*)

These members are in charge of determining what services will be covered by SHI plans, a task delegated to the Plenary Group of the FJC, as well as how many physicians of any given specialty may practice in an area.⁴² They are also responsible “health care quality assurance,” and they do so “with help from the Institute for Quality and Efficiency in Health Care” (*Institut für Qualität und Wirtschaftlichkeit im Gesundheitswesen*).⁴³ Patient representatives act as advisors to the FJC, but they have no voting capacity on any decisions the FJC makes.⁴⁴ It is also important to note that all members of the FJC are experts in their respective fields; they are not politicians.⁴⁵ While one would hope this would make them impervious to outside influences, they

⁴² Based upon information from Holst (2015), *Rethinking Medical Training in Germany Towards Rural Health Care*, Sundmacher and Ozegowski (2016), *Regional distribution of physicians: The role of comprehensive private health insurance in Germany*, and Giaimo (2016), *Reforming Health Care in the United States, Germany, and South Africa: Comparative Perspectives on Health*, p.123

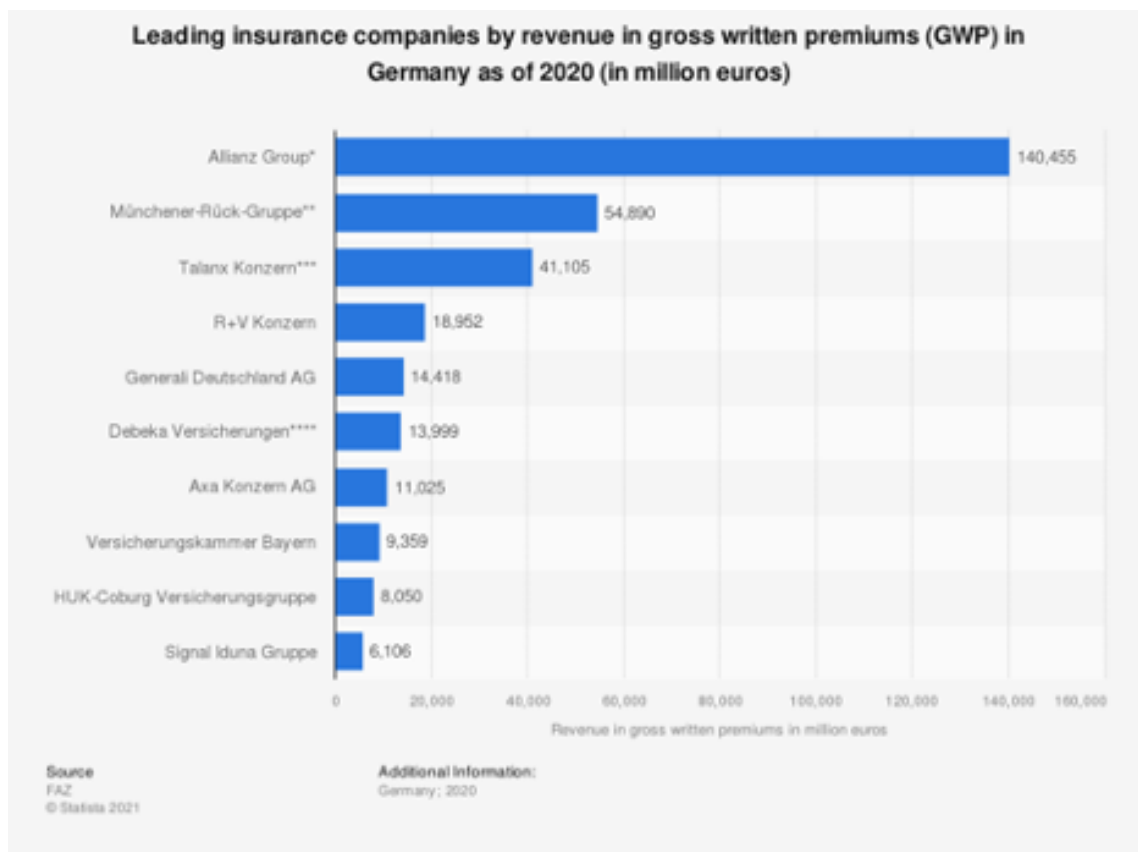
⁴³ The Institute for Quality and Efficiency in Healthcare (2018), *Health care in Germany: The German health care system*

⁴⁴ Tikkanen et al (2020), *International Health Care System Profiles: Germany*

⁴⁵ Giaimo (2016), *Reforming Health Care in the United States, Germany, and South Africa: Comparative Perspectives on Health*, p.124

obviously want all FJC decisions to benefit their respective groups and thus are not entirely objective. The FJC also has a variety of subcommittees dedicated to specific topics such as the Quality Assurance Subcommittee, the Highly Specialized Outpatient Care Subcommittee, and the Needs Planning Subcommittee, all of which are headed by one of the impartial members of the FJC.⁴⁶

Throughout the years, the number of sickness funds has varied; however, there are currently a few names that stand out as major players insuring large portions of the German population. The graphic below illustrates the top insurance providers based on their revenue in gross written premiums.



Graphic taken from Statista⁴⁷

⁴⁶ Gemeinsamer Bundesausschuss *Subcommittees - Gemeinsamer Bundesausschuss*

⁴⁷ Original source is Frankfurter Allgemeine Zeitung (2021) *Germany: leading insurance companies by GWP 2020*

Costs and Financing

This extensive system of coverage requires an equally extensive system of financing. Key stakeholders in this financing system include employers, employees, and the state. Both employers and employees are required to contribute some of their earnings to paying for coverage.⁴⁸ Workers pay 7.3% of their salaries and employers pay an additional 7.3% of costs. Unemployed citizens and any individual receiving social welfare are covered by unemployment insurance or the municipalities in which they reside; these costs are covered by the state. Once all parties' contributions are collected, they are pooled into a single "Gesundheitsfond" and divided proportionally among the individual sickness funds based on the number of members they have and the health statuses of their members.⁴⁹ The below graphic provides a basic breakdown of this structure. Note that the graphic lacks an input for coverage of unemployed citizens, but they too are covered by federal subsidies just as children are. The graphic is also based on data from 2009, so while the contribution rates are still the same, the number of sickness funds is now slightly different, at about 109 public non-profit firms.⁵⁰

⁴⁸ This and the following information are from Holst (2015), *Rethinking Medical Training in Germany Towards Rural Health Care*

⁴⁹ Tikkanen et al (2020), *International Health Care System Profiles: Germany* and Giaimo (2016), *Reforming Health Care in the United States, Germany, and South Africa*, p.132

⁵⁰ Tikkanen et al (2020), *International Health Care System Profiles: Germany*

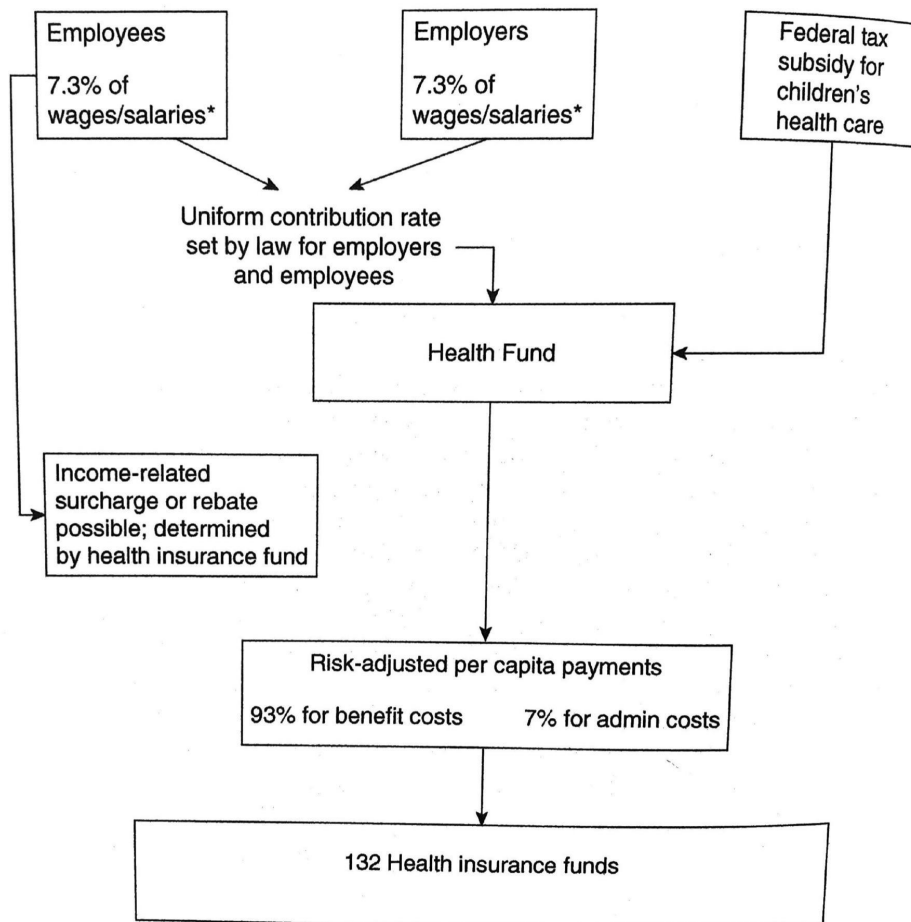


Figure 3.2 Financing flows in German social health insurance since 2009.

This graphic was extracted from the Giaimo (2016) *Reforming Health Care in the United States, Germany, and South Africa: Comparative Perspectives on Health*⁵¹

⁵¹ Original source is Adapted from Hoyer, *Social Health Insurance in Germany and the Market Position of the TK*, 2009, p.16; and Lisac, "Health Care Reform in Germany: Not the Big Bang" (2006); and Busse, Reinhard and Miriam Blümel. 2014. *Germany: Health System Review*, vol. 16, issue 2, *Health Systems in Transition*. European Observatory on Health Systems and Policies

Physicians are also paid differently depending on whether their patients have SHI or PHI coverage. All physicians who are SHI-licensed are required to spend at least 20 hours per week or about 40% of their work hours treating SHI patients.⁵² German physicians are divided into many categories, including specialists versus generalists and ambulatory, or outpatient, versus hospital, or inpatient, providers. SHI-licensed physicians, which include 97% of ambulatory physicians in Germany, are paid on a fee schedule using a quota system.⁵³ Once they reach a predetermined service quota for a quarter, they will only receive partial reimbursement for any services performed over and above this number.⁵⁴

This is not the case for treating PHI patients. There is no quota system in place when it comes to treating privately insured patients, and physicians receive higher compensation for services performed on PHI patients.⁵⁵ In addition, physicians can charge patients up to 3.5 times the standard fee rate for a particular service.⁵⁶ Patients must pay whatever costs the insurance company does not cover out of pocket, resulting in high remuneration for physicians treating privately insured patients. In 2013, “...SHI-licensed physicians in the ambulatory sector generat[ed] on average 27% of their income from privately insured patients, who make up less than 15% of the population.” Although these figures are from 2013, in 2020 the Leibniz-Institut für Wirtschaftsforschung in Essen⁵⁷ found that, as a result of this higher remuneration

⁵² Sundmacher and Ozegowski (2016), *Regional distribution of physicians: The role of comprehensive private health insurance in Germany*, p.444 and Heydom et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.63

⁵³ Sundmacher and Ozegowski (2016), *Regional distribution of physicians: The role of comprehensive private health insurance in Germany*, p.444

⁵⁴ Tikkanen et al (2020), *International Health Care System Profiles: Germany*

⁵⁵ This and the following come from Sundmacher and Ozegowski (2016), *Regional distribution of physicians: The role of comprehensive private health insurance in Germany*, p.444

⁵⁶ This and the following are from Gerlinger (2017), *Vergütung privatärztlicher Leistungen*

⁵⁷ *Institut für Wirtschaftsforschung* - Institute for Economic Research

system, PHI patients wait approximately 12 days for an appointment while their SHI counterparts wait 25 days on average.⁵⁸ Physicians are still prioritizing treating PHI patients to increase their incomes.

Already, it is evident how this system incentivized doctors to settle in regions where higher proportions of the population are privately insured. Additionally, these aforementioned regions tend to be in urban rather than rural areas, exacerbating the provider shortage in rural areas.⁵⁹

Medical associations also play a critical role in shaping healthcare policy and procedure. These associations represent providers, non-physician medical professionals, hospitals, insurance funds, and others to ensure their interests are considered in policy making. Some of the key players are as follows:⁶⁰

- The National Association of Statutory Health Insurance Funds (*GKV-Spitzenverband*)
- The National Association of Statutory Insurance Physicians (*Kassenärztliche Bundesvereinigung*)
- The German Hospital Federation (*Krankenhausgesellschaft*)
- State-level physician, dentist, psychotherapist, and pharmacist chambers (*Ärzte-, Zahnärzte-, Psychotherapeuten- und Apothekerkammern*)
- The Public Health Service (*Öffentlicher Gesundheitsdienst*)
- Patient organizations and self-help groups (*Patientenorganisationen und Selbsthilfegruppen*)

⁵⁸ Becker (2020), *Privatpatienten wurden bevorzugt*

⁵⁹ Kuhn et al (2017), *Which strategies might improve local primary healthcare in Germany? An explorative study from a local government point of view.*

⁶⁰ Heydorn et al (2021), *Abschlussbericht: der Enquete Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern*, pp.22-25 and The Institute for Quality and Efficiency in Healthcare (2018), *Health care in Germany: The German health care system*

- The Federal Ministry of Health (*das Bundesgesundheitsministerium*)
- The Federal Joint Committee (*Gemeinsamer Bundesausschuss*)

These groups each have individual responsibilities as well as joint interactions. For example, state-level provider organizations are in charge of licensing and board examinations within their state.⁶¹ Representatives from these different groups come together at the federal level in the form of the Federal Joint Committee to determine which services will be covered, and at what costs, and to lobby for their groups' interests.⁶²

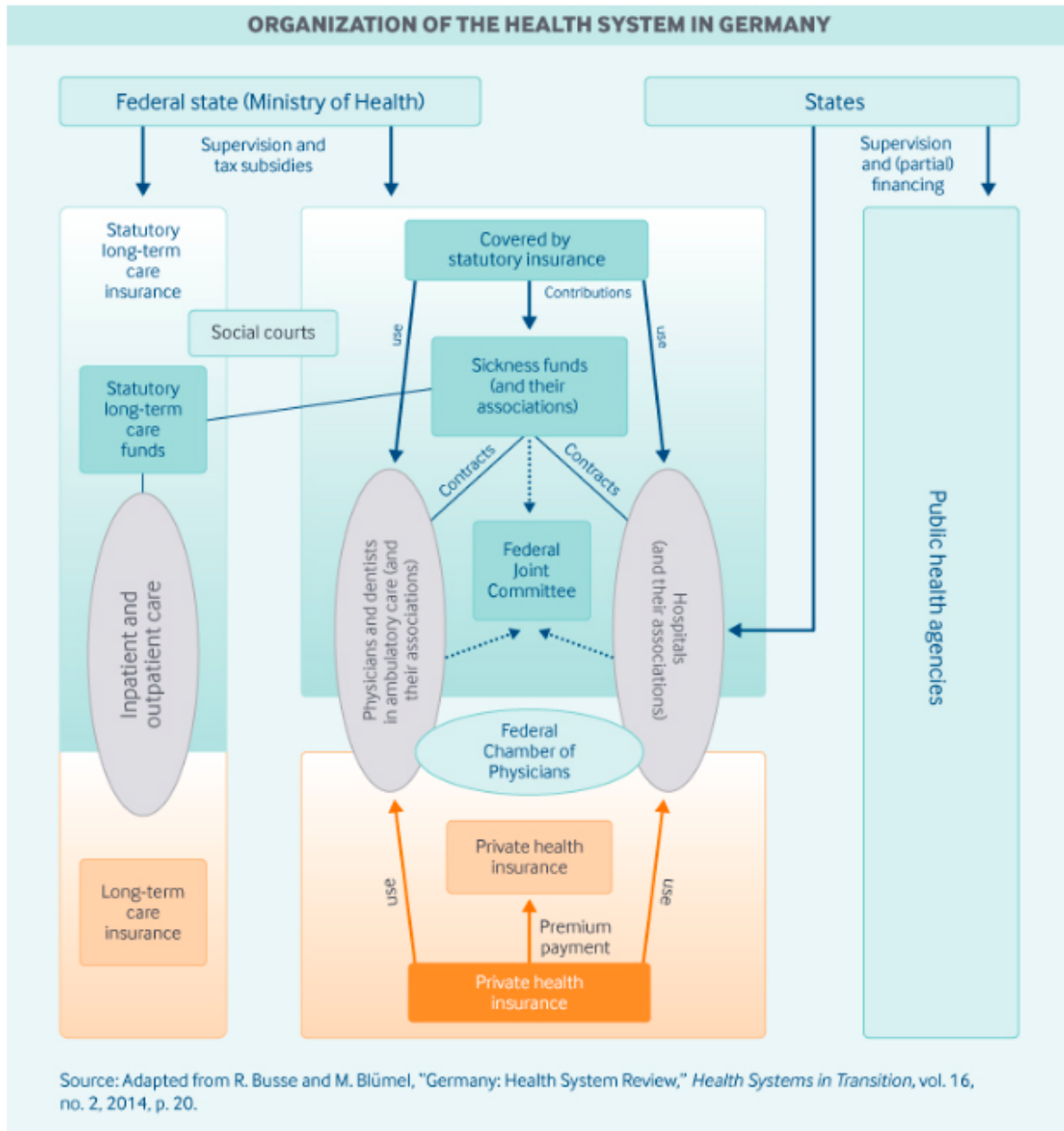
All of these groups are in charge of representing their respective members and advocating for them in health policy discussions. Often, they may have competing interests that inhibit efficient policy negotiations and make it difficult for all of the different groups to reach a consensus on new laws and regulations.⁶³ For example, insurance fund representatives (*GKV-Spitzenverband*) and SHI-physician representatives (*Kassenärztliche Bundesvereinigung*) may disagree on the fee doctors should receive for each service they perform. Doctors would prefer higher remuneration whereas insurance funds would prefer lower fees to increase their profit margins. These conflicting views can protract negotiations on fee-for-service guidelines. It is also important to note that patient representatives act as advisors to the FJC but do not have the capacity to vote on any decisions the committee makes.⁶⁴

⁶¹ The Institute for Quality and Efficiency in Healthcare (2018), *Health care in Germany: The German health care system*

⁶² Giaimo (2016), *Reforming Health Care in the United States, Germany, and South Africa*, pp.104-106

⁶³ Holst (2015), *Rethinking Medical Training in Germany Towards Rural Health Care*

⁶⁴ Tikkanen et al (2020), *International Health Care System Profiles: Germany*



This graphic was extracted from Tikkanen et al (2020) *International Health Care System Profiles: Germany*.⁶⁵

⁶⁵ Original source is R. Busse and M. Blümel, "Germany: Health System Review," *Health Systems in Transition*, vol. 16, no. 2, 2014, p.20

Salient Issues in the German Healthcare System

The German healthcare system has a history marked primarily by success. However, it is not perfect, and there are areas in which the system is not living up to its potential and promises. Across the country, a major issue is the “Digitalisierungsdilemma des deutschen Gesundheitswesens” (The Digitization Dilemma of the German Healthcare System).⁶⁶ While digitizing patient information and records is crucial for integration of care across different facilities, the rate of progress in this arena is inadequate to meet providers’ needs. This deficit has been even more evident as the Coronavirus pandemic rages on, and hospitals are faced with high numbers of critically ill patients. Without digital patient information, providers may lack the necessary information to properly treat their patients. Also of note is the shortage of skilled nurses to care for critically ill patients. This results in current providers being overworked and delivering a lower quality of care.

Even outside of the acute care setting, access to quality health care continues to be an issue, particularly for poorer patients and those with migration backgrounds. For example, Hamburg is one of Germany’s wealthiest cities, yet its poorer neighborhoods Veddel and Billstedt lack the same degree of health as wealthier areas of the city.⁶⁷ Residents in these neighborhoods face “...high rates of chronic illnesses such as diabetes, depression, and heart disease...Treatment and preventive care are difficult to access” (Luthra). Part of the challenge is that doctors are unwilling to work in these areas, and this is true for general practitioners and specialists alike. Despite cost not

⁶⁶ This and the following information are from Schreyögg (2020), *Corona-Krise trifft auf Strukturprobleme im Gesundheitswesen*

⁶⁷ This and the following information are from Luthra (2019), *Poor People Are Still Sicker Than The Rich In Germany, Despite Universal Health Care*

being a barrier to care for patients, Germany's population still has stark gaps in health status across groups because "social determinants of health" play a critical role in people's health. These include factors such as access to healthy food at a reasonable cost, air quality, housing, and time to seek medical care. These factors are much more debilitating for poorer citizens and are part of the reason why life expectancy in Veddel and Billstedt is thirteen years lower than in wealthier parts of Hamburg.

Immigrants also face their own unique set of challenges in accessing healthcare in Germany. As of 2002, immigrants made up 8.9% of the German population, and this number has grown significantly in the past two decades.⁶⁸ In 2020, the number of "people with a migration background" living in Germany was up to 26.7% of the population.⁶⁹ While migrants do not typically have a higher mortality rate than German citizens, their status as immigrants does create barriers to receiving care, leaving them "gesundheitlich eingeschränkt" (limited or restricted from a health standpoint) (Razum 2885).⁷⁰ For example, immigrants face a communication barrier with German providers that includes not only a language barrier, with many of them lacking the necessary vocabulary to describe complex medical symptoms in German, but also a cultural barrier. This cultural barrier can make it challenging for physicians and patients to mutually grasp the gravity of the situation and determine a course of treatment that respects the beliefs of both parties.

The above issues are those faced country-wide, and they represent only a small subset of issues with the current healthcare system. In the following sections, I will

⁶⁸ This and the following information come from Razum (2004), *Gesundheitsversorgung von Migranten*, pp.2882-2887

⁶⁹ Mediendienst Integration, *Facts and Figures*

⁷⁰ This and the following information come from Razum (2004), *Gesundheitsversorgung von Migranten*, pp.2882-2887

zoom in further to explore some of the most substantial issues as they pertain to rural areas of the country.

Provider Shortages

Although this system is well developed and has many positive aspects, there are areas of inefficiency, especially when it comes to providing care in more remote areas. The most critical issue currently facing rural regions is the deficit of healthcare providers. In 2016, 40% of Germany's doctors were poised to retire soon due to their advanced age, including 33% of general practitioners (GPs), compared to the 32% average among Organization for Economic Co-operation and Development (OECD) countries.⁷¹ Despite this high rate of retirement, only 10% of new doctors are choosing to be generalists; ideally, this number would be as close to 33% as possible to replace retiring GPs.⁷² Generalists are in great demand in rural areas. They have the capability to act as “gatekeepers” who determine whether patients need to be referred to specialists, an important role for improving the efficiency of the healthcare system.⁷³ There are a variety of reasons for this issue, including doctors aging out of the workforce, structural incentives for physicians to practice in more populated areas, doctors moving abroad, and insufficient education and preparation for rural positions. I will explore each of these factors in more depth in Chapter 3.

⁷¹ Flum et al (2016), *Can a “rural day” make a difference to GP shortage across rural Germany?* and Wilhelmi et al (2018), *What leads to the subjective perception of a ‘rural area’? A qualitative study with undergraduate students and postgraduate trainees in Germany to tailor strategies against physician’s shortage*

⁷² Wilhelmi et al (2018), *What leads to the subjective perception of a ‘rural area’? A qualitative study with undergraduate students and postgraduate trainees in Germany to tailor strategies against physician’s shortage*

⁷³ Rosano et al (2013), *Preventable hospitalization and the role of primary care: a comparison between Italy and Germany*

Provider Distribution

Further exacerbating the problem is that many doctors tend to prefer practicing in urban areas. Most medical schools are situated in urban areas with sufficient resources, so medical students are more comfortable working in these kinds of settings.⁷⁴ Rural practices and hospitals, in contrast, tend to lack many of the resources and advanced technologies one might find in a university or urban setting. In addition, physicians tend to prefer to work in areas where a larger percentage of the population is privately insured.⁷⁵ Physicians with more privately insured patients have the potential to earn more than those with primarily SHI patients.⁷⁶ The areas of high PHI coverage tend to be in urban rather than rural areas, drawing practitioners away from increasingly underserved areas. While providers in rural areas have the potential to earn approximately 227,000 Euros per year while their urban counterparts earn approximately 207,000 Euros per year, this difference is often offset by PHI earnings in urban areas.⁷⁷ This difference also does not account for the fact that rural physicians tend to be overworked and lacking in the quality of life urban physicians enjoy. New doctors have also stated negative associations with rural areas such as poor access to public transit, long hours in practices where they are the sole provider, and a less robust

⁷⁴ Holst et al (2015), *Strengthening training in rural practice in Germany: New approach for undergraduate medical curriculum towards sustaining rural health care*

⁷⁵ Kuhn et al (2017), *Which strategies might improve local primary healthcare in Germany? An explorative study from a local government point of view*

⁷⁶ Kuhn et al (2017), *Which strategies might improve local primary healthcare in Germany? An explorative study from a local government point of view* and CNBC (2019), *How Germany's Universal Health-Care System Works*

⁷⁷ Sundmacher and Ozegowski (2016), *Regional distribution of physicians: The role of comprehensive private health insurance in Germany*, p.447

infrastructure compared to the convenience, educational options, and cultural offerings of cities.⁷⁸ These factors further dissuade them from settling in rural areas.

A smaller part of the problem is some German doctors choosing to work abroad. According to data from the German Medical Association, approximately 3,000 German doctors have taken jobs outside of Germany each year since 2010 due to the potential for higher income and better training opportunities.⁷⁹ While this is not the most striking reason for provider shortages in certain areas, it could be interesting to consider what Germany could learn from these more appealing countries and incorporate these lessons into its own system to better retain its physicians. I will explore this idea briefly in the conclusion of the thesis but will have to leave the majority of the work to future scholars.

Cost versus Quality

Another critical issue facing many German providers and hospitals is balancing the often conflicting priorities of cost and quality. As Susan Giaimo succinctly states, the goals of any healthcare system are to “...ensure equitable access to high quality care at a reasonable cost (to the individual and the country),” or put more simply, countries must balance “...accessibility, affordability, and quality of care.”⁸⁰ While the FJC sets important quality guidelines for SHI providers and insurers, there is often a struggle for

⁷⁸ Wilhelmi et al (2018), *What leads to the subjective perception of a 'rural area'? A qualitative study with undergraduate students and postgraduate trainees in Germany to tailor strategies against physician's shortage*

⁷⁹ This data was obtained from Harriet Torry's (2015) article “Germany Seeks Foreign Cure for its Doctor Shortage.” Torry obtained her data from the German Medical Association website. Data was also obtained from Zavlin et al (2017), *A comparison of medical education in Germany and the United States: From applying to medical school to the beginnings of residency*

⁸⁰ Giaimo (2016), *Reforming Health Care in the United States, Germany, and South Africa: Comparative Perspectives on Health*, pp.1,5

providers to continue to provide quality care given their resources.⁸¹ For example, over-extended providers in remote areas often struggle to provide the highest quality of care as they become run down from long hours of seeing a high volume of patients every day.⁸² Although Vu-Eickmann and her colleagues found that higher salaries may improve both job satisfaction and quality of care, this is often easier said than done, particularly for providers who own their own practices in rural regions and who are constrained by the regulations the FJC places upon them concerning reimbursement. The FJC helps set service quotas dictating how many times a physician can perform a given service and be reimbursed for it.⁸³ Once the physician reaches this quota, any further iterations of this service they perform will only result in partial reimbursement.⁸⁴ However, this rule only pertains to SHI-licensed physicians treating SHI patients. Physicians who treat PHI patients are not constrained by the quota system and thus have the potential to earn more money by treating more PHI patients, as their remuneration for such services are strictly fee-for-service.⁸⁵ This structure places rural providers at a disadvantage compared to their urban counterparts since rural inhabitants tend to have SHI rather than PHI insurance while PHI insurance is more common in urban areas.

It is also important to consider that there are many subcategories of quality including structural quality, e.g. having qualified personnel treat you in an updated

⁸¹ Tikkanen et al (2020), *International Health Care System Profiles: Germany*

⁸² This and the following are based on information from Vu-Eickmann et al (2018), *Associations of psychological working conditions with health outcomes, quality of care and intentions to leave the profession: results from a cross-sectional study among physician assistants in Germany*

⁸³ Sundmacher and Ozegowski (2016), *Regional distribution of physicians: The role of comprehensive private health insurance in Germany*, p.444

⁸⁴ Sundmacher and Ozegowski (2016), *Regional distribution of physicians: The role of comprehensive private health insurance in Germany*, p.444

⁸⁵ This and the following information are from Sundmacher and Ozegowski (2016), *Regional distribution of physicians: The role of comprehensive private health insurance in Germany*, pp. 444,450

facility, and process quality, e.g. receiving empathy from the staff who treat you.⁸⁶

Increasing providers' salaries may not automatically improve all of these more nuanced aspects of care quality.

Higher quality care is often correlated with the use of innovative medical technologies; however, these also tend to be expensive.⁸⁷ Hospitals that treat smaller patient populations often struggle to justify these costs, even though it would improve the quality of care they could provide, because it could be fiscally challenging for them to recoup the costs.⁸⁸

Medical Education

Even before physicians enter the workforce, there are already systemic problems with German medical education that discourage medical students from practicing in rural areas. Since most medical schools are located in urban areas, medical students tend to lack exposure to rural practice before graduating.⁸⁹ Holst, Normann, and Herrmann point out that "...undergraduate training provides future physicians with vast opportunities to learn and appreciate technologically advanced procedures used in specialised health care for treating complex diseases."⁹⁰ While this is useful for preparing students to work in clinical settings such as university-associated hospitals, it likely will not equip them with the knowledge needed for rural practice. As a result, they

⁸⁶ Heydorn et al (2021), *Abschlussbericht: der Enquete Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern*, p.28

⁸⁷ Giaimo (2016), *Reforming Health Care in the United States, Germany, and South Africa: Comparative Perspectives on Health*, pp.21-22

⁸⁸ Heydorn et al (2021), *Abschlussbericht: der Enquete Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern*, p.37

⁸⁹ Flum et al (2016), *Can a 'rural day' make a difference to GP shortage across rural Germany?*

⁹⁰ This and the following information are from Holst et al (2015), *Strengthening training in rural practice in Germany: new approach for undergraduate medical curriculum towards sustaining rural health care*

lack some of the essential skills required of small-town providers such as the business knowledge of financing their own practice and how to address community health issues specific to rural areas.

Some medical schools are attempting to address this deficit in their curricula with rural rotations and outings that expose students to the intricacies of rural care before graduation. For example, *Verbundweiterbildung Baden-Württemberg* includes a 'rural day' in its general practitioner training program.⁹¹ During this single-day excursion, students are able to meet with local stakeholders and get a glimpse into rural practice.⁹² Although this program did improve participants' perceptions of rural work, with 47% stating they had a more positive view of rural areas after the experience, the authors note that there was "no significant difference in the intention to work in a rural area for participants before and after the rural day experience."⁹³ This experiment is clearly a step in the right direction in increasing future providers' exposure to rural practice; however, it also illustrates that one day is not enough time to change peoples' minds. Students spend a whole month for each rotation in other medical specialties, and the same should be true for rotations dedicated to rural general practice.

Other schools have taken this approach a step further by introducing rural rotations lasting a few weeks. The University of Magdeburg in Sachsen-Anhalt opted for a slightly longer program that spanned two weekends.⁹⁴ During the program, fourteen students lived in Sieben Linden, a village of 140 inhabitants, and spent the two

⁹¹ Wilhelmi et al (2018), *What leads to the subjective perception of a 'rural area'? A qualitative study with undergraduate students and postgraduate trainees in Germany to tailor strategies against physician's shortage*

⁹² This and the following information are from Flum et al (2016), *Can a 'rural day' make a difference to GP shortage across rural Germany?*

⁹³ Flum et al (2016), *Can a 'rural day' make a difference to GP shortage across rural Germany?*

⁹⁴ This and the following information are from Holst et al (2015), *Strengthening training in rural practice in Germany: new approach for undergraduate medical curriculum towards sustaining rural health care*

weekends working with rural practitioners in a variety of settings. Not only did students expand their medical skills, but they also learned important practical lessons in communication and the administrative management of a rural practice. Unlike the study conducted at Verbundweiterbildung Baden-Württemberg, this program produced more promising results: All participants stated there was an increased likelihood they would choose to practice in a rural area after participating in this program.⁹⁵ This is a positive development, and it should inspire other medical schools to adopt similar programs that emphasize longer-term exposure to rural practice.

Differential Health Outcomes

All of the issues discussed above compound upon each other to create differing health outcomes in different parts of the country. For example, as Rosano et al discuss in their 2013 study based on data from the Federal Statistical Office, the Federal Medical Registry, and Eurostat Statistics, hospitalization rates vary across Germany.⁹⁶ Rosano and his colleagues examined hospitalization rates for chronic and acute Ambulatory Care Sensitive Conditions (ACSCs) which are medical conditions that can be controlled, prevented, or managed in an out-patient setting. Their results were quite striking. For acute conditions, regional variations in hospitalization rates ranged from 28.7 people hospitalized per 100,000 inhabitants in Baden-Württemberg to 136.6 in Mecklenburg-Vorpommern. There are many potential explanations for this astonishing difference in hospitalization rates. For example, social determinants of health such as

⁹⁵ Holst et al (2015), *Strengthening training in rural practice in Germany: new approach for undergraduate medical curriculum towards sustaining rural health care*

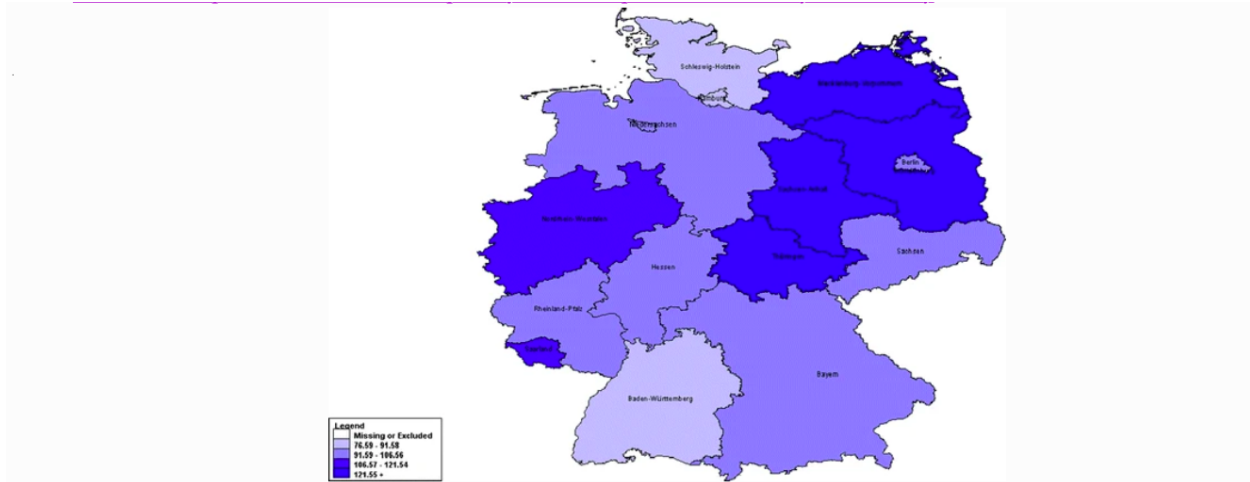
⁹⁶ This and the following information are from Rosano et al (2013), *Preventable hospitalization and the role of primary care: a comparison between Italy and Germany*, p.445

lower levels of health education and further distances to primary care providers in more rural states such as Mecklenburg-Vorpommern often lead patients to depend on emergency services more. Also, the knowledge that care is far away could lead residents to put off seeking care until their conditions become more acute, forcing them to utilize emergency care.

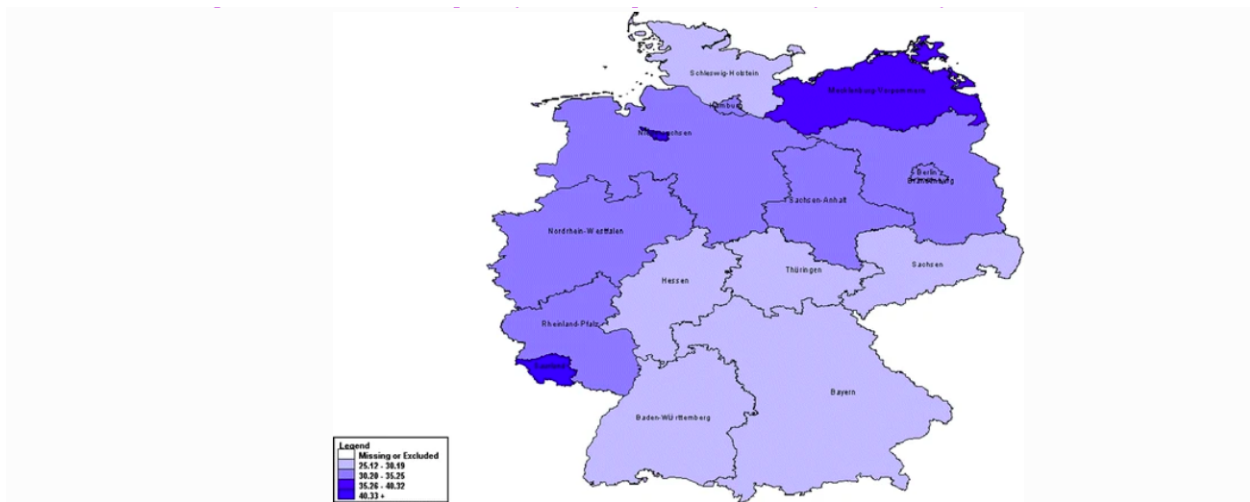
The authors also found a strong correlation between geographic region and rates of hospitalization, with “...eastern regions in Germany show[ing] a higher risk of avoidable hospitalization for chronic diseases.”⁹⁷ These eastern areas also have lower GDPs per person on average and “...suffer from lower levels of health-care facility resources.” The problem is further exacerbated by the fact that there are fewer general practitioners per 1,000 residents in eastern Germany than in western Germany. It is important to note that Eastern areas are not always synonymous with rural regions. However, some of the problems faced in the East, such as lower GDPs and other social determinants of health, are similar to those seen in rural regions and could give us indications as to some of the causes of higher hospitalization rates and medical outcomes seen in rural regions.

I will discuss health outcomes in Mecklenburg-Vorpommern further in the following chapter; however, the above data lays the groundwork for an understanding of variable health outcomes in Germany due to the unequal distribution of all forms of health resources, including but not limited to the supply of healthcare providers.

⁹⁷ This and the following information and quotation are from Rosano et al (2013), *Preventable hospitalization and the role of primary care: a comparison between Italy and Germany*, p.451



Average rates of ACSCs among adult population along the years 2000–2008 by region for chronic conditions in Germany. Rates per 100,000



Average rates of ACSCs among adult population along the years 2000–2008 by region for acute conditions in Germany. Rates per 100,000

The above graphics are from Rosano et al. (2013), *Preventable hospitalization and the role of primary care: a comparison between Italy and Germany*, p.450 depict ACSC rates (chronic and acute respectively) throughout Germany. Note the high rates of both chronic and acute ACSCs in Mecklenburg-Vorpommern (Northeast corner).⁹⁸

I plan to explore differential health outcomes more in my case study of Mecklenburg-Vorpommern. The above sections act as my introduction into healthcare in the state, a topic which will be developed in considerable depth in the following chapter.

⁹⁸ Rosano et al (2013), *Preventable hospitalization and the role of primary care: a comparison between Italy and Germany*, p.450

Chapter 2: Mecklenburg-Vorpommern Case Study

The goal of the previous chapter was to ensure the reader has adequate background knowledge of how the German healthcare system should function. Now that I have established the problems as they exist at the federal level, I will zoom in for an in-depth analysis of a single Bundesland and the dysfunction occurring at the state level. I have chosen the northern state of Mecklenburg-Vorpommern (Mecklenburg-Western Pomerania based on its status as a rural state, as well as on the extensive research and data available on healthcare delivery in the state.

Mecklenburg-Vorpommern Demographics

Mecklenburg-Vorpommern is located in the northeastern corner of Germany. At the end of 2019, the state was home to 1.61 million inhabitants, the third lowest population of all German states.⁹⁹ Although there are other federal states in the country with lower total population numbers, it is critical to note that Mecklenburg-Vorpommern has the lowest population density, averaging 69 people per square kilometer, whereas the national average in Germany lies at 233 people per square kilometer.¹⁰⁰ The state with the next lowest density is Brandenburg, which averages 85 people per square kilometer. This population sparsity in Mecklenburg-Vorpommern will play a critical role in later discussions of the current challenges for residents in accessing healthcare.

⁹⁹ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.15

¹⁰⁰ This and the following are from Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.17

Population Density in Each State and County in Mecklenburg-Vorpommern

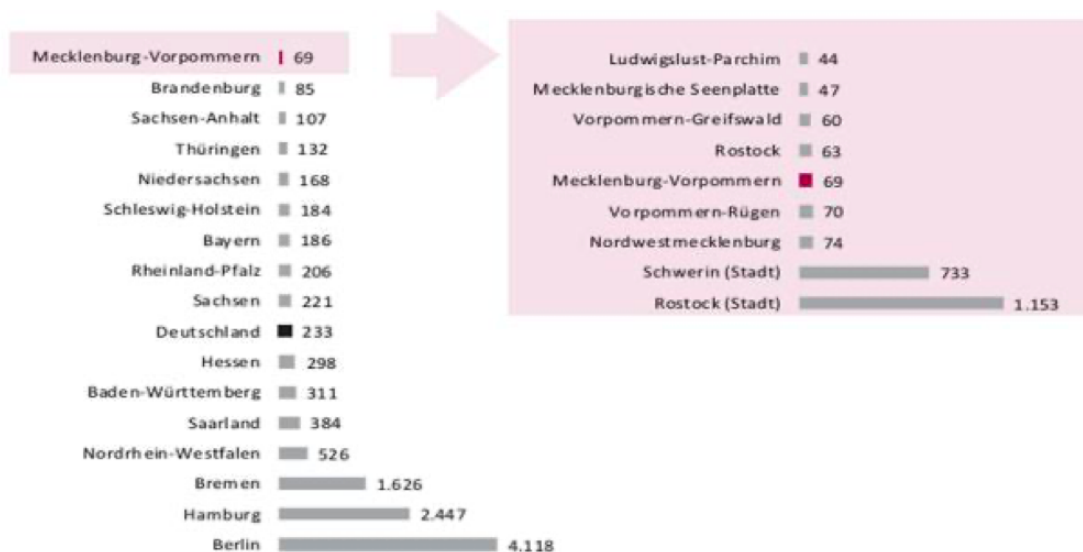


Abbildung 2: Einwohnerdichte in M-V, Stand: 2019³⁴

This graphic illustrates the population density of Mecklenburg-Vorpommern in comparison to other German Bundesländer. Not only is the state's population density lower than all other states and the national average, but the majority of regions within the state also have low population densities, as is shown in the pink area on the right side of the graphic.

Source: Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.18

Demographic challenges within Mecklenburg-Vorpommern are exacerbated by recent, current, and future shifts in the age structure of its population. In 2019, 25.3% of the population was 65 or older and 25.4% of the population was between the ages of 50 and 65.¹⁰¹ By 2030, over one-third of the state's population will be age 65 or older, with a longer life expectancy than ever before, while younger age groups will continue to shrink in size.¹⁰² Older individuals often have more expensive and extensive healthcare requirements that add extra strain to a system already lacking enough providers. Older

¹⁰¹ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.19

¹⁰² Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.21

people tend to get sick more frequently and require more expensive care as well. For example, people over age 65 make up 18% of the German population, but they incur 45% of the healthcare costs in the country.¹⁰³ In addition, older citizens are more likely than younger citizens to live in rural regions with less developed public transport infrastructure, decreasing their access to healthcare.

The following graphic (“*Tabelle 4*”) illustrates recent data of the age distribution of the population in Mecklenburg-Vorpommern, which shows that not only is approximately 50% of the population over the age of 50, but also the number of young people is disproportionately low. There will not be enough young taxpayers to pay into the social welfare system upon which healthcare coverage for retirees is based. In 1995, the ratio of workers paying into the system to retirees was 4.4 to 1.¹⁰⁴ In 2020, that same ratio was projected as 2.1:1. Despite this drastic drop, healthcare has not become any cheaper to finance and, if anything, people are developing more chronic conditions that require long-term, expensive treatments. According to the Institute for Health Metrics and Evaluation, the top eight leading causes of death in Germany in 2019 were non-communicable diseases such as chronic obstructive pulmonary disease, hypertensive heart disease, and chronic kidney disease.¹⁰⁵ People can live with these conditions for years, and thus the total cost to treat them can be quite high.

These numbers are concerning when one considers that many members of the aging population are also practicing healthcare providers who will soon need replacements that are in extremely limited supply. This is true for both general

¹⁰³ This and the following are from Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.21

¹⁰⁴ This and the following are from Giaimo (2016), *Reforming Health Care in the United States, Germany, and South Africa: Comparative Perspectives on Health*, p.113

¹⁰⁵ Institute for Health Metrics and Evaluation (2015), *Germany*

practitioners (*Hausärzte*) and specialists (*Fachärzte*). The average age of physicians in Mecklenburg-Vorpommern has increased steadily over the past decade with 24% of GPs over the age of 60 in 2020 and 19% of specialists over the age of 60.¹⁰⁶ While these numbers are slightly lower than the national average, they are nonetheless concerning as they continue to increase and these providers struggle to find successors. Furthermore, Mecklenburg-Vorpommern is projected to lose 5% of its population by 2040, most of whom will be young people moving elsewhere in search of work.¹⁰⁷ This will put additional strain on the financing of the healthcare system and decrease the number of potential healthcare workers within the state.

Age Distribution of the Population in Mecklenburg-Vorpommern

Alter von ... bis unter ... Jahren	in Mecklenburg-Vorpommern	in %
Bevölkerung insgesamt	1.608.138	100,0
unter 6 Jahren	81.491	5,1
6 - 15 Jahren	124.091	7,7
15 - 18 Jahren	39.498	2,4
18 - 25 Jahren	90.158	5,6
25- 30 Jahren	66.259	4,1
30 - 50 Jahren	392.145	24,4
50 - 65 Jahren	408.126	25,4
65 Jahre und mehr	406.370	25,3

Tabelle 4: Bevölkerung in M-V, Stand: 31. Dezember 2019³⁸

Source: Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.20

¹⁰⁶ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.48

¹⁰⁷ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.20

I would now like to take a moment to comment on some of the most striking findings presented by the Enquete Kommission, a task force developed by the Mecklenburg-Vorpommern legislature and its leader Birgit Hesse in May of 2020 . The commission's main goals were

- 1) to develop achievable goals for healthcare provision in Mecklenburg-Vorpommern;
- 2) to innovate the health delivery system; and
- 3) to determine where there are gaps in knowledge.¹⁰⁸

The development of this task force illustrates the state government's dedication to improving healthcare for its constituents. I will reference their findings and recommendations extensively throughout this chapter and others.

Health Care Concerns in Mecklenburg-Vorpommern

Aging Physician Population

A current primary concern in Mecklenburg-Vorpommern is the number of physicians in the state approaching retirement age. The following graphic (*Abbildung 8*) illustrates the average age of physicians in Mecklenburg-Vorpommern (MV) in both 2013 and 2020.¹⁰⁹ It further divides this data into the average age of general practitioners (*Hausärzte*) and specialists (*Fachärzte*) and compares all of these data points to the average age of providers across Germany (D) in each respective category. The image offers a number of key insights into the situation in Mecklenburg-Vorpommern; however, most striking is the increase in average age of

¹⁰⁸ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.11

¹⁰⁹ This and the following information are from Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.48

both generalists (from 54.3 to 55.4 years old) and specialists (from 52.8 to 53.7 years old) over a period of just seven years. In addition, the percentage of these providers who are over the age of 60 (>60 J.) has also increased in both categories, from 21% to 24% for generalists and 13% to 19% for specialists. It also appears that, while these state-level trends may be alarming, the situation at the national level is equally if not more dire. Holst, Normann, and Herrmann estimate 24,000 GPs will have retired or aged out of working by 2020.¹¹⁰ A larger proportion of providers than ever before is fast approaching retirement age. This will only serve to make the current shortage of providers even worse in the coming years.

Also of note is the fact that the total number of general practitioners has only increased by nine providers in the seven-year span of the study while the number of specialists has increased by 370 providers in Mecklenburg-Vorpommern.¹¹¹ This is presumably due to specialists being able to attain higher salaries. These numbers include the total number of providers in each category when both *Zulassungen*¹¹² und *angestellte Ärzte*¹¹³ are taken into account. This is supportive of the findings that medical education in Germany skews students' interest toward specialty concentrations with their superior rate of compensation, leaving the country with a gaping hole in primary care support.¹¹⁴

¹¹⁰ Holst et al (2015), *Strengthening training in rural practice in Germany: new approach for undergraduate medical curriculum towards sustaining rural health care*

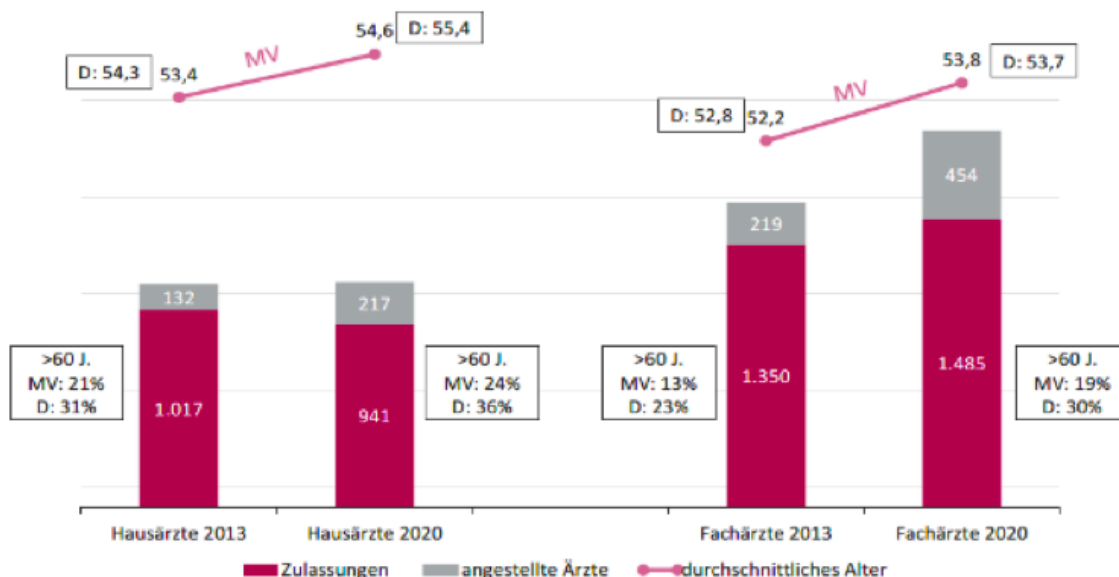
¹¹¹ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.48

¹¹² *Zulassungen Ärzte* - licensed physicians

¹¹³ *Angestellte Ärzte* - practicing physicians

¹¹⁴ Sundmacher and Ozegowski (2016), *Regional distribution of physicians: The role of comprehensive private health insurance in Germany*, p.444

General Practitioners and Specialists: Number, Age, und Terms of Employment



Anmerkung: Unter „Hausärzte“ werden Allgemeinmediziner/Praktische Ärzte und hausärztlich tätige Internisten subsumiert. Pädiater sind nicht eingeschlossen. Quelle: Gutachten „Zukunft der medizinischen Versorgung in M-V“, S. 24.

Key: Pink bars: Licensed physicians; Gray bars: practicing physicians; Pink trend lines: Average age

Source: Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.48

Transportation to and from Care

Another major healthcare concern in Mecklenburg-Vorpommern is patient access to care. Seeing as much of the population in Mecklenburg-Vorpommern lives in remote areas, transportation to and from hospitals and physicians' offices can be a major challenge for citizens. Fortunately, all Mecklenburg-Vorpommern residents live within 20 minutes of a general practitioner if they travel by personal vehicle.¹¹⁵ However, according to the Statistical Office of Mecklenburg-Vorpommern (*Statistischen Amtes*

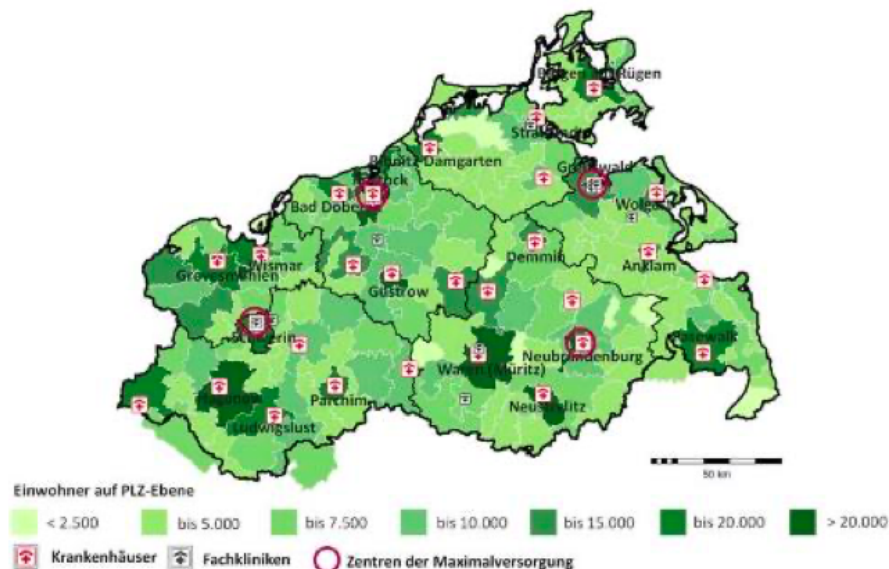
¹¹⁵ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.82

Mecklenburg-Vorpommern), 22.3% of households in the state did not have a car as of 2018.¹¹⁶ Significantly, 16% of the population cannot reach a hospital within 30 minutes by car, and not all hospitals have the resources to provide the same standard of care even if patients can get there.¹¹⁷ The following graphic illustrates the locations of current hospitals in Mecklenburg-Vorpommern as compared to population density in different regions, with lighter colors representing less densely populated regions. Hospitals tend to be located nearer to large, metropolitan areas, leaving residents of rural towns far from critical medical care.

¹¹⁶ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.84

¹¹⁷ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.83

Overview of Hospital Locations in Mecklenburg-Vorpommern



Anmerkung: Die gekennzeichneten Standorte umfassen 30 Krankenhäuser und zehn Fachkliniken.

Quelle: G-BA 2020, Ministerium für Wirtschaft, Arbeit und Gesundheit des Landes Mecklenburg-Vorpommern (2020), Darstellung aus dem Gutachten „Zukunft der medizinischen Versorgung in M-V“, S. 28.

Key: Colors correspond to inhabitants in each area. In order from left to right they are as follows: less than 2,500; 2,500-5,000; 5,000-7,500; 7,500-10,000; 10,000-15,000; 15,000-20,000; greater than 20,000. Red boxed symbols represent hospital locations. Black boxed symbols represent specialty clinics. Red circles represent medical centers that can provide the maximum level of care.

Source: Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.37

Public transportation would usually be an acceptable solution to this transportation crisis; however, public transportation infrastructure, especially in rural regions of the state, is severely lacking in Mecklenburg-Vorpommern. For example, 32% of the population in the state cannot reach a general practitioner within an hour if they travel with public transportation.¹¹⁸ 4% of people cannot reach a general practitioner at

¹¹⁸ This and the following information are from Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.84

all with public transportation, such as in the area formerly known as Uecker-Randow. The situation is even worse with regard to accessing specialists. 64% of the population must travel over an hour by bus to reach an eye doctor and 5% of people cannot reach an eye doctor at all utilizing public transportation.¹¹⁹ The situation is particularly challenging in rural areas and among older people.

The following graphic depicts how long citizens travel from rural regions to reach the next nearest city, where the nearest provider or hospital is likely to be, during the week. Dark green areas indicate travel times under 15 minutes, whereas areas in red indicate travel times of 81 minutes or more, and areas in dark red indicate travel times over 90 minutes.¹²⁰ The fact that some residents must travel more than 90 minutes to reach a city with a hospital is unacceptable from a public health standpoint. This is especially concerning considering long travel times tend to negatively impact health outcomes, especially in the case of an emergency health situation.¹²¹

Receiving care in emergent situations in a timely manner is a challenge across Germany. In Nordrhein-Westfalen, for example, the law requires emergency responders to be on scene within 8 minutes in urban areas and 12 minutes in rural areas.¹²² This time is often protracted, particularly in rural areas, because of an increase in emergency calls and a decrease in emergency physicians in these settings. Rheinland-Pfalz has a similar issue of a shortage of emergency physicians who can respond to emergencies with paramedics. A pilot study in Aachen, Nordrhein-Westfalen examined the usage of

¹¹⁹ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.85

¹²⁰ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.86

¹²¹ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.77

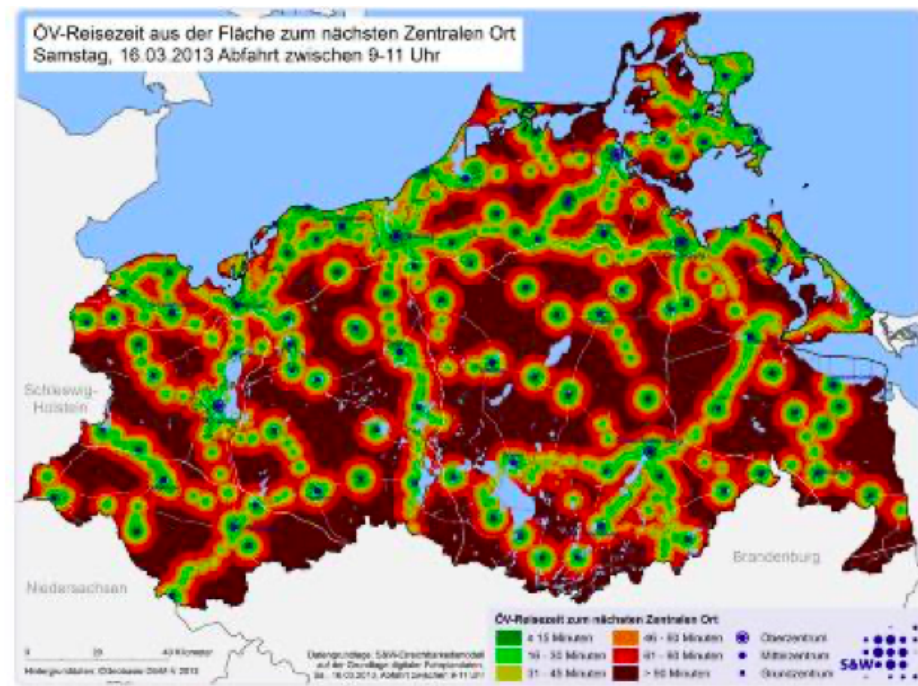
¹²² This and the following information are from Stevanovic et al (2017), *Telemedical support for prehospital Emergency Medical Service (TEMS trial): study protocol for a randomized controlled trial*

teleconsultation systems between emergency physicians and paramedics to supplement in-person emergency physicians or to replace them entirely when they cannot make it to the scene of the emergency. After tracking this system from 2009-2013, teleconsultation was found to improve patient care, improve the “...quality of medical history, treatment, and documentation,” and decrease the time physicians most devote to emergent care by half.¹²³ The successes of other German states in modernizing their emergency care systems should serve as benchmarks for Mecklenburg-Vorpommern as its policymakers examine shortfalls in the current system.

¹²³ Stevanovic et al (2017), *Telemedical support for prehospital Emergency Medical Service (TEMS trial): study protocol for a randomized controlled trial*

The previous graphic depicts travel times with public transportation on a weekday. The next graphic depicts travel times with public transportation on weekends. Public transportation is more limited on weekends which can increase the time people must wait for a bus, adding to their travel time and posing another hurdle in their ability to access care.¹²⁴

Public Transportation Travel Time to the Nearest City on a Saturday between 9-11am



Quelle: Spiekermann & Wegener, Analyse der Erreichbarkeit der Zentralen Orte in Mecklenburg-Vorpommern, 2013 (im Auftrag des Energieministeriums M-V) <http://www.regierung-mv.de/Landesregierung/em/Service/Publikationen/?id=14503&processor=veroeff>

Key: Dark green: <15 minutes; Light green: 16-30 minutes; Yellow: 31-45 minutes; Orange: 46-60 minutes; Red: 61-90 minutes; Dark red: >90 minutes

Source: Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.86

¹²⁴ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, pp.85-86

The state is covered in dark red in this figure, indicating that those segments of the population living in these areas must spend over 90 minutes waiting for transportation and traveling to a provider.¹²⁵

Recruiting New Providers

It is also challenging to recruit new providers to rural regions, either to establish new practices or to take over for physicians hoping to retire.¹²⁶ This has created a massive „*Ärztmangel*“ (doctor shortage), especially in rural areas, and led to a high ratio of patients to providers.¹²⁷ According to Kuhn et al, physicians are considered undersupplied in an area if the number of physicians is -25% (for general practitioners) or -50% (for specialists) below a pre-defined patient-to-doctor ratio. This ratio is set by the Association of Statutory Health Insurance Physicians based on the population of an area.¹²⁸ As of 2019, the ratio in larger cities across Germany of patients aged eighteen or younger to pediatricians was 2043:1 while other regions had a ratio of 2862:1.¹²⁹ For general practitioners, the number is approximately 1609:1 across all regions.

In Mecklenburg-Vorpommern, the doctor-to-patient ratio was 1671:1 across the whole state as of 2021.¹³⁰ This is above the national average. In 2020, there were 1,158

Hausärzte (general practitioners) in Mecklenburg-Vorpommern, an insufficient number

¹²⁵ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.88

¹²⁶ This topic will be covered in further detail in Chapter 3

¹²⁷ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.52

¹²⁸ Kuhn et al (2017), *Which strategies might improve local primary healthcare in Germany? An explorative study from a local government point of view*

¹²⁹ This and the following information are from Beyer et al (2020), *Task-Sharing Between Pediatricians and Non-Physician Healthcare Professionals in Outpatient Child Health Care in Germany: Assessment of Need and Acceptance for Concept Development*

¹³⁰ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.45

to adequately meet the needs of the population.¹³¹ This means these doctors are working 52 hours per week on average. Interestingly, I have not found any sources that give explicit numbers illustrating the hours of physicians in urban settings without shortages. It is likely their working hours are shorter; however, this may not always be the case.

As stated above, 24% of the general practitioners in Mecklenburg-Vorpommern are over the age of sixty, fast approaching retirement, and struggling to find new doctors to take over their practices.¹³² There are currently 104.5 vacancies for general practitioners and 250 more are expected within the next five years.¹³³ If these positions are not filled, patients will have to travel even further to seek care and will experience longer wait times. The remaining physicians will see higher patient numbers, adding to their stress, working hours, and potentially, their error rates.

The graphic below illustrates the shortage of *Hausärzte* across Germany. The darker purple areas indicate that the area suffers from undersupply. There is a large concentration of dark purple areas in the north-east quadrant of the country. This area is occupied primarily by the state of Mecklenburg-Vorpommern. This map also demonstrates a larger deficit in care in former East Germany. These areas tend to have a lower gross domestic product (GDP) per person which Rosano et al found to correlate with a higher risk of chronic conditions and avoidable hospitalizations.¹³⁴ In fact,

“Brandenburg, along with Mecklenburg-Western Pomerania

¹³¹ This and the following information are from Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.47

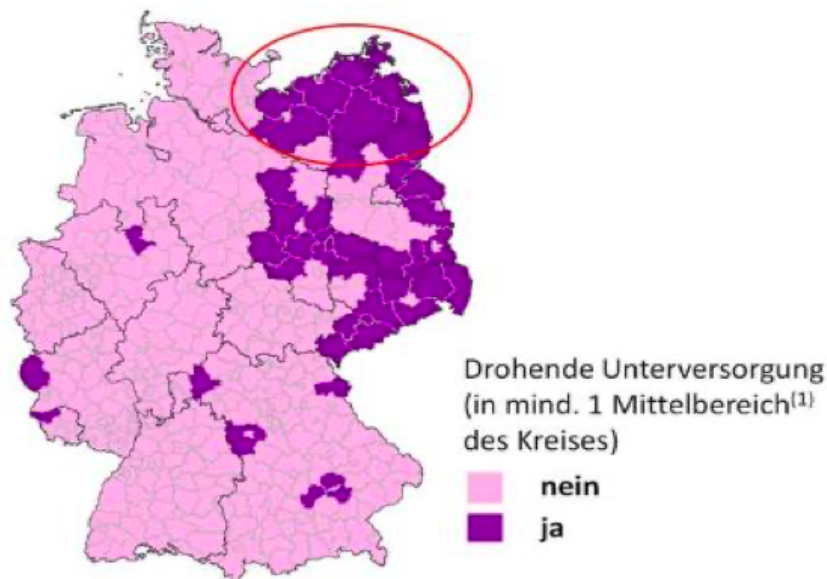
¹³² Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.48

¹³³ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.52

¹³⁴ Rosano et al (2013), *Preventable hospitalization and the role of primary care: a comparison between Italy and Germany*, p.451

[Mecklenburg-Vorpommern], has the highest rates of hospitalization for avoidable chronic conditions.”¹³⁵ While other authors have noted a similar trend in hospitalization rates and health outcomes in former East Germany, I will not explore it in depth here.¹³⁶

Areas Facing an Undersupply of General Practitioners (2018)



Quelle: Augurzky et al. 2021 und KBV 2020c, Darstellung aus dem Gutachten „Zukunft der medizinischen Versorgung in M-V“, S. 52.

Key: Light purple: yes, there is a likelihood of undersupply of GPs in this area; Dark purple: no, there is not a likelihood of undersupply of GPs in this area

Source: Heydorn et al (2021) *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.52

¹³⁵ Rosano et al (2013), *Preventable hospitalization and the role of primary care: a comparison between Italy and Germany*, p.452

¹³⁶ See Holst (2015), Sundmacher and Ozegowski (2016), Holst et al (2015), Hervartz and Schley (2018), Rosano et al (2013) for more information on this topic

Proposed Solutions

While the above challenges seem large and insurmountable, there are many proposed approaches to address them. These approaches address issues such as improving the coordination of care, incentivizing providers to work in undersupplied areas, investing more in rural care, and improving access to care. I will address each of these approaches in turn.

Coordination of Care

Researchers unanimously agree that one of the biggest shortfalls in Germany's healthcare system is the lack of coordination of care between different providers, both in-patient and out-patient, as well as cross-disciplinary. The Enquete Kommission has offered a variety of suggestions to address this issue in hopes of increasing the efficiency of care delivery within the state of Mecklenburg-Vorpommern.

One suggestion is to increase direct connections between different clinics, hospitals and providers. The commission terms this practice "clustering" and hopes that clustering clinics together will help improve efficiency of communication and sharing of patient information between multiple providers on a patient's care team.¹³⁷ A similar practice can occur with hospitals integrating care with the ambulatory sector through telemedical pursuits. *Integrierte Gesundheitszentren*¹³⁸ (IGZ) are another option that also include public health and preventative medicine in addition to in-patient and out-patient care. The commission emphasizes the importance of increasing the attention paid to preventative care services. If preventative care is bolstered, there may

¹³⁷ This and the following information come from Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, pp.56-57

¹³⁸ Integrierte Gesundheitszentren - integrated healthcare centers

be less need for treatment of expensive conditions which would save the healthcare system valuable time and money.

This *Vernetzung*¹³⁹ of medical services and non-medical services is a major goal for policymakers and stakeholders in Mecklenburg-Vorpommern.¹⁴⁰ However, it will require significant innovation and adjustment for patients, providers, and insurance funds. Digitization of medical records and services will be a major factor in the success of these *Vernetzung* efforts. While it ideally will prevent patients from being treated for the same condition multiple times, due to insufficient medical histories, and will allow for greater collaboration between providers, digitization is also expensive, and many of these costs could fall on doctors.¹⁴¹

The COVID-19 pandemic has increased an acceptance of, and reliance on, telemedicine. For example, in 2017 less than 2% of doctors held video visits with patients.¹⁴² In May of 2020, this number had increased to 50%. The pandemic has shown the necessity of the medical system to adapt to public health crises and, in the process, has proven the usefulness and effectiveness of telehealth in reaching the population when in-office visits are not feasible. The utility of telehealth visits can outlast the current pandemic by increasing accessibility for patients who lack the necessary transportation to visit their doctors in person. All relevant parties will need to weigh the pros and cons of digitization to determine whether it is a viable solution for the state of Mecklenburg-Vorpommern to pursue.

¹³⁹ *Vernetzung* can be translated to mean creating a more interconnected network between different medical providers.

¹⁴⁰ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.54

¹⁴¹ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, pp.95-97

¹⁴² This and the following information come from Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.97

Incentivizing Workers

Decreasing barriers for foreign providers to practice in Germany will be an integral part of the solution to address the current shortage of skilled healthcare workers. The need for providers is not limited to doctors. Rather, there is also a shortage of nurses in Mecklenburg-Vorpommern as well as other skilled health professionals such as physical therapists, technologists, and midwives.¹⁴³ One challenge is that foreign providers often struggle to have their medical licenses recognized in Germany if they did not obtain their training in another European Union country.¹⁴⁴ Allowing providers from other countries easier access to practicing in Germany could help alleviate the strain in many of these professional areas.

It will also be important for townships and their local government officials to market healthcare jobs to workers. Skilled workers are more attracted to areas with amenities such as easy access to cities, state-of-the-art technology, and a strong work-life balance.¹⁴⁵ These factors and others are extremely influential in doctors' decisions on where to practice. If rural communities emphasize the availability of these desirable aspects of rural, or even non-big city, life, they may have better luck in attracting providers to their areas.¹⁴⁶

The current shortages of many skilled providers also allows the opportunity to reconsider the distribution of responsibilities among healthcare workers. Germany

¹⁴³ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, pp.59,66-67

¹⁴⁴ Hahn and Steinhäuser (2019), *Strategies for rural areas: The development of and initial experiences with a training course for physicians from third countries to prepare them for medical practice in Germany*

¹⁴⁵ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.59

¹⁴⁶ Wilhelmi et al (2018), *What leads to the subjective perception of a 'rural area'? A qualitative study with undergraduate students and postgraduate trainees in Germany to tailor strategies against physician's shortage*

currently has a very dichotomous division of responsibilities, with doctors performing most tasks and the rest being delegated primarily to nurses. Numerous studies have examined the possibility of introducing roles such as Physician Assistants, Nurse Practitioners, emergency paramedics (*Notfallsanitäters*), and AGnES practice assistants.^{147 148} While these providers would not replace doctors entirely, they could be integrated into a team-based system that would decrease the strain on current physicians and allow practices to operate with fewer physicians overall.¹⁴⁹ Luckily for Germany, these roles already exist in other countries, and data strongly indicates their effectiveness. German officials would be able to adopt the scopes' of practice outlined in other countries and adjust them to fit the German system rather than having to start from scratch. One challenge, however, could be getting citizens to accept the expertise of non-physician providers, as physicians are held in high esteem in German culture.

¹⁴⁷ AGnES is a german abbreviation for GP-relieving, community-based, e-health-assisted, systemic intervention

¹⁴⁸ Berg et al (2009), *GP-support by means of AGnES-practice assistants and the use of telecare devices in a sparsely populated region in Northern Germany – proof of concept* and Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, pp.69-70

¹⁴⁹ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.69

Rural Care

The Enquete-Kommission recognizes the importance of bolstering rural care and has put forth a variety of suggestions to do so. In general, the committee members agree there needs to be greater investment in rural areas and in attracting workers to rural areas.¹⁵⁰ In addition to giving direct funding to undersupplied areas, providers in Mecklenburg-Vorpommern are eligible to receive an investment subsidy if they open a practice in an underserved area.¹⁵¹ This program has been quite successful already, resulting in the opening of 184 new practices since 2008.

The commission also believes more direct actions should be taken to acquaint medical students with rural care. This topic will be explored in significant detail in the following chapter; however, I will touch upon it briefly here as it relates directly to plans in Mecklenburg-Vorpommern. One current approach is in the distribution of medical student seats. For the Winter 2021 semester, 32 of the 400 medical student seats in the state of Mecklenburg-Vorpommern were reserved for students who plan to practice as general practitioners in underserved areas for a significant period of time after graduation.¹⁵² This adjustment comes out of „*das Landarztgesetz*“¹⁵³ passed in 2020.¹⁵⁴ While this statement of for whom the seats are reserved is slightly vague, and the authors do not provide further insight into what is meant by “a significant period of time,”

¹⁵⁰ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.54

¹⁵¹ This and the following information come from Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, pp.63-64

¹⁵² Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.64

¹⁵³ Landarztgesetz - The Country Doctor Act

¹⁵⁴ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.64 and *Deutsches Ärzteblatt Mecklenburg-Vorpommern beschließt Landarztgesetz*

it is encouraging to see policies moving in the right direction toward incentivizing rural practice.

Once students are underway with their medical education, they could visit local hospitals to be more familiar with the operations of such institutions.¹⁵⁵ Students could also be paired with a mentor in rural areas, again to give them a better understanding of the roles of such providers.¹⁵⁶ These suggestions may seem insignificant; however, they could prove quite influential in attracting students to rural practice. As Wilhelmi, Ingendae, and Steinhäuser found in their research, many candidates stated inaccurate perceptions of what practice looked like in rural areas as well as fear that they lacked the necessary skills for rural work as influencing their willingness to work in such settings.¹⁵⁷ Pairing students with rural providers and having them participate in rural internships during medical school would give them the skills and confidence to run their own practices in rural areas.

¹⁵⁵ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.62

¹⁵⁶ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.54

¹⁵⁷ This and the following information are from Wilhelmi et al (2018), *What leads to the subjective perception of a ‘rural area’? A qualitative study with undergraduate students and postgraduate trainees in Germany to tailor strategies against physician’s shortage*

Accessing Care

Researchers, politicians, and providers have all offered a variety of innovative approaches to ensuring patients are able to get to and from their medical appointments. One suggestion has been to implement a „*Rufbusssystem*.“^{158 159} This would allow rural residents who lack their own means of transportation or for whom public transport is not feasible to call for a ride to take them to an appointment. Landkreis Vorpommern-Greifswald has been using the ILSE bus system¹⁶⁰ and has seen acceptance of the intervention among older residents. This is noteworthy as older residents tend to have the greatest transportation barriers. However, this is not a perfect system. The bus can only transport 10-15 people per day on average, and it can be challenging to supply enough buses to rural areas to meet the demand.¹⁶¹ In addition, this system will be expensive to scale up, and it may make more sense to focus on expanding the public transport system, *Öffentlicher Personennahverkehr (ÖPNV)*, while taking the locations and hours of operation of medical practices into account.¹⁶² A study conducted in Lower Saxony attempted to implement patients' buses as one intervention for increasing access to care to model a similar program in place in Brandenburg.¹⁶³ Patients had mixed reviews on the usefulness of patient buses; however, this was mostly in areas that already had adequate access to public transportation. Residents of a more rural region with poorer access to public transportation may be more in favor of

¹⁵⁸ Rufbusssystem - On-call bus system

¹⁵⁹ This and the following information are from Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, pp.88-89

¹⁶⁰ ILSE is an abbreviation for Integrierte Leitstelle für Notfallversorgung, Medizinverkehr, und ÖPNV

¹⁶¹ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, pp.89,93

¹⁶² Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, pp.91-92

¹⁶³ This and the following information are from Kuhn et al (2017), *Which strategies might improve local primary healthcare in Germany? An explorative study from a local government point of view*

this transportation option. Other related interventions could be ride sharing, providing taxi services, and/or having volunteer groups drive patients to and from appointments.¹⁶⁴ Municipalities in Mecklenburg-Vorpommern such as Eifel, Hochsauerland, Banzkow, and Barlow have already implemented iterations of these approaches.

The Enquete Kommission also offers suggestions such as implementing mobile health clinics to better reach remote patients.¹⁶⁵ Schröder et al have also suggested utilizing mobile clinics, especially on weekends and holidays when doctors' offices tend to be closed, to help address the mobility issues in rural Germany.¹⁶⁶ Patient and provider feedback on mobile clinics in Lower Saxony have shown this model is less accepted than others proposed.¹⁶⁷ Nevertheless, it may prove useful in conjunction with other interventions, especially in areas where the situation is particularly dire.

¹⁶⁴ Schröder et al (2018), *Mobility concepts and access to health care in a rural district in Germany: a mixed methods approach* and Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, pp.87,93

¹⁶⁵ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.93

¹⁶⁶ Schröder et al (2018), *Mobility concepts and access to health care in a rural district in Germany: a mixed methods approach*

¹⁶⁷ Kuhn et al (2017), *Which strategies might improve local primary healthcare in Germany? An explorative study from a local government point of view*

Telemedicine

As in other areas of the world, the potential for an expansion of telemedicine and telehealth services is quite promising in Germany, especially in its more rural areas. Coordination of care is one area where telemedicine could have the most beneficial impacts. The Enquete Kommission in Mecklenburg-Vorpommern recommends utilizing telemedicine to transfer information between different providers and to transfer information between providers and patients.¹⁶⁸ Telemedicine will also allow providers the flexibility to see patients without either party having to travel, saving both time and money.¹⁶⁹ It could also be useful in rural regions, for example, where it is hard to employ specialists full-time. For example, the commission recommends that smaller hospitals could utilize telemedical radiology services overnight or on weekends as X-rays and imaging can be read remotely. This will save the expense and challenge of finding enough radiologists to provide full-time coverage at smaller hospitals.

Ideally, the commission hopes telemedicine will help with *“Über-, Unter-, und Fehlbehandlungen zu vermeiden und die Bezahlbarkeit und hohe Qualität des Gesundheitssystem zu erhalten,”*^{170 171} In other words, telemedicine should not replace in-person care entirely, but rather should be used supplementally to fill in the gaps in the current system. Many projects in Mecklenburg-Vorpommern are already working on integrating telemedicine into routine care, including in specialties such as dermatology,

¹⁶⁸ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.94

¹⁶⁹ This and the following information are from Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.98

¹⁷⁰ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.105

¹⁷¹ Translation: Telemedicine will help to lessen the over, under, and mistreatment of patients as well as to improve the quality and cost of the healthcare system.

psychiatry, and emergency medicine.¹⁷² However, more data needs to be collected to determine the quality and effectiveness of such interventions and whether or not further innovation is required.

Of course there are always downsides to any solution. For telemedicine, the largest challenges are infrastructure, cost, and integration of differing systems across practices.¹⁷³ Rural regions of Mecklenburg-Vorpommern in particular currently lack the high-speed internet and cell phone network connections that would be crucial for telehealth to be a viable solution.¹⁷⁴ These findings are supported by the findings of the Enquete Kommission as well as other studies.¹⁷⁵ Improving infrastructure to support telemedicine in addition to improving the telemedical technologies and systems themselves will require major investments from providers and governments alike. Fortunately, the Enquete Kommission, made up of representatives from a variety of political backgrounds, believes telemedicine should continue to be financed by hospitals and the state.¹⁷⁶ So long as there is state financial support, the costs should not be inhibitory for providers.

Finally, providers will have to take care to uphold doctor-patient relationships even as services shift to online platforms.¹⁷⁷ Patients in previous studies have cited concerns of this lack of connection between doctors and patients when consultations

¹⁷² This and the following information is from Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, pp.99-101

¹⁷³ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.97

¹⁷⁴ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.103

¹⁷⁵ See Heydorn et al (2021), Wilhelmi et al (2018), Herwartz and Schley (2018)

¹⁷⁶ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.105

¹⁷⁷ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.102

are conducted remotely.¹⁷⁸ Technology is often hardest to navigate for older adults as well, so this will have to be taken into consideration, and the barriers will have to be mitigated as much as possible to ensure telehealth is a feasible solution for Mecklenburg-Vorpommern's aging population.

It is exciting to see the plethora of suggestions and projects already being implemented to address the healthcare deficits in Mecklenburg-Vorpommern. The first step in addressing these challenges is for all relevant stakeholders to take them seriously, including patients, providers, and the state government. The Enquete Kommission and other researchers have laid out a variety of exciting possibilities for improving care in Mecklenburg-Vorpommern; however, it is critically important that these suggestions do not remain hypothetical. Rather, providers and government officials must prioritize their implementation and gather data on their effectiveness and shortcomings to make necessary adjustments and ensure care delivery and access is being affected for the better.

This chapter barely breaks the surface on all of the innovative approaches currently being implemented and researched. The following chapter will look more closely at some of the most well researched and most supported interventions both within Mecklenburg-Vorpommern and in Germany as a whole. Other potential solutions that could be put into place in Mecklenburg-Vorpommern or other Bundesländer will be explored in the next chapter. I will then attempt to tie these solutions back to the potential efficacy of their application in Mecklenburg-Vorpommern. The reader should

¹⁷⁸ This and the following information is from Kuhn et al (2017), *Which strategies might improve local primary healthcare in Germany? An explorative study from a local government point of view*

note that many of the solutions described in this chapter will be referenced again in the following sections.

Mecklenburg-Vorpommern is on the right track in how it is attempting to address the shortcomings in its healthcare delivery. The following sections of this thesis will provide more concrete examples of some of the suggestions discussed in this chapter that have been put into play elsewhere in Germany. The officials, policymakers, and providers in Mecklenburg-Vorpommern would benefit from a study of the successes and failures of these examples as they continue to improve their approach to improving healthcare delivery and access in their own state.

Chapter 3: Existing Solutions: An Analysis of Potential Effectiveness in the German Context

Thus far I have offered a snapshot of the state of German healthcare and established its strengths and weaknesses. Against this backdrop, I will turn to an in-depth analysis of proposed solutions intended to address the challenges and deficiencies within the healthcare system. I will begin by describing four of the solutions scholars have, after considerable research, proposed as viable for Germany. These include: 1) employing third country physicians; 2) adjusting medical school curriculum; 3) task-sharing; and 4) polyclinics. In this chapter, I analyze the merits of these proposed solutions and comment on the likelihood of their efficacy.

Third-Country Physicians

There is a consensus in the scholarship that recruiting foreign physicians is a viable potential solution for the German healthcare system. Foreign physicians, from non-European Union (EU) countries, could be required to work in rural regions upon completing training programs in Germany for a given period of time. A program developed in Schleswig-Holstein, titled *LandärztInnen Nord - Anpassungsqualifizierung für ausländische Ärztinnen und Ärzte*, trains non-EU physicians to practice medicine in rural regions of the state.¹⁷⁹ Participants must acquire B2 language skills and take rural field trips throughout the program to interact with local government representatives. They also visit rural medical settings including hospitals, group practices, and individual

¹⁷⁹ This and the following are based on facts and statistics from Hahn and Steinhauser (2019), *Strategies for rural areas: The development of and initial experiences with a training course for physicians from third countries to prepare them for medical practice in Germany*

practices. This study found that 89% of participating foreign physicians believed they were more likely to work in a rural area after attending the program.

These programs are critical not just for improving foreign physicians' German language skills, but also for improving their proficiency in areas such as the German healthcare system and patient communication, topics they may be less familiar with based on their backgrounds.¹⁸⁰ Although challenges such as language barriers and transferring medical licenses accompany the employment of foreign physicians, this approach may be a worthwhile investment in addition to the other solutions explored below. Increased hiring of foreign physicians would likely have to occur in conjunction with supplemental training programs, such as the one in Schleswig-Holstein, for this solution to be as successful as possible. In addition, the aforementioned program lasted only 10 days with a total of 80 active hours of instruction. For the best results, future programs should last for more than a few days and thus be able to offer more in-depth training. This will increase the likelihood that foreign doctors are accepted by the communities they serve in their new positions in Germany.

The cost of hiring foreign doctors is another factor that must be considered if the German state is dedicated to using foreign doctors as a tool to address medical staff shortages. According to Birgit Neubert of Pleissental Klinik in Werdau, it costs about 20,000 Euros to hire a foreign candidate, between the costs for recruitment agencies, visas, and other necessary expenses.¹⁸¹ This could pose an insurmountable economic barrier for smaller, more remote practices and hospitals already struggling to keep their

¹⁸⁰ This and the following are based on facts and statistics from Hahn and Steinhauser (2019), *Strategies for rural areas: The development of and initial experiences with a training course for physicians from third countries to prepare them for medical practice in Germany*

¹⁸¹ Torry (2015), *Germany Seeks Foreign Cure for Its Doctor Shortage*

doors open. A more subtle obstacle to consider is patient perception and acceptance of foreign providers. More research needs to be done on this topic to determine whether patient attitudes could hinder the viability of this solution.

It is also important to note that these barriers to employment are much lower for doctors emigrating from other EU countries than those coming from non-EU member countries. Physicians from other EU-member states need only show proof of a current medical license, whereas non-EU doctors must pass an exam before they are allowed to obtain a German medical license and begin practicing.¹⁸² The language exam can be a major obstacle for foreign applicants in gaining access to positions in Germany. For example, of the nearly 260 doctors who underwent language testing in Rhineland-Pfalz between 2012 and 2014, about one-third failed the exam.¹⁸³ Rather than being disappointed by these results and using them as justification not to hire foreign physicians, this statistic should be used to support the need for investment in better preparatory programs for these candidates. Germany could also investigate the licensing requirements in other countries. Physicians from non-EU countries with licensing requirements that are similar to Germany's could be spared having to retest through the German licensing system.

The government of Mecklenburg-Vorpommern has suggested mitigating such barriers for both foreign doctors and other skilled healthcare providers, such as nurses, in an attempt to alleviate the strain on current providers due to undersupply.¹⁸⁴ This could be critically important as nurses are also in high demand and short supply, a

¹⁸² Hahn and Steinhauser (2019), *Strategies for rural areas: The development of and initial experiences with a training course for physicians from third countries to prepare them for medical practice in Germany*

¹⁸³ Kresge (2014), *Foreign doctors fill physician shortage in Germany*

¹⁸⁴ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.59

problem that will only be exacerbated as the German population continues to age.¹⁸⁵ Increasing the supply of nurses will need to be met with a reexamination of providers' roles and responsibilities at the policy or legal level. I will explore this aspect of the conversation in my discussion of task-sharing.

Medical School Curriculum Adjustments

The medical school curriculum and medical school admissions process are two arenas where changes could be made to encourage new doctors to practice in rural areas. I will first consider the admissions process and what type of candidates are typically admitted.

Current medical school admissions decisions are governed by a concept known as "numerus clausus." Numerus clausus is the cut-off number for how many students can be admitted into a given program.¹⁸⁶ Individual programs at each German university have their own set numbers of how many students they can accept into a program; this is known as a local numerus clausus.¹⁸⁷ Certain areas of study for which the number of applicants well exceeds the available spots nationwide are further restricted by a second nationwide numerus clausus. The greatest factor determining admission into programs of study, such as medical and legal programs, is grade point average (GPA). According to Zavlin et al, 20% of spots go to students with the highest GPAs, 60% of spots go to students accepted based on GPA and a personal interview, and 20% of spots go to people who have been out of high school the longest, which is to say those

¹⁸⁵ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, p.59

¹⁸⁶ Von Wendorff (2021), *German University Admissions: The Numerus Clausus*

¹⁸⁷ This and the following information come from von Wendorff (2021), *German University Admissions: The Numerus Clausus*

who have been waiting the longest for a spot.¹⁸⁸ While the GPA cut-off varies slightly each year, competition for seats in medical programs remains stiff.¹⁸⁹ This system fails to take into consideration students who, although they may have slightly less competitive GPAs, might commit to a term of practicing in rural areas and/or as general practitioners who are in high demand across the country.

Bundesärztekammer-Präsident Dr. Klaus Reinhardt suggests increasing the number of spots available for students to study medicine in an effort to replace the large number of physicians quickly approaching retirement age and dropping out of the workforce.¹⁹⁰ These spots could be offered to students only if they commit to working in a rural practice for a period of time after graduating. Some researchers have also suggested reserving more spots for medical students who hail from rural regions, as they are more likely to have positive, realistic associations with rural areas, and presumably would be more willing to return to these rural regions to work upon obtaining their degrees.¹⁹¹

Rather than spending time and money recruiting professionals from other countries, Germany would be much better off adjusting their medical school programs to incentivize students to practice in rural areas after graduation. Students at German medical schools already have the language skills, cultural knowledge, and required credentials to be successful providers in remote regions. While this is likely to be an integral aspect of the ultimate action plan to mitigate the physician shortage, it will likely

¹⁸⁸ Zavlin et al (2017), *A comparison of medical education in Germany and the United States: from applying to medical school to the beginnings of residency*

¹⁸⁹ Von Wendorff (2021), *German University Admissions: The Numerus Clausus*

¹⁹⁰ Bundesärztekammer (2021), *Drohendem Ärztemangel mit kreativen Ideen begegnen*

¹⁹¹ Wilhelmi et al (2018), *What leads to the subjective perception of a 'rural area'? A qualitative study with undergraduate students and postgraduate trainees in Germany to tailor strategies against physician's shortage*

need to occur in conjunction with a variety of other measures to address the shortage comprehensively.

Medical school curriculum further exacerbates the problem of undersupply. Currently, medical schools focus primarily on training students for specialty care in practices and hospitals with abundant resources.¹⁹² As Flum et al. notes, most medical schools are located in metropolitan areas.¹⁹³ Upon further examination, I found this number to actually be 100% of German medical schools.¹⁹⁴ This means medical students have little interaction with rural patients and their unique health circumstances during their training.¹⁹⁵ If students receive exposure to rural care, which is not the case at many medical schools, these exposures are often short-lived, lasting anywhere from a day to two weeks. In contrast, traditional rotations in specialties such as surgery last on average 16 weeks and give students a much more in-depth understanding of the field.¹⁹⁶

¹⁹² Holst et al (2015), *Strengthening training in rural practice in Germany: new approach for undergraduate medical curriculum towards sustaining rural health care* and Holst (2015) *Rethinking Medical Training in Germany Towards Rural Health Care*

¹⁹³ Flum et al (2016), *Can a 'rural day' make a difference to GP shortage across rural Germany?*

¹⁹⁴ See the figure below

¹⁹⁵ Flum et al (2016), *Can a 'rural day' make a difference to GP shortage across rural Germany?*

¹⁹⁶ Flum et al (2016), *Can a 'rural day' make a difference to GP shortage across rural Germany?*, Zavlin et al (2017), *A comparison of medical education in Germany and the United States: from applying to medical school to the beginnings of residency*, and Holst et al (2015), *Strengthening training in rural practice in Germany: new approach for undergraduate medical curriculum towards sustaining rural health care*



The above map indicates the locations of German medical schools. Purple map markers indicate public universities, whereas orange map markers indicate private institutions. Although the programs are relatively equally distributed across the country, they tend to cluster near each other, and nearly all of them are located in large, metropolitan areas.¹⁹⁷

¹⁹⁷ The list of schools used to develop this graphic comes from the My German University website.

Some German medical schools have begun including rural “field trips” in their curriculum in an attempt to increase students’ exposure to rural practice.¹⁹⁸ *Verbundweiterbildung*¹⁹⁹ *Baden-Württemberg* has incorporated a “rural day” into its general practitioner training program to increase students’ exposure to rural medicine, hoping to increase the odds they will choose to work in a rural setting.²⁰⁰ The authors found that 47% of participants had a more positive view of rural areas after participating in the program, yet their analysis of results lacks a thorough description of what a “positive view” really means. While these results do point to rural programming improving young physicians’ attitudes towards rural practice, it does not help to determine whether more young physicians will elect to work in rural areas as a direct result of their participation in the program. This idea is, however, a promising potential solution. Although these programs are a solid foundational step toward increasing students’ willingness to practice in rural areas, they would be even more effective if they were converted to longer, more comprehensive rotations such as those that occur in other specialty areas throughout the typical medical education program.²⁰¹

The University of Magdeburg in Sachsen-Anhalt, a former East German state, has implemented a two-weekend-long program in a small, rural village to expose students to rural careers.²⁰² Although this program was only a short-term intervention (two weekends) with relatively few participants, there are useful takeaways to consider for the development of future programs. For example, the program at the University of

¹⁹⁸ Flum et al (2016), *Can a 'rural day' make a difference to GP shortage across rural Germany?*

¹⁹⁹ *Verbundweiterbildung* - Network of continuing education

²⁰⁰ Flum et al (2016), *Can a 'rural day' make a difference to GP shortage across rural Germany?*

²⁰¹ Zavlin et al (2017), *A comparison of medical education in Germany and the United States: from applying to medical school to the beginnings of residency*

²⁰² Holst et al (2015), *Strengthening training in rural practice in Germany: new approach for undergraduate medical curriculum towards sustaining rural health care*

Magdeburg took a holistic approach by including a representative from the regional Association of SHI Physicians and a financial advisor.²⁰³ These individuals introduced students to some of the administrative and practical aspects of private practice in a more remote region. Future programs will need to consider all of the competencies rural providers need to possess, not just the medical skills required, and incorporate these competencies into their rural exposure programs. These may include cultural understanding, provider-patient communication, and the basic business skills required to run a practice, among others. By boosting students' confidence in their ability to practice in a diverse array of settings, programs are more likely to divert students toward rural practices. The possibility of addressing the pay gap between rural and urban practice, as well as that between general practitioners and specialists will be discussed momentarily.

The structure of the German healthcare system is also organized such that medical schools and students tend to focus on specialty areas.²⁰⁴ Medical schools often emphasize research and training in specialties as a means to attract both students and research funding to their institutions. For example, interviewee Miriam Mayer, a fourth-year medical student at the prestigious Universitätsmedizin Charité in Berlin chose to leave her small town in Austria where she was raised and attend medical school in a large city. While this was partially due to the results of the admissions process, she liked the research emphasis of Charité and its location within a large city with more academic and cultural resources. Holst makes a crucial observation that this

²⁰³ Holst et al (2015), *Strengthening training in rural practice in Germany: new approach for undergraduate medical curriculum towards sustaining rural health care*

²⁰⁴ This and the following are from Holst (2015), *Rethinking Medical Training in Germany Towards Rural Health Care*

creates a system in which research and funding are dedicated to the areas that, although interesting, do not meet the greatest needs of society.²⁰⁵ Medical schools should become more in tune with the needs of patients and the general population, so they can adjust both their curriculum and research endeavors to better fit the needs of those they serve. The social perception of specialities as more prestigious, tied in part to the relative rates of compensation, complicates this issue.

Telehealth

In recent years, telehealth has become a popular alternative to in-person office visits. Telehealth and telemedicine are terms that encompass a broad spectrum of interventions. Many people think of telehealth as video consultations with a doctor to discuss a patient's concerns. However, telehealth also includes telecare devices such as diabetes-monitoring devices and ECGs.²⁰⁶ Patients can use these devices to collect data on their health status and send this data directly to their physician for interpretation and guidance.

Telehealth practices could prove quite useful in decreasing the demands on overworked rural physicians; however, there are some hurdles to overcome before widespread implementation can occur. A questionnaire conducted in Nordrhein-Westfalen in the early 2000s found no significant difference in the approval rate of telemedical devices among participants in rural and urban areas, at 79.6% and 80.3% respectively.²⁰⁷ However, the study did elucidate that the age group least likely to

²⁰⁵ Holst (2015), *Rethinking Medical Training in Germany Towards Rural Health Care*

²⁰⁶ This and the following are from Berg et al (2009), *GP-support by means of AGnES-practice assistants and the use of telecare devices in a sparsely populated region in Northern Germany – proof of concept*

²⁰⁷ This and the following are from Terschüren et al (2012), *Is telemonitoring an option against shortage of physicians in rural regions? attitude towards telemedical devices in the North Rhine-Westphalian health survey, Germany*

approve of telemedical devices were those aged seventy-five and older. This is critically important because, as Germany's population ages, the proportion of the population in this age group will rise. If older citizens follow the trend described in this study and continue to disapprove of telemedicine, it will not function as a viable solution to either staffing shortages or access restrictions.

Respondents in the Nordrhein-Westfalen study cited concerns regarding the validity of results from tests not performed by doctors or nurses as well as wanting immediate interpretation of their results by a medical professional.²⁰⁸ While the overall convenience of telehealth, and its obviation of travel to and from the doctor's office in particular, are undeniable benefits of this system, it will not prove a viable solution without adjustments to account for such patient concerns. A group of respondents composed of local politicians in another study conducted in Lower Saxony viewed telemedicine as "impersonal," feared it would impact the quality of care they received, and stated that telemedicine was their least favorite option out of the following supplementary healthcare models: utilizing trained medical assistants, instituting a patient bussing service, providing mobile physicians' offices, and implementing telemedicine models.²⁰⁹

More remote settings may also require expanded infrastructure to accommodate increased internet usage for telehealth purposes. Tests conducted outside of medical offices may be less reliable due to user error as well. These additional complicating

²⁰⁸ Terschüren et al (2012), *Is telemonitoring an option against shortage of physicians in rural regions? attitude towards telemedical devices in the North Rhine-Westphalian health survey, Germany*

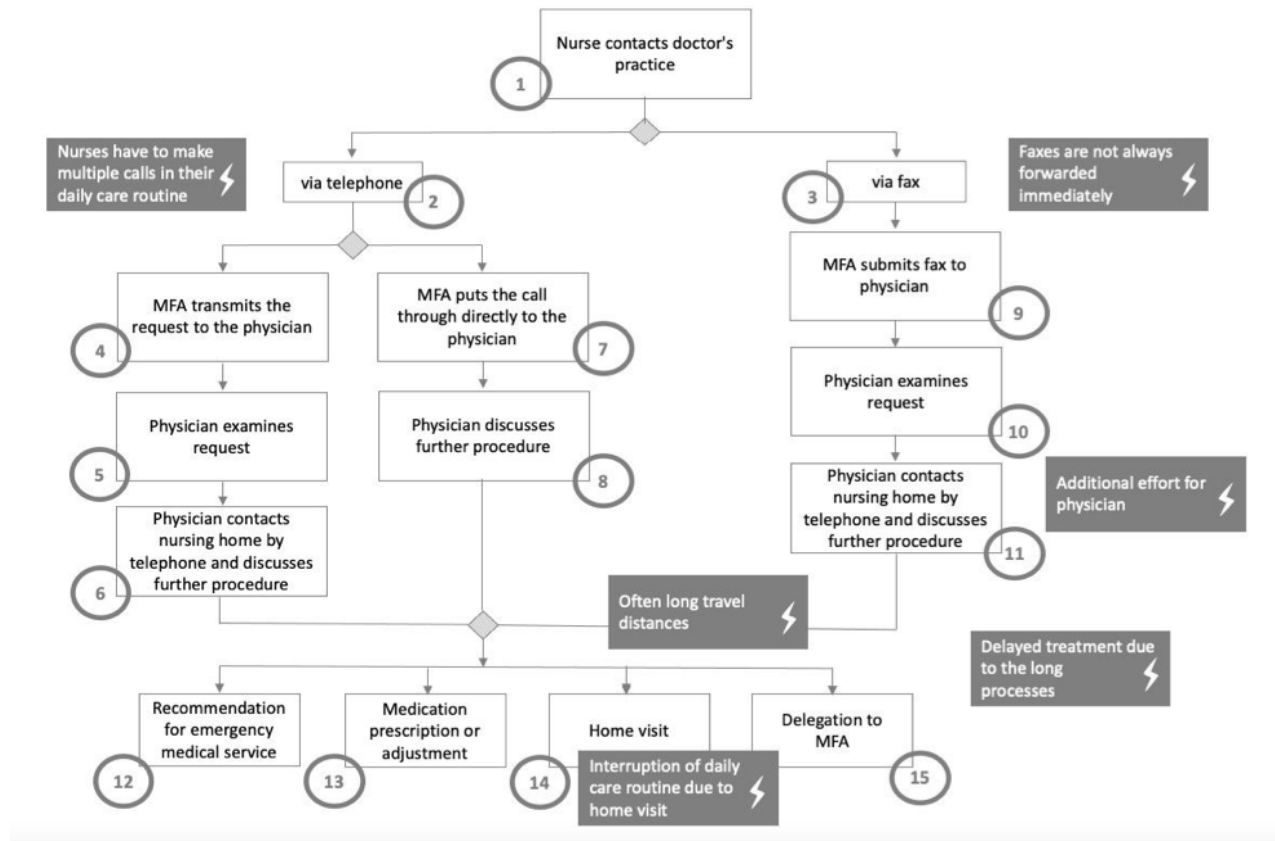
²⁰⁹ Kuhn et al (2017), *Which strategies might improve local primary healthcare in Germany? An explorative study from a local government point of view*

factors may prove to be a nuisance that offsets any potential benefits to be derived from such interventions.

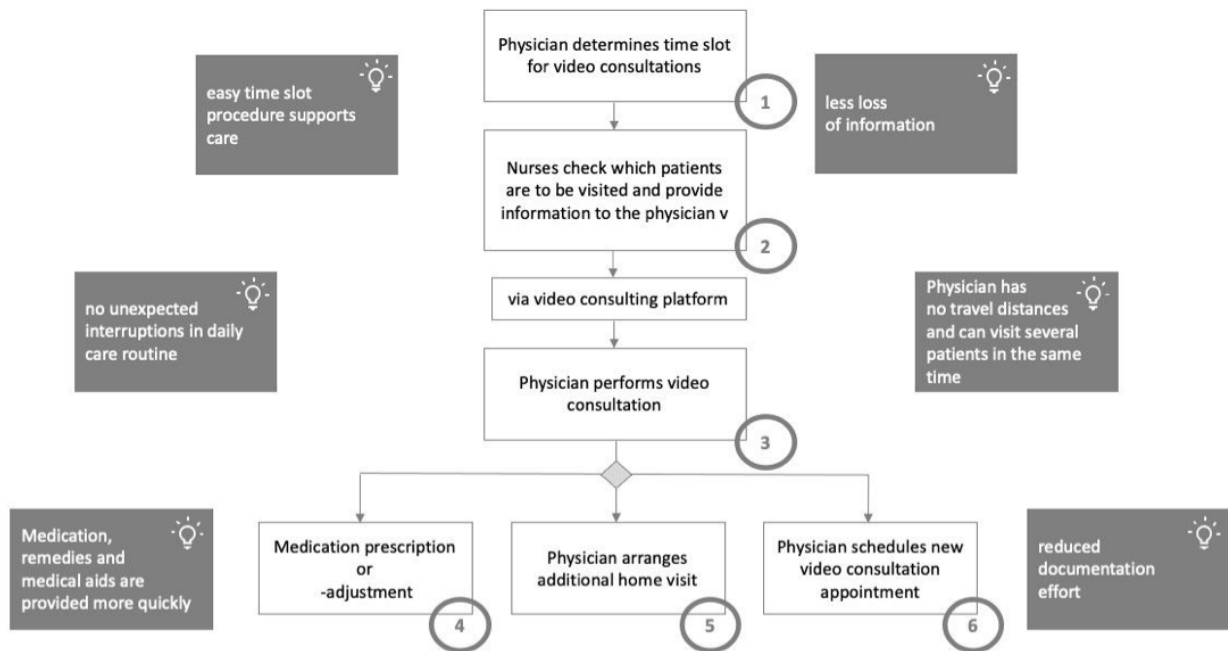
The figures below detail challenges in the current workflow of nurses utilizing technology to contact a doctor and how telemedicine could cut down on inefficiencies in the system. Two important developments arise from the implementation of telehealth in rural settings. First, providers will experience fewer interruptions in their daily workflow since they do not have to leave their office and travel to patients.²¹⁰ This is only an issue for rural providers whose patient populations are more dispersed and may require house calls that involve traveling significant distances to perform. Second, the possibilities for information to be lost as it is passed through multiple steps and providers are decreased. According to Kuhn et al, there were nearly 200 pilot projects for telemedicine across Germany as of 2017.²¹¹ Politicians and providers should learn from these projects and their results, growing those that prove most successful and expanding them to other regions.

²¹⁰ This and the following are from May et al (2021), *Challenges in Current Nursing Home Care in Rural Germany and How They Can Be Reduced by Telehealth - an Exploratory Pre-post Study*

²¹¹ Kuhn et al (2017), *Which strategies might improve local primary healthcare in Germany? An explorative study from a local government point of view*



Source: May et al (2021), *Challenges in Current Nursing Home Care in Rural Germany and How They Can Be Reduced by Telehealth - an Exploratory Pre-post Study*



Source: May et al (2021), *Challenges in Current Nursing Home Care in Rural Germany and How They Can Be Reduced by Telehealth - an Exploratory Pre-post Study*

The COVID-19 pandemic has brought the need for expanded telehealth capabilities into sharp focus over the past two years, in Germany and beyond.²¹² Healthcare leaders across the world are planning to invest heavily in telehealth infrastructure now and in the coming years as they prepare for the next public health crisis. In order for telehealth to benefit the largest proportion of the population, healthcare providers as well as the German state will need to invest in training and infrastructure across the country. It is crucial to note that telehealth should not be seen as a replacement for in-person care, but rather a supplement for existing care structures to better reach marginalized populations of patients.

²¹² This and the following are from Willige (2021), *This is what healthcare leaders see as the future for digital health*

Task-sharing

One of the more exciting and potentially fruitful suggestions for expanding access to care is through task-sharing with medical assistants (MAs) and nurses. Many tasks that occur in a medical office, such as giving immunizations and providing training on medical device usage, are currently delegated to physicians.²¹³ These tasks increase the strain placed on doctors who are already overworked and treating large numbers of patients. Shifting these tasks to other medical professionals such as registered nurses and medical assistants could decrease doctors' workloads and decrease the number of doctors needed to adequately care for a given population. There are a variety of allied health professionals within the German system whose skills are currently underutilized. They include medical assistants, registered nurses, and physician assistants. Some positions such as nurse practitioners that exist in other countries are yet to be implemented within the German healthcare system.²¹⁴ A better distribution of the workload across all of these providers could be crucial for improving the efficiency of care throughout Germany.

In a 2007 study conducted in Mecklenburg-Vorpommern, practice assistants took over roles often delegated to physicians such as home visits, training patients on telecare device usage, and geriatric assessments.²¹⁵ The study included 550 home visits to 105 patients, with responsibilities shared between two general practitioners and

²¹³ Berg et al (2009), *GP-support by means of AGnES-practice assistants and the use of telecare devices in a sparsely populated region in Northern Germany – proof of concept* and Beyer et al (2020), *Task-Sharing Between Pediatricians and Non-Physician Healthcare Professionals in Outpatient Child Health Care in Germany: Assessment of Need and Acceptance for Concept Development*

²¹⁴ Kuhn et al (2017), *Which strategies might improve local primary healthcare in Germany? An explorative study from a local government point of view*

²¹⁵ Berg et al (2009), *GP-support by means of AGnES-practice assistants and the use of telecare devices in a sparsely populated region in Northern Germany – proof of concept*

three registered nurses (RNs).²¹⁶ An important step in the study was the gradual increase in tasks delegated to RNs over three phases to include “...complex diagnostic measures and medical counselling” by the final phase. As the study showed, the graduated increase of RN responsibilities should be applied to future studies because it allows patients to grow used to the idea of practice assistants providing care and allows practice assistants to grow more confident in the responsibilities they are assigned. Indeed, 96.5% of patients in this study accepted the practice assistants’ expertise, and both physicians who participated in the study believed delegating tasks such as home visits to their assistants decreased their workload while still providing patients with high-quality care.

Although this study used a small sample size of participating physicians and practice assistants, it demonstrates acceptance of task delegation from all relevant stakeholders: patients, physicians, and practice assistants. Interviewee Christina Feudtner, a night nurse practicing in a cardiology clinic in Bad Nauheim, Hessen agrees that she would gladly handle more responsibility if German law allowed it. After twenty five years of practice in home care and a variety of sectors in acute medicine, she feels both her education and experience have adequately prepared her to perform more tasks. While her opinion is that of a single nurse, it is reassuring to see that the sentiments expressed and presented in the academic studies cited here are also seen at the individual level and in a variety of regions across Germany. According to the authors of the Berg study, similar projects have been implemented in Brandenburg,

²¹⁶ This and the following are from Berg et al (2009), *GP-support by means of AGnES-practice assistants and the use of telecare devices in a sparsely populated region in Northern Germany – proof of concept*

Sachsen, and Sachsen-Anhalt.²¹⁷ Analysis of the success of these similar studies will be crucial for determining if this model of care can be applied country-wide.

Table 3 Activities delegated to the AGnES-practice assistants

From: [GP-support by means of AGnES-practice assistants and the use of telecare devices in a sparsely populated region in Northern Germany – proof of concept](#)

Activities	N
Standardized assessment of the patients' health condition	550
Measuring blood pressure and pulse rate	402
Measuring pulse rate (without measuring blood pressure)	268
Additional documentation of noticeable symptoms	236
Measuring blood glucose	230
Applying standardized tests (e.g. for dementia, mobility)	126
Measuring body weight	81
Drug history (complete ascertainment of medication incl. inspection of storage)	78
Fluid intake advice	76
Training on telemedical devices	58
Standardized prevention of falls incl. visual inspection of the home	45
Measuring performance of the lungs	34
12-lead-ECG	30
Geriatric assessment	26
Instruction how to use a peak flow-meter	18
Drawing of a blood sample	17
Additional advise/consultation (without fluid intake advice)	17
Coordination/check of home care	15
Special talks (e.g. in case of mourning)	15
Checking daily pain journals	13
Therapy of wounds/sores/decubitus	10
Injections	6
Measuring body temperature	5
Issue of a medication plan	2

The above table illustrates the tasks delegated to practice assistants in the study conducted by Berg et al (2009) in their study *GP-support by means of AGnES-practice assistants and the use of telecare devices in a sparsely populated region in Northern Germany – proof of concept*. These tasks may be interesting for American readers, as many of these, such as measuring blood pressure and pulse rate, are already universally delegated to non-physician medical staff across the United States.

²¹⁷ Berg et al (2009), *GP-support by means of AGnES-practice assistants and the use of telecare devices in a sparsely populated region in Northern Germany – proof of concept*

A more recent study published in 2020, also analyzed acceptance of task-sharing in Mecklenburg-Vorpommern. Unlike the previously mentioned report, however, this study considers the role of non-physician providers in pediatric care.²¹⁸ Respondents came from a variety of health and allied health backgrounds, including nursing and social work. 58% of respondents believe there are currently substantial difficulties in accessing pediatric medical care in Mecklenburg-Vorpommern. The survey revealed a consensus that task-sharing could be critical for addressing barriers to accessing pediatric care in rural regions; however, non-physician providers would need to have adequate experience, and not all tasks could be assigned to non-physicians. As of 2008, German law allows non-physician staff, including medical practice assistants and nurses, to perform tasks delegated to them by a general practitioner without said physician being legally responsible. While task sharing is legally permissible, further research is required to determine if task sharing is actually occurring on a regular basis. If it is regularly occurring, it will be important to determine in which settings it is primarily taking place and whether or not it is improving care delivery and decreasing doctors' workloads.

This structure of healthcare delivery is widely implemented in other countries, like the United States, which proves it can be scaled up and still be successful. The next step will be to scale up this system within Germany and determine if it actually ameliorates the issues of overworked physicians and the lack of providers in rural regions. It will be crucial to have the input and buy-in of policymakers who determine the legal aspects surrounding scope of practice for different healthcare professionals. This

²¹⁸ This and the following are from Beyer et al (2020), *Task-Sharing Between Pediatricians and Non-Physician Healthcare Professionals in Outpatient Child Health Care in Germany: Assessment of Need and Acceptance for Concept Development*

change would need to coincide with policy alterations that adjust scope of care for each position. In conjunction with changes in medical school curriculum, adjustments to task sharing will likely make up a considerable portion of any comprehensive plan policymakers may enact to address the shortage of physicians in remote areas.

Not only will policy need to be adjusted, but patients and providers alike will need to be confident in the new delegation of responsibilities in order for this system to be successful. In the aforementioned study involving pediatricians in Mecklenburg-Vorpommern, 70% of healthcare professionals who participated in the study's questionnaire believed it would be acceptable to delegate tasks relating to health promotion and prevention to non-physician staff.²¹⁹ Many pediatricians noted that it would be particularly important to expand the scope of practice of nurses in areas lacking pediatric care, such as rural areas, so that their expertise could be utilized to address the care deficit in these areas. All parties agreed that a certain amount of clinical experience would be necessary to ensure tasks were delegated to competent staff. Based on survey results and workshops with representatives from the pediatric field, respondents determined that a minimum of 5 years experience and completion of pediatric training through the Medical Association would suffice to ensure staff could handle the assigned tasks.

Although this study found physicians were accepting of task-sharing, at least to some degree, this is not always the case. A study conducted by Jens Holst of the Institute of General Medicine and Family Medicine at the University of Magdeburg found that "...panel physicians have shown much resistance to delegating medical services to

²¹⁹ This and the following are from Beyer et al (2020), *Task-Sharing Between Pediatricians and Non-Physician Healthcare Professionals in Outpatient Child Health Care in Germany: Assessment of Need and Acceptance for Concept Development*

nurses or medical assistants like in other countries; at the same time, however, they continuously complain about the heavy workload generated by the perceived high demand of patients.”²²⁰ The unwillingness of physicians to improve and adjust interprofessional relationships with other healthcare professionals could impinge upon the viability and success of proposed solutions for addressing problems within the healthcare system. All health professionals will need to reassess the organization of their power structure if this solution is to be implemented.

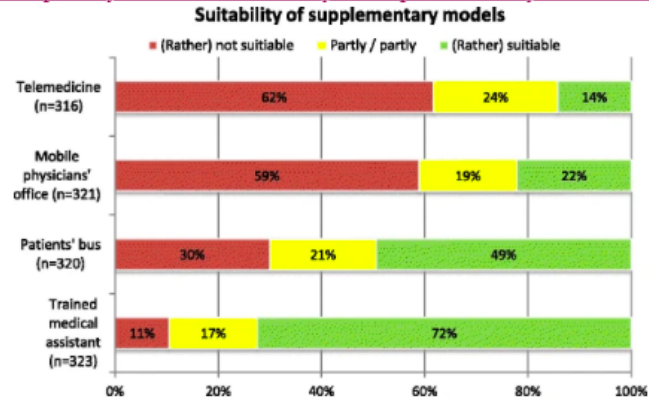
Patients must also accept alterations in who provides their care - a change that seems more straightforward on paper than it would be in implementation. In a study conducted in Lower Saxony, researchers surveyed local leaders on their opinions on four supplementary healthcare models: patient buses, telemedicine, mobile physicians' offices, and trained medical assistants.²²¹ The following graphic illustrates respondents' thoughts on how suitable they find each of these models. The figure illustrates that 72% of respondents think utilizing trained medical assistants is an appropriate supplementary care model. This model was also the most widely accepted of the four proposed.

²²⁰ Holst (2015), *Rethinking Medical Training in Germany Towards Rural Health Care*

²²¹ This and the following are from Kuhn et al (2017), *Which strategies might improve local primary healthcare in Germany? An explorative study from a local government point of view*

Fig. 4

From: [Which strategies might improve local primary healthcare in Germany? An explorative study from a local government point of view](#)



Summarized assessment of supplementary models in health care

Source: Kuhn et al (2017), *Which strategies might improve local primary healthcare in Germany? An explorative study from a local government point of view*

The findings of this study are promising and enlightening as to which care models may be most successful if implemented on a larger scale. Future researchers and policymakers should take into account the positive and negative feedback respondents of the above study provided as they move forward with developing related, but hopefully improved, interventions. For example, some of the positive comments regarding the usage of trained medical assistants was the possibility of relieving physicians' workloads and providing more home healthcare visits.²²² Conversely, respondents worried these professionals were “not an adequate substitute for a doctor” and worried the quality of care they would receive would not be as high as if a doctor had provided it. These concerns are valid, and all stakeholders must work together to address them if any supplementary care models are to be implemented and successfully improve access to quality healthcare throughout Germany.

²²² This and the following are from Kuhn et al (2017), *Which strategies might improve local primary healthcare in Germany? An explorative study from a local government point of view*

Polyclinics

An interesting approach to addressing the healthcare deficits posed by Susan Giaimo is to reinvigorate the polyclinic system once common in East Germany before reunification.²²³ Polyclinics or “Praxiskliniken” are “multispecialty practices” where patients can see different types of physicians all in one place.²²⁴ Polyclinics, in the traditional definition of the term, no longer exist; however, practices with a similar approach to the traditional east German polyclinics are beginning to reappear across Germany.

For example, the Saale Klinik in Halle an der Saale, Saxony-Anhalt has based its practice structure on the “Polykliniken” or “Ärztelhäuser” of the former German Democratic Republic.²²⁵ The Saale Klinik employs “...surgeons, gynaecologists, cardiologists, urologists, anaesthetists, and state-of-the-art equipment” all under one roof. This structure could be helpful for improving coordination of care between providers, a common problem that creates inefficiencies and unnecessary expenses. It could also help improve coordination of care between in-patient and out-patient settings by combining them all in one location.²²⁶ Equipment can be expensive, and the costs can deter physicians from opening private practices; however, in this case, equipment and its costs are shared across providers.²²⁷

Other advantages of polyclinics include the ease of communication between different providers and the ability to efficiently share patient files since all information is

²²³ Giaimo (2016), *Reforming Health Care in the United States, Germany, and South Africa*, pp.126-127

²²⁴ Giaimo (2016), *Reforming Health Care in the United States, Germany, and South Africa*, pp.126-127 and The Institute for Quality and Efficiency in Healthcare (2018), *Health care in Germany: The German health care system*

²²⁵ This and the following are from Hyde (2006), *Controversy accompanies polyclinic revival in Germany*, p.721

²²⁶ Pflugmacher (2017), *Aus der Asche nach 28 Jahren in der Versenkung*

²²⁷ Hyde (2006), *Controversy accompanies polyclinic revival in Germany*, pp.721-722

housed in the same facility.²²⁸ Some providers, however, are unconvinced: Elvira Reinke, an internal cardiac specialist in private practice in Schwerin, Mecklenburg-Vorpommern, worries that this system could cut into doctors' earnings without sufficiently decreasing their workloads. More research is required to determine whether this potential disadvantage outweighs the possible advantages of the system. Polyclinics have the advantage of decreasing the demands on any single physician. Many young doctors state that the long working hours and high demands of running their own practice are deterrents from practicing in rural locations where private practice is the norm.²²⁹ A structure wherein multiple physicians share the time and expense burden could help improve the likelihood of young doctors choosing to practice in rural areas.

The German government seems to be encouraging hospitals and providers to improve coordination of care between the stationary and ambulatory sectors as is evident in the enactment of Sozialgesetzbuch V Paragraf 115.²³⁰ The language of the law, however, is slightly vague and does not offer direct examples of how providers should improve "Zusammenarbeit," stating only that they are encouraged to do so. The promotion and utilization of polyclinics will require citizens to accept the model that has some negative connotations due to its east German past, in which doctors often spied on their patients, and will require politicians to adjust the stringent laws defining and dividing in-patient and out-patient care.²³¹

²²⁸ This and the following are from Hyde (2006), *Controversy accompanies polyclinic revival in Germany*, pp.721-722

²²⁹ Kuhn et al (2017), *Which strategies might improve local primary healthcare in Germany? An explorative study from a local government point of view*

²³⁰ This and the following are from Pflugmacher (2017), *Aus der Asche nach 28 Jahren in der Versenkung*

²³¹ Pflugmacher (2017), *Aus der Asche nach 28 Jahren in der Versenkung* and Hyde *Controversy accompanies polyclinic revival in Germany*, p.722

Conclusion

This thesis has covered a wide range of topics pertaining to Germany's healthcare system. Chapter 1 offered an overview of the German healthcare system and how it is structured. Chapter 2 focused on Mecklenburg-Vorpommern to determine how these country-level trends play out at the state level in Germany's most rural federal state. In Chapter 3, I discussed the different solutions currently being researched and/or implemented throughout Germany to address some of the major problems impacting adequate healthcare delivery in rural regions of the country.

The first chapter sets the stage for how the system should function compared to how it is actually functioning on a broad level, contrasting the ideal with the real. I focused on its biggest issues overall, as well as those that are more apparent in rural regions. This allowed me to dive deeper into the dysfunction at the state level in future chapters and allowed me to analyze the merits of proposed solutions as well as how realistic they are given the constraints under which they would be operating. This chapter is primarily a synthesis of other sources with little analysis on my part; however, I think it was important for setting the stage for the analysis I conducted in the rest of the thesis.

Chapter 2 took the discussion of healthcare inefficiencies down to the state and local level with an examination of Mecklenburg-Vorpommern. As the state with the third lowest population with 1.61 million inhabitants and the lowest population density, averaging 69 people per square kilometer, Mecklenburg-Vorpommern is an excellent case study for the triumphs and downfalls of rural healthcare in Germany.²³² I discussed

²³² Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, pp.15-17

the challenges of demographic trends that are leading to a shrinking base of young people paying into the system to support older individuals as well as aging physicians, both specialists and general practitioners, who are struggling to find replacements to take over their practices when they retire.²³³ I also spent a considerable portion of the chapter illuminating the transportation deficits across the state that impact patients' abilities to receive care.

Finally, I went into a detailed discussion of the various solutions that are currently being explored throughout Mecklenburg-Vorpommern. These include the following:

- Better coordinating care between providers to improve efficiency of care
- Incentivizing workers to settle in Mecklenburg-Vorpommern, particularly the more remote regions of the state
- Taking actions to bolster rural care such as through giving medical students more exposure to rural practice
- Improving systems of transportation to allow patients better ease of accessing care
- Expanding telemedical practices to decrease the need for transportation in areas that are more isolated or where patients lack personal transportation methods

Many of these themes will appear again in Chapter 3. This illustrates the promising conclusion that Mecklenburg-Vorpommern is on par with the rest of Germany in instituting innovative approaches to improving access to healthcare for its residents.

²³³ Heydorn et al (2021), *Abschlussbericht: der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“*, pp.20,48

The primary aim of Chapter 3 was to provide an in-depth examination of the most promising proposed solutions to the issues mentioned in Chapters 1 and 2. These solutions include the following approaches:

- Recruiting physicians from other countries and requiring them to work in rural areas of Germany
- Adjusting German medical school curriculum to better prepare students for practice in rural areas
- Increasing the usage of telehealth for virtual visits and diagnostics
- Redistributing responsibilities and tasks among different medical providers to decrease the load placed on physicians
- Reinstating a form of polyclinics as seen in East Germany to improve efficiency of communication between providers and centralize care

All of these solutions provide promising opportunities to improve access to care and efficiency of care, especially in more remote regions of Germany. However, no one solution will completely solve all the problems currently facing the system. It will take a combination of multiple approaches, and likely alterations to them, to comprehensively address the deficiencies in Germany's healthcare system.

What are the next steps?

With all of this information in hand, it is now critical that policymakers, medical providers, insurance companies, and patients all work together to put it into action. Researchers in Germany have already done much of the theoretical work in this area, with applications in small-scale projects; however, larger implementations are necessary to truly determine which solutions will be most effective.

Germany could also take this opportunity to learn from other countries and explore innovative solutions that they may not have considered yet. For example, I spent the summer of 2021 working on public health projects in rural Uganda. While this setting is certainly quite different from Germany, it does provide interesting examples of rural healthcare models that could be useful in rural Germany. Each village in Uganda has a set of trained volunteer community members known as the Village Health Team. These individuals act as the first level of medical care in the Ugandan healthcare system. Locals can go to them for items such as some contraceptives and subsidized mosquito nets or for advice on whether to seek further medical care. The Village Health Team acts as the first level of “gatekeepers” in the Ugandan healthcare system. They increase the accessibility of care for rural residents while also improving the efficiency of the healthcare system by providing guidance that ideally prevents some people from needing to visit actual medical professionals. An iteration on this model could prove quite useful in improving accessibility to care as well as decreasing workloads for rural providers in more remote areas of Germany.

What has this taught us?

My goal with this in-depth analysis is not to sow disappointment and despair regarding the state of Germany's healthcare system. Instead, I hope to inspire providers, policymakers, and patients to continue innovating to improve a system that is so full of potential. The German healthcare system is already incredibly strong and has worked hard throughout its history to continuously improve. Germans must be willing to continue improving and innovating to allow all citizens the care they deserve.

Bibliography

42 Medical Universities in Germany: The list (2021) . My German University.

Retrieved January 13, 2022, from

<https://www.mygermanuniversity.com/articles/medical-universities-in-germany>

Ärzteblatt, D. Ä. G., Redaktion Deutsches. (2020, January 29).

Mecklenburg-Vorpommern beschließt Landarztgesetz. Deutsches Ärzteblatt.

<https://www.aerzteblatt.de/nachrichten/108990/Mecklenburg-Vorpommern-beschliesst-Landarztgesetz>

Becker, K. B. (2020, June 28). Privatpatienten wurden bevorzugt. *Frankfurter Allgemeine*.

<https://www.faz.net/aktuell/politik/inland/studie-privatpatienten-wurden-bevorzugt-16835636.html>

Berg, N. van den, Fiß, T., Meinke, C., Heymann, R., Scriba, S., & Hoffmann, W.

(2009). GP-support by means of AGnES-practice assistants and the use of telecare devices in a sparsely populated region in Northern Germany – proof of concept. *BMC Family Practice*, 10(1), 44.

<https://doi.org/10.1186/1471-2296-10-44>

Beyer, A., Rehner, L., Hoffmann, W., & van den Berg, N. (2020). Task-Sharing Between Pediatricians and Non-Physician Healthcare Professionals in Outpatient Child Health Care in Germany: Assessment of Need and Acceptance for Concept Development. *Inquiry: A Journal of Medical Care Organization, Provision and Financing*, 57, 46958020969299. <https://doi.org/10.1177/0046958020969299>

Breckenkamp, J., Mielck, A., & Razum, O. (2007, July 1). *Full article: Health inequalities in Germany: Differences in the 'Healthy migrant effect' of European, non-European and internal migrants*. BioMed Central Public Health. <https://www.tandfonline.com/doi/full/10.1080/1369183X.2021.1901675>

Breckenkamp, J., Mielck, A., & Razum, O. (2007). Health inequalities in Germany: Do regional-level variables explain differentials in cardiovascular risk? *BMC Public Health*, 7(1), 132. <https://doi.org/10.1186/1471-2458-7-132>

Bundesärztekammer. (2021, September 8). *Drohendem Ärztemangel mit kreativen Ideen begegnen*. Bundesärztekammer. <https://www.bundesaerztekammer.de/ueber-uns/landesaerztekammern/aktuelle-pressemitteilungen/news-detail/drohendem-aerztemangel-mit-kreativen-ideen-begegnen/>

Bureau, U. C. (2017, August 9). *One in Five Americans Live in Rural Areas*.

Census.Gov. <https://www.census.gov/library/stories/2017/08/rural-america.html>

Carter, A. (2021, September 28). *Thousands of doctor vacancies in Germany remained unfilled in 2019*. I Am Expat.

<https://www.iamexpat.de/expat-info/german-expat-news/thousands-doctor-vacancies-germany-remained-unfilled-2019>

CNBC. (2019, November 24). *How Germany's Universal Health-Care System Works*. <https://www.youtube.com/watch?v=1d3QLPdHysc>

Commonwealth Fund. (2021). *About Us*. Commonwealth Fund.

<https://www.commonwealthfund.org/about-us>

Ehmann, A. T., Groene, O., Rieger, M. A., & Siegel, A. (2020). The Relationship between Health Literacy, Quality of Life, and Subjective Health: Results of a Cross-Sectional Study in a Rural Region in Germany. *International Journal of Environmental Research and Public Health*, 17(5), E1683.

<https://doi.org/10.3390/ijerph17051683>

Federal Ministry of Health. (2020). *The German healthcare system* (p. 61). Federal Ministry of Health.

https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/5_Publikationen/Gesundheit/Broschueren/200629_BMG_Das_deutsche_Gesundheitssystem_EN.pdf

Felder, S., & Tauchmann, H. (2013). Federal state differentials in the efficiency of health production in Germany: An artifact of spatial dependence? *The European Journal of Health Economics*, 14(1), 21–39.

<https://doi.org/10.1007/s10198-011-0345-8>

Flum, E., Goetz, K., Berger, S., Ledig, T., & Steinhäuser, J. (2016). Can a “rural day” make a difference to GP shortage across rural Germany? *Rural and Remote Health*, 16(1), 3628.

Frankfurter Allgemeine Zeitung. (2021, July 9). *Germany: Leading insurance companies by GWP 2020*. Statista.

<https://www.statista.com/statistics/764141/leading-insurance-companies-in-germany-by-revenue-in-gross-written-premiums/>

Gemeinsamer Bundesausschuss. *Members—Gemeinsamer Bundesausschuss*.

Gemeinsamer Bundesausschuss. Retrieved January 29, 2022, from

<https://www.g-ba.de/english/structure/members/>

Gemeinsamer Bundesausschuss. *Subcommittees—Gemeinsamer*

Bundesausschuss. Retrieved February 4, 2022, from

<https://www.g-ba.de/english/structure/subcommittees/>

Germany. (2015, September 9). Institute for Health Metrics and Evaluation.

<https://www.healthdata.org/germany>

Gerlinger, T. (2017, September 22). *Vergütung privatärztlicher Leistungen*.

Bundeszentrale für politische Bildung.

<https://www.bpb.de/themen/gesundheit/gesundheitspolitik/252106/verguetung-privataerztlicher-leistungen/>

Gaiimo, S. (2016). Reforming Health Care in the United States, Germany, and

South Africa: Comparative Perspectives on Health. In *Reforming health care in the United States, Germany, and South Africa: Comparative perspectives on health*. Palgrave Macmillan; U-M Catalog Search.

Hahn, K., & Steinhäuser, J. (2019). Strategies for rural areas: The development of and initial experiences with a training course for physicians from third countries

to prepare them for medical practice in Germany. *GMS Journal for Medical Education*, 36(3), 25. <https://doi.org/10.3205/zma001233>

Health care in Germany: The German health care system. (2018). In

InformedHealth.org [Internet]. Institute for Quality and Efficiency in Health Care (IQWiG). <https://www.ncbi.nlm.nih.gov/books/NBK298834/>

Heier, M., & Marstedt, G. (2021). Das Ärzteimage in der Bevölkerung: Im Schatten von „IGeL“ und „Zweiklassenmedizin“. *Bertelsmann Stiftung und der BARMER GEK*, 12.

Herwartz, H., & Schley, K. (2018). Improving health care service provision by adapting to regional diversity: An efficiency analysis for the case of Germany. *Health Policy*, 122(3), 293–300. <https://doi.org/10.1016/j.healthpol.2018.01.004>

Heydorn, J., & der Enquete Kommission. (2021). *Abschlussbericht: Der Enquete-Kommission „Zukunft der medizinischen Versorgung in Mecklenburg-Vorpommern“* (p. 183). Landtag Mecklenburg-Vorpommern. https://www.dokumentation.landtag-mv.de/parldok/dokument/50688/abschlussbericht_der_enquete_kommission_zukunft_der_medizinischen_versorgung_in_mecklenburg_vorpommern.pdf

Hoebel, J., Rommel, A., Schröder, S. L., Fuchs, J., Nowossadeck, E., & Lampert, T. (2017). Socioeconomic Inequalities in Health and Perceived Unmet Needs for Healthcare among the Elderly in Germany. *International Journal of Environmental Research and Public Health*, 14(10), 1127.

<https://doi.org/10.3390/ijerph14101127>

Holst, D. D. J., Normann, O., & Herrmann, M. (2015, November 11). *Strengthening training in rural practice in Germany: New approach for undergraduate medical curriculum towards sustaining rural health care*. Rural and Remote Health.

<https://doi.org/10.22605/RRH3563>

Holst, J. (2015). Rethinking Medical Training in Germany Towards Rural Health Care. *Primary Health Care Open Access*, 05(02).

<https://doi.org/10.4172/2167-1079.1000194>

Hyde, R. (2006). Controversy accompanies polyclinic revival in Germany. *The Lancet*, 368(9537), 721–722. [https://doi.org/10.1016/S0140-6736\(06\)69268-4](https://doi.org/10.1016/S0140-6736(06)69268-4)

Kacandes, I. (1997). *A User's Guide to German Cultural Studies* (S. Denham, I. Kacandes, & J. Petropoulos, Eds.). University of Michigan Press.

Keisler-Starkey, K., & Bunch, L. N. (2021, September 14). *Health Insurance Coverage in the United States: 2020*. Census.Gov.

<https://www.census.gov/library/publications/2021/demo/p60-274.html>

Kresge, N. (2014, June 30). *Foreign doctors fill physician shortage in Germany*. Helsinki Times.

<https://www.helsinkitimes.fi/world-int/world-news/international-news/11031-foreign-doctors-fill-physician-shortage-in-germany.html>

Kuhlmann, E. (2011). Citizenship and healthcare in Germany: Patchy activation and constrained choices. In J. Newman & E. H. Tonkens (Eds.), *Participation, responsibility and choice: Summoning the active citizen in Western European welfare states* (pp. 29–44). Amsterdam University Press; U-M Catalog Search.

Kuhn, B., Kleij, K.-S., Liersch, S., Steinhäuser, J., & Amelung, V. (2017). Which strategies might improve local primary healthcare in Germany? An explorative study from a local government point of view. *BMC Family Practice*, 18(1), 105.

<https://doi.org/10.1186/s12875-017-0696-z>

Loerbroks, A., Weigl, M., Li, J., & Angerer, P. (2016). Effort-reward imbalance and perceived quality of patient care: A cross-sectional study among physicians in Germany. *BMC Public Health*, 16(1), 1–9.

<https://doi.org/10.1186/s12889-016-3016-y>

Luthra, S. (2019, October 16). Poor People Are Still Sicker Than The Rich In Germany, Despite Universal Health Care. *NPR*.
<https://www.npr.org/sections/health-shots/2019/10/16/770442938/poor-people-a-re-still-sicker-than-the-rich-in-germany-despite-universal-health-c>

May, S., Jonas, K., Zahn, T., Heinze, M., & Mühlensiepen, F. (2021). *Challenges in Current Nursing Home Care in Rural Germany and How They Can Be Reduced by Telehealth—An Exploratory Pre-post Study* [Preprint]. In Review.
<https://doi.org/10.21203/rs.3.rs-498775/v1>

Mediendienst Integration. *Facts & Figures | English | Zahlen und Fakten | MEDIENDIENST INTEGRATION*. Medien Dienst Integration. Retrieved January 28, 2022, from <https://mediendienst-integration.de/english/facts-figures.html>

Organisation for Economic Co-operation and Development, & European Observatory on Health Systems and Policies. (2019). *Poland: Country Health Profile 2019, State of Health in the EU* (State of Health in the EU, p. 24). Organisation for Economic Co-operation and Development.
https://ec.europa.eu/health/sites/default/files/state/docs/2019_chp_poland_english.pdf

- Pflugmacher, I. (2017, September 4). *Aus der Asche nach 28 Jahren in der Versenkung* [ÄrzteZeitung]. AerzteZeitung.de.
<https://www.aerztezeitung.de/Wirtschaft/Aus-der-Asche-nach-28-Jahren-in-der-Versenkung-301140.html>
- Ratcliffe, M., Burd, C., Holder, K., & Fields, A. (2016). *Defining Rural at the U.S. Census Bureau*. 8.
- Razum, O., Geiger, I., Zeeb, H., & Ronellenfitsch, U. (2004, October 22). *Gesundheitsversorgung von Migranten*. Deutsches Ärzteblatt.
<https://www.aerzteblatt.de/archiv/43977/Gesundheitsversorgung-von-Migranten>
- Rosano, A., Peschel, P., Kugler, J., Ricciardi, W., Guasticchi, G., & van der Zee, J. (2013). Preventable hospitalization and the role of primary care: A comparison between Italy and Germany. *Journal of Public Health, 21*(5), 445–454.
<https://doi.org/10.1007/s10389-013-0563-x>
- Schreyögg, J. (2020). Corona-Krise trifft auf Strukturprobleme im Gesundheitswesen. *Wirtschaftsdienst, 2020*(4), 226–227.
- Schröder, L., Flägel, K., Goetz, K., & Steinhäuser, J. (2018). Mobility concepts and access to health care in a rural district in Germany: A mixed methods approach. *BMC Family Practice, 19*(1), 47. <https://doi.org/10.1186/s12875-018-0733-6>

Schulz, M., Romppel, M., & Grande, G. (2018). Built environment and health: A systematic review of studies in Germany. *Journal of Public Health, 40*(1), 8–15.

<https://doi.org/10.1093/pubmed/fdw141>

Slack, T., & Jensen, L. (2020). The Changing Demography of Rural and Small-Town America. *Population Research and Policy Review, 39*(5), 775–783.

<https://doi.org/10.1007/s11113-020-09608-5>

Sperlich, S., Klar, M. K., Safieddine, B., Tetzlaff, F., Tetzlaff, J., & Geyer, S. (2021). Life stage-specific trends in educational inequalities in health-related quality of life and self-rated health between 2002 and 2016 in Germany: Findings from the German Socio-Economic Panel Study (GSOEP). *BMJ Open, 11*(3),

e042017. <https://doi.org/10.1136/bmjopen-2020-042017>

Sperlich, S., Klar, M. K., Safieddine, B., Tetzlaff, F., Tetzlaff, J., & Geyer, S. (2021b). Life stage-specific trends in educational inequalities in health-related quality of life and self-rated health between 2002 and 2016 in Germany: Findings from the German Socio-Economic Panel Study (GSOEP). *BMJ Open, 11*(3),

e042017. <https://doi.org/10.1136/bmjopen-2020-042017>

Stevanovic, A., Beckers, S. K., Czaplík, M., Bergrath, S., Coburn, M., Brokmann, J. C., Hilgers, R.-D., Rossaint, R., Felzen, M., Hirsch, F., Wolff, J., Lapp, N., Albrecht, L., Koerentz, C., & TEMS Collaboration Group. (2017). Telemedical support for prehospital Emergency Medical Service (TEMS trial): Study protocol for a randomized controlled trial. *Trials*, *18*(1), 43.
<https://doi.org/10.1186/s13063-017-1781-2>

Sturny, I. *Switzerland*. The Commonwealth Fund. Retrieved October 30, 2021, from <https://www.commonwealthfund.org/international-health-policy-center/countries/switzerland>

Sundmacher, L., & Ozegowski, S. (2016). Regional distribution of physicians: The role of comprehensive private health insurance in Germany. *The European Journal of Health Economics*, *17*(4), 443–451.
<https://doi.org/10.1007/s10198-015-0691-z>

Terschüren, C., Mensing, M., & Mekel, O. C. (2012). Is telemonitoring an option against shortage of physicians in rural regions? Attitude towards telemedical devices in the North Rhine-Westphalian health survey, Germany. *BMC Health Services Research*, *12*(1), 95. <https://doi.org/10.1186/1472-6963-12-95>

Tikkanen, R., Osborn, R., Mossialos, E., Djordjevic, A., & Wharton, G. A. (2020, June 5). *International Health Care System Profiles: Germany*. The Commonwealth Fund.
<https://www.commonwealthfund.org/international-health-policy-center/countries/germany>

Torry, H. (2015, July 20). *Germany Seeks Foreign Cure for Its Doctor Shortage*—WSJ. The Wall Street Journal.
<https://www.wsj.com/articles/germany-seeks-foreign-cure-for-its-doctor-shortage-1437434991>

Toth, F. (2020). Going universal? The problem of the uninsured in Europe and in OECD countries. *International Journal of Health Planning & Management*, 35(5), 1193–1204. <https://doi.org/10.1002/hpm.3027>

von Wendorff, F. (2021, March 20). *German University Admissions: The Numerus Clausus*. Top Universities.
<https://www.topuniversities.com/blog/german-university-admissions-numerus-clausus>

Vu-Eickmann, P., Li, J., Müller, A., Angerer, P., & Loerbroks, A. (2018). Associations of psychosocial working conditions with health outcomes, quality of care and intentions to leave the profession: Results from a cross-sectional study among physician assistants in Germany. *International Archives of Occupational and Environmental Health*, 91(5), 643–654.

<https://doi.org/10.1007/s00420-018-1309-4>

Welle (www.dw.com), D. (2003, December 29). *Doctor Shortage in Germany Called Acute* | DW | 29.12.2003. DW.COM.

<https://www.dw.com/en/doctor-shortage-in-germany-called-acute/a-1071282>

Wilhelmi, L., Ingendae, F., & Steinhäuser, J. (2018, November 19). *What leads to the subjective perception of a ‘rural area’? A qualitative study with undergraduate students and postgraduate trainees in Germany to tailor strategies against physician’s shortage*. Rural and Remote Health.

<https://doi.org/10.22605/RRH4694>

Willige, A. (2021, May 14). *This is what healthcare leaders see as the future for digital health*. World Economic Forum.

<https://www.weforum.org/agenda/2021/05/digital-health-telemedicine-telehealth-ai-digitalize-health-services/>

World Bank. (2020, August). *Urban and rural population of Germany 2019*. Statista.

<https://www.statista.com/statistics/984679/urban-and-rural-population-of-germany/>

Zavlin, D., Jubbal, K. T., Noé, J. G., & Gansbacher, B. (2017). A comparison of medical education in Germany and the United States: From applying to medical school to the beginnings of residency. *GMS German Medical Science*, 15, 15.

<https://doi.org/10.3205/000256>

Appendix 1: Interview Question Responses

Interview 1

1. Name

Christina Feudtner

2. May I use your name and location in my paper?

Yes, you may !

3. Where do you live and/or work?

Living in Friedberg, close to Frankfurt/Germany , Place of work, Kerckhoff Clinic,
Cardio Clinic /Bad Nauheim , Germany

4. What is/was your profession?

Exminated nurse

5. In what setting do/did you work (i.e. hospital, clinic, rural, urban)?

I have been working in the Cardiological clinic for the past 25 yrs. Before that I experienced urban home care and various different sectors in the acute medicine. For two years I had experience in an institute of vascular surgery.

6. Can you describe your daily duties and responsibilities?

I practice as a night nurse, shifts are from 20.00 pm -7.00 AM-

-Checking new patients off the day , freshly operated, vital functions, wounds

Questioning patients about needs of pain/sleep medication

Necessity, digestion

Diabetics patients control, Insulin injections

EKG, monitoring if necessary

Medication setting for the patients for the following day

Bandage changes

Blood control

Daily filing , paperwork

5.30 AM – 6.30 AM personal hygiene with patients in need of assistance.

7. What is/was your favorite part of your job?

I like my night shifts since I am in charge.

8. What is/was your least favorite part of your job?

Convincing the doctors to make a decision regarding the patient

9. Do you feel like your roles and responsibilities match your level of expertise?

I could gladly take over more responsibility, but the German law does not allow that.

10. What is your position on giving more responsibility to nurses and/or medical assistants such as having them conduct immunizations and home visits?

That is the case in Germany. Conducted by the doctor , nurses do home visits and fulfill the delegated chores

11. Do you feel that you have an adequate amount of work? Is it too much or too little?

Its definitely too much work

12. What do you like about the current German healthcare system?

No one gets a door in their face asking for help! And although we do have private patients, medical treatment is not very much different to the ones regularly insured.

13. What do you dislike about the current German healthcare system?

Although people have high monthly insurance costs, they often have to pay extra for certain medication, often leaving the patient no choice but to accept the more reasonable medication

14. Do you feel that your medical education adequately prepared you to work in any medical setting, both urban and rural?

Yes, I like to make the statement, the education is very good!

15. If you could change one thing about your medical education, what would it be?

Less theory, more practice at the scene! During the education as much contact to the patients as possible, empathy and social contacts are important for patients and students.

„Learning by Doing“ my Motto!

16. Further comments or questions?

NO,NO

17. May I contact you for a phone or video interview if needed?

Certainly

Interview 2

1. Name

Miriam Mayer

2. May I use your name and location in my paper?

yes

3. Where are you studying?

Universitätsmedizin Charité Berlin

4. What are you studying?

Medicine

5. Where do you live?

in Berlin

6. Where did you grow up?

in Feldbach, Austria (a small town in Styria)

7. Did you choose to study near where you were raised? Why or why not?

No, I didn't bc of a combination of the admission processes, the program of my degree and research possibilities of the university I am now in and the academic and cultural possibilities of a city like Berlin.

8. Please describe the kind of courses you are taking in school.

My program (in not-corona times at least) contains a lot of clinical “classes” from year 1. It’s not structured in longitudinal classes but rather in “Modules”. I have four modules a term with four different topics. E.g. currently, I’m dealing with the GI tract, which involves internal medicine of the GI-tract, surgery, pharm (specifically used for GI diseases or surgical/anesthetic meds) as well as revision of biochemistry, physiology and anatomy. Every week, I have a unique schedule of classes in formats of lectures, seminars, case discussion rounds, practical seminars (e.g. learning how to stitch) and bed-side classes. In Corona times, a lot of these classes take place online.

9. Please describe the practical/clinical experience you are getting in school.

I have bed-side teaching classes, peer teaching tutorials, practical seminars etc. The last year will be entirely in the hospital. In Corona times, a lot has changed, though.

10. What made you decide to go into this program or field?

I chose medicine, bc I like the combination of social interaction, science and its broad variety of specialities and job possibilities (eg. doctor/academic career/public health and politics or consulting). Plus, understanding the human body and being able to react and help in emergency settings has always been a major goal to me.

For me, it's a combination of the practical experience in my program as well as great teachers/doctors in my school. Additionally, science/research is a priority at the Charité and as a student, I am required to conduct research by myself (in order to obtain the title Dr. med., I need to write a doctoral thesis on which I am currently working on). My school gives me a great opportunity to work with extraordinary and passionate researchers/doctors/professors.

11. What area of medicine (or dentistry) are you hoping to go into upon graduating from your program?

either Emergency medicine, ENT or OB/GYN. Depending in which country I'll end up in Europe, there are also possibilities in combining EM with one of the others.

12. What setting are you hoping to work in upon graduation (i.e. urban or rural, hospital or office)?

hmm, not clear yet. I plan to do my residency in a university hospital in a rather large city, but in the long run, I might consider working in a smaller hospital/my own office.

13. Do you feel that your medical/dental education adequately prepared you to work in any setting, both urban and rural?

Good question. I think, everybody will have a hard time starting residency and/or start running an office by him*herself no matter where, but I think being able to choose where to do our "Famulaturen" ("internships"/"electives". I did one of

them in a rural village in the Bavarian Alps) helps evolving a diverse insight of what to expect.

14. If you could change one thing about your medical/dental education, what would it be?

In corona times, more in person classes. In general, at least some more days off (we have to do Famulaturen in our breaks).

15. What do you like about the current German healthcare system?

*mandatory health insurance

*the concept of ZNA(Zentrale Notaufnahme) (one emergency room covered by all specialities)

*emergency supply even in rural areas - emergency physicians coming to the accident site

*incorporation of clinics and research in med school, residency, university hospitals but also smaller hospitals

16. What do you dislike about the current German healthcare system?

*that private insurance exists. I would prefer to have the same insurance for everybody, with the possibility to buy additional (!) care.

*different price calculation systems for private/non private patients and

* residency - there still need to be done a lot about the system of education in residency (!)

17. Further comments or questions?

18. May I contact you for a phone or video interview if needed?

Sure! I'd prefer a zoom session to a phone call, just contact me if you need further information (preferred time in your mornings/my afternoons)