

RESEARCH ARTICLE

Assessment of health system performance in Germany: Survey-based insights into the perspective of people with private health insurance

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Abstract

Introduction: The World Health Organization (WHO) defined intermediate and overall goals to assess the performance of health systems. As the population perspective becomes more important for improving health systems, the aim of this study was to gain insights into the perspective of people with private health insurance (PHI) in Germany along the predefined WHO goals.

Methods: A cross-sectional survey was conducted in 2018 among people with PHI in Germany. The questionnaire included items on all intermediate (access, coverage, quality, and safety) and overall WHO goals (improved health, responsiveness, social and financial risk protection, and improved efficiency). Descriptive analyses were conducted for the total sample and subgroups (gender, age, income, and health status).

Results: In total, 3601 respondents (age 58.5 ± 14.6 ; 64.7% male) assessed the German health system. For example, 3.3%–7.5% of the respondents with subjective needs reported forgone care in the past 12 months due to waiting time, distance, or financial reasons and 14.4% suspected

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medical errors in their care. During the last physician visit 94.2% experienced respectful treatment but only 60.6% perceived coordination of care as good. Unnecessary health services were perceived by 24.2%. For many items significant subgroup differences were found, particularly for age groups (18–64 vs. 65+).

Conclusion: Conducting a health system performance assessment from the population perspective gained new and unique insights into the perception of people with PHI in Germany. Areas to improve the health system were seen in, for example, coordination of care, financial risk protection, and quality of care, and inequalities between subgroups were identified.

KEYWORDS

Germany, health system performance assessment, patient safety, population perspective, private health insurance, quality of health care, responsiveness

Key points

- Health system performance assessment from a population perspective is feasible.
- PHI insured assessed the performance of the German health system for the first time.
- Subgroups (age, gender, income, health status) differed in their assessment.
- Potential for improving coordination, quality of care, and equity was seen.

1 | INTRODUCTION

High-performing health systems are a prerequisite for improving population health, preventing deaths, and achieving health equity. In the Tallinn Charter of 2008, all member states of the European Region of the World Health Organization (WHO) committed to strengthen health systems.¹ The WHO Health Systems Framework defines intermediate (access, coverage, quality, and safety) and overall goals (improved health, responsiveness, social and financial risk protection, and improved efficiency) for measuring the overall performance of a health system.^{2,3} Health system performance assessment (HSPA) signifies a process to reveal needs for optimisation and action in the respective health system, to identify opportunities for further improvements in comparisons with other countries and over time, while focussing on the health system in its entirety.^{2,4,5}

Patient orientation and the population perspective are highly relevant for health system performance.^{1,5} In general, health systems should be “responsive to people’s needs, preferences and expectations”,¹ which entails that health systems put the population and its preferences in the centre.^{6,7} Person-centeredness can even help to “improve processes and outcomes as well as satisfaction”.⁸ On this account, the population should participate and be integrated into every level and sector of the health system for sustainability and equity in the health system, and for improving population health.^{9,10}

Germany's health system provides universal health coverage to its population, either in statutory social health insurance (SHI) or in parallel substitutive private health insurance (PHI). Whether someone is insured in SHI or PHI depends on occupational status and income, and is only partially subject to free choice.¹¹ In 2019, around 8.84 million or 11.2% of the population had substitutive PHI.¹² People with PHI are mainly civil servants, the self-employed or those with an income above a certain threshold (€64,350/year in 2021)¹³ who choose to opt out from SHI. In principle, all of these groups are free to choose between SHI and PHI, though there are complex regulations and exceptions (e.g. for certain professions, such as police officers). SHI, however, is usually not economically beneficial for these groups and most choose PHI. For example, self-employed persons with lower incomes have to pay relatively high minimum contributions to obtain SHI coverage. PHI is financed by individual risk-related premiums.¹¹ This coexistence of SHI and substitutive PHI is a special feature of the German health system that distinguishes it from other health systems in other countries.¹⁴ Thus, despite the different forms of insurance financing, SHI and PHI insureds use the same service providers in ambulatory and inpatient care.

Differences between SHI and PHI in the benefit coverage and the payment of health care providers create financial incentives for providers in Germany to prefer PHI insured people and to provide them with more (and sometimes unnecessary) health services.^{15,16} This systematic "over-supply" is a present topic in the ongoing discussion in Germany among policy-makers, in public media¹⁷ and in research circles.¹⁸

It can be assumed that people with PHI represent a distinct population group that is not representative of the entire German population. However, although accounting for more than 11% of the population, people with PHI are underrepresented in health services research in Germany. PHI insured people in Germany seem to be younger,¹⁹ predominantly male^{12,20} and have a higher income.²¹ Some studies have even concluded that people with PHI feel significantly healthier and have fewer acute and chronic diseases²²⁻²⁷ and tend to have fewer consultations with physicians and less days in inpatient care compared to the SHI insured.^{25,28} Waiting times are shorter for the PHI insured for ambulatory physician's appointments with GPs or specialists, and for elective treatments in hospitals compared to the SHI insured in Germany.^{20,29-33} Furthermore, people with PHI seem to be more satisfied with waiting times,²⁰ have more time during a consultation with a physician and are more involved in decision making.^{27,34}

These previous findings support the assumption that the health system performs better for people with PHI in Germany (e.g., health system responsiveness). It is unclear if people with PHI accordingly assess the health system performance along the intermediate and overall goals of the WHO Health Systems Framework. Additionally, it remains to be clarified if differences can be seen among subgroups within this specific population group, especially regarding gender, age, monthly net equivalent income, and health status. Therefore, the aim of this research is to gain insights into HSPA from the perspective of people with substitutive PHI and to identify differences between subgroups.

The present study is part of the larger project "IPHA" (Integrating the Population Perspective in Health System Performance Assessment), which aimed to learn about the population's perception of the German health system and their assessment of the health system performance (see study protocol).³⁵

2 | MATERIAL AND METHODS

This quantitative cross-sectional study is based on a survey (paper- or web-based), which was conducted between October and December 2018 among 20,000 of a total of 2.4 million people³⁶ with substitutive PHI from the German health insurance company "Debeka".³⁵ The study was approved by the Ethics Committee of the Charité – Universitätsmedizin Berlin.

2.1 | Sample

A representative random sample was drawn from those with PHI with the provider Debeka and stratified according to the distribution of gender, age, and aid allowance for civil servants ("Beihilfe") among all people with PHI in

Germany.^{37,38} In addition, over-recruitment of 10% in the 18–34 age group and 10% less recruitment in the 65+ age group were planned due to experiences from a previous study.³⁹ The sampling process included everyone 18 years and above, and having PHI continuously from Debeka since January 2015. People with severe long-term care needs/disabilities and with end-of-life care in a hospice were excluded. Respondents were contacted in the German language via a cover letter including the study description, a declaration of consent, a postage-free return envelope, and a paper-based questionnaire in the name of their insurance company asking them to participate. The cover letter contained a link to the online questionnaire (SoSci Survey). No incentives were offered for participation.

2.2 | Survey items

The questionnaire was developed along the WHO Health Systems Framework to assess the performance of Germany's health system for all eight intermediate (access, coverage, quality, safety) and final goals (improved health, responsiveness, social and financial risk protection, improved efficiency) (see Figure 1). Survey items (see survey and respective scales in Supporting Information S1: Appendix 1) also included patient characteristics such as socio-demographics as covariates for analysing subgroups (see study protocol³⁵ for more details). Each intermediate and overall goal was operationalised through at least one item, consisting of validated survey questions (e.g., surveys from the Commonwealth Fund, Eurostat, Robert Koch-Institute, WHO) or accordingly adopted or newly developed questions. The survey was pre-tested ($n = 122$) for content and understandability, and the web-based survey (mobile and desktop versions) for technical feasibility, and both adapted accordingly.

2.3 | Analysis

The paper-based questionnaires were processed electronically, while web-based questionnaire data were directly imported, and both data sets were merged. Frequencies, means, median, standard deviation and confidence intervals were calculated. Group differences were analysed using chi-square test or Mann-Whitney U test with a significance level of $p < 0.05$ using SPSS Statistics 27.

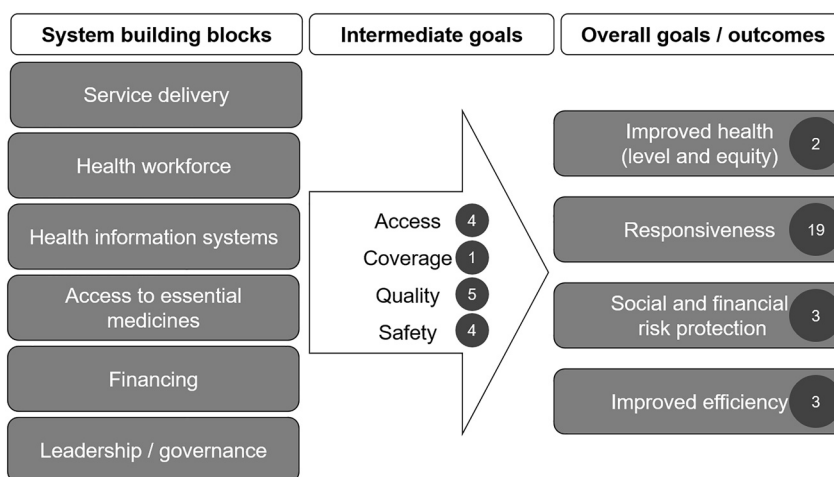


FIGURE 1 World Health Organization (WHO) Health Systems Framework, including the respective number of survey questionnaire items presented in the results section. Survey questionnaire items can be found in Table 2 with its respective realised sample sizes; questions with multiple answers were counted as one and questions with multiple items were counted based on each item. Source: own adaptation based on WHO^{2,3}

2.4 | Subgroup analysis

Subgroups for the following analysis were selected according to (1) gender, with the manifestations male and female (diverse group was too small for analysis); (2) age, separated into the groups 18–64 (working-age) and 65+ (age of retirement); (3) monthly net equivalent income, splitting the sample into below and above monthly median net equivalent income; and (4) health status, grouped as people with chronic diseases (one or more) versus no chronic disease.

3 | RESULTS

Overall, $n = 3617$ people participated in the survey (3307 paper-based, 310 web-based). After plausibility checks and data cleansing, 16 people were excluded due to double participation ($n = 8$), blank questionnaires ($n = 6$); or lack of overall socio-demographics ($n = 2$). The answers of a total of $n = 3601$ respondents were used for the descriptive analysis, resulting in a response rate of 18.0%. Respondents had an average age of 58.5 (± 14.6) and 64.7% were male. The majority (80.5%) had a high educational level (ISCED 5–8), with 44.3% working in full-time employment and 40.2% in retirement, and the median of the monthly net equivalent income was €2667 (see Table 1).

Results for all WHO Health Systems Framework goals were obtained from the survey with some differences in response rates among items (see Table 2). Almost all respondents (99.8%) answered the item 'accessing after-hours medical care', while the fewest (63.5%) addressed the need for reform of availability of home care services, followed by coordination of care (66.0%) which was not applicable for 26.5% of respondents, because they only had contact with one provider (data not shown in Table 2). Subgroup differences were found for most items, particularly among the two age groups. The initial sample differs from the final sample as slightly more men and people above the age of 55 responded. The results reported below are all statistically significant with a p -value < 0.05 (for p -value see Table 2).

3.1 | Access and coverage

Accessing after-hours medical care was perceived as very difficult or difficult by 54.2% of the respondents. Respondents aged 18–64 and those with a monthly net equivalent income below €2667 more often reported difficulties in accessing after-hours medical care than their counterparts (see Table 2). A share of 7.5% of the respondents reported unmet needs within the past year due to waiting times, 7.1% due to financial reasons, and 3.3% due to distance. The proportion of those who reported having forgone care was, for all reasons, higher among women, respondents aged 18–64, those with lower income and those with chronic diseases.

A total of 74.9% of respondents reported their household had out-of-pocket (OOP) health spending in the past year on pharmaceuticals and medical aids. Respondents that were either 18–64 years of age or with chronic diseases reported having OOP spending more often than both those 65+ and those without a chronic disease. No OOP spending was reported by 14.6% of the respondents.

3.2 | Quality and safety

Respondents were asked which factors are relevant for choosing a hospital for a selective treatment and had the option to provide up to two choices. The hospital's reputation and recommendations by family, friends, and physicians were the most frequent reasons for choosing a hospital reported by 79.3% of the respondents. The medical quality of treatments (including medical outcomes and few complications) was a main factor for 60.1% of the respondents to choose a hospital. Hospital amenities (including cleanliness, the staff's friendliness, and the reachability for family/friends) was an important characteristic for 23.8% of the respondents. Regarding differences between subgroups, it

TABLE 1 Characteristics of survey respondents

	Total		Missing	Male		Female		
	n = 3601			n = 2323		n = 1266		
	n	%		n	%	n	%	
Gender (n = 3589)			12		2323	64.7	1266	35.3
Age (years) (n = 3588)			13					
Mean (SD)	58.5 (14.6)				59.2 (14.1)		57.2 (15.3)	
18–34	307	8.6			161	6.9	146	11.6
35–49	637	17.8			401	17.3	236	18.7
50–64	1220	34.0			801	34.5	417	33.0
65–74	928	25.9			644	27.7	284	22.5
75+	496	13.8			315	13.6	181	14.3
Educational level ISCED (n = 3572)			29					
Low (ISCED 0–1)	57	1.6			18	0.8	36	2.9
Medium (ISCED 2–4)	641	17.9			355	15.4	284	22.6
High (ISCED 5–7)	2592	72.6			1696	73.7	890	70.8
Doctoral degree (ISCED 8)	282	7.9			234	10.2	48	3.8
Work status (n = 3560)			41					
Full-time	1578	44.3			1183	51.4	395	31.5
Part-time	315	8.8			93	4.0	221	17.6
Retired	1431	40.2			949	41.2	480	38.2
Other (student, parental leave, unemployed, etc.)	236	6.7			77	3.4	159	12.7
Monthly net equivalent income groups according to the median of the German population in 2018 (n = 3399)			202					
Up to €1136	81	2.4			53	2.4	27	2.3
€1137–€1893	374	11.0			229	10.3	145	12.3
€1894–€2839	1418	41.7			905	40.9	511	43.2
€2840 +	1526	44.9			1026	46.4	500	42.3
Monthly net equivalent income groups according to the median of the sample (n = 3399)								
€0–€2666	1799	52.3			1123	50.7	653	55.2
€2667+	1620	47.7			1090	49.3	530	44.8
Household size (n = 3560)			41					
1 person	563	15.8			299	13.0	264	21.0
2 persons	1894	53.2			1266	55.1	627	49.8
3 or more persons	1103	31.0			734	31.9	367	29.2
Subjective socioeconomic status (n = 3515)			87					
Lower middle class	150	4.3			99	4.3	50	4.1
Middle class	1616	46.0			1014	44.6	600	48.8
Upper middle class	1512	43.0			1003	44.1	506	41.1
Upper class	137	3.9			98	4.3	38	3.1
None of those	99	2.8			62	2.7	36	2.9

TABLE 1 (Continued)

	Total		Missing	Male		Female	
	n = 3601			n = 2323		n = 1266	
	n	%		n	%	n	%
Self-rated health (n = 3582)			19				
Very good	475	13.3		317	13.7	156	12.4
Good	2098	58.6		1370	59.3	724	57.6
Moderate	890	24.8		549	23.7	335	26.5
Bad	109	3.0		70	3.0	39	3.1
Very bad	10	0.3		6	0.3	4	0.3
Chronic diseases (n = 3584)			17				
Yes, one	1247	34.8		807	34.9	438	34.8
Yes, several	862	24.1		536	23.2	320	25.4
None	1475	41.2		969	41.9	502	39.8

Note: Percentages may not add up to 100% due to rounding.

Abbreviations: ISCED—International Standard Classification of Education, SD—standard deviation.

was seen that the hospital's medical quality was more important for people aged 18–64 (63.9%) than people aged 65+ (54.2%). A share of 75.0% of the respondents indicated significant quality differences between hospitals. Differences in hospital quality were more often reported by the younger age group (78.4% vs. 69.8%).

Knowing the hospitals' websites as sources to find information about hospital quality was reported by 81.9% and knowing hospital quality reports by 42.5% of the respondents. Younger people more often had knowledge of hospital websites as a source of information (88.0% vs. 72.5%) and people with chronic diseases also knew more about a hospitals' quality report (45.1% vs. 38.5%).

Regarding experiences with situations related to safety, the share of respondents that were told there was a medical error was 4.1%. A similar number received wrong test results (4.2%). Receiving a wrong medication dose was reported by 7.1%, and 14.4% of respondents suspected medical errors. Safety concerns were more often reported by respondents with at least one chronic disease (4.9%–17.3%) compared to respondents without chronic diseases (2.3%–9.7%).

3.3 | Improved health (level and equity)

Improved health was measured as a general health status (ranging between very good and very bad) and as a perceived health status on a visual analogue scale (VAS) ranging from 0 (worst) to 100 (best).

A very good or good health was stated by 71.8% of the respondents, with differences between people without (93.7%) or with chronic diseases (56.6%), between younger (78.8%) and older people (61.5%), and between people with lower (66.5%) or higher income (78.2%). These subgroup differences were also visible based on the VAS health status.

3.4 | Responsiveness

The last physician visit was rated very good or good for respectful treatment (94.2%) and confidentiality (94.0%). Fewer respondents assessed coordination of care (60.6%) and waiting time in the medical practice (74.7%) positively. Main differences among subgroups were also present for coordination of care, with lower rates in the younger age group (55.6%) versus respondents 65+ (67.3%).

TABLE 2 Survey results according to the World Health Organization (WHO) Health Systems Framework goals as frequencies (%) with 95% confidence interval (CI) and *p*-value (*p*)

Survey item	Gender		Age		Monthly net equivalent income		Chronic diseases	
	Male (<i>n</i> = 2323) % [CI]	Female (<i>n</i> = 1266) % [CI]	18–64 (<i>n</i> = 2164) % [CI]	65+ (<i>n</i> = 1424) % [CI]	€0–€2666 (<i>n</i> = 1779) % [CI]	€2667+ (<i>n</i> = 1620) % [CI]	None (<i>n</i> = 1475) % [CI]	One or more (<i>n</i> = 2109) % [CI]
Total (<i>n</i> = 3601)								
Access								
Accessing after-hours medical care (<i>n</i> = 3592) (Q8)								
Very/somewhat easy	20.4 [18.8–22.1]	19.6 [17.4–21.9]	18.9 [17.3–20.6]	22.0 [19.9–24.2]	18.8 [17.1–20.7]	22.6 [20.6–24.7]	0.004 [17.7–21.7]	20.3 [18.6–22.0]
Very/somewhat difficult	55.3 [53.3–57.3]	52.3 [49.5–55.1]	58.4 [56.3–60.5]	47.9 [45.3–50.5]	56.8 [54.5–59.1]	51.1 [48.7–53.5]	52.8 [50.2–55.3]	55.4 [53.3–57.5]
Never needed after-hours medical care	24.3 [22.6–26.1]	28.0 [25.6–30.6]	22.6 [20.9–24.4]	30.2 [27.8–32.6]	24.4 [22.4–26.4]	26.3 [24.2–28.5]	27.5 [25.3–29.9]	24.3 [22.5–26.2]
Unmet needs due to ^a								
Waiting time (<i>n</i> = 3257) (Q16)	6.5 [5.5–7.6]	9.3 [7.6–11.0]	10.2 [8.8–11.6]	3.5 [2.5–4.5]	8.6 [7.3–10.0]	6.3 [5.1–7.6]	6.6 [5.2–7.9]	8.1 [6.9–9.3]
Distance (<i>n</i> = 3211) (Q17)	2.0 [1.4–2.6]	5.7 [4.4–7.1]	3.8 [2.9–4.6]	2.6 [1.8–3.5]	3.9 [3.0–4.9]	2.6 [1.8–3.4]	1.7 [1.0–2.4]	4.3 [3.4–5.2]
Financial reasons (<i>n</i> = 3323) (Q18)	6.1 [5.0–7.1]	9.0 [7.4–10.7]	8.7 [7.4–9.9]	4.7 [3.6–5.9]	10.2 [8.8–11.7]	3.8 [2.8–4.8]	4.8 [3.6–5.9]	8.6 [7.4–9.9]
Coverage								
Out-of-pocket health spending in the past year ^b (<i>n</i> = 3393) (Q19)								
No out-of-pocket spending	14.6 [14.4–17.5]	12.0 [10.2–13.9]	12.8 [11.3–14.2]	17.3 [15.3–19.4]	14.0 [12.3–15.7]	14.7 [12.9–16.5]	19.1 [17.0–21.2]	11.4 [10.0–12.8]
Medical products (pharmaceuticals and medical aids)	74.9 [70.5–74.3]	79.4 [77.2–81.7]	76.1 [74.3–78.0]	73.0 [70.6–75.4]	75.6 [73.5–77.6]	74.7 [72.5–76.8]	71.4 [69.0–73.8]	77.3 [75.5–79.2]

TABLE 2 (Continued)

Survey item	Gender		Age		Monthly net equivalent income		Chronic diseases	
	Male (n = 2323) % [CI]	Female (n = 1266) % [CI]	18-64 (n = 2164) % [CI]	65+ (n = 1424) % [CI]	€0-€2666 (n = 1779) % [CI]	€2667+ (n = 1620) % [CI]	None (n = 1475) % [CI]	One or more (n = 2109) % [CI]
Deductible	43.5 [42.8-47.0]	41.1 [38.3-43.9]	0.033 [44.1-48.4]	39.2 [36.6-41.9]	<0.001 [39.3-44.0]	46.3 [43.8-48.8]	0.007 [34.4-39.5]	48.0 [45.8-50.2]
Services (inpatient/ambulatory care by physicians/allied health professionals)	23.3 [20.8-24.3]	24.8 [22.4-27.3]	0.140 [23.9-27.6]	19.5 [17.4-21.7]	<0.001 [22.1-26.2]	23.0 [20.9-25.1]	0.456 [18.3-22.5]	25.4 [23.5-27.3]
Dental care	23.3 [21.9-25.5]	22.6 [20.3-25.0]	0.482 [22.7-26.4]	21.3 [19.1-23.5]	0.027 [22.6-26.8]	22.5 [20.4-24.5]	0.135 [21.2-25.6]	23.2 [21.4-25.1]
Other services	18.7 [15.0-18.1]	22.9 [20.5-25.3]	<0.001 [19.7-23.3]	14.3 [12.4-16.2]	<0.001 [17.6-21.4]	18.0 [16.1-19.9]	0.257 [15.0-18.9]	19.9 [18.2-21.7]

Quality

Reasons for hospital choice^b

(n = 3273) (Q5)

Reputation	79.3 [77.6-81.1]	79.0 [76.6-81.3]	0.789 [77.1-80.7]	79.7 [77.5-82.0]	0.562 [76.0-80.1]	80.9 [78.9-82.9]	0.052 [77.5-81.8]	79.1 [77.3-81.0]
Medical quality	60.1 [56.8-61.0]	62.4 [59.6-65.3]	0.048 [61.8-66.0]	54.2 [51.4-56.9]	<0.001 [57.0-61.8]	60.8 [58.3-63.2]	0.432 [57.6-62.8]	59.9 [57.7-62.1]
Amenities	23.8 [21.2-24.8]	25.2 [22.6-27.7]	0.169 [19.9-23.5]	26.9 [24.5-29.4]	0.001 [23.9-28.2]	21.1 [19.1-23.2]	0.001 [20.5-25.0]	24.5 [22.6-26.5]
Quality differences between hospitals (n = 3507) (Q6)	75.0 [72.4-76.0]	76.7 [74.3-79.0]	0.112 [76.6-80.1]	69.8 [67.3-72.2]	<0.001 [70.8-74.9]	77.5 [75.4-79.5]	0.002 [71.5-76.1]	75.9 [74.0-77.8]
Some differences	24.2 [23.4-27.0]	22.4 [20.1-24.8]	20.9 [19.2-22.7]	29.4 [27.0-31.8]	26.4 [24.3-28.5]	21.8 [19.8-23.9]	25.1 [22.9-27.3]	23.6 [21.8-25.4]
No differences	0.7 [0.4-1.1]	0.9 [0.5-1.5]	0.7 [0.4-1.1]	0.8 [0.4-1.4]	0.8 [0.4-1.2]	0.7 [0.4-1.2]	1.1 [0.6-1.6]	0.5 [0.2-0.8]

(Continues)

TABLE 2 (Continued)

Survey item	Gender		Age		Monthly net equivalent income			Chronic diseases					
	Total (n = 3601)	Male (n = 2323) % [CI]	Female (n = 1266) % [CI]	p	18–64 (n = 2164) % [CI]	65+ (n = 1424) % [CI]	p	€0–€2666 (n = 1779) % [CI]	€2667+ (n = 1620) % [CI]	p	None (n = 1475) % [CI]	One or more (n = 2109) % [CI]	
Knowledge about information sources regarding hospital quality ^a (Q7)													
Hospital websites (n = 3524)	81.4	81.4 [79.8–83.0]	82.9 [80.8–85.0]	0.253	88.0 [86.6–89.4]	72.5 [70.1–74.9]	<0.001	81.1 [79.2–82.9]	83.8 [82.0–85.6]	0.038	81.9 [79.9–83.9]	81.9 [80.2–83.6]	0.978
Hospital quality reports (n = 3450)	42.5	41.2 [39.2–43.3]	44.6 [41.8–47.4]	0.054	40.8 [38.7–42.9]	45.0 [42.3–47.6]	0.017	42.3 [40.0–44.7]	42.8 [40.3–45.2]	0.782	38.5 [35.9–41.0]	45.1 [43.0–47.3]	<0.001
Other sources (n = 3487)	53.7	52.7 [50.6–54.7]	55.7 [53.0–58.5]	0.081	53.1 [51.0–55.2]	54.8 [52.1–57.4]	0.336	55.0 [52.7–57.4]	52.1 [49.6–54.5]	0.088	50.7 [48.1–53.3]	55.7 [53.6–57.9]	0.004
Safety													
Experiences in the past 2 years ^a													
Received wrong medication/dose (n = 3184) (Q9)	7.1	5.7 [4.7–6.7]	9.7 [7.9–11.4]	<0.001	8.3 [7.0–9.5]	5.2 [4.0–6.5]	0.001	7.1 [5.8–8.3]	6.9 [5.6–8.2]	0.848	4.7 [3.5–5.9]	8.5 [7.3–9.7]	<0.001
Suspected medical error in treatment/care (n = 3200) (Q10.1)	14.4	13.0 [11.6–14.5]	16.7 [14.5–18.9]	0.005	16.0 [14.4–17.7]	11.7 [10.0–13.5]	0.001	14.9 [13.1–16.6]	13.8 [12.0–15.6]	0.413	9.7 [8.0–11.3]	17.3 [15.6–19.0]	<0.001
Was told that a medical error had been made (n = 3327) (Q10.2)	4.1	3.8 [3.0–4.7]	4.5 [3.3–5.7]	0.380	4.2 [3.3–5.0]	3.9 [2.9–5.0]	0.725	3.6 [2.7–4.6]	4.5 [3.5–5.6]	0.202	2.3 [1.5–3.1]	5.2 [4.3–6.2]	<0.001
Received wrong results of medical/laboratory tests (n = 3031) (Q10.3)	4.2	3.4 [2.6–4.2]	5.3 [4.0–6.7]	0.012	4.6 [3.7–5.6]	3.3 [2.3–4.3]	0.067	4.1 [3.1–5.1]	4.2 [3.2–5.3]	0.876	3.0 [2.0–3.9]	4.9 [4.0–5.9]	0.008

TABLE 2 (Continued)

Survey item	Gender		Age		Monthly net equivalent income		Chronic diseases	
	Total (n = 3601) % [CI]	Female (n = 1266) % [CI]	18-64 (n = 2164) % [CI]	65+ (n = 1424) % [CI]	€0-€2666 (n = 1779) % [CI]	€2667+ (n = 1620) % [CI]	None (n = 1475) % [CI]	One or more (n = 2109) % [CI]
Improved health								
Very good/good health (vs. Fair/bad/very bad) (n = 3582) (Q21)	71.8	70.0	78.8	61.5	66.5	78.2	93.7	56.6
	[71.2-74.8]	[67.4-72.5]	[77.1-80.6]	[58.9-64.0]	[64.3-68.7]	[76.2-80.2]	[92.4-94.9]	[54.5-58.7]
			0.056	<0.001	<0.001		<0.001	<0.001
Perceived health (VAS from 0 [worst] to 100 [best health]) mean ^c (n = 3542) (Q24)	75.9	75.3	78.7	71.5	74.0	78.1	82.9	70.9
	[75.6-76.8]	[74.4-76.2]	[78.1-79.3]	[70.6-72.4]	[73.3-74.8]	[77.4-78.7]	[82.4-83.5]	[70.2-71.6]
			0.111	<0.001	<0.001		<0.001	<0.001
Responsiveness								
Very good/good rating of the last physician's visit (GP or specialist) (vs. Moderate/bad/very bad) (Q3.2)	84.0	81.3	81.4	87.8	81.6	86.8	85.2	83.1
	[83.9-86.9]	[79.1-83.6]	[79.7-83.1]	[86.1-89.6]	[79.8-83.5]	[85.1-88.6]	[83.2-87.1]	[81.5-84.8]
			0.002	<0.001	<0.001		<0.001	<0.001
Waiting time until the appointment	74.7	70.3	73.8	76.0	71.2	78.9	76.5	73.3
	[75.2-78.8]	[67.7-72.9]	[71.8-75.7]	[73.7-78.3]	[69.0-73.3]	[76.8-80.9]	[74.2-78.8]	[71.4-75.2]
			<0.001	0.150	0.001		<0.001	<0.001
Free choice of physician/practice (n = 3308)	92.2	90.6	90.5	94.7	89.8	94.6	91.8	92.5
	[92.0-94.1]	[88.9-92.3]	[89.2-91.8]	[93.5-95.9]	[88.3-91.3]	[93.5-95.8]	[90.3-93.3]	[91.3-93.6]
			0.011	<0.001	<0.001		<0.001	<0.001
Respectful treatment (n = 3367)	94.2	93.7	93.2	95.9	93.3	95.4	94.7	94.0
	[93.6-95.5]	[92.3-95.1]	[92.1-94.3]	[94.8-97.0]	[92.1-94.5]	[94.3-96.4]	[93.5-95.9]	[92.9-95.0]
			0.314	0.001	0.001		0.011	0.002
Comprehensible explanations (n = 3364)	90.5	90.3	90.3	90.9	88.8	92.7	92.5	89.2
	[89.4-91.9]	[88.6-91.9]	[89.0-91.6]	[89.3-92.4]	[87.3-90.4]	[91.4-94.0]	[91.0-93.9]	[87.9-90.6]
			0.718	0.580	0.580		<0.001	<0.001
Participation in treatment decision making (n = 3313)	86.7	85.5	84.3	90.4	85.3	88.1	87.5	86.0
	[85.9-88.7]	[83.5-87.5]	[82.7-85.9]	[88.8-92.0]	[83.6-87.0]	[86.5-89.8]	[85.7-89.3]	[84.5-87.5]
			0.156	<0.001	<0.001		0.018	0.217
Talk confidentiality (n = 3319)	94.0	93.1	93.6	94.8	93.1	95.2	95.4	93.1
	[93.6-95.5]	[91.7-94.5]	[92.5-94.7]	[93.6-96.0]	[91.8-94.3]	[94.1-96.2]	[94.2-96.5]	[92.0-94.2]
			0.096	0.131	0.131		0.013	0.007

(Continues)

TABLE 2 (Continued)

Survey item	Gender		Age		Monthly net equivalent income			Chronic diseases			
	Total (n = 3601)	Male (n = 2323) % [CI]	Female (n = 1266) % [CI]	p	18-64 (n = 2164) % [CI]	65+ (n = 1424) % [CI]	€0-€2666 (n = 1779) % [CI]	€2667+ (n = 1620) % [CI]	None (n = 1475) % [CI]	One or more (n = 2109) % [CI]	p
Coordination of treatment among different physicians (n = 2377)	60.6	61.6 [59.2-64.1]	58.6 [55.3-61.9]	0.151	55.6 [53.0-58.3]	67.3 [64.4-70.2]	59.2 [56.5-62.0]	62.3 [59.3-65.3]	62.3 [59.0-65.7]	59.5 [57.1-62.0]	0.184
Trust that treatment solely serves for well-being (and not other interests) (n = 3284)	81.5	82.0 [80.4-83.7]	80.6 [78.4-82.9]	0.321	78.4 [76.6-80.3]	86.3 [84.4-88.2]	80.8 [78.8-82.7]	82.6 [80.7-84.5]	81.8 [79.7-83.9]	81.4 [79.7-83.1]	0.800
Discrimination experiences in health care in the past year ^a (n = 3417) (Q4)	7.6	6.0 [5.0-7.0]	10.4 [8.7-12.1]	<0.001	8.8 [7.6-10.0]	5.6 [4.4-6.8]	8.8 [7.5-10.2]	6.1 [4.9-7.3]	5.9 [4.7-7.2]	8.6 [7.4-9.8]	0.004
Reason(s) for discrimination ^b (n = 200) (Q4,2)											
Other reasons (incl. Free text field)	71.0	64.1 [57.7-73.5]	78.4 [70.0-86.7]	0.026	72.1 [64.6-79.7]	67.2 [54.8-79.7]	72.3 [63.9-80.7]	70.3 [59.6-80.9]	78.6 [67.5-89.7]	68.1 [60.3-75.8]	0.141
Health status	32.0	36.9 [27.4-46.4]	26.8 [17.8-35.8]	0.126	32.1 [24.3-40.0]	29.3 [17.2-41.4]	25.0 [16.9-33.1]	39.2 [27.8-50.6]	16.1 [6.1-26.0]	38.2 [30.2-46.2]	0.003
Age	13.5	10.8 [4.7-16.9]	16.3 [8.9-23.8]	0.252	10.0 [5.0-15.0]	19.0 [8.6-29.4]	17.9 [10.7-25.1]	6.8 [0.9-12.6]	8.9 [1.2-16.6]	15.3 [9.3-21.2]	0.238
High need for reforms in Germany (vs. Low/no need) (Q2)											
Coordination between physicians and hospitals (n = 2974)	47.0	44.7 [42.5-46.9]	51.6 [48.5-54.7]	<0.001	52.4 [50.1-54.7]	38.5 [35.7-41.4]	47.3 [44.8-49.9]	46.5 [43.8-49.1]	47.0 [44.2-49.9]	47.0 [44.6-49.3]	0.965
Coordination between physicians (n = 3194)	46.5	45.0 [42.9-47.1]	49.5 [46.5-52.5]	0.016	53.0 [50.8-55.2]	36.3 [33.6-39.0]	45.6 [43.1-48.1]	47.0 [44.4-49.5]	48.6 [45.9-51.4]	45.1 [42.9-47.4]	0.052
Amount of money spent out-of-pocket (n = 3186)	38.1	37.6 [35.6-39.7]	39.1 [36.2-42.0]	0.428	41.2 [39.0-43.4]	33.2 [30.6-35.8]	41.2 [38.7-43.6]	34.7 [32.2-37.2]	38.0 [35.3-40.6]	38.3 [36.1-40.5]	<0.001

TABLE 2 (Continued)

Survey item	Gender		Age		Monthly net equivalent income		Chronic diseases				
	Total (n = 3601)	Male (n = 2323) % [CI]	Female (n = 1266) % [CI]	18-64 (n = 2164) % [CI]	65+ (n = 1424) % [CI]	€0-€2666 (n = 1779) % [CI]	€2667+ (n = 1620) % [CI]	None (n = 1475) % [CI]	One or more (n = 2109) % [CI]		
Availability of specialists (n = 3521)	23.0	21.2 [19.5-22.9]	26.5 [24.1-29.0]	<0.001	27.2 [25.3-29.1]	16.8 [14.8-18.8]	18.8 [16.8-20.7]	<0.001	21.4 [19.2-23.5]	24.2 [22.3-26.0]	0.052
Quality of care (n = 3394)	21.4	19.1 [17.5-20.8]	26.0 [23.5-28.5]	<0.001	24.0 [22.1-25.8]	17.4 [15.4-19.5]	18.3 [16.3-20.2]	<0.001	20.2 [18.1-22.3]	22.2 [20.4-24.0]	0.156
Availability of home care services (n = 2286)	21.2	20.1 [18.1-22.1]	23.5 [20.5-26.5]	0.062	24.9 [22.6-27.3]	16.1 [13.7-18.4]	20.4 [17.9-22.9]	<0.001	21.0 [18.4-23.7]	21.3 [19.1-23.5]	0.888
Availability of GPs (n = 3467)	19.9	18.8 [17.2-20.5]	22.1 [19.7-24.5]	0.022	23.5 [21.7-25.4]	14.3 [12.5-16.2]	17.8 [15.9-19.7]	<0.001	19.8 [17.7-21.9]	20.0 [18.3-21.7]	0.887
Availability of hospitals (n = 3501)	6.0	5.5 [4.6-6.5]	6.9 [5.5-8.3]	0.104	7.6 [6.5-8.7]	3.6 [2.6-4.6]	5.2 [4.1-6.3]	<0.001	6.4 [5.1-7.6]	5.7 [4.7-6.7]	0.446
Social and financial risk protection											
Households with out-of-pocket spending ≥500€ in the past year (vs. <500€) (n = 2888) (Q19.1)	33.4	34.7 [32.6-36.9]	31.1 [28.3-34.0]	0.049	33.6 [31.4-35.8]	33.0 [30.1-35.8]	35.9 [33.3-38.5]	0.733	30.6 [27.9-33.3]	35.2 [33.0-37.5]	0.011
Very strong/strong financial burden by out-of-pocket spending (vs. Fair/less strong/not at all) (n = 2949) (Q19.2)	11.2	10.5 [9.1-11.9]	12.2 [10.2-14.1]	0.170	12.1 [10.6-13.5]	9.4 [7.7-11.2]	7.0 [5.6-8.4]	0.028	7.9 [6.3-9.5]	13.2 [11.6-14.8]	<0.001
Difficulties paying health insurance premium ^a (n = 3390) (Q20)	2.9	2.7 [2.0-3.3]	3.3 [2.2-4.3]	0.319	3.5 [2.7-4.3]	2.0 [1.2-2.7]	1.7 [1.1-2.4]	0.010	2.4 [1.6-3.2]	3.2 [2.4-4.0]	0.156
Improved efficiency											
Experiences in the past 2 years ^a											
Duplicate tests due to lack of coordination (n = 3095) (Q10.4)	21.9	22.3 [20.5-24.2]	21.2 [18.8-23.6]	0.463	22.0 [20.1-23.9]	21.7 [19.4-24.0]	22.5 [20.3-24.7]	0.848	15.7 [13.7-17.8]	25.8 [23.8-27.8]	<0.001

(Continues)

TABLE 2 (Continued)

Survey item	Gender		Age		Monthly net equivalent income			Chronic diseases	
	Male (n = 2323) % [CI]	Female (n = 1266) % [CI]	18-64 (n = 2164) % [CI]	65+ (n = 1424) % [CI]	€0-€2666 (n = 1779) % [CI]	€2667+ (n = 1620) % [CI]	p	None (n = 1475) % [CI]	One or more (n = 2109) % [CI]
Subjectively unnecessary services (e.g. pharmaceuticals) (n = 3043) (Q10.5)	22.8 [21.0-24.7]	26.5 [23.9-29.1]	29.2 [27.1-31.3]	16.6 [14.5-18.7]	23.8 [21.6-25.9]	25.1 [22.9-27.4]	<0.001	0.388 [21.9-26.9]	24.1 [22.1-26.0]
Relation of health insurance contribution to coverage (n = 3515) (Q12)									
Too high/high	35.0 [33.1-37.0]	29.4 [26.9-32.0]	33.5 [31.5-35.5]	32.5 [30.1-35.0]	34.0 [31.8-36.3]	32.5 [30.2-34.8]	0.595	0.136 [32.5-37.4]	31.9 [29.9-33.9]
Fair	61.0 [59.0-63.0]	65.7 [63.0-68.4]	61.3 [59.2-63.3]	64.9 [62.3-67.4]	62.4 [60.1-64.7]	62.4 [60.0-64.8]		60.6 [58.1-63.1]	64.0 [61.9-66.0]
Low/too low	4.0 [3.2-4.8]	4.8 [3.7-6.1]	5.3 [4.4-6.3]	2.6 [1.9-3.5]	3.6 [2.8-4.5]	5.1 [4.1-6.3]		4.4 [3.5-5.6]	4.2 [3.4-5.1]

Note: bold values indicate a statistically significant difference with a p-value <0.05. (Q = number in questionnaire [see Appendix 1 in Supporting Information S1])

Abbreviation: VAS, visual analogue scale.

^aYes (vs. No).

^bmultiple answers possible.

^cMann-Whitney U test was used for VAS.

Discrimination, as part of responsiveness, was felt by 7.6% of all respondents but by 10.4% of women (vs. 6.0% of men). The respondents who stated the reasons for discrimination ($n = 200$) indicated discrimination due to health status most often (32.0%), which was somewhat higher among respondents with chronic diseases (38.2%). In addition, respondents had the opportunity to provide additional reasons and stated (within text field) that they felt discriminated because of their PHI (7.0%, not shown in Table 2).

Respondents were also asked where they perceived a high need for reforms in Germany. The top replies were coordination between physicians and hospitals (47.0%), coordination between physicians (46.5%), and the level of OOP spending (38.1%), whereas the availability of hospitals (6.0%) was indicated less often. Across all parameters, older respondents saw less need for reforms. Most respondents were unsure regarding the availability of home care services as only 63.1% answered this question (with 21.2% stating a need for reforms).

3.5 | Financial risk protection

Having more than €500 of OOP household spending on health in the past year was stated by 33.4% of respondents, with a higher share of households among the higher income group and those with chronic diseases. Respondents in the lower income group felt more often financially very strongly or strongly burdened by OOP spending than respondents with a monthly net equivalent income above €2667 (14.6% vs. 7.0%). The same applies for people with chronic diseases when compared to respondents without a chronic disease (13.2% vs. 7.9%). The share of respondents who had difficulties in paying their PHI premium was 2.9%. The share is twice as high in the lower income group (3.9%) than among those with a higher income (1.7%). Respondents in the younger age group also had more difficulties paying their premium than respondents aged 65+ (3.5% vs. 2.0%).

3.6 | Improved efficiency

Efficiency was measured by three indicators. First, duplicate tests due to a lack of coordination between physicians were reported by 21.9% of the respondents, with higher rates (25.8%) among respondents with chronic diseases. Second, 24.2% of the respondents received a prescription for (self-assessed) unnecessary services. Third, looking at the efficiency of health insurance premiums, a total of 33.1% of the respondents assessed their premiums as (too) high related to the services they receive, 62.6% as fair and 4.3% as (too) low, with differences among age groups.

4 | DISCUSSION

This study provides new and unique insights on the perspective of people with PHI in Germany along the WHO Health Systems Framework and the perception of the health system performance among this specific population group.

For the first time, an HSPA was conducted from the population perspective and, in addition, the insufficiently researched perspective of people with PHI in Germany was explored. In general, this HSPA from the population perspective worked well, as all survey questions reached substantial response rates (63.5%–99.8%). Assumingly, the range in the response rates can be explained by different levels of utilization of the health system (e.g., no need of home care services yet) among the respondents. For future research, it is important to consider these different levels of experience among respondents in survey development. Otherwise, focussing on more general survey items which can be answered even by people not using the health system will result in high response rates. Nevertheless, it appears from the results that a survey based HSPA can be used as a tool to identify and monitor reform needs and inequities, even in specific subgroups of the population.

Previous research by Hu et al. (2020) indicated that patient socio-demographics, such as gender, age, and income were associated with patient satisfaction,⁴⁰ while Munro et al. (2016) concluded that satisfaction with the health system was not strongly influenced by socio-demographics.⁴¹ This study supports both findings, as differences for some items among the subgroups (by gender, age, income, and health status) were found, while no differences were seen for other items. Munro et al. identified stronger associations with utilization, perceived inequalities in the access to health care, and ethical concerns in interactions with health care providers,⁴¹ which could be subject to further population-based HSPA research.

The sample of this study is older (average age: 58.6) and not as healthy (58.8% with one or more chronic diseases) in comparison to previous findings that identified the PHI insured in Germany as younger¹⁸ and healthier.^{22–27} The higher age and morbidity of the sample could be due to the fact that this population group has a greater interest in health-related issues, which in turn increases willingness to participate in the survey. In contrast to the overall German population the sample is highly educated, with 72.6% of respondents having high education (ISCED 5–7) and an additional 7.9% possessing a doctorate (ISCED 8), whereas 25.2% of the overall German population have a high educational level⁴² and 1.7% have a doctorate.⁴³ In addition, the sample has a substantially higher median monthly net equivalent income (€2667 vs. €1894)⁴⁴ which is in line with previous research reporting the PHI insured to have higher incomes.²¹ However, 2.4% are at risk of poverty with a monthly net equivalent income below 60% of the German median net equivalent income (the share for the German population was 15.5% in 2018).⁴⁴ There is no income threshold for civil servants and the self-employed, resulting in a minor share of PHI insureds with low income.

This study shows that most people with PHI perceive the performance of the German health system as moderate with significant differences among subgroups (by gender, age, income, and health status). Consequently, potential for improving health care for the PHI insured in Germany can be derived along the intermediate and overall goals.

4.1 | Intermediate and overall goals

Access to health care and coverage of health services are generally assessed as good in Germany.⁴⁵ Germany has among the lowest unmet needs in Europe and only 0.2% of the population reported an unmet medical need due to waiting time, distance, or financial reasons in 2018.⁴² Looking only at the population with an actual medical need, the numbers are higher. According to the European Health Interview Survey, 24.7% of people with a medical need reported to forgo care due to waiting times, 4.3% due to distance, and 13.4% due to costs in 2014.⁴² Reporting forgone care is more prevalent in lower income groups.⁴⁶ These findings are supported by this study. The share of PHI insured that reported forgone care in the past 12 months was lower (3.3%–7.5%). However, this is a considerable share as the majority of this sample has a high income. That the PHI insured forgo medical treatment for financial reasons may be due to deductibles for certain PHI plans. Several studies show a relationship between cost-sharing and utilization of medical services.^{47,48} For example, 11% of the Swiss population reported having forgone medical care for financial reasons.⁴⁹ In Switzerland, the income level is comparatively high, but the health insurance system is characterised by high cost-sharing.⁵⁰ Another interesting finding, although counterintuitive, is that older people more often reported having had no OOPs in the previous year. One possible explanation could be the process of submitting invoices for reimbursement. The submission procedure is time consuming (such as submitting an invoice to the insurance company after obtaining a prescription from a physician) and can be less attractive for working persons when the invoice amounts are small (e.g., pharmaceuticals). Older persons are more likely to submit small invoice amounts for reimbursement and are thus somewhat more likely to have no OOPs.

Financial protection is closely linked to the dimension of access. In this study, over one third of households had OOPs higher than €500 in the past year. The share is higher for households in the higher income group. Similarly, lower-income households reported twice as often of difficulties paying their premiums and experiencing very strong or strong financial burden due to OOPs, respectively. Furthermore, 14.6% of the respondents reported that their household had no OOP spending at all within the past year. OOP payments can create a barrier to access and no or low OOP spending might be related to forgone care due to costs, which is also considerably higher among the less

wealthy.⁵¹ A total of 7.1% of respondents reported having forgone care due to financial reasons, supporting this assumption. Furthermore, unmet needs and financial burden are greater in lower income groups and among people with one or more chronic diseases, raising equity concerns. However, the results indicate a good overall financial protection and PHI seems to provide a broad and sufficient benefits basket. Previous research indicated a strong correlation between perceived access problems and dissatisfaction with health care in 17 Latin American countries.⁵² Perceived access barriers and unmet needs among people with PHI should be further considered in future research.

Quality differences between hospitals were perceived by almost all respondents, and the vast majority indicated significant quality differences (75.0%). In previous research among SHI insureds in Germany, satisfaction with hospital treatment was associated with gender and age (with men and older patients being more satisfied).⁵³ This supports our findings, with women and younger patients being more critical and more often reporting significant quality differences between hospitals. For the selection of a hospital, respondents rated the hospital reputation as the most important reason, followed by the medical quality. This result is in contrast to findings from a previous population-representative survey in Germany, where 76%–82% of the respondents stated medical quality as the most important reason for choosing a hospital, followed by the hospital's reputation (57%–70%).⁵⁴ On the other hand, recent research among patients in the U.S. concluded that reputation is the most important reason,⁵⁵ which confirms the findings of the present study. Amenities were the least important reason, which is in line with findings the U.S.⁵⁶ and Germany.⁵⁴

Previous research found an association between quality of care and patient satisfaction.^{57–60} Accordingly, improving hospital quality in Germany, which aims primarily at better health outcomes, also helps to promote patient satisfaction. Hospital websites were well known information sources about the hospital quality for the respondents (81.9%), but official quality reports published by hospitals were only known by 42.5%. This is in line with a previous population-representative survey in Germany, where 68% of the respondents stated hospital websites as a source of information about hospital quality, whereas only 20% were familiar with hospitals' quality reports.⁵⁴ Though hospitals' quality reports are legally mandatory, publicly available, and aim to offer information which can be used by patients to compare and select hospitals,⁶¹ they do not seem to be the first choice. However, the numbers indicate that the awareness of quality reports has grown in recent years.

The number of respondents who suspected a (non-confirmed) medical error in their treatment was more than three times higher (14%) compared to respondents with confirmed errors (4%). The Commonwealth Fund Survey 2020 shows similar results with 12% of the German population reporting errors in medical treatment or medication.⁶² However, it is important to consider the different wording of the underlying survey questions (were told/suspected vs. experienced).

The health status of the sample differs among the subgroups age and income, and between people with or without chronic diseases. The sample of this study is in better health than the German population, as a very good or good self-perceived health is stated by 71.8% of the respondents compared to 65.5% of the German population in 2018.⁴² However, regarding chronic diseases, this study sample has higher numbers (58.8%) than the total German population (43.9%) but is close to the number among people 65+ (62.8%), which might be due to the high average age of 58.6 in this sample. Survey items appear plausible, as significantly more people without chronic diseases report very good or good health (93.7%) compared to individuals with chronic diseases (56.6%). The tendency of the distribution of very good or good health in the highest income quintile in the German population (78.4%) is similar to the highest income group in this study (78.2%). It should be considered that the highest-income group of the German population consists largely of people with PHI.

The responsiveness of the last physician visit was rated as very good or good by the vast majority (81.5%–94.2%) along seven of the nine items, except for coordination (60.6%) and waiting time in the medical practice (74.7%). However, the assessment varies between the subgroups. Röttger and Busse (2016) found in a survey among chronically ill SHI insured people in Germany that 88.9%–94.4% were able to talk confidentially and 87.6%–94.7% were treated respectfully.⁶³ This is in line with the findings of the present study, where 94.0% were able to talk confidentially and 94.2% were treated respectfully. Coordination of care among chronically ill patients was rated by 64.6%–71.8%

as very good or good, whereas only by 59.5% of the respondents with chronic diseases in the present study. Fewer survey respondents were satisfied with the waiting time in medical practices (54.2%–70.4%),⁶³ compared to the present study (overall 74.7%, those with chronic diseases at 73.3%). In another population-representative survey in Germany, the assessment was comparable to our findings for comprehensible explanations by physicians (92% vs. 90.5% in this study), with slightly more differences for participation in treatment decision making (79% vs. 86.7% in this study).⁶⁴ Overall, coordination of care shows the most potential for improvement in Germany.

Perceived discrimination was reported by 7.6% of the respondents for a variety of reasons. Discrimination due to PHI was indicated as free text answer by 7.0% which might be an underestimation. However, this finding is in contrast to the assumption that PHI insureds receive favourable care. Therefore, this answer category should be included in future surveys.

A belief in the high need for reforms varied among the eight listed items, ranging between 6.0% and 47.0%. Numbers were higher among women, people aged 18–64 years, and those with lower income, though hardly any differences can be observed based on health status. This is in contrast to a previous population wide survey in Germany, where the need for reform was rated higher not only by younger people (up to 39 years vs. 60+) but also by people with diseases (vs. healthy people).⁶⁵

Efficiency is one of the areas with potential for improvement from the population perspective, for example, by reducing duplicate tests. Patients with PHI experience unnecessary services and duplicate tests, which put a strain on both: the already limited financial and personnel resources on a macro level, and the level of the individual PHI premium. Patients perceived tests or services as unnecessary, and hence, can detect the inefficiencies of a health system. Efficiency can be improved, for example, by better coordination of care between health care providers. In Germany, coordination of care across sectors is lacking due to the highly fragmented health system (such as with GPs vs. specialists or ambulatory vs. inpatient care) and affects most population groups.¹¹ Recent initiatives promote integrated care and aim at improving the coordination and continuity of care,⁶⁶ but are not yet widespread and not part of standard care in Germany.

4.2 | Policy recommendations

The results of this study suggest poor coordination among ambulatory care physicians. In the SHI system, Disease Management Programs (DMPs) for select chronic diseases were introduced in the early 2000s to improve quality of care, for example, through increased coordination between ambulatory care GPs and specialists.⁶⁷ Sickness funds have since been required to facilitate member participation in DMPs. This offer does not exist in this form for the PHI insured. Additionally, the way physicians are paid in the PHI system does not create incentives for better coordination between physicians and care sectors. At this point, thought should be given to suitable incentives aimed at improving coordination of care for people with PHI.

Communication appears to be another area for improvement. On the one hand, communication between providers and patients was found to be insufficient and non-transparent, even leading to patients suspecting medical errors and having safety concerns about their health care. On the other hand, access barriers to after-hours medical care might also be partly due to a lack of communication either with coordinating providers or on a macro level. Difficulties with accessing after-hours care may be further exacerbated by the population's lack of knowledge about the patient pathways envisioned by policy. A population-representative survey in Germany found that only 37% of the respondents knew about the nationwide telephone number (116 117) for after-hours care in Germany in 2019. Despite recent media campaigns aiming to promote this service to the general public, only 48% of respondents knew about it in 2021.⁶⁴ Therefore, further policy measures appear necessary to inform the general population in Germany. Overall, improving communication should be a policy goal on both the micro and macro levels.

Regarding financial risk protection, the overall good protection that PHI households enjoy is not only a likely result of their on average higher income levels, but also of policies enacted in recent years. Insurance companies, for instance, are obliged by law to include savings for old age in premium payments to prevent large increases in health

expenses with rising age. Companies must further provide special tariffs with capped premiums for certain groups, such as pensioners or those in financial hardship, though this is paired with a limited benefit basket. The current results show that inequalities in financial protection do exist among the PHI insured, especially between income groups. Additional policy measures may therefore help to expand and improve protection mechanisms.

Quality differences between hospitals is another area for improvement. Germany has the highest number of acute care beds in Europe and they are distributed across a high number of hospitals, though not every hospital has the full technical equipment to treat patients adequately.⁶⁸ In addition, some hospitals only treat a low number of patients with certain diseases, which has a negative impact on patient outcomes.^{69,70} Busse (2021), for example, recommends reducing the number of hospitals in Germany and to move towards hospitals with a pre-defined range of treatments (including case thresholds and having adequate personnel and technical equipment) to improve quality of care.⁶⁸

4.3 | Limitations

A major strength of this research is that it provides first insights into the perspective of people with PHI regarding the performance of the German health system. However, some limitations need to be considered when interpreting the results. The study sample comprises people from one PHI provider in Germany, whose insureds differ from the German PHI population regarding the frequency of aid allowance. The sample selection was therefore stratified by age, gender, and aid allowance according to the overall PHI population. In the future, the results from this study should be validated with samples from other PHI providers and the total population. Furthermore, the questionnaire was only provided in the German language, which excludes respondents with insufficient knowledge of the German language. In addition, people with few experiences with the German health system were disadvantaged in answering very specific questions about health care or the health system. It cannot be distinguished if these people lack experience due to unmet needs or no need for health care at all.

5 | CONCLUSIONS

Despite the ongoing media debate in Germany whether people with PHI receive favourable treatment, the present study highlights severe differences of the health system performance between subgroups of the PHI insured. Overall, this population group is hardly subject to German health services research, but the present results indicate potential for improvement of health care and for promoting equity among this specific—but also very heterogeneous—population group.

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CONFLICT OF INTEREST

None.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

ETHICS STATEMENT

The study was approved by the Ethics Committee of the Charité—Universitätsmedizin Berlin.

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REFERENCES

1. World Health Organization Regional Office for Europe. The Tallinn Charter: Health Systems for Health and Wealth; 2008. Accessed 25 August 2021. http://www.euro.who.int/__data/assets/pdf_file/0008/88613/E91438.pdf?ua=1
2. World Health Organization. Everybody's Business: Strengthening Health Systems to Improve Health Outcomes: WHO's Framework for Action; 2007. Accessed 25 August 2021. http://www.who.int/healthsystems/strategy/everybodys_business.pdf
3. World Health Organization. *Monitoring the Building Blocks of Health Systems: A Handbook of Indicators and Their Measurement Strategies*. World Health Organization; 2010. Accessed 25 August 2021. https://www.who.int/healthinfo/systems/WHO_MBHSS_2010_full_web.pdf
4. Smith P. *Performance measurement for health system improvement*. The Cambridge health economics. Policy and management series. Cambridge Univ. Press; 2010.
5. Smith P. Health System Performance Assessment: Synthesis Report; 2014. Accessed 25 August 2021. <https://ec.europa.eu/social/BlobServlet?docId=12631>
6. Sheikh K, Ranson MK, Gilson L. Explorations on people centredness in health systems. *Health Pol Plann*. 2014;29(Suppl 2):ii1-5. <https://doi.org/10.1093/heapol/czu082>
7. World Health Organization. *Continuity and Coordination of Care: A Practice Brief to Support Implementation of the WHO Framework on Integrated People-Centred Health Services*; 2018. Accessed 25 August 2021. <https://apps.who.int/iris/bitstream/handle/10665/274628/9789241514033-eng.pdf>
8. Wensing M, Elwyn G. Methods for incorporating patients' views in health care. *BMJ*. 2003;326(7394):877-879. <https://doi.org/10.1136/bmj.326.7394.877>
9. Boyce T, Brown C. *Engagement and Participation for Health Equity*. World Health Organization; 2017. Accessed 25 August 2021. http://www.euro.who.int/__data/assets/pdf_file/0005/353066/Engagement-and-Participation-HealthEquity.pdf
10. World Health Organization Regional Office for Europe. *Pathways to Health System Performance Assessment: A Manual to Conducting Health System Performance Assessment at National or Subnational Level*; 2013. Accessed 25 August 2021. http://www.euro.who.int/__data/assets/pdf_file/0005/169412/e96512-Eng.pdf
11. Blümel M, Spranger A, Achstetter K, Maresso A, Busse R. Germany: health system review. *Health Syst Transit*. 2020;22(6):i-273.
12. Statistisches Bundesamt. *Angaben zur Krankenversicherung (Ergebnisse des Mikrozensus) - Fachserie 13 Reihe 1.1: 2019; 2020*. Accessed 25 August 2021. <https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Gesundheit/Gesundheitszustand-Relevantes-Verhalten/Publikationen/Downloads-Gesundheitszustand/krankenversicherung-mikrozensus-2130110199004.pdf>
13. Bundesministerium für Arbeit und Soziales. *Bundeskabinett beschließt Sozialversicherungsrechengrößen 2021; 2020*. Accessed 25 August 2021. <https://www.bmas.de/DE/Service/Presse/Pressemitteilungen/2020/bundeskabinett-beschliesst-sozialversicherungsrechengroessen-2021.html>
14. Busse R, Blümel M, Knieps F, Bärnighausen T. Statutory health insurance in Germany: a health system shaped by 135 years of solidarity, self-governance, and competition. *Lancet*. 2017;390(10097):882-897. [https://doi.org/10.1016/S0140-6736\(17\)31280-1](https://doi.org/10.1016/S0140-6736(17)31280-1)
15. Sawicki PT. Qualität der Gesundheitsversorgung in Deutschland Ein randomisierter simultaner Sechs-Länder-Vergleich aus Patientensicht. *Med Klin*. 2005;100(11):755-768. <https://doi.org/10.1007/s00063-005-1105-2>
16. Maio G. Wäre eine Bürgerversicherung gerecht? *DFZ*. 2018;62(2):22-23. <https://doi.org/10.1007/s12614-018-7154-8>
17. Genett T. Ärztliches Vergütungssystem auf dem Prüfstand. *Recht Polit Gesundheitswes (RPG)*. 2019;25(1):15-19.

18. Huber J, Lampert T, Mielck A. Unterschiede bei Gesundheitsrisiken, Morbidität und gesundheitlicher Versorgung zwischen Kindern GKV- bzw. PKV-versicherter Eltern: Ergebnisse aus dem Kinder- und Jugendgesundheitsurvey (KiGGS). *Gesundheitswesen*. 2012;74(10):627-638. <https://doi.org/10.1055/s-0031-1301268>
19. Rothgang H. "Pflegeversicherung folgt Krankenversicherung" – fundamentale Fehlentscheidung oder zukunftssträchtiges Modell? *Sozialer Fortschritt*. 2015;64(1-2):8-14. <https://doi.org/10.3790/sfo.64.1-2.8>
20. Luque Ramos A, Hoffmann F, Spreckelsen O. Waiting times in primary care depending on insurance scheme in Germany. *BMC Health Serv Res*. 2018;18(1):191. <https://doi.org/10.1186/s12913-018-3000-6>
21. Leinert J. Einkommenselektion und ihre Folgen. In: Jacobs K, Dräther H, eds. *Fairer Wettbewerb oder Risikoselektion?: Analysen zur gesetzlichen und privaten Krankenversicherung*. 1. Aufl. Bonn; 2006:31-48.
22. Hajek A, Bock J-O, Saum K-U, et al. Unterschiede in der Morbidität nach Krankenversichererstatus im Alter. *Gesundheitswesen*. 2018;80(6):551-556. <https://doi.org/10.1055/s-0042-108584>
23. Huber J, Mielck A. Morbidität und Gesundheitsversorgung bei GKV- und PKV-Versicherten: Forschungsstand empirischer Studien. *Bundesgesundheitsblatt Gesundheitsforsch Gesundheitschutz*. 2010;53(9):925-938. <https://doi.org/10.1007/s00103-010-1119-7>
24. Kriwy P, Mielck A. Versicherte der gesetzlichen Krankenversicherung (GKV) und der privaten Krankenversicherung (PKV): Unterschiede in Morbidität und Gesundheitsverhalten. *Gesundheitswesen*. 2006;68(5):281-288. <https://doi.org/10.1055/s-2006-926779>
25. Leinert J. Morbidität als Selektionskriterium. In: Jacobs K, Dräther H, eds. *Fairer Wettbewerb oder Risikoselektion?: Analysen zur gesetzlichen und privaten Krankenversicherung*. 1. Aufl. Bonn; 2006:67-76.
26. Längen M, Potthoff P, Wendland G. Unterschiede in der Inanspruchnahme von Gesundheitsleistungen und der Morbidität zwischen Versicherten in der Gesetzlichen Krankenversicherung und Privaten Krankenversicherung. Eine Auswertung des Infratest Access Panels. *Gesundheits- und Sozialpolitik*. 2005;59:25-30.
27. Mielck A, Helmert U. Vergleich zwischen GKV- und PKV-Versicherten: Unterschiede bei Morbidität und gesundheitlicher Versorgung. *Gesundheitsmonitor*. 2006:32-52.
28. Gruber S, Kiesel M. Wer konsultiert den Allgemeinarzt in Deutschland? Eine Analyse zum Einfluss von Versicherung und anderen sozialen Merkmalen auf die Inanspruchnahme allgemeinmedizinischer Leistungen im Alter. In: Engelhardt HH, ed. *Altern in Europa. Empirische Analysen mit dem Survey of Health, Ageing and Retirement in Europe*. University of Bamberg Press; 2009:94-143.
29. Längen M, Stollenwerk B, Messner P, Lauterbach KW, Gerber A. Waiting times for elective treatments according to insurance status: a randomized empirical study in Germany. *Int J Equity Health*. 2008;7(1):1. <https://doi.org/10.1186/1475-9276-7-1>
30. Roll K, Stargardt T, Schreyögg J. Effect of type of insurance and income on waiting time for outpatient care. *Geneva Pap Risk Insur - Issues Pract*. 2012;37(4):609-632. <https://doi.org/10.1057/gpp.2012.6>
31. Schellhorn M. Vergleich der Wartezeiten von gesetzlich und privat Versicherten in der ambulanten ärztlichen Versorgung. In: Amhof R, Böcken J, Braun B, eds. *Gesundheitsmonitor 2007: Gesundheitsversorgung und Gestaltungsoptionen aus der Perspektive von Bevölkerung und Ärzten*. 1. Aufl. Gütersloh: Verl. Bertelsmann Stiftung; 2007:95-113.
32. Kassenärztliche Bundesvereinigung (KBV). Wartezeiten. Accessed 25 August 2021. <https://gesundheitsdaten.kbv.de/cms/html/2405.php>
33. Schwierz C, Wübker A, Wübker A, Kuchinke BA. Discrimination in waiting times by insurance type and financial soundness of German acute care hospitals. *Eur J Health Econ*. 2011;12(5):405-416. <https://doi.org/10.1007/s10198-010-0254-2>
34. Becklas E, Mielck A, Böcken J. Das Arzt-Patienten-Verhältnis in der ambulanten Versorgung - Unterschiede zwischen GKV- und PKV-Versicherten. In: Böcken J, Braun B, Repschläger U, eds. *Gesundheitsmonitor 2007: Gesundheitsversorgung und Gestaltungsoptionen aus der Perspektive von Bevölkerung und Ärzten*. Verlag Bertelsmann Stiftung; 2012:28-53. Accessed 25 August 2021. https://www.bertelsmann-stiftung.de/fileadmin/files/BST/Publikationen/imported/leseprobe/LP_978-3-86793-493-0_1.pdf
35. Blümel M, Röttger J, Köppen J, Achstetter K, Busse R. Integrating the population perspective into health system performance assessment (IPHA): study protocol for a cross-sectional study in Germany linking survey and claims data of statutorily and privately insured. *Int J Health Pol Manag*. 2020;9(9):370-379. <https://doi.org/10.15171/ijhpm.2019.141>
36. Debeka Krankenversicherungsverein a.G. Geschäftsberichte. Accessed 24 June 2021. https://www.debeka.de/unternehmen/informationen_zur_debeka/geschaeftsberichte.html
37. Statistisches Bundesamt. Angaben zur Krankenversicherung (Ergebnisse des Mikrozensus) - Fachserie 13 Reihe 1.1 - 2015. Wiesbaden; 2016.
38. Verband der Privaten Krankenversicherungen e.V. *Zahlenbericht der Privaten Krankenversicherung 2015*. Köln; 2016.
39. Röttger J, Blümel M, Engel S, et al. Exploring health system responsiveness in ambulatory care and disease management and its relation to other dimensions of health system performance (RAC) - study design and methodology. *Int J Health Pol Manag*. 2015;4(7):431-437. <https://doi.org/10.15171/ijhpm.2015.97>

40. Hu L, Ding H, Liu S, Wang Z, Hu G, Liu Y. Influence of patient and hospital characteristics on inpatient satisfaction in China's tertiary hospitals: a cross-sectional study. *Health Expect* 2020;23(1):115-124. <https://doi.org/10.1111/hex.12974>
41. Munro N, Duckett J. Explaining public satisfaction with health-care systems: findings from a nationwide survey in China. *Health Expect* 2016;19(3):654-666. <https://doi.org/10.1111/hex.12429>
42. Eurostat. Database. Accessed August 20, 2021. <https://ec.europa.eu/eurostat/en/data/database>.
43. Statistisches Bundesamt. Haushalte und Familien - Ergebnisse des Mikrozensus - Fachserie 1 Reihe 3 - 2019; 2019. Accessed 20 August 2021. <https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bevoelkerung/Haushalte-Familien/Publikationen/Downloads-Haushalte/haushalte-familien-2010300197004.pdf>
44. Statistisches Bundesamt. Income Distribution (Equivalent Net Income) [Einkommensverteilung (Nettoäquivalenzeinkommen) in Deutschland]: Community Statistics on Income and Living Conditions (EU-SILC). Accessed 16 August 2021. <https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Einkommen-Konsum-Lebensbedingungen/Lebensbedingungen-Armutsgefahrdrung/Tabellen/einkommensverteilung-silc.html>
45. OECD/European Observatory on Health Systems and Policies. Germany: Country Health Profile 2019. OECD Publishing; 2019.
46. Mielck A, Kiess R, Knesebeck OVD, Stirbu I, Kunst AE. Association between forgone care and household income among the elderly in five Western European countries - analyses based on survey data from the SHARE-study. *BMC Health Serv Res*. 2009;9(1):52. <https://doi.org/10.1186/1472-6963-9-52>
47. Aron-Dine A, Einav L, Finkelstein A. The RAND Health Insurance Experiment, three decades later. *J Econ Perspect*. 2013;27(1):197-222. <https://doi.org/10.1257/jep.27.1.197>
48. Gerfin M, Kaiser B, Schmid C. Healthcare demand in the presence of discrete price changes. *Health Econ* 2015;24(9):1164-1177. <https://doi.org/10.1002/hec.3154>
49. Bodenmann P, Favrat B, Wolff H, et al. Screening primary-care patients forgoing health care for economic reasons. *PLoS One*. 2014;9(4):e94006. <https://doi.org/10.1371/journal.pone.0094006>
50. De Pietro C, Camenzind P, Sturny I, et al. Switzerland: health system review. *Health Syst Transit*. 2015;17(4):1-288.
51. Siegel M, Busse R. Can People Afford to Pay for Health Care? New Evidence on Financial Protection in Germany; World Health Organization. Regional Office for Europe. 2018.
52. Kim MK, Blendon RJ, Benson JM. What is driving people's dissatisfaction with their own health care in 17 Latin American countries? *Health Expect* 2013;16(2):155-163. <https://doi.org/10.1111/j.1369-7625.2012.00777.x>
53. Zich K, Tisch T, Bertelsmann Stiftung. Krankenhausqualität aus Patientensicht: Untersuchung auf Basis der PEQ-Daten der Weissen Liste. Bertelsmann Stiftung; 2018.
54. Mansky T. Was erwarten die potenziellen Patienten vom Krankenhaus? In: Böcken J, Braun B, Reipschläger U, eds. *Gesundheitsmonitor 2012: Bürgerorientierung im Gesundheitswesen Kooperationsprojekt der Bertelsmann Stiftung mit der BARMER/GEK*. Verlag Bertelsmann Stiftung; 2012:136-159.
55. Ellis RJ, Yuce TK, Hewitt DB, et al. National evaluation of patient preferences in selecting hospitals and health care providers. *Med Care*. 2020;58(10):867-873. <https://doi.org/10.1097/MLR.0000000000001374>
56. Jung K, Feldman R, Scanlon D. Where would you go for your next hospitalization? *J Health Econ*. 2011;30(4):832-841. <https://doi.org/10.1016/j.jhealeco.2011.05.006>
57. Kraska RA, Weigand M, Geraedts M. Associations between hospital characteristics and patient satisfaction in Germany. *Health Expect* 2017;20(4):593-600. <https://doi.org/10.1111/hex.12485>
58. Naidu A. Factors affecting patient satisfaction and healthcare quality. *Int J Health Care Qual Assur*. 2009;22(4):366-381. <https://doi.org/10.1108/09526860910964834>
59. Schutt RK, Woodford ML. Increasing health service access by expanding disease coverage and adding patient navigation: challenges for patient satisfaction. *BMC Health Serv Res*. 2020;20(10):175. <https://doi.org/10.1186/12913-020-5009-x>
60. Batbaatar E, Dorjdagva J, Luvsannyam A, Savino MM, Amenta P. Determinants of patient satisfaction: a systematic review. *Perspect Public Health*. 2017;137(2):89-101. <https://doi.org/10.1177/1757913916634136>
61. Gemeinsamer Bundesausschuss. Qualitätsberichte der Krankenhäuser. Accessed 25 August 2021. <https://www.g-ba.de/themen/qualitaetssicherung/datenerhebung-zur-qualitaetssicherung/datenerhebung-qualitaetsbericht/>
62. Schneider EC, Shah A, Doty MM, Tikkanen R, Fields K, Williams RD. Mirror, Mirror 2021 - Reflecting Poorly: Health Care in the U.S. Compared to Other High-Income Countries; 2021.
63. Röttger J, Busse R. How do chronically ill patients rate medical care by their GPs and specialists? Results of a Germany-wide survey. *Gesundheitswesen*. 2016;78(S 01):e89-e96. <https://doi.org/10.1055/s-0041-110669>
64. Kassenärztliche Bundesvereinigung (KBV). Versichertenbefragungen; 2022. Accessed 31 May 2022. <https://www.kbv.de/html/versichertenbefragung.php>
65. Marstedt G, Reiners H. Das deutsche Gesundheitswesen 2001 bis 2015 aus der Versichertenperspektive. In: Böcken J, Braun B, Meierjürgen R, eds. *Gesundheitsmonitor 2016: Bürgerorientierung im Gesundheitswesen*. Verlag Bertelsmann Stiftung; 2016:15-39.

66. Struckmann V, Leijten FRM, van Ginneken E, et al. Relevant models and elements of integrated care for multi-morbidity: results of a scoping review. *Health Pol.* 2018;122(1):23-35. <https://doi.org/10.1016/j.healthpol.2017.08.008>
67. Busse R. Disease management Programs in Germany's statutory health insurance system – a gordian solution to the adverse selection of chronically ill in competitive markets? *Health Aff* 2004;23(3):56-67. <https://doi.org/10.1377/hlthaff.23.3.56>
68. Busse R. Gesundheitsökonom Busse erachtet Klinikabbau als alternativlos. *Georg Thieme Verlag KG*. September 9, 2021. Accessed 7 March 2022. <https://www.kma-online.de/aktuelles/politik/detail/gesundheitsoekonom-busse-erachtet-klinikabbau-als-alternativlos-a-46208/artikel-seite-0>
69. Krautz C, Nimptsch U, Weber GF, Mansky T, Grützmann R. Effect of hospital volume on in-hospital morbidity and mortality following pancreatic surgery in Germany. *Ann Surg.* 2018;267(3):411-417. <https://doi.org/10.1097/sla.0000000000002248>
70. Nimptsch U, Haist T, Krautz C, Grützmann R, Mansky T, Lorenz D. Hospital volume, in-hospital mortality, and failure to rescue in esophageal surgery: an analysis of German hospital discharge data. *Deutsches Ärzteblatt International.* 2018;115(47):793.

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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