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ARTICLE

Value-Based Outsourcing in Spain Is Associated with Improved Clinical, Efficiency, and Patient Satisfaction Metrics

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Over the past decade, North American and European health care systems have opted for policies based on the tenets of value-based health care (VBHC), aiming to improve health outcomes, reduce care-related expenditure, and provide care sustainably. As well as promoting healthy competition between health care providers, VBHC aims to drive collaboration between players, including those in primary and secondary care and public and private providers. Long-standing trends toward increased outsourcing of publicly owned facilities to private organizations have generated heated debate, especially in Europe, regarding potential conflicts between ensuring quality of care and implementing cost-reduction strategies to increase economic benefits. In this context, outsourcing to private networks with a strong commitment to VBHC may be a successful strategy for improving health outcomes and lowering costs while overcoming potential drawbacks voiced by opponents of outsourcing. The Regional Health Care System of Madrid (RHSM), Spain, stands out as a best practice model in European health care, providing universal coverage to around 7 million inhabitants (14% of the nation's population) through a robust network of primary care centers and hospitals, of which several are outsourced to private providers. The RHSM is characterized by a centralized database and transparent reporting system to monitor quality metrics across hospitals and other health care structures, as well as a free-choice mandate, which empowers inhabitants to seek care at the center of their choice at zero out-of-pocket cost, thus overcoming social inequalities in access to care. The authors analyzed publicly available data from 25 public hospitals in the RHSM from

2015 to 2023, comparing quality of care, efficiency, and patient experience metrics from four hospitals outsourced to the value-based Quirónsalud Health Care Network and 22 publicly managed hospitals. Their results provide longitudinal evidence that value-based outsourcing is associated with lower standardized inpatient mortality rates, reduced medical and surgical inpatient complications (3.22% vs. 3.75%; P<0.001), lower average lengths of hospital stays (4.93 days vs. 5.83 days; P<0.001; 95% confidence interval [CI], −0.89 to 0.90), and higher patient experience survey scores (93.1 vs. 88.6; P<0.001; 95% CI, 3.75 to 4.93) than the results from other nonoutsourced hospitals. Significantly more patients were transferred to outsourced hospitals than to nonoutsourced hospitals, with more than half of the patients coming from areas with worse socioeconomic status. The authors' findings suggest that, in the context of a regional health care system providing excellent universal coverage to residents at zero out-of-pocket cost, along with free choice of health provider, value-based outsourcing is associated with increased quality of care, efficiency, and patient satisfaction, as well as helping to reduce inequalities in access to care in areas with lower socioeconomic status. Outsourcing to value-based networks may catalyze system transformation toward VBHC, while fostering healthy, patient-centered competition between private providers.

Introduction

Since its introduction in the early 2000s, value-based health care (VBHC) has constituted a paradigm shift from traditional, volume-based care delivery to health care that seeks to prioritize value for patients at the lowest possible cost.[1] Although first described and implemented in the United States, VBHC has swiftly become the gold standard for policy makers, health care managers, and clinicians worldwide. The complex nature of health care systems makes value-based reform an intricate process with numerous implementation obstacles to be faced and pitfalls to avoid. Nonetheless, many European health care systems are strongly investing in VBHC, seeing it as a solution to ensure sustainable, high-value health care.[2-4]

European health care systems largely provide universal access to health care and are usually funded through taxpayers' social security contributions or mandatory public health insurance.[5] In most countries, private health care networks coexist with public providers, and citizens may opt for voluntary private health insurance to expedite access to specialist care. Despite some structural differences compared with U.S. health care, many of the challenges facing European health care management are similar, including an aging population, a higher prevalence of chronic diseases, and a dwindling health care workforce, all of which point to a need for strategies aimed at sustaining care provision.[6-9] Thus, elements of VBHC — organizing care into integrated practice units, measuring outcomes and costs for individual patients, implementing bundled payments instead of traditional fee-for-service, integrating care delivery across facilities, expanding geographic reach, and investing in an enabling technological infrastructure — have been progressively adopted, nationally and locally, in multiple regions and countries.[10,11]

Simultaneously, faced with rapidly increasing health care expenditure amid budget constraints, many European countries have tended to outsource services in order to control costs while providing high-quality care.[12,13] Outsourcing hospital management to privately owned companies has potential benefits, such as more efficient processes, better patient experience, and lower overall costs.[14] However, several publications have highlighted possible drawbacks of privatization, such as sacrificing quality of care or patient safety for economic benefits, making it clear that the choice of provider when outsourcing is of vital importance.[15-17]

In this regard, outsourcing to VBHC networks is emerging as a potential solution to capture the benefits of outsourcing (expenditure control, positive patient experience, and quality care) while avoiding possible pitfalls, as the objective of VBHC is precisely to deliver the highest value for patients.[18,19] In systems that guarantee universal access to health care, the interactions between publicly and privately managed hospitals in the public network are usually complex and tend toward a more collaborative model rather than invoking a competitive structure.[20] Based on these considerations, we hypothesize that outsourcing to value-based providers is a viable strategy to improve system outcomes, fostering collaboration between different institutions and catalyzing systemwide implementation of VBHC.

The Regional Health Care System of Madrid (RHSM) attends a population of around 7 million inhabitants (approximately 14% of Spain's population), and it is characterized by its provision of universal access to high-quality health care.[21] Since 2009, a free-choice mandate has allowed residents of the Madrid region to receive care from the primary center and hospital of their choice, even if these do not coincide with their geographic catchment area.[22] For over a decade, four of the region's public hospitals have been completely outsourced (including management, health care delivery services, and other areas such as maintenance and information and technology services) to the Quirónsalud Health Care Network (Quirónsalud). This network operates on value-based principles, seeking to deliver the highest value for patients at the lowest possible cost through the implementation of an enabling technological platform, organization of care into integrated practice units, measuring outcomes and costs for individual patients, and organizing integrated care delivery across separate facilities and nationwide.[23-31]

> *"Outsourcing hospital management to privately owned companies has potential benefits, such as more efficient processes, better patient experience, and lower overall costs."*

This study aims to describe a range of metrics, including inpatient mortality, medical and surgical inpatient complications, average length of hospital stay, and patient experience scores, comparing data from four public hospitals outsourced to Quirónsalud with those from 21 publicly managed hospitals from the RHSM. Drawing on these results, we then examine possible motives behind observed differences and explore the interactions between public and privately managed health care.

Methods

Study Design

A multicenter, retrospective, observational, cross-sectional study was conducted using 10 years of data (2014–2023) from 25 hospitals in the RHSM. We compared results from four hospitals outsourced to Quirónsalud (the study hospitals) with 21 publicly managed hospitals (the control group).

Setting

The Regional Health System of Madrid: Advancing Health Care through Free Choice, Transparency, and Public Accountability

The RHSM attends a total population of around 7 million inhabitants through a robust primary care system serving as first port of call and gatekeeper to specialist care, and a network of 34 public hospitals offering emergency, inpatient, and outpatient specialist care, of which five are outsourced to privately-owned organizations — four of which belong to Quirónsalud (one tertiary, two secondary, and one primary level hospital).

Over the past decade, the Community of Madrid (one of Spain's 17 major geopolitical areas or autonomous communities) has developed a health care governance model based on the principles of citizen choice and transparency in results. Unlike other Spanish autonomous communities, the RHSM not only recognizes these principles, but also enshrines them in law. Thus, the free-choice mandate guarantees every patient the right to select their preferred hospital, specialist, or primary care professional within the public health system. This right has become a cornerstone of Madrid's health policy, reflecting an institutional commitment to empowerment, accountability, and performance-driven management, and has led to reduced waiting times and increased patient satisfaction throughout the health care system.[32]

Complementing this, the Observatory of Health Care Outcomes (*Observatorio de Resultados del Servicio Madrileño de Salud*) provides open access to comparative data across hospitals and services, enabling both patients and professionals to make informed decisions.[33] The observatory is the RHSM's public reporting initiative designed to monitor and transparently disseminate the performance of the regional health system. It compiles and publishes standardized indicators covering population health status, primary care, hospital care, and emergency services, enabling longitudinal assessment and benchmarking across health care providers. The observatory integrates routinely collected administrative and clinical data to evaluate effectiveness, safety, efficiency, and patient experience. Its purpose is to support evidence-based decision-making, promote accountability, and facilitate comparisons across institutions within the Community of Madrid.

Quirónsalud: A Value-Based Approach to Outsourcing

Quirónsalud is the largest Spanish private health care network.[23-31] The most significant investment made by the four hospitals outsourced to Quirónsalud (study hospitals) to implement value-based health care has focused on reorganizing patient workflows, emphasizing quality, experience, accessibility, and timely care, with the support of information technologies.[34] Information technology and data have streamlined workflows between the hospitals' different departments, enabling more efficient management and significantly reducing response times.[24,26] This, in turn, has resulted in a shorter average length of stay, serving the same population with fewer beds and consequently reducing costs for supplies, personnel, and other resources. The information technology platform has enabled initiatives, such as department-wide patient-reported outcome measures (PROMs) and patient-reported experience measures (PREMs) collection,[23,31] and the organization of different services, such as cancer treatment and preoperative care, into integrated practice units.[27,29]

The evaluation of health outcomes is integrated into all care pathways within the SALUD (**S**eguimiento **A**sistencial Quirónsa**LUD**, or Quirónsalud Health Care Delivery Monitor) project. This project represents a transition from isolated, procedure-centered follow-up to coordinated, patient-centered care processes. The SALUD model is based on the definition of clinical care pathways and their integration into the electronic health record. For each diagnosis and patient profile, the system suggests to the clinician the most appropriate clinical pathway.

Each clinical pathway is developed and implemented following five methodologic pillars: a service delivery plan, a patient communication and education plan, a safety plan, a health outcomes evaluation plan, and scientific and internal clinical endorsement. Patient-reported outcomes are analyzed through a dedicated dashboard, along with a process adherence metric, the Health Indicator, which measures adherence to clinical pathways.

Several of the value-based initiatives have demonstrated improved patient outcomes and considerable cost savings, such as the HOPE (**H**óspital **O**ncológico **PE**rsonalizado or Personalized Oncology Hospital) integrated practice unit, which reduced cancer treatment complications and emergency room visits;[29] a PROMs program for patients with lymphoma, which was associated with lower use of health care and improved survival, potentially owing to the incorporation of a real-time alert system for self-reported severe adverse events;[35] a teledermatology program that enables reorganization of care across the Madrid region and nationwide, increasing timely access to care and melanoma treatment, as well as improving physician satisfaction;[28,36] and a preoperative care program, which reduced the number of unnecessary preoperative tests and improved preoperative safety.[25]

Financing Model

The control and study hospitals share the same public funding source. In both control and study hospitals, access to health care services is universal and provided free of charge to patients. However, the health care providers differ: In the case of the 21 control hospitals the provider is the public administration itself, and in the four study hospitals the provider is Quirónsalud, either through a specific agreement with the public administration (as in the case of the Jiménez Díaz Foundation University Hospital) or through an administrative concession (as in the case of the other three hospitals, i.e., Infanta Elena University Hospital, Rey Juan Carlos University Hospital, and General Villalba University Hospital). In the RHSM model, low- and middle-complexity–

outsourced (concession) hospitals have no self-paying or self-insured private activity, while for the high-complexity study hospital (study hospital 4), self-paying or self-insured private activity accounts for less than 1% of total activity.

Although the funding source is the same for both control and study hospitals, the financing mechanisms differ. In the study group, the Jiménez Díaz Foundation University Hospital is funded based on the activity performed for an assigned population (around 465,000 people) with an annual payment cap, which effectively turns it into a capitation model, as the large volume of activity generated by the assigned population means that the funding cap is always reached or exceeded. The other three study hospitals are funded through a capitation model. This arrangement incentivizes the adoption of efficient management practices, as any additional activity performed beyond the cap must be provided without additional funding, effectively at no cost to the payer. In addition, elective activity (i.e., care provided to patients who are not part of the hospital's assigned population, but who exercise their statutory right to free hospital choice) is reimbursed at standardized public rates across all hospitals. In the case of the study hospitals, this revenue is subject to a reduction and is paid separately as supplementary income. This reimbursement arrangement has been in effect since 2011, when the law on free hospital choice was consolidated, thereby enabling patients to exercise this right.[22] This factor has contributed both to the development of a high-quality care model that appeals to patients and to the coexistence of this model with the efficiency-driven financing structure based on the capitation ceiling.

On the other hand, the financing model of the control hospitals is markedly different. Control hospitals are financed through a budget-based model, characterized by rigidly allocated budget lines for specific expenditure categories (e.g., personnel, supplies, maintenance), which are determined annually considering historical spending patterns.

Patient Characteristics

The reference population for each hospital is primarily determined by the geographic and administrative assignment to Basic Health Zones (BHZ). Each BHZ is allocated a specific reference hospital responsible for providing specialist, inpatient, and emergency inpatient care. However, since 2011, the RHSM has implemented a free-choice-of-care mechanism, permitting patients to select the primary care practice and hospital of their choice. The catchment areas for each hospital may include various districts or municipalities, and patients choosing to transfer from their reference hospital to another center may further distort patient population statistics, making a direct comparison of socioeconomic characteristics of each hospital's real patient population challenging — especially for the study hospitals, which have significantly more transfers from other catchment areas. We analyzed demographic and clinical characteristics of patients admitted to inpatient care in 2024 at RHSM hospitals (Table 1).[37]

In this regard, we performed an analysis of care episodes for patients choosing to transfer to the high-complexity study hospital (study hospital 4) during 2023 (Table 2). Of 183,922 care episodes for 84,082 individual patients, we analyzed those coming from Madrid capital, as well as from other municipalities of the Madrid region with more than 50,000 inhabitants. The average per

Table 1. Demographic and Clinical Characteristics of Inpatient Hospital Admissions in 2024 for the RHSM Hospitals and Study Hospital Subgroup.*

Characteristic	RHSM Admissions[37]	Study Hospital Subgroup Admissions
Age — n (%)		
0–10 years	680,612 (11.36)	3160 (4.06)
10–19 years	474,362 (7.91)	1843 (2.37)
20–49 years	1,963,227 (32.76)	17,966 (23.07)
50–69 years	1,472,220 (24.56)	22,287 (28.61)
>70 years	1,402,966 (23.41)	32,636 (41.90)
Female sex	3,299,073 (55.05)	41,205 (52.90)
Case-mix complexity index	1.09	1.09
Diagnostic category — n (%)		
Nervous system disorders	225,240 (3.76)	3730 (4.79)
Eye disorders	336,802 (5.62)	174 (0.22)
Ear, nose, mouth, and throat disorders	569,602 (9.50)	2428 (3.12)
Respiratory system disorders	400,888 (6.69)	13,219 (16.97)
Circulatory system disorders	292,186 (4.88)	8076 (10.37)
Digestive system disorders	645,646 (10.77)	7912 (10.16)
Liver, biliary system, and pancreas disorders	63,018 (1.05)	3934 (5.05)
Musculoskeletal and connective tissue disorders	729,544 (12.17)	10,665 (13.69)
Skin and subcutaneous tissue disorders	470,991 (7.86)	1656 (2.13)
Endocrine, nutritional, and metabolic disorders	47,766 (0.80)	1887 (2.42)
Kidney and urinary tract disorders	258,238 (4.31)	6550 (8.41)
Male reproductive system disorders	49,846 (0.83)	1831 (2.35)
Female reproductive system disorders	72,694 (1.21)	1314 (1.69)
Pregnancy, childbirth, and puerperium	120,859 (2.02)	5740 (7.37)
Perinatal conditions (newborns)	13,343 (0.22)	729 (0.94)
Blood, hematopoietic, and immune disorders	64,272 (1.07)	763 (0.98)
Myeloproliferative and poorly differentiated neoplasms	279,720 (4.67)	1156 (1.48)
Infectious and parasitic diseases	137,288 (2.29)	2677 (3.44)
Mental health disorders	229,103 (3.82)	1404 (1.80)
Drug- and alcohol-related disorders	7,646 (0.13)	165 (0.21)
Injuries, poisonings, and toxic effects	69,424 (1.16)	950 (1.22)
Burns	5840 (0.10)	5 (0.01)
Other health care reasons	453,144 (7.56)	786 (1.01)
HIV infections	2028 (0.03)	71 (0.09)
Significant multiple trauma	946 (0.02)	70 (0.09)
Unknown	447,313 (7.46)	–
Total	5,993,387 (100)	77,892 (100)

*HIV denotes human immunodeficiency virus and RHSM, Regional Health Care System of Madrid.

capita net incomes were taken from the Madrid region's atlas of territorial inequalities.[38] Of 147,483 care episodes, 92,828 (62.9%) corresponded to patients coming from municipalities and districts with average per capita incomes lower than the average of the study hospital's setting (Madrid capital), while 76,436 (51.8%) came from municipalities and districts with average per capita incomes lower than the average for the whole Madrid region. The estimated average per capita net income for patients transferring to the high-complexity study hospital was €21,866.47

Table 2. Analysis of Care Episodes in 2023 for Patients from Study Hospital 4 Who Transferred from the Control Hospitals.

District or Municipality	Average Net per Capita Income (€)	Number of Free-Choice Care Episodes
Alcalá de Henares	16,741	2040
Alcobendas	26,065	1637
Alcorcón	17,004	1823
Aranjuez	15,406	579
Arganda del Rey	14,564	1849
Boadilla del Monte	31,725	736
Collado Villalba	15,854	176
Colmenar Viejo	19,736	808
Coslada	16,329	1978
Fuenlabrada	13,896	1750
Getafe	17,279	3402
Leganés	15,658	3711
Majadahonda	28,750	1638
Móstoles	14,875	1514
Parla	11,965	1286
Pinto, Madrid	16,615	616
Pozuelo de Alarcón	38,361	2793
Rivas-Vaciamadrid	20,386	2450
Las Rozas de Madrid	28,423	2134
San Sebastián de los Reyes	20,876	1285
Torrejón de Ardoz	15,313	1786
Tres Cantos	26,657	1418
Valdemoro	16,273	563
Centro	24,911	2418
Arganzuela	25,687	3199
Retiro	31,523	2437
Salamanca	35,734	3884
Chamartín	39,346	3914
Tetuán, Madrid	21,495	4705
Chamberí	34,660	11,808
Fuencarral-El Pardo	27,058	8833
Moncloa-Aravaca	33,833	1972
Latina	16,424	10,705
Carabanchel	14,611	11,191
Usera	12,678	6258
Puente de Vallecas	12,739	7689
Moratalaz	19,118	707
Ciudad Lineal	21,295	10,402
Hortaleza	27,311	4138
Villaverde	12,970	5045
Villa de Vallecas	16,498	2961
Vicálvaro	16,918	1307
San Blas — Canillejas	18,767	4242
Barajas	25,207	1696
Total	–	147,483

(standard deviation, ±€7588.83), lower than the average per capita net income for Madrid capital, where the hospital is located.

Infrastructure

While the study hospitals must allocate funding for construction, capital investments, maintenance, information systems, and related costs out of their capitation-based funding, the control hospitals have these costs largely covered by the RHSM through additional budgetary allocations.

Data Sources and Extraction

Data were manually extracted from publicly available annual reports carried out by the Madrid Department of Health (Supplementary Appendix 1). These annual reports draw on data collected from patient discharge reports, regional databases, international programs for infection control, and independent patient satisfaction surveys.

The data presented in the RHSM annual reports, from which our indicators are derived, are sourced from mandatory reporting systems required for all centers that receive public funding or operate under the RHSM umbrella, including directly managed public hospitals, outsourced hospitals, and private centers integrated into the public network. The primary source for activity and clinical effectiveness indicators (e.g., mortality, case-mix index, length of stay) is the Minimum Basic Dataset (MBDS). The submission of high-quality, complete MBDS records is a nonnegotiable, legally mandated requirement for reimbursement and operational licensing for all acute care centers, irrespective of ownership.

For data standardization and validation, the Madrid Department of Health, through its reporting bodies, enforces a standardized protocol for data submission and quality checks. All providers must use the same *International Classification of Diseases* coding versions and the identical Diagnosis-Related Group (DRG) classification system for all acute inpatient episodes, ensuring that the definition of an episode or a case is consistent across the public and private spheres. The department also conducts validation checks on the MBDS submissions for completeness, consistency, and accuracy, thus enforcing a high baseline standard across the entire network, while many hospitals also run internal audits to enforce the quality of reporting. In addition, the public availability of these data within the RHSM annual reports ensures transparency and public accountability.

We included data from all publicly owned primary, secondary, and tertiary level hospitals from RHSM, excluding data from purely pediatric, psychiatric, or long-term care facilities; 25 hospitals were included in the analysis. Patient satisfaction surveys were not carried out in 2020 on account of the coronavirus disease 2019 (Covid-19) pandemic, and this year was excluded from the analysis.

Outcomes and Measurements

We performed stratified analysis according to hospital complexity (primary, secondary, or tertiary care), using standardized inpatient mortality rates as well as medical and surgical inpatient complications as markers of quality of care, average hospital length of stay as a process metric indicating efficiency, and patient satisfaction scores as a measure of overall patient experience. We also analyzed data on case-mix complexity, elective activity, and public administration cost per patient.

The case-mix complexity index serves as a vital management indicator reflecting the average complexity of patients treated within a hospital, as measured by their expected resource consumption. Each acute inpatient episode treated at a given hospital is systematically classified into a specific DRG based on the patient's principal diagnosis, secondary diagnoses, procedures performed, age, sex, and discharge status. DRGs constitute a standardized classification system for acute hospital episodes, grouping cases that are clinically homogeneous and are expected to consume a similar amount of hospital resources. Each DRG is assigned a relative weight that represents the expected cost of treating a typical patient within that specific group compared with the average cost across all acute inpatient cases. These relative weights are updated periodically. Although the DRG classification system originates in the United States, in Spain, the relative weights and associated costs are estimated using hospital cost accounting data from Spanish public hospitals, as part of the national DRG costing process.[39]

Elective activity was defined as the number of patients choosing to change from their catchment area hospital to another hospital of their choice; these data were extracted from the Madrid Department of Health's annual reports.

Standardized inpatient mortality rates (SIMRs) were calculated by the Madrid Department of Health using mandatory coding data extracted from hospital discharge reports. Inclusion criteria for calculating SIMR were patients admitted to the hospital for the following diagnoses: myocardial infarction, heart failure, stroke, pneumonia, gastrointestinal bleeding, and hip fracture. Patients admitted to a palliative care ward were excluded. Logistic regression models were developed by the Madrid Department of Health to adjust for age, sex, comorbidity, and DRG. Expected mortality was calculated for each hospital catchment area, and the SIMR was obtained by dividing observed mortality by the expected mortality for each hospital.

Prevalence of medical and surgical inpatient complications was calculated by the Madrid Department of Health by dividing the total number of discharged patients presenting with one or more coded surgical or medical complications recorded in hospital discharge reports by the total number of patients discharged from the hospital per year, multiplied by 100.

The average length of hospital stay was computed as the average number of days of hospital stay per patient admitted to the hospital. The case-mix–adjusted average length of stay is an efficiency indicator that compares the actual duration of hospital admissions with the expected stay based on the complexity of the hospital's case mix. It is calculated using an indirect rate-adjustment method, contrasting the number of inpatient days actually used by each center with the number of days it would have needed if, given its own case mix, it had operated with standard RHSM efficiency during the previous year. For each hospital, the expected stay is obtained by applying the standard length of stay by DRG to the actual episodes in the study period, weighted by their complexity index. Case-mix–adjusted average length of stay is expressed as an observed–expected ratio. This indicator is especially useful for comparing hospitals of different sizes and service portfolios, as it removes the effect of patient severity and clinical heterogeneity, allowing for a homogeneous assessment of relative operational efficiency.

Regarding patient satisfaction, the Global Satisfaction Index (GSI) utilized by RHSM is a critical metric for systematically assessing and comparing patient perception of care quality across hospitals and specialized care centers within the Community of Madrid. This index serves as a fundamental indicator for quality benchmarking within the regional health system. The GSI is derived from periodic patient satisfaction surveys conducted by RHSM. It encapsulates the overall user experience, with sampling stratified by key areas of hospital care (inpatient care, outpatient clinics, emergency department, and ambulatory surgery). The core of the index relies on a single, direct question assessing the patient's overall satisfaction with the care received, employing a five-point Likert scale with response options ranging from "Very dissatisfied" to "Very satisfied." The GSI is calculated as a percentage representing the proportion of respondents who report a positive experience (i.e., selecting the "Satisfied" or "Very satisfied" categories). To ensure the statistical validity and generalizability of the GSI results across the patient population, the RHSM employs a probabilistic sampling methodology designed to be representative of the users treated within defined time frames. The general approach involves random sampling within established strata defined by the area of hospital care for each hospital. The required sample size for each stratum and hospital is calculated to ensure a minimum 95% confidence level and a predefined, acceptable margin of error (for example, 19,595 surveys were conducted in 2023).[40] Patients are selected randomly from the official administrative records (e.g., discharge lists, attendance logs) corresponding to specific reference periods. The final sample of patients is contacted via telephone interview or electronic or postal questionnaire by specialized external entities. Strict adherence to anonymity and confidentiality protocols is maintained throughout the data collection phase.

Public administration cost refers to the total annual financial public transfer assigned to each hospital. For publicly managed hospitals, this figure was extracted from their official annual reports. For privately managed hospitals operating under public concession contracts, the figure was obtained from officially audited third-party reports (e.g., PWC, Deloitte, KPMG) that quantify the yearly public transfer. In both cases, the numerator represents exactly the same construct: the amount of public funding allocated to the hospital. We normalized this figure by the population assigned to each hospital to obtain a per capita indicator. Thus, the final unit of comparison is public expenditure per inhabitant, which is not sensitive to differences in hospital size or management model. Importantly, private revenue streams, patient co-payments, and capital investments were excluded from both groups to ensure like-for-like comparison.

Statistical Analysis

As adjusted indicators, the SIMR and case-mix–adjusted length of stay allowed hospitals to be compared with RHSM's standardized reference values, set at 1. A 95% confidence interval was calculated by the Madrid Department of Health for each result using Byar's approximation of the exact Poisson distribution and reported in annual audit data. Lower-than-expected mortality and length of stay were defined as a confidence interval with both values less than 1, whereas higher-than-expected mortality and length of stay were defined as a confidence interval in which both values were greater than 1.

The average length of stay and prevalence of medical and surgical complications, as reported by the Madrid Department of Health, were transformed into weighted averages by multiplying variables by the number of inpatients per year and dividing the total by the overall number of inpatients during the study period. To compare the average length of hospital stay, case-mix complexity, elective transfers, and public administration cost per patient, a Student's t-test was performed. Prevalence of medical and surgical inpatient complications between groups was compared using a chi-square test. To compare patient satisfaction scores, a Student's t-test was performed with a Satterthwaite–Welch correction to account for heteroskedasticity. A two-sided P value of less than 0.05 was considered to indicate statistical significance. Analyses were performed using Python, version 4.1.

Ethics and Reporting

The study was carried out in accordance with the principles set forth in the Declaration of Helsinki. Only anonymized, aggregated data were included. The study received formal exemption from the Jiménez Díaz Foundation Institutional Research Ethics Board. We followed **ST**rengthening the **R**eporting of **OB**servational Studies in **E**pidemiology (STROBE) guidelines.[41]

Results

Case-Mix Complexity

No significant differences were observed in case-mix complexity between the control and study groups (Table 3).

Hospitals from the study group attracted significantly more patients from other catchment areas than those from the control group (Table 4 and Table 5).

Standardized Inpatient Mortality Rates

Outsourced hospitals reported lower-than-predicted inpatient mortality consistently during the 10-year study period (Table 6).

After correcting for the total number of inpatients per year (Supplementary Appendix 2), study hospitals presented lower average surgical and medical complications than controls. Differences were statistically significant for low-complexity and high-complexity hospitals (Table 7).

Table 3. Average Case-Mix Complexity during the Study Period for Hospitals in the Study and Control Groups, Stratified by Complexity.*

Stratum	Study Group (N=4)	Control Group (N=21)	P Value (95% CI)
Low complexity	1.08 (±0.31)	0.96 (±0.33)	0.326 (−0.13 to 0.36)
Medium complexity	1.10 (±0.35)	1.02 (±0.36)	0.397 (−0.11 to 0.26)
High complexity	1.26 (±0.38)	1.29 (±0.46)	0.852 (−0.32 to 0.27)
Overall	1.17 (±0.37)	1.09 (±0.41)	0.318 (−0.07 to 0.22)

*Values for the study and control groups are presented as the mean (± standard deviation). CI denotes confidence interval.

Table 4. Inward Transfers to Different Hospitals from Other Catchment Areas.*

Hospital	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Low complexity										
Study hospital 1	9177	13,554	16,955	15,237	15,437	18,569	9391	16,819	19,156	20,173
Control 1	469	621	580	537	627	1080	970	2937	2883	1846
Control 2	994	1149	1495	1630	2268	2577	1230	2285	3455	4304
Control 4	219	242	309	283	352	1046	668	1801	2245	2397
Control 5	659	709	1259	1524	1209	1692	595	1379	1453	1054
Medium complexity										
Study hospital 2	2039	7582	13,876	18,836	23,299	27,269	16,788	28,003	32,558	33,486
Study hospital 3	13,833	20,484	30,449	38,250	41,174	48,049	26,489	45,142	58,630	64,820
Control 6	3730	3528	3733	4130	4755	4977	3418	5561	5427	4760
Control 7	1225	1137	1804	2343	2741	4057	2518	6251	4715	3407
Control 8	2595	2745	3446	3261	2758	2801	1978	3787	4211	4926
Control 9	2028	2336	2903	3485	4133	6082	3011	5602	6791	4339
Control 11	5103	5159	5375	5327	5855	7059	5356	13,169	12,493	10,705
Control 13	1415	2043	2554	3100	4379	5148	3325	8302	7551	7011
Control 14	1166	1255	1189	1191	1588	1289	984	1965	2962	2545
Control 15	1629	1844	1276	1229	2452	2802	1248	2652	2086	3367
High complexity										
Study hospital 4	23,341	26,008	40,968	55,304	69,766	75,889	44,465	70,972	78,128	84,082
Control 16	10,935	10,702	12,274	10,851	13,453	15,134	7370	14,685	15,741	13,523
Control 17	15,066	14,761	15,134	11,529	13,686	13,573	6959	10,780	11,432	11,707
Control 18	6922	6183	7298	6658	6215	8250	4724	9177	10,862	7121
Control 19	4316	4308	4352	5386	6838	6762	3258	3442	3972	3138
Control 20	8814	8782	10,178	11,489	10,197	10,708	6815	12,220	11,315	8855
Control 21	8942	12,585	12,634	12,772	12,432	13,185	8897	13,322	13,088	14,084
Control 22	3637	4041	4744	4171	4708	6178	3525	8250	8333	6894

*Values are the number of patients choosing to exercise their statutory right to free choice of hospital per center, 2014–2023.

Significantly lower rates of complications were observed on global analysis (3.22% vs. 3.75%; P<0.001).

Average Length of Hospital Stay

We analyzed the average length of hospital stay for each of the 25 centers included in the analysis during the study period (Table 8). When correcting for total number of inpatients per year, study hospitals presented lower average lengths of hospital stay than their stratified controls (Table 9).

Table 5. Analysis of Mean Inward Transfers to Different Hospitals from Other Catchment Areas by Hospital Complexity.*

Stratum	Study Group (N=4)	Control Group (N=21)	P Value (95% CI)
Low complexity	15,336 (±3600)	1,375 (±937)	<0.001 (11,348 to 16,794)
Medium complexity	29,553 (±15,904)	3807 (±2384)	<0.001 (18,093 to 33,397)
High complexity	56,892 (±20,988)	9204 (±3664)	<0.001 (31,849 to 63,527)
Overall	32,861 (±21,575)	5283 (±4161)	<0.001 (20,566 to 34,589)

*Values are the mean (± standard deviation) number of patients choosing to exercise their statutory right to free choice of hospital per center, 2014–2023. CI denotes confidence interval.

Table 6. Standardized Inpatient Mortality Ratios for Study and Control Hospitals from the Regional Health Care System of Madrid (Spain) (2014–2023).*

Hospital	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Low complexity										
Study hospital 1	0.94 (0.79 to 1.11)	0.75 (0.63 to 0.9)	0.84 (0.71 to 0.98)	1.06 (0.91 to 1.22)	0.95 (0.82 to 1.09)	0.83 (0.72 to 0.96)	0.8 (0.71 to 0.89)	0.75 (0.67 to 0.83)	0.7 (0.61 to 0.8)	0.64 (0.54 to 0.75)
Control 1	1.09 (0.88 to 1.34)	1.29 (1.06 to 1.56)	1.23 (1.0 to 1.5)	1.14 (0.93 to 1.39)	1.4 (1.16 to 1.68)	1.5 (1.24 to 1.81)	1.22 (1.06 to 1.4)	1.14 (0.99 to 1.29)	1.32 (1.11 to 1.56)	1.79 (1.47 to 2.16)
Control 2	0.64 (0.53 to 0.76)	0.55 (0.46 to 0.66)	0.62 (0.53 to 0.73)	0.65 (0.55 to 0.75)	0.73 (0.62 to 0.84)	0.85 (0.73 to 0.97)	0.84 (0.75 to 0.94)	0.85 (0.76 to 0.94)	0.96 (0.83 to 1.09)	0.93 (0.79 to 1.09)
Control 3	0.71 (0.59 to 0.86)	0.82 (0.69 to 0.97)	0.8 (0.67 to 0.95)	0.9 (0.77 to 1.05)	1.01 (0.87 to 1.17)	1.09 (0.94 to 1.27)	0.82 (0.72 to 0.93)	0.81 (0.72 to 0.91)	1.11 (0.98 to 1.26)	1.12 (0.97 to 1.29)
Control 4	1.06 (0.88 to 1.26)	1.1 (0.92 to 1.3)	1.06 (0.89 to 1.27)	0.89 (0.73 to 1.09)	0.89 (0.73 to 1.09)	1.09 (0.9 to 1.32)	1.07 (0.93 to 1.22)	1.01 (0.89 to 1.14)	1.16 (0.99 to 1.35)	1.17 (0.96 to 1.42)
Control 5	0.79 (0.67 to 0.93)	0.9 (0.77 to 1.03)	0.92 (0.79 to 1.06)	1.06 (0.91 to 1.22)	1.16 (1.0 to 1.33)	1.09 (0.93 to 1.26)	0.87 (0.76 to 0.98)	0.84 (0.75 to 0.95)	1.12 (0.98 to 1.27)	1.22 (1.05 to 1.41)
Medium complexity										
Study hospital 2	N/A	0.7 (0.56 to 0.87)	0.78 (0.66 to 0.91)	0.83 (0.71 to 0.96)	0.65 (0.56 to 0.76)	0.69 (0.59 to 0.8)	0.73 (0.65 to 0.82)	0.78 (0.69 to 0.87)	0.93 (0.81 to 1.05)	0.9 (0.77 to 1.04)
Study hospital 3	0.64 (0.57 to 0.73)	0.64 (0.56 to 0.71)	0.65 (0.58 to 0.73)	0.64 (0.57 to 0.71)	0.61 (0.55 to 0.68)	0.65 (0.59 to 0.72)	0.72 (0.66 to 0.77)	0.71 (0.66 to 0.77)	0.66 (0.6 to 0.73)	0.55 (0.49 to 0.62)
Control 6	1.31 (1.15 to 1.49)	1.39 (1.22 to 1.58)	1.24 (1.09 to 1.41)	1.03 (0.89 to 1.2)	1.07 (0.93 to 1.22)	1.2 (1.05 to 1.37)	1.25 (1.13 to 1.37)	1.24 (1.14 to 1.36)	1.18 (1.05 to 1.33)	1.02 (0.87 to 1.18)
Control 7	1.01 (0.88 to 1.15)	0.91 (0.8 to 1.04)	0.92 (0.81 to 1.03)	0.95 (0.84 to 1.08)	0.91 (0.8 to 1.03)	0.84 (0.73 to 0.97)	0.75 (0.68 to 0.84)	0.71 (0.64 to 0.78)	0.82 (0.73 to 0.93)	0.96 (0.82 to 1.1)
Control 8	0.94 (0.84 to 1.04)	0.84 (0.75 to 0.93)	0.85 (0.76 to 0.95)	0.9 (0.8 to 1.01)	0.91 (0.81 to 1.02)	1.04 (0.92 to 1.17)	0.96 (0.87 to 1.05)	0.9 (0.83 to 0.98)	0.94 (0.85 to 1.05)	1.04 (0.92 to 1.17)
Control 9	0.79 (0.67 to 0.93)	0.86 (0.73 to 1.01)	0.91 (0.78 to 1.06)	0.91 (0.78 to 1.06)	0.83 (0.7 to 0.97)	0.85 (0.72 to 0.99)	0.94 (0.84 to 1.04)	0.8 (0.72 to 0.88)	0.69 (0.59 to 0.8)	0.7 (0.58 to 0.85)
Control 11	0.71 (0.62 to 0.81)	0.78 (0.69 to 0.89)	0.83 (0.73 to 0.93)	0.81 (0.72 to 0.92)	0.82 (0.72 to 0.93)	0.89 (0.79 to 1.01)	0.9 (0.83 to 0.99)	0.85 (0.78 to 0.93)	0.9 (0.81 to 1.0)	0.91 (0.79 to 1.03)
Control 12	0.88 (0.75 to 1.03)	0.92 (0.78 to 1.07)	0.91 (0.78 to 1.07)	0.99 (0.87 to 1.13)	0.93 (0.83 to 1.05)	0.86 (0.77 to 0.97)	1.06 (0.99 to 1.15)	1.01 (0.94 to 1.08)	1.01 (0.91 to 1.1)	1.09 (0.98 to 1.22)
Control 13	0.97 (0.86 to 1.1)	1.0 (0.89 to 1.12)	1.1 (0.98 to 1.22)	1.06 (0.95 to 1.18)	0.97 (0.87 to 1.07)	0.93 (0.83 to 1.03)	0.91 (0.84 to 0.98)	0.94 (0.87 to 1.01)	1.1 (1.01 to 1.2)	1.19 (1.07 to 1.31)
Control 14	1.06 (0.97 to 1.16)	1.08 (0.99 to 1.18)	0.99 (0.9 to 1.09)	1.03 (0.93 to 1.14)	1.06 (0.96 to 1.18)	1.01 (0.91 to 1.12)	1.06 (0.97 to 1.14)	0.96 (0.89 to 1.03)	0.98 (0.89 to 1.08)	1.07 (0.96 to 1.19)
Control 15	1.22 (1.08 to 1.36)	1.25 (1.12 to 1.39)	1.1 (0.97 to 1.23)	0.94 (0.82 to 1.07)	0.88 (0.76 to 1.01)	0.96 (0.84 to 1.09)	1.2 (1.11 to 1.3)	1.07 (0.99 to 1.15)	0.93 (0.83 to 1.03)	0.82 (0.72 to 0.94)
High complexity										
Study hospital 4	0.84 (0.77 to 0.91)	0.81 (0.73 to 0.88)	0.73 (0.66 to 0.8)	0.72 (0.65 to 0.79)	0.74 (0.67 to 0.81)	0.65 (0.58 to 0.71)	0.77 (0.72 to 0.83)	0.83 (0.78 to 0.88)	0.87 (0.81 to 0.93)	0.73 (0.67 to 0.79)
Control 16	1.16 (1.08 to 1.25)	1.16 (1.08 to 1.24)	1.26 (1.17 to 1.35)	1.18 (1.1 to 1.27)	1.13 (1.04 to 1.22)	0.97 (0.89 to 1.06)	0.99 (0.94 to 1.06)	1.09 (1.03 to 1.14)	1.25 (1.17 to 1.33)	1.11 (1.03 to 1.21)
Control 17	1.02 (0.95 to 1.09)	1.01 (0.94 to 1.07)	1.01 (0.94 to 1.08)	1.11 (1.03 to 1.19)	1.15 (1.07 to 1.23)	1.08 (1.0 to 1.16)	0.96 (0.9 to 1.01)	0.85 (0.81 to 0.9)	0.83 (0.77 to 0.89)	0.85 (0.78 to 0.91)
Control 18	1.0 (0.93 to 1.08)	0.97 (0.9 to 1.05)	0.92 (0.85 to 0.99)	0.96 (0.89 to 1.03)	1.01 (0.93 to 1.08)	1.01 (0.94 to 1.09)	1.05 (1.0 to 1.11)	1.02 (0.97 to 1.07)	1.01 (0.95 to 1.07)	1.04 (0.97 to 1.11)
Control 19	1.19 (1.08 to 1.3)	1.16 (1.06 to 1.27)	1.03 (0.93 to 1.13)	0.98 (0.89 to 1.08)	1.01 (0.92 to 1.11)	1.17 (1.07 to 1.28)	1.17 (1.09 to 1.26)	1.12 (1.05 to 1.2)	1.2 (1.11 to 1.3)	1.11 (1.01 to 1.22)
Control 20	0.92 (0.84 to 0.99)	0.96 (0.88 to 1.04)	1.03 (0.95 to 1.12)	0.99 (0.92 to 1.06)	0.93 (0.87 to 1.0)	1.02 (0.95 to 1.1)	1.07 (1.01 to 1.13)	1.06 (1.01 to 1.12)	1.07 (1.0 to 1.15)	0.97 (0.89 to 1.05)
Control 21	1.01 (0.92 to 1.09)	0.94 (0.86 to 1.02)	1.04 (0.95 to 1.13)	1.01 (0.93 to 1.11)	1.0 (0.91 to 1.09)	1.09 (1.0 to 1.18)	1.02 (0.95 to 1.09)	0.88 (0.83 to 0.94)	0.95 (0.88 to 1.02)	1.06 (0.98 to 1.15)
Control 22	0.99 (0.92 to 1.06)	0.95 (0.88 to 1.02)	0.9 (0.83 to 0.97)	0.97 (0.89 to 1.05)	1.01 (0.93 to 1.08)	1.05 (0.97 to 1.13)	1.1 (1.04 to 1.16)	1.09 (1.04 to 1.15)	1.15 (1.08 to 1.22)	1.15 (1.06 to 1.24)

*95% confidence intervals are shown in parentheses. N/A denotes not applicable.

Table 7. Rates of Medical and Surgical Complications during Inpatient Stay.

Stratum	Study Group (N=4)	Control Group (N=21)	P Value
Low complexity	2.84%	3.24%	<0.001
Medium complexity	3.05%	3.05%	0.99
High complexity	3.53%	4.24%	<0.001
Overall	3.22%	3.76%	<0.001

This difference was also observed when comparing the group of study hospitals with the control group (4.93 days vs. 5.83 days; P<0.001; 95% confidence interval [CI], −0.89 to 0.90). Likewise, case-mix adjusted length of hospital stay was consistently lower than expected for the study hospitals (Table 10).

Average rates of all-cause hospital readmissions during the study period were 8.63%, with hospital readmissions linked to the original process averaging 4.12%. A tendency toward a proportional relationship between length of stay and readmissions was observed, except for during the Covid-19 pandemic (Fig. 1).

Public Expenditure on Health Care

Hospitals in the study group accounted for an average of €553.88 of public administration spending per patient, €262 less than the average for the control group hospitals (95% CI, −€333.52 to €190.43) (Table 11).

Patient Experience Scores

Average patient experience scores were significantly higher than those of the control group for each stratum (Table 12), as well as when compared globally (93.1±1.5 vs. 88.6±2.1; P<0.001; 95% CI, 3.75 to 4.93). We analyzed yearly patient experience data for each center (Table 13).

Discussion

Many European health care systems have opted for policies based on the tenets of VBHC, aiming to improve health outcomes, reduce care-related expenditure, and provide care sustainably.[3,4,19] However, while VBHC was originally designed to promote healthy competition between health care providers, in European countries — where most systems offer universal coverage via taxation-funded services — VBHC is often seen as driving collaboration between different players, including primary and secondary care or public and private providers. At the same time, long-standing trends toward increased outsourcing of publicly owned facilities to private organizations have stimulated debate regarding conflicts between quality of care and cost-reduction strategies to increase economic benefits.[16] As has been the case for health care systems in many other regions of Spain and neighboring European countries, during the past decade RHSM has had to adapt to multiple challenges, including an increase in climate change–related disease, exacerbations of chronic respiratory conditions due to air contamination, higher rates of infections, such as malaria, associated with changing patterns of vector-borne disease, immigration and tourism, and an endogenous aging population.[42,43] Despite these challenges, the RHSM has been described

Table 8. Average Length of Hospital Stay in Days and Total Number of Inpatients per Year for Study and Control Hospitals (2014–2023).*

Hospital	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Low complexity										
Study hospital 1	4.51 (8038)	4.59 (9015)	4.58 (9573)	4.65 (10,118)	4.46 (10,575)	4.7 (10,430)	5.31 (8899)	5.26 (8974)	4.49 (10,939)	4.42 (11,348)
Control 1	4.87 (3661)	4.73 (3644)	4.58 (3765)	5.25 (3657)	4.89 (3533)	4.84 (3441)	5.64 (3309)	5.82 (2951)	5.05 (3100)	5.15 (3523)
Control 2	5.33 (10,124)	5.45 (10,228)	5.52 (10,778)	5.61 (11,108)	5.67 (11,367)	5.43 (11,471)	6.05 (9620)	5.79 (10,155)	5.13 (11,258)	5.06 (11,919)
Control 3	4.92 (7504)	5.09 (7623)	4.96 (7740)	5.07 (7985)	4.95 (8057)	5.01 (8116)	5.6 (6946)	5.61 (7107)	5.12 (8372)	5.39 (8050)
Control 4	5.51 (4670)	5.47 (4899)	5.42 (4867)	5.44 (4743)	5.38 (4687)	5.28 (4504)	5.98 (4146)	5.93 (4126)	5.27 (4517)	5.25 (4559)
Control 5	4.59 (9167)	4.62 (9293)	4.69 (8990)	4.52 (9208)	4.69 (8902)	4.68 (9045)	5.09 (8656)	5.11 (8660)	5.0 (8860)	4.96 (8681)
Medium complexity										
Study hospital 2	N/A	4.61 (7382)	4.73 (8810)	4.93 (8963)	5.23 (9624)	4.86 (10,176)	5.06 (9640)	4.68 (8999)	4.39 (11,027)	4.1 (11,630)
Study hospital 3	4.78 (15,016)	4.85 (17,786)	4.88 (19,852)	4.98 (20,312)	5.22 (21,576)	5.28 (21,745)	5.66 (18,685)	5.64 (18,165)	4.71 (20,950)	4.63 (21,929)
Control 6	6.77 (10,430)	6.53 (10,233)	6.33 (10,266)	6.1 (10,212)	6.09 (10,400)	5.9 (10,700)	6.81 (9808)	6.64 (8828)	6.18 (9339)	6.03 (nan)
Control 7	5.19 (15,109)	5.4 (15,605)	5.34 (15,815)	4.99 (15,886)	5.22 (16,311)	5.23 (16,277)	5.7 (15,634)	5.67 (15,226)	5.19 (17,183)	5.13 (17,831)
Control 8	5.75 (18,649)	5.53 (18,766)	5.43 (18,319)	5.33 (18,669)	5.48 (18,736)	5.47 (18,385)	5.95 (16,755)	5.81 (16,729)	5.36 (18,545)	5.32 (18,879)
Control 9	5.67 (13,292)	5.86 (13,391)	5.65 (13,072)	5.78 (12,693)	5.64 (12,225)	5.47 (13,049)	5.91 (11,288)	5.86 (11,283)	5.47 (11,994)	5.21 (12,650)
Control 11	5.52 (15,973)	5.46 (16,050)	5.44 (16,102)	5.3 (16,387)	5.39 (16,548)	5.2 (16,290)	5.68 (14,458)	5.59 (14,299)	5.24 (15,455)	5.03 (15,823)
Control 12	5.01 (12,542)	4.97 (13,597)	4.93 (13,625)	5.36 (15,483)	5.24 (15,768)	5.27 (16,012)	5.56 (15,902)	5.5 (16,161)	4.99 (17,163)	4.95 (17,881)
Control 13	5.28 (13,399)	5.27 (13,882)	5.26 (14,229)	5.19 (14,592)	5.14 (15,193)	5.02 (15,826)	5.43 (14,969)	5.45 (15,501)	5.0 (17,053)	4.76 (17,453)
Control 14	6.06 (17,944)	6.05 (17,744)	6.0 (18,068)	5.98 (17,917)	5.73 (18,213)	5.53 (18,221)	5.84 (16,602)	5.78 (17,456)	5.48 (18,507)	5.21 (18,682)
Control 15	6.4 (14,237)	6.17 (14,791)	6.09 (15,388)	5.83 (15,807)	5.98 (15,835)	5.87 (16,005)	6.25 (13,860)	5.85 (13,826)	5.48 (15,119)	5.39 (15,247)
High complexity										
Study hospital 4	4.82 (30,320)	4.88 (28,962)	5.0 (29,046)	4.9 (30,125)	5.04 (29,128)	5.03 (28,947)	5.48 (25,330)	5.39 (26,372)	4.86 (27,359)	4.63 (29,901)
Control 16	6.0 (35,139)	5.78 (35,377)	5.75 (34,299)	6.14 (32,320)	6.17 (31,908)	6.09 (31,657)	6.55 (28,008)	6.39 (28,073)	6.24 (28,705)	5.89 (29,980)
Control 17	6.44 (48,238)	6.24 (48,838)	6.28 (48,652)	6.25 (48,059)	6.25 (47,298)	6.16 (47,048)	6.75 (42,446)	6.7 (42,531)	6.51 (42,288)	6.33 (43,595)
Control 18	6.2 (44,032)	5.93 (45,333)	5.82 (44,513)	5.63 (44,739)	5.65 (45,053)	5.64 (45,358)	6.15 (39,669)	6.33 (39,587)	6.04 (42,691)	5.74 (44,764)
Control 19	7.51 (14,980)	7.49 (14,979)	7.26 (15,163)	6.85 (15,750)	6.83 (15,885)	6.52 (15,268)	6.99 (13,940)	7.11 (14,383)	6.7 (14,971)	6.46 (15,337)
Control 20	6.27 (46,758)	6.27 (46,286)	6.45 (47,116)	5.94 (48,151)	5.95 (48,945)	5.93 (48,749)	5.98 (44,190)	5.86 (44,948)	5.81 (46,314)	5.63 (48,637)
Control 21	6.0 (25,774)	5.83 (25,799)	5.92 (25,910)	5.96 (25,925)	5.95 (26,048)	5.94 (26,349)	6.35 (24,454)	6.41 (23,762)	6.07 (26,457)	5.91 (27,365)
Control 22	6.66 (32,179)	6.57 (31,253)	6.08 (31,847)	6.12 (31,847)	6.21 (31,876)	6.0 (32,393)	6.47 (29,284)	6.31 (30,373)	5.99 (32,374)	5.77 (32,895)

*Total numbers of inpatients are presented in parentheses. N/A denotes not applicable.

Table 9. Comparison of Stratified and Overall Average Length of Hospital Stay for Study and Control Hospitals during the Study Period.*

Stratum	Study Group (N=4)	Control Group (N=21)	P Value (95% CI)
Low complexity	4.68 (±0.30)	5.20 (±0.39)	<0.001 (−0.52 to 0.52)
Medium complexity	4.95 (±0.38)	5.55 (±0.51)	<0.001 (−0.69 to 0.51)
High complexity	4.99 (±0.24)	6.16 (±0.36)	<0.001 (−1.17 to 1.17)
Overall	4.93 (±0.33)	5.96 (±0.54)	<0.001 (−1.10 to 0.96)

*Values are presented as the mean (± standard deviation). CI denotes confidence interval.

as offering the best health care among other Spanish regional health care systems through its network of primary care and hospital providers.[21]

> *"These results suggest that outsourcing to value-based health care providers is a successful strategy to improve health care management and lower costs while focusing on high-quality health care by placing respect of patients' values and the achievement of patient outcomes as the key objective of health care delivery."*

We had hypothesized that outsourcing to value-based providers is a viable strategy. Our results, which analyze publicly available data from a European regional health care system, provide evidence that outsourced hospitals outperformed publicly managed hospitals on a range of metrics, including inpatient mortality rates, medical and surgical inpatient complications, average length of stay, and patient experience surveys, while achieving the lowest public health expenditure per inhabitant. These results suggest that outsourcing to VBHC providers is a successful strategy to improve health care management and lower costs while focusing on high-quality health care by placing respect of patients' values and the achievement of patient outcomes as the key objective of health care delivery.

Value-Based Outsourcing Is Associated with Improved Clinical Outcomes, Efficiency Metrics, and Patient Satisfaction

Our study suggests that value-based outsourcing is associated with lower standardized inpatient mortality rates, decreased medical and surgical inpatient complications, lower average length of stay, and higher patient satisfaction scores. Previously, some of the most highly cited studies criticizing the outsourcing of publicly owned facilities or services to private organizations (such as Goodair and Reeves' metanalysis[16]) associated higher rates of outsourcing with higher-than-expected mortality. Although the methodology used to calculate these mortality rates cannot establish causality, in Goodair and Reeves' study, the observed relationship between traditional, non–value-based privatization and poorer clinical outcomes is, at least, unsettling. Providers opting for VBHC make a commitment to prioritizing both clinical results and patient-reported outcomes, leading to improved clinical results. Although available European evidence is scarce, some reports suggest that value-based collaboration can improve outcomes across a range of clinical conditions, including preoperative care, cancer treatment, heart failure, and diabetes

Table 10. Case-Mix–Adjusted Length of Hospital Stay in Days for Study and Control Hospitals during the Study Period.*

Hospital	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Low complexity										
Study hospital 1	0.94 (0.79 to 1.11)	0.75 (0.63 to 0.9)	0.84 (0.71 to 0.98)	1.06 (0.91 to 1.22)	0.95 (0.82 to 1.09)	0.83 (0.72 to 0.96)	0.8 (0.71 to 0.89)	0.75 (0.67 to 0.83)	0.7 (0.61 to 0.8)	0.64 (0.54 to 0.75)
Control 1	1.09 (0.88 to 1.34)	1.29 (1.06 to 1.56)	1.23 (1.0 to 1.5)	1.14 (0.93 to 1.39)	1.4 (1.16 to 1.68)	1.5 (1.24 to 1.81)	1.22 (1.06 to 1.4)	1.14 (0.99 to 1.29)	1.32 (1.11 to 1.56)	1.79 (1.47 to 2.16)
Control 2	0.64 (0.53 to 0.76)	0.55 (0.46 to 0.66)	0.62 (0.53 to 0.73)	0.65 (0.55 to 0.75)	0.73 (0.62 to 0.84)	0.85 (0.73 to 0.97)	0.84 (0.75 to 0.94)	0.85 (0.76 to 0.94)	0.96 (0.83 to 1.09)	0.93 (0.79 to 1.09)
Control 3	0.71 (0.59 to 0.86)	0.82 (0.69 to 0.97)	0.8 (0.67 to 0.95)	0.9 (0.77 to 1.05)	1.01 (0.87 to 1.17)	1.09 (0.94 to 1.27)	0.82 (0.72 to 0.93)	0.81 (0.72 to 0.91)	1.11 (0.98 to 1.26)	1.12 (0.97 to 1.29)
Control 4	1.06 (0.88 to 1.26)	1.1 (0.92 to 1.3)	1.06 (0.89 to 1.27)	0.89 (0.73 to 1.09)	0.89 (0.73 to 1.09)	1.09 (0.9 to 1.32)	1.07 (0.93 to 1.22)	1.01 (0.89 to 1.14)	1.16 (0.99 to 1.35)	1.17 (0.96 to 1.42)
Control 5	0.79 (0.67 to 0.93)	0.9 (0.77 to 1.03)	0.92 (0.79 to 1.06)	1.06 (0.91 to 1.22)	1.16 (1.0 to 1.33)	1.09 (0.93 to 1.26)	0.87 (0.76 to 0.98)	0.84 (0.75 to 0.95)	1.12 (0.98 to 1.27)	1.22 (1.05 to 1.41)
Medium complexity										
Study hospital 2	N/A	0.7 (0.56 to 0.87)	0.78 (0.66 to 0.91)	0.83 (0.71 to 0.96)	0.65 (0.56 to 0.76)	0.69 (0.59 to 0.8)	0.73 (0.65 to 0.82)	0.78 (0.69 to 0.87)	0.93 (0.81 to 1.05)	0.9 (0.77 to 1.04)
Study hospital 3	0.64 (0.57 to 0.73)	0.64 (0.56 to 0.71)	0.65 (0.58 to 0.73)	0.64 (0.57 to 0.71)	0.61 (0.55 to 0.68)	0.65 (0.59 to 0.72)	0.72 (0.66 to 0.77)	0.71 (0.66 to 0.77)	0.66 (0.6 to 0.73)	0.55 (0.49 to 0.62)
Control 6	1.31 (1.15 to 1.49)	1.39 (1.22 to 1.58)	1.24 (1.09 to 1.41)	1.03 (0.89 to 1.2)	1.07 (0.93 to 1.22)	1.2 (1.05 to 1.37)	1.25 (1.13 to 1.37)	1.24 (1.14 to 1.36)	1.18 (1.05 to 1.33)	1.02 (0.87 to 1.18)
Control 7	1.01 (0.88 to 1.15)	0.91 (0.8 to 1.04)	0.92 (0.81 to 1.03)	0.95 (0.84 to 1.08)	0.91 (0.8 to 1.03)	0.84 (0.73 to 0.97)	0.75 (0.68 to 0.84)	0.71 (0.64 to 0.78)	0.82 (0.73 to 0.93)	0.96 (0.82 to 1.1)
Control 8	0.94 (0.84 to 1.04)	0.84 (0.75 to 0.93)	0.85 (0.76 to 0.95)	0.9 (0.8 to 1.01)	0.91 (0.81 to 1.02)	1.04 (0.92 to 1.17)	0.96 (0.87 to 1.05)	0.9 (0.83 to 0.98)	0.94 (0.85 to 1.05)	1.04 (0.92 to 1.17)
Control 9	0.79 (0.67 to 0.93)	0.86 (0.73 to 1.01)	0.91 (0.78 to 1.06)	0.91 (0.78 to 1.06)	0.83 (0.7 to 0.97)	0.85 (0.72 to 0.99)	0.94 (0.84 to 1.04)	0.8 (0.72 to 0.88)	0.69 (0.59 to 0.8)	0.7 (0.58 to 0.85)
Control 11	0.71 (0.62 to 0.81)	0.78 (0.69 to 0.89)	0.83 (0.73 to 0.93)	0.81 (0.72 to 0.92)	0.82 (0.72 to 0.93)	0.89 (0.79 to 1.01)	0.9 (0.83 to 0.99)	0.85 (0.78 to 0.93)	0.9 (0.81 to 1.0)	0.91 (0.79 to 1.03)
Control 12	0.88 (0.75 to 1.03)	0.92 (0.78 to 1.07)	0.91 (0.78 to 1.07)	0.99 (0.87 to 1.13)	0.93 (0.83 to 1.05)	0.86 (0.77 to 0.97)	1.06 (0.99 to 1.15)	1.01 (0.94 to 1.08)	1.01 (0.91 to 1.1)	1.09 (0.98 to 1.22)
Control 13	0.97 (0.86 to 1.1)	1.0 (0.89 to 1.12)	1.1 (0.98 to 1.22)	1.06 (0.95 to 1.18)	0.97 (0.87 to 1.07)	0.93 (0.83 to 1.03)	0.91 (0.84 to 0.98)	0.94 (0.87 to 1.01)	1.1 (1.01 to 1.2)	1.19 (1.07 to 1.31)
Control 14	1.06 (0.97 to 1.16)	1.08 (0.99 to 1.18)	0.99 (0.9 to 1.09)	1.03 (0.93 to 1.14)	1.06 (0.96 to 1.18)	1.01 (0.91 to 1.12)	1.06 (0.97 to 1.14)	0.96 (0.89 to 1.03)	0.98 (0.89 to 1.08)	1.07 (0.96 to 1.19)
Control 15	1.22 (1.08 to 1.36)	1.25 (1.12 to 1.39)	1.1 (0.97 to 1.23)	0.94 (0.82 to 1.07)	0.88 (0.76 to 1.01)	0.96 (0.84 to 1.09)	1.2 (1.11 to 1.3)	1.07 (0.99 to 1.15)	0.93 (0.83 to 1.03)	0.82 (0.72 to 0.94)
High complexity										
Study hospital 4	0.84 (0.77 to 0.91)	0.81 (0.73 to 0.88)	0.73 (0.66 to 0.8)	0.72 (0.65 to 0.79)	0.74 (0.67 to 0.81)	0.65 (0.58 to 0.71)	0.77 (0.72 to 0.83)	0.83 (0.78 to 0.88)	0.87 (0.81 to 0.93)	0.73 (0.67 to 0.79)
Control 16	1.16 (1.08 to 1.25)	1.16 (1.08 to 1.24)	1.26 (1.17 to 1.35)	1.18 (1.1 to 1.27)	1.13 (1.04 to 1.22)	0.97 (0.89 to 1.06)	0.99 (0.94 to 1.06)	1.09 (1.03 to 1.14)	1.25 (1.17 to 1.33)	1.11 (1.03 to 1.21)
Control 17	1.02 (0.95 to 1.09)	1.01 (0.94 to 1.07)	1.01 (0.94 to 1.08)	1.11 (1.03 to 1.19)	1.15 (1.07 to 1.23)	1.08 (1.0 to 1.16)	0.96 (0.9 to 1.01)	0.85 (0.81 to 0.9)	0.83 (0.77 to 0.89)	0.85 (0.78 to 0.91)
Control 18	1.0 (0.93 to 1.08)	0.97 (0.9 to 1.05)	0.92 (0.85 to 0.99)	0.96 (0.89 to 1.03)	1.01 (0.93 to 1.08)	1.01 (0.94 to 1.09)	1.05 (1.0 to 1.11)	1.02 (0.97 to 1.07)	1.01 (0.95 to 1.07)	1.04 (0.97 to 1.11)
Control 19	1.19 (1.08 to 1.3)	1.16 (1.06 to 1.27)	1.03 (0.93 to 1.13)	0.98 (0.89 to 1.08)	1.01 (0.92 to 1.11)	1.17 (1.07 to 1.28)	1.17 (1.09 to 1.26)	1.12 (1.05 to 1.2)	1.2 (1.11 to 1.3)	1.11 (1.01 to 1.22)
Control 20	0.92 (0.84 to 0.99)	0.96 (0.88 to 1.04)	1.03 (0.95 to 1.12)	0.99 (0.92 to 1.06)	0.93 (0.87 to 1.0)	1.02 (0.95 to 1.1)	1.07 (1.01 to 1.13)	1.06 (1.01 to 1.12)	1.07 (1.0 to 1.15)	0.97 (0.89 to 1.05)
Control 21	1.01 (0.92 to 1.09)	0.94 (0.86 to 1.02)	1.04 (0.95 to 1.13)	1.01 (0.93 to 1.11)	1.0 (0.91 to 1.09)	1.09 (1.0 to 1.18)	1.02 (0.95 to 1.09)	0.88 (0.83 to 0.94)	0.95 (0.88 to 1.02)	1.06 (0.98 to 1.15)
Control 22	0.99 (0.92 to 1.06)	0.95 (0.88 to 1.02)	0.9 (0.83 to 0.97)	0.97 (0.89 to 1.05)	1.01 (0.93 to 1.08)	1.05 (0.97 to 1.13)	1.1 (1.04 to 1.16)	1.09 (1.04 to 1.15)	1.15 (1.08 to 1.22)	1.15 (1.06 to 1.24)

*95% confidence intervals are shown in parentheses. N/A denotes not applicable.

FIGURE 1

Length of Stay and Readmissions over Time.

The blue line denotes length of stay; the orange line, overall readmissions; and the green line, readmissions.

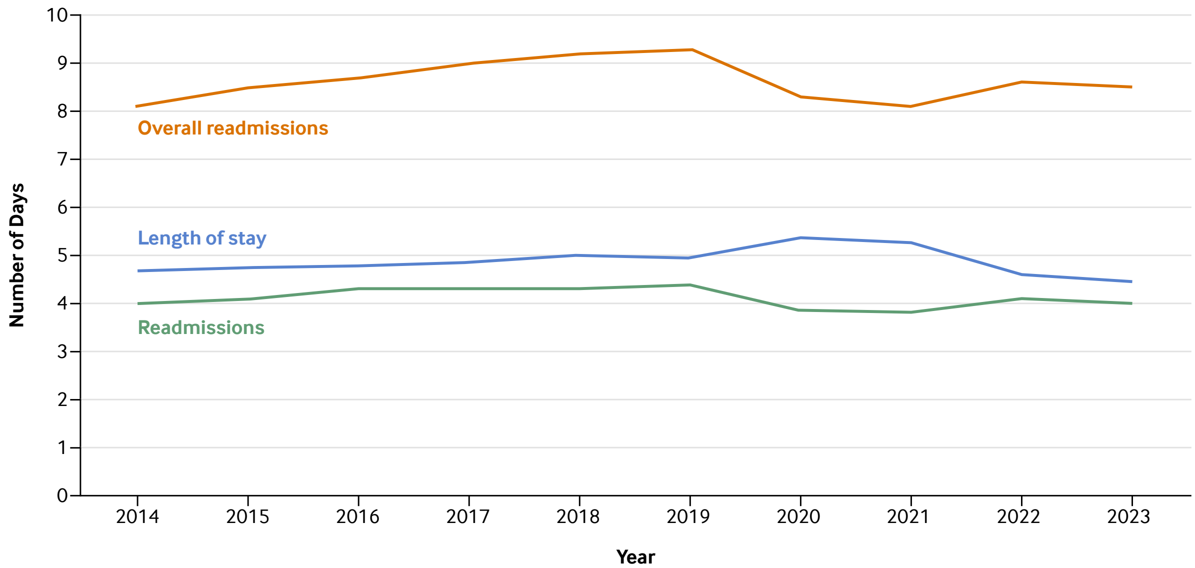

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Table 11. Analysis of Average per Capita Public Expenditure by Study and Control Group Hospitals, Stratified by Hospital Complexity (Low to Medium to and High).*

Stratum	Study Group (N=4)	Control Group (N=21)	P Value (95% CI)
Low complexity	479.79€ (±€59.25)	523.57€ (±€168.23)	0.198 (−€110.56 to €23.00)
Medium complexity	474.22€ (±€64.60)	755.07€ (±€191.59)	<0.001 (−€335.81 to €225.90)
High complexity	787.29€ (±€56.43)	1094.09€ (±€378.09)	<0.001 (−€410.52 to −€203.08)
Overall	553.88€ (±€148.07)	815.86€ (±€348.88)	<0.001 (−€333.52 to €190.43)

*Values for the study and control groups are presented as the mean (± standard deviation). Public expenditure per capita refers to the annual public financial transfer allocated to each hospital, divided by the population assigned. Figures for public hospitals come from official annual reports; figures for concession hospitals come from audited reports (PwC to Deloitte to KPMG). Private revenues and co-payments are excluded. CI denotes confidence interval.

Table 12. Comparison of Stratified and Overall Average Patient Experience Scores for Study and Control Hospitals during the Study Period.*

Stratum	Study Group (N=4)	Control Group (N=21)	P Value (95% CI)
Low complexity	92.7 (±1.9)	88.0 (±2.6)	<0.001 (3.03 to 6.35)
Medium complexity	93.2 (±1.5)	88.7 (±2.0)	<0.001 (3.58 to 5.343)
High complexity	92.8 (±0.8)	89.3 (±2.0)	<0.001 (2.96 to 4.53)
Overall	93.1 (±1.5)	88.6 (±2.1)	<0.001 (3.70 to 4.893)

*Values for the study and control groups are presented as the mean (± standard deviation). CI denotes confidence interval.

Table 13. Yearly Patient Experience Data for Study and Control Hospitals (2014–2023).

Hospital	2014	2015	2016	2017	2018	2019	2021	2022	2023
Low complexity									
Study hospital 1	93.76	93.32	93.32	93.15	96.07	91.61	89.11	90.68	93.52
Control 1	89.16	90.98	94.08	91.93	92.52	94.4	90.28	90.37	89.81
Control 2	83.96	88.17	90.46	87.39	84.14	86.44	88.76	88.79	89.17
Control 3	91.85	88.04	85.53	86.28	86.1	87.55	90.18	87.04	86.23
Control 4	86.2	84.47	85.22	86.6	84.95	86.75	89.65	88	88.72
Control 5	88.21	85.4	87.39	85.02	84.58	85.99	86.41	89.95	88.57
Medium complexity									
Study hospital 2	N/A*	94.86	93.81	96.11	94.2	94.25	92.96	91.14	92.24
Study hospital 3	93.21	91.64	94.86	93.63	93.89	92.25	90.52	91.43	92.24
Control 6	87.88	86.99	87.98	89.88	88.92	90.99	88.81	86.64	90.58
Control 7	85.33	83.28	86.58	88.38	87.82	88.83	89.74	89.59	90.25
Control 8	91.05	89.16	89.16	92.25	89.63	87.72	91.59	88.03	88.27
Control 9	94.1	89.05	89.31	92.44	91.06	89.15	89.75	87.18	88.22
Control 11	87.64	88.81	87.67	86.89	87.52	90.34	88.2	89.43	90.1
Control 12	89.76	87.93	86.7	90.82	86.43	90.07	90.79	88.95	89.33
Control 13	89.58	86.79	87.32	89.23	88.44	87.74	87.42	87.67	88.4
Control 14	92.02	91.46	89.89	90.99	85.29	89.48	86.8	89.24	92.13
Control 15	85.09	84.39	85.86	88.9	83.97	85.17	88.28	88.97	89
High complexity									
Study hospital 4	92.09	92.99	93.79	92.68	93.14	93.94	91.13	92.39	92.71
Control 16	89.2	89.71	89.27	84.23	86.7	90.47	91.3	91.77	90.52
Control 17	88.74	89.33	89.18	86.96	89.27	89.1	88.34	91.29	90.2
Control 18	86.37	86.43	88.73	85.49	85.28	88.47	89.89	87.02	88.99
Control 19	91.42	88.08	89.87	90.35	89.15	87.58	90	90.05	89.62
Control 20	84.59	88.02	88.63	90.45	88.21	90.23	88.29	88.02	87.19
Control 21	90.79	89.76	91.01	89.4	93.9	93.01	90.81	92.2	89.61
Control 22	87.62	88.3	89.52	83.59	89.06	89.26	90.14	87.87	90.37

Overall patient satisfaction scores, expressed as values from 0–100. *N/A denotes not applicable.

management.[29,44-47] In this regard, we believe that the potential drawbacks of outsourcing can, in fact, be overcome by contracting providers with a value-based ethos.

> *“While some studies have found that privatization may be linked to higher patient satisfaction, public opinion toward outsourcing fluctuates and may be influenced by political and economic factors.”*

Monitoring patient-reported outcomes has been associated with multiple benefits, including improved patient experience and clinical outcomes.[48,49] Since 2021, the study hospitals have run a fully implemented PROMS and PREMS data collection program (known as E-Res Salud). This is integrated with the network electronic health record.[31] The program operates in over 20 medical and surgical conditions, with over 50,000 participants to date. As well as helping patients and physicians track outcomes and individually make diagnostic and therapeutic decisions, the E-Res Salud initiative has supported organizing prescription pickup for patients with human immunodeficiency virus, standardizing follow-up for patients undergoing prosthetic joint replacement, and implementing digital tools for shared decision-making for lymphoma patients, resulting in improved care delivery.[23]

An important contributing factor to value for patients is reducing unnecessary procedures and appointments, which lead to lost time at work and incidental findings that may precipitate uncalled-for diagnostic tests. Studies indicate that only 60% of activity in health care adheres to current guidelines, while 30% is low value and 10% is harmful.[50] In this sense, VBHC is closely aligned with patient safety initiatives such as the international Choosing Wisely program.[51-53] The study hospitals leverage a robust information technology infrastructure to develop programs geared toward reducing unnecessary preoperative testing and specialist follow-up, leading to a reduction in preoperative tests without observing increased surgical complications, and reductions in unnecessary follow-up appointments in outpatient care.[25,26] Another use case in which a value-based approach to care delivery has improved both patient experience and clinical outcomes is the HOPE integrated practice unit (IPU) for cancer treatment.[29] Implemented in 2020, the IPU has led to a significant reduction in cancer treatment toxicity–related visits to the emergency department, as well as a decrease in low-value clinical acts and a significant increase in patient satisfaction scores. Although the impact of these and similar initiatives on the results of this study is difficult to quantify, it is clear that the implementation of value-based culture spurs clinicians and health care managers to innovate different means of providing the highest value to patients, and that this is beneficial to quality of care, potentially translating as improved clinical outcomes such as reduced surgical and medical complications and avoidable death. Finally, the organization of palliative care units in the study hospitals has demonstrated improved value to patients and their families, with enhanced experience, lower health care costs, and fewer unnecessary tests and procedures.[54,55]

Hospital length of stay is a widely accepted process metric indicating efficiency, and unnecessarily long hospital stays have been associated with a higher risk of inpatient complications such as hospital-acquired infections, pressure ulcers, falls, and death.[56-58] A study comparing results after orthopedic surgery between a value-based network in the United States and a traditional hospital in Germany found that VBHC led to reduced length of stay as well as improved clinical outcomes and lower health care costs.[59] Likewise, in this report, the study hospitals presented a lower average length of stay than hospitals from the control group, pointing to higher process efficiency in hospitals outsourced to a value-based network.

Although some studies have found that privatization may be linked to higher patient satisfaction, public opinion toward outsourcing fluctuates and may be influenced by political and economic factors.[60] Although European citizens often feel loyalty toward public health care systems, in practice, they are often frustrated by issues such as backlogs for elective care.[61] Our results show that patients reported higher overall satisfaction with hospitals outsourced to a value-based network than publicly managed controls, indicating that adopting value-based strategies may improve not only clinical outcomes and efficiency metrics, but also patient experience.

> *"The synergy between free choice and transparency constitutes the foundation of a governance model that strengthens accountability and encourages continuous improvement."*

One of the potential drawbacks to outsourcing health care facilities is inequities regarding access to high-quality health care, as private networks may seek less complex patient populations (cherry-picking).[62,63] In addition, in some cases, patients may not have equal access to outsourced hospitals owing to insurance restrictions. However, in this study, all patients had equal access to care thanks to the Spanish government's policy that grants universal and free access to health care for all legal residents, as well as RHSM's free-choice policy, which enables residents to seek care at the hospital of their choice without being restricted to a specific catchment area. Our results show that the number of patients opting to transfer out of their catchment area to the study hospitals was significantly greater than the number of patients choosing to transfer to hospitals from the control group, helping to free capacity in other centers and pointing to higher satisfaction with study hospitals. Patient transfers from other public hospitals can be explained by a combination of access, organizational performance, and patient-perceived value. First, timely access to care is a key driver. These hospitals show shorter waiting times for first specialist visits, diagnostic tests, and elective procedures, which strongly influences patient choice in a system with free hospital choice. Second, patient experience and relational quality play an important role. Clear communication, professional accessibility, and organizational efficiency contribute to trust, satisfaction, and positive reputation through both formal surveys and social recommendations. Third, patients experience a more integrated and predictable care process, supported by standardized clinical pathways, coordinated outpatient and inpatient care, and a clearer definition of next steps. Overall, patient transfers reflect performance-based patient choice, driven by accessibility, care coordination, and experience, while fully aware of the outsourced status of the four study hospitals. Our analysis of socioeconomic data in Table 2 demonstrates that more than half of patients choosing to transfer to study hospital 4 in 2023 were from economically disadvantaged areas. At the same time, no significant difference in patient complexity was observed across groups. Thus, we can conclude that outsourcing to a value-based health care network in health care systems with universal access to care does not lead to the selection of less complex patients, but instead increases access to high-quality care. Our findings suggest that in the context of a regional health care system providing excellent universal coverage to residents at zero out-of-pocket cost, along with free choice of health care provider, value-based outsourcing is associated with increased quality of care, efficiency, and patient satisfaction, as well as helping to reduce inequalities in access to care in areas with lower socioeconomic status.

A comparison of public administration expenditure per inhabitant shows that the study hospitals outsourced to Quirónsalud are associated with important public cost savings. Furthermore, it is important to note that while study hospitals must cover the costs of, for example, infrastructure, investments, maintenance and information systems, as well as associated finance costs and amortizations, with the capitation funding received from the public funder (RHSM), for the control hospitals these costs (including financing costs) are largely covered by the central services of the RHSM through separate budget allocations. Thus, the comparison of public administration expenditure likely underestimates the cost savings observed for the study hospitals. Despite this, the study hospitals remain profitable to the network, with positive earnings before interest and taxes and earnings before interest, taxes, depreciation, and amortization. However, as the control hospitals do not maintain financial accounting, but instead use budgetary accounting based on historical expenses of different areas (supplies, personnel) recorded in annual budgets, the only objective comparable cost data backed by public reports and audits are those relating to public administration cost per patient.

The synergy between free choice and transparency constitutes the foundation of a governance model that strengthens accountability and encourages continuous improvement. Three mechanisms explain this dynamic: First, when citizens can choose, outcomes gain importance and providers are incentivized to improve the quality of care and patient experience. Second, when outcomes are made public, management quality improves, as transparency fosters benchmarking, peer comparison, and organizational learning. Finally, when both mechanisms operate together, the system fosters competition based on value rather than volume.

> *“The combination of legal free choice and sustained public outcome measurement represents a structural innovation in health care policy, redefining how public systems can reconcile universality with individual autonomy.”*

The RHSM framework aligns with the principles of VBHC, promoting efficiency, responsiveness, and equity. By integrating citizens’ preferences into system design, RHSM has created conditions that encourage innovation and adaptive management within the public sector.

It is noteworthy that no other Spanish region — and few European systems — combine these two dimensions in a similarly institutionalized manner. The combination of legal free choice and sustained public outcome measurement represents a structural innovation in health care policy, redefining how public systems can reconcile universality with individual autonomy.

VBHC Implementation: Geographical Differences between U.S. and European Health Care Landscapes

The results of our analysis, focused on value-based outsourcing in Spain, must be interpreted within the context of the U.S. and European health care landscapes. Implementing VBHC in both the United States and Europe involves significant system integration efforts, with different systems facing unique challenges shaped by their respective health care landscapes. While in the United States, the transition from fee-for-service to value-based payment models is a central focus of VBHC implementation, in European health care systems seeking to evolve toward VBHC, policy makers are more heavily focused on evidence-based contracts while collecting PROMs and PREMs data to monitor and improve quality of care.

In the United States, new models of care delivery organization and reimbursement, such as accountable care organizations, have been developed, with mixed success regarding savings and quality improvements. In most European countries, the majority of primary care providers and specialists are salaried workers at government-owned facilities, and in this sense, primary and secondary care are usually more centralized than in the United States, aiming to facilitate coordination and integrated care. Centralization of urologic cancer care in countries, such as in the U.K. and Denmark, has been associated with improved outcomes,[64] suggesting that this approach may be more effective in the European context, possibly owing to the health care system structure with a stronger public sector presence.

Opponents of VBHC contend that emphasizing the importance of clinical and patient-reported outcomes may, in fact, lead to inequities in access to care, as health care providers participating in pay-for-performance schemes may tend to choose less complex patients or conditions in order to avoid penalties.[65,66] However, studies suggest that value-based care delivery improves health care access even for disadvantaged populations.[67-69] In the European context, the obligation of publicly owned facilities to provide universal access to care also serves to mitigate the potential risk of inequities associated with performance-linked compensation.

Common challenges across regions include the need to develop appropriate information technology infrastructures to support VBHC implementation, as well as the necessity for robust data collection, analysis, and sharing capabilities.[2,10,11] At the same time, significant cultural and organizational changes are required in both health care landscapes, including shifting focus from traditional process measurements to more patient-centered outcomes, and developing new competencies in areas such as cost measurement and outcome analysis.

Implementation of Value-Based Outsourcing Strategies in European Health Care

The implementation of value-based strategies in European health care can be challenging on account of numerous obstacles, including preexisting reimbursement models that limit progress toward bundled payment, technological unreadiness, and resistance to change from health care managers and clinicians. Private health care providers are often the first players to adapt quickly to changes in the health care sector, including the adoption of the tenets of VBHC. At the same time, because of the publicly financed status of health care in European countries, the relationship between publicly managed and outsourced hospitals is usually more collaborative than competitive in nature. Thus, outsourcing to a VBHC network may not only improve different care delivery outcomes, but also catalyze systemwide transformation toward VBHC. In our experience, many of the initiatives designed and implemented in the four study hospitals have been presented at regional and national levels, sparking interest from other publicly managed centers and serving as inspiration to implement similar projects in different hospitals across the country. In fact, several of the clinical leaders involved in projects, such as the HOPE IPU or the E-Res Salud PROMS and PREMS collection program, have been invited to participate and mentor the design and deployment of similar projects in various centers.

Although the implementation of VBHC in the European health care panorama may tend toward collaboration, given the universal nature of access to health care and high levels of government regulation, we believe that there is a place for healthy competition when it comes to outsourcing hospital management to private players. In our view, outsourcing to VBHC networks may be a solution to potential drawbacks associated with privatization, and competition between different providers may be beneficial both from the quality and economic perspectives if value and patient outcomes are rewarded and low-value care is penalized.

Study Limitations

This study has several limitations. First, although Spain has been progressively adopting VBHC, and the Madrid Department of Health is among the leading regional systems in this area, the degree of VBHC implementation — including the systematic collection of PROMs and PREMs — still varies considerably across hospitals. As the Regional Health Outcomes Observatory of the Community of Madrid has not yet incorporated PROMs and PREMs into its official evaluation framework, these measures could not be included in our analysis, and external benchmarking is therefore not currently feasible. Second, although the MBDS offers a robust and widely used data source for comparative analyses, data quality depends not only on legal reporting obligations, but also on each hospital's organizational capacity to produce accurate clinical documentation and coding — a limitation of any study relying on coding as a source of information. Similarly, because the study relies on publicly available aggregated datasets, some values may lack precision; obtaining granular data for the entire patient population, while ideal, is outside the scope of this study. In addition, we were unable to include an analysis of granular sociodemographic data for the patient populations attending each hospital during the study period (for various reasons, including the fact that, in Spain, variables such as race, ethnicity, insurance status, and education are not routinely collected as standardized variables in the electronic health record). Finally, European data protection policies, data fragmentation between hospitals, and the large size of the dataset, with more than 10 million registries over the whole period, made granular data collection unfeasible. Nevertheless, the rigorous data collection processes used by the RHSM team, independent reporting, large sample size, and long study period helped mitigate these limitations and support the validity of the findings.

Regarding potential sources of bias, the Covid-19 pandemic had a substantial impact on both clinical activity and coding practices, particularly for pneumonia. This makes it difficult to obtain a fully stable time series for the 2019–2023 period and may limit overly linear interpretations of trends. Differences in how hospitals evolved during the pandemic, and how quickly they returned to pre–Covid-19 coding patterns, may also have affected some indicators.

In addition, classification by complexity groups is not always perfectly aligned with real-world practice: Some medium-complexity hospitals function as high-complexity centers in certain specialties, and vice versa, which may introduce some distortion in interhospital comparisons. However, as the indicators included in the analysis are high-level metrics, they are not likely to be affected by differences regarding specific specialties; in fact, the results of the overall comparisons also point in favor of the study group, confirming our results.

Conclusions

Value-based outsourcing in a European health care system with universal coverage is associated with improved clinical outcomes, efficiency metrics, and patient satisfaction, and it may help to reduce inequalities in access to care. VBHC is a successful strategy to overcome the potential drawbacks of outsourcing voiced by opponents of privatization. Although structural differences exist between the implementation of VBHC in the United States and Europe, mainly owing to higher government regulation and centralization of care in European health care systems, both systems face similar challenges. Outsourcing to value-based networks may catalyze system transformation toward VBHC while fostering healthy competition between health care providers.

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Credit Statement

J.A.A.P. and C.C.S. were responsible for supervision, validation, and the final draft of the article. B.P. and I.C. were responsible for study design, drafting the article, and data acquisition and interpretation. J.B. was responsible for strategic advice, article review, the final draft of the article, and editorial advice. D.T.B. was responsible for the methodology and final draft of the article.

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SUPPLEMENT 1
Hospital Inpatient Admissions per Year, 2014 - 2023

Hospital Code	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Control 23	6023	5837	5070	5196	4756	4332	3702	4711	5014	5006
Control 15	35139	35377	34299	32320	31908	31657	28008	28073	28705	29980
Control 26	1107	1123	1175	1175	1114	1130	1125	970	1017	1153
Control 29	1483	1409	1442	1521	1772	1688	1372	1394	1704	1799
Control 1	3661	3644	3765	3657	3533	3441	3309	2951	3100	3523
Study Hospital 4	30320	28962	29046	30125	29128	28947	25330	26372	27359	29901
Control 6	10430	10233	10266	10212	10400	10700	9808	8828	9339	
Study Hospital 2		7382	8810	8963	9624	10176	9640	8999	11027	11630
Control 17	48238	48838	48652	48059	47298	47048	42446	42531	42288	43595
Control 18	44032	45333	44513	44739	45053	45358	39669	39587	42691	44764
Control 7	15109	15605	15815	15886	16311	16277	15634	15226	17183	17831
Control 8	18649	18766	18319	18669	18736	18385	16755	16729	18545	18879
Control 19	14980	14979	15163	15750	15885	15268	13940	14383	14971	15337
Control 9	13292	13391	13072	12693	12225	13049	11288	11283	11994	12650
Control 10	14576	12306	12141	12132	11998	11164	10328	11778	12626	12817
Control 2	10124	10228	10778	11108	11367	11471	9620	10155	11258	11919
Control 3	7504	7623	7740	7985	8057	8116	6946	7107	8372	8050
Control 4	4670	4899	4867	4743	4687	4504	4146	4126	4517	4559
Control 11	15973	16050	16102	16387	16548	16290	14458	14299	15455	15823
Control 5	9167	9293	8990	9208	8902	9045	8656	8660	8860	8681
Study Hospital 1	8038	9015	9573	10118	10575	10430	8899	8974	10939	11348
Control 12	12542	13597	13625	15483	15768	16012	15902	16161	17163	17881
Control 13	13399	13882	14229	14592	15193	15826	14969	15501	17053	17453
Control 20	46758	46286	47116	48151	48945	48749	44190	44948	46314	48637
Control 14	17944	17744	18068	17917	18213	18221	16602	17456	18507	18682

Control 21	25774	25799	25910	25925	26048	26349	24454	23762	26457	27365
Control 22	32179	31253	31847	31847	31876	32393	29284	30373	32374	32895
Study Hospital 3	15016	17786	19852	20312	21576	21745	18685	18165	20950	21929
Control 15	14237	14791	15388	15807	15835	16005	13860	13826	15119	15247

Juan Antonio Alvaro

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Disclosure Purpose: 25.0208.R2

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Title: **Position Description:**
Additional Information:

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Jeffrey Braithwaite

Discloser Identifier: 1046680
Disclosure Purpose: 25.0208.R2

Summary of Interests

Company or Organization

Entity	Type	Interest Held By
Macquarie University	Employment	Self

Title: Professor
Position Description:
Additional Information:

Entity	Type	Interest Held By
National Health and Medical Research Council	Grant / Contract	Self

Recipient Name: Jeffrey Braithwaite
Recipient Type: Institution
Grant / Contract Description: Australian Genomics associated Grants
Grant / Contract Purpose: Research
Additional Information: N/A

Certification

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Cristina Carames Sanchez

Discloser Identifier: 1251736
Disclosure Purpose: 25.0208.R2

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Title: CMO
Position Description:
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Ion Cristobal

Discloser Identifier: 1251737
Disclosure Purpose: 25.0208.R2

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Title: Scientific Coordinator **Position Description:**
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Bernadette Pfang

Discloser Identifier: 1098531
Disclosure Purpose: 25.0208.R2

Summary of Interests

Company or Organization

Entity	Type	Interest Held By
Quirónsalud	Employment	Self

Title: Research Coordinator and Emergency Department Physician **Position Description:**
Additional Information:

Certification

I certify that the information provided in this disclosure is complete and accurate.

Feb 24, 2026 1:57 PM ET
NEJM Catalyst

Daniel Toledo Bartolomé

Discloser Identifier: 1279543
Disclosure Purpose: 25.0208.R2

Summary of Interests

I do not have any interests to disclose at this time.

Certification

I certify that the information provided in this disclosure is complete and accurate.

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