Landscape of Health Systems in the United States

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Abstract

Despite the prevalence of vertical integration, data and research focused on identifying and describing health systems are sparse. Until recently, we lacked an enumeration of health systems and an understanding of how systems vary by key structural attributes. To fill this gap, the Agency for Healthcare Research and Quality developed the Compendium of U.S. Health Systems, a data resource to support research on comparative health system performance. In this article, we describe the methods used to create the Compendium and present a picture of vertical integration in the United States. We identified 626 health systems in 2016, which accounted for 70% of nonfederal general acute care hospitals. These systems varied by key structural attributes, including size, ownership, and geographic presence. The Compendium can be used to study the characteristics of the U.S. health care system and address policy issues related to provider organizations.

Introduction

Payment and delivery reforms have encouraged changes to the organization of the U.S. health care system, resulting in greater integration of hospitals and physicians into health systems. Horizontal and vertical consolidation of hospitals and physicians has occurred rapidly for more than two decades. The percentage of U.S. hospitals in a health system rose from 53% in 2001 to 60% in 2011, and hospital ownership of physician practices increased from 24% in 2004 to 49% in 2011 (Cutler & Scott Morton, 2013). More recently, the share of physicians who own their own practice declined from 53% in 2012 to 47% in 2016 (Kane, 2017). Given these trends, more research is needed on the organization of care and the extent to which providers are organized into integrated systems.

Prior data and research on vertical integration has predominantly taken the perspective of the physician, practice, or hospital—not the system. Data and research typically focus on the components of integrated systems such as hospital ownership of physicians (Baker, Bundorf, Devlin, & Kessler, 2018) or physician employment by hospitals (Burns, Goldsmith, & Sen, 2013). However, less data and research have focused on vertically integrated entities at the system level, emphasizing the parent organizations that include hospitals and physicians under common ownership and management (Burns, Gimm, Nicholson, & Muller, 2005; Burns & Pauly, 2002; Goldsmith, Burns, Sen, & Goldsmith, 2015). In fact, despite the prevalence of vertical integration, we lack an enumeration of health systems in the United States and an understanding of how systems vary by key structural attributes (Casalino, 2014; Cohen et al., 2017). Research on systems extends beyond the hospital-physician relationship to focus on the institutions that can potentially support functions, such as sharing electronic health records, establishing standard care guidelines, taking on risk in contracts, and, in some cases, offering an insurance product.

To advance research on this topic, the Agency for Healthcare Research and Quality (AHRQ) created the Comparative Health System Performance (CHSP) Initiative to study how health care systems promote evidence-based practices in delivering care. As part of the initiative, AHRQ developed the Compendium of U.S. Health Systems as a data resource to identify health systems and describe key system attributes (AHRQ, 2017a).[1]

The Compendium can be used by researchers, policymakers, and other stakeholders to address a range of policy issues, such as assessing the diversity of health care structures underlying alternative payment models and understanding how system attributes affect cost and quality outcomes (Post, Buchmueller, & Ryan, 2018). As payment and delivery reforms encourage vertical integration through accountable care organizations and bundled payments, accounting for how health care is structured may inform the design of new policies.

For this article, we use the Compendium to characterize health systems in the United States as of 2016. Our study (1) enumerates the number of health systems in the United States; (2) characterizes systems by key structural attributes such as size, ownership, system type, and

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[1] The Compendium is publicly available for download on the AHRQ website at https://www.ahrq.gov/chsp/compendium/index.html

geographic presence; and (3) reports system penetration among hospitals, beds, and physicians.

New Contribution

Our study differs from prior work on vertical integration in three ways. First, our study examines vertical integration at the system level, whereas prior studies have focused on physicians, practices, and hospitals. Focusing on the hospital-physician relationship within health systems allows us to distinguish between vertical integration that is and is not part of a health system. Second, our study is the first to identify and enumerate the number of health systems in the United States, delineate system composition, and describe variation across systems. This contribution allows us to describe the landscape of hospitals and physicians at the system level rather than at the hospital or physician level. Third, we introduce the Compendium of U.S. Health Systems, the first publicly available data resource that identifies and describes health systems that have formed from the dramatic consolidation of physicians and hospitals into vertically integrated arrangements. We describe the construction of the Compendium and use it to characterize the landscape of the U.S. health care systems. By linking the Compendium to other data sources, stakeholders will be able to answer important policy questions about systems' impact on care delivery, health care costs and quality, and how different system characteristics affect comparative health system performance.

Method and Data

Defining Health Systems

We used the definition of a health system that a group of experts developed under the CHSP Initiative. According to this definition, a health system is

> an organization that includes at least one hospital and at least one group of physicians that provides comprehensive care (including primary and specialty care) who are connected with each other and with the hospital through common ownership or joint management. (AHRQ, 2017c)

This definition does not explicitly include other provider types and other common forms of integration between providers. For example, this definition does not explicitly include health system ownership/management of post–acute care providers and nonownership contractual relationships such as accountable care organizations or physician hospital organizations. It also excludes multihospital systems (without sufficient outpatient capacity) and multispecialty group practices (without an inpatient presence).

Prior work on the extent of vertical integration has compared two national surveys to assess ownership patterns (Baker et al., 2018); however, we were not aware of a gold standard on health systems by which to validate our estimates. No single data source enumerates or describes the health systems that meet the CHSP definition (Cohen et al., 2017). To construct the Compendium, we selected three data sources that identify health systems: the American Hospital Association (AHA) Annual Survey, Quintiles IMS Healthcare Organization Services Database (HCOS), and SK&A's Office-Based Physician and Hospital

Databases (the latter two now make up IQVIA). These data sources rely on different techniques for surveying organizations and providers, and they rely on different definitions of health systems (Table 1). For example, AHA surveys hospitals and asks respondents to self-report the characteristics and attributes of their hospitals, including counts of affiliated physicians. Their definition of a system includes either a multihospital system or a diversified single hospital system. SK&A surveys outpatient practices, enumerates providers, and asks for their hospital affiliations. Their definition of a health system emphasizes ownership or management of health care providers, including hospitals, medical offices, group practices, and nursing homes. HCOS uses secondary data from industry sources—including the National Plan and Provider Enumeration System, the Drug Enforcement Agency, and the Drug Distribution Database—to identify providers and organizations. Linkages are made using proprietary matching algorithms. Because of these differences in definition, each data source identifies a different number of total systems (Figure 1).

Developing a List of Health Systems

We constructed the Compendium in four steps: (1) conducting name and address matches across contributing data sources, (2) aggregating regional subsystems into their parent systems, (3) applying exclusion criteria to help identify systems delivering comprehensive care, and (4) removing hospital management companies (Figure 1). Each step is described below. For a complete description of the methods we used to construct the Compendium, see the technical documentation on the AHRQ website (AHRQ, 2017b).

First, we applied a series of automated matching techniques using the names and addresses of systems to create a deduplicated list of health systems across the three data sources. Specifically, we conducted character-string matching and distance-based matching using geocoding in SAS. In addition, we manually reviewed a set of matches identified in the automated process as potential matches to determine if they were in fact matches. The process resulted in a list of 1,275 unique health systems.

Next, we sought to aggregate regional subsystems into their parent systems. That is, some medium and large health systems have smaller, regional subsystems nested within them. These types of nested relationships are explicitly defined in the SK&A data. We identified possible additional subsystems by reviewing discrepancies across data sources in how entities are classified. For example, an entity that is classified as a system in one source but as a hospital linked to a larger system in another source might represent a nested relationship. We aggregated the information for identified regional subsystems under their parent systems ($n = 206$) and reported only the parent subsystems.[2] This approach does not address whether systems deliver comprehensive care that would qualify them as health systems in all of their local or regional markets.

[2.]After completing the unmatched health system to hospital matching, we manually reviewed each of the matches to identify possible parent-subsystem relationships. Manual review included visual review of the system and hospital names and locations, web searching, and expert judgment. A step-by-step example of the review process and a complete list of regional subsystems are published in the Compendium technical documentation.

Third, we applied exclusion criteria to remove health systems that did not appear to meet the requirement that a system provide comprehensive care. We excluded systems that (1) lacked at least one general acute care hospital ($n = 165$), (2) had fewer than 50 physicians $(n = 265)$, or (3) had fewer than 10 primary care physicians ($n = 8$). We chose these thresholds based on the requirement that a system include a sufficient number of physicians to plausibly offer a reasonably comprehensive range of services to their patients.

Finally, we removed systems that were hospital management companies that did not appear to own or tightly manage comprehensive physician services and thus did not meet the criteria used to identify health systems. To identify systems that might be hospital management companies, we reviewed the corporate website of entities for which either the AHA data indicated that they had a hospital under contract management and the management organization name matched the system name or the entity was classified as primarily investor owned. To be retained as a system on the list, the corporation website had to document either (1) common ownership of at least one general acute care hospital and one group of physicians providing comprehensive primary care and specialty care or (2) tight joint management of at least one general acute care hospital and one group of physicians providing comprehensive primary and specialty care. We defined tight joint management as a foundation model, shared governance (e.g., substantially overlapping board membership of a hospital and comprehensive medical group), or explicit cobranding of physicians with the system. We did not consider physician-hospital organizations, by themselves, to represent tight joint management. The final list comprises 626 health systems.

Operationalizing the CHSP initiative's definition of health systems highlights the challenges of determining the exact nature of the relationship between systems and their components. Our approach to constructing the Compendium relied on some level of expert judgment to confirm linkages across the data sources, linkages between systems and their components, and to identify systems that deliver comprehensive care and meet our definition of a health system. For example, hospital management companies often present much like systems that provide comprehensive care, and it is not always possible to assess systems' business models based on publicly available information. Also, there can be a time lag in capturing changes to systems resulting from mergers and acquisitions.

Determining System Counts of Hospitals and Physicians

All of the contributing data sources include information on system components, namely, hospitals and physicians. However, even when two sources identified the same system, they did not always identify the same components. To identify a final system count of hospitals, we matched hospitals across data sources using available identifiers, including CMS Certification Number (CCN) and AHA identification number (AHA ID). We also conducted hospital name and location matches because not all hospitals in the contributing data source had identifiers. We then removed all hospitals that did not report at least a CCN or an AHA ID after we performed name and location matching.

We manually reviewed hospitals that were listed in more than one health system, and we assigned each hospital to a single system.[3] In most cases, the multiple systems were in fact the same system with a different name or systems that were nested within one another (i.e.,

subsystems and parent systems). In the former case, we updated the list to indicate that these systems were a match and the hospital belonged to this system; in the latter case, we assigned the hospital to the parent system. The remaining cases were hospital-level joint ventures in which multiple systems have a formal relationship with at least one other hospital. In these cases, we assigned the hospital to a system based on three decision rules, in order of priority: (1) there is a clear majority owner or a system that runs the day-to-day operations of the hospital, (2) the hospital is investor owned and only one of the systems is investor owned, and (3) in the absence of other clarifying information, proximity between the hospital and the system headquarters.

Counts of the number of physicians affiliated with health systems varied substantially across the data sources. The highest counts were typically found in HCOS, partly because HCOS attempts to enumerate both hospital-based physicians and those working in office-based practices. We limited the HCOS counts to physicians with close affiliations with facilities in the system. These close affiliations are identified as attending physicians (for system hospitals), facility staff and treating physicians for long-term care facilities, and all physician affiliations for system medical groups and other system facility types. This approach excludes physicians with looser system affiliations, such as those with only admitting privileges at hospitals.[4] SK&A enumerates office-based physicians and seeks information about each of those physician's affiliations and thus undercounts some hospital-based physicians (DesRoches et al., 2015). The AHA data do not enumerate individual physicians, but the survey asks about the counts of physicians in various hospital-physician relationships; we summed the AHA physicians across integrated salary, equity, and foundation models. We reported the highest physician count value for a system found across the three data sources to err on the side of inclusion, given the physician count exclusion criteria.

The thresholds of primary care and specialist physicians we used to exclude systems that did not provide comprehensive care are by their very nature judgment calls. However, we conducted sensitivity tests around the thresholds we selected to identify which systems would be dropped or added. We then conducted web searches of these systems to assess whether the added systems were in fact providing a comprehensive range of services or whether the dropped systems were potentially important to their community and provided a wide range of services. This approach may result in the underrepresentation of systems serving patients in rural or frontier areas; systems using networking approaches (i.e., teleconsultation) to provide comprehensive care, which may require fewer physicians; and systems that rely more heavily on advanced practice clinicians.

[3.]A Compendium system-hospital linkage file and technical documentation is publicly available for download on the AHRQ website at https://www.ahrq.gov/chsp/compendium/technical-documentation.html
[4.]HCOS designates physician affiliations as attending, IDN affiliated, or admitting. Attending includes physicians whose primary practice location is physically located in the hospital. IDN affiliated includes physicians who practice at an outpatient location that is part of an IDN campus and admit to one or more IDN hospitals. Admitting includes physicians who admit to the hospital but are not designated as attending or IDN affiliated.

Describing System Attributes and Calculating System Penetration

To describe system attributes, we merged hospital data from the Healthcare Cost Report Information System (HCRIS; for total beds, ratio of full-time equivalent [FTE] residents to beds, hospital ownership type, and Medicare disproportionate share hospital [DSH] patient percentage) and the AHA annual survey (for missing hospital ownership type), and we aggregated hospital data up to the system level. We defined safety net hospitals as hospitals in the top quintile of Medicare DSH patient percentage among all nonfederal general acute care hospitals and indicated whether or not the system included at least one safety net hospital. We calculated system ownership type by determining the most common ownership type among system beds. We also calculated system hospital presence by counting the number of states in which the system operates (defined by the locations of their member hospitals).

To calculate measures of system penetration, we identified the total number of nonfederal general acute care hospitals in the United States and the total number of physicians. We defined total hospitals as nonfederal general acute care hospitals with a CCN or AHA ID in one of the three data sources. We obtained total physician counts from the HCOS data. Whereas physicians could be reported in more than one system for the system-level physician counts in the Compendium, we deduplicated the counts of total physician and physicians in systems when calculating system penetration. System penetration was calculated using a numerator of the total number of unique physicians in systems from HCOS and a denominator of total number of unique physicians in the United States from HCOS.[5]

Results

The 626 health systems in the United States varied by key structural attributes, including size, ownership, system type, and hospital presence. For example, we found substantial variation in the distribution of system size among health systems (Table 2). A large proportion of health systems are relatively small, based on the number of participating hospitals and physicians. The median number of hospitals in health systems is 2, with a range from 1 to 175 hospitals per system. About one-third of systems ($n = 223$) have only one general acute care hospital. The median number of physicians in health systems is 245. Across systems, the number of physicians ranged from 50 to 20,300.

A small number of relatively large systems account for a disproportionate share of providers. The 10 largest systems in terms of the number of physicians account for 21.0% of the physicians in systems. The 10 largest systems in terms of the number of hospital beds account for 24.5% of beds in systems.

Health systems also varied by ownership, system type, and geographic presence (Table 3). Roughly 80% of health systems have nonprofit ownership, including religiously affiliated systems. One in six systems (17.3%) have state/local government ownership; these vary in

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size, but approximately half (50.9%) are below the overall median size as measured by the number of hospital beds. We identified 19 systems (3.0%) with investor ownership; these also vary in size, with the bulk of these systems (77.8%) above the overall system median for number of hospital beds. Appendix Table A1 highlights the variation in system attributes by size by presenting the 10 largest, 10 medium-sized, and 10 smallest systems based on number of acute care hospitals and total physicians.

In aggregate, 7 in 10 health systems include at least some hospitals with a teaching affiliation. Almost 40 percent of systems have at least one major teaching hospital (defined as an FTE resident-to-bed ratio greater than or equal to 0.25). We identified 31 systems (5.0%) that serve predominantly children. Approximately one third of health systems have one or more safety net hospitals (as measured by the top quintile of the DSH patient percentage).

Most health systems had a hospital presence in only one state (based on the address of the system hospitals). About one in six (16.2%) systems have hospitals located in multiple states. Across systems, the number of states ranged from 1 to 35 per system. The top 10 systems in terms of hospital presence each had locations in 14 or more states.

We found considerable system penetration among hospitals and physicians in 2016 (Table 4). A majority of all U.S. nonfederal general acute care hospitals (69.7%) are in health systems; they account for 88.2% of all hospital beds. More than 460,000 physicians, or 44.6% of all U.S. physicians, were in health systems, including 42.7% of primary care physicians. Among states, the percentage of hospital beds associated with health systems varies, ranging from 47.4% in Wyoming to 98.2% in Hawaii (Figure 2). Twenty-five states have more than 90% of all beds in nonfederal general acute care hospitals in health systems.

Hospitals that are part of a system differed from those not in a system (Appendix Table A2). Hospitals in systems were larger and varied by ownership and teaching status. Hospitals in systems were more likely to have religious or other nonprofit ownership and less likely to have state or local government ownership.

Discussion

Health systems are a pervasive presence in the United States. A majority of all hospitals and close to half of all physicians are in systems. This presence varies across geographic areas, with the top quartile of states having more than 94% of total beds in nonfederal general acute care hospitals in health systems. We also found substantial diversity among the 626 systems. For example, more than a third of health systems have only one nonfederal general acute care hospital, which is in stark contrast with the 10 largest systems (by number of hospital beds), which account for roughly a quarter of total beds in systems. These findings imply that policies to reform the delivery system must consider both the widespread influence of vertically integrated entities and the diversity in system characteristics. Payment and delivery reforms designed to encourage integration may need to account for this variation.

The debate on whether the growth of health systems is good or bad is ongoing. On the one hand, systems may be better positioned organizationally to invest in health information technology, implement care management processes, and participate in new value-based alternative payment models (Chukmaitov, Harless, Bazzoli, & Deng, 2017; Rodriguez et al., 2016). On the other hand, systems might gain greater market power, which could result in higher prices (Baker, Bundorf, & Kessler, 2014; Machta, Maurer, Jones, Furukawa, & Rich, 2018; Neprash, Chernew, Hicks, Gibson, & McWilliams, 2015). In addition, because value-based purchasing efforts are often aimed at reducing hospital use, the extent to which hospital-led systems will participate in such efforts remains to be seen. More research is needed on whether and to what extent systems, large and small, can achieve better quality and greater efficiencies.

The Compendium—the first national resource specifically developed to support research on health systems—will be a valuable tool for generating answers to questions about comparative health system performance. It can be used to study the characteristics of the U.S. health care system more broadly and policy issues related to provider organizations (Casalino, 2017). It can also be linked to other data sources to study the association of system attributes with cost and quality performance, as well as variation among systems in prices/contracted rates with physicians and hospitals' and patients' experience. Moreover, data on the internal structure of health systems might be used to develop taxonomies that describe the U.S. health care landscape (Bazzoli, Shortell, Dubbs, Chan, & Kralovec, 1999; Shortell et al., 2015; Wu, Shortell, Lewis, Colla, & Fisher, 2016).

A growing body of research on comparative health system performance is foundational to developing a high-value health care system. Given the diversity in systems, it is unwise for researchers to focus only on outcomes among system versus nonsystem providers. Instead, researchers should strive to differentiate systems by their form and function. Our data and analysis were limited in scope to vertical integration of hospitals and physicians, and we could not fully describe health systems that include vertical integration of other provider types (e.g., post–acute care). Future research might enumerate the configuration of health systems, such as the "hub and spoke" model, with academic medical centers surrounded by community hospitals (Cutler & Scott Morton, 2013). Future research might also explore other kinds of health systems that did not meet our narrow working definition (e.g., physician organizations that provide comprehensive management of their patient populations without ownership or tight management by a hospital).

Acknowledgments

Appendix

Table A1.

Example Health Systems by System Size.

Health system name	System state (parent location)	Total hospitals	Total physicians	Total primary physicians	Total hospital beds	Total residents	Number of States the system operates In	System Includes a safety net hospital	System is predomlnately investor owned
Large systems (by number of acute care hospitals and total physicians)									
HCA	TN	175	9,162	2,576	34,532	1,639	20	Yes	Yes
Community Health Systems, Ine	TN	156	4,283	1,594	20,882	419	22	Yes	Yes
Ascension Health	MO	122	10,502	3,931	1 8,097	2,062	19	Yes	No
Cathollc Health 1 nitiatives	CO	102	5,422	1,926	12,475	1,113	15	Yes	No
Trinity Health	MI	93	8,790	3,302	1 4,706	1,749	18	Yes	No
Tenet Healthcare Corporation	TX	82	6,297	1,587	16,315	2,123	14	Yes	Yes
UfePoint Health	TN	72	1,699	668	7,680	189	22	Yes	Yes
Prime Healthcare Services, Ine	CA	40	1,336	320	5,486	293	14	Yes	Yes
Dignity Health	CA	39	2,403	870	7,452	220	3	Yes	No
Kaiser Permanente	CA	37	20,300	8,995	8,800	855	3	No	No
Medium-sized systems (with the median number of acute care hospitals)									
Vanderbilt University Medicai Center	TN	2	1,852	366	895	701	1	No	No
UW Health	Wl	2	1,845	534	857	427	2	No	No
UF Health	FL	2	1,558	391	1,264	893	1	Yes	No
The University of Chicago Medicine	IL	2	1,270	344	896	593	1	Yes	No
Cedars-SInai Health System	CA	2	1,258	296	940	349	1	No	No
University of Virginia Health System	VA	2	1,247	203	623	660	1	No	No
University of Kentucky Healthcare	KY	2	1,230	269	829	485	1	Yes	No
Augusta University	GA	2	1,022	274	495	470	1	Yes	No

Health system name	System state (parent location)	Total hospitals	Total physicians	Total prlmary physicians	Total hospital beds	Total residents	Number of States the system operates In	System Includes a safety net hospital	System is predomlnately investor owned
Medicai Center									
John Muir Health	CA	2	989	439	751	0	1	No	No
SUNY Upstate Medicai University	NY	2	895	168	641	335	1	No	No
Small systems (by number of acute care hospitals and total physicians)									
Southeastern Health	NC	1	55	21	256	5	1	Yes	No
Klngs Daughters Health	IN	1	55	24	89	0	1	No	No
Campbell County Memorial Hospital	WY	1	54	18	66	0	1	No	No
West Jefferson Medicai Center	LA	1	54	29	405	21	1	No	No
South Central Regional Medicai Center	MS	1	53	23	268	0	1	No	No
Hendricks Regional Health	IN	1	52	16	127	0	1	No	No
Mld-Columbia Medicai Center	OR	1	52	22	43	0	1	No	No
Doctors Hospital at Renaissance	TX	1	51	23	449	8	1	Yes	Yes
Union Hospital	MD	1	51	19	1 10	0	1	No	No
Wyoming Medicai Center	WY	1	51	18	158	0	1	No	No

Note. Data come from the 2016 AHRQ Compendium of U.S. Health Systems. We sorted Compendium systems by the number of general acute care hospitals and then by the number of total physicians. We then selected the 10 largest systems, the 10 smallest systems, and 10 systems with the median number of hospitals in systems nationally. Hospitals refer to nonfederal general acute care hospitals.

Table A2.

Comparison of Hospitals in Systems and Those Not in Systems.

	Hospitals in systems (*n* = 3,513)		Hospitals not in systems (*n* = 1,528)	
	Percent of hospitals	**Number of hospitals**	**Percent of hospitals**	**Number of hospitals**
Hospital beds, *M*(*SD*)	190 (200)		55 (67)	
Ownership type:				
Investor ownership	21	676	19	273
State/local government ownership	12	373	44	643
Nonprofit ownership	67	2,148	37	551
Major teaching hospital	12	376	2	30
Children's hospital	2	65	2	13
Safety net hospital	14	448	10	151

Note. Hospitals refer to nonfederal general acute care hospitals. Data come from the Healthcare Provider Cost Reporting Information System. A major teaching hospital is defined as a full-time equivalent resident-to-bed ratio greater than or equal to 0.25. Safety net hospitals are defined as the top quintile of Medicare disproportionate share hospital patient percentage nationally. Some hospitals have missing information for the results presented in this table (406 hospitals for beds and residents, 370 hospitals for ownership and facility type). These hospitals are not included in the calculations.

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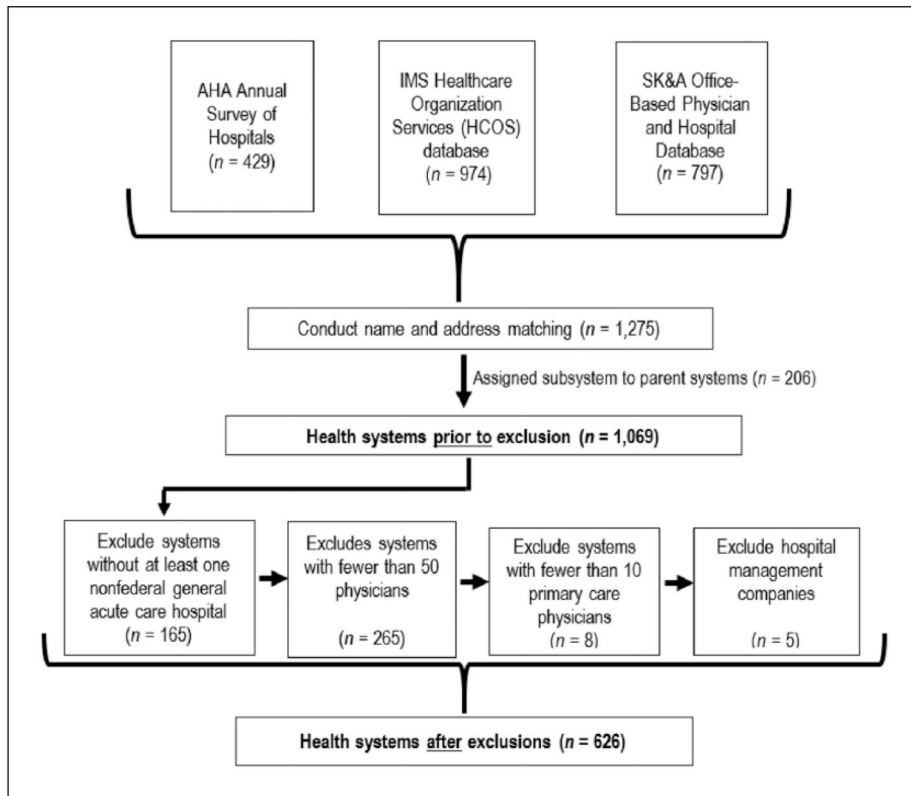**Figure 1.**
Flowchart describing the construction of the Agency for Healthcare Research and Quality's (AHRQ) Compendium of U.S. Health Systems, 2016.
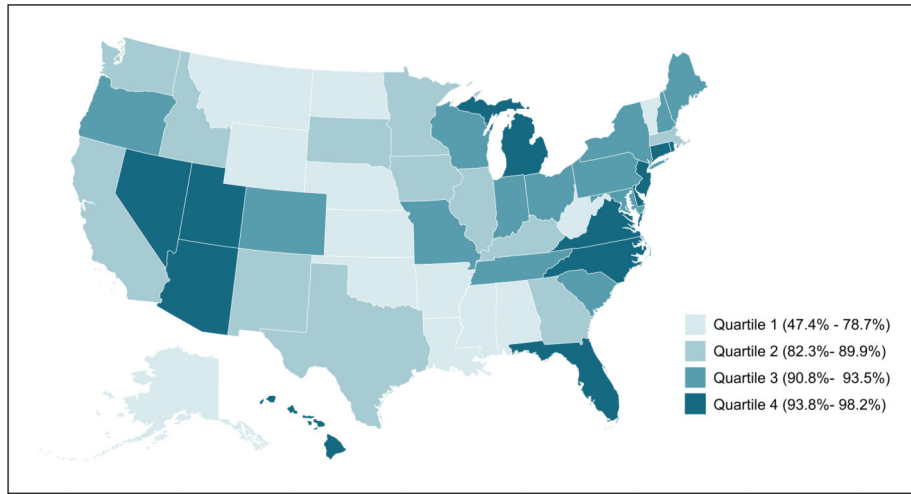
Figure 2.

Percentage of hospital beds belonging to health systems, by state.

Note. Data come from the 2016 AHRQ Compendium of U.S. Health Systems.

Table 1.

Health System Definition, by Data Source.

Data source	Health system definition
American Hospital Association annual survey	Either a multihospital or a diversified single hospital system. A multihospital system is two or more hospitals owned, leased, sponsored, or contract managed by a central organization.
HCOS	An organization that has direct responsibility for centralizing the purchasing or contracting of its affiliated hospitals and ancillary care facilities; it also offers a continuum of care through services at acute and non-acute sites. An integrated delivery network owns, leases, manages, or establishes a purchasing affiliation with two or more health care delivery sites. Integrated delivery networks include at least one acute care hospital and one non-acute organization.
SK&A	Health care organizations that own or manage a complex delivery network of health care providers, including hospitals, medical offices, group practices, and nursing homes.

Note. HCOS = Healthcare Organization Services.

Table 2.

Distribution of System Size, by Number of Hospitals and Physicians.

	Health systems ($n = 626$)						
	M	*SD*	Lowest number	25th percentile	*Mdn*	75th percentile	Highest number
Hospitals	6	13.6	1	1	2	5	175
Hospital beds	965	2,207.8	24	247	433	885	34,532
Physicians	742	1,479.5	50	112	245	767	20,300
Primary care physicians	227	502.7	10	41	93	234	8,995

Note. Data come from the 2016 AHRQ Compendium of U.S. Health Systems. Hospital and hospital beds reflect general acute care hospitals.

Table 3.

Number and Percentage of Systems, by Ownership, System Type, and Geographic Reach.

System characteristics	Percent in system (number)
Ownership type: Investor ownership	3.0 (19)
State/local government ownership	17.3 (108)
Nonprofit ownership	79.7 (499)
Teaching status: System includes at least one major teaching hospital	37.2 (233)
Predominantly serves children	5.0 (31)
Safety net status: System includes at least one safety net hospital	30.8 (193)
Hospital presence: Hospital(s) located in only one state	83.9 (525)
Hospitals located in exactly two states	9.3 (58)
Hospitals located in three or more states	6.9 (43)

Note. Data come from the 2016 AHRQ Compendium of U.S. Health Systems. A major teaching hospital is defined as a full-time equivalent resident-to-bed ratio greater than or equal to 0.25. Safety net hospitals are defined as the top quintile of Medicare disproportionate share hospital patient percentage nationally.

Table 4.

Number and Percentage of Hospitals, Hospital Beds, and Physicians in Health Systems.

System members	Number in systems	Percent in systems
Hospitals	3,513	69.7
Hospital beds	601,352	88.2
All physicians	464,505	44.6
Primary care physicians	142,000	42.7

Note. Data come from the 2016 AHRQ Compendium of U.S. Health Systems. Hospital statistics represent all U.S. nonfederal general acute care hospitals.