

FINAL REPORT

Exploring Metropolitan Anchor Hospitals and the Communities They Serve

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PRESENTED TO:
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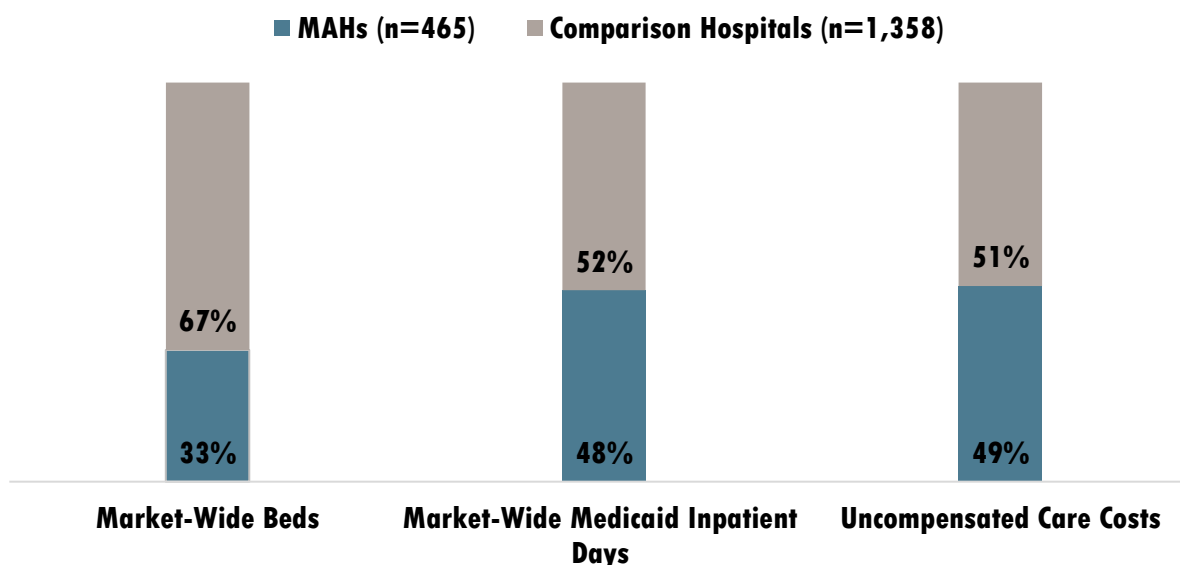
Executive Summary

The American Hospital Association (AHA) identified and defined a particular set of urban safety net hospitals — the Metropolitan Anchor Hospital (MAH) — that serve large numbers of urban, low-income and historically marginalized individuals. This report describes the distinguishing attributes of these hospitals and the communities they serve.

AHA contracted with NORC at the University of Chicago (NORC) to conduct qualitative and quantitative research describing safety net hospitals in the U.S., in general, and, more specifically, the characteristics of the hospitals the AHA has identified as MAHs. In this paper, we review the available literature involving U.S. safety net hospitals, discuss the background of AHA’s proposed definition and examine the underlying data used to develop the definition, and present various descriptive characteristics of MAHs and the communities they serve. There are 465 MAH-designated hospitals across 162 metropolitan statistical areas (MSAs). When we compare MAH hospitals to other hospitals, we use the non-MAH hospitals in these 162 urban markets as the comparison group (referred to as “comparison hospitals” throughout this paper). All quantitative analyses conducted by NORC use pre-pandemic data.

MAHs provide a disproportionately high amount of Medicaid and uncompensated care within their markets.

Exhibit 1. Descriptive Statistics, MAH and Comparison Hospitals



Source: NORC analysis of Medicare Hospital Cost Reports and IPPS Rulemaking Files.

Our analysis finds that MAHs provide an outsized portion of uncompensated care and Medicaid care within their urban market areas ([Exhibit 1](#)). MAHs are typically larger, accounting for 33% of market-wide beds and an estimated 34% of market-wide inpatient revenue. MAHs also provide a disproportionately high amount of care to historically marginalized populations,

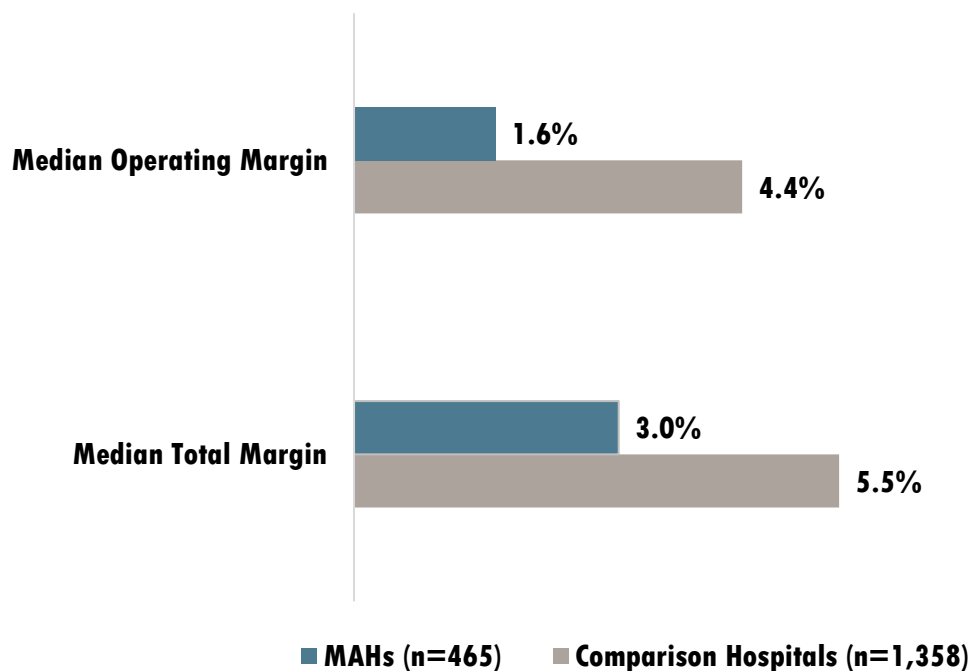
In general, MAHs:

- Are larger hospitals
- Are more likely to provide [essential services](#)
- Provide a greater number of these essential services, such as burn care, neonatal intensive care, inpatient psychiatric care, substance use disorder services, HIV care
- Are major teaching hospitals
- Are larger employers in their catchment areas than comparison hospitals

accounting for about 48% of market-wide Medicaid inpatient days and 49% of market-wide uncompensated care costs. Overall, the average Medicaid Inpatient Utilization Rate (MIUR) of a MAH is nearly 37%, compared to 17% in other hospitals in those same 162 markets. This means that MAHs are more likely to occupy inpatient beds with Medicaid beneficiaries than the other metropolitan hospitals serving the same area.

MAHs experience higher net patient revenues but lower total margins and lower operating margins than other hospitals in their markets ([Exhibit 2](#)).

Exhibit 2. Financial Margins, MAHs and Comparison Hospitals



Source: NORC analysis of Medicare Hospital Cost Reports and IPPS Rulemaking Files.

Introduction

During the last two years, the COVID-19 pandemic has stretched the capacity and tested the strength of the U.S. health care delivery system, with hospitals across the country operating at full or beyond capacity during prolonged COVID-19-surge periods.ⁱ Hospitals and health systems are not built to operate at or beyond bed or staffing capacity for extended periods of time. The pandemic has placed great strain on all hospitals, including hospitals that play a safety net role. Government relief funding provided to hospitals during the pandemic helped to offset the financial losses they experienced,ⁱⁱ however pandemic surges continue to put financial pressures on hospitalsⁱⁱⁱ. As the pandemic stabilizes and puts less acute, short-term financial pressure on hospitals, there is an opportunity to take the learnings from the pandemic to revisit many aspects of how the U.S. pays providers for health care services, including hospital care at safety net hospitals. This paper is designed to contribute to that discussion by exploring a particular safety net designation recently developed by the AHA: the Metropolitan Anchor Hospital (MAH).

America's safety net hospitals provide a substantial amount of care to low income, uninsured and historically marginalized populations.

America's hospitals have a long history of providing care to low-income and marginalized members of their communities, with many of the earliest hospitals specifically founded and operated by religious or charitable organizations to provide care and comfort to the poor and afflicted.^{iv} Today, many of America's hospitals are considered safety net hospitals, a term that lacks a formal definition, but is generally used to describe hospitals that serve a large percentage of Medicaid and uninsured patients, many of whom are part of historically marginalized communities. Safety net hospitals can serve urban and rural geographies. The MAH, by definition, is specifically limited to urban hospitals and as such this discussion eschews issues of the impact of non-urban safety net providers.

There is widespread agreement that many hospitals provide a substantial amount of care to large numbers of low-income and historically marginalized populations and that such hospitals face special challenges meriting policy focus. However, there is no single definition of a "safety net hospital." In a groundbreaking analysis of the nation's health care safety net, the Institute of Medicine (IOM, now the National Academy of Medicine) noted "a general lack of agreement and ongoing debate on which providers constitute the health care safety net."^v In the absence of a universally accepted, single definition, IOM defined safety net providers as "providers that organize and deliver a significant level of health care and other health-related services to uninsured, Medicaid, and other vulnerable patients."^{vi} While widely cited, the IOM definition left several open questions, including how to define "significant" and which patients should be considered "vulnerable." A 2021 systemic review of health services researchers' definitions of what constitutes a safety net hospital found 11 separate definitions used in recent studies, based on five separate categories including facility characteristics (e.g., status as a public or

teaching hospital), patient case-mix (e.g., socioeconomic and/or health status) Medicaid Disproportionate Share Hospital (DSH) payment status, Medicaid caseload and/or level of uncompensated care.^{vii}

Together, between 25% and 35% of the U.S. population either lacks insurance or relies on Medicaid (the federal-state program focused on providing care to low-income individuals, families and children as well as the disabled and elderly), and more than half of these individuals are part of historically marginalized groups. During the pandemic, Medicaid enrollment increased from 70.7 million in February 2020 to 83.2 million by June 2021,^{viii} and in 2020, an estimated 31.6 million additional Americans lacked health insurance.^{ix} Historically marginalized populations are disproportionately uninsured or Medicaid beneficiaries and face health inequities, immense structural barriers, and need timely, culturally competent care. They often rely on safety net hospitals for their health care, ranging from primary care to highly specialized inpatient and outpatient services.

Findings

Exploring the “Metropolitan Anchor Hospital” Designation

Using data derived from Medicare’s Inpatient Prospective Payment System (IPPS) Regulatory Impact files and hospital cost reports, the AHA defines a MAH as a hospital:

1. Located in an urban area;
2. With a Medicaid Inpatient Utilization Rate (MIUR) greater than the statewide average, and
3. With either:
 - a. A disproportionate patient percentage (DPP) greater than 70%, or;
 - b. A DPP greater than 34.5% combined with a ratio of uncompensated care costs (UCC)-to-beds of \$35,000 or more.

Eligibility for MAH designation is limited to the 3,270 hospitals found in the Centers for Medicare & Medicaid Services (CMS) IPPS Regulatory Impact file. These files exclude critical access hospitals, often located in rural areas, which are defined in statute and are not eligible for standard Medicare inpatient system payments or related DSH payments. Of this smaller universe, the AHA definition further limits eligibility to urban hospitals. There are 2,510 urban hospitals identified in Medicare’s IPPS Impact files.

The remaining criteria embedded in AHA’s MAH definition – MIUR, DPP, and UCC thresholds – when applied to the eligible universe of 2,510 urban hospitals with data in the IPPS Regulatory Impact File, yield a total of 465 MAH-designated hospitals.

Below we examine more closely the characteristics of these hospitals, and of the communities they serve.

Nearly half of MAHs meet the Coronavirus Aid, Relief, and Economic Security (CARES) Act safety net hospital definition, and nearly 85% receive both Medicare and Medicaid DSH payments.

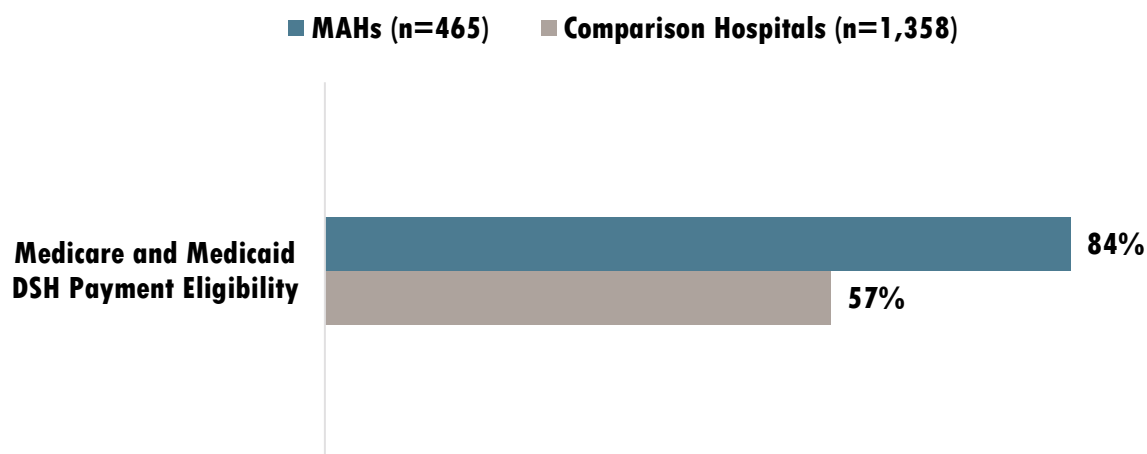
The quantitative parameters of the MAH definition discussed in this paper overlap substantially with other safety net hospital designations used for payment, health services research and quality improvement purposes. We compare the MAH designation to two available sets of statutory definitions of safety net hospital: 1) the definition set out by the CARES Act and 2) whether a hospital receives *both* Medicare and Medicaid DSH payments.

CARES Act: Designed to distribute pandemic-related financial relief, the CARES Act defined safety net hospitals as 1) having a DPP of 20.2% of greater, 2) a UCC-to-bed ratio of \$25,000 or more, *and* 3) a total margin of 3% or less.^x In adopting a limit on total hospital margin, the CARES Act sought to target funds to safety net hospitals in greatest financial need. Nearly half (48%) of MAH-designated hospitals meet the CARES Act definition whereas 18% of other hospitals in the same urban markets meet these criteria.

DSH: The Medicare and Medicaid DSH programs are designed to offset uncompensated care costs and support the financial stability of safety net hospitals.^{xi,xii} Medicare's DSH designations and payments are set by a federal formula, whereas Medicaid's DSH designations and payment are established by individual states. Together, DSH eligibility criteria are designed to target hospitals that serve a large proportion of low- or no-revenue patients, and DSH payments are intended to offset unrecovered costs experienced by hospitals that care for these patients. A hospital that receives *both* Medicare and Medicaid DSH payments is recognized in both federal statute and applicable state statute that it meets the unique statutory definitions, and these hospitals are often referred to, generically, as safety net hospitals.

Among MAH-designated hospitals, 84% receive both Medicare and Medicaid DSH payments, compared to 57% of other hospitals in the same urban markets, again underscoring the impact of varying criteria on the number of thus-defined safety net hospitals ([Exhibit 3](#)).

Exhibit 3. Hospitals Eligible for Medicare and Medicaid DSH Payments, MAHs and Comparison Hospitals



Source: NORC analysis of Medicare Hospital Cost Reports and IPPS Rulemaking Files.

Arguably, these narrower MAH criteria yield a more homogenous universe of urban safety net hospitals, allowing for more targeted and effective policy, payment and quality improvement initiatives.

As noted above, other definitions of safety net hospitals use some of the same parameters used to assign MAH status. By limiting eligibility to urban hospitals, with high-MIUR and high-UCC/DPP metrics – the MAH criteria yields a narrower universe of ‘safety net hospitals,’ compared to other measures’ definitions.

MAH Catchment Area Statistics

MAHs serve diverse, large urban markets, and within these markets, provide an outsized portion of care to Medicaid beneficiaries and the uninsured.

MAHs can be found in 162 (42%) of the 382 Metropolitan Statistical Areas (MSAs) in the U.S. Within the 162 MSAs containing at least one MAH, there are 1,823 hospitals, of which 465 (25%) are MAHs. When we compare MAH hospitals to other hospitals, we use the non-MAH hospitals in these 162 urban markets as the comparison group (referred to as “comparison hospitals” throughout this paper).

Relative to the comparison hospitals operating in these same 162 markets, MAHs are typically larger, accounting for 33% of market-wide beds and an estimated 34% of market-wide inpatient revenue. The median MAH had 256 beds and total inpatient revenue of \$161 million in 2019, compared to 175 beds and \$95 million in other hospitals in the same markets. MAHs tend to provide a disproportionately high amount of care to historically marginalized populations, accounting for about 48% of market-wide Medicaid inpatient days and 49% of market-wide uncompensated care costs. Overall, the average MIUR of a MAH is about 37%, compared to 17% in other hospitals in those same 162 markets. This means that MAHs are more likely to have Medicaid beneficiaries occupying inpatient beds than the other metropolitan comparison hospitals serving this same area.

Overall, MAHs tend to serve areas that are more racially and ethnically diverse and have greater occurrence of socioeconomic hardships, including greater rates of unemployment and eligibility for public assistance. MAH catchment areas experience higher instances of premature death overall, as well as more homicides and firearm deaths.

MAHs are more likely than other hospitals in their markets to offer essential services such as burn care, neonatal intensive care, trauma care, and HIV/AIDS support, as well as offer a greater number of these services. MAHs also tend to be more likely to provide community support services. Last, MAHs are more likely to be teaching hospitals and tend to employ a greater number of staff and trainees in all positions.

MAH-served counties have notably greater Hispanic and Black populations than comparison hospital-served counties.

To understand how MAH-designated hospitals differ from comparison hospitals in the same urban markets, we examined measures of these communities' demographics and social determinants of health (SDOH). In this, we rely on county-level data on demographic, economic and environmental characteristics of the counties served by MAHs. Ideally, the data would be more granular, allowing a more nuanced description of these patients and communities. The most robust data sources on social determinants of health are gathered in national surveys by government agencies including the Agency for Healthcare Research and Quality (AHRQ), the Centers for Disease Control and Prevention, and National Center for Health Statistics (the American Community Survey), which usually report the data (only) on a county-level basis.

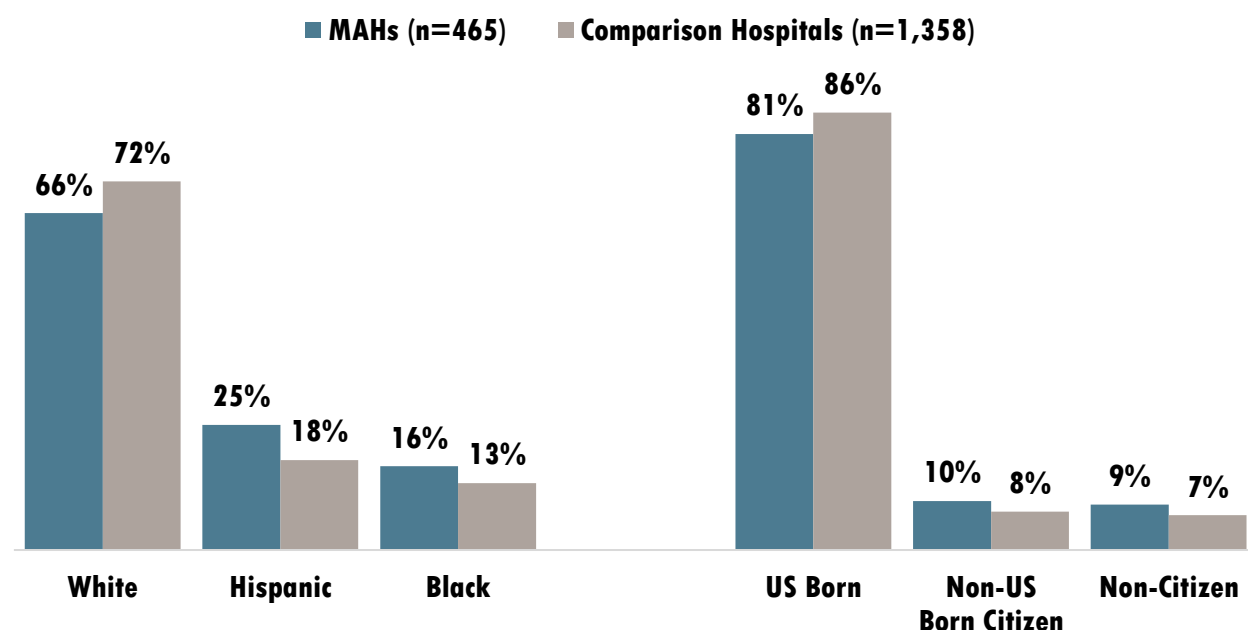
In describing the SDOH characteristics of counties served by MAHs, we use hospitals' Medicare claims data to weight the assignment of aggregate county-level SDOH data to individual hospitals located within that county.^{xiii} This allows the comparison of hospitals within the same markets by the underlying SDOH attributes of the population served as it examines where the beneficiaries who utilize that hospital live, not just the urban market where the hospital is located. Implicitly, this assumes that 1) Medicare fee-for-service claims by county are representative of the total hospital catchment area and proportions of claims reflect that of other

insurers and the uninsured, and 2) SDOH measures are broadly representative of the subsets of each county that utilize a given hospital.

We compared MAHs to other hospitals located in the same MSAs on a variety of population and service characteristics. These include demographics, socioeconomic indicators, racial segregation of housing and public safety.

Demographics: We describe catchment area demographics in [Exhibit 4](#) (for more details see [Appendix A](#)) and show that MAHs tend to serve counties that are more diverse than other hospitals located in the same urban market. That is, MAH-served counties tend to be less white (-6.1 percentage point difference) and have notably greater populations of Hispanic and Black individuals (7.0 percentage point and 3.2 percentage point greater, respectively). Further, MAH-designated hospitals deliver care in counties with a lower percentage of U.S. born citizens (-4.2 percentage points). Differences in age bands are small, and we did not detect gender-based differences.

Exhibit 4. Catchment Area Demographics



Source: NORC analysis of Medicare claims, AHRQ SDOH area designations, and IPPS Rulemaking Files. Differences are significant at $p < 0.01$.

MAHs serve more Medicaid enrollees and uninsured than comparison hospitals and have catchment areas with higher homicide and firearm deaths.

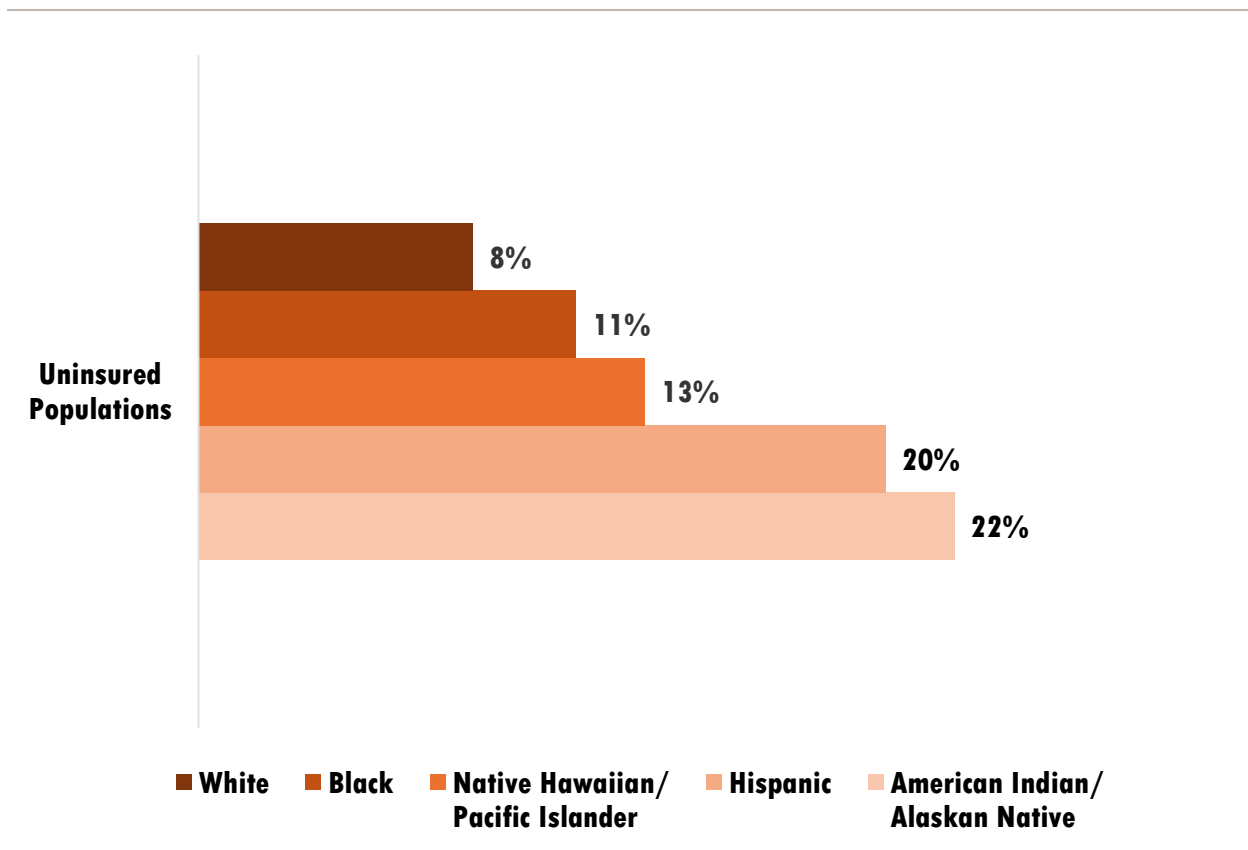
Socioeconomic Status: [Appendix B](#) describes socioeconomic indicators, including the proportion of the population disabled, unemployed and on public assistance, as well as housing, insurance and educational attainment. These measures are predominantly derived from the

American Community Survey portion of the AHRQ SDOH database. These factors directly and indirectly indicate the health and economic stability of the communities served by MAHs and other hospitals in the same MSAs.

Against these factors, MAH-designated hospitals operate in counties with somewhat more challenging socioeconomic factors than counties served by comparison hospitals. MAHs serve areas with higher unemployment (0.4 percentage points higher). MAH catchment areas tend to have a higher portion of households receiving public assistance income and using supplemental nutrition assistance programs (0.4 percentage points and 2.7 percentage points, respectively). MAHs serve more under-65 Medicaid enrollees and uninsured, and fewer commercially insured individuals than their comparison hospital counterparts.

Historically marginalized populations are more likely to be uninsured and make up a greater proportion of Medicaid beneficiaries than white individuals ([Exhibit 5](#)). Despite significant gains in coverage since the implementation of the Affordable Care Act, nonelderly American Indian/Alaskan Native (22%), Hispanic (20%), Native Hawaiian and other Pacific Islander (13%), and Black (11%) individuals are all more likely to be uninsured than white people (8%).^{xiv}

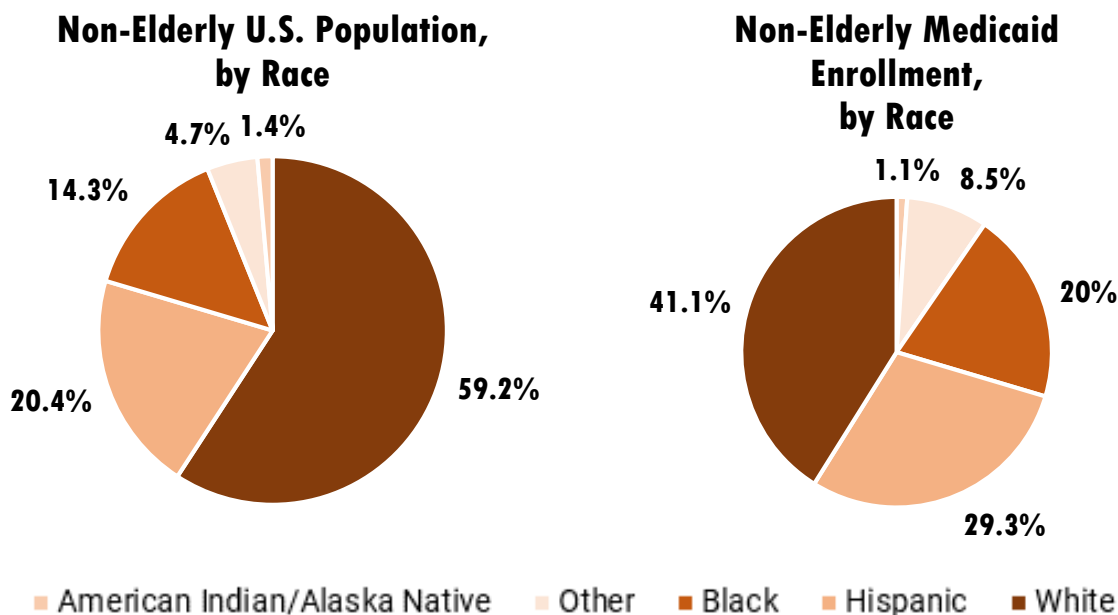
Exhibit 5. U.S. Uninsured Rates, by Race and Ethnicity (2019)



Source: Artiga S, Hill L, Orgera K, Damico A. "Health Coverage by Race and Ethnicity, 2010-2019." Kaiser Family Foundation. July 16, 2021. <https://www.kff.org/racial-equity-and-health-policy/issue-brief/health-coverage-by-race-and-ethnicity/>

Additionally, as shown in [Exhibit 6](#), people of color are enrolled in Medicaid at higher rates, with Hispanic people representing more than 29% of non-elderly Medicaid enrollees and Black people representing 20% of non-elderly Medicaid enrollees.^{xv}

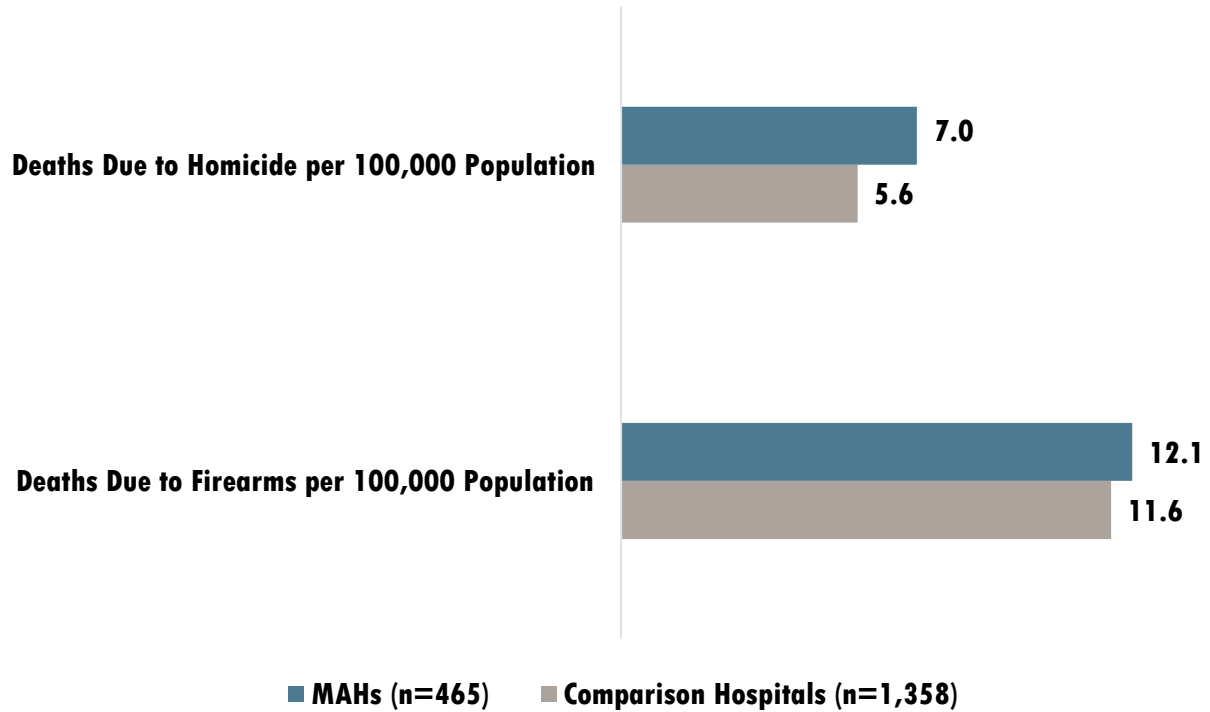
Exhibit 6. Comparing Non-Elderly U.S. Population to Overall to Rates of Non-Elderly Medicaid Enrollment for Historically Marginalized Populations



Source: U.S. Census Bureau (2019). *American Community Survey (ACS)*. KFF. (2020, October 23). <https://www.kff.org/medicaid/state-indicator/medicaid-distribution-nonelderly-by-raceethnicity/>.

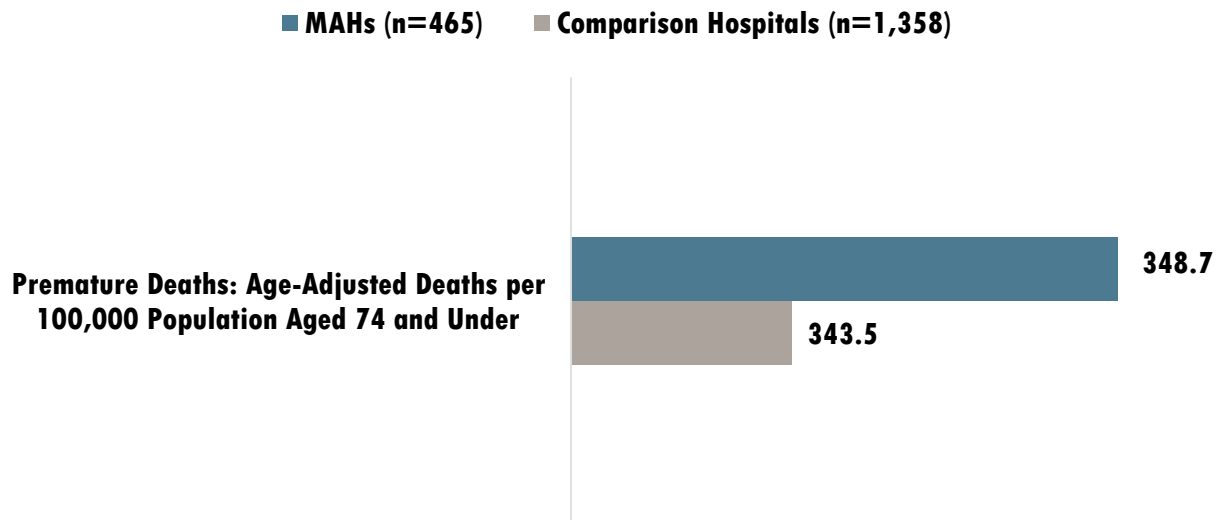
Mortality: To understand differences in public health and public safety between MAH and the service areas of other hospitals located in the same markets, Exhibits [7](#) and [8](#) array mortality statistics weighted by catchment area (for more details, see [Appendix C](#)). Premature deaths (mortality age 74 and under) are 1.5% higher in MAH catchment areas. The homicide rate is 26.3% higher in MAH catchment area, and relatedly, firearm deaths are 4.6% higher. Drug overdose deaths are 5.0% lower in MAH catchment areas. Opioid overdose and cardiovascular deaths are not significantly different in MAH and other hospital catchment areas.

Exhibit 7. Mortality Due to Homicide and Firearms, Per 100,000 Residents



Source: NORC analysis of Medicare claims, AHRQ SDOH area designations and IPPS Rulemaking Files. Differences are significant at $p < 0.01$.

Exhibit 8. Premature Mortality, Per 100,000 Residents



Source: NORC analysis of Medicare claims, AHRQ SDOH area designations and IPPS Rulemaking Files. Differences are significant at $p < 0.01$.

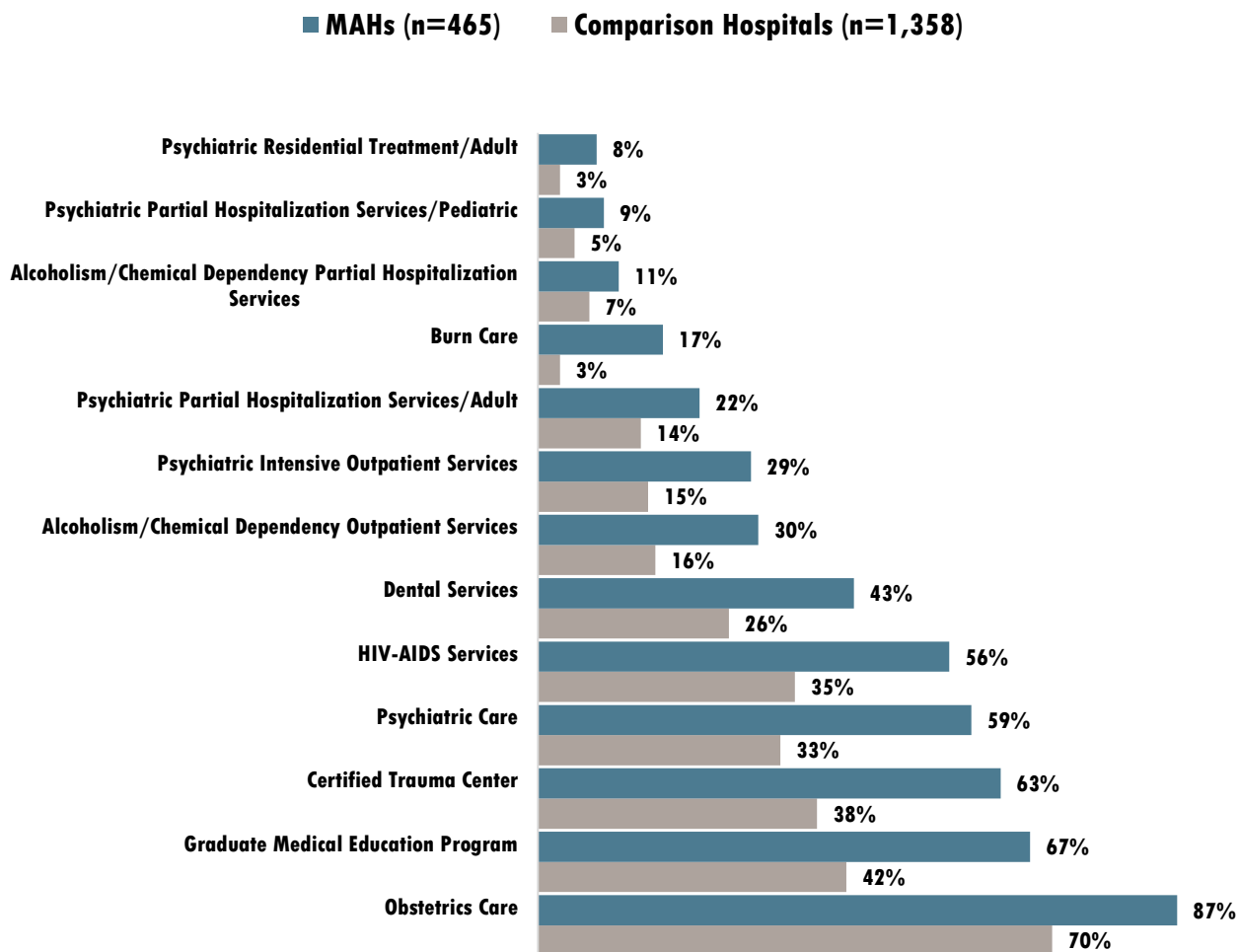
MAH Services

MAHs offer a greater number of essential, core hospital services than comparison hospitals.

Many safety net hospitals offer tertiary and quaternary care to their communities, and often are the primary or sole provider of other specialized services. To examine how and whether MAH designation is related to the provision of essential services in the community, we analyzed data from the AHA annual service lines survey.^{xvi} We examined differences between MAH-designated hospitals and comparison hospitals in the same markets using a list of essential services developed by the Medicaid and CHIP Payment and Access Commission (MACPAC)^{xvii}. MACPAC defines “core services” as burn services, dental services, graduate medical education, HIV/AIDS care, inpatient psychiatric services (through a psychiatric subunit or stand-alone psychiatric hospital), neonatal intensive care units, obstetrics and gynecology services, substance use disorder services, and trauma services.

Core & Essential Services: As shown in [Exhibit 9](#), MAHs are consistently more likely than comparison hospitals to offer any given listed core service identified (for more details, see [Appendix D](#)). Using this definition, MAHs are more likely to provide services in these categories than other hospitals in the same urban markets, as shown in [Appendix E](#), 98% of MAHs provide at least one MACPAC-identified core service area, compared to 85% (respectively) among other hospitals in the same markets.

Exhibit 9. MACPAC Core Services Detail by Hospital Designation



Source: NORC analysis of AHA Annual Survey and IPSS rulemaking Files.

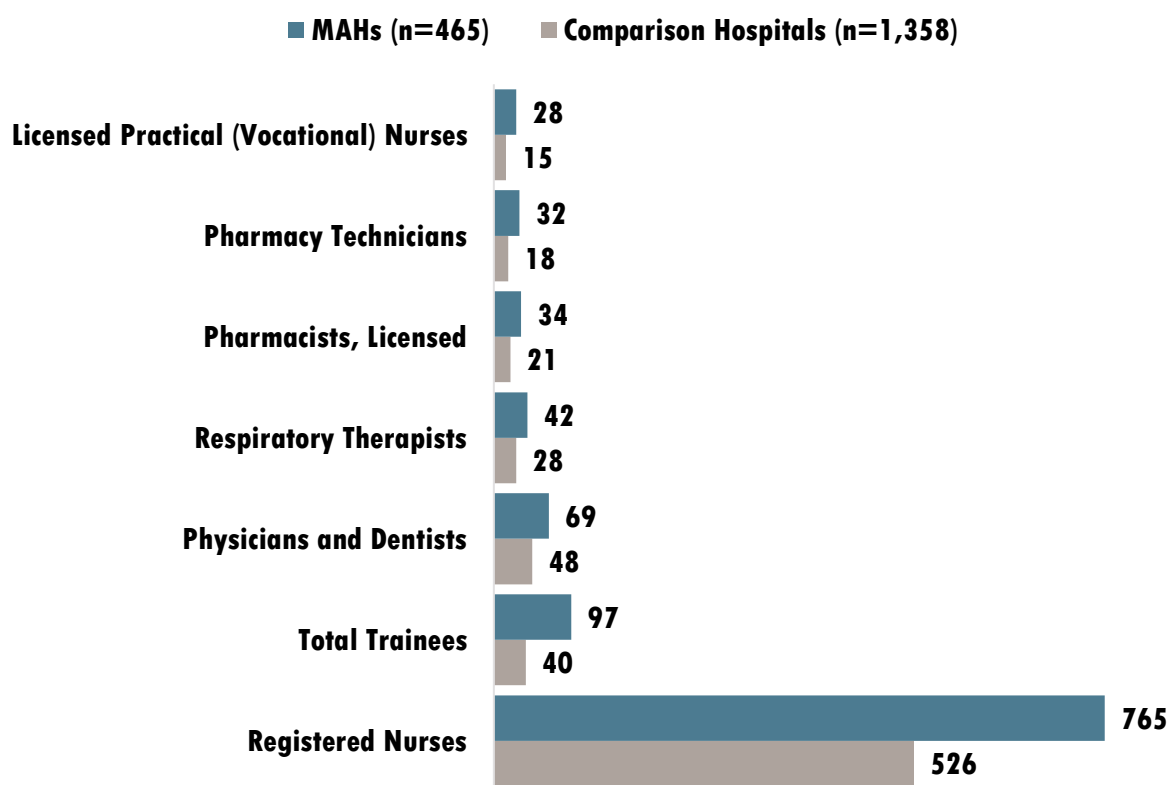
Further, MAHs tend to provide a greater number of essential services than other hospitals in the same MSA, as shown in [Appendix F](#). On average, MAH hospitals had five MACPAC-identified core services, compared to three among other hospitals operating in the same urban markets.

MAHs support more graduate medical students and trainees, and MAHs employ 50% more personnel than comparison hospitals.

MAHs employ significant numbers of clinicians and technicians, and often provide teaching and learning opportunities to support the education of the next generation of health care providers. MAHs also provide a significant number of jobs in their local market areas.

Workforce Size: Using the AHA annual survey, [Exhibit 10](#) counts of full time equivalent (FTE) personnel (for more details, see [Appendix G](#)). In general, MAHs are larger than other hospitals in their urban markets (Metropolitan Statistical Areas), and employ, on average, about 35% of market-wide FTEs compared to holding 25% of hospitals in those markets (MAHs also provide about 35% of inpatient days in their markets). Examining FTE personnel counts, on average, MAHs tend to have 50% more personnel than other hospitals in the same market and typically have more graduate and other trainees.

Exhibit 10. Full Time Equivalent Personnel by Hospital Designation

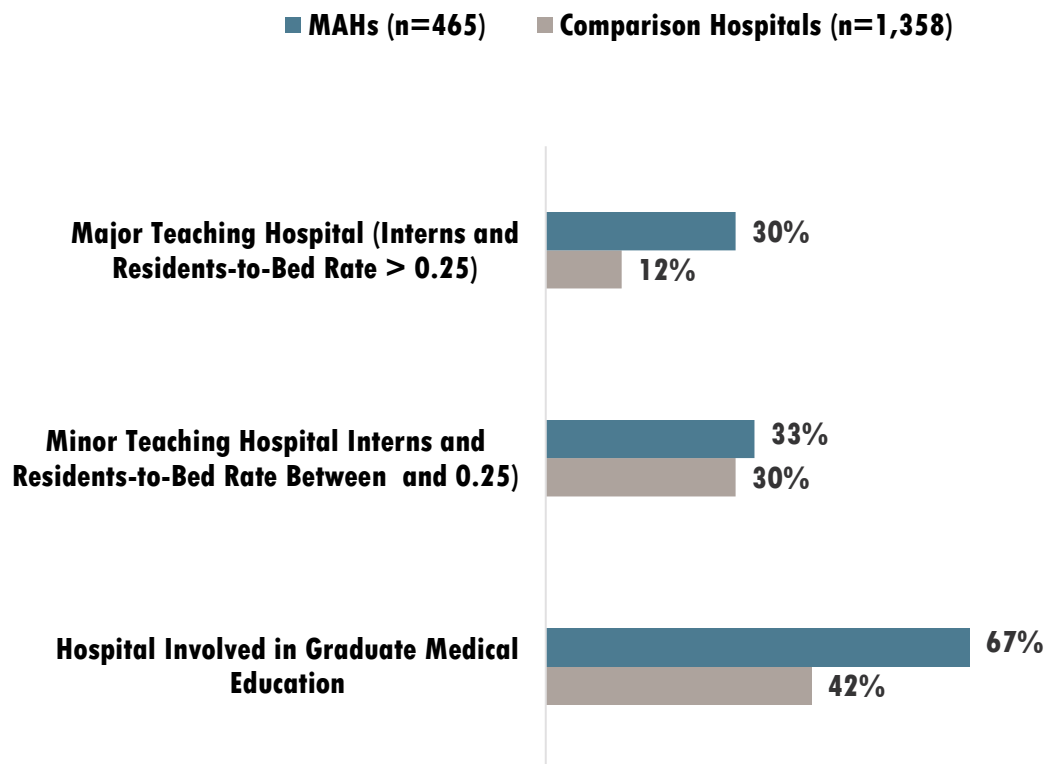


Source: NORC analysis of AHA Annual Survey and IPPS rulemaking Files.

MAHs are 25% more likely be teaching hospitals than comparison hospitals.

Teaching Status: [Exhibit 11](#) examines hospital-level teaching status (for more details see [Appendix H](#)). This exhibit corroborates the [Appendix G](#) survey data on FTEs using Medicare hospital cost report data. Overall, MAHs are 25 percentage points more likely to be teaching hospitals than other hospitals in the same market and are 22 percentage points more likely to be a major teaching hospital.

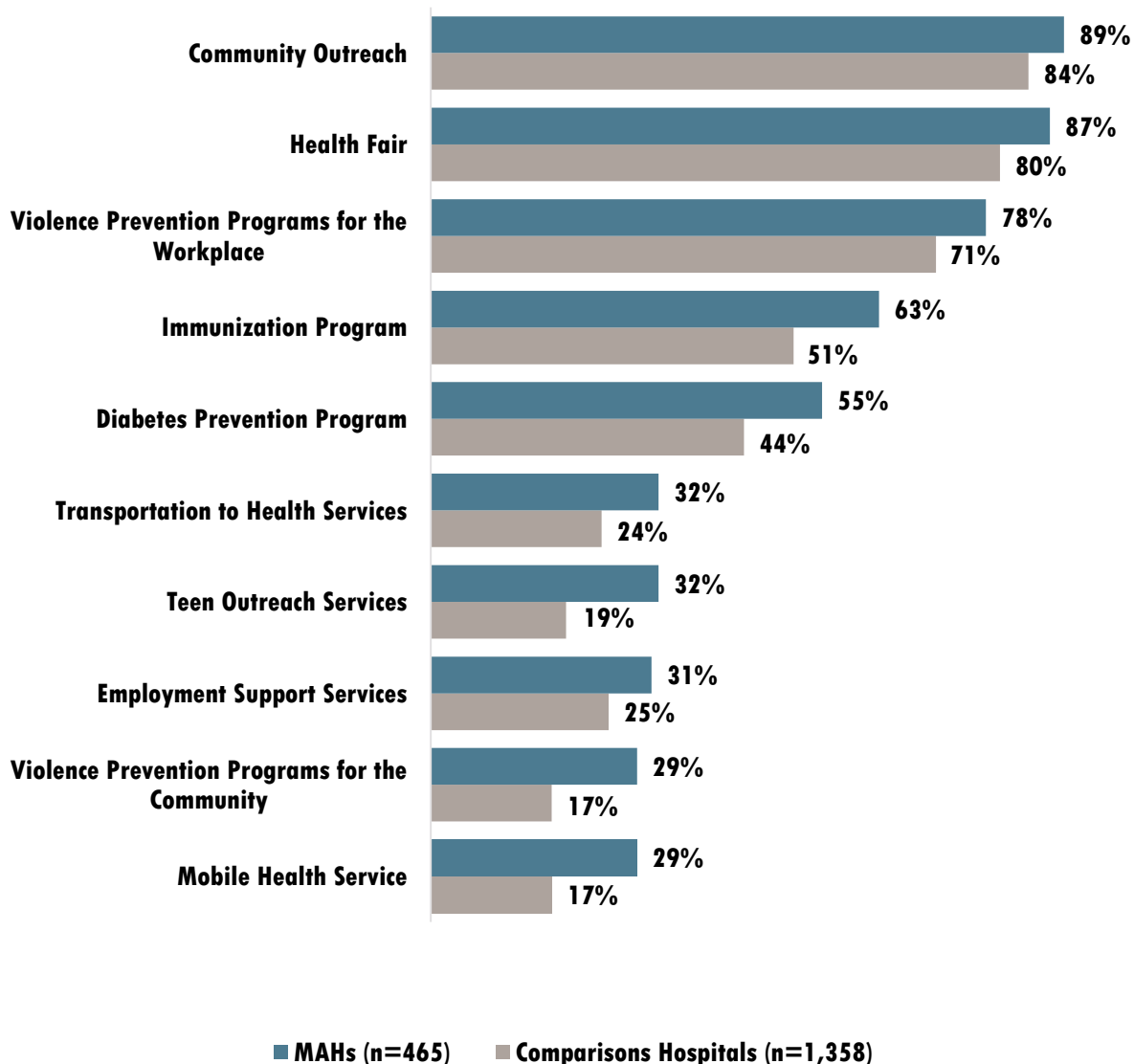
Exhibit 11. Hospital Teaching Status by Hospital Designation



Source: NORC analysis of Medicare Hospital Cost Reports and IPPS Rulemaking Files.

Community Support Services: Many hospitals provide a range of community support services, and these services are tracked in the AHA annual survey. [Exhibit 12](#) shows the likelihood of MAHs and other hospitals to provide any of 13 different community services in those markets (for more details, see [Appendix I](#)). Overall, MAHs and other hospitals were very likely to supply at least one type of these services (99% and 96%, respectively). On average, MAHs tend to provide more types of these services (6.2) than other hospitals in the same markets (5.2). In addition to providing more service types overall, MAHs are more likely to provide almost any of the listed service types such as teen outreach, mobile health services and chronic disease prevention programs (an exception is Meals on Wheels, which is more likely offered by comparison hospitals than MAHs).

Exhibit 12. Community Support Programs by Hospital Designation



Source: NORC analysis of AHA Annual Survey and IPPS Rulemaking Files.

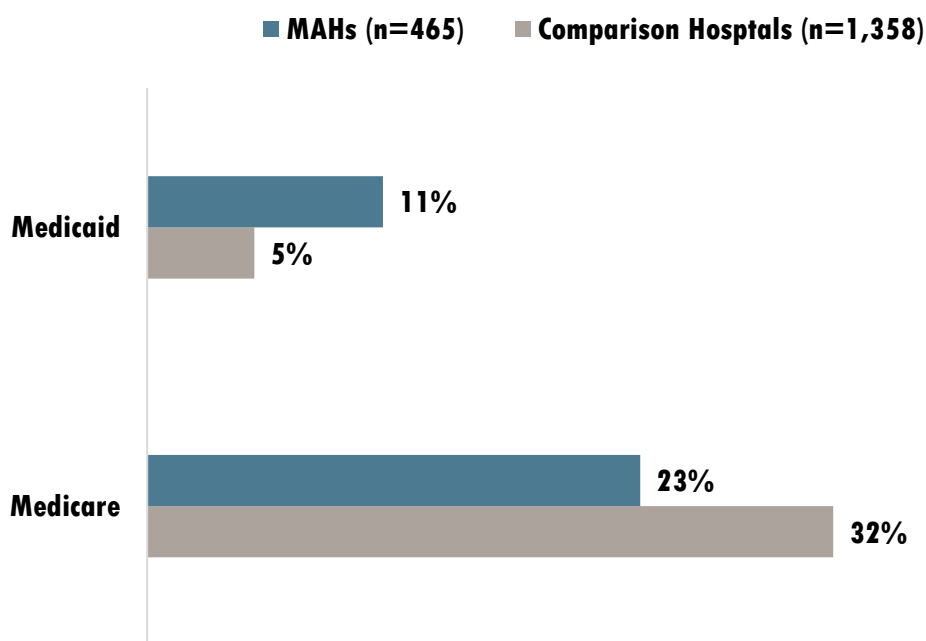
MAH Financial Performance

MAHs have higher net patient revenue along with lower total margins and lower operating margins than comparison hospitals.

As described above, safety net hospitals treat large numbers of uninsured and Medicaid patients. MAHs tend to serve patients of a meaningfully different payer mix than other hospitals

in the same markets. For example, in 2019, MAHs have a median inpatient day share that was split 23% Medicare and 11% Medicaid (the remainder to other payers or uninsured) whereas comparison hospitals had a median of 32% Medicare and 5% Medicaid ([Exhibit 13](#)). These figures were generally consistent over time, though the share of Medicaid inpatient days has decreased for both groups of hospitals since 2014 (from a high of nearly 16.9% in MAH and 6.8%).

Exhibit 13. MAH and Comparison Hospitals, Median Inpatient Day Share



Source: NORC analysis of Medicare Hospital Cost Reports and IPPS Rulemaking Files.

Median MAH-designated hospitals report 2019 net patient revenues of \$317 million, inpatient revenues of \$152 million, and inpatient costs of nearly \$175 million; other hospitals in the same markets report median net patient revenues of \$207 million, with \$91 million in inpatient revenues and \$108 million in inpatient costs. These aggregate figures mask considerable variation in hospital-specific costs and revenues but are generally consistent over time.

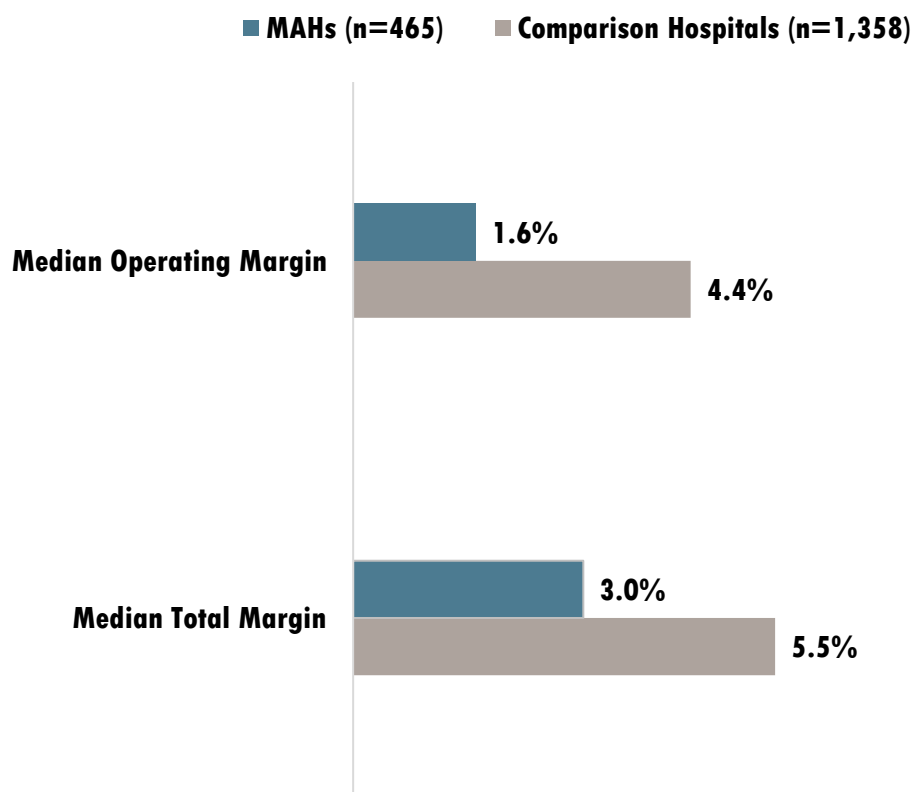
The distribution of MAH total inpatient margins is very similar to that of other hospitals in the same markets. Margin and cost data from hospital cost reports is notoriously sensitive to the data cleaning approach. Here, only values between -30% and 30% were considered for calculating group margins. Overall, MAHs have higher median Medicare margins (7.6% inpatient and 1.4% total) compared to other hospitals in the same markets (-1.4% inpatient and -2.8% total) – these figures were generally very consistent from 2014 onward. However, the

imputed median total margin of MAHs is lower, 3.0% compared to 5.5% among comparison hospitals (again, differences are relatively consistent over time). Hospital margins tend to vary by hospital, and distributions across the MAHs and comparison hospitals were broadly overlapping – generally, overall hospital margin performance is similar between MAHs and comparison hospitals.

While MAHs tend to be more revenue-efficient with Medicare patients, they experience lower total margins. This is likely explained by higher spend on charity care, as well as a lower share of Medicare patients and a higher share of Medicaid patients among MAHs compared to other hospitals. MAHs tend to spend a higher portion of operating expenses on charity care than other hospitals in the same markets. In 2019, MAHs spent a median 2.8% of operating expenses on charity care compared to 1.6% by other hospitals; this equated to a median of \$10.6 million per MAH and \$4.2 million in other hospitals (noting MAHs are generally larger hospitals).

Operating margins (operating income as a fraction of revenue) tend to be lower at MAHs than other urban hospitals in the same markets. In 2019, MAHs had a median operating margin of 1.6% compared to 4.4% in other hospitals in the same market ([Exhibit 14](#)). 2019 was a low year in this stat for MAHs, with median operating margins typically being above 2.3% from 2014; the median operating margin in comparison hospitals are consistently at least 1.5% points higher than MAHs. As MAHs tend to be larger hospitals, they typically have higher total operating revenues than comparison hospitals, (median of \$348 million in 2019 among MAHs compared to \$217 million). However, operating incomes were equivalent or lower among MAHs with a median of \$4.8 million in 2019 compared to \$6.6 million (operating income is relatively unstable with MAHs having equal or higher median operating incomes than comparison hospitals in half of the years since 2014). Variation between hospitals is significant and distributions of operating margins largely overlap between MAHs and comparison hospitals.

Exhibit 14. MAHs and Comparison Hospitals, Margins



Source: NORC analysis of Medicare Hospital Cost Reports and IPPS Rulemaking Files.

Conclusion

Our analysis finds that MAHs provide an outsize portion of uncompensated and Medicaid care in their markets. MAHs median inpatient day share that has less Medicare and more Medicaid exposure, along with greater amounts of charity care, contribute to lower total margins and lower operating margins than other hospitals in their markets. While MAHs financial metrics suggest they tend to be more efficient with Medicare patients, lower total margins are likely explained by higher spend on charity care, as well as a lower share of the catchment areas Medicare patients, and a higher share of Medicaid patients among MAHs compared to other hospitals.

By focusing on hospitals serving densely populated communities, the MAH designation describes urban hospitals that play crucial roles in the communities they serve caring for millions of low-income and historically marginalized populations, in providing specialized services for the entire community, and in serving as a hub to connect the health and social

safety net systems. MAHs are more likely to offer core essential community services (HIV services, neonatal intensive care units, burn units, inpatient psychiatric care, and substance use disorder services). Sixty seven percent of MAHs are involved with teaching the next generation of health care professionals and are major employers in their communities. Future work could explore these organizations' workforce and teaching programs further, the community benefit or charitable practices of these organizations, Medicare and Medicaid claims and quality reporting data to determine the demographics of persons who utilize these hospitals, and the quality of care they provide.

Limitations of Our Analysis

Our analysis of hospital and community characteristics relied on a variety of hospital and geographic data sources, originating from claims data, cost report data and surveys. Each data source applied has its own unique limitations. As a rule, readers should not infer causal relationships between disparate ecological data. Data from the inpatient impact files and Medicare claims tend to be reasonably accurate and reproducible over time.

Medicare Hospital Cost Reports and the AHA Annual survey are two additional sources of data for our analysis; Medicare cost reports are known to introduce ambiguity, since hospitals are not required to follow standard cost allocation rules. While audits of hospitals cost data are rare, there are penalties associated with misreporting, giving hospitals a strong incentive to report accurately. AHA survey data is voluntarily self-reported data from hospitals. Though generally considered accurate and consistent year-over-year, not all survey sections are completed by all hospitals. This leads to potential biases in the data where some subsets of hospitals may not fully report the breadth of services they provide.

The AHRQ SDOH database, includes data combined from multiple sources (CDC, American Community Survey, etc.) and uses small area estimation techniques to impute population-level data from surveys to a smaller geographic unit. We use this data as a catchment area indicator of as SDOH indicators for individuals served by the hospitals. SDOH data presented here should be understood to be ecological in nature and that it might not be reflected in any single hospital's patient mix.

This report utilizes data that reflects the pre-Covid-19 period and does not fully reflect today's hospital environment.

Appendix: Technical Tables

Appendix A. Community Demographics in Catchment Areas

Demographic Category	Demographic Group	Portion of Demographic Group in MAH Catchment Area	Portion of Demographic Group in Comparison Hospital Catchment Area	Percent Point Difference
Age	Age 17 & under	23.1%	23.0%	0.1%
	Age 18-44	37.0%	35.7%	1.3%*
	Age 45-64	25.3%	26.2%	-0.9%*
	Age 65-79	10.8%	11.3%	-0.4%*
	Age 80+	3.6%	3.7%	-0.1%*
Sex	Female	50.8%	50.8%	0.0%
	Male	49.2%	49.2%	0.0%
Race/Ethnicity	White	65.9%	72.1%	-6.1%*
	Hispanic	24.5%	17.6%	7.0%*
	Black	16.4%	13.1%	3.2%*
	Asian	6.3%	5.6%	0.7%*
	Multi-racial	3.4%	3.3%	0.1%**
	American Indian and Alaskan Native	1.0%	0.8%	0.3%*
	Pacific Islander	0.2%	0.2%	0.0%
Citizenship	US Born	81.4%	85.6%	-4.2%*
	Non-US Born Citizen	9.6%	7.5%	2.1%*
	Non-Citizen	8.9%	6.8%	2.1%*

Source: NORC analysis of Medicare claims and AHRQ SDOH area designations

* Indicates statistically significant difference at $p < 0.01$

Appendix B. Socioeconomic Factors

Socioeconomic Category	Socioeconomic Group	Portion of MAH Catchment Area	Portion of Comparison Hospital Catchment Area	Percent Point Difference
Disability	Disabled	12.5%	12.4%	0.2%**
Employment	Unemployed	4.1%	3.7%	0.4%*
Public Assistance and SNAP	Households with Public Assistance Income	2.7%	2.4%	0.4%*

	Households using SNAP	15.0%	12.2%	2.7%*
Housing	Median Rent as Portion of Household Income	30.9%	30.1%	0.8%*
	Rent at Least 30% of Household Income	51.3%	49.6%	1.8%*
	Households Renting	40.8%	35.2%	5.5%*
	Housing Stock Vacant	11.1%	10.3%	0.7%*
Insurance	Medicaid Enrollees under age 65	21.4%	18.1%	3.4%*
	Private Insurance under age 65	60.5%	65.5%	-5.0%*
	Uninsured under age 65	12.1%	10.6%	1.5%*
Educational Attainment	Less than High School	14.7%	12.3%	2.4%*
	High School Graduate	26.3%	26.9%	-0.6%*

Source: NORC analysis of Medicare claims and AHRQ SDOH area designations

* Indicates statistically significant difference at $p < 0.01$; ** indicates significant difference at $p < 0.05$ Note that percent point differences in proportions in Appendix B may not add fully due to rounding.

Appendix C. Mortality Causes per 100,000 Residents

Mortality Measure	Mortality Rate in MAH Catchment Area	Mortality Rate in Comparison Hospital Catchment Area	Percent Difference
Premature deaths: age-adjusted deaths per 100,000 population aged 74 and under	348.7	343.5	1.5%*
Deaths due to homicide per 100,000 population	7.0	5.6	26.3%*
Deaths due to firearms per 100,000 population	12.1	11.6	4.6%*
Number of drug poisoning deaths per 100,000 population	20.3	21.4	-5.0%*
Drug overdose deaths involving any opioid per 100,000 resident population per year	12.8	12.9	-0.4%
Total cardiovascular disease death rate per 100,000 population	221.5	220.5	0.4%

Source: NORC analysis of Medicare claims and AHRQ SDOH area designations

* Indicates statistically significant difference at $p < 0.01$

Appendix D. MACPAC Core Services Detail by Hospital Designation

Service Line	Portion of MAHs Responding to AHA Survey with Service Line	Portion of Comparison Hospitals in MAH Markets Responding to	MAH Percent Point Difference
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	AHA Survey with Service Line		
Obstetrics care	87%	70%	17%
Graduate Medical Education Program	67%	42%	25%
Certified trauma center	63%	38%	25%
Psychiatric care	59%	33%	25%
HIV-AIDS services	56%	35%	21%
Dental services	43%	26%	16%
Alcoholism/chemical dependency outpatient services	30%	16%	14%
Psychiatric intensive outpatient services	29%	15%	14%
Psychiatric partial hospitalization services/adult	22%	14%	9%
Burn care	17%	3%	14%
Alcoholism/chemical dependency partial hospitalization services	11%	7%	3%
Psychiatric partial hospitalization services/pediatric	9%	5%	4%
Psychiatric residential treatment/adult	8%	3%	5%

Source: NORC analysis of AHA Annual Survey

Appendix E. Likelihood of a Hospital Providing at Least One Core Service

Service Line	Portion of MAHs Responding to AHA Survey with Service Line	Portion of Other Hospitals in MAH Markets Responding to AHA Survey with Service Line	Percent Point Difference
Any MACPAC Core Intensive Services	98%	85%	13%

Source: NORC analysis of AHA Annual Survey

Appendix F. Average Count of Core Services by Hospital Designation

Service Line	Average of MAHs Responding to	Average of Other Hospitals in MAH Markets Responding	Percent Difference
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	AHA Survey with Service Line	to AHA Survey with Service Line	
Count of MACPAC Core Intensive Services	5.0	3.0	67%

Source: NORC analysis of AHA Annual Survey

Appendix G. Full Time Equivalent Personnel by Hospital Designation

Service Line	Average FTEs of MAHs Responding to AHA Survey	Average FTEs of Other Hospitals in MAH Markets Responding to AHA Survey with Service Line	Percent Difference
Physicians and Dentists	69	48	43%
Registered Nurses	765	526	46%
Licensed Practical (Vocational) Nurses	28	15	83%
Medical and Dental Residents and Interns	92	37	145%
Other Trainees	5	3	67%
Nursing Assistive Personnel	191	133	43%
Radiology Technicians	71	54	31%
Laboratory Technicians	60	42	43%
Pharmacists, licensed	34	21	61%
Pharmacy Technicians	32	18	77%
Respiratory Therapists	42	28	51%
Total trainees	97	40	140%
All other personnel	1,588	1,044	52%
Hospital Unit Total Personnel	2,442	1,628	50%

Source: NORC analysis of AHA Annual Survey

Appendix H. Hospital Teaching Status by Hospital Designation

Teaching	Portion of MAHs	Portion of Other Hospitals in MAH Markets	Percent Point Difference
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Major teaching hospital (Interns and Residents-to-Bed Rate > 0.25)	34%	12%	22%
Minor teaching hospital (Interns and Residents-to-Bed Rate between 0 and 0.25)	33%	30%	3%
Hospital Involved in Graduate Medical Education	67%	42%	25%

Source: NORC analysis of Medicare Hospital Cost Reports

Appendix I. Community Support Programs by Hospital Designation

Community Support Service Line	Portion of MAHs Responding to AHA Survey with Service Line	Portion of Other Hospitals in MAH Markets Responding to AHA Survey with Service Line	Percent Point Difference
Teen outreach services	32%	19%	13%
Mobile health services	29%	17%	13%
Immunization program	63%	51%	12%
Violence prevention programs for the community	29%	17%	12%
Diabetes prevention program	55%	44%	11%
Transportation to health services	32%	24%	8%
Health fair	87%	80%	7%
Violence prevention programs for the workplace	78%	71%	7%
Employment support services	31%	25%	6%
Community outreach	89%	84%	6%
Supportive housing services	3%	2%	1%
Adult day care program	4%	3%	1%
Meal delivery services	3%	7%	-4%

Source: NORC analysis of AHA Annual Survey

Glossary

<i>Term</i>	<i>Definition</i>
ACS	American Community Survey
AHRQ	Agency for Healthcare Research and Quality
Catchment Area	Typical counties where a hospital’s patients reside
CDC	Centers for Disease Control
Community Support Services	Programs within communities which foster improved quality of life, deliver resources, and address SDOH
Comparison Hospital	Hospitals in the same urban market as at least one MAH
Charity Care	Care provided at reduced charges or free
CMS	Centers for Medicare and Medicaid Services
Graduate Medical Education	Residency or subspecialty training for clinicians following medical school
Disproportionate Patient Percentage (DPP)	Used in calculating DSH payments, it is the sum of the portion of care provider to the under-served and elderly and disabled
FLP	Federal Poverty Level
Full-Time Equivalent (FTE)	The unit of measurement equivalent to an individual – worker or student – of one unit of a work day
Historically Marginalized Populations	Communities dealing with sustained and/or structural hardship
Inpatient Revenue	Costs occurred in the production of inpatient hospital services
Inpatient Costs	Costs occurred in the production of inpatient hospital services
IPPS Regulatory Impact File	This file is CMS’s detailed projection of the impact of proposed or finalized updates to the IPPS on hospitals
IPPS	Inpatient Prospective Payment System; this is the way in which CMS sets payment levels for inpatient

	services and rules for what is covered and how it may be billed
Median Operating Margin	Operating margin is net income over total revenue and other income, excluding investment income. The Median is the 50 th percentile of operating margin across all hospitals being measured
Median Total Margin	Total margin is net income over total revenue and other income, including investment income. The Median is the 50 th percentile of operating margin across all hospitals being measured
MAH	Metropolitan Anchor Hospital
MIUR	Medicaid Inpatient Utilization Rate
MSA	Metropolitan Statistical Area
MACPAC	Medicaid and CHIP Payment and Access Commission
Medicaid Disproportionate Share Hospital	Hospitals deemed a “disproportionate share hospitals” by the local state Medicaid program. These hospitals receive payments to compensate for charity care, Medicaid underpayments, and other uncompensated care
NCHS	National Center for Health Statistics, a unit of the CDC
Net Patient Revenue	Charges less contractual allowances and discounts
Patient Case-Mix	Relative risk of the patient population served by the hospital
Public Hospital	A hospital owned and funded by the government
Quaternary Care	Highly specialized services, more specialized and rarer than tertiary care
SDOH	Social Determinants of Health
Service Line	The organization of hospital resources around service to a particular patient set or need
Teaching Hospital	A hospital affiliated with a medical school with substantial use of GME
Tertiary Care	Highly specialized care
Uncompensated Care Costs (UCC)	Care provided that is not reimbursed

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