Assessing Hospital Efficiency: Considerations for States Seeking to Reduce Health Care Costs

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REPORT | June 2025

Peterson-Milbank
Program for Sustainable
Health Care Costs

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Bailit Health would like to acknowledge support from the Massachusetts Employer Coalition on Health for research that contributed to this report.

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EXECUTIVE SUMMARY

High and rising hospital spending is a primary contributor to unsustainable commercial market spending growth. As more state policymakers and employer purchasers recognize these trends, they are looking for ways to assess hospital efficiency, that is, how effectively a hospital is using available resources to deliver patient care. These assessments can help determine when hospitals can reduce expenses and/or when payers can reduce negotiated hospital prices, without compromising quality or patient safety. Policies and contracts informed by these assessments can reduce excess commercial market hospital spending, resulting in more affordable, high-quality care for both employers and consumers.

This brief provides an overview of existing state, federal, and private sector hospital efficiency measures; the advantages and limitations of those measures; potential modifications to existing measures; and options for how states can employ new or existing measures to better understand current hospital efficiency levels and incentivize improved efficiency. It focuses on measures that primarily use publicly available or state-accessible data and organizes them into three main domains: (1) Delivery of Wasteful Hospital Services; (2) Hospital Revenue per Unit; and (3) Hospital Expenses.

We conclude that although no existing hospital efficiency measure or measurement domain is comprehensive, hospital efficiency measurement is still a worthwhile pursuit for states and other entities concerned with commercial market affordability. The Hospital Revenue per Unit domain is particularly promising; this domain includes multiple viable measures from which states can select or choose to combine.

To support states interested in implementing or developing hospital efficiency measures, we propose principles and parameters for hospital efficiency measurement:

- Incorporating quality metrics in addition to financial metrics
- Measuring performance over time
- Grouping hospitals by type (e.g., tertiary care centers, critical access hospitals) when comparing relative efficiency
- Balancing comprehensiveness with complexity if developing composite measures
- Focusing measurement on efficiency relative to peer hospitals rather than attempting to develop an absolute definition of efficiency

We also offer policy options for states to employ selected efficiency measures based on their health care environment and policy goals:

- Public reporting of individual hospital performance on efficiency measures, in conjunction with standardized public reporting of hospital expenses
- Requiring a hospital to enter into an "efficiency improvement plan" if the hospital performs poorly on the selected efficiency measure(s)
- Developing new hospital payment models that incentivize efficient operations
- Requiring "efficiency adjustments" to commercial insurers' hospital contracts based on performance on selected efficiency measures
- Encouraging commercial insurers to adopt plan designs that promote more efficient spending
- Supporting individual or cross-hospital activities to streamline internal hospital operations

The Appendix describes how each example measure or set of metrics is calculated and applied, and identifies advantages and limitations of each measure.

INTRODUCTION

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High and rising hospital spending is a primary contributor to unsustainable commercial market spending growth. As more state policymakers and employer purchasers recognize these trends, they are looking for ways to assess hospital efficiency, that is, how effectively a hospital is using available resources to deliver patient care. These assessments can help determine when hospitals can reduce expenses and/or when payers can reduce negotiated hospital prices, without compromising quality or patient safety. Policies and contracts informed by these assessments can reduce excess commercial market hospital spending, resulting in more affordable, high-quality care for both employers and consumers.

While efficiency-related research to date has largely focused on areas such as identifying health system administrative waste and strategies to reduce wasteful spending,[1-3] few studies have focused specifically on hospital efficiency measures and how to employ such measures to identify efficient and inefficient providers and use state policy levers to improve efficiency. To identify ways that states can evaluate hospital efficiency, this report first provides a landscape overview of existing state, federal, and private sector hospital efficiency measures, focusing on measures that use publicly available or state-accessible data.* These measures are organized into three main domains: (1) Delivery of Wasteful Hospital Services; (2) Hospital Revenue per Unit; and (3) Hospital Expenses. As described under each domain, current measures are narrow in their scope (i.e., none provide a comprehensive view of efficiency), and state efforts to evaluate hospital efficiency and implement policies to improve efficiency are also limited.

Despite certain drawbacks to existing efficiency measures and corresponding policy applications, the importance of hospital spending as a cost driver—and the pace at which it is growing—indicates that measuring hospital efficiency and seeking strategies to improve it remain an important undertaking for states and other entities concerned with commercial market affordability.

SUMMARY OF RESEARCH FINDINGS

Our literature review and key informant interviews identified three domains of hospital efficiency measures:

1. Delivery of Wasteful Hospital Services. Measures of wasteful hospital services can identify when hospitals are providing care that is, by definition, inefficient. This domain includes low-value care and potentially avoidable care. Low-value care is the provision of a service that has little or no clinical benefit or care in which the risk of harm from the service outweighs its potential benefit.[4] Potentially avoidable care refers to services that could have been avoided, prevented, or are otherwise unnecessary, such as potentially preventable hospitalizations, unplanned readmissions, avoidable emergency department (ED) visits, or additional care resulting from a medical error.[5-9] This type of care typically could have been avoided with better care coordination, improved chronic condition management,

*Because this brief focuses on measures that use publicly available data, we do not include measures that examine or evaluate opportunities for internal hospital process improvements, such as measures of patient flow (e.g., examining hospitals' internal variation in planned or elective care utilization) or patient throughput (e.g., appropriate and timely discharges to subacute care facilities or providers). Private firms work with hospitals on such internal process improvements and other topics such as improving performance on measures of potentially avoidable care, managing expenses, improving operational efficiency, and increasing revenue; this work is often supported by proprietary datasets.

and/or preventive measures.[10] States that take policy action to create new incentives or requirements using measures in this category could create new or strengthened hospital incentives to reduce low-value care and potentially avoidable utilization—for example, through adjustments to hospital payment models or the introduction of corrective action plans for hospitals with high rates of low-value services. These actions have the potential to reduce health care spending while improving or having no impact on health outcomes.

2. Hospital Revenue per Unit. Measures that assess and compare hospital revenue per unit of care can identify overpayment or excessive payments relative to the value of the services provided.* For example, hospitals that have higher negotiated commercial prices than their peers for similar services, but comparable outcomes, could be receiving excessive payments. Although existing revenue-based measures of price primarily include Medicare or all-payer revenue, adapting measures to focus on commercial payer revenue could highlight opportunities to reduce excessive commercial market spending. States that take policy action to create new incentives or requirements using measures in this category could change hospital incentives to maximize revenue per unit—for example, by measuring and publishing data regarding variation in hospital commercial prices, or by instituting price caps or price growth caps—with the potential for major impacts on commercial affordability. Because hospital commercial revenue is directly tied to prices paid for health care services by commercial plans (and the premiums paid by employers and plan members), these measures can inform policy and/or spur regulatory action that most directly impacts health insurance affordability.

3. Hospital Expenses. Finally, measures that examine and compare hospital expenses can assess variation in the resources used to deliver care (comparative production efficiency), with the goal of identifying hospitals with unnecessarily high clinical and/or administrative costs. For example, identifying hospitals with high expenses for equivalent services and patient outcomes compared to their peers could highlight opportunities to improve the efficiency of internal hospital operations. Understanding variation in hospital expenses can also help policymakers and payers understand the extent to which low margins may reflect inflated spending rather than inadequate revenue. States could harness this data to support policy action, such as corrective action plans for hospitals with high expenses, or through payment adjustments to encourage operational improvement and cost reduction. This domain includes measures of hospital expenses overall as well as administrative spending and administrative waste (i.e., hospital costs not directly associated with treating patients).

Although a range of state and federally constructed measures exist, these current measures are narrow in their scope and application, described in further detail in the following sections.

1. Delivery of Wasteful Hospital Services

Wasteful hospital services—care that provides no benefit to patients, could be avoided, or is provided in settings or in ways that are more expensive than necessary—is, by definition, inefficient. This domain focuses on two types of wasteful services: low-value care and potentially avoidable care. Additional types of wasteful care, such as care delivered in a higher-cost setting than necessary and instances when patients receive more expensive services than needed to achieve the same clinical outcome, were outside the scope of this project.

*In this report, "revenue" refers to all payments the hospital receives from payers or patients for delivering health care services; for some example measures, it also includes other sources of revenue, such as grants, parking, cafeteria, donations, and investments. "Price" refers to the contractual rates that commercial insurers and other payers pay to hospitals.

Low-value care is the provision of a service that has little or no clinical benefit or care in which the risk of harm from the service outweighs its potential benefit.[11] Such care can occur due to inefficient or unnecessary procedures, patient requests, or resource limitations, among other factors. Relatedly, potentially avoidable care refers to services that could have been avoided, prevented, or are otherwise unnecessary, such as potentially preventable hospitalizations, unplanned readmissions, avoidable emergency department (ED) visits, or additional care resulting from a medical error.[12-16] This type of care typically could have been avoided with better care coordination, improved chronic condition management, and/or preventive measures. Analyses of low-value care and potentially avoidable care can highlight areas to target to reduce unnecessary utilization of care and, in turn, excessive medical spending.

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Low-value care

Academics and other researchers have developed various methods of identifying and measuring low-value care. Examples of existing measures[†] include:

- **Lown Institute Hospital Index.** This index ranks hospitals on a composite grade for "social responsibility" based on performance in the areas of value, outcomes, and equity.[17] The "value" domain, weighted at 30% of the overall index, includes components for "cost efficiency" (see Hospital Revenue per Unit domain later in this report) and "avoiding overuse" (weighted 60% and 40%, respectively). To measure rates of overuse, the Lown Institute has developed a list of 12 low-value services and procedures, specifying circumstances that meet the criteria for overuse for the purpose of rating hospitals on the overuse of low-value care (e.g., arthroscopic knee surgery for osteoarthritis excluding patients with meniscal tears).[18]
- **Medicare Payment Advisory Commission (MedPAC).** MedPAC has identified 31 hospital outpatient tests and procedures as low-value care indicators, which MedPAC classifies into six clinical categories: cancer screening, diagnostic and preventive testing, preoperative testing, imaging, cardiovascular testing and procedures, and other low-value surgical procedures.[19] MedPAC uses these measures to annually analyze rates of low-value care for Medicare beneficiaries and associated spending.
- **Choosing Wisely.** The Choosing Wisely campaign, an initiative of the American Board of Internal Medicine Foundation in effect from 2012 to 2023, was designed to promote conversations between clinicians and patients about which tests, treatments, and procedures are needed and which are not.[22] The campaign partnered with physician societies to generate clinical recommendations that discouraged the use of unnecessary, low-value care, producing more than 600 recommendations for ways to reduce overused services and align medical care with clinical value.[23]

Table 1 (see Appendix) provides a summary of existing measures of low-value care.

[†]See Appendix for a summary and evaluation of existing measures.

State efforts to measure and increase transparency about low-value care have also been growing. For example, to assess opportunities to reduce excessive spending, the Massachusetts Health Policy Commission (HPC) has examined trends in low-value care for years, including a recent analysis that found significant commercial market spending in 2022 for 17 low-value services provided to Massachusetts residents in the categories of screenings, preoperative tests, procedures, imaging, and prescriptions.[24] The HPC analysis examined rates of low-value care and spending by provider organization to understand the variation in care and associated spending in the commercial population. In addition, states such as Colorado, Maine, Virginia, and Washington have used all-payer claims databases to track spending on potentially wasteful services.[25]

Limitations of using measures in this category, particularly if considered alone to assess efficiency, are twofold:

1. The utility of a clinical service can depend on the context in which the service is provided, and administrative data typically lacks clinical detail and nuance.

2. Federal and state policy interventions that have focused on reducing or eliminating low-value care through education or financial incentives have had little success in meaningfully reducing the use of low-value care.[26] Reducing low-value care requires changing provider decisions about the type of care they provide or recommend—and these changes are difficult to achieve through policy.

Key informant interviewees also acknowledged that a very limited number of services would be considered low-value care that is never appropriate. They advised that if included in an efficiency metric, the focus should be on care that is always inappropriate or wasteful, which limits the selection of these measures. Interviewees further noted that these services provide a narrow perspective on efficiency overall and represent a small portion of all excessive spending on unnecessary care.

Potentially avoidable care

State and federal policymakers have incorporated measures of potentially avoidable care as part of efforts to assess hospital efficiency. Examples of existing measures include:

- **CMS.** The AHEAD Model seeks to incentivize lower hospital potentially avoidable utilization (PAU), defined as potentially avoidable hospital and ED care, for participating hospitals. The Medicare FFS hospital global budget methodology for the AHEAD Model applies a downward "effectiveness adjustment" to a hospital global budget based on a participant hospital's Medicare FFS PAU performance relative to all other eligible hospitals in the state, including performance on readmissions, avoidable admissions, and avoidable ED visits, as well as low-value care, as described earlier.[27]
- **Mathematica Policy Research.** Mathematica has developed a dashboard that provides data for more than 3,500 hospitals in the United States on the percentage of Medicare revenue from three PAU metrics in ED and inpatient care settings. The dashboard provides information by state and shows individual hospitals' PAU rates in comparison to the median PAU rates for all hospitals in the state.[28]

- **Maryland.** As part of its hospital global budget rate setting, Maryland's Health Services Cost Review Commission (HSCRC) assesses PAU for its savings adjustment using the rate of hospital readmission and quality measures that evaluate the rate of admissions that might have been avoided through access to high-quality outpatient care.[29] The savings adjustment redistributes global budget revenue to hospitals based on prior-year performance on PAU, raising revenue to hospitals with better performance while reducing revenue to hospitals with poorer performance.
- **Massachusetts.** The HPC has assessed potentially avoidable ED visits as a metric of health system efficiency and quality, citing wide variation across hospitals.[30-32] In addition, the Massachusetts Center for Health Information and Analysis publicly reports hospital-specific readmission rates, which similarly show wide variation in performance.[33]

Table 1 (see Appendix) provides a summary of existing measures of potentially avoidable care.

Comparing and publishing potentially avoidable care performance across hospitals can help incentivize hospitals to implement interventions that reduce unnecessary or avoidable care, thereby lowering spending while improving health outcomes.

There are limitations to measures in this category, particularly if considered alone to assess efficiency:

- Certain factors beyond hospitals' control can significantly influence potentially avoidable care, such as inadequate access to primary care services, poor outpatient management of chronic conditions, and lack of availability of appropriate postacute care.
- Similar to efforts to reduce low-value care, federal and state policies have not resulted in meaningful reductions of potentially avoidable care.[34] For example, Medicare's program to reduce hospital readmissions through penalties has had limited effect.[35]
- Certain factors beyond hospitals' control can significantly influence potentially avoidable care, such as inadequate access to primary care services, poor outpatient management of chronic conditions, and lack of availability of appropriate postacute care.

Key informant interviewees reinforced the point that Medicare has faced challenges in accurately measuring potentially avoidable care and implementing effective programs to reduce potentially avoidable care. Some interviewees also advised against focusing on this measurement domain, reiterating the challenge of determining when potentially avoidable care is linked to hospital provider actions and when it's tied to factors outside of the hospital's control (e.g., the actions of non-hospital-employed primary care providers, availability of appropriate postacute care settings, or availability of supportive community-based services to help address health-related social needs). Further, some types of potentially avoidable care, such as readmissions, may be due to factors such as older demographics and higher rates of comorbidities, rather than poor-quality care. Interviewees further noted that potentially avoidable care measures provide a narrow perspective on efficiency, consistent with their feedback on low-value care, and advised that if included in an efficiency metric, potentially avoidable care should be combined with other quality measures.

2. Hospital Revenue per Unit

Measures that assess hospital revenue per unit (e.g., revenue per admission, per case, per service delivered)‡ or revenue compared with expenses (e.g., payment-to-cost ratios) can help to identify hospitals with excessive revenue.[36-37] These measures focus on actual payments received from private or governmental payers, patients, nonpayer government sources (e.g., supplemental funding, research grants), and other sources. Incorporating a complementary quality assessment using one or more quality measures can help identify whether payments are excessive relative to quality outcomes (i.e., high cost/low quality), or whether a hospital is providing more cost-efficient care (i.e., low cost/high quality).

State policymakers and researchers have examined measures of revenue per unit as part of efforts to assess hospital efficiency. Examples of existing measures include:

- **Lown Institute Hospitals Index.** This index, as described in the Delivery of Wasteful Hospital Services domain, includes a "cost efficiency" component that measures the clinical outcomes hospitals achieve, indicated by mortality rates, over the Medicare fee-for-service (FFS) payments for hospitalizations using 30-day and 90-day episodes (i.e., using all claims within 30 or 90 days from the admission date).[38] Hospitals with the lowest mortality rates and the lowest payments received the highest scores in cost efficiency, and hospitals with high mortality rates and high payment levels received the lowest scores.
- **RAND Corporation.** RAND's Hospital Price Transparency Study uses voluntarily contributed claims data from state all-payer claims databases, commercial insurers, and self-insured employers to study commercial payments to hospitals.[39] The study produces two major outputs that measure different aspects of revenue per unit: standardized price and relative price.
    - Standardized price represents the average commercial paid amount for a "standardized unit of service." This means that each inpatient visit or outpatient service is weighted and adjusted for complexity and resource intensity. Standardized price allows for comparison across hospitals, including when hospitals provide different services or treat more complex cases.§
    - Relative price represents the ratio of actual commercial payments compared to simulated Medicare payments for the same services at the same hospital, expressed as a percentage of the Medicare payment amounts. Relative prices reflect Medicare's underlying hospital payment methodologies for hospitals, including any adjustments. For hospitals paid under Medicare's Inpatient and Outpatient Prospective Payment Systems (IPPS and OPPS), this includes adjustments for wages, inflation, case mix, and hospital characteristics (e.g., teaching hospital status, disproportionate share hospital and uncompensated care payments), among others.
    - Both of these measures allow for cross-hospital comparison of commercial revenue, either per unit (standardized price) or in comparison to Medicare payments (relative price).

‡To assess hospital revenue per unit, academics and researchers use adjustments to make payments and units of service comparable. Case Mix Adjusted Discharges (CMAD) apply a Case Mix Index to inpatient admissions to account for complexity of services delivered; Equivalent Case Mix Adjusted Discharges (ECMAD) measure overall inpatient and outpatient service volume and allow for comparison across hospitals that provide different proportions of inpatient and outpatient services, also incorporating a case mix index adjustment.

§ Because RAND uses different relative weights for inpatient standard units of service (MS-DRG weights), inpatient and outpatient standardized prices cannot be combined or compared. In addition, standardized price cannot be compared across RAND study rounds or over time because it is not standardized for inflation. Hospital coding of MS-DRGs and Ambulatory Payment Classifications can also be vulnerable to upcoding practices.

- **Colorado.** The state's Colorado Option (public option) program seeks to reward efficient hospitals by raising potential negotiated hospital-insurer prices for hospitals whose all-payer net patient revenues, operating costs, and net incomes indicate efficient operations compared to state averages; this includes raising potential negotiated prices for hospitals with all-payer net patient revenue per adjusted discharge below the state average.[40]

States have also compared hospital Medicare revenue to Medicare-specific hospital expenses—based on hospital costs reported on the Medicare Cost Report, an annual form completed by all hospitals and other institutional providers who participate in the Medicare program, described in more detail in the following section—to assess efficiency.

- **Washington and Vermont.** Consultants to the Washington Health Care Authority and the Vermont Green Mountain Care Board examined hospital Medicare payment-to-cost ratios as part of both states' efforts to assess hospital efficiency.[41-44] These analyses, when applied across multiple hospitals, provide a comparative framework to evaluate relative efficiency.

Table 2 (see Appendix) provides a summary of existing measures within this domain.

As shown in these examples, states have typically used comparisons to the statewide average or median to reflect relative efficiency or assess appropriateness of payment levels. While only the Lown Institute cost efficiency metric includes a quality component (i.e., mortality rates), measures can be adapted to include a broader set of quality measures, including measures of patient experience, so that quality performance is considered in an efficiency measure.

There are some drawbacks to the existing measures in this category:

- Even adjusted for complexity or case mix, hospital revenue per service may vary for legitimate reasons. For example, Medicare's IPPS includes adjustments for local wages and quality performance, as well as outlier payments to cover the cost of care for cases where it significantly exceeds Medicare's standard payments, among other adjustments and supplemental payments.
- Methodologies that include Medicare payments but not commercial payments (Lown Institute; Medicare payment-to-charge analyses performed for Washington Health Care Authority and Vermont Green Mountain Care Board) likely underestimate the payment levels of some patient episodes. In addition, price variation cannot be examined as part of a Medicare-based payment metric because, for example, a hospital may be deemed highly efficient based on Medicare payments and select outcomes, but could still charge high prices for non-Medicare patients. These limitations could be addressed by modifying measures such as the Lown cost efficiency metric to include payments and quality metrics from commercial insurers, which would require utilizing state-level claims data, noting that state all-payer claims databases are not inclusive of all commercial payments.
- Although measures of hospital revenue per unit could help to identify excessive payments, they may not encourage hospitals to improve internal operational efficiency or reduce unnecessary administrative expenses.

Key informant interviewee feedback regarding use of measures of revenue per unit as a measure of efficiency was generally positive. Interviewees noted that an advantage of revenue measures is that they are not vulnerable to inflated hospital cost structures (see Hospital Expenses domain later in this report). In addition, employing revenue measures that focus on all-payer or commercial payments could have a direct impact on prices paid for health care services and consequently on health insurance premiums and affordability. Interviewees also emphasized the reliability of payment data in comparison to input cost data.

Key informant interviewees emphasized that integration of quality or outcome measures is a critical component to any potential composite measure or index, whether revenue- or expense-based. However, interviewees cautioned that quality measures, including mortality, are vulnerable to coding efforts to the extent that such measures are risk-adjusted.[45]

3. Hospital Expenses

Measures that examine hospital clinical and/or administrative expenses seek to identify inflated hospital cost structures and variation in the resources spent to deliver care, known as production efficiency. This domain includes measures of hospital expenses or costs per case, per service delivered, or per quality outcome(s). Measures of administrative spending and administrative waste, described in further detail later in the report, are also included in measures of hospital expenses.

Many measures of hospital expenses utilize cost accounting to identify costs (expenses) attributable to a particular activity or patient population. Most rely on Medicare Cost Reports, submitted annually by hospitals and other institutional providers that participate in Medicare. Medicare is the only payer that requires standardized cost reporting from providers. Although Medicare Cost Reports are a valuable source of standardized national cost report data, there are limitations to this data source as described in the following pages.

Inflated hospital cost structures, which can include clinical and/or administrative costs, can occur when hospitals do not effectively manage their resources, or when hospitals with excess revenue invest that revenue in ways that result in higher expenses. For example, hospitals might invest in new technology that is expensive to run, increase staff salaries, purchase physician practices, fund community programs to improve health, or hire clinicians for salaries that exceed the fees they generate. While some investments may be desirable from a patient care perspective or community benefit perspective (e.g., investments in community programs to improve health), others might not improve value for patients relative to their cost (e.g., higher clinician salaries).

Understanding hospital expenses is a critical component of evaluating hospital efficiency. Measures of hospital expenses allow policymakers and stakeholders to compare expenses across hospitals, assess how effectively hospitals utilize resources to deliver services, and identify opportunities for improved resource management. If states can better evaluate when hospitals have excessive expenses that can be addressed through improved production efficiency, this can help state policymakers (a) evaluate hospital requests for legislative appropriations and other onetime relief funds to bolster flagging finances,[46-47] and (b) assess the validity of hospital claims that policies intended to curb rising commercial market prices will be financially unmanageable.

Overall Hospital Expenses

Measures of hospital expenses generally include all of the costs associated with hospital operations—including the cost of providing patient care (e.g., clinician salaries, supplies, and property, plant, and equipment) and administrative expenses.

Academics and other researchers have developed measures that examine expenses across hospitals, including both clinical and administrative expenses:

- **Medicare Payment Advisory Commission (MedPAC).** MedPAC has developed a methodology to identify a cohort of "relatively efficient" hospitals based on whether the hospitals met certain cost and quality criteria in each of the three prior years.[48] Such criteria include standardized Medicare cost per unit for inpatient stays and outpatient services, risk-adjusted mortality rates, risk-adjusted readmission rates, and patient care satisfaction. MedPAC examines median Medicare margin for those hospitals identified as "relatively efficient" to help determine whether FFS Medicare's payments are adequate to cover the costs of providing efficient hospital care.
- **Maryland.** In addition to measuring hospital revenue per unit (see the Hospital Revenue per Unit domain), Maryland's HSCRC uses cost per case as a part of its hospital global budget rate-setting process. Cost per case represents the average cost incurred by a health care provider to deliver care for a single patient encounter or episode of care. The HSCRC uses this measure to compare regulated hospitals' cost per case with the average cost per case of a set peer group.[49] Maryland also evaluates each hospital's all-payer adjusted revenue per equivalent case mix adjusted discharges (ECMAD; see note ‡ on page 11), which calculates hospitals' revenue per ECMAD "adjusted for social goods (e.g. medical education costs) and for costs that take into consideration factors beyond a hospital's control (e.g. labor market areas as well as markup on costs to cover uncompensated care and payer differential)." The HSCRC compares regulated hospitals' adjusted revenue per ECMAD with the average adjusted revenue per ECMAD of a set peer group.[50] Note that under Maryland's rate setting–based hospital global budget model, hospitals' annual global budget revenue is determined in part on the basis of cost. These policies are complemented by a quality measure set against which hospitals are measured and performance compared; calculation of efficiency adjustments to global budget revenue include a reflection of quality performance, such that hospitals with high quality scores can avoid being penalized for higher cost per case.
- **Colorado.** In addition to measuring net patient revenue (NPR) per adjusted discharge for use in setting Colorado Option hospital-specific payment cap levels, as described in the prior section, Colorado also considers the average cost incurred by each hospital to treat a patient, including inpatient discharges and equivalent outpatient services.

Table 3 (see Appendix) provides a summary of existing measures of hospital expenses.

By enabling comparisons across hospitals, these metrics can highlight variation in expenses among hospitals with similar quality outcome performance. By focusing on hospital expenses in particular and publicly reporting on variation, or otherwise instituting new incentives or requirements for improvement, states could encourage hospitals to improve the efficiency of their internal operations. Including a quality outcome component is important to ensure that lower costs are not coming at the expense of quality or patient outcomes.

Limitations to measures in this category include the following:

- Medicare Cost Reports have several weaknesses: (1) Submissions are not audited or completed according to U.S. Generally Accepted Accounting Principles (GAAP), which means that reporting methodologies are not fully consistent across hospitals and therefore comparisons across facilities can be misleading; (2) cost reporting is done at the facility level, not the health system level, so may not accurately represent costs that are shared across a hospital and other system-owned entities; (3) there is significant data lag of up to two years. Allocation of health system–level costs to owned hospitals is a particularly concerning limitation because of increasing trends toward hospital consolidation; depending on health system corporate structures, costs that are borne by the parent corporation may or may not be represented on individual facility Medicare Cost Reports. The finances of hospital-owned practices are also not consistently represented.
- There is currently no nationally standardized reporting of costs associated with health care services for non-Medicare payers; some states, including California, require hospitals to submit state-defined financial reports that include costs or expenses. Accurately measuring hospital expenses by cost center is challenging and requires significant administrative effort for hospitals; for some hospitals, more granular cost accounting would require significant changes to financial and accounting systems. Additionally, nuances in cost structures often cannot be fully addressed through risk adjustment alone.
- There is no consensus benchmark for appropriate or ideal hospital expense levels.
- As with hospital revenue per unit, hospitals' costs to provide care can vary for legitimate reasons. These could include the medical or social complexity of the hospital's patient population; higher-than-average local wages for health care workers or nonclinical staff; or higher-than-average local costs for land, property, or facilities. (Note that Medicare's Inpatient and Outpatient Prospective Payment Systems [IPPS and OPPS] adjust for these and some other factors that are likely to influence hospitals' cost to provide care.) Health care systems with multiple hospitals may be able to achieve economies of scale by sharing clinical and administrative staff and other expenses, while independent hospitals are less likely to do so.
- Use of measures in the Hospital Expenses domain to measure hospital efficiency may not directly support states in achieving their affordability goals because the relationship between hospital revenue and hospital expenses is not consistent or clear. Because reductions in hospital expenses may not result in lower payments to hospitals, they might not lead to more affordable care for consumers, employers, or society at large. Although reductions in hospital expenses are not guaranteed to lead to lower payments, they could, given that hospitals often justify high prices with high expenses.

Key informant interviewees agreed that further research is needed to understand variation in hospital expenses. Nevertheless, multiple interviewees believed at least some hospital expenses were higher than necessary at most hospitals and that internal hospital efforts to address production inefficiencies could result in decreased expenses. One interviewee proposed that hospitals could decrease the cost of providing care by eliminating variation in planned or elective utilization, with the goal of eliminating variation in daily resource use. In addition, interviewees emphasized data challenges associated with accurately measuring hospital expenses by cost center and identifying a desired hospital expense or input cost level. Interviewees also stressed the importance of including a quality component in any efficiency measure based on expenses to avoid inadvertently rewarding hospitals that cut costs at the expense of quality or patient access.

Hospital Administrative Expenses

Administrative expenses in hospitals represent a significant component of overall hospital expenses, with wide variation across institutions based on size, complexity, and function.

Administrative expenses refer to hospital costs not directly associated with treating patients, such as salaries for nonclinical staff and administrators, financial transactions and management (including coding, billing, and other system infrastructure), nonclinical property and plant costs (including owning or leasing nonclinical office space), and other corporate functions such as marketing, record maintenance, and legal services. Administrative expenses in hospitals represent a significant component of overall hospital expenses, with wide variation across institutions based on size, complexity, and function. They also vary based on factors like wages for nonclinical staff. Most published research on administrative spending has explored why such spending is high in the United States[52,53] and identified components of spending that may be wasteful.[54]

Some state agencies and independent researchers have also examined hospital administrative expenses to identify trends and opportunities for improving efficiency:

- **Massachusetts.** The HPC used Medicare Cost Reports to analyze hospital administrative spending across six broad categories: central services and general administration, medical records, employee benefits, capital, maintenance, and nursing administration.[55] The analysis found that while administrative spending increased substantially from 2011 to 2021, the percentage of net patient service revenue spent on administration remained fairly consistent over that time period. The analysis also found that administrative spending varied significantly by hospital type, with spending per discharge equivalent twice as high in academic medical centers as in high public payer community hospitals. These results could be impacted by the additional costs associated with operating teaching programs, as well as how systems with multiple hospitals allocate shared administrative resources between the cost reports for individual hospitals in the system.
- **New Mexico.** The New Mexico Legislative Council Service commissioned a study of methods to reduce administrative costs in the state's health care system. The study found, using Medicare Cost Report data, that the proportion of total costs spent on health care administration was consistently higher in New Mexico compared to the rest of the country.56 The study further found that specific types of New Mexico hospitals, including government-owned hospitals, had significantly higher administrative costs proportional to their total costs.
- **Vermont.** The Vermont Green Mountain Care Board's review of hospitals' fiscal year 2025 budgets included analysis of two measures intended to assess hospital efficiency and the appropriateness of administrative expenses: the ratio of administrative and general salaries to clinical salaries; and the ratio of clinical to nonclinical employees.[57]
- **Rhode Island.** In 2024, the Rhode Island Business Group on Health examined hospital overhead costs as a percentage of overall spending and advocated for benchmarking hospital performance to improve efficiency.[58]

Table 3 (see Appendix) provides a summary of existing measures of hospital expenses.

Although there is conceptual appeal to identifying excessive or wasteful administrative spending, significant measurement challenges are associated with metrics of administrative expense:

- Although medical loss ratio is a widely used measure of health plan administrative spending, there is no similar publicly reported and regulated measure for hospitals, and no widely accepted benchmark for appropriate hospital administrative spending exists (e.g., a reasonable ratio of hospital administrative expenses compared with patient care expenses). In our interviews and expert consultations, key informants emphasized that any such measure would need to reflect the different administrative needs of different hospital types, sizes, and corporate structures. Yet, detailed breakdowns of general administrative spending components are not captured in Medicare Cost Reports.
- As described earlier, Medicare Cost Reports and other cost allocation methodologies are not standardized in their handling of system-owned facilities where some functions and costs (often administrative functions) are shared across hospitals and sometimes across legal and corporate entities. This makes cost allocation methodologies vulnerable to gaming.
- Distinguishing wasteful administrative spending versus administrative spending that is necessary or that could increase efficiency (e.g., internal quality or process improvement; nonclinical staff who work to connect patients with social services) is challenging.
- These measures are subject to gaming and manipulation by hospitals that might, for example, seek to classify more administrative expenses as supporting clinical care.

Key informant interviewees emphasized the challenges and limitations associated with measuring the efficiency and appropriateness of hospital administrative expenses. Interviewees stated that some administrative expenses are necessary for hospitals to function effectively and can improve efficiency and/or quality. They offered examples of how measures of administrative spending could produce negative unintended consequences—for example, discouraging administrative spending that supports efficient operation—and highlighted concerns related to gaming described earlier. One interviewee suggested comparing hospital administrative costs (sourced from administrative cost centers included in hospitals' Medicare Cost Reports) with regional or national peer group medians, rather than comparing administrative spending to a static benchmark. Overall, the interviewees largely recommended against pursuing measures of hospital administrative expense, stressing the lack of an established benchmark for acceptable hospital administrative costs and the impracticality of distinguishing between beneficial and wasteful hospital administrative spending.

DISCUSSION AND RECOMMENDATIONS FOR MEASURING HOSPITAL EFFICIENCY

Based on the results of the literature review and key informant interviews, we recommend that states interested in developing a construct for measuring hospital efficiency begin with pursuing measures within the Hospital Revenue per Unit domain.

Based on the results of the literature review and key informant interviews, we recommend that states interested in developing a construct for measuring hospital efficiency begin with pursuing measures within the Hospital Revenue per Unit domain. The Hospital Revenue per Unit domain includes multiple viable measures from which states can select or choose to combine. Further, this domain has the most direct connection with affordability in terms of health care prices and consumer costs, was widely supported by our key informant interviewees, and effectively links to state policy levers, as described in the following section.

Though the Hospital Expenses domain has fewer publicly reported, detailed, and reliable measures that states could utilize immediately, understanding how cost structures and expenses for care delivery vary across hospitals remains critically important due to wide recognition among key informant interviewees that most hospitals do not currently operate efficiently. We recommend that states pursue measurement and comparison of hospital expenses as they have or develop the capacity and expertise (e.g., taking advantage of standardized hospital financial reporting where it is required by the state), in addition to revenue-based measurement of relative hospital efficiency. We hope that the availability of research-supported hospital expense measures will grow as state and private sector interest and experience in measuring hospital efficiency expands.

We do not recommend that states prioritize measurement in the Delivery of Wasteful Hospital Care domain, given that, to date, most federal and state policy interventions aimed at reducing the provision of wasteful care have not resulted in meaningful reductions of such care and associated reductions in wasteful spending. In addition, these measures provide a very limited perspective on efficiency and should therefore not be considered alone to assess efficiency. States that wish to target reducing wasteful care as part of overall efficiency improvements might consider including some wasteful care measures within a broader framework to assess efficiency; for example, states could use financial measures from the Hospital Revenue per Unit domain in conjunction with a set of quality metrics that includes measures of wasteful care.

As states pursue action to measure and improve hospital efficiency, we also recommend the following principles and parameters:

- **Incorporate financial and quality metrics.** Many of the key informant interviewees and experts with whom we consulted emphasized that measuring efficiency solely on the basis of one of these two dimensions would not offer a complete picture; interviewees were nearly unanimous regarding the need to include a quality or outcomes component in measuring efficiency. For the quality metric component, we recommend including patient outcomes and one or more measures of patient care experience (e.g., Hospital Consumer Assessment of Healthcare Providers and Systems [HCAHPS] survey), in addition to other quality indicators. Recognizing that quality measures that directly incorporate a proportional adjustment on the basis of a case mix index or a risk score are vulnerable to gaming due to increasing coding intensity,[59] states should use caution when employing risk-adjusted quality measures. If including risk-adjusted measures, states should also incorporate non-risk-adjusted measures.

- **Measure performance over time and incorporate multiyear measures** to ensure that efficiency measures are evaluating hospitals' longitudinal performance. This will help states to avoid making summary judgments based on one year's findings, which may be influenced by onetime or short-term events.
- **Consider grouping hospitals by type when conducting a relative efficiency analysis.** This approach ensures hospitals are compared to other hospitals in their peer group (tertiary care centers, critical access hospitals, etc.) that are more likely to have similar cost structures. Where in-state peer hospitals do not exist, states should consider comparing hospitals to similar facilities or health systems in other states.
- **For any composite measure, balance comprehensiveness with the level of complexity** and goals of incentivizing improvement in any one subcomponent measure.
- **Develop a measure of relative efficiency** rather than attempting to define absolute efficiency. No clear standard exists to determine absolute hospital efficiency with respect to any of the domains or measures discussed in this brief. A measure of relative efficiency can incorporate scoring and/or group hospitals by scores to identify the highest and lowest performers, keeping in mind that even relatively high performers, according to some experts, have ample room to improve their efficiency.

Options for State Application of Hospital Efficiency Measures to Improve Affordability

States' application of efficiency measures will depend on factors such as state policies implemented to date to assess hospital efficiency, state goals regarding which type(s) of efficiencies to target for improvement, operational complexity and the available state resources, and political feasibility of state action, especially if legislative action is required. Some potential application options include the following:

- **Public reporting of individual hospital performance on efficiency measures, in conjunction with standardized public reporting of hospital expenses.** This option could be a first step for states that currently do not report on any of the efficiency measures described. Understanding relative hospital performance on a broader set of efficiency measures can help inform where to subsequently target the application of specific measures. In addition, state-level standardized public reporting of hospital expenses can be an important transparency tool for understanding hospital expenses and enable more robust analyses comparing hospital expenditures.
- **Requiring a hospital to enter into an "efficiency improvement plan" if a hospital performs poorly on the selected efficiency measure(s).** This strategy could build on public reporting of hospital performance on specific efficiency measures. If a hospital performs poorly in comparison to other hospitals in the state or compared to an external benchmark, the state could partner with the hospital to identify concrete goals to improve efficiency and actions to meet those goals. Financial penalties could be imposed if a hospital fails to implement the improvement plan.
- **Developing new hospital payment models that incentivize efficient operations.** Payment models such as hospital global budgets, capitation, and some bundled payment models can incentivize efficient hospital operations. Under these models, hospitals

receive a set amount—either based on historical revenue, per person, or per episode—and realize savings where they can reduce the cost of providing care. States could sponsor development of such models by convening hospitals and commercial payers; implement such models through Medicaid programs (e.g., through requirements on Medicaid managed care plans); or encourage them through rate review (e.g., by including requirements for plans to increase uptake of certain types of alternative payment models as a condition of approved rates). Note that linking payment incentives to quality, as well as additional monitoring of utilization and quality performance, are critical under payment models that strongly encourage reductions in the amount of care provided.

- **Requiring "efficiency adjustments" to commercial insurers' hospital contracts based on performance on selected efficiency measures.** States could pursue this strategy through insurance regulation. For example, if a state is seeking to better understand and take action to address unwarranted provider price variation, it could employ an efficiency metric to compare hospital commercial market payment levels for inpatient and outpatient services along with a set of quality metrics. Hospitals deemed inefficient (i.e., with the highest revenue levels and lowest quality performance) could then be subject to state action via the state's regulation of insurance forms and contracts or as a condition of approved rates through health insurance rate review (for example, requiring insurers to institute a hospital price growth cap that limits the average annual rates of price increase for inpatient and outpatient services within each fully insured provider contract). States could also consider implementing this type of adjustment in state-developed hospital value-based payment models (e.g., adjustments to hospital global budgets, as CMS plans to do in the AHEAD Model) or through Medicaid programs (e.g., using value-based state-directed payments in Medicaid managed care). Finally, states could also pursue actions to encourage hospital spending on activities that would improve efficiency—for example, by exempting hospitals from efficiency adjustments or other financial penalties if they instead spend funds to make state-approved investments in these areas.

- **Encouraging commercial insurers to adopt plan designs that promote more efficient spending**. Models such as value-based insurance design (VBID), for example, seek to align patients' out-of-pocket costs, such as copayments and deductibles, with the value of health services. By reducing cost sharing for services of high clinical value, while increasing cost sharing for low-value care, VBID can discourage utilization of low-value care.

- **Support individual or cross-hospital activities to streamline internal hospital operations.** States that wish to focus on measures within the Hospital Expenses domain could procure qualified contractors to work directly with hospitals to facilitate process improvement. Hospital buy-in would be critical to the success of such an initiative; however, states must recognize that hospitals may not be willing partners. To increase buy-in, states could partner with hospitals on program design; identify hospital leaders to act as champions of the program among their peers; and implement an application process for hospitals to ensure buy-in among participating institutions.

CONCLUSION

Key informant interviewees agreed that, although difficult to quantify, most hospitals are not highly efficient, and thus efforts to better understand and improve efficiency are a worthwhile endeavor. In addition to the domain-specific challenges identified throughout the brief, states should recognize the overall complexity of measuring hospital efficiency given that (1) hospital efficiency, or lack thereof, can take numerous forms, and thus even broadly formulated composite measures are unlikely to capture all types of efficiency; and (2) publicly available and state-accessible data on hospital efficiency are limited, and developing new measures or ways to collect new information that would inform efficiency measurement (e.g., detailed hospital cost reporting) would require significant state resources.

States pursuing hospital efficiency measurement should also expect significant pushback from hospitals and their associations, which are likely to challenge the validity of selected measures, underlying data, and any transparency or accountability policies built on efficiency metrics. Some may even question whether hospital efficiency needs to or can be improved. States must anticipate this opposition and allocate sufficient resources to address these concerns but should not let anticipated resistance deter them from acting.

Despite these measurement and political hurdles, states should consider pursuing strategies to improve hospital efficiency as part of their overall efforts to tackle unsustainably high and rising commercial market spending. States should prioritize adapting or combining existing measures in the Hospital Revenue per Unit domain to identify excessive payments and pursue corresponding transparency-based or stronger accountability policies. Although existing measures in the Hospital Expenses domain are less developed, states and policy experts should seek to better understand inflated hospital cost structures and the variation in the resources spent to deliver care in order to identify opportunities for lowering expenses through improved operational efficiency.

Policies that incentivize efficiency improvements can support broader state efforts to improve affordability without sacrificing quality of care or patient outcomes. Revenue per unit measures align particularly well with state initiatives to control hospital price growth, while hospital expense measures are increasingly relevant to states evaluating hospital financial health in the context of affordability and access to care. As states pursue policies to strengthen health care affordability in the commercial market and hospitals push back with arguments that such policies could threaten their financial viability, expense-based efficiency measures could also help states better understand whether hospitals are appropriately managing expenses and whether they can take actions to address inflated cost structures.

Whether adapting an existing efficiency measure or integrating multiple domains, hospital efficiency measures can serve as a tool to encourage hospital efficiency improvements, reduce wasteful spending, and improve health care affordability.

METHODOLOGY

Bailit Health reviewed governmental, academic, and other private sector sources regarding hospital efficiency and engaged in key informant interviews to identify and evaluate existing hospital efficiency measures.

Through this research, we surfaced three major domains of efficiency measures: (1) Delivery of Wasteful Hospital Services; (2) Hospital Revenue per Unit; and (3) Hospital Expenses.

For each of these three domains, we identified examples of state and federal policies or private sector organizations that have utilized the measure or a set of metrics to either better understand hospital efficiency or incentivize improved efficiency. Our eight key informant interviews and three email consultations with experts in hospital efficiency further supplemented this research.[60] Six of the eight interviewees provided input on ways to assess hospital efficiency using publicly available information, while two interviewees focused on recommendations for how to improve the efficiency of internal hospital operations.

The Appendix to this brief describes how each example measure or set of metrics is calculated and applied, identifies advantages and limitations of each measure, and includes links to relevant resources for further details. When available, we additionally cite evidence of the measure's impact on improving hospital efficiency. We found such evidence to be limited, however, either because the measure was not specifically designed to incentivize improved efficiency, or because programs using the measure have not been fully implemented or evaluated (e.g., CMS's AHEAD Model).

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APPENDIX: SUMMARY OF EXISTING MEASURES BY EFFICIENCY DOMAIN

Table 1. Existing Measures of Delivery of Wasteful Hospital Services

Measure	Description (Application and Calculation)	Advantages and Limitations	Relevant Resources
Measures of Low-Value Care			
Low-value care Source: Medicare Payment Advisory Commission (MedPAC) Applied by AHEAD Model	MedPAC identifies 31 hospital outpatient tests and procedures as low-value care indicators, classified into six clinical categories: 1. Cancer screening 2. Diagnostic and preventive testing 3. Preoperative testing 4. Imaging 5. Cardiovascular testing and procedures 6. Other low-value surgical procedures MedPAC analyses of low-value care and associated spending use both a broader version (more sensitive, less specific) and narrower version (less sensitive, more specific) of these measures. • Increasing the sensitivity of a measure captures more potentially inappropriate use but is also more likely to misclassify some appropriate use as inappropriate • Increasing a measure's specificity leads to less misclassification of appropriate use as inappropriate at the expense of potentially missing some instances of inappropriate use	Advantages: • Identifies areas where health care resources are being used inefficiently • Encourages adherence to evidence-based guidelines and best practices • Reduces the risk of harm to patients Limitations: • Can depend heavily on patient-specific factors and clinical circumstances that might not be reflected in claims data. • Coding and reporting errors by providers could result in errors in estimates, especially for low-volume hospitals when rates of overuse change year-to-year • MedPAC measures do not capture all low-value care and may misclassify some appropriate use as inappropriate or potentially miss some instances of inappropriate use based on whether the broader or narrower version is used (see Description) • Spending estimates likely understate actual spending on low-value care because they do not include the cost of downstream services (e.g., follow-up tests and procedures) that may result from the initial low-value service	MedPAC. Health care spending and the Medicare program. 2024.

Table 1. Existing Measures of Delivery of Wasteful Hospital Services (continued)

Measure	Description (Application and Calculation)	Advantages and Limitations	Relevant Resources
Low-value care Source: Lown Institute Hospitals Index, 2024 methodology	Lown Institute Hospitals Index includes cost efficiency and avoiding overuse measures (weighted 60% and 40%, respectively) to assess value. The avoiding overuse component includes rates of overuse of 12 low-value services, including: 1. Arthroscopic knee surgery 2. Carotid artery imaging for fainting 3. Carotid endarterectomy 4. Colonoscopy screening for patients 86 and over when repeated within nine years 5. Coronary artery stenting 6. EEG for fainting 7. EEG for headache 8. Head imaging for fainting 9. Inferior vena cava filter (IVC) 10. Renal artery stenting 11. Spinal fusion/laminectomy 12. Vertebroplasty	Advantages: • Identifies areas where health care resources are being used inefficiently • Encourages adherence to evidence-based guidelines and best practices • Reduces the risk of harm to patients • Includes specifications for when the low-value service is deemed to be overuse (e.g., for all patients or when prescribed to patients with certain diagnoses or conditions) Limitations: • Can depend heavily on patient-specific factors and clinical circumstances that might not be reflected in claims data • Coding and reporting errors by providers could result in errors in estimates, especially for low-volume hospitals when rates of overuse change year-to-year • Lown methodology attempts to limit risk of rewarding hospitals for avoiding overuse when they don't have the capacity to perform such a service by including a "capacity assessment," but subject to error at low volumes	Lown Institute. Lown Institute Hospitals Index for Social Responsibility: 2024 methodology. 2024.

Table 1. Existing Measures of Delivery of Wasteful Hospital Services (continued)

Measure	Description (Application and Calculation)	Advantages and Limitations	Relevant Resources
Measures of Potentially Avoidable Care			
Inpatient and observation status readmissions Source: Maryland HSCRC and AHEAD Model	Maryland HSCRC Potentially Avoidable Utilization (PAU) Efficiency Adjustment: • Defines readmission rates as the rate of 30-day all-cause inpatient and observation stay readmissions at each hospital, regardless of where the initial admission occurred AHEAD Model Effectiveness Adjustment: • Defines unplanned readmissions as hospitalizations within 30 days of an initial inpatient stay discharge or outpatient observation visit greater than 23 hours at each hospital • Planned readmissions are defined according to the CMS Hospital-Wide All-Cause Unplanned Readmission (HWR) measure and are not counted as PAU • In cases where the initial admission took place at a hospital different from the subsequent readmission, PAU is counted for the hospital with the initial discharging hospitalization	Advantages: • Standard measure that is widely used Limitations: • Could lead hospitals to avoid admitting patients • May disproportionately impact hospitals serving vulnerable populations • Does not account for factors outside of a hospital's control, such as inadequate access to postacute care services	Maryland Health Services Cost Review Commission. Global budget revenue (GBR) potentially avoidable utilization (PAU) efficiency adjustment. CMS. AHEAD Model Financial Specifications for the CMS-Designed Medicare FFS Hospital Global Budget Methodology Version 3.0. 2025. Massachusetts Center for Health Information and Analysis. Hospital-specific readmissions profiles. 2021.

Table 1. Existing Measures of Delivery of Wasteful Hospital Services (continued)

Measure	Description (Application and Calculation)	Advantages and Limitations	Relevant Resources
Avoidable admissions Source: Agency for Healthcare Research and Quality Prevention Quality Indicators (AHRQ PQI-90) Applied by Maryland HSCRC and AHEAD Model	Maryland HSCRC GBR PAU Efficiency Adjustment and AHEAD Model Effectiveness Adjustment assess the rate of preventable admissions with AHRQ PQI-90 (Overall Composite): PQIs use data from hospital discharges to identify admissions that might have been avoided through access to high-quality outpatient care • Includes the following 10 different types of hospitalizations: ○ PQIs use data from hospital discharges to identify admissions that might have been avoided through access to high-quality outpatient care ○ PQI 01 Diabetes, short-term complications admission rate ○ PQI 03 Diabetes, long-term complications admission rate ○ PQI 05 COPD or asthma in older adults admission rate ○ PQI 07 Hypertension admission rate ○ PQI 08 Heart failure admission rate ○ PQI 11 Bacterial pneumonia admission rate ○ PQI 12 Urinary tract infections admission rate ○ PQI 14 Uncontrolled diabetes admission rate ○ PQI 15 Asthma in younger adults admission rate ○ PQI 16 Lower extremity amputations among patients with diabetes admission rate	Advantages: • Can apply different measures to different kinds of hospitals • Can prioritize certain types of utilization (e.g., hypertension admission) • AHRQ provides free software to assess quality indicators that includes risk adjustment and is updated annually to account for changes in ICD-10-CM coding guidance Limitations: • Requires comprehensive and consistent data collection • Quality assessment may need to be adjusted to additional underlying risk factors (i.e., health status, income)	AHRQ. AHRQ PQI-90 Overall Composite Technical Specifications. Maryland Health Services Cost Review Commission. Global Budget Revenue (GBR) Potentially Avoidable Utilization (PAU) Efficiency Adjustment. CMS. AHEAD Model Financial Specifications for the CMS-Designed Medicare FFS Hospital Global Budget Methodology Version 3.0. 2025.

Table 1. Existing Measures of Delivery of Wasteful Hospital Services (continued)

Measure	Description (Application and Calculation)	Advantages and Limitations	Relevant Resources
Avoidable admissions (pediatric) Source: AHRQ Pediatric Quality Indicators (PDIs) Applied by Maryland HSCRC	Since rate year 2021, the Maryland HSCRC GBR PAU Efficiency Adjustment has assessed the rate of preventable pediatric admissions with AHRQ PDI-90 (Overall Composite): • PDIs focus on potentially preventable complications and preventable hospitalizations for pediatric patients. There are 11 individual indicators and three composite indicators in the measure set; seven are area-level indicators (assessed in the same way as PQIs) and seven are hospital-level indicators. • Includes the following four types of hospitalizations: 1. PDI 14 Asthma admission rate 2. PDI 15 Diabetes short-term complications admission rate 3. PDI 16 Gastroenteritis admission rate 4. PDI 18 Urinary tract infection admission rate	Advantages: • Different measures can be applied to different hospitals and used to prioritize certain types of utilization • Area-level PDIs population based and risk adjusted for age and sex • Hospital-level PDIs risk adjusted for patient characteristics, conditions, or procedures, which vary by indicator Limitations: • Requires comprehensive and consistent data collection • Area-level PDIs may need to be adjusted for additional underlying risk factors (e.g., health status) • Hospital-level PDIs may need to be adjusted for additional social risk factors (e.g., income)	Agency for Healthcare Research and Quality. Pediatric Quality Indicator Measures. 2024. Maryland Health Services Cost Review Commission. Potentially Avoidable Utilization (PAU) Savings Policy.
Avoidable emergency department (ED) visits Source: NCQA Emergency Department Utilization (EDU) measure Applied by the AHEAD Model	• AHEAD Model Effectiveness Adjustment: o ED visits that do not result in an inpatient or observation stay are counted as PAU, as defined by NCQA's EDU measure • Measure excludes ED visits for individuals: o Enrolled in hospice o With more than three (for ages 65 and older) or five (for ages 18-64) ED visits in a year o With principal diagnosis of mental health or chemical dependency o With psychiatric disorders o Receiving electroconvulsive therapy	Advantage: • Can help incentivize appropriate, coordinated primary care or other care alternatives to prevent avoidable ED visits Limitations: • Does not account for factors outside of a hospital's control, such as inadequate access to postacute care services • Variations in coding practices and patient access to non-emergency care can adversely affect the accuracy of the PAU designation or comparisons across hospitals	NCQA. Emergency Department Utilization (ED) Measure. CMS. AHEAD Model Financial Specifications for the CMS-Designed Medicare FFS Hospital Global Budget Methodology Version 3.0. 2025

Table 1. Existing Measures of Delivery of Wasteful Hospital Services (continued)

Measure	Description (Application and Calculation)	Advantages and Limitations	Relevant Resources

Avoidable readmissions
 	
Source: Medicare Hospital Readmissions Reduction Program
	Medicare value-based purchasing program:
	• Encourages hospitals to improve communication and care coordination to better engage patients and caregivers in discharge plans and, in turn, reduce avoidable readmissions
	• Includes the following condition or procedure-specific 30-day risk-standardized unplanned readmission measures:
	  ○ Acute myocardial infarction
	  ○ COPD
	  ○ Heart failure
	  ○ Pneumonia
	  ○ Coronary artery bypass graft surgery
	  ○ Elective primary total hip arthroplasty and/or total knee arthroplasty
	• CMS calculates the payment reduction and component results for each hospital based on its performance during a rolling performance period; payment reduction capped at 3%
		Advantage:
		• Encourages hospitals to focus on discharge planning
		
		Limitations:
		• Patient population can affect outcomes significantly
		• May incentivize hospitals to prematurely discharge patients
			CMS. Hospital Readmissions Reduction Program (HRRP). 2024.

Table 2. Existing Measures of Hospital Revenue Per Unit

Measure	Description (Application and Calculation)	Advantages and Limitations	Relevant Resources

Evaluation of hospitals' risk-standardized mortality rates compared to their Medicare payments
 	
Source: 2024 Lown Institute Hospitals Index for Social Responsibility and 2021 Lown Institute Cost Efficiency metric
	Lown Institute Hospitals Index ranks hospitals on a composite grade for "social responsibility" based on performance in the domains of value, outcomes, and equity. The "value" domain, weighted at 30%, includes a measure of cost efficiency:
	• Cost efficiency (60%)
	  ○ 30-day risk standardized mortality rates and standardized Medicare FFS payments
	  ○ 90-day risk standardized mortality rates and standardized Medicare FFS payments PQIs use data from hospital discharges to identify admissions that might have been avoided through access to high-quality outpatient care
	• Avoiding overuse of 12 low-value services (40%)
	
	Cost efficiency scoring:
	• This measure evaluates hospital performance by charting 30-day and 90-day mortality rates against risk-standardized payments. Each hospital is compared to the "ideal" hospital, a hypothetical hospital with the lowest mortality rate and lowest cost. The metric quantifies the difference between the evaluated hospital and the "ideal" hospital.
	• Highest scores are given to hospitals with low mortality rates and low payments
	• Lowest scores are given to hospitals with high mortality rates and high payments.
	• Hospitals with high payments and low mortality are given a higher score than hospitals with low payments and high mortality because if there is a trade-off between payments and mortality, they should favor better mortality rates compared to lower payments
	
	Additional domains and measures:
	• Outcomes (30% weight)
	  ○ Clinical outcomes for six mortality and readmissions measures
	  ○ Patient satisfaction using 10 metrics from HCAPS
	  ○ Patient safety using six measures from CMS
	• Equity (40%)
	  ○ Inclusivity—measures degree to which a hospital's patient population reflects the demographics of its community area by race, income, and education (40%)
	  ○ Pay equity—CEO pay vs housekeeper wage (20%)
	  ○ Community benefit—financial assistance, Medicaid revenue, community investment (40%)
		Advantages:
		• Payments standardized for hospital patient risk (both patient conditions and procedures received) to ensure hospitals with sicker patients are not punished
		• Payments adjusted for patient survival so that hospitals with low patient survival did not have artificially lower costs
		• Payments adjusted for Medicare's regional cost differences
		• Includes both short- and medium-term outcomes
		• Can incentivize better cost management without compromising quality
		
		Limitations:
		• Includes Medicare payments and not payments from other payers, which means the methodology may be underestimating the true costs of some patient episodes
		• Since data include Medicare beneficiaries and standardized costs, cannot examine price variation as part of the metric (i.e., a hospital might be highly cost efficient because it has low readmissions and avoids unnecessary care, but it may charge high prices to non-Medicare patients)
		• Although mortality and cost are adjusted for underlying patient risk, some environmental and social factors that impact patient outcomes may not be accounted for in risk adjustment. Hospitals caring for the poorest and sickest patients may appear to do worse on mortality and cost
		• Quality measure calculation relies on accurate/consistent coding for risk standardization
		• Using only mortality is a narrow construction of quality
			Lown Institute. Lown Institute Hospitals Index for Social Responsibility: 2024 Methodology." 2024.
			
			Lown Institute. 2021 Winning Hospitals: Cost Efficiency. 2021.

Table 2. Existing Measures of Hospital Revenue Per Unit (continued)

Measure	Description (Application and Calculation)	Advantages and Limitations	Relevant Resources
Standardized price Source: RAND	• Standardized price represents the average commercial paid amount for a "standardized unit of service." Each inpatient visit or outpatient service is weighted and adjusted for complexity and resource intensity; this allows for direct comparisons of revenue per unit across hospitals • RAND uses Medicare Severity Diagnosis Related Groups (MS-DRG) weights for inpatient units of services, and the Ambulatory Payment Classification (APC) weights for outpatient units of service Calculation: • Standardized Price per Inpatient Service = Sum of Commercial Allowed Amounts for Inpatient Services / Standardized Inpatient Units of Service • Standardized Price per Outpatient Service = Sum of Commercial Allowed Amounts for Outpatient Services / Standardized Outpatient Units of Service	Advantages: • Allows for comparison across hospitals, even those that provide different services or treat more complex cases • Focus on commercial revenue highlights potential opportunities to reduce commercial payments and overall spending Limitations: • Completeness of RAND commercial claims dataset varies significantly by state; results are less reliable in states where limited commercial claims are included • Because RAND uses different relative weights for inpatient standard units of service and outpatient units of service, inpatient and outpatient standardized prices cannot be combined or compared • Findings cannot be compared across RAND study rounds or over time because data are not adjusted for inflation • Hospital coding of MS-DRGs and APCs can be vulnerable to upcoding practices	RAND. Hospital price transparency study. Whaley et al. Prices paid to hospitals by private health plans: findings from round 5.1 of an employer-led transparency initiative. 2024.

Table 2. Existing Measures of Hospital Revenue Per Unit (continued)

Measure	Description (Application and Calculation)	Advantages and Limitations	Relevant Resources
Relative price Source: RAND	• Relative price represents the ratio of actual commercial payments expressed as a percentage of Medicare payment amounts for the same services at the same hospital • Relative prices reflect Medicare's underlying hospital payment methodologies for hospitals, including any adjustments. For hospitals paid according to Medicare's Inpatient and Outpatient Prospective Payment Systems (IPPS and OPPS), this includes adjustments for wages, inflation, case mix, and hospital characteristics (e.g., teaching hospital status, disproportionate share hospital and uncompensated care payments), among others. Calculation: • Relative Price = Total Commercial Allowed Amounts / Total Simulated Medicare Payments for Equivalent Services	Advantages: • Medicare IPPS and OPPS are nationally standardized payment methodologies and reflect important hospital characteristics on the basis of which the cost of delivering care may vary. Medicare IPPS and OPPS payment amounts are set with the intent that efficient hospitals can profitably care for Medicare patients (see description of MedPAC hospital efficiency methodology in Table 3). • Focus on commercial revenue highlights potential opportunities to reduce commercial payments and overall spending Limitations: • Completeness of RAND commercial claims dataset varies significantly by state; results are less reliable in states where limited commercial claims are included • Method does not allow for comparison of absolute prices. Because relative price reflects underlying differences in Medicare payment amounts, facilities with lower relative prices may have higher actual prices, or vice versa.	RAND. Hospital price transparency study. Whaley et al. Prices Paid to Hospitals by Private Health Plans: Findings from Round 5.1 of an Employer-Led Transparency Initiative. 2024.

Table 2. Existing Measures of Hospital Revenue Per Unit (continued)

Measure	Description (Application and Calculation)	Advantages and Limitations	Relevant Resources
Net patient revenue per adjusted discharge Source: Colorado Option, Colorado Department of Insurance	• Similar to Adjusted Revenue per ECMAD (see MD HSCRC), Net Patient Revenue (NPR) per Adjusted Discharge provides a comparable measure of revenue per discharge. This measure is used by Colorado Option, a public option program operated by the Colorado Department of Insurance. • "Adjusted Discharges" are defined in regulation as "a measure of the overall volume of services provided by hospital inpatient and outpatient departments" (Colorado Regulation 3 CCR 702-4-2-91, p. 1) • Colorado Option allows higher prices for hospitals with NPR per Adjusted Discharge below the state average according to a formula laid out in Regulation 3 Calculation: • Net Patient Revenue Per Adjusted Discharge = Net Patient Revenue / Adjusted Discharges • Adjusted Discharges = (Total Revenue / Total Inpatient Revenue) * Inpatient Discharges	Advantages: • Comparable across hospitals (see Limitations) • Currently in use in a documented state regulatory process • Relies on Medicare Cost Report data, which is publicly available for most US hospitals Limitations: • Does not appear to adjust for case mix or complexity • Changes in reimbursement rates (governmental payments or negotiated commercial payments) and service mix may drive NPR per Adjusted Discharge without reflecting actual changes in operational efficiency • Focuses on revenue only, without a quality component; could incentivize organizational behaviors that could result in negative unintended consequences such as premature discharges, avoidance of high-cost or high-risk patients (cherry-picking/lemon-dropping), or rationing of care	Colorado Department of Regulatory Agencies. Amended Regulation 4-2-91, concerning the methodology for calculating reimbursement rates to support premium rate reductions for Colorado Option standardized health benefit plans. 2024.

Table 2. Existing Measures of Hospital Revenue Per Unit (continued)

Measure	Description (Application and Calculation)	Advantages and Limitations	Relevant Resources
Net Income per Adjusted Discharge Source: Colorado Option, Colorado Department of Insurance	• Assesses how much net income (total revenue minus total expenses) a hospital generates per adjusted patient discharge. This measure is used by Colorado Option, a public option program operated by the Colorado Department of Insurance. • Hospital Net Income is defined as "the excess or net patient revenue and other income over total operating and other expenses" (Colorado Regulation 3 CCR 702-4-2-91, p. 2); data are pulled from hospitals' Medicare Cost Reports • Colorado Option allows higher prices for hospitals with Net Income per Adjusted Discharge below the state average according to a formula laid out in Regulation 3 Calculation: • Net Income per Adjusted Discharge = Net Income / Adjusted Discharges • Adjusted Discharges = (Total Revenue / Total Inpatient Revenue) * Inpatient Discharges	Advantages: • Comparable across hospitals (see Limitations) • Currently in use in a documented state regulatory process • Relies on Medicare Cost Report data, which are publicly available for most US hospitals • Focus on operating expenses may shed more light on operational efficiency compared with NPR per Adjusted Discharge • Incentivizes lower net income per adjusted discharge; rewards hospitals with lower profitability per case Limitations: • Does not appear to adjust for case mix or complexity • Net income is impacted by factors other than operational efficiency, including service mix, hospital financial status (resource-constrained hospitals are likely to have lower operating expenses), and factors such as location and labor costs. In some fiscal years, nonoperating gains and losses—which include investment income and, in some cases, changes in investment portfolio value, as well as other non-patient-care revenue and expenses such as cafeteria and parking—can have a large influence on net income. • Focuses on revenue and expenses only, without a quality component	Colorado Department of Regulatory Agencies. Amended Regulation 4-2-91, concerning the methodology for calculating reimbursement rates to support premium rate reductions for Colorado Option standardized health benefit plans. 2024.

Table 2. Existing Measures of Hospital Revenue Per Unit (continued)

Measure	Description (Application and Calculation)	Advantages and Limitations	Relevant Resources
Medicare Spending per Beneficiary (MSPB) Source: CMS Hospital Value-Based Purchasing (HVBP) Program	• Assessment of payment for services provided to a beneficiary during a spending-per-beneficiary episode that spans from 3 days prior to an inpatient hospital admission through 30 days after discharge; includes spending on Medicare Part A and Part B • The payments included in this measure are standardized and adjusted so that variation in geographic costs as well as variation in patient health status are removed • Hospital MSPB is compared with the national median	Advantages: • Takes a holistic view of health care expenditures related to a patient hospital stay, beyond hospital services alone • Incentivizes appropriate care coordination between hospital and nonhospital services • Currently in use for Medicare Inpatient Prospective Payment System • Publicly available results Limitations: • Performance could be impacted by factors such as local health care system integration and availability of nonhospital services to support high-quality postdischarge care, for example • Does not include a quality or outcomes component. (Note that the HVBP program more broadly does include quality and outcome components.) • Medicare performance may not be reflective of performance for other payer populations	CMS. Hospital value-based purchasing program. 2024.

Table 2. Existing Measures of Hospital Revenue Per Unit (continued)

Measure	Description (Application and Calculation)	Advantages and Limitations	Relevant Resources
Medicare payment-to-cost ratio Source: CMS Medicare Cost Report	• Institutional providers who participate in the Medicare program are required to submit an annual cost report to CMS (Medicare Cost Report) • This measure is a ratio of an institution's Medicare payments to that entity's Medicare-allowable costs, as defined by the Medicare Cost Report. A Medicare payment-to-cost ratio above 1.0 indicates that Medicare payments exceed the cost of providing care • This measure was used in the Vermont Green Mountain Care Board's 2024 assessment of hospital financial performance (analysis performed by Bartholomew-Nash & Associates)	Advantages: • Relies on Medicare Cost Report data, which are publicly available for most US hospitals • Provides a clear picture of whether an organization's Medicare-allowable costs are above or below the organization's Medicare payments Limitations: • Payment-to-cost ratios could vary for multiple reasons, including non-efficiency-related factors that influence costs (population served, location, etc.) as well as factors that influence Medicare payment rates (e.g., teaching hospital status, Medicare outlier and add-on payments) • Medicare Cost Reports are developed according to CMS direction, but there is variability in how hospitals interpret CMS instructions. Additionally, Medicare Cost Reports are not audited; financials are not reported according to US Generally Accepted Accounting Standards; data are often available only at the facility level rather than including the full system; and there is significant data lag (up to two years).	Bartholomew N, Nash T. Financial analysis—Vermont hospitals. Presented to: Vermont Green Mountain Care Board. 2024. Pauly N, Sears L, Zhan A, McAvey K. Guide to understanding hospital spending through financial analysis. Peterson-Milbank Program for Sustainable Health Care Costs. 2024.

Table 3. Existing Measures of Hospital Expenses

Measure	Description (Application and Calculation)	Advantages and Limitations	Relevant Resources
Measures of General Hospital Expenses			
Hospital rankings based on risk-adjusted mortality rate, risk-adjusted readmission rate, and standardized cost Source: MedPAC hospital relative efficiency criteria	MedPAC identifies a cohort of hospital as "relatively efficient" if it meets the following criteria in each of the three prior years: • Risk-adjusted mortality rate or standardized cost was among the best one-third of hospitals in all years • Risk-adjusted mortality rate was not among the worst third in any year • Risk-adjusted readmission rate was not among the worst third in any year • Standardized cost was not among the worst third in any year • Uses the Hospital CAHPS survey to require that at least 50% of the hospital's patients rated it a 9 or 10 in the year prior to the performance period	Advantages: • Includes several quality measures, including an outcomes measure, PAU measure, and patient satisfaction measure • Examines consistent performance by analyzing metrics over a three-year period • Has been updated over time to include hospital outpatient costs as well as inpatient costs, and using more rigorous thresholds for quality of care Limitations: • Not intended to identify all efficient hospitals but rather to identify a cohort of relatively efficient hospitals • Limited quality and cost measures; selection of relatively efficient hospitals would likely be different if quality and cost measures included, for example, hospital-acquired conditions, transition to postacute care, and/or spending per episode • Includes Medicare payments and not payments from other payers, which means the methodology may be underestimating the true costs of some patient episodes	MedPAC. Report to the Congress: Medicare Payment Policy. 2024.

Table 3. Existing Measures of Hospital Expenses (continued)

Measure	Description (Application and Calculation)	Advantages and Limitations	Relevant Resources
Cost per case Source: Maryland HSCRC	See also Background information related to the Maryland HSCRC ICC process, Adjusted Revenue per ECMAD. • Cost per Case represents the average cost incurred by a health care provider to deliver care for a single patient encounter or episode of care. MD HSCRC uses this measure to compare regulated hospitals' Cost per Case with the average Cost per Case of a set peer group. This measure builds on Average Revenue per ECMAD, converting revenue to cost by removing profit and performing a productivity adjustment (represented by "Markup" in the calculation below). Calculation: • The calculation of Cost per Case relies on Maryland-specific hospital revenue calculations, but could potentially be adapted to other states • Standard Cost per Case = Permanent Revenue – Markup – Profit – Direct Medical Education and Trauma Center Costs – Labor Market Adjustment – Indirect Medical Education / Equivalent Case Mix Adjusted Discharges (ECMADs)	Advantages: • Comparable across hospitals • Currently in use in a documented state regulatory process • Adjusts for complexity of services, for "social goods" like medical education, and for differences in some input costs (e.g., labor costs) • Linked to a comprehensive quality framework under Maryland's hospital global budget model Limitations: • Specific to Maryland's hospital global budget-setting process; sufficient data may not be available in all states • Sensitive to case-mix changes, which are influenced by coding practices • In the context of Maryland's global budget model where revenue is guaranteed, this could incentivize hospitals to increase units of care delivered, including low-value care. In non-global-budget environments and in the absence of a strong quality program, this could incentivize hospitals to reduce their costs through means other than cost management, such as through premature discharges, avoidance of high-cost or high-risk patients (cherry-picking/lemon-dropping), or rationing of care.	Maryland Health Services Cost Review Commission. Final recommendation on full rate application policy. 2021.

Table 3. Existing Measures of Hospital Expenses (continued)

Measure	Description (Application and Calculation)	Advantages and Limitations	Relevant Resources
Adjusted Revenue per ECMAD Source: Maryland HSCRC	• In calculating approved hospital global budget revenue for regulated Maryland hospitals, the Maryland HSCRC uses multiple agency-developed measures of efficiency in a process it calls "Inter-hospital Cost Comparison" (ICC). This includes Adjusted Revenue per ECMAD and Cost per Case. • ECMADs are "a volume statistic that account[s] for the relative costliness of different services and treatments," incorporating both inpatient and outpatient services (MD HSCRC, p. 1). ECMADs allow for comparison across hospitals that provide different services with different levels of complexity. • Adjusted Revenue per ECMAD represents the hospital's revenue per ECMAD, "adjusted for social goods (e.g. medical education costs) and for costs that take into consideration factors beyond a hospital's control (e.g. labor market areas as well as markup on costs to cover uncompensated care and payer differential)" (MD HSCRC, p. 6) • MD HSCRC compares regulated hospitals' Adjusted Revenue per ECMAD with the average Adjusted Revenue per ECMAD of a set peer group	Advantages: • Comparable across hospitals • Currently in use in a documented state regulatory process • Adjusts for complexity of services, for "social goods" like medical education and for differences in some input costs (e.g., labor costs) • Linked to a comprehensive quality framework under Maryland's hospital global budget model Limitations: • Specific to Maryland's hospital global budget-setting process; sufficient data may not be available in all states • Sensitive to case-mix changes, which are influenced by coding practices • In the context of Maryland's global budget model where revenue is guaranteed, this could incentivize hospitals to increase units of care delivered, including low-value care. In non-global budget environments and in the absence of a strong quality program, this could incentivize hospitals to reduce their costs through means other than cost management, such as through premature discharges, avoidance of high-cost or high-risk patients (cherry-picking/lemon-dropping), or rationing of care.	Maryland Health Services Cost Review Commission. Final recommendation on integrated efficiency policy for RY 2022. 2021.

Table 3. Existing Measures of Hospital Expenses (continued)

Measure	Description (Application and Calculation)	Advantages and Limitations	Relevant Resources
Operating Expenses per Adjusted Discharge Source: Colorado Option, Colorado Department of Insurance	• Measures the average cost incurred by a hospital to treat a patient, including inpatient discharges and equivalent outpatient services. This measure is used by Colorado Option, a public option program operated by the Colorado Department of Insurance. • Hospital Operating Expenses are defined as "total cost associated with hospital-related services and patient care" (Colorado Regulation 3 CCR 702-4-2-91, p. 3); data are pulled from hospitals' Medicare Cost Reports • Colorado Option allows higher prices for hospitals with Operating Expenses per Adjusted Discharge below the state average according to a formula laid out in Regulation 3 Calculation: • Operating Expenses per Adjusted Discharge = Hospital Operating Expenses / Adjusted Discharges • Adjusted Discharges = (Total Revenue / Total Inpatient Revenue) * Inpatient Discharges	Advantages: • Comparable across hospitals (see Limitations) • Currently in use in a documented state regulatory process • Relies on Medicare Cost Report data, which are publicly available for most US hospitals • Focus on operating expenses may shed more light on operational efficiency compared with NPR per Adjusted Discharge Limitations: • Does not appear to adjust for case mix or complexity • Operating Expenses per Adjusted Discharge is impacted by factors other than operational efficiency, including service mix, hospital financial status (resource-constrained hospitals are likely to have lower operating expenses), and factors like location and labor costs • Focuses on cost only, without a quality component; this could incentivize cost-cutting measures that could have a negative impact on quality and patient outcomes	Colorado Department of Regulatory Agencies. Amended Regulation 4-2-91, concerning the methodology for calculating reimbursement rates to support premium rate reductions for Colorado Option standardized health benefit plans. 2024.

Table 3. Existing Measures of Hospital Expenses (continued)

Measure	Description (Application and Calculation)	Advantages and Limitations	Relevant Resources
Measures of Hospital Administrative Expenses			
Measures of clinical expenses and general/ administrative expense compared with total hospital expenses Source: CMS Medicare Cost Report	Institutional providers who participate in the Medicare program are required to submit an annual cost report to CMS. The Medicare Cost Report includes expenses related to administrative costs, including central services and general administration, medical records, employee benefits, capital, maintenance, and nursing administration. Researchers and analysts have taken multiple approaches to calculating ratios of clinical expense to general or administrative expense. Generally, these studies aggregate nonclinical costs and clinical costs, distributing some general and administrative functions across multiple cost centers, and compare these aggregated figures to total expenses identified on the Medicare Cost Report. There is not an accepted threshold or range of general or administrative expense as a percentage of total expenses. Where researchers have calculated these statistics, they have been used for comparative purposes. There is no evidence that measures of this kind have been applied as hospital accountability measures.	Advantages: • These measures are intuitive to understand • They use public data submitted by nearly all hospitals • Longitudinal data are generally available starting in 1996 or earlier Limitations: • Substantial variation exists in the methods researchers have used to calculate these measures • No accepted threshold or range has been established to indicate appropriate general or administrative expense compared with clinical expense • Any threshold or range must reflect differences in hospital size, type, system ownership, and services	Examples of studies that use measures of this type to study hospital administrative spending: Himmelstein DU et al. A comparison of hospital administrative costs in eight nations: US costs exceed all others by far. *Health Aff* (Millwood). 2014;33(9):1586–1594. Wang Y, Bai G. U.S. hospitals' administrative expenses increased sharply during COVID-19. *J Gen Intern Med*. 2023;38:1887-1893. Woolhandler S, Himmelstein DU, Lewontin JP. Administrative costs in U.S. hospitals. *N Engl J Med*. 1993;329(6):400-403.

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