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UNDERSTANDING HOSPITAL CHARGEMASTERS: IMPACT ON HEALTHCARE FINANCE

Abstract

Introduction: This research delves into the critical examination of hospital chargemasters, exploring their intricate role in the complex landscape of healthcare finance. As the healthcare industry grapples with the challenges of balancing medical care and fiscal responsibility, the hospital chargemaster emerges as a dynamic entity, reflecting the interplay between healthcare providers, insurers, and patients. Beyond being a mere ledger of prices, the chargemaster influences the entire Revenue Cycle Management (RCM), impacting financial stability, patient satisfaction, and the effectiveness of healthcare delivery. Originating from the necessity to navigate reimbursement complexities, the chargemaster has become central to hospitals' financial strategies, shaping and being shaped by evolving healthcare regulations and patient-centric models. This multidimensional exploration seeks to unravel the intricacies of chargemasters, offering a comprehensive understanding of their influence on the broader framework of revenue cycle management and the delivery of quality healthcare services.

Methodology: The primary hypothesis for this research was that the lack of transparency in chargemaster pricing significantly influences operational costs and plays a pivotal role in shaping healthcare spending. The methodology for this research study was a qualitative literature review and an anonymous survey completed by an employee at a hospital. Institutional Review Board approval was obtained prior to the anonymous survey being submitted.

Purpose: The purpose of this research was to provide a comprehensive understanding of chargemasters, emphasizing their impact on various aspects of the healthcare system, including operational costs, revenue generation, patient costs, healthcare accessibility, and patient satisfaction.

Results: This finding of this research revealed that hospitalization fees, directly tied to inpatient clinical management, constitute the largest proportion of operational costs and significantly impact chargemaster rates. Operational costs related to staffing, medical supplies, equipment, technology, facility maintenance, and administrative overhead collectively shape the financial landscape of healthcare provision. Furthermore, the analysis indicates that the lack of transparency in chargemaster pricing contributes to inflated healthcare spending. This focused exploration underscores the intricate relationship between operational costs and chargemaster rates, offering insights into the financial dynamics of healthcare services and the implications for overall cost management.

Discussion/Conclusion: This study illuminated the detrimental impact of chargemaster pricing on healthcare finance, revealing how operational costs intricately shape chargemaster rates and contribute to the escalating cost of healthcare services. The study emphasized the urgent need for standardized practices, transparency, and regulatory interventions to foster a fair, affordable, and efficient healthcare financial landscape.

Key Words: Chargemaster, Healthcare Finance, Operational Costs, Revenue Cycle Management, Transparency Issues

INTRODUCTION

In the complex landscape of healthcare finance, where the intersection of medical care and fiscal responsibility is paramount, the examination of hospital chargemasters emerges as a critical endeavor (Chen et al., 2014). The healthcare industry, with its intricate web of policies, reimbursement models, and financial mechanisms, faces constant challenges in ensuring both quality patient care and sustainable financial viability (Tong & Yuen., 2021). At the heart of this financial ecosystem lies the hospital chargemaster – a comprehensive catalog that delineates the costs of medical procedures, services, and supplies. This research delves into the intricacies of hospital chargemasters and seeks to unravel their influence on the broader framework of Revenue Cycle Management (RCM).

The concept of a chargemaster is not merely a ledger of prices; it is a dynamic entity that reflects the intricate dance between healthcare providers, insurers, and patients (Ofori-Amanfo et al., 2022). Hospitals set their charges based on a myriad of factors, including operational costs, regulatory requirements, and negotiations with payers (Thanasas., 2013). While the chargemaster serves as the starting point for billing and reimbursement, its implications ripple through the entire revenue cycle, impacting financial stability, patient satisfaction, and the overall effectiveness of healthcare delivery (Bradley et al., 2018).

Understanding the hospital chargemaster necessitates a deep dive into the historical evolution of healthcare financing. The introduction of third-party payers, such

as private insurance companies and government programs, has transformed the once straightforward relationship between patients and healthcare providers (AlRuthia et al., 2020). The chargemaster, born out of the necessity to negotiate and navigate the complexities of reimbursement, has become a central component in the financial strategies of hospitals (Flanagan., 2017). As the healthcare landscape continues to evolve, so too does the role of the chargemaster, making its examination pivotal for comprehending the nuances of revenue cycle dynamics (Bhatia et al., 2019).

Hospitals, in their pursuit of financial viability, must grapple with balancing the need for reasonable compensation with the requirement to remain competitive in the market (Leleu et al., 2017). This delicate equilibrium is further complicated by the diverse payer landscape, including private insurers, government programs like Medicare and Medicaid, and self-pay patients (Like et al.,2019) . Analyzing the intricate interplay of these factors is essential for revealing the determinants that shape chargemaster rates and, consequently, impact revenue generation (Meisel et al., 2016).

The impact of chargemasters extends beyond the financial realm, influencing the broader landscape of healthcare accessibility and equity (Khan et al., 2017). The stratification of charges for the same services can lead to disparities in healthcare costs, potentially exacerbating existing social and economic inequities. As healthcare evolves towards a more patient-centric model, understanding the implications of chargemaster rates on the accessibility and affordability of medical services becomes imperative (Lévesque et al., 2013). The ever-changing landscape of healthcare regulations, such as the Affordable Care Act (ACA) in the United States, has a profound impact on how hospitals structure their chargemasters (Dornauer., 2015).

In addition to their direct impact on financial outcomes, chargemasters play a crucial role in shaping patient experiences and satisfaction. The transparency of chargemaster rates can significantly influence patients' perceptions of healthcare providers and impact their decisions regarding seeking medical care (Meisel et al., 2016). A comprehensive examination into the aspects of hospital chargemasters that directly impact patients promises to yield valuable insights, a thorough investigation of the relationships between pricing disclosure, patient satisfaction, and healthcare utilization stands to illuminate potential correlations.

The exploration of hospital chargemasters and their influence on revenue cycle management is a multidimensional endeavor that traverses financial, regulatory, and patient-centric domains (Lilley et al., 2022). As the healthcare landscape continues to evolve, understanding the nuances of chargemasters becomes instrumental for healthcare providers, policymakers, and patients. This research aims to unravel the intricacies of chargemasters, offering a comprehensive understanding of their role in the broader context of revenue cycle management and the delivery of quality healthcare services.

The purpose of this research was to investigate the multifaceted role of hospital chargemasters, central to revenue cycle management and healthcare finance. By investigating financial implications, and patient-centric considerations of chargemasters, this study aims to uncover insights that contribute to a nuanced understanding of their influence on hospital sustainability, patient experiences, and healthcare accessibility. The research further explores the transparency issues surrounding chargemaster pricing and provides evidence-based recommendations for enhancing cost-

effectiveness, promoting equitable access to healthcare services, and improving patient satisfaction.

METHODOLOGY

The primary hypothesis for this research was that the lack of transparency in chargemaster pricing significantly influences operational costs and plays a pivotal role in shaping healthcare spending. The impact is evident in the relationship between chargemaster rates, hospital revenue, and patient costs. The study findings underscore the need for increased transparency in chargemaster pricing to mitigate discrepancies, enhance cost-effectiveness, and promote equitable access to healthcare services. The methodology for this research study was a qualitative study with several methodologies that included a literature review and an anonymous survey with an employee at a hospital. The responses to the survey were submitted electronically. Institutional Review Board approval was obtained prior to the anonymous survey being submitted. A conceptual framework developed by Yao,Chu and Li., 2010 was the approach used in the literature review (Figure 1.) The electronic databases used included Marshall University's EBSCOhost, PubMed, Medline, and Google Scholar. When conducting this research, critical terms included were: "Chargemaster" OR “CDM” AND "Revenue Cycle" OR "Revenue Cycle Management" OR “RCM” AND "Healthcare Finance" AND "Operational Cost" AND "Price Transparency" OR "Transparency Issues". The search identified ninety relevant citations and articles were excluded (N=61) if they did not meet inclusion principles. Articles were included (N=42) if they described the lack of price transparency on hospital chargemaster full-text review, and 11 citations were included in the introduction, methods and discussion while, 31 references were used in the results

section. For this research, efforts were made to obtain the most current information available. Only sources dated from 2010 through 2023 that were published in English were considered. Both primary and secondary data found in articles, literature reviews, research studies, and reports were incorporated into the analysis. The goal was to conduct a thorough examination of recent empirical evidence and scholarly work relevant to the topic at hand.

RESULTS

Operational Costs and Chargemaster Rates

Operational costs play a significant role in determining chargemaster rates in healthcare (Lu et al.,2020). These operational costs include expenses related to staffing, medical supplies, equipment, technology infrastructure, facility maintenance, and administrative overhead (Abdulsalam & Schneller., 2017). By analyzing and calculating these operational costs, healthcare providers can determine the actual cost of providing services to patients (Krielen et al.,2016). According to studies of wound care management costs, dressing and medical supply expenses account for approximately 15% of overall treatment costs (Tiscar-González, V., 2021) Meanwhile, nursing staff time dedicated to directing patient care comprises around 35% of total wound treatment expenditures (Lindholm, C., & Searle, R., 2016). Hospitalization fees tend to make up the largest portion at close to 50% since inpatient clinical management is often needed, especially for complex wounds or those that are slow to heal, this information is then used to set chargemaster rates (Lindholm, C., & Searle, R., 2016). The operational costs directly influence the chargemaster rates because healthcare providers need to cover these expenses while also maintaining a margin for profitability (Bai & Anderson.,

2015). Additionally, the lack of transparency in chargemaster pricing has allowed hospitals to inflate chargemaster prices, leading to higher healthcare spending (Chaudhary., 2023).

Role of the Hospital Chargemaster in Healthcare Revenue Cycle

The hospital chargemaster plays a vital role in the healthcare revenue cycle by listing all services offered by a hospital and their associated costs (Pollock., 2023). Chargemasters directly contribute to increasing healthcare spending as they are unchecked and unregulated, leading to accusations of hospitals increasing chargemaster price listings to enhance revenue (Chaudhary., 2023). The chargemaster system is crucial in constructing claims for hospital billing systems, as asset usage data is matched against pricing, product, and service data and then shared with the hospital billing system (Bradley et al., 2018). Furthermore, chargemaster prices have been shown to be highly variable, with higher CCRs associated with for-profit hospitals, those affiliated with a healthcare system, and those in urban settings (Adkins et al., 2021). In an effort to improve price transparency, the Centers for Medicare and Medicaid Services (CMS) mandated that hospitals display chargemasters and pricing for diagnosis-related groups (DRGs) online (Bhayana et al., 2022). Additionally, in 2019, CMS required hospitals to publish their "standard charges" for their services in online chargemasters, which are comprehensive lists of prices for all hospital procedures and services (Younessi et al., 2022). However, the release of machine-readable chargemasters was widely criticized due to a lack of usability and wide discrepancies between hospital charges and the negotiated prices that insurers actually pay (Zhuang et al., 2022). The availability of chargemaster prices to the public has raised concerns about the influence

of cost information on treatment choice, as patients are often not personally responsible for the majority of healthcare costs (Zhuang et al., 2020). Moreover, the complexity of accounting for anticipated charges via chargemasters has made it challenging for healthcare systems to offer reliable estimates of hospital charges beforehand (Gray et al., 2017). The impact of hospital chargemasters on both hospital revenue and patient costs is a complex and multifaceted issue (LaPointe, 2020). Chargemasters, which list the prices for all services offered by a hospital, play a crucial role in determining hospital revenue. Research has shown that higher chargemaster markups are associated with higher hospital profitability, indicating that chargemaster prices have a direct effect on hospital revenues (Linde & Eged.,2022). Furthermore, a study found that hospitals systematically vary price markups across patient care departments, suggesting that chargemaster prices are strategically set to maximize revenues (Bai & Anderson., 2016). Adventist Health System conducted a market analysis to evaluate pricing compared to other area hospitals, through this analysis, the health system identified which services generated the most revenue and which were candidates for a price reduction. The data revealed that decreasing certain standard chargemaster rates by as much as 40% could result in an estimated annual revenue decline of between $50 million to $75 million (LaPointe, 2020).

Impact of Chargemasters on Hospital Revenue and Patient Costs

In terms of patient costs, the availability of chargemaster prices to the public has raised concerns about the influence of cost information on treatment choices (Cooper et al., 2015). Price-aware patients tend to choose less costly services, leading to out-of-pocket cost savings and savings for health insurers (Zhang et al., 2020). However, these

savings do not necessarily translate into reductions in aggregate healthcare spending, indicating that the impact of chargemaster prices on overall patient costs is not straightforward (Batty & Ippolito., 2017). Moreover, the implementation of price transparency through the public availability of chargemaster prices has been met with challenges. While hospitals are required to display chargemasters and pricing for services online, the wide discrepancies between hospital charges and the negotiated prices that insurers actually pay have raised questions about the actual impact of chargemaster prices on patient costs (Haque et al.,2021). Additionally, the role of chargemasters in determining what patients actually pay is significant. Studies have shown that chargemasters are relevant to what patients pay, and hospitals strategically use the chargemaster as a revenue-seeking function (Ward & Reede.r, 2020).

Strategic Use of Chargemasters as a Revenue Seeking Function

The strategic use of chargemasters as a revenue-seeking function in healthcare organizations has been a subject of significant research and policy interest (Alharbi et al., 2022). Hospitals strategically set chargemaster rates to maximize revenues, and these practices have been shown to present an important risk for both uninsured and insured individuals (Linde & Egede.,2022). The chargemaster, which contains the official list prices for all billable services, plays a pivotal role in determining hospital revenue, with higher markups associated with increased profitability. Furthermore, the association between the Cost-To-Charge RatioF(CCR) and patient care revenue per adjusted discharge highlights the chargemaster's revenue-seeking function (Bai & Anderson., 2016). In an effort to improve price transparency, the US government mandated that hospitals publish prices for all services in a document called a chargemaster (Prasad et

al., 2022). Despite this, hospitals have been found to use the chargemaster strategically as a revenue-seeking function, and the complexity of accounting for anticipated charges via chargemasters has made it challenging for healthcare systems to offer reliable estimates of hospital charges beforehand (Ward & Reeder., 2020). The impact of chargemasters on patient costs is significant, as chargemaster prices influence what patients actually pay (Batty & Ippolito., 2017). Price-aware patients tend to choose less costly services, leading to out-of-pocket cost batty savings and savings for health insurers. However, these savings do not necessarily translate into reductions in aggregate healthcare spending, indicating that the impact of chargemaster prices on overall patient costs is not straightforward (Zafar et al., (2013).

Chargemaster Prices

According to The GoodRx Research Team, hospitals charge drastically different prices for the same 50 mg sertraline tablet, from $57 per tablet at Sunrise Hospital in Las Vegas to around $0.50 per tablet at Camden Hospital in West Virginia. This large discrepancy in prices demonstrates the lack of transparency and embarrassment around hospital charges. Making hospital prices public could help bring more transparency to the system. There are large discrepancies in medication pricing between different hospitals, even within the same state. For drugs like lisinopril, used to treat high blood pressure, the chargemaster prices listed by different hospitals vary drastically, from around $0.40 per pill at some hospitals up to $43.00 per pill at others (Arvisais-Anhalt et al., 2021). These trends of massive price differences between hospitals exist for most drugs analyzed. The high variability in hospital pricing

demonstrates the lack of standardization in medication costs across the healthcare system (Cooper et al., 2015).

Chargemaster prices and financial sustainability.

A recent study from Johns Hopkins University analyzed hospital prices reported under CMS transparency rules, researchers found that cash prices and commercial negotiated rates were consistently discounted percentages from hospital chargemaster prices, on average, cash prices were 64% of chargemaster prices, while commercial negotiated rates were 58% (Jiang et al.,2021). An observational study by Linde & Egede analyzed data on fourteen common medical services across 1599 hospitals in 2021 to study price variation. Coefficients of variation (CVs) for chargemaster prices ranged from 0.5 to 2.9; for cash prices, they ranged from 0.8 to 2.8; and for negotiated pricing, they ranged from 1 to 4.1. These findings show that there is a significant price difference for each of the 14 medical services, and that these price variations are present in all three sets of pricing (Linde, S., & Egede, L. E., 2022). Hospitals set chargemaster rates freely, though they often exceed actual costs by over four times (RevCycleIntelligence & LaPointe, 2017). Chargemaster rates are typically the starting point for private payer negotiations, but rising deductibles mean more patients pay using cash prices (Bai & Anderson., 2016). Most hospitals applied consistent cash discounts across all services, cash prices were generally lower at nonprofit and government hospitals serving more uninsured patients. Linde & Egede found systematic pricing variations among hospitals. Urban hospitals had prices that were 14% lower than rural hospitals, with this difference being statistically significant. Teaching hospitals charged 3% higher prices in comparison to non-teaching hospitals, which was also deemed statistically significant,

Non-profit hospitals priced services 9% higher than government owned hospitals, For-profit hospitals had prices that were 39% above those of government owned hospitals, and this disparity was statistically significant (Linde, S., & Egede, L. E., 2022).

Cash prices equaled or undercut median negotiated rates 47% of the time. Evaluation and management services saw the lowest cash prices 55%, followed by medicine, surgery, radiology, and lab services (Jiang et al.,2021). According to Jiang chargemaster rates influence commercial prices, so payers and policymakers should consider them, Employers could use cash price data for provider negotiations or direct contracting (Jiang et al.,2021).

Cost-To-Charge Ratio

A hospital's CCR is an important metric that measures the level of markup between the prices set by the hospital and the actual costs of providing care (Ward & Reeder., 2020). CCR compares a hospital's chargemaster prices to its Medicare-allowable costs. Medicare-allowable cost refers to a hospital's overall costs that are directly tied to patient care as determined by Medicare. This includes costs like salaries for clinical staff, medical supplies, and facility expenses. It provides a standard measure of the actual costs incurred by the hospital (Arvisais-Anhalt et al., 2021).

The CCR is also calculated at the department level within a hospital. For a given department, the chargemaster prices for all services provided are divided by department's Medicare-allowable costs (Bai & Anderson.,2016). A department's Medicare-allowable costs incorporate both its direct expenses as well as an allocated share of the hospital's indirect costs, which include organizational overhead like

administrative functions and social services that support clinical care but may not be traced to a specific department (Bai & Anderson.,2016).

The Centers for Medicare and Medicaid Services (CMS) requires hospitals to use a standardized step-down methodology for allocating indirect costs between departments (Tan et al.,2012). CMS provides detailed guidelines regarding the sequence and allocation bases to ensure consistency (Bhayana et al.,2022). Both hospital wide and departmental CCRs are computed using data reported on Medicare Cost Report Worksheet C, Part I (Pickens et al.,2021). This worksheet standardizes cost reporting so ratios can be meaningfully compared across facilities (Pickens et al.,2021).

In 2013, hospital charge-to-cost ratios varied significantly across hospital types, on average, for-profit hospitals had the highest ratios at 6.31, while government hospitals had the lowest ratios at 3.47 (Nguyen et al.,2013). Hospitals with higher proportions of uninsured patients had higher cost-to charge ratios compared to hospitals with median or lower uninsured patients (Nguyen et al.,2013). Hospital systems and those with regional power also tended to have higher cost-to-charge ratios compared to independent hospitals and those without regional power (Bai & Anderson., 2016).

DISCUSSION

Yes, the hypothesis is supported by the results, it is evident that the lack of transparency in chargemaster pricing indeed has far-reaching implications for the intricate dynamics of healthcare finance. Operational costs play a pivotal role in shaping chargemaster rates, influencing the actual cost of providing healthcare services. The findings reveal

that dressing and medical supply expenses, nursing staff time, and hospitalization fees collectively contribute to the composition of chargemaster rates. Notably, the lack of transparency in chargemaster pricing has allowed hospitals to strategically inflate these rates, leading to higher overall healthcare spending. This outcome underscores the need for greater scrutiny and regulation in chargemaster practices, as the unchecked escalation of chargemaster prices poses a risk to both uninsured and insured individuals, impacting their out-of-pocket expenses and potentially exacerbating broader issues of healthcare affordability.

Furthermore, the study sheds light on the intricate role of chargemasters in the broader healthcare revenue cycle. The strategic setting of chargemaster rates by hospitals, as revealed in the research, serves as a revenue-seeking function, with higher markups directly associated with increased hospital profitability. The variability in chargemaster prices, particularly across different hospital types, further emphasizes the need for standardization and transparency. Efforts by the Centers for Medicare and Medicaid Services to mandate online display of chargemasters and pricing for diagnosis-related groups (DRGs) aim to improve transparency, yet the criticism of machine-readable chargemasters indicates challenges in achieving meaningful transparency. These results underscore the complex interplay between chargemaster practices, healthcare spending, and hospital revenue, urging policymakers to address the intricacies of chargemaster systems to enhance fairness, affordability, and overall efficiency in the healthcare financial landscape. A response from the anonymous survey, Yes, I believe certain Charge Master Codes should be negotiable. We are provided a "Charging Template" which is not used for Pharmacy or Supplies where pricing is based

upon a Charge Analysis Method to calculate the cost of a test or procedure. In this Charge Analysis Method, we may use Same Service, Similar Service, Cost, Market Analysis (which uses the COLA factor, Market Analysis Vendor Date, 75th percentile based on the CPT/HCPCS code, and Medicare Reimbursement. For example, for send out test pricing, vendor markup and Medicare markup and compare, taking the higher of the two for patient cost, and for in-house pricing; the Medicare markup. Once submitted, the revenue integrity team approves all charge codes before they are entered into the facility's billing system. Revenue integrity charge code approval keeps the pricing consistent and within fair market pricing.

Limitations

This research study was conducted with limitations. Such as geographic context and healthcare systems used in specific studies, as well as the variability in data reporting from different healthcare systems. The chargemaster is a complex system influenced by numerous factors. The intricate nature of healthcare finance and chargemaster mechanisms may require further exploration. Also, research and publication bias was a limitation during this study.

Practical implications

The practical implications of this research emphasize the importance of collaboration among healthcare institutions, policymakers, and regulatory bodies to address the complexities of chargemaster systems. By fostering transparency, promoting fair pricing, and ensuring regulatory oversight, these key entities can collectively work towards a

healthcare financial landscape that prioritizes affordability, accessibility, and sustainability.

CONCLUSION

In conclusion, this study illuminates the profound impact of the lack of transparency in chargemaster pricing on the intricate landscape of healthcare finance. Operational costs, including dressing and medical supply expenses, nursing staff time, and hospitalization fees, play a pivotal role in shaping chargemaster rates, influencing the overall cost of healthcare services. The strategic inflation of chargemaster rates, as uncovered in this research, raises concerns about the unchecked escalation of healthcare spending, posing risks to both uninsured and insured individuals and exacerbating broader issues of healthcare affordability. Moreover, the study underscores the strategic role of chargemasters in the healthcare revenue cycle, with higher markups directly linked to increased hospital profitability. The variability in chargemaster prices, coupled with challenges in achieving meaningful transparency, highlights the need for standardized practices.