

Hospital Contracting Trends and Implications for Adoption and Use of New Health Technologies

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Summary

Reimbursement approaches in U.S. managed care medicine, associated with provider and payer incentives to provide appropriate patient care, have different implications for new health technology acceptance. This paper seeks to (1) characterize current trends in hospital contracting types and associated risk-management strategies from the hospital and payer perspectives, and (2) characterize the implications of such risk-mitigation strategies on health technology adoption, access, and diffusion.

Key Points

- Hospital-payer contracting approaches remain variable and are influenced by a variety of factors, including provider size and scope of services, geography, competition, and health plan negotiating leverage.
- Within provider organizations, implications for technology adoption may vary by site of care, internal hospital division, and anticipated revenue implications.
- Use of per-diem rates is decreasing and case rates and discount off charges are likely to remain the dominant payment types in the inpatient setting. In the outpatient setting, there is movement away from discount-off charges and towards APC-like approaches.
- Although hospital contracting involves various risk-reducing provisions, only the most costly health technologies warrant line item attention by providers and payers managing large operating budgets.
- The greatest influence on new health technology access and treatment selection remains payer managed care management processes.

Introduction

As United States health stakeholders struggle to balance quality and costs of health care, a myriad of cost management schemes have been attempted. While there is no perfect solution, many of these approaches have significant implications for operational efficiency and patient access to care.

One area that has received comparatively little attention is the interface between trends in provider and third-party payer contracting approaches and access to new health technologies. Hospitals and third-party payers enter into many different types of agreements to specify the terms and conditions of payment for hospital services. These agreements vary by payer and hospital type and are influenced by many factors, including organization size and negotiating power, geographic contracting trends, scope and complexity of health service offerings, and capacity to support contracts with complex administrative requirements.

The goals of this report are to (1) understand cur-

rent trends in hospital contracting types and associated risk management strategies from the hospital and payer perspectives, and (2) characterize the implications of such risk-mitigation strategies on health technology adoption, access, and diffusion.

Methods

Because the implications of U.S. hospital contracting on technology adoption and use are not as well characterized as other cost and utilization management approaches (e.g., health technology assessment, coverage polices, cost sharing), this report is a general exploration of current relationships between hospital contracting and health technology access. Current practices and trends were identified via literature search and supplemented with interviews with six U.S. provider and payer reimbursement experts chosen for their expertise in establishing state and national reimbursement rates, negotiating hospital contracts, and managing medical and pharmacy benefits of U.S. payers.

Exhibit 1A: Main Hospital Inpatient and Outpatient Contracting Mechanisms and Implications for New Health Technology Access

Payment Type	Description	Implications for New Health Technology
Hospital Inpatient Services		
Discount off charges or cost-based service rates	Payers pay an agreed-upon percentage of charges for services or the costs of services itemized in the hospital bill. The discount off charges varies based on the negotiating power of the payer and the hospital, ranging from 10% to 50%	Provides limited disincentives for new health technology adoption because the hospital can adjust charges to reflect incremental cost increases associated with the technology or its administration. Exceptions: (a) scenarios where a technology is introduced before payer renegotiation of charge categories or (b) if the percentage discount for charges driven by technology costs are disadvantageous to the provider. Discount-off-charges approaches may allow cost increases resulting from new technology adoption versus capitated or prospective payment. <i>Technology example:</i> infusible drugs.
Per-diem rates	Payers pay an agreed-upon amount for every day that the patient is in the hospital; different rates are negotiated for different types of hospitalizations, including surgical stays, medical stays, infant deliveries, and psychiatric admissions. Used by some Medicaid and private payers.	Health technologies over a certain cost threshold may necessitate carve-outs for expensive equipment or drugs to buffer financial risks not anticipated in the average payment. Technologies that are under but close to the threshold may diminish provider incentives for uptake if more affordable alternatives are available. For outlier cases, hospitals may seek carve-outs that may include other controls such as prior authorization to protect against unanticipated costs. <i>Technology example:</i> cellular therapies
Hospital case rates	Patients are assigned to case categories (e.g., Medicare diagnosis-related groups [DRGs]) based on diagnostic and treatment information from the hospital stay. Payers pay an agreed-upon amount for each case category. The amount paid is generally based on historical observed mean costs or charges. Used by Medicare and some Medicaid and private payers	Because case rate payment approaches place payment limits on a particular bundled payment (e.g., for a specific procedure), new health technologies that reduce the hospital's profit margin may not be selected in favor of less costly alternatives that yield sufficient safety and effectiveness results. For outlier cases, hospitals may seek carve-outs that may include other controls such as prior authorization to protect against unanticipated costs. <i>Technology example:</i> drug eluting stents and pacemaker/implantable cardioverter-defibrillator combinations
Global case rates	These rates are similar to hospital case rates, except the physician fees, as well as the hospital costs, are included in the global case rate. These are used for some specific procedures (e.g., organ transplants) by some Medicaid and private payers.	Similar implications as case rates apply
Capitation	Payers pay the hospital a fixed amount per year for every person in a covered population, irrespective of whether they are hospitalized. These are used only occasionally by some Medicaid and private payers.	Infrequently used as a payment mechanism today. The nature of annual capitation payment approaches rarely lend themselves to negotiations that involve individual health technologies.

APC = ambulatory payment classification; DRG = diagnosis-related group; MS-DRG = Medicare severity diagnosis-related group.

A comprehensive search of the literature on hospital contracting involving provisions related to specific health technologies in the U.S. was conducted. Primary health services research and review articles from PubMed that were published from January 1980 through August 2009 were included in the review. The literature search strategy included the following Medical Subject Heading (MeSH) terms and

incorporated text words as appropriate to ensure a broad search on the topic: Managed Care Programs, Cost Control, Insurance, Pharmaceutical Services, Prescription Drugs, Technology, Medical, Fee Schedules, Medication Systems, Insurance, Health, Reimbursement, Hospital and Pharmacy Service, Hospital, and Managed Competition. The search yielded a limited number of citations on provider

Exhibit 1B: Main Hospital Inpatient and Outpatient Contracting Mechanisms and Implications for New Health Technology Access

Payment Type	Description	Implications for New Health Technology
Hospital Inpatient Services		
Discount off charge	Payers pay an agreed-upon percentage of charges for services or the costs of services itemized in the hospital bill. The discount off charges varies based on the negotiating power of the payer and the hospital, ranging from 10% to 50%	Similar to inpatient description of discount off charges <i>Technology example:</i> infusible drugs, some physician-administered oncology agents, some anticoagulant drugs
Fee schedule	Payers pay an agreed-upon fee for each unit of service provided. These are used by some Medicaid and private payers.	Although practically more complex to negotiate and administer fee-based payment systems provide straightforward opportunities for payers and providers to negotiate payment for individual health technologies.
Ambulatory Payment Classification (APC)	Outpatient services are bundled into service packages and are reimbursed at an agreed-upon rate based on the relative intensity of care provided, similar to inpatient MS-DRGs. These are used by Medicare and some Medicaid and private payers.	Because APC approaches place payment limits on a particular bundled payment (e.g., for a specific procedure), new health technologies that reduce a hospital's profit margin may not be selected in favor of less costly alternatives with sufficient safety and effectiveness results. For outlier cases, hospitals may seek carve-outs that may include other controls such as prior authorization to protect against unanticipated costs. <i>Technology example:</i> infusible drugs, some physician administered oncology agents, some anticoagulant drugs
APC = ambulatory payment classification; DRG = diagnosis-related group; MS-DRG = Medicare severity diagnosis-related group.		

and third-party payer contracting, the majority of which considered the implications of hospital competition and managed care—contracting incentives, but did not consider implications for uptake and use of new health technologies.

The limitations of this study are that (a) available literature regarding the implications of provider and payer contracting on health technology use is particularly limited, and (b) hospital payment approaches and contract provisions are highly variable among hospital types and different regions of the country and change periodically as a result of local and national pressures and incentives related to health services delivery and cost and utilization management. Therefore, information on the frequency of use of the different payment types discussed herein may not be generalizable to all hospital contracting scenarios in the U.S.

Results

Different Payment Types and Associated Payer and Provider Incentives

A variety of approaches to hospital contracting have been attempted since the emergence of managed care practices in the U.S. in the mid 1930s. No single existing contracting mechanism is ideal for both the payer and provider, and methods may change cyclically. While prior studies have detailed the main pay-

ment types and associated revenue implications^{1,2,3,4} as well as effects of hospital competition and selective contracting by payers^{5,6,7,8,9,10,11,12,13,14,15,16,17,18,19} the majority of studies have not considered the implications of contracting for health technology access and use.

To better understand the implications of payer/provider contracting processes on use of specific health technologies, it is first important to understand the existing payment types and mechanisms for tracking contract-related financial information and performance in the provider setting. Managed care processes began with broader capitation-based payment approaches, where payers pay hospitals a fixed amount per year for every person in a covered population (irrespective of individual utilization), but this approach is now infrequently applied in the U.S. (0 percent to 5 percent) for inpatient services. Capitation-based payment provides incentives for providers to restrict treatment for medically appropriate services and to offer preventive services.² Diminishing interest in this type of capitated payment is based on recognition of risk for unnecessary expenditures by payers facing an expanding array of covered services.

Today, 80 percent to 90 percent of large hospitals are reimbursed for inpatient services based upon calculated case rates (Exhibit 1 and Exhibit 2). This approach limits payer financial risks by applying pay-

Exhibit 2A: Inpatient and Outpatient Care: Methods of Payment, Incentives, and Risk Mitigation

Type of Payment	How Common Now? ^a	Gaining or Losing Popularity	Incentives for Hospital	Incentives for Payer	Contract Provisions to Mitigate Risk for Provider	Contract Provisions to Mitigate Risk for Payer
Inpatient Services						
Discount off charges or cost for services: inpatient	L: 10%-15% S: 65%-75%	Steady	Increased charges and increased services	Managed use of services	Not reported	Cap on charge increases Medically unnecessary days or services Develop service fee schedules
Per-diem or tiered per-diem rates	L: 10%-15% S: 10%-15%	Decreasing	Increased length of stay (LOS) where per diem is greater than cost and reduced services are used each day	Providers encouraged to discharge patients promptly	Mechanism to change per-diem rates if cost per day changes significantly Carve-outs for expensive drugs or equipment	Medically unnecessary days
Hospital case rates	L: 80%-90% S: 40%-50%	Steady	Decreased LOS and reduced services are used each day	Early discharges are discouraged Hospital stays are pre-authorized for some conditions Treatment protocols are developed to limit use of intensive treatment regimens with higher case rates	Outlier, inlier, and ceiling provisions Carve-outs for expensive drugs or equipment	Readmissions within a short time period as part of initial case rate
Global case rates	L: 5% S: 0%	Steady (may be increasing for specialty services)	Decreased LOS and reduced services are used each day	Early discharges are discouraged Hospital stays are pre-authorized for some conditions Treatment protocols are developed to limit intensive treatment regimens	Outlier, inlier, and ceiling provisions Carve-outs for expensive drugs or equipment	Readmissions within a short time period as part of initial case rate
Capitation	L: 0%-20% S: 0%	Decreasing	Reduced number of hospitalizations and cost per hospital stay	Hospital stays are limited Costs are limited to avoid increase in capitation rate	Reinsurance for outlier cases Strong medical management Limited duration of contract	Not reported

ment caps and clarifies provider payment rates for certain services. The amount paid generally is based on historical hospital costs or charges and negotiated between the provider and payer at the time of contract initiation. Global case rates in the inpatient setting include physician fees and hospital costs and are generally restricted to specific types of care, including organ transplants, coronary artery bypass graft surgery, and some orthopedic services. Under case-based payment approaches, providers are incentivized to reduce costs by reducing the length of stay, substituting cheaper or fewer inputs, or providing lower-quality care.⁴ For example, selection among medical management, percutaneous coronary intervention, or coronary artery bypass graft surgery may be influenced by a hospital's need to realize certain operational and revenue goals. This can adversely impact use of new technologies if their cost reduces hospital case margins relative to alternatives. Payers can incorporate

disincentives for providers offering lower quality of care (e.g., reducing payment if patients are readmitted within a specific time frame).⁴ Other incentives for hospitals desiring to maximize net revenue include “up-coding” patients into more intensive (and better-paying) diagnosis-related groups (DRGs) (OIG Report, 1999) or ambulatory payment classifications (APCs) and selectively treating healthier patients within a specific DRG or APC.

The majority (65 percent to 75 percent) of smaller hospitals are currently reimbursed using a discount-off-charges method for both inpatient and outpatient services, where payers agree to cover an agreed-upon percentage of itemized charges or costs for services. This approach is advantageous for smaller hospitals that do often not have the infrastructure to maintain complex capitation-based approaches and is acceptable to payers with beneficiary obligations in rural or high-need areas. Based upon the financial

Exhibit 2B: Inpatient and Outpatient Care: Methods of Payment, Incentives, and Risk Mitigation

Outpatient Services						
Discount off charges	L: 40%-50% S: 65%-75%	Decreasing	Increased charges and increased services	Service protocols are developed	Not reported	Charge increases are limited Prior authorization for services and service limits
Fee schedule	L: 10-15% S: 10-15%	Increasing	Increased service episodes that can be billed Reduced services that are bundled	Service protocols are developed	Not reported	Fee increases are limited Service limits
Ambulatory Payment Classification or case rates	L: 40%-45% S: 15%-20%	Steady	Increased service episodes that can be billed Reduced services that are bundled	Service protocols are developed	Outlier, inlier, and ceiling rates Carve-outs are paid under alternative methods	Not reported

L = large hospitals; LOS = length of stay; S = small hospitals.

^a Percentage of patients.

Table 2 presents a summary of the types of payments, associated incentives, and contract provisions in the inpatient and outpatient setting. In addition, this table includes expert estimates of the proportion of hospital patients who are reimbursed by the different payment methods in large and small hospitals and the trend in the mix of payment methods.

realities for small providers, this payment approach is unlikely to change in the foreseeable future.

Under discount-off-charges reimbursement scenarios, providers may be incentivized to provide more services¹, unless service or reimbursement caps exist. Moreover, the price associated with an individual service may result in a suboptimal treatment mix.⁴ For example, if procedures are reimbursed at higher rates than less intensive care, an excessive number of procedures might be performed to provide higher revenue for the provider organization. For example, the Centers for Medicare & Medicaid Services (CMS) has begun a review of 114 rapid-growth procedures (> 10 percent annually), many of which involve costly health technologies, to address concerns of overuse.²⁰

Outpatient contracts between payers and large hospitals are currently evenly split between discount-off-charges (40 percent to 50 percent) and capitation-based approaches (40 percent to 45 percent), depending upon a number of factors including hospital size, geography, and strategic importance to a payer's beneficiary population. Selection of a payment method is influenced by the payer's and provider's negotiating power and options for seeking alternative stakeholders with whom to contract.

Per-diem rates, where payers reimburse providers an agreed-upon amount for each patient-day in the hospital, are also infrequently used (~10 percent to 15 percent) in the hospital inpatient setting; preferences are for contracting processes that offer more accurate cost containment. Different rates are negotiated for different types of hospitalizations (e.g.,

surgical stays, medical stays, and infant deliveries). Thus, providers are incentivized to reduce patient costs per day while increasing length of stay.²¹

Hospitals with a mix of Medicare, Medicaid, and managed care patients are frequently reimbursed using multiple payment systems, including per-diem rates and per-case rates. This mix of payment types may offer opportunities for cost shifting to less restrictive payers and diminish cost-containment objectives.²² As such, variation in payment schemes can provide conflicting incentives among different provider types and care settings.

Provisions to Mitigate Financial Risks: Medicare and Private Payers

Hospital contracting arrangements have evolved different provisions to mitigate the financial risks. For example, Kominski (2007) described steps that the Medicare program has taken to reduce risks and contain costs. In 2008, Medicare switched to severity-adjusted DRGs (MS-DRGs); as a result, the number of DRGs increased from 538 to 745.²³ This change enabled DRG payments to be adjusted upward or downward based on severity, versus the previous approach that did not account for variable severity and costs. As a consequence, hospitals will be paid more for those patients likely to have higher costs, rewarding more efficient care at all levels of severity and creating payer administrative requirements to manage inappropriate up-coding.^{3,24,25,26} Rarely, if ever, are adjustments technology specific in the DRG system. One notable exception is the introduction of drug-eluting stents,

where a technology-specific DRG was created for percutaneous coronary intervention procedures that included this device. This assessment describes the most common provisions identified for private payers.

Under case rate or global case rate scenarios, hospitals are motivated to include outlier provisions and carve-outs to adjust for expensive technologies and clauses that revert payment to discount off charges if total charges exceed a set threshold. Alternatively, second-dollar outlier provisions, wherein only those charges above the threshold value are paid as a discount off charges (plus the regular case rate), are preferred by payers. Carve-outs are infrequently made for expensive drugs (i.e., those costing more than \$500 or \$1,000 per dose), medical devices, or organ acquisition. Hospitals may also seek inlier provisions that ensure case-rate payment results in a minimum reduction of charges per patient, while payers may require a ceiling that limits case payments to a maximum percentage of charges.

For payers using discount off charges for hospital inpatient or outpatient services, contract provisions frequently limit the rate at which charges can be increased and require a determination of whether or not the care was medically necessary. In addition, payers may negotiate fee schedules that fix payment for each unit of service instead of hospital charges, which may be increased arbitrarily.

For per-diem rates, hospitals may include provisions for renegotiation of per-diem rates for admissions resulting from the introduction of new health technologies. Per-diem negotiations can also include carve-outs for expensive equipment or drugs to buffer financial risks not anticipated in the average payment. These items are paid separately as a discount off charge or by invoice cost plus a premium. From a payer's perspective, it is beneficial to include provisions that limit medically necessary days and to avoid negotiated carve-outs.

Irrespective of the site of care, bundled and prospective payment approaches with well-defined limits generally place the burden of efficient financial management on providers and enable payers to better manage costs. The least risky method, from a hospital's perspective, is discount-off charges, which are often set much higher than hospital costs and increase annually. Charge-based approaches allow hospitals to recover costs not adequately covered by per-diem or case rates. Outpatient charges also are unpredictable for payers, although payers often use actuarial trend analyses as rationale against unreasonable charge increases.

Implications of Hospital Contracting on Adoption of New Health Technologies

Cost and revenue impacts of adopting new health technologies on providers and payers will vary for

different payment types and service scenarios. However, payers were quick to note that irrespective of the contracting scenario, negotiations rarely include individual technology types because these individual costs rarely create a significant financial impact for health plans managing budgets in the high millions or billions of dollars. Typically, only the most expensive or frequently used technology types (e.g., defibrillators, pacemakers, stents) would be considered during contract-level negotiations that focus at a "macro" level.²⁷

The extent to which hospital net revenues change when a new technology is introduced is an important factor in understanding uptake implications for new treatments. Even given significant outcome improvements, if technology adoption jeopardizes revenue from established services, uptake by providers may be suboptimal; for example, when a new drug or device replaces more lucrative surgical services. Alternatively, use of a new drug as an adjunct to costly services (e.g., antithrombotic agents as adjuncts to cardiovascular procedures) may be more readily accepted because it does not displace provider procedural revenue. However, individual technologies from either scenario would rarely feature in hospital contract negotiations. Other factors such as provider size, patient mix, ability to channel patients to new health technology-driven services, and excess capacity influence a hospital's ability to successfully contract with payers and differentiate themselves from other geographic competitors.^{5,18}

Instead of using hospital contracting as a means to achieve utilization and cost control, payers typically employ a variety of cost and utilization management tools selected based on technology attributes and administrative considerations.²⁹ Approaches include coverage limits, utilization controls (e.g., step therapy, prior authorization), claims management and other tools (e.g., quality and pay for performance initiatives) to manage cost impacts of health technologies. Payers apply tools such as clinical pathways, internal permission systems, and quality or performance programs to control utilization of health technologies that place the provider at risk. Over the past several years payers have also been experimenting with new methods of managing quality and cost associated with health technology use, including and new formulary structures, mandates for using specific specialty pharmacy services, new provider network and referral models, disease management approaches, cost shifting to employers/patients, performance-based risk sharing agreements.^{30,31}

From the drug or device manufacturer's perspective, separate payment is almost always preferable to bundled payment. Separate payment circumvents

provider disincentives to use expensive technologies, and potentially offers some protection from competition or market erosion. As payers and providers continue to implement more rigorous quality and cost management approaches, manufacturers will be faced with new and evolving challenges for demonstrating the value of new health technologies and supporting appropriate patient access to innovations. This process will necessitate closer coordination between manufacturers, payers, providers and other health care decision makers to ensure that incentive structures enable efficient and effective use of scarce health care resources that continue to meet patient health care needs.

Summary

The majority of patients in large hospitals continue to receive payment on a case-rate basis, and small hospitals are most frequently paid for using DRGs and APCs or discount off charges. Within provider organizations, implications for technology adoption may vary by site of care, internal hospital division, and anticipated revenue implications. For inpatient care, experts indicated that use of per-diem rates is generally decreasing and that case rates and discount off charges likely will remain the dominant payment types. In the outpatient setting, movement is away from discount off charges and toward APC-like approaches.

Introduction of a new technology for use in outpatient and inpatient settings has the potential to change hospital costs and revenues associated with a specific health condition. Although hospital contracting involves various risk-reducing provisions, most negotiations rarely focus at the level of individual health technologies. Only the most costly health technologies warrant “line item” attention by providers and payers managing large operating budgets. While understanding revenue impacts of new health technologies is important, the greatest influence on access and treatment selection remains traditional (e.g., coverage and utilization limits) and emerging (e.g., quality and performance management) payer management processes. **JMCM**

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