TRANSFORMING HEALTH CARE

A Focus on Consumerism and Profitability

Edited by Jennifer L. Hefner
and Mona Al-Amin

ADVANCES IN HEALTH CARE MANAGEMENT

VOLUME 19

TRANSFORMING HEALTH CARE

ADVANCES IN HEALTH CARE MANAGEMENT

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TRANSFORMING HEALTH CARE: A FOCUS ON CONSUMERISM AND PROFITABILITY

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INVESTOR IN PEOPLE

CONTENTS

SECTION II: THE MOVE TOWARDS TRANSPARENCY

LIST OF FIGURES

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LIST OF TABLES

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INTRODUCTION

The Patient Protection and Affordable Care Act (ACA) included changes in health care reimbursement and incentive mechanisms and enhanced public reporting of patient outcomes, patient experience, and Medicare spending per beneficiary. The goal was to radically transform health care organizations by increasing accountability for key performance domains. While what constitutes a fair assessment of performance might be controversial at times, there is an agreement that the health care system, led by the federal government as a dominant payer, needs to solidify the structures and mechanisms that herd health care organizations toward the desired performance goal of delivering cheaper, patient-centered, effective, and error-free care (Al-Amin, Makarem, & Rosko, 2016; Ryan, Krinsky, Maurer, & Dimick, 2017). Two prominent mechanisms include new value-driven reimbursement models and public reporting to increase transparency and inform consumer choice. In this volume, we focus on these mechanisms and on their implications.

Two key stakeholders, simultaneously impacted the most by the goal of high performance and essential for its successful attainment, are health care organizations and consumers. Both stakeholder groups must be equipped with the right tools and incentives to competently play their part in the optimal coproduction of health care services. Health care organizations are incentivized to commit to the goal through constantly evolving reimbursement models such as bundled payments and value-based purchasing (VBP) programs. Public reporting and price transparency, on the other hand, aim at encouraging patient engagement and consumerism in health care by facilitating consumer selection of health care providers with the best performance.

Health care organizations need access to sufficient resources to successfully transform their processes and culture in such a way that ensures better performance. Health care organizations are businesses, and regardless of their ownership status, they need to generate profit in order to sustain their operations, to acquire essential and strategic resources, and to achieve their mission by contributing to their communities (Bazzoli, Chan, Shortell, & D'Aunno, 2000). Factors such as ownership, size, occupancy rates, and advanced technologies are associated with higher profitability (Burkhardt & Wheeler, 2013; Rosko, Goddard, Al-Amin, & Tavakoli, 2018). Further understanding of the factors that influence hospital profitability is imperative as hospitals struggle to achieve their financial goals.

Consumers, despite the abundance of publicly reported data in the United States, are either unaware of data availability or do not rely on publicly reported data to select providers (Sinaiko, Eastman, & Rosenthal, 2012). Transparency in

quality, patient experiences, and prices is essential for consumerism to work in health care. However, transparency of data alone, while a baseline requirement, is not sufficient. Consumers have to be aware of what data are available, convinced of their usefulness and applicability, and able to interpret the data when they make health care related choices. Carman, Lawerence, and Siegel (2019) explain consumerism as "people proactively using trustworthy, relevant information and appropriate technology to make better-informed decisions about their health care options in the broadest sense, both within and outside the clinical setting." Given that transparency in patient outcomes, experiences, and prices is a new shift in the health care industry, it is essential for us to understand what true transparency means and how to optimally use this transparency of data to improve consumer decisions to achieve the desired performance goal of delivering cheaper, patient-centered, effective, and error-free care.

OVERVIEW OF THE PAPERS IN THIS VOLUME

The following 10 chapters in the volume seek to provide answers to the outstanding questions about health care system finance and consumerism outlined earlier. The chapters are divided into two sections: "Reimbursement, Cost, and Profitability" and "The Move Toward Transparency." Employing a variety of research methodologies – including advanced quantitative modeling, systematic literature review, narrative review, and expert commentary from Burns and Pauly – in these chapters, authors explore the impact of transformation in payment and debt structures, profitability, and horizontal or vertical integration on outcomes such as price, clinical outcomes, and health plan selection. Additionally, to explore the trend toward transparency between health care stakeholders (patients, hospitals, insurance companies, the government), section two considers how sharing price and outcomes information can enhance patient and payer choice.

SECTION I: REIMBURSEMENT, COST, AND PROFITABILITY

The first four chapters in this volume address the issues of reimbursement, cost, and profitability. These issues are key to understanding how new reimbursement models can serve as a mechanism to achieve the goal of higher performance in health care organizations. The first chapter, by Gascon and Sawchyn, presents a narrative review of the history of bundled payment programs – a mechanism to align payer, provider, and patient incentives. The authors evaluate bundled payment through the lens of agency theory and then postulate the future direction of bundled payments as a key structure in the provision and payment of health services.

The second chapter, by Rosko, uses advanced quantitative modeling to assess the internal and external environmental factors that affect variations in rural hospital profitability. More specifically, the chapter focuses on the impact of the

ACA regulations that resulted in the expansion of Medicaid eligibility, as well as four Medicare programs that target rural hospitals. He found that while the Medicaid expansions provided modest help for rural hospitals' financial condition, the impact of the four targeted Medicare programs for rural hospitals was either small or insignificant. This study speaks to the resources at-risk hospitals need in this era of health care transformation. Rural hospital managers cannot rely on current government programs to remedy their long-standing financial problems, but must consider other mechanisms such as system membership, a factor this study found significantly associated with profitability.

The third chapter, by Ramamonjiarivelo, Hearld, Epané, McRoy, and Weech-Maldonado, is a quantitative study of the impact of public hospitals' privatization on community orientation. Their findings suggested that ownership conversion from nonprofit to for-profit increases the likelihood of hospitals engaging in community orientation activities. This surprising finding indicates that conversion to for-profit status indeed has implications for how organizations are serving their local communities. Those proposing new reimbursement models must consider how those models change incentives in the industry to privatize.

The fourth chapter in Section I, by Carroll, Smith, and Wheeler, explores another potential benefit of system membership by addressing the question: "Does system membership help hospitals achieve optimal leverage?" Using propensity score-matched control hospitals, they examined changes in leverage that occurred after independent hospitals joined multihospital systems. This chapter presents the evidence that system membership allows underleveraged hospitals to increase their debt holdings, suggesting that system membership may help not-for-profit hospitals attain an optimal capital structure.

SECTION II: THE MOVE TOWARDS TRANSPARENCY

The chapters in Section II explain how transparency in the health care system can serve as a mechanism to motivate health care organizations to achieve the goal of higher performance. The chapters explore transparency via three broad topics: price transparency, market transparency, and quality metric transparency. The first chapter in this section is an expert commentary written by Burns and Pauly that considers the question: "When is medical care price transparency a good thing, and when isn't it?" They propose that any new policies to promote price transparency must take the specific market setting into account. Therefore, they present an analysis of markets characterized by monopolistic, oligopolistic, and competitive conditions to determine when and under what economic and managerial circumstances price transparency will be useful. This chapter concludes with a nuanced answer to that question, which can be summarized as "not always."

Following this is a chapter by Patel, Rucks, and Ford presenting an analysis of hospital websites to assess compliance with federal regulations requiring hospitals to publish their "standard charges" in a public, machine-readable format. The authors also conducted a sentiment analysis to evaluate the level

of consumer-friendliness of the content in terms of language usage. The authors conclude that most hospitals' websites do not present standard charges data in a way that is readily collectable or comparable to other facilities. In fact, the messaging on webpages routinely suggests that consumers not use the data.

Following the discussions on price transparency, Bauhoff, Carman, and Wuppermann provide a chapter about transparency in insurance markets, particularly exploring the role of consumer financial literacy in health plan choice on the ACA insurance marketplaces. They note that while low-income consumers are eligible for subsidies to purchase insurance, whether these consumers can take advantage of the support and make sound decisions about buying health insurance depend on their knowledge and skills in navigating complex financial products. Their analysis of financial literacy across income groups found that among the low-income population eligible for subsidies, financial literacy was low. This finding is important for ongoing health care transparency efforts and points to a need for targeted support to consumers.

The last three chapters in this volume consider transparency of quality metrics. Aydin, Zengul, Quintana, and Ozaydin present a systematic literature review addressing the question: "Does transparency of quality metrics affect hospital care outcomes?" They identified 39 articles that studied the impact of the public release of quality performance data on hospital care outcomes. They documented a growth in health care transparency efforts between 2010 and 2015, with the increasing number of studies over this time period showing mixed results on outcomes positive, negative, and neutral. Next, McCaughey, McGhan, and Landry explore transparency within a hospital and the links to leadership and safety excellence. Their analysis of employee safety culture surveys found that ratings of safety climate leadership factors by hospital support workers – e.g., food and nutrition, environmental services – were related to perceived safety climate, highlighting the need for transparent leadership across the organizations.

In the final chapter in this volume, Helmchen presents an alternative to current health care transparency efforts that tend to mainly focus on posting provider-specific patient outcomes. Noting the same limitations to this type of transparency as previous chapters, he proposes a system of "outcome warranties" in which providers underwrite insurance policies that promptly pay patients a predetermined sum after an adverse outcome. Patients could then use these outcome warranties to infer quality differences among providers. He aims to propose a novel, controversial idea to highlight flaws in the current policy and advance the conversation.

The chapters in Section II all support the claim made by Burns and Pauly in this section's first chapter that price transparency is not always a good thing. It depends on a multitude of contextual factors related to consumer's capabilities and the organization of the information. This section supports the complexity of consumer transparency as a mechanism to reach the goal of high-value health care, and makes a case for future research in this rapidly changing field. This is complementary to Section I, which presents a consideration of how new reimbursement models have transformed the finance of health care organizations. As we offer in our Introduction, health care organizations and consumers are the two

key stakeholders simultaneously impacted the most by the goal of high performance and essential for its successful attainment. We hope that health care scholars and practitioners will find this volume of interest.

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Editors

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BUNDLED PAYMENT PROGRAMS AS AN APPLICATION OF CASE RATE PROVIDER REIMBURSEMENT

Gregg M. Gascon and Gregory I. Sawchyn

ABSTRACT

Bundled payments for care are an efficient mechanism to align payer, provider, and patient incentives in the provision of health care services for an episode of care. In this chapter, we use agency theory to examine the evolution of bundled payment programs in private and public payer arrangements, and postulate future directions for bundled payment development as a key component in the provision and payment of health care services.

Keywords: Bundled payment; episode of care; population health; risk management; agency theory; reimbursement model; value-based purchasing; payment reform

Episode-based bundled payment programs provide patients, employers, and third-party payers with a prescribed set of health care goods and services related to a medical procedure or condition at a fixed charge. Payments for the care are distributed on a contractual basis to each provider who contributes to patient care during the episode to the extent that quality goals are met; facilities utilized during the episode of care are reimbursed at prearranged rates. The contract organizes care in such a way as to produce optimal patient outcomes efficiently taking all aspects of care into account. Episode-based bundled payment programs are perceived as one way to address rising health care costs in America.

In January 2015, the US Department of Health and Human Services announced that it would tie 30 percent of all Medicare fee-for-service provider payments to alternative payment models like bundled payment programs by the end of 2016 and

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a total of 50 percent by the end of 2018 (Burwell, 2015). Through two administrations, Medicare has pursued the expansion of bundled payment programs as a means to reduce health care costs and improve the quality of health care provided to patients. It has done so as the largest payer of health care services in America, accounting for 20 percent of total national health spending in 2017 (Cubanski, Neuman, & Freed, 2019). Given its importance in national efforts to reduce health care costs, it is important to understand the development, use, and evaluation of bundled payment programs. This chapter provides a historical overview of the development of bundled payment programs in the private and public sectors and provides a framework through which to understand the behavior of parties to health care contracts based upon agency theory. We then use insights from this history to present policy recommendations for successful bundled payment programs.

EXPLAINING BUNDLED PAYMENT PROGRAMS THROUGH THE LENS OF AGENCY THEORY

To understand the relationship between providers and payers in each of these bundled payment programs and in health care more generally, it is helpful to employ agency theory. Agency theory is concerned with the relationship between two parties bound by a contract in which one party (the principal) delegates work to another (the agent). It assumes that people act in their own interest, are rational, and are risk averse. It is a theory that has been employed in such fields as accounting, economics, finance, marketing, political science, organizational behavior, and sociology (Eisenhardt, 1989), and used to understand and predict the consequences associated with principal–agent relations when goals are divergent and information regarding the extent to which the agent has behaved appropriately is asymmetrical. Agency loss can occur through moral hazard, as when the agent does not put forward the agreed-upon effort, or adverse selection, as when the skills required of the agent to complete the contract are deficient and agent intent does not translate to outcome (Eisenhardt, 1989).

Multiple principal–agent relationships exist in modern health care arrangements, including the relationship between physicians and patients, health plans and physicians, health plan purchasers and health plans, health care facilities and physicians, and regulators and health plan purchasers (Casalino, 2001; Conrad, 2015). While provider payments create different incentives between the parties, in general, the goals of these dyads are the optimal health and wellness of the patient (physician–patient); the efficient delivery of evidence-based, high-value services to all patients (health plans – physicians and health plan purchasers – health plans); and lawful operations that yield optimal health outcomes among citizens (regulators – health plan purchasers). Provider payment incentives impact these relationships positively and negatively (Eisenhardt, 1989), while stronger financial has a larger impact on behavior (Conrad, 2015). Dyadic relationships can be developed, then, on the basis of agency theory.

Agents are more likely to behave in the interests of the principal when the contract is outcome-based. If a principal provides strong incentives to agents to

achieve the principal's goal, the contract is stronger to the extent that explicit, measurable goals are articulated and understood by both parties. Bundled payment programs that provide measurable goals that reflect the quadruple aim (enhancing patient experience, improving population health, reducing costs, and improving work–life balance of health care providers) (Bodenheimer & Sinsky, 2014) alongside strong incentives can optimize the relationship between parties. To the extent that the principal has information to verify agent behavior with the full knowledge and consent of the agent, this relationship is strengthened. Similarly, to the extent that contracts are long term, this relationship is strengthened (Conrad, 2015; Eisenhardt, 1989; Robinson, 2001). Agency theory is a clear guide for the optimization of these health care dyads, but its application depends upon the financial incentives embedded in the contract. Those contracts vary by dyad.

In March 2012, the National Commission on Physician Payment Reform was convened by the Society of General Internal Medicine to recommend forms of payment that would optimize patient outcomes, enhance patient and physician satisfaction, and provide cost-effective care. Their top recommendation was the elimination of the dominant provider reimbursement mechanism, fee-for-service care. The report found that the fee-for-service incentive system increased the volume and cost of services regardless of appropriateness, encouraged duplication, and discouraged care coordination (Schroeder & Frist, 2013).

HISTORY OF BUNDLED PAYMENT MODELS

Early Payer Models

In a fee-for-service provider reimbursement contract, providers are paid a fee for services performed. The services themselves are provided by autonomous physicians meeting the medical needs of patients under an insurance contract wherein medical necessity is left largely to the discretion of providers. However, service availability is influenced by insurance coverage and consumption of services is influenced by patient preference. In a fee-for-service system, providers are rewarded for the volume of service given to patients without regard to the appropriateness, cost, or quality of those services. In the provision of a medical procedure or course of treatment for a condition, providers are not financially responsible for the outcomes of treatment. Originally, fees were established on the basis of usual, customary, or reasonable charges – typically, the average charges levied by providers in a geographic area. When prices rose precipitously, fee schedules were developed by third-party payers and negotiated with providers (Fox & Kongstvedt, 2012). This type of provider reimbursement system emerged in the United States largely after the Second World War.

Case rates are a form of hospital reimbursement wherein a procedure or set of services are provided in exchange for a predetermined, set payment. As such, bundled payments are an application of case rates. In order to be successful, bundled payments must be developed upon the foundational elements of successful public and private bundled payment programs: the appropriate articulation of all germane services in an episode of care; thorough measurement of

past episode cost distributions in order to set target prices; the alignment of incentives around care coordination, quality, and outcomes; and rigorous evaluation of results. The construction of such elements requires pause to consider the development of a bundled payment program.

1984–1985 – Pioneering Innovations

In 1984, the Texas Heart Institute (THI), a nonprofit private corporation, received a request from a local employer to provide cardiovascular care to its employees and was asked by a national third-party payer soon thereafter to consider whether a fixed payment could be arranged for services related to a medical procedure (Edmonds & Hallman, 1995). In order to respond to the request, THI relied upon its existing patient care database to identify three cardiovascular procedures with definitive beginning and endpoints. By identifying the parameters of a procedure, the providers could articulate the medical goods and services required to provide appropriate care for patients for auditing purposes (Lembcke, 1956) or the measurement of health care quality (Kessner, Kalk, & Singer, 1973). This process has its roots in case studies of disease management (Lee & Jones, 1933), medical economics (Scitovsky, 1964), and the health care services research literature (Hornbrook, Hurtado, & Johnson, 1985; Solon et al., 1967). In each case, the process of measurement precedes the development of an episode of care which informs the evaluation of patient outcomes.

After THI staff had identified three types of procedures with a tangible beginning and end to treatment, they subdivided the three procedures into 16 specific operations. A cost and utilization analysis followed in which patients were partitioned into high and low groups. At the time, staff could not determine the risk of complications or costs prospectively, so they estimated the hospital charges and professional fees associated with treating patients up to the 95th percentile of the low cost and utilization group and determined to address the hospital charges and professional fees of the others on a fee-for-service basis with the payers. This was done on the basis of the standard length of stay so that per diem hospital rates and professional fees were levied after the standard length of stay for the low cost and utilization group were exceeded. While the bundled payment program began under a single contract, interactions with the state's insurance commission led THI to develop a physician-directed, taxable, not-for-profit corporation, CardioVascular Care Providers, Inc. (CVCP), to administer the program by separating the facility component at St. Luke's Episcopal Hospital, a nonprofit corporation, from the physician contracts with THI. Afterward, CVCP contracted with employer-based self-insured plans, prepaid health plans, and union plans to provide cardiovascular services to covered health plan members (Edmonds & Hallman, 1995).

1986–1989 – Private Sector Adoption and Early CMS Interest

In 1986, THI submitted a proposal to the Health Care Financing Administration (HCFA), later renamed the Centers for Medicare & Medicaid Services (CMS), to provide bundled payments to Medicare providers. At the time, the bundled

payment program charge for a coronary artery bypass under the CVCP plan was 43.9 percent of the average Medicare payment for the procedure, and THI surgeons were performing thousands of cardiovascular procedures per year.[1] In a review of the proposal the following year, the inspector general of Health and Human Services responded favorably by recommending the development and implementation of a program that would provide a single payment for coronary artery bypass graft (CABG) surgery with high-volume hospitals (Office of the Inspector General, 1987; Institute of Medicine, 2010).

In the interim, other private parties were experimenting with the bundled payment approach. In Lansing, Michigan, an orthopedic surgeon and the Ingham Medical Center, a not-for-profit organization, contracted with the Blue Care Network Health Maintenance Organization (HMO), a mutual insurance corporation, to provide orthopedic care and surgeries for health plan members from 1987 to 1989. The contract with the physician included office visits, radiographics, utilization review, and surgical care. The contract with the facility included hospitalization, lab testing, in-hospital radiographs, preoperative electrocardiograms, anesthesia services, and physical/occupational therapy. If a patient required surgery, a single fee was paid by the HMO to the doctor and hospital to cover the costs of the surgery; all related services performed by the surgeon were covered up to two years postdischarge. The results of the first contract were positive: of the 111 patients referred to the surgeon, 44 percent ($n = 49$) required surgery. Of the 49 surgical cases, 42 were treated as outpatients. Four subsequent procedures were performed on three patients. The surgeon, hospital, and HMO all benefited from the contract financially. Costs were lower due to lower administrative costs through the reduction of precertification and utilization review, and a lower incidence of surgery and a greater proportion of outpatient care. These results were conditioned by the surgeon's estimate of the utility of surgery given the fact that he would be financially accountable for the results for up to two years (Johnson & Becker, 1994).

1989–1996 – Early CMS Adoption

At the same time that the Michigan orthopedic bundled payment experiment was ending and two years after the THI proposal, HCFA solicited bids from hospitals and physicians to participate in a Medicare Participating Heart Bypass Center Demonstration by providing patients with a single charge to cover all facility and professional fees associated with services provided to Medicare patients discharged with Diagnosis-Related Group (DRG) 106 and 107. The bids were sent to hospitals performing more than 250 coronary artery bypass procedures annually. Of the 734 hospitals solicited, 209 responded with a preapplication. Of those 209, 42 were asked to submit additional information regarding surgical

[1]To provide some context on the volume of procedures performed annually at the Texas Heart Institute (THI), surgeons at THI performed 5,014 open heart procedures (Sprung, 2019).

volumes and qualifications; 27 submitted. An expert panel evaluated applicants on the basis of outcomes, resources, number of CABG procedures performed per year, marketing plans, charges, and long-term follow-up of patients. Ten finalists were recommended for inclusion (Cromwell et al., 1998; Department of Health and Human Services, 1988).

Four hospitals – Saint Joseph's Hospital (Atlanta, GA), St. Joseph Mercy Hospital (Ann Arbor, MI), The Ohio State University (Columbus, OH), and University Hospital (Boston, MA) – all not-for-profit organizations – began participation in 1991. To participate in the program, hospitals were required to collect Part A and B deductibles and Part B coinsurance, and they received a single payment for each discharge that included all facility and professional fees, outliers, and readmissions occurring within a window of 3 days to 6 weeks from discharge. No balance billing or outlier payments were allowed, and the hospitals were still subject to utilization review to ensure that all surgeries were necessary (Institute of Medicine, 2010). By 1993, three additional not-for-profit hospitals – St. Luke's Episcopal Hospital (Houston, TX), St. Vincent's Hospital (Portland, OR), and Methodist Hospital (Indianapolis, IN) – joined the Demonstration.

After the Demonstration's conclusion in 1996, a mixed methods program evaluation found that the program generated substantial savings to Medicare and patients, and was associated with lower length of stays, lower mortality rates, and higher patient satisfaction rates (Cromwell et al., 1998). At the conclusion of the Demonstration, over 10,000 procedures had been performed at a savings of more than $50 million (Institute of Medicine, 2010). Two additional evaluation findings merit attention. Through the Demonstration, HCFA obtained evidence that many hospital systems were willing to develop bundled payment programs and absorb financial risk for Medicare recipients. Participating hospitals also found that they were in a better position to negotiate contracts with third-party payers due to the experience, having made investments in data systems, physician contracts, billing and collection systems, and staff in order to succeed in the experiment (Cromwell et al., 1998).

At the same time that the Medicare Participating Heart Bypass Center Demonstration program was ending, so was the Medicare Cataract Surgery Alternative Payment Demonstration (1993–1996). In contrast to the Medicare Participating Heart Bypass Center Demonstration, this initiative was limited in scope to outpatient procedures. It involved three participants – Medical Eye Associates and the Cataract Eye Center (Cleveland, OH), a physician-owned group practice; Doctors Hospital of Dallas (Dallas/Fort Worth, TX), a not-for-profit corporation at the time; and Southwestern Eye Center (Phoenix, AZ), a physician-owned group practice. The bundled payments included all facility and physician fees, the cost of the intraocular lens, and all preoperative and postoperative tests and visits required for the procedure. In the end, HCFA realized a savings of 2–5 percent relative to prior fee-for-service rates (Reardon, Wrobel, Olinger, & Dorsey, 1997, p. xi).

1997–2005 – Early Learning Dissemination and Slow Progress

As both demonstration programs were ending, Medicare began work on another project, the Participating Centers of Excellence Demonstration for Orthopedic and Cardiovascular Services. It was never implemented, however, due to a number of reasons including funding priorities of the Balanced Budget Act of 1997, concerns over computer system changes in light of Y2K, and organized opposition from the American Academy of Orthopedic Surgeons (Institute of Medicine, 2010). As the successes of the Medicare demonstration projects were communicated to a wider audience, similar initiatives emerged from the private sector.

2005–Present – Reemergence and Wide Adoption of Bundled Payments

Beginning in August 2005, Geisinger Health System (Danville, PA), a large integrated not-for-profit health care delivery system, took a quality improvement approach to process redesign in its development of a bundled payment program for elective CABG procedures (Berry, Doll, McKinley, Casale, & Bothe, 2009; Casale et al., 2007). It began by working with its surgeons to take the best practice guidelines from the appropriate specialty medical society, translating those guidelines into clinically meaningful recommendations, and making those recommendations process steps that could be tracked in the clinical workflow so that real-time data collection methodologies could be employed to track adherence to each step in the clinical care pathway. The bundled payment program, ProvenCare, became available six months from the initial planning start (February 2006). It involved a single payment in exchange for the surgery and all related care up to 90 days postdischarge (Mechanic & Altman, 2009).

Within the first four months of operations, process fidelity reached 100 percent. When patients enrolled in ProvenCare in its first year of operation were compared to a prior cohort, average total length of stay decreased 16 percent, hospital charges fell 5 percent, and operative mortality fell to 0. As a result, staff satisfaction increased as a function of reduced practice variation and improved patient outcomes, and the lessons learned from the development and implementation of the elective CABG episode led to the development of bundled payments in other medical procedures including elective total hip replacement, cataract surgery and percutaneous coronary interventions (Berry et al., 2009; Casale et al., 2007), gastric bypass surgery (Petrick et al., 2015), and conditions such as pregnancy (Berry et al., 2011) and lung cancer (Katlic et al., 2011). The first report of the success of the model was published in 2007 (Casale et al., 2007).

In September 2006, the Assistant Secretary for Planning and Evaluation contracted with RAND Corporation, a not-for-profit think tank, to explore episode-based payments and other payment reforms to encourage care coordination, shared accountability, and efficiency (Sorbero et al., 2006). The project was designed to examine alternative episode definitions to better align performance measures, incentives, payments, and accountability within Medicare fee-for service, and illuminated a number of challenges associated with the practical

work of building a bundled payment program for a specific procedure or medical condition. Their report raised a number of issues that remain contentious today, including how episodes of care should be defined, which providers should be included, how case mix should be addressed, and how to prevent or minimize negative unintended consequences (Damberg et al., 2009; Herzlinger, Schleicher, & Mullangi, 2016). These issues were to arise under the next iteration of bundled payment programs, PROMETHEUS.

That same year, the Robert Wood Johnson Foundation (RWJF) a major philanthropic organization provided the Health Care Incentives Improvement Institute (HCI3), a not-for-profit organization, with a planning grant to create and evaluate a bundled payment model. With a $6 million grant extending over three years, RWJF enabled HCI3 to implement the PROMETHEUS program (Provider Payment Reform for Outcomes, Margins, Evidence, Transparency Hassle-reduction, Excellence, Understandability and Sustainability) in three pilot sites – Crozer-Keystone Health System, part of a for-profit corporation (Springfield, PA), Employers' Coalition on Health, an employer-owned Preferred Provider Organization (Rockford, IL), and Spectrum Health, a not-for-profit health system (Grand Rapids, MI) – with the support of additional grants from the Commonwealth Fund, the New York State Health Foundation, and the Colorado Health Foundation. The goal was to determine if the bundled payment model could be implemented in the field and to identify the conditions for its success.

Twenty-one care episodes were developed for chronic medical conditions, acute medical conditions, and procedures. Pilot sites agreed to the proposed payment methodology, worked with physicians to coordinate care, and began process improvements. However, after several years, none of the pilot participants were able to implement a bundled payment program (Hussey, Ridgely, & Rosenthal, 2011). Some of the lack of success associated with PROMETHEUS is inherent in its design. Within its methodology, cost is distributed among all episodes of care for which a beneficiary is eligible at the time of service. As a result, payments between providers and payers are split among eligible episodes. By so doing, payers are not able to fully mitigate the risk associated with a patient whose comorbidities place them in multiple episodes. In this circumstance, the risk-mitigating effect of a bundled payment is offset by a risk-adding effect of episode eligibility that makes a bundled payment less attractive.

Despite the failure of the PROMETHEUS approach and the lackluster results of the Medicare Cataract Surgery Alternative Payment Demonstration, the success associated with the Medicare Participating Heart Bypass Center Demonstration program and Geisinger Health System's ProvenCare bundled payment programs indicated that bundled payment programs were a viable means to change the financial and administrative incentives to improve the care and efficiency of high-cost, high-volume surgical procedures within an integrated health care delivery system. In 2008, the Medicare Payment Advisory Commission (MedPAC) recommended to Congress that the CMS plan, develop, implement, and evaluate a voluntary pilot program to test bundled payments for all Medicare Part A/B services included in select high-cost, high-volume procedures that include a