LAWTON ROBERT BURNS

THE HEALTHCARE VALUE CHAIN

DEMYSTIFYING THE ROLE OF GPOS AND PBMS

The Healthcare Value Chain

"Criticisms of the healthcare system come from many directions. One frequent target concerns the roles played by Group Purchasing Organizations (GPOs) and Pharmacy Benefit Managers (PBMs). Hemingway wrote that the one quality needed, above all, to be a good writer was having "a built-in, shock-proof, crap detector." Professor Burns has taken Hemingway's sage advice by chronicling the evolution of these organizations and faithfully identifying the value provided by these much-misunderstood entities. Readers will understand what it takes, in an era of supplier consolidation and innovation, to be a valued agent for organizations that are so dependent on others to bring care to our population."

—Eugene Schneller, Ph.D., *Department of Supply Chain Management, Arizona State University*

"*Professor Burns dives deeply into the two most opaque parts of the healthcare ecosystem - GPOs and PBMs. It is the most detailed and comprehensive assessment available of these two often misunderstood sectors. Anyone truly interested in understanding, as opposed to blindly criticizing, these key participants would benefit from a careful read of this important volume.*"

—Bradley Fluegel, *Former Chief Commercial Officer and Strategy Officer, Walgreens, Former Chief Strategy Officer, Anthem, Former Head of National Accounts, Aetna*

"In his introduction, Professor Burns alerts us to the "Dark Territory of GPOs and PBMs". He then proceeds to illuminate the darkness thoroughly and emphatically with humor, analogy, and extensive research. In so doing, he firmly establishes the historical roles played by GPOs and PBMs in the healthcare ecosystem. If "Past is Prologue" then Professor Burns' exhaustive chronicle of GPOs and PBMs sets the stage for a more nuanced, less biased interpretation of their role. This volume is an intense, but absorbing read. A "Dark Territory" no longer. You would be hard pressed to find a better researched view. Every healthcare executive, employer and policy maker should take advantage of these insights."

—Mike Taylor, *Principal, MT Healthcare Consulting, Former Senior VP Delivery System Transformation—Aon plc*

"Professor Burns, one of the nation's leading healthcare management scholars, provides an objective assessment of healthcare middlemen. Burns convincingly argues from research evidence and decades of experience that if you are looking for organizations to blame for the nation's health cost crisis, you had better look elsewhere. This is a must read for those who want to learn more about the complexities of our healthcare supply chain."

—David Dranove, Ph.D., *Walter McNerney Distinguished Professor, Professor of Management & Strategy, Kellogg School of Management, Northwestern University*

Lawton Robert Burns

The Healthcare Value Chain

Demystifying the Role of GPOs and PBMs

palgrave
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Preface and Acknowledgments

This volume has been in the making for the past twenty-five years. In the late 1990s, with the financial assistance of a grant from the National Science Foundation and its sponsored Center for Health Management Research, I undertook a multi-year field study of the institutional supply chain in healthcare. That study investigated (1) the *manufacturers* of pharmaceutical, medical supply, and medical device products; (2) the *distributors* of those products; and (3) the organized *purchasers* of those products. The purchasers included the group purchasing organizations (GPOs) and integrated delivery networks (IDNs). That investigation resulted in a book published in 2002, *The Health Care Value Chain*.

While I have remained active in studying these organizations and their contractual relationships, I have broadened my scope to examine the retail supply chain in healthcare that is concerned with prescription drugs. That inquiry brought me into greater contact with drug wholesalers, pharmacy benefit managers (PBMs), and pharmacies. I confess that it has taken me longer to understand (to the extent that I do) the retail channel than the institutional channel, perhaps because I have studied physicians and hospitals (the two end customers of the institutional channel) for so long.

I have long been struck by the parallels (and contrasts) between the institutional and retail channels, and in particular, the similar roles played by two intermediaries in these chains: the GPOs and the PBMs. As best I can tell, none of my colleagues has bothered to analyze this topic. I have seen only a few cursory depictions of these parallels from industry publications—and I

do not feel they are either accurate or thorough. My purpose is to establish an academic foundation for this topic, drawing on an extensive archival record that places these two intermediaries in historical context.

I am standing on the shoulders of many researchers and analysts who have gone before me and/or are still going. I have persuaded some of them to assist (and correct) me here as co-authors of several chapters. In particular, I wish to acknowledge David Cassak and Roger Longman—both long-time analysts and journalists covering these intermediaries. David has lectured in my Wharton classroom on many occasions; Roger has similarly lectured in my colleague Patricia Danzon's class. Much of my historical understanding of GPOs and PBMs stems from their decades-long investigations. I also wish to thank Adam Fein, Ph.D., who received his Ph.D. from Wharton in the late 1990s. His publications educated me about (a) mergers of pharmaceutical wholesalers and how they extracted scale economies from such combinations, and (b) the workings of wholesalers, PBMs, and pharmacies. I have been using those lessons in class for more than twenty years. Adam has also been most gracious in letting me utilize some of his slides as figures here. I also thank Allison Briggs, my doctoral student, who has helped me to analyze survey data on the GPOs and their performance over the past few years. Special thanks go to Tina Horowitz, who has been the most phenomenal administrative assistant I have ever had the pleasure of working with. Like many of my prior books, Tina edited this entire volume and helped with many of the source documents and figures. Finally, I thank my wife and son who, as with my last book on the healthcare ecosystem, tolerated me and my long hours of writing this volume from home.

Bryn Mawr, PA, USA Lawton Robert Burns

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Part I

Introduction

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Caution: Entering Dark Territory

Dark Territory

My son analyzes industries and companies for a hedge fund. The first industry he covered was the railroads. According to that authoritative research source, Wikipedia, "Dark territory is a term used in the North American railroad industry to describe a section of running track not controlled by signals." There are several elements here. First, there is no central control or centralized administration. Second, there are safety concerns due to the absence of direct or indirect train detection. Third, there is a lower ability to detect misalignment in track switches, broken rails, or runaway rail cars. Fourth, and most importantly, it is dark. Of course, I should have known all of this. It played a central role in Steven Seagal's 1995 action movie thriller, "Under Siege 2: Dark Territory."

Welcome to Healthcare's Dark Territory

Healthcare has its own version of dark territory. It comprises many intermediaries—i.e., firms that connect other firms (buyers and sellers)—who are widely mistrusted and disliked. Why? They are seemingly out of control, with little federal regulation of their activities; their actions purportedly threaten patient safety; they amplify (rather than correct) distortions in the market; they allegedly make big profits but don't make anything; and, of course, they are widely viewed as shady characters that evade transparency and sunlight.

L. R. Burns, *The Healthcare Value Chain*,
https://doi.org/10.1007/978-3-031-10739-9_1

In the 1990s, the firms with the "dark territory" bullseye on their back were the health maintenance organizations (HMOs), a subset of managed care organizations (MCOs). The HMOs helped to (briefly) contain the escalation in national health expenditures in the middle of the decade, largely by working with employers to channel employees into narrow-network plans that often required prior authorization by a gatekeeping physician to see a specialist and a second opinion before getting surgery, and pressured hospitals to discharge patients more quickly (e.g., "drive-by deliveries"). The public's dislike of these tactics led to the "managed care backlash" of the late 1990s, a loss of market share, and replacement by a less restrictive form of MCO known as preferred provider organizations (PPOs). In 2008, candidate Barack Obama targeted another subset of MCOs, the Medicare Advantage (MA) plans (HMOs for Medicare enrollees), complaining about the high rates of reimbursement they were paid by the federal government.[1]

MCOs are not alone. Other healthcare firms that have been frequently targeted for criticism are the pharmaceutical manufacturers ("Big Pharma") for the high prices attached to their new drugs. For 2021, population surveys rank pharmaceutical companies lowest in public trust (56%) among five types of healthcare firms, not far behind the MCOs (59%).[2]

These criticisms pale, however, compared to the invective leveled at two other intermediaries: the group purchasing organizations (GPOs) and pharmacy benefit managers (PBMs). They have perhaps been the two biggest scapegoats in healthcare for at least two decades. The following accusations typically accompany articles in the popular press about one or both of them[3]:

- monopoly power
- collusion with manufacturers
- market foreclosure of smaller, innovative startups due to exclusive contracts
- anticompetitive market structure
- distortions to supply and demand
- conflicts of interest
- stifling innovation and keep lifesaving technologies off the market
- harms to patient care
- deadly medical supply cartel that is killing healthcare workers
- excessive fees and outsized profits
- kickbacks
- secret rebates
- pernicious pay-to-play system
- cater to the sellers rather than the buyers
- lack of transparency and disclosure

- artificially higher product prices
- bamboozle hospital chief financial officers and purchasing managers
- influence what drugs a physician prescribes
- take decision-making out of the hands of physicians
- product shortages
- impeded patient access to medications
- higher patient co-pays for medications

Most recently, a Professor of Surgery at Johns Hopkins Medicine weighed in on the issue, publishing a short, two-page "viewpoint" (letter, not research) in the *Journal of the American Medical Association* and then a new book.[4] He restates many of the same accusations above.

This is a pretty long list of serious charges. Some readers may now be thinking, "what a bunch of #@&$!#@." No wonder healthcare is "broken." How come I did not know about this scandal? Why hasn't someone done anything about these problems? Has anyone gone to jail for all this wrongdoing? Or, as TV attorney Saul Goodman (from *Breaking Bad*) would say, "Who did this to me? And more importantly, who can I sue?" The journalistic assault on these intermediaries has continued for at least two decades.

The problem with these accusations is that they are very difficult to evaluate. The authors of the articles and reports on these intermediaries note the lack of evidence; others note the lack of understanding about what these organizations actually do. For example:

- "As for independent assessment of GPOs' effect on costs, they are hard to come by."[5]
- "…little empirical evidence exists to definitively assess the impact of the GPO safe harbor."[6]
- "How [PBMs] operate has remained mostly hidden."[7]
- "Debates about PBMs can be confusing in large part because their role is generally not well understood…"[8]
- "The evidence is scant that abolishing PBMs would reduce the amount that our country spends on drugs…"[9]

Instead, the stories are almost entirely based on opinions, case vignettes, and testimony of disgruntled parties in Senate Hearings. The lack of understanding is perhaps why GPOs and PBMs are not included in surveys of public trust.

Dark Territory for Academics, Too

Researchers who seek to objectively evaluate these intermediaries are often tarred with the same brush. In February 2002, I published my first book, *The Health Care Value Chain*.[10] The volume represented the culmination of a 3.5-year, field investigation of how the supply chain in healthcare operated—the first analysis of its kind. The study was underwritten by the Center for Health Management Research (CHMR), an industry/university consortium funded by the National Science Foundation (NSF). The industry members of the consortium, large integrated delivery networks (IDNs), wanted to understand the workings of their upstream trading partners: product manufacturers, product wholesalers, and group purchasing organizations (GPOs). The book's findings and conclusions were based on industry reports and executive interviews at a sizeable sample of firms drawn from each category of the IDNs' trading partners. These partners handled medical-surgical supplies, medical devices, and pharmaceuticals.

The book's sales were modest. However, the timing of its publication was impeccable, given that it was coincident with two external events. First, beginning in March (and extending through December) of 2002, the *New York Times* published a series of exposé articles on the practices of the GPOs. The articles aired complaints by small suppliers that (1) GPOs were plagued by conflicts of interest, (2) the GPOs allegedly erected barriers to new suppliers getting access to hospital markets, and (3) the clinicians and patients faced barriers getting access to the new technologies offered by these suppliers. Second, these articles sparked a series of Hearings conducted by the Senate Judiciary Committee's Subcommittee on Antitrust. These Hearings began in April 2002 and ran through 2006, covering many of the same issues reported by the *Times*.

I was approached that Spring by the lead counsel for the Senate Subcommittee to see if I could testify at the Hearings. The attorney then asked me what I thought about the GPOs. I relayed the contents of Chapter 4 of that book, which could be succinctly summarized as follows: "The GPOs may not be as good as they think they are, but they are certainly not as bad as others say they are." It was a balanced, academic response to the *New York Times* stories I had been reading. I was promptly dis-invited and dropped from consideration as a witness. It was my first hint that I had stumbled into a minefield filled with partisan politics; to use the vernacular, "the fix was in." Academic objectivity had little role to play in the Senate Hearings. To some, this may sound like sour grapes at being excluded. It may actually have been

a blessing in disguise. As I and some of my colleagues have learned experientially, academics get vilified for any whiff of support their research offers the GPOs.

In 2008, I published the results of a national survey of hospital Vice-Presidents of Materials Management regarding their views of the GPOs.[11] Like the 2002 book, this study was funded by the CHMR and NSF. This was the first empirical article on GPO performance published in a peer-reviewed journal; it reiterated the theme of GPOs being not so good and not so bad. The Government Accountability Office actually cited the study as the only peer-reviewed evidence on the GPOs' impact on pricing.[12]

As my colleague, Mark Pauly, likes to say, "no good deed goes unpunished." At that time, a journalist and staunch GPO critic wrote a lengthy, 7-page, single-spaced letter to the Chairman of the Board of Overseers of the Wharton School—also copying the President of the University of Pennsylvania, the Deputy Provost, and the Wharton School Dean (among others)—accusing me of serving as "a friend, advocate and apologist for the GPO industry" and that I had committed "a serious breach of academic integrity." Moreover, the critic asserted that the NSF's funding of my research constituted "an egregious misuse of taxpayer dollars," and that my "so-called research" could embarrass both Wharton and Penn. These allegations rested on the assumption that, since I frequently spoke about the findings in my book and subsequent survey at conferences sponsored by the GPOs as well as product manufacturers and IDNs (the GPOs' trading partners), I must be "on the take" and have serious financial conflicts of interest. It never occurred to the critic that academics (generally) and business school professors (specifically) endeavor to disseminate our research findings to outsiders in the industry. The Administration of the Wharton School investigated all of this, quickly exonerated me, and informed the critic that if they did not like my findings, they should write a letter to the Editor of the journal that published them.

What happened to me was not an isolated event. My colleague at Arizona State University, Gene Schneller, wrote the second academic volume on the healthcare supply chain, funded by the same NSF research center and issued by the same publishing house.[13] Gene subsequently issued some GPO-funded studies on their contribution to lowering hospital costs. He has suffered the same (and perhaps more) calumny from the same critic. So has a former commissioner of the Federal Trade Commission.

Why relay this chronicle? It serves as an advisory to the reader that the topic of this new volume is "hot" and fraught with controversy. You will not make any friends writing anything objective or quasi-positive about GPOs. I

have learned that my research (on GPOs and other topics) sometimes pisses people off. That is not usually the case with academic journal articles or books which are too obtuse to cause offense. I sometimes think that if my work is not pissing people off, it must not be very good. You can let me know. But, hopefully I have gotten your attention and you will read on.

Time for Some Critical Thinking

The question begs itself: do the GPOs and PBMs deserve their role as everyone's favorite scapegoat? How does one go about answering this question? (And, did I and my colleague deserve so much crap for studying them?) This is not an easy assignment, since (as noted above) there is not a lot of empirical or academic evidence on their market conduct and performance, and certainly no experimental data to satisfy the hard-core scientist. Like the MCOs, the GPOs and PBMs are "middlemen" who act as "agents" on behalf of other organizations ("principals") and thus are somewhat shielded from public scrutiny. The problem is somewhat akin to judging the managers who act as agents on behalf of firms and their shareholders (the principals).

I attempt to train my students in the art of "critical thinking." This can be defined as a mode of disciplined but open-minded thought that carefully weighs arguments and claims, gathers evidence to support or rebut them, considers alternative explanations, and maintains an attitude of "reflective skepticism." The motto over the entrance to the Royal Society in London (circa 1660) is *nullius in verba*, i.e., "take nobody's word for it." In short, I train my students to ask, "is what I just read really true?" Such deliberative thinking is in short supply. According to the famous Irish playwright, George Bernard Shaw, "two percent of the people think, three percent think they think, and ninety-five percent of the people would rather die than think."

Given the lack of hard data and real experiments, the Royal Society may not be convinced (either way) by anything that anyone says, including me. I do think academics can do a better job of marshaling the available evidence to construct a plausible theory and argument, however. That evidence consists of (1) an accurate historical chronicle of how the GPOs and PBMs developed, (2) an analysis of the "agency role" they play in the broader healthcare industry, and (3) an assessment of their performance using available information, including what their customers (the "principals" in the principal-agent relationship) say about them.

What this volume undertakes is the following four-fold task:

- Describe the agency roles of middlemen in U.S. healthcare and the industry context in which they operate
- Describe the roles GPOs/PBMs play in the broader healthcare industry
- Chronicle the historical development of GPOs/PBMs and functions they have assumed
- Analyze the host of performance issues surrounding the GPOs/PBMs

Sources of Evidence

Of course, following the Royal Society and George Bernard Shaw, you should not take my word for it any more than you should accept all of the accusations found in the non-academic literature. So, where do I draw my insights? What is my competitive advantage in assembling this volume?

First, I have been studying the GPOs for over two decades and the PBMs for one decade—all as part of studying the U.S. healthcare ecosystem and the various intermediaries that operate in healthcare. I continue to teach the introductory course on this ecosystem to MBAs and have continued to do so for roughly 35 years at three different business schools (as well as two more in India and China). Because my students are interested in business and the product manufacturing sectors of healthcare (e.g., pharmaceuticals, medical devices), I have had to master the business and revenue models of not only the hospital buyers and product suppliers but also the intermediaries that connect them.

Second, I have received a LOT of help along the way. MBA programs typically invite outside speakers from the industry to educate our students. I have been fortunate to have had a long-running interaction with executives from the manufacturers of healthcare products who explain how their sectors work. Their presentations often include analyses of their trading partners, including the MCOs, GPOs, PBMs, and wholesalers. In addition to the manufacturers, I have also invited in top consultants who cover the intermediaries. I have learned about the inner workings of the intermediaries for over two decades from (a) consultants such as Chris McFadden (Goldman Sachs), Adam Fein (Pembroke Consulting), and Karl Kellner (formerly at Booz, now at McKinsey) and (b) journalists such as David Cassak and Roger Longman (Co-founders of Windhover Information, which published *In Vivo*). Several of these individuals have graciously joined me in co-authoring certain chapters in this volume.

Third, I have the honor of co-directing one of the most innovative undergraduate training programs in the world hosted at the University of Pennsylvania: The Roy & Diana Vagelos Program in Life Sciences and Management (LSM for short). LSM may be the only dual degree program where students are admitted into the program as entering freshmen, jointly pursue dual degrees in Biology (College of Arts & Sciences) and Business (the Wharton School), and combine both skill-sets in a year-long practicum to advise life science startups on the two key issues they all face: validating their scientific contribution and then helping them commercialize it. I am now in my tenth year with LSM. The program has taught me considerably about life science companies (e.g., pharma, biotech, medical devices, information technology), their scientific platforms, and their business/revenue models.

Fourth, some of the major industry/academic consortia (e.g., CHMR) and professional associations—such as the American Hospital Association (AHA) and its Association for Health Care Resource and Materials Management (AHRMM)—have taken a personal interest in my work and funded my research. These organizations represent the hospitals, hospital systems, and IDNs in the industry. Because they serve as the principals who contract with the GPO agents, I have been granted generous access to the hospital membership of the GPOs as well as to GPO executives. During the course of this research, I have also come to know a considerable number of Vice-Presidents for Materials Management (VPMMs). A panel of VPMMs served as the advisory committee for the research contained in the 2002 book. They used their role as "buyer" to persuade their upstream "suppliers" (e.g., manufacturers, wholesalers, GPOs) to grant me interviews with them. The VPMMs have also proved invaluable in helping me construct the historical chronicle of the GPOs' development contained in Chapter 4.

Fifth, I have conducted and published a considerable amount of peer-reviewed research, much of it empirical and statistical, since the late 1970s. This research has spanned the entire U.S. healthcare ecosystem. These endeavors have broadened my purview of the industry and sharpened my analytic skills. I have also had a chance to work with several top healthcare economists. Such collaborations have enabled me to consider topics from multiple perspectives and disciplines.

Sixth, my research track record and broad areas of expertise have attracted the attention of attorneys, who engage me as a fact witness or expert witness in many cases. As the saying goes, "I have no dog in those fights." I am not working to advance the interests of one side over another. Rather, I participate in these cases to learn more about the industry. Such participation exposes me to information that researchers (let alone the public) never

get access to. This includes the contractual relationships struck between the various parties in the healthcare supply chain (principals and agents) as well as strategy and board deliberations that explicate how the industry actually operates. Normally, I work alongside my economist colleagues who perform the statistical modeling while I offer "the color commentary." We all agree that this experience serves to test and (hopefully validate) our academic hypotheses on how the ecosystem functions.

Seventh and last, based on my academic research, I have observed a lot of promising innovations and innovative organizations on both the technology as well as managerial side. To my chagrin, most of these innovations have either failed or seriously under-performed. I have also taught many courses in Wharton's Management Department (where I am jointly appointed) and covered scores of Harvard Business School cases on strategy and strategic implementation. These experiences have helped me to develop a keen "BS Detector."[14] Scholars have linked BS detection to "critical thinking."[15] I have endeavored to practice both skills, in class as well as in my writing. Hopefully, this volume is BS-free.

Overview of Volume

This volume is divided into four parts. *Part I* encompasses this Chapter and Chapter 2, which constitute the "Introduction." Chapter 2 portrays the challenge of capturing the material contained in the second and third parts. This challenge can be summarized as one of manifold complexity: multiple chains of activity (vertical chain, value chain, supply chain), multiple channels of product flow (retail channel, institutional channel), multiple types of customers (consumers/end customers, physicians, firms in the supply chain), and multiple ways to conceptualize and measure "value." Welcome to the jungle.

Part II, encompassing Chapters 3–8, focuses on GPOs. Chapter 3 characterizes the complex landscape of GPOs as they operate today. Chapters 4 and 5 chronicle the historical development of GPOs, broken up into two periods (capturing events in the 20th and 21st Centuries, respectively). Chapter 5 examines all of the contentious issues and the criticisms leveled at the GPOs that give them the "dark territory" treatment. Chapter 6 then carefully reviews the research evidence on GPO performance to ascertain whether the criticisms have validity. Chapter 7 makes an evidence-based argument for how GPOs can be viewed more favorably and why GPOs may serve pro-competitive ends. Chapter 8, finally, considers whether GPOs are

differentiated firms or commodities—e.g., are they as good as they think they are.

Part III, encompassing Chapters 9–13, focuses on PBMs. Chapter 9 characterizes the complex landscape of the PBMs, paralleling Chapter 3. Chapter 10 chronicles the historical development of the PBMs in the twentieth century; Chapters 11 and 12 analyze PBM development in the new millennium according to their tailwinds and headwinds, respectively. In this manner, Chapters 10–12 on the PBMs parallel Chapters 4 and 5 on the GPOs. Chapter 13 "looks under the hood" of the PBMs and their contractual negotiations upstream (with pharmaceutical manufacturers) and downstream (with health plans and employers). The chapter examines PBM contract terms to begin to evaluate the criticisms levied at the PBMs and demystify their operations. In contrast to Part II, there is no evidence base on the PBMs as there is for GPOs, and thus no parallel to Chapter 6. The PBM chapters do evaluate the available data and evidence to draw similar conclusions, however.

Part IV, finally, brings the volume to a conclusion. Chapter 14 summarizes the overall lessons of the volume and the similarities and differences between GPOs and PBMs. It includes a detailed side-by-side comparison of the GPOs and PBMs to document their common roles as intermediaries in the healthcare value chain.

As a guide to the reader going forward, I present two charts here that introduce the complex ecosystem in which GPOs and PBMs reside. The first chart (Fig. 1.1) borrows from my friend Adam Fein's depiction of the many intermediaries involved in the distribution and reimbursement of inpatient and outpatient drugs in the U.S. I have modified his slide to be even more exhaustive (and exhausting). Figure 1.2 simplifies Adam's chart to highlight how many intermediaries are engaged in aggregated purchasing:

- Group purchasing organizations (GPOs)
- Pharmacy services administrative organizations (PSAOs)
- Pharmacy benefit managers (PBMs)
- Third-party payers/health plans
- Employer purchasing coalitions

For the reader who wants more and cannot wait, Chapter 14 includes a third chart (Fig. 14.1) that highlights some of the similarities and differences between GPOs and PBMs. The remainder of this volume explicates these comparisons.

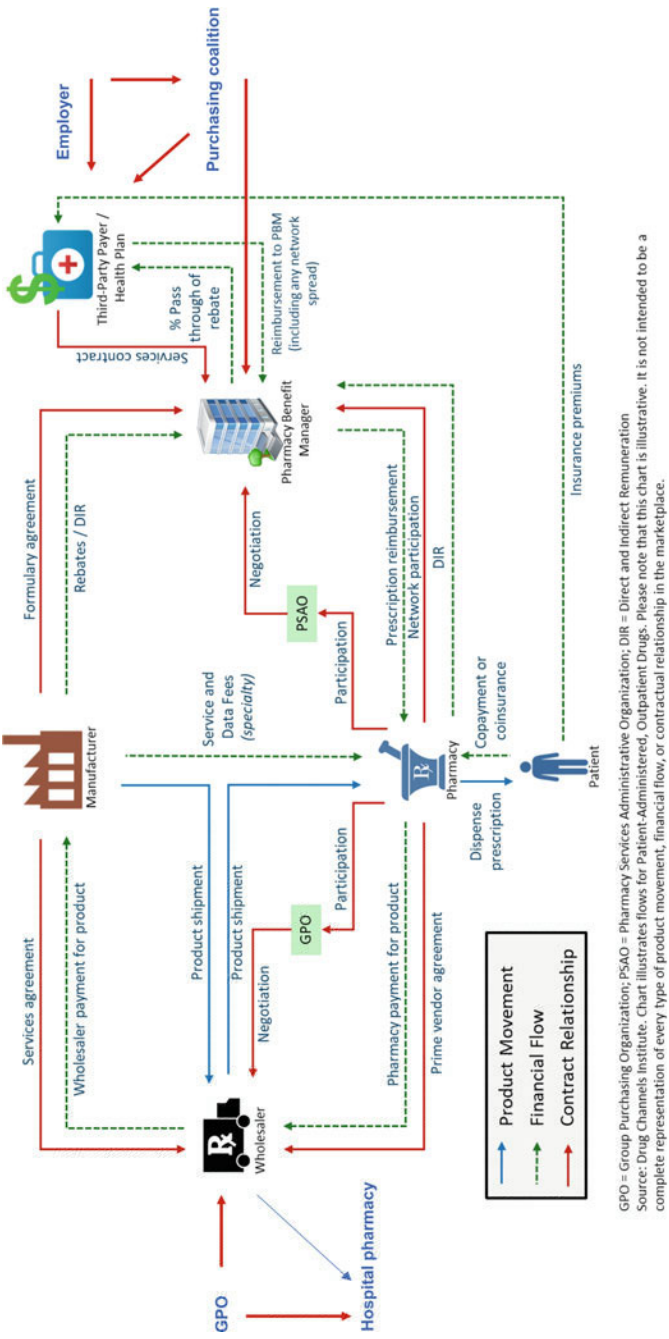

Fig. 1.1 U.S. Distribution & reimbursement system for inpatient and outpatient drugs

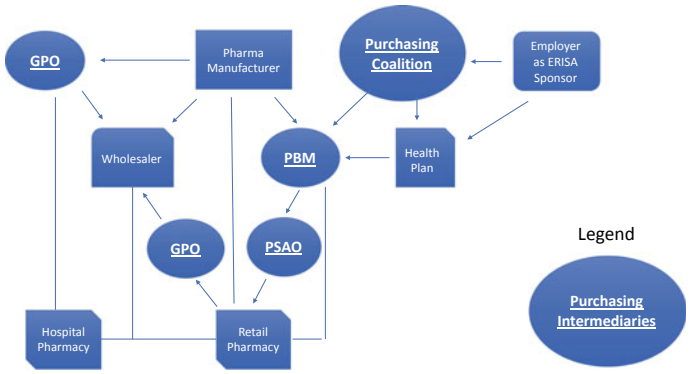

Fig. 1.2 Multiplicity of purchasing intermediaries

Notes

1. Other healthcare firms frequently targeted for criticism are the pharmaceutical manufacturers. They are producers rather than intermediaries.
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2

The Challenge of Complexity: Chains, Channels, Customers (and Value Too)

The Challenge: Too Much Stuff?

In 1997, blues artist Delbert McClinton (along with John Prine and Lyle Lovett) released a song called, "Too Much Stuff."[1] The tune opens with some catchy "boogie-woogie" piano and then chronicles the junk that piles up around people—including the fat around their waist. It is an apt description of the challenge facing researchers, analysts, and students who want to understand U.S. healthcare. There is literally too much healthcare stuff that has been piling up for over a century. This confounds most people's understanding. Without such an understanding, it is really hard to grasp (let alone evaluate) the role of specific players in U.S. healthcare such as GPOs and PBMs—the task laid out in the prior chapter.

I have been teaching the introductory course on U.S. healthcare for roughly 35 years and annually face the challenge of how to cover an expanding array of topics and issues in a finite academic term. I have recently written an article with two colleagues on the trials and tribulations we instructors deal with in trying to capture and convey the material.[2] I have also just published a textbook that attempts to tame the beast and reduce it to written form.[3]

U.S. healthcare is not a "system." That is one reason why it is so hard to capture and comprehend. In a system, the players act in concert in orderly, coordinated ways toward a common purpose. By contrast, U.S. healthcare is an "ecosystem," a community of living organisms that merely interact with one another in a specific environment. Yes, the actors are interdependent,

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but they do not work together. Their purposes are frequently orthogonal to or, worse yet, at odds with one another. Thus, these actors can be direct competitors or can transact as buyers and sellers seeking competitive advantage by undermining one another at the bargaining table (akin to the card game, "screw your neighbor"). It is not collaboration; it is what the Dutch might call *klobberation* or what the Germans might call *partner-shaft*. It is perhaps the opposite of what the Quaker minister Edward Hicks portrayed in his 1830 painting, *The Peaceable Kingdom*: e.g., "The wolf also shall dwell with the lamb, and the leopard shall lie down with the kid; and the calf and the young lion and the fatling together; and a little child shall lead them." Look for William Penn in the painting background. Instead of a peaceable kingdom, we have an unforgiving, dog-eat-dog, eat-or-be-eaten jungle. The Hippocratic oath, "do no harm," no longer applies once you leave the doctor's examining room. In such an environment it is difficult to assess the contribution of any particular player, given all the other players they are contending with.

To make matters more complex, the number of organisms populating the healthcare ecosystem has proliferated over time. The ecosystem sports a seemingly endless cast of characters that have taken the stage. We started with some apothecaries, physicians and quasi-physicians (bone setters, herbalists), and quasi-hospitals (almshouses) in the eighteenth century. In the mid-late nineteenth century, we added on more professionally trained physicians and nurses, hospitals, pharmacies, pharmaceutical companies, and pharmaceutical wholesalers. In the twentieth century, we then added a succession of other players: (in roughly chronological order) private insurers, nursing homes, employers offering health insurance benefits, GPOs, hospital outpatient departments, public insurers (Medicare and Medicaid), long-term care hospitals, emergency rooms, PBMs, hospices, medical device firms, ambulatory surgery centers, biotechnology firms, managed care organizations, home healthcare agencies, information technology firms, integrated delivery networks or IDNs, and retail clinics.

This proliferation in healthcare occupations and organizations has been going on perhaps for a century.[4] Much of this proliferation has taken the form of differentiation (i.e., increased division of labor) and specialization in both healthcare delivery and healthcare supply. On the delivery side, Milton Roemer documented that the ratio of non-physician healthcare professionals (e.g., nurses, dentists, technologists) to physicians rose from 0.58:1 (1900) to 3.35:1 (1950) and then to 12:1 (1973).[5] More recently, David Lawrence, former CEO of Kaiser Foundation Health Plan and Hospitals, noted that