

HEALTH CARE SUPPLY CHAIN MANAGEMENT

Elements, Operations, and Strategies

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CONTENTS

Authors	xix
Contributors	xxiii
Chapter 11 Contributors	xxvii
Foreword.	xxix
Introduction	xxxi
Chapter 1 The Healthcare Supply Chain.	1
Introduction	1
The Supply Chain and Supply Chain Management	1
How are Healthcare Supply Chains Different?	3
Why is Supply Chain Management Important in Healthcare?	6
The Value Chain.	8
Healthcare Value Chain.	11
Products in the Healthcare Supply Chain	13
Benefits of Improved Healthcare Supply Chain Management	16
Organization of this Textbook.	17
Summary	17
Sarah Says: A Student's Perspective	18
Discussion Questions	18
Exercises	19
Journal Items	19
References	20
Chapter 2 Acquiring.	23
Introduction	23
Procurement.	24
Healthcare Segmentation of Purchases	27
Basic Commodity Items (BCI)	27

Clinical Commodity Items (CCI) . . . . .	.27
Clinical Preference Items (CPI) . . . . .	.27
Physician Preference Items (PPI) . . . . .	.27
Cost. . . . .	.30
Importance: Why Does it Matter? . . . . .	.30
Stakeholders: Who Do You Buy for in the Healthcare Organization? . . . . .	.31
Healthcare Supply Chain Stakeholders. . . . .	.31
Clinicians and the Supply Chain Workforce: Supply Chain Support of Care . . . . .	.31
Healthcare Supply Chain Professional Associations and Professional Groups . . . . .	.31
Sourcing Models: Big Picture . . . . .	.32
Differing Approaches of the Healthcare Supply Chain: Outsource or Insource? . . . . .	.32
Traditional (Outsourced) or Non-Integrated/Non-Intermediated (Insourced) Model . . . . .	.33
Model Decisions. . . . .	.34
Vertically Integrated or Dis-Intermediated Model (Insourced) . . . . .	.35
Outsourcing . . . . .	.36
Multi-Sourcing . . . . .	.37
Group Purchasing Organizations . . . . .	.37
Sourcing for Patient Care . . . . .	.38
Differences . . . . .	.39
Other Information Sources . . . . .	.44
Demand Forecasting . . . . .	.44
Economic Order Quantity . . . . .	.45
Purchasing . . . . .	.45
Vendor Selection and Management . . . . .	.47
Purchase Orders. . . . .	.48
Purchasing Terms and Conditions . . . . .	.49
Payment Terms and Conditions . . . . .	.49
Purchasing Requests to Make Buying Decisions . . . . .	.50
Transacting the Purchase . . . . .	.51
Summary . . . . .	.52

Sarah Says: A Student's Perspective	53
Discussion Questions	53
Exercises	54
Journal Items	54
References	55
Chapter 3 Moving, Storing, and Dispensing	59
Introduction	59
Now What?	59
Logistics in the Healthcare Supply Chain	59
History and Overview	61
Transportation	61
Why Does Transportation Matter?	61
History and Overview	61
Common Transportation Modes Used in Healthcare	61
Trade-offs and Selection Criteria	65
Trends and Issues in Transportation	65
Trade-offs between Transportation and Inventory	66
Receiving	69
Receiving Methods	69
Trade-offs Between Logistics and Transportation	70
Packaging	71
Cost	72
Packaging Strings and Volumetric Tables	72
Storage	72
Logistical Considerations in Healthcare	72
Material Handling Equipment	72
Materials Management	73
Receiving and Distribution Methods	74
Considerations with Shelving and Storage Options	74
Dispensing	77
Distribution Services	78
The Demand-Pull Vision	78
Dispensing Equipment	79
Summary	80
Sarah Says: A Student's Perspective	80
Discussion Questions	81
Exercises	81
Journal Items	82
References	82

Chapter 4	Dispensing at Points of Care, Security, and Compliance in the Supply Chain	85
	Introduction	85
	Periodic Automatic Replenishment (PAR)	86
	Just in Time (JIT)	87
	Perpetual Inventory	88
	Kanban	88
	Point of Use	89
	Pharmaceutical-Specific Solution Models	90
	Omnicell	90
	Pyxis	90
	Quality Control	91
	Lot Size	92
	Healthcare Supply Chain Impact to Quality and Efficacy of Care	92
	Security in the Healthcare Supply Chain	92
	Federal Schedule of Narcotics	93
	Non-Provider Requirements	93
	Minimum Standards: Handlers of CI and CII Controlled Substances	94
	Minimum Standards: Handlers of CIII–V Controlled Substances	95
	Collocating CIII–V with CI and CII Controlled Substances	96
	Multiple Storage Areas	96
	Accessibility to Storage Areas	96
	Compounding and Manufacturing Areas	96
	Public Warehouses	97
	Common or Contract Carriers	97
	Theft or Loss	97
	Radioactive Materials	98
	Pilferage	98
	Chain of Custody	99
	Chain of Custody for Pharmaceuticals	99
	Chain of Custody for Implants	99
	Outsourcing and Vendor Contract Services	100

Cardinal Health	100
Owens and Minor	100
Amerisource Bergen	100
Contract Compliance	100
Drug Recalls	101
Lot and Batch Number	101
Hazardous Waste Disposal	102
Supervised Collection Sites or Drop Box Locations	102
The Group Also Recommended Mail-Back Programs	102
Syringe Exchange Programs	102
In-Home Needle Destruction Devices	102
Summary	103
Sarah Says: A Student's Perspective	103
Discussion Questions	104
Exercises	104
Journal Items	105
References	105
Chapter 5 Informing: Information Systems in the Healthcare Supply Chain	109
Introduction	109
Information Systems in Healthcare Supply Chain	110
Pencils to Keyboards to Touchpads and Electronic Systems	110
Data Management and Information Flow	111
How does Information Flow in the Organization?	112
What Data Should Be Managed?	113
Item Master	114
Vendor Master	114
Transaction History File	114
Contract Elements	114
What Is Linked to the Information System?	117
Acquiring and Procurement: Sourcing and Purchasing	117
Transportation	118
Warehousing/Storing	118
Examples of Best Enterprise Information System Practices in Industry	120
Distribution	121
Why Is All This Important?	121
Visualizing the Flow of Items	122

Information Systems Facilitate Metrics and Performance	
Statistics	122
Basic Metrics	123
Operational Management Enabled by Metrics, Statistics	
and Information	124
Systems: Cloud versus Server Based	125
Simulation for Process Improvement and Optimization	125
Discrete Event Simulation	125
Summary	127
Sarah Says: A Student's Perspective	127
Discussion Questions	128
Exercises	128
Journal Items	129
References	129
Chapter 6 Operations of Acquiring	131
Introduction	131
Operational Focus	131
Introduction to Operations	132
The Basics of High-Performing Organizations	132
Specific to Healthcare Supply Chain	134
Strategic Supply-Chain Factors in Order of Importance	134
Sourcing and Purchasing	135
Insource versus Outsource	135
Shared Services	135
Intermediaries	135
Even More Sourcing Models	136
Total Cost Analysis	136
Rebates	136
Value Chain	136
Want versus Need	136
Demand Forecasting	138
Economic Order Quantity	140
Pareto Analysis	140
Strategic Relationships	142
The Kraljic Model	142
The CAAVE Model	143

Group Purchasing Organization	145
Distributors.	145
Sales Tracing Fees	145
Comparative Trade-offs.	146
Transacting the Purchase	146
The Basics of EDI.	147
The Healthcare Supply Chain Information System	147
Item Master Additions.	148
Supplier/Vendor Addition or Modification.	148
Contract Additions and Modifications	148
Pharmaceutical Shortages.	149
Recalls	150
Emergency Preparedness	151
Legal Considerations of Sourcing and Purchasing	152
Contracting for the Healthcare Supply Chain.	152
What is a Contract?	152
Parties of Supply Chain Contracts	153
Required Elements	154
Does a Contract Have to Be in Writing?	154
Terms and Conditions	154
Stages of the Contract Process	155
Contract Management	156
Summary	158
Sarah Says: A Student's Perspective.	158
Discussion Questions	159
Exercises	159
Journal Items	160
References	160

Chapter 7 Operations of Storing: Storage and Inventory Management	163
Introduction	163
Multiple Supply Chain Methods Within the Organization	163
Materials Management	164
Inventory Management	164
Medical and Surgical Devices.	166
Pharmaceuticals	166
Capital Equipment	166

Strategy	166
Supply Chain Point of Use Capture	166
Storage Bins	167
Interstitial Space	167
Central Storage	167
Distributor Warehouse	167
Pros and Cons to External Distribution Centers	167
What Does Your Own Distribution Center Look Like?	168
The Cost of Storing and Handling Inventory	169
First In First Out (FIFO)	169
Last In First Out (LIFO)	169
Inventories	170
Equipment	170
Pallets	170
Facility Layout	170
Planning a New Facility	171
Greenfield	172
Existing Structure	172
Loading Dock	173
Facility Automation	173
Automated Storage and Retrieval Systems	174
A-frame Dispensing Systems	174
Automated Full Case Picking Systems	174
Automatic Sortation Systems	174
Carousel Systems	174
Case/Tote/Unit Conveyor Systems	174
Pallet Conveyor Systems	175
Robotic Goods to Man Systems (Less than Full Case)	175
Shuttle Cart Systems	175
How Is Inventory Received?	175
Just in Time (JIT)	175
Standard Replenish	175
Cross-Docking	175
Worker Safety	176
Docks	176
Forklifts	176
Conveyor Systems	176
Material Storage	176
Manual Lifting and Material Handling	177
Communication of Hazards	177
Charging Stations	177
Poor Ergonomics	177
Other Hazards	178
Simulation and Operations Management	178
Process Improvement	178

Information Systems for Storing Functions	178
Summary	179
Sarah Says: A Student's Perspective	179
Discussion Questions	180
Exercises	180
Journal Items	181
References	181

Chapter 8 Operations of Dispensing: Distribution to Points of Care	183
Introduction	183
Different Clinical Areas Matter	184
Operative/Perioperative space	184
Medical/Surgical	184
Pharmacy	184
Capital Equipment	185
Restocking	185
Periodic Automatic Replenishment (PAR)	186
Just in Time (JIT)	186
Perpetual Inventory	186
The Last Mile	187
Kanban	187
Where Is Kanban Best Utilized?	187
Case Cart Preparation as Restocking	189
Inventory on the Floor	190
Consignment of Goods	190
Distribution to the Patient	191
Bedside	191
Benefits and Challenges of Barcoding	192
Pharmacy	192
Simulation	193
Charge-Capture Outcomes	193
The Lean Methodology	194
Information Systems for Distribution Functions	195
Summary	198

Sarah Says: A Student's Perspective	198
Discussion Questions	199
Exercises	199
Journal Items	200
References	200
Chapter 9 Leading the Healthcare Supply Chain	203
Introduction	203
Motivation and Inspiration	204
Locus of Control.	204
Group Affiliation.	205
Goal-Setting Theory: A Motivational Theory	205
Interpersonal Relationships.	206
Factors to Strengthen Relationships.	207
Communication and Culture.	208
Media-Richness Theory.	209
Burns's Transformational Leadership Model (1978)	209
Leadership as Managing Organizational Culture.	211
The Dynamic Culture Leadership Model	211
Comparison: Two Community-Based Hospitals.	217
Hospital 'A' Charts – Government, Federal.	219
Hospital B Charts – Voluntary, Not for Profit	219
DCL and Organizational Culture	219
Organizational Culture and Supply Chain	225
Bolman and Deal's Reframing Leadership and Management in Organizations Model	225
Human Resources Leadership	228
Political Leadership	228
Symbolic Leadership	228
Summary	229
Sarah Says: A Student's Perspective.	229
Discussion Questions	230
Exercises	230
Journal Items	231
References	231

Chapter 10 Building a Culture of Healthcare Supply-Chain Excellence: Leading, Planning, Managing, Deciding, and Learning	235
Introduction	235
How are You Leading and Managing the Healthcare Supply-Chain?	236
Managing Regulatory Compliance	237
Metrics	238
Warehousing Education and Research Council (WERC) Data	238
How to Lead People and Manage Resources	250
Planning	250
The Leader's Role in Planning	252
Contingency Planning	253
Situational Assessment and Environmental Scanning	254
Decision Making and Decision Alignment	255
Bounded Rationality in Decision Making	256
Decision Making	257
Quantitative Methods	257
Qualitative Methods	258
Triangulation	258
Decision Making in Quality Improvement	258
Total Quality Management	258
Kaizen Theory	259
Benchmarks in Qualitative Decision Making for Leaders	259
Shewhart Cycle	260
Continuing Health Education: Competency Attainment	260
Vendor Management	261
Group Purchasing Organizations (GPO)	261
Vendor Managed Inventory (VMI)	261
Sales Representative	262
Credentialing of Sales Representatives	262
Summary	262
Healthcare Supply Chain Integration with Geographical Information Systems	262
Geographic Information Systems (GIS) and Healthcare Supply Chains: A Case Study in Outfitting a New Hospital Facility	263
Learning Objectives	263
Introduction	263

Key Concepts	263
Standardization and Interoperability	264
Bringing Tools and People Together in Transformed Workflows	264
Lean Supply Chains	264
Coupling	265
Agility	265
GIS and Healthcare	265
Case Study	266
Summary	270
Sarah Says: A Student's Perspective	270
Discussion Questions	270
Exercises	271
Journal Items	271
References	272

Chapter 11 Measuring Compatibility Gaps in Relationships and Business Models that Influence Strategy . . . . .	275

Introduction	275
Measuring Compatibility Gaps in Strategic Relationships	276
Model	278
Compatibility Measurement	286
Compatibility Summary	287
Unpacking Sourcing Business Models	288
Section I. Outsourcing is a Continuum	289
Using the Market (Outsource)	290
The Catch-22	290
The Rise of a Hybrid Approach	291
Section II Types of Outsourcing Business Models	291
Transaction-Based Models	291
Simple Transaction Provider	292
Approved Provider	292
Preferred Provider	292
Outcome-Based Business Models	294
Performance-Based Agreements	294
Vested Outsourcing	295
Shared Services	295
Equity Partner	298
Section III Which Sourcing Business Model is Best for Your Situation?	298

The Conventional Approach—The Kraljic Model	298
Sourcing Business Model Mapping—An Alternative Decision Framework	301
Other Influences	302
Section IV: Case Studies	305
Case Study—Simple Transaction Based	306
Case Study—Approved Supplier	306
Case Study—Preferred Supplier	306
Case Study—Performance-Based United States Navy	307
Case Study—Vested Outsourcing—Microsoft	307
Case Study—Shared Services—Bell Canada/PSI	308
Case Study—Joint Venture—Samsung and Sony	309
Business Model Summary	310
Summary	310
Sarah Says: A Student's Perspective	310
Discussion Questions	311
Exercises	311
Journal Items	312
References	312

Chapter 12 Lessons to Transform Healthcare Contract Performance:	
Transaction-Cost Economics	315
Introduction	315
What Exactly is TCE?	316
Ten Key TCE Lessons for Healthcare Practitioners	316
Lesson 1: Outsourcing Is a Continuum, Not a Destination	316
Insight	318
Lesson 2: Develop Contracts that Create “Mutuality of Advantage”	318
Insight	319
Lesson 3: Understand the Transaction Attributes and their Impact on Risk and Price	320
Insight	321
Lesson 4: The More Bilateral Dependencies, the More the Need for Preserving Continuity	322
Insight	322
Lesson 5: Use a Contract as a Framework—Not a Legal Weapon	323

Insight.	324
Lesson 6: Develop Safeguards to Prevent Defection	324
Insight.	325
Lesson 7: “Predicted Alignments” Can Minimize Transaction Costs	326
Insight.	327
Lesson 8: Your Style of Contracting Matters: Be Credible	328
Muscular.	328
Benign	329
Credible Style	330
Insight.	330
Lesson 9: Build Trust: Leave Money on the Table	331
Insight.	331
Lesson 10: Keep It Simple	332
Insight.	333
Future Implications	333
Summary	334
Sarah Says: A Student’s Perspective.	334
Discussion Questions	335
Exercises	335
Journal Items	336
References	336

Chapter 13 The Health Leader, Information, Decisions, and Creating a Knowledge Culture in the Supply Chain: The Four Ps of Health Analytics Adoption.	337
Introduction	337
Situational Analysis: Catalyst to Integrated Information Necessity	338
Patient Protection and Affordable Care Act (PPACA)	338
American Hospital Association Perspectives.	340
Paths to Transformational Change.	341
Health Equity: AHA Equity Care Report	341
The Joint Commission Perspectives	342
The Joint Commission Road Map	342
Governmental Imperatives	344
IRS Policy Guidance	344

Centers for Medicare & Medicaid Services (CMS): Medicare Value-Based Purchasing	344
Hospital Compare	345
Physician Compare	345
Integrated Information Required: Need for Technology and Informatics Solutions	345
HIMSS Analytics Adoption Model for Analytics Maturity (AMAM)	346
Profitability	348
Patients	350
Populations	351
Processes	351
HIMSS Electronic Medical Record Adoption Model	353
Integration of 4 Ps, HIMSS Delta and EMRAM Models	354
Efficiency, Effectiveness, and Efficacy	354
Integration	355
What Does my Knowledge Score Mean?	358
What Does my Utilization Score Mean?	358
When Should my Organization Work to Increase Our Utilization Level?	359
Examples of 4 Ps of Health Analytics Adoption Model in Practice	359
Example 1: Using the 4 Ps in a Small Rural Hospital to Determine the Need for an Analytic Solution	359
Example 2: Using the 4 Ps in a Large Health System With an Existing EMR and Data Warehouse System	360
4 Ps of Health Analytics Adoption and Supply Chain	360
Example	360
Manrodt & Ledlow CUBE	361
Major Opportunity	362
Disadvantage	362
Typical	362
Advantage	362
Best-in-class	362
4 Ps and Supply Chain	362
Summary	362
Sarah Says: A Student's Perspective	363
Discussion Questions	363
Exercises	364

Journal Items	364
References	364
Chapter 14 A Synthesis of Healthcare Supply Chain Value	369
Introduction	369
Important Details	369
Reconnecting with the Value Chain	371
Inventory Management	372
Distributing Items Within the organization	373
Dispensing	374
Pharmaceutical-Specific-Solution Models	374
Information Systems in Healthcare Supply Chain	375
Data Management and Information Flow	375
How Does Information Flow in the Organization?	375
What Data Should Be Managed?	375
Clinical Operations and Healthcare Supply Chain Integration	376
Putting It All Together – Supply Chain Management Operations	377
Pros and Cons of External Distribution Centers	377
What Does Your Own Distribution Center Look Like?	378
Internal Distribution	378
Leadership	379
Managing Regulatory Compliance	380
Metrics	380
Sarah Says: A Student’s Perspective	381
Discussion Questions	381
Exercises	381
Journal Items	382
References	382
Glossary	385
Index	389

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succession planning, healthcare governance, strategic planning, and new healthcare delivery models. Dr. Stephens is an Associate Professor and Distinguished Fellow in Healthcare Leadership and the Director for the Master of Healthcare Administration Program within the Jiann-Ping Hsu College of Public Health at Georgia Southern University. He teaches only doctoral and master's courses to include Healthcare Finance, Healthcare Economics, Leadership and Strategic Planning, and Communication in Healthcare Organizations. Dr. Stephens has published many articles, book chapters, and case studies in addition to national and international academic presentations.

Dr. Jeff Jones

Dr. Jeff Jones is an Assistant Professor in the Department of Health Policy and Management at the Jiann-Ping Hsu College of Public Health, Georgia Southern University as well as adjunct faculty for the Biomedical Informatics Program at the College of Osteopathic Medicine, Nova Southeastern University. He brings more than 16 years of experience in public health research. Having served as principal investigator (PI) on more than thirty studies, Dr. Jones has received more than \$6.5 million in funded research awards. Through joint, funded research initiatives, he has built collaborative partnerships with many of the leading national public health policy and practice organizations in the country such as ASTHO, NACCHO, NALBOH, NNPHI, and the Public Health Foundation. These efforts include conducting a national data harmonization and integration project collecting demographic and services data on every state health agency, local health department and board of health in the United States in 2010 and 2011. As co-PI, he formerly directed data informatics for the National Center for Public Health Services and Systems Research. Dr. Jones continues to work with state and local urban and/or minority community groups, hospitals, school systems, and agencies in Georgia and Kentucky to provide program evaluation, health education, survey design, program analysis, and grant-writing support through community based participatory research. As PI, he collected Kentucky's Youth Risk Behavior Survey (YRBS) data and other behavioral data for the US Centers for Disease Control and Prevention (CDC) for over a decade. His expertise includes harmonizing large databases with other national data sets as well as spatial analysis, survey research, and health informatics using GIS (Geographic Information Systems). Much of his state-level work involves program evaluation of physical activity, nutrition, and obesity prevention programming involving children and adolescents, program evaluation of HIV care systems, and community health assessments among minority populations.



Dr. Julie Reagan

Julie Reagan is an assistant professor at the Jiann-Ping Hsu College of Public Health at Georgia Southern University. She holds a PhD in Management, Policy, and Community Health from the University of Texas Health Science Center, School of Public Health in Houston, Texas. Dr. Reagan is also an attorney with over 20 years of practice experience in state government, primarily at public health agencies. Her work focuses on the areas of health policy and management, health law, public health law, and healthcare governance.



Andrew Blues

Andrew Blues serves as the Associate Director for Facilities Information Services (FIS) under the Vice President for Facilities Management at the University of Kentucky. Andrew has worked for over 20 years at the university in a variety of information technology roles and has spent the last five years growing FIS into an independently funded department. He has worked to expand the thinking of what an information service department can be by consolidating a variety of information technology and geospatial based services, along with Enterprise Resource Planning (ERP) support, into a one-stop service offering. Under his leadership, the department has continued to expand while also adding new departments to their support umbrella, even during public university budget cuts.

Andrew holds a Bachelor of Science degree in Computer Science and has served as the lead programmer for the university's enterprise mapping solutions since its inception. Throughout his tenure with the university, Andrew has built a reputation for making lean principles a core value in what he builds and manages. He leads the team that was recognized with the ESRI Vision Award and the ESRI International Special Achievement in GIS (SAG) Award. He also makes time to share endeavors with colleagues and enjoys helping others expand their usage of innovative technologies in their day-to-day activities.



Michelle Ellington

Michelle Ellington serves as the GIS Coordinator for FIS at the University of Kentucky. She is known as a technical evangelist for the development and adoption of innovative geospatial products that support the university community. Michelle manages and continues to expand a data-rich geospatial library used for a variety of needs including campus planning and analysis, Master Planning, space reporting, asset management, and wayfinding. Data is published through custom designed web and mobile solutions that utilize modern and innovative graphical mapping techniques. These solutions have been used to support hospital occupancy, analyze classroom utilization and building efficiencies, and for space analysis in support of the university's new budget modeling process.

Michelle is a frequent guest speaker for multiple university courses, local and international conferences, TEDx speaker, and invited plenary speaker at the 2014 Esri International Education Conference. Most recently, Michelle received the 2014 University of Kentucky Supervisor of the Year Award for her leadership and appreciation for "inspiring us to greatness."



Dr. Schott, Sarah Storey and Dr. Ledlow



CHAPTER 11 CONTRIBUTORS

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About the Contributors

Kate Vitasek is an international authority for her award-winning research and Vested® business model for highly collaborative relationships. Vitasek, a faculty member at the University of Tennessee, has been lauded by *World Trade Magazine* as one of the “Fabulous 50+1” most influential people impacting global commerce. Her pioneering work has led to five books, including: *Vested Outsourcing: Five Rules That Will Transform Outsourcing*, *Vested: How P&G, McDonald’s and Microsoft Are Redefining Winning in Business Relationships* and *Getting to We: Negotiating Agreements for Highly Collaborative Relationships*. Vitasek’s work also won the Supply Chain Council’s Academic Advancement award for its impact in advancing the business. Vitasek is internationally recognized for her practical and research-based advice for driving transformation and innovation through highly collaborative and strategic partnerships. She has appeared on Bloomberg radio multiple times, NPR, and on Fox Business News. Her work has been featured in over 300 articles in publications like *Forbes*, *Chief Executive Magazine*, *CIO Magazine*, *The Wall Street Journal*, *Journal of Commerce*, *World Trade Magazine* and *Outsource Magazine*.

Bonnie Keith is an adjunct faculty in the University of Tennessee’s Center for Executive Education and is the President of The Forefront Group, LLC, an international leader in Strategic Sourcing Transformation concepts. Bonnie’s business experience includes corporate executive and officer positions for three Fortune 100 companies and two Fortune 500 companies where she provided international, successful procurement and supply management strategies. She served as a member of the White House Year 2000 Advisory Council for the Pharmaceutical Industry. Bonnie teaches all over the world and is an executive coach.

Jim Eckler is the COO of Health Services BC, the provider of shared services for the health-care system across British Columbia. Prior to joining Health Services, BC, Jim was President and CEO of SCI Group Inc., a leading outsourcing services company. Jim is a founding member and a Director of the Center for Outsourcing Research and Education and is a past chairman

of the Supply Chain and Logistics Association of Canada. He has authored numerous articles and is the author of a textbook on transportation issued by the Purchasing Management Association of Canada. He is a frequent speaker at industry conferences and is a popular guest lecturer at universities.

Dawn Tiura Evans is the SIG's President and Chief Executive Officer. She has more than 20 years' leadership experience in large and small organizations, with the past 14 years focused on the sourcing and outsourcing industry. In 2007, Dawn joined SIG as CEO, but has been active in SIG as a speaker and trusted advisor since 1999, bringing the latest developments in sourcing and outsourcing to SIG members. Prior to joining SIG, Dawn held leadership positions as CEO of Denali Group and before that as a partner in a CPA firm. Dawn is actively involved in a number of boards promoting civic, health, and children's issues in the Jacksonville, Florida area. Dawn is a licensed CPA and has a BA from the University of Michigan and an MS in taxation from Golden Gate University.

Jacqui Crawford is the Commercial Excellence Manager for BP leading the development of contracting processes, capability, and contracting best practice for the exploration and production segment. She is an internationally respected dealmaker, thought leader, and creative commercial leader. Jacqui's deal portfolio includes many complex agreements. The core of her success is her focus on outcomes, fair play, and mutual gain. Over the past 25 years, Jacqui has worked extensively in the UK, United States, Japan, Thailand, Singapore, Africa (Egypt), and Europe, and her open and direct approach has gained her an international reputation for fair dealing. Jacqui is on the Board of Directors of the International Association for Contract and Commercial Management (IACCM) and is a co-author of *The Vested Outsourcing Manual*.

Srinivas Krishna is Director, Finance Operations—Global Vendor Management for the Microsoft Corporation where he is responsible for managing all global outsourced relationships within finance operations, specifically focusing on the business, commercial, and contractual structuring of these partnerships. His corporate experience spans Fortune 100 organizations across the United States, UK, Europe and the emerging markets. Srinivas is also a Sloan Fellow of the London Business School.

Katherine Kawamoto is the Vice President of Research and Advisory Services at the International Association for Contracts and Commercial Management (IACCM), a worldwide nonprofit association with members representing more than 4,000 organizations in more than 120 countries. Katherine works with leading corporations, public, and academic bodies, supporting executive awareness and understanding of the role that contracting and relationship management capabilities increasingly play in 21st-century business performance and public policy. Prior to joining IACCM in 2006, Katherine was the Worldwide Director of Contract Management at NCR Corporation. She has also held leadership positions at Teradata Corporation and Hughes Aircraft Company in Los Angeles. She is a frequent speaker at industry conferences, researcher, thought leader, and author of articles on current contracting topics.

FOREWORD

The time to improve the healthcare supply chain with efficient, effective, and efficacious systems is now! Our greatest challenge today in the healthcare supply chain is a shortage of talent. While the profession of provider-centered supply chain has been formally recognized for nearly 40 years, the market and technological changes in recent times have yielded an unprecedented demand for new skills. As in many industries, the rate of business model changes and market disruptions in the healthcare industry have accelerated in recent years. Traditional healthcare supply-chain skill sets and knowledge are no longer adequate to keep pace with the greater needs of the organization in the areas of clinical, operational, and financial viability.



The healthcare provider-based supply-chain enterprise lags other industries by 10 or more years in adoption of new methods, technologies, and strategies. While the healthcare provider supply chain is dramatically differentiated from other industrial supply chains—we care for patients—the time is right for adoption of cross-industry supply chain solutions into the healthcare industry. Hospital Boards of Directors and Executive teams are elevating Supply Chain to the “Board-Level Agenda.” At the John Hopkins Health Systems we consistently receive invitations to collaborate with other provider organizations. One of the top three collaborative initiative requests from these provider organizations is supply-chain management.

With continued market disruptions, accelerating interest in supply chain collaboration, board-level actions in supply chain, and growing interest—and shortage—of supply chain talent, the timing of this textbook could not be better. This textbook will prove to be a market catalyst for educating the next generation of healthcare executives on the strategies, opportunities, and methods for healthcare supply chain and effective management of these systems.

Supply-chain management is a significant contributor to improving patient safety, quality of care, and at the same time achieving cost reduction objectives. In fact, as we have seen in John Hopkins, supply-chain management can be the catalyst and common thread to align each of these efforts. While there has been continuous improvement in healthcare supply chain methods and solutions, there remains much opportunity yet to be realized by the industry sector. The need to develop new methods, share knowledge, and train the next generation of leaders is well served by this textbook and curriculum materials.

The structure of this textbook's approach to supply-chain management is effectively built upon Michael Porter's Value Chain Model. The basic elements, which provide the groundwork for supply chain, are established in Chapters 1–5. Building upon those basic elements Chapters 6–10 take the readers into the operations of supply chain with specific emphasis on leadership, and the final section of this textbook provides the reader with key strategies and strategic thinking with regard to sourcing, contracting, supply-chain models, and clinical integration in Chapters 11–14. The layout and organization of this text book will serve the reader initially through a comprehensive, sequential learning and into the future as a sourcebook for topical content and reference material. The authors of this book have a combined 65 years of experience in leadership, management and academic roles to include healthcare supply chain and other industry supply-chain programs. Their direct experience, real-world accomplishments, and proven, practical methods provide added value in the content of this impactful presentation.

The goal of improving the healthcare supply chain is paramount in today's health industry. For a well-prepared health professional, knowledge to improve the healthcare supply chain from the bed to the boardroom is critical to achieve success in the dynamic health industry. Success can no longer be myopically located in a single functional area, be it surgery, ER, or oncology. In order to achieve sustainable high-quality patient outcomes, all components in the system must practice excellence. This book helps those of us in supply-chain management to understand what excellence looks like, and provides a way of getting there.

I am delighted that the authors have taken the initiative to develop a formal approach to graduate-level education in healthcare supply-chain management. For those of us in the practice of supply-chain management our greatest challenge today in the healthcare supply chain is talent. The authors' efforts in producing this textbook and accompanying instructional materials will make a significant contribution in the development of knowledgeable healthcare professionals and the advancement of supply-chain knowledge into the future.

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INTRODUCTION

The healthcare supply chain is a critical core business component of the healthcare delivery system. The supply chain ensures that the technology of care is available to the physician, surgeon, nurse, clinician, or caregiver at the right time, at the right place, and in sufficient quantity and quality for superior health outcomes for patients within the health system. As, from various sources, the healthcare supply chain comprises between 30 – 45% of annual operating expense, the absolute necessity for efficient, effective and efficacious healthcare supply chain operations and strategic leadership is evident. With pressure to deliver care with higher quality, better outcomes, and with fewer resources, the healthcare supply chain is a major opportunity for health system improvement and further maturation.

This textbook and associated materials bring an overview of the healthcare supply chain through the elements of the supply chain in the first five chapters, the operational aspects in Chapters 6 through 10 and then strategic aspects in Chapters 11 through 13. Chapter 14 wraps the discussion with integration of the supply chain with the clinical delivery of care. The intent is to provide a sound basis of knowledge for students and early careerists so that healthcare supply-chain improvements can be achieved for the mutual benefit of the healthcare industry.

The concept of the Value Chain by Porter introduces the healthcare supply chain in the first part of the textbook, Chapters 1 through 5, and is reinforced with learning aids such as “Follow the Cotton Ball” and a student’s perspective on each chapter in a “Sarah Says” segment. The method called Focused Content Cycling has been used to establish a foundation, called the elements in part one (Chapters 1–5), of concepts, approaches, and tools then is further built upon and explored in the operational section of the text (Chapters 6–10 as part two). Part three, Chapters 11 through 13, explores strategic concepts before Chapter 14 brings an integration to the text in the interface between the supply chain and the clinical operations of care. In addition, Chapters 9 and 10 add leadership and management concepts, topics, and applications to the operational part of the text. Supplements, presentation material, journal items, assignments (for most chapters), and test banks augment each chapter of the text.

The authors have considerable (over 60 years’ combined) academic, healthcare delivery, supply-chain, and managed-care experience, and have designed this textbook as part of a learning system for enhanced mastery of the healthcare supply chain. We wish you well in your journey!

