

HEALTH CARE SUPPLY CHAIN MANAGEMENT

Elements, Operations, and Strategies

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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!

