

AUTHOR COMMENTARIES

A companion volume for

THE TRANSFORMATION OF ACADEMIC HEALTH CENTERS: MEETING THE CHALLENGES OF HEALTHCARE'S CHANGING LANDSCAPE

(Published by Elsevier: ISBN 9780128007634)

EDITED BY STEVEN A. WARTMAN, MD, PHD, MACP
President/CEO
Association of Academic Health Centers



Association of Academic Health Centers®
Leading institutions that serve society

TABLE OF CONTENTS

SECTION I: The Evolution of the Academic Health Center

Preface	
<i>Steven A. Wartman, MD, PhD, MACP</i>	iii
About the Book	iv

Chapter 1: The Changing Ivory Tower: Balancing Mission and Business	
<i>Authors: Paul B. Rothman, MD; Edward D. Miller, MD; Landon S. King, MD; Ellen F. Gibson</i>	2

Chapter 2: Presidential and Academic Health Center Leadership within the Modern University: Opportunities and Challenges	
<i>Authors: Christopher C. Colenda, MD, MPH; Ricardo Azzi, MD, MBA, MPH</i>	3

Chapter 3: How Academic Health Centers are Transforming in Leadership, Administration, and Management: A Case Study	
<i>Authors: Jeffrey R. Balser, MD, PhD; William W. Stead, MD</i>	5

Chapter 4: The Changing Roles and Expectations of Faculty	
<i>Authors: Robert N. Golden, MD; Marc K. Drezner, MD; Jeffrey Grossman, MD; Richard Moss, PhD; Elizabeth M. Petty, MD; Patrick L. Remington, MD, MPH</i>	6

Chapter 5: Universal Lessons for Academic Health Science Centers—Recognizing the Value of Integration	
<i>Authors: Catharine Whiteside, MD, PhD, FRCPC; Sarita Verma, LLB, MD, CCFP</i>	7

Chapter 6: Future Directions	
<i>Authors: Victor J. Dzau, MD; William F. ElLaissi, MBA, MHA; Krishna Udayakumar, MD, MBA</i>	8

SECTION II: Educating the Future Health Workforce

Chapter 7: Disruptive Technologies Affecting Education and Their Implications for Curricular Redesign	
<i>Authors: C. Donald Combs, PhD; Bertalan Meskó, MD, PhD</i>	10

Chapter 8: Diversity in the Academic Health Center: Progress and Opportunities	
<i>Authors: Sonja Haywood, MD; Ron Berkman, PhD; Jeanne C. Sinkford, DDS, PhD; Louis Sullivan, MD; Jeffrey L. Susman, MD; Jay Gershen, DDS, PhD</i>	12

Chapter 9: The Growing Integration of Health Professions Education	
<i>Authors: Frank B. Cerra, MD; Barbara F. Brandt, PhD</i>	13

Chapter 10: Advancing Collaborative Global Education Programs	
<i>Authors: Yang Ke, MD; Qiudan Sun, MA; Lei Zhang, MD, PhD; Jianlin Hou, PhD; Weiwei Du, PhD</i>	14

Chapter 11: The Future of Graduate Medical Education: Is There a Path Forward?	
<i>Authors: Philip A. Pizzo, MD; Clarence H. Braddock III, MD, MPH, MACP; Charles G. Prober, MD</i>	15

Chapter 12: Guiding the Future of Medical Education through “Enlightened” Accreditation Policy	
<i>Authors: Deborah M. DeMarco, MD, FACP; Terence R. Flotte, MD; Michael D. Kneeland, MD, MPH; Paulette A. Seymour-Route, PhD, RN; Michael F. Collins, MD, FACP</i>	16

Chapter 13: The Compelling Need for Education Reform: A Futurist’s View of Health Professions Education	
<i>Authors: Tim Lahey, MD, MMSc; Greg Ogrinc, MD, MS, Leslie Fall, MD; Sue Reeves, EdD, RN, Rich Simons, MD, MACP; Wiley “Chip” Souba, MD, ScD, MBA</i>	17

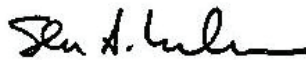
SECTION III: The Challenge of Discovery	Chapter 14: The Changing Spectrum of Biomedical and Clinical Research <i>Authors: Robert Clarke, PhD, DSc, Elliott Crooke, PhD; Howard J. Federoff, MD, PhD</i>	20
	Chapter 15: Managing, Funding, and Supporting Research <i>Authors: Craig Johnson, MBA; Rex L. Chisholm, PhD, Eric G. Neilson, MD</i>	21
	Chapter 16: Transformative Changes to Embrace, Manage, and Exploit “Big Data” <i>Authors: Michelle L. Kienholz; Rebecca S. Crowley, MD, MS; Jeremy M. Berg, PhD; Arthur S. Levine, MD</i>	23
	Chapter 17: Bridging Science and Practice—A Case Study: The Military Translation of Innovative Responses to Urgent Military Medical Needs Into Widespread Clinical Practice <i>Authors: Kent E. Kester, MD; Charles L. Rice, MD</i>	25
	Chapter 18: How Research Can and Should Inform Public Policy <i>Authors: Claire Pomeroy, MD, MBA; Fred Sanfilippo, MD, PhD</i>	26
	Chapter 19: Population Health and the Patient <i>Authors: Jay A. Perman, MD; C. Daniel Mullins, PhD; Robin Newhouse, PhD, RN, NEA-BC, FAAN</i>	30
SECTION IV: Preparing for Health System Change	Chapter 20: The Changing Delivery of Patient Care <i>Authors: Katy A. Stevenson, MPP; Sarah E. Peyre, EdD; Katia I. Noyes, PhD, MPH; Bradford C. Berk, MD, PhD</i>	32
	Chapter 21: Making the Patient Paramount <i>Author: James Merlino, MD</i>	34
	Chapter 22: Positioning Academic Health Centers for Quality, Safety, and Patient Empowerment <i>Authors: Carolyn M. Clancy, MD; Arthur Garson, Jr., MD, MPH</i>	35
	Chapter 23: Information Technology and Better Health: Overcoming the Risks <i>Author: Randolph Hall, PhD</i>	37
	Chapter 24: Market Consolidation and Alignment <i>Author: Larry R. Kaiser, MD, FACS</i>	39
SECTION V: Conclusion	Chapter 25: Academic Health Center Transformation: Future Shock or Future Success? <i>Author: Steven A. Wartman, MD, PhD, MACP</i>	42

Preface

Chapter writing, particularly the kind that has a technical bent, is often viewed as impersonal and, to some extent, mechanical. Yet these personal reflections by the authors of the chapters of the book, *The Transformation of Academic Health Centers: Meeting the Challenges of Healthcare's Changing Landscape*, reveal insightful underlying currents behind the authors' observations. These observations dip beneath the surface and add meaning and depth to the material covered.

As such, they form an interesting and insightful *companion volume* to the book itself. What did the authors hope to achieve with their chapters? How can their thoughts be interpreted through a more personal lens? And, what do they want to communicate about the future of health professions education, science, and patient care?

A book should be more than the sum of its parts. Authors strive to stay within certain guidelines regarding subject, content, form, and length. But each chapter has another story – the one that reflects the thinking that underlies the writing and adds insight about the authors. It is this often private journey that this *companion volume* offers to the reader, and, in so doing, is in itself an interesting and informative stand-alone piece of work.



Steven A. Wartman, MD, PhD, MACP

Editor

About the Book

The Transformation of Academic Health Centers: Meeting the Challenges of Healthcare's Changing Landscape

Consisting of 25 chapters written by more than 75 prominent authors, “Transformation” is divided into five sections and provides the latest information about the trends, challenges, and solutions facing academic health centers in the 21st century.

- **Section I, The Evolution of the Academic Health Center,** focuses on the strategies for leading these evolving institutions, including balancing mission and business, leadership, administration, management, organization, and future directions.
- **Section II, Educating the Future Health Workforce,** offers comprehensive discussion about disruptive education technologies, diversity, interprofessional education, collaborative global education programs, the future of graduate medical education, “enlightened” accreditation policy, and a futurist perspective on the compelling need for education reform.
- **Section III, The Challenge of Discovery,** discusses the challenge of discovery, with commentaries and insights regarding: the changing spectrum of biomedical and clinical research; managing, funding and supporting research; big data; bridging science and practice; and how research can and should inform public policy.
- **Section IV, Preparing for Health System Change,** analyzes the major pressing clinical topics, including population health, the changing delivery of patient care, making the patient paramount, quality and safety, information technology, and market consolidation and alignment.
- **Section V, Conclusion,** reviews the major challenges facing academic health centers, the importance of finding optimal leadership, and the overarching guidelines for the path forward.

The book is a “must read” for current and aspiring academic health center leaders, as well as for faculty and staff who work at these important institutions and others with interests in healthcare delivery, policy, education, and science. This companion volume provides added insight behind each chapter, suggesting that it be read concurrently with the book.



SECTION I

THE EVOLUTION OF THE ACADEMIC HEALTH CENTER

1

The Changing Ivory Tower: Balancing Mission and Business

Author Commentary

CHAPTER ABSTRACT:

The business landscape for academic health centers in the United States is changing rapidly due to legislative reforms, growing competition, and the urgent need to control healthcare expenditures. This introductory chapter discusses where academic health centers have been and where they must go in facing the challenges of balancing mission and money in healthcare. The authors explore how to break from tradition and implement sustainable, forward-looking changes in all three mission areas (research, education, clinical care).

History offers plenty of lessons for academic health centers, but the pressures emerging in academic medicine today are different than they have been in the past. If institutions like ours are to remain leaders in the field, we must embrace new approaches and new ways of thinking.

Clearly, the cost of healthcare in the United States is unsustainable. We are now spending 17 percent of our gross domestic product on healthcare. The need to rein in this spending is placing tremendous pressure on academic health centers because what we do is expensive. As we try to control costs, demographic shifts are leading statisticians to project a surge in demand for health services over the coming decades. The high price of education places a burden on medical students and leads them to pursue subspecialties, even as the primary care physician shortage worsens. Additionally, funding for biomedical research is getting ever more difficult to secure. In this environment, academic health centers cannot be afraid to explore out-of-the-box solutions. The traditional corrections that worked in the past—primarily increasing patient volumes and cutting payroll costs—are not going to suffice in the future.

At Johns Hopkins, we have become a truly integrated healthcare delivery system; we have added hospitals and practices. We try to ensure that we provide the right care for the right price in the right place; this includes partnering with community groups to keep people well. Our mission is to improve lives and communities through innovation, top-notch training, and cutting-edge patient care. To execute that mission, we need adequate resources.

Around the country, academic health centers are engaged in cost-cutting, but changes go well beyond these efficiencies. We are now engaged in a radical rethinking of our business model—implementing sustainable, forward-looking moves that ensure we will thrive in the future. These include new payment models, an increased emphasis on quality of care, and improved use of new technologies. We are at the dawn of a powerful new era of discovery, with technology enabling huge advances in disciplines such as metabolomics, proteomics, and epigenetics. We need to make sure we are in a position to seize these opportunities and continue advancing biomedical science to improve human health.

Innovation and education are what separate academic health centers from other healthcare providers. However, we can no longer rely on clinical margins to subsidize these important parts of our mission. Academic health centers must seek creative ways to support teaching and research, even as we recalibrate our clinical operations to meet today's challenges. In the midst of all this transformation, we cannot lose sight of our core mission and our value system; whatever changes we implement, we must continue to put the patient first and do what is right for the people we serve.

Paul B. Rothman, MD

*CEO, Johns Hopkins Medicine
Dean of the Medical Faculty
The Johns Hopkins University*

2

Presidential and Academic Health Center Leadership within the Modern University: Opportunities and Challenges

Authors' Commentaries

CHAPTER ABSTRACT:

This chapter examines the role of the academic health center within the larger university, discusses governance issues and opportunities, and explores how university presidents and academic health center leaders can work synergistically to create a unified cultural and corporate identity. Central to a successful partnership, no matter the governance structure, are common core competencies; and, pathways to leadership can impact the effectiveness of the partnership.

**Ricardo Azziz,
MD, MBA, MPH**

*President, Georgia
Regents University
CEO, Georgia Regents
Health System
Georgia Regents University*

With a few notable exceptions, the majority of top-performing medical schools in the U.S. are academic health centers associated with broader universities—evidence that such structural organizations are beneficial to the overall institution.

Yet, the potential that exists for advantageous synergy among the component parts—undergraduate and graduate/professional schools, health science and non-health science colleges and departments, the clinical enterprise, the research function, clinical and non-clinical faculty and administration—is, in many institutions, not fully realized. Significant differences in culture, mission, and financial structure drive separation and siloing; these are trends that institutional leaders must consciously and deliberately counter with strategies for cross-institutional alignment to achieve the greatest possible success.

This imperative is even greater in today's increasingly difficult higher education and healthcare environments. Multiple pressures resulting from increased demand for accountability, a rapidly evolving regulatory landscape, a greater need to demonstrate value, and the drive to increase size and efficiency in an environment of decreasing state support, mean the siloing with which many of these organizations have existed is simply no longer tenable.

Thus, there is a great need to better educate university and academic health center leadership and faculty regarding what each of these constituents can bring to the table and how to leverage their unique skills, talents, and abilities to the betterment of the institution as a whole. And, all parties need to become convinced of the mutual benefits of greater synergy.

For example, many institutional leaders do not fully appreciate the energy, perspective, and tools that academic health faculty and leadership can contribute to the overall university. Because they operate in significant part as revenue generators, these personnel typically are able to inject a greater entrepreneurial perspective and bring related skills—such as effective project and change management—as well as business tools, such as lean process improvement. And, to quote Galileo, healthcare leaders' willingness, ability, and experience to “measure what can be measured, and make measurable what cannot be measured” can be applied advantageously to further a wide range of institutional goals.

Looking back on my 30-year career in academic medicine administration, I realize that every position I held offered lessons applicable to leadership, personal character, communication skills, responsibility, authority, and accountability. However, building strong relationships with those with whom I worked—whether peers, subordinates, or superiors—was the bedrock foundation of this journey. Cultivating relationships that were based on shared values enabled successful management and implementation of strategy and operations. In instances when things did not work out well, I could usually find disruption of relationship as one of the root causes.

The leader of the academic health system is required to have a clear understanding of the health system's mission relevant to the academic mission of the university. That includes training of health professionals, supporting discovery, and transforming care-models. As safety-net institutions, academic health systems have a moral obligation to serve our communities and the healthcare needs of our patients.

In addition, academic health system leaders need to broaden their vision and commitment to community engagement beyond the traditional care-delivery mission. We must advocate for, engage with, and champion community and business development activities; foster positive interactions with local, state, and federal government officials; and not be afraid to speak out for social justice.

As academic health systems face significant economic challenges in the second decade of the 21st Century and beyond, we must become much more strategic with investments. We should not expect to see unlimited growth and diversification moving forward. These are complex institutions, and changing priorities and direction can be difficult. But change is inevitable and is best guided by sound strategy that is aligned with the mission and values of the organization. In short, we must adapt to our changing environments.

Leaders should understand their governance, management, and organizational structures within the context of the larger university, and they must also embrace the university's vision and mission. At the highest levels of administration, the chemistry and relationship between the university president and academic health science leader is vital. If that positive working relationship does not exist, then the two parties need to seek rapprochement to achieve an effective working relationship. Failure to do this, in my opinion, requires the health system leader to move on; in the end, the university community is not well served by conflict between the two.

**Christopher C. Colenda,
MD, MPH**

*President and Chief
Executive Officer
West Virginia United
Health System
Former Chancellor for
Health Sciences
Robert C. Byrd Health
Science Center
West Virginia University*

3

How Academic Health Centers are Transforming Leadership, Administration, and Management: A Case Study

Author Commentary

CHAPTER ABSTRACT:

Critical to transformation is increasing the effectiveness of the collective academic health center enterprise while cutting costs to free resources to support that work. Choices made to address this challenge require unprecedented levels of coordination and alignment throughout the enterprise while preserving an environment that nurtures individual creativity. This chapter highlights, with a detailed case study, the importance of maintaining accountability for organization-wide goals and how leadership can harness the energy and creativity of a large, diverse enterprise to nimbly address unfamiliar organizational challenges.

Jeffrey R. Balser, MD, PhD
*Vice Chancellor for
Health Affairs
Dean, School of Medicine
Vanderbilt University*

Over the last five years, academic health centers have managed rapid change during turbulent economic times, and the pace of change is only accelerating.

Traditionally, academic health centers have been relatively insulated from consumer sensitivity; the healthcare system was not consumer driven. But, that has changed. Companies cannot afford 5-10 percent increases in healthcare costs. Patients aren't just looking at quality anymore, they are also looking at price, and this is driving the value discussion. The drive towards consumer value is forcing us to act less like a public utility and more like many other industries.

In this environment, it's critical to have structures and management mechanisms in place that allow speed and versatility. The leadership teams of our institutions must view themselves as constantly developing. This is true of almost every organization, but particularly academic health centers, where leadership teams must not only demonstrate humility—they must understand the team's collective and individual development edges. Success of academic health center leadership teams can no longer be defined strictly in organization financial terms, or by the number of research grants awarded, but increasingly by the dynamic performance of the leadership team. How are team members relating to one another? Are we capitalizing on each other's distinctive skills? Are we being critical of one another in a constructive way?

The quality of the relationship within the leadership team is paramount, and that relationship depends on trust. Rather than "shame and blame," like high-performing cultures of safety, leadership teams must also cultivate an environment in which mistakes can be brought forward and examined as learning opportunities. Management teams that are afraid to acknowledge their weaknesses or mistakes will be unable to address problems at an early stage, before they grow. Another key to building trust is for C-suite management to get out of the office and engage in constant, active, and direct dialogue with department chairs and other leaders responsible for large and diverse segments of the organization. Time invested in relationship-building is generously rewarded when difficult challenges arise, as the foundation of trust is already strong.

Among our greatest future challenges will be to bring the academic and clinical enterprise into even greater alignment, both structurally and functionally. It is no longer viable to keep academic department chairs and health system leaders set apart, as they have been in the more traditional models of academic health center governance. In the future, everyone will be engaged in the management of the academic health center enterprise. This is a time of great experimentation. People are understandably nervous about abandoning the traditional structure, which worked well—but for a different time. We are called to overcome our historic preconceptions and work together to build a successful new paradigm.

4

The Changing Roles and Expectations of Faculty

Author Commentary

CHAPTER ABSTRACT:

Academic health centers are undergoing profound changes, and the roles and expectations of their faculty must also evolve.

This chapter discusses how competition is intense in each of the tripartite missions. The authors argue that most faculty need to focus intensively on a primary area of concentration and describe specific objectives for educators, clinical investigators, basic scientists, clinicians, deans, and other academic health center leaders.

In the midst of radical transformation, it is often tempting to focus on the short-term rather than the long-term, and to neglect the lessons of the past. We need to skate to where the proverbial puck is going to be, but we also need to appreciate where it came from. Academic medicine has been incredibly powerful and effective over the past century, largely due to our faculty. Thoughtful consideration of the changing roles and expectations for faculty can lay the foundation for success in the continued evolution of academic health centers.

We know that faculty models from an earlier epoch are now outdated. If roles and expectations do not evolve along with the other constructs of the academic health center, there will be very serious and destabilizing cracks in the foundation.

No one can know with certainty what healthcare delivery will look like ten years from now, but we do know that those leaders and institutions who deliberately and thoughtfully create new models for faculty development will rise to the top—not only in terms of the quality and effectiveness of their faculty, but also in the clinical, education, and research missions that rest on their shoulders. We need to establish the necessary training and support systems to prepare us for the still hazy future. Institutional leaders must have the courage to shake off the shackles of older models that were designed (or passively evolved) to support a previous version of the academic health center. For example, if we want to emphasize new strategies—such as team-based care, population health, and translational research—then reward systems and resource allocation criteria should be reshaped to support them. Departmental silos must give way to multi-disciplinary approaches to education, research, and clinical care.

Technology has changed the landscape, and this is especially apparent in research and education. The centuries-old model of a distinguished professor delivering a lecture to a large group of students will not meet evolving educational needs. We should embrace new technologies for active, collaborative, group learning. And we need to develop reward systems that recognize “team science” and appreciate the timelines for successful completion of meaningful interventional and outcomes research. The current generation of students grew up with a comfort and ease in obtaining information and data instantaneously. Educators need to teach them how to sift and winnow, and thereby learn from the magnitudes of information available at their fingertips.

The Affordable Care Act is just the first chapter in the ongoing narrative of changes in healthcare delivery. The growing recognition of population health management should encourage an integration of the fields of medicine and public health as a key to the advancement of all missions in the evolving academic health center.

Robert N. Golden, MD

Dean, University of Wisconsin
School of Medicine and
Public Health
Vice Chancellor for
Medical Affairs
University of
Wisconsin – Madison

5

Universal Lessons for Academic Health Science Centers—Recognizing the Value of Integration

Author Commentary

CHAPTER ABSTRACT:

The concept of an academic health science center (AHSC) embraces a spectrum of relationships among universities, hospitals, and, increasingly, community-based healthcare sites. Defining common elements that drive successful performance, this chapter lays out the universal lessons for academic health centers to: facilitate integration and innovation; develop a seamless flow of knowledge among research, education, and healthcare systems; and acquire robust affiliation agreements between university and hospitals.

**Catharine Whiteside,
MD, PhD, FRCPC**

*Former Dean of Medicine
Former Vice Provost,
Relations with
Healthcare Institutions
Professor of Medicine
University of
Toronto, Canada*

In Canada, academic health science centers have emerged as multi-institutional partnerships between research-intensive universities, Faculties of Medicine, and regional quaternary and tertiary academic hospitals. One of the largest and most complex of these entities is the Toronto Academic Health Science Network (TAHSN), which encompasses the University of Toronto Health Science Faculties and 13 hospitals, along with 18 affiliations with community healthcare institutions in the Toronto area. Although we bring together distinct entities, we share the goals of providing world-class patient care, educating highly-skilled practitioners, and conducting state-of-the-art research. We have learned a great deal about self-evaluation, iterative change, and sharing lessons across institutions in the federated model.

An academic health science network focuses collaboratively on improving health. In this model, the University of Toronto provides very clear value. The University facilitates integration across and among the institution and network. Articulating this value has enabled us to build our partnerships, and it has also helped our faculty understand their role and the importance of the larger collective. Our faculty members, students, and trainees fill the academic affiliated hospital, and only the university is in the position to assist the understanding of what can be accomplished. In the larger collective, we seek to integrate education and research and to facilitate integrated care.

It's important for the academic leadership to understand the value they bring to the collective, as well as to the partnerships among the various institutions that create the academic health science network. It's not just about the centers anymore, as we're networking more broadly among the partners. TAHSN is one of the largest health science networks in North America. We are the only medical school serving the population of the greater Toronto area, where there is a population of six million people. Academic leaders must envision what can be accomplished through strategic collaboration, integrating themes that no one single institution in the network can accomplish alone. This does not mean surrendering your identity or compromising your strategic focus, but rather seeking the value that can be added through integration and partnership. We fulfill our social responsibility by preparing leaders in health, and we take that role very seriously.

Healthcare transformation will emerge out of academic health science centers and their networks. It's our responsibility to imagine the future because it won't come out of the government. We have to enable private and public sector partners to enable healthcare transformation. This can only occur by bringing evidence to bear on how we do our business. That evidence has to support new models of care that are truly better, faster, and more cost effective.

6

Future Directions

Author Commentary

CHAPTER ABSTRACT:

In order to continue meeting their missions, academic health centers must make bold transformative changes. They must extensively reform their systems for care delivery and financing, improve the productivity of research, and reduce the cost of medical education. And they must foster innovation that yields “disruptive” technologies and approaches that can reduce costs and/or increase revenues. This chapter discusses how the changing healthcare landscape cannot be escaped, with the authors challenging academic health centers to transform enterprise-wide.

Victor J. Dzau, MD

*President, Institute of Medicine
Chancellor Emeritus,
Duke University
Former CEO, Duke University
Health System*

Obviously, we are seeing a rapid change of the healthcare delivery system in the United States, and academic health centers must transform in order to continue to excel in the new environment. Academic health centers will always excel if we understand what we are best at.

Planning within academic health centers must engage all the different aspects of the institution because research, education, and clinical care are highly interdependent. Collective decision-making must be embraced, and silos must be eliminated. Our institutions must understand their fundamental strengths and *raison d'être*. Academic health centers differentiate themselves from other healthcare providers in several ways, but notably through the capacity for discovery and excellence in specialty care. We must not surrender those strengths, and we should continue to be leaders in those areas, but we also cannot be an Ivory Tower. Academic health centers must become vertically integrated organizations that address population health, the continuum of care, and the fundamental design of healthcare delivery itself. Cost is going to be a significant area of emphasis, and we need to deliver the best outcomes to the populations we serve at the lowest possible cost.

The advantage of the academic health center is that we can leverage tools that no other system can. We can convene leaders from business, economics, and the behavioral sciences to work with us to create a new continuum of care. We can bring together a wide range of expertise and talent from within the academic environment and apply it to all aspects of patient care. Very few institutions have access to this tremendous resource. Of course this can help in research and discovery, but other disciplines can also help us redesign the way we educate and deliver care.

We must challenge our existing paradigm because the world is changing. For example, big data and informatics will play an increasingly important role in the way we design and deliver care. Our best chance of success is to continue to adapt. The world will not be the same forever, and so we must be resilient and embrace change.

There are always challenges and opportunities. It's natural for people to expect business as usual, or that if the present paradigm changes, disaster will follow. This is why our leaders must be analytic and visionary. They must have the ability to see the road ahead and to engage their organizations in comprehensive conversations in order to transform education, research, and care delivery. They must mobilize stakeholders at all levels of the institution.



SECTION II

EDUCATING THE FUTURE HEALTH WORKFORCE

7

Disruptive Technologies Affecting Education and Their Implications for Curricular Redesign

Author Commentary

CHAPTER ABSTRACT:

Disruptive technologies are impacting education, healthcare, and health professions education. Some digital advances have already begun to disrupt the model of current healthcare with an amazing array of technologies that will still need to be incorporated into medical and health professions education programs. In this provocative chapter, the authors review where they expect these disruptive technologies must be implemented and argue that the characteristics of curricula that are successful in the future will be based on business models that embrace customization and personalization of educational programs and that achieve balance between the constant connectivity afforded by digital devices and the need for offline reflection.

The pace of change is accelerating at a faster rate than many educators and administrators had expected. We are seeing the constant introduction of new software and new technologies that support instant access to information and massive amounts of data, and these applications are proliferating in the market with increasing rapidity.

Leaders of academic health centers are adapting and making changes, but the question remains: are they keeping up? For the past 20 years, students have enjoyed a different level of technological prowess than our faculty, demonstrating strong proficiencies in new technologies such as social media. The challenge is to ascertain which of these myriad new options can have real and lasting benefits to the profession. Email is a perfect example—in 2000, people were just beginning to use email. The use of that technology exploded over the next decade, but now has been supplanted by other technologies, such as texting or social media. Younger generations expect these applications to extend to the educational and clinical sphere, and our educators have been slow to learn how to respond, so building this responsiveness is a major faculty development challenge.

The need to evolve is permanent. In large organizations, there's a tendency (and it's quite understandable) to be wary of the bleeding edge because, historically, new technologies have taken years or decades to become commonly adopted. That timeframe has been accelerated, and emerging technologies are now widely adopted in months.

Successful professional practice begins with skills competency that is supported by an appropriately curated knowledge base. Professional practice prospers when it also includes competence in communication and teamwork and a willingness to incorporate new technologies that meet the quality standards required by science and by regulation. That, in a nutshell, is the overriding challenge that these emerging technologies pose to existing curricula—how can they educate initially competent professionals capable of maintaining their competence in a rapidly changing practice environment, and do so in a manner that is flexible, that fulfills universities' transcendent potential, and that is much more cost-effective and competency-based.

Among our leaders, we must cultivate a cadre of educators who address this challenge as their primary function, rather than something they do separate and apart from their administrative, clinical, and research duties. This is especially true when education is as expensive as it is today, and when students are shouldering increasing amounts of debt. We can't

C. Donald Combs, PhD

*Vice President and Dean,
School of Health Professions
Eastern Virginia
Medical School*

see the future as clearly as we would like, and we won't be mistake free, but we must be open to the idea that we must change continually.

There is something in human nature that loves a habit—it's comfortable to do the same thing tomorrow that we did today. Habit is becoming an increasingly harmful attitude in an era of rapid technological change.

8

Diversity in the Academic Health Center: Progress and Opportunities

Authors' Commentary

CHAPTER ABSTRACT:

The United States has experienced an enduring shortage of racial and ethnic minorities in the health professions—a diversity gap that contributes to health disparities. This chapter examines contemporary approaches to enhancing diversity, inclusion, and equity; and it provides case studies of how academic health centers can learn from and adapt successful programs that increase the healthcare professions pipeline, improve retention, and support practice.

Jay A. Gershen, DDS, PhD
President
Northeast Ohio
Medical University

Sonja Haywood, MD
Director
NEOMED-CSU
Partnership for
Urban Health

Jeffrey L. Susman, MD
Dean, College of Medicine
Northeast Ohio Medical
University

Most of the focus on healthcare reform has understandably centered around the Affordable Care Act and on insurance reform. An often overlooked, but critically important factor for health reform success, is an exemplary-trained, diverse workforce.

Diversity is a critical issue in the health professions workforce. We need to create a healthcare workforce to care for our diverse communities—a workforce that mirrors these communities. We can't wait for people to simply seek health professions careers, but must develop robust pipelines to the health professions, beginning in primary education and supported by intrusive advising, mentoring, and role modeling. Diversifying the work force is a long-term endeavor that cannot be accomplished in three years; it's at least a ten-year commitment. The program must be sustainable over this substantial period of time.

Academic health centers can be successful in diversifying their workforce by engaging their diverse communities and securing the community's active participation. Our program reaches out to nontraditional community outlets, including churches and civic centers, to identify students in the pipeline who may have an interest in the health professions. If we can improve educational opportunities, we won't just be diversifying the healthcare workforce, we will also be bringing economic vitality to the community. We have a very active community advisory board made up of key stakeholders from across the Cleveland area. As a program matures, its leaders and constituents can lose sight of the original vision. The community advisory board ensures that we are always cognizant of our mission and that we continue to serve the needs of the community.

None of this can happen unless there's support from the leadership at the institution. In our case, we have the commitment from the senior leadership across the entire institution, and they have made diversity a high priority institution-wide. You can't be successful simply by instituting a program several layers down in the bureaucracy—you must have the leadership from the entire institution behind you.

We also have to recognize that this is not a single issue, but a broad array of healthcare concerns. There are multiple concerns to address, including funding, access to care, and economics. We engage the state, corporations, and the local community in our efforts, and we use qualitative and quantitative data to consistently examine our progress and adjust our course.

There is a business case to be made for these efforts. If we can provide a diverse workforce for diverse communities, we will see improved prevention, increased access to care, and reduced costs.

9

The Growing Integration of Health Professions Education

Author Commentary

CHAPTER ABSTRACT:

A major redesign of healthcare and education is underway that: promotes mutual learning to import the transformative redesign of the scope and process of care, the workforce, and institutions that improve population health; engages individuals and communities; and improves quality while reducing the per capita cost of care. This chapter analyzes the value provided by interprofessional education and discusses how a new program will inform, connect, and engage the various stakeholders to make a sustainable, transformative redesign.

Frank B. Cerra, MD

*Senior Advisor, National Center for Interprofessional Practice and Education
Deputy Director, National Center for Interprofessional Practice and Education
Former SVP for Health Sciences and Dean of the Medical School
University of Minnesota*

The academic community has a major role to play in redesigning the healthcare system and workforce; and they must understand the importance of interprofessional education and collaborative practice. Academic health centers should undertake team care both experientially and didactically, while forming new partnerships with the care delivery system and its components. Some academic health centers understand this, but others do not. As a result, the product they're producing does not align with the emerging healthcare paradigm, which is a system that improves population health, engages families and communities, enhances quality, and reduces cost of care.

Payment systems must also join with care delivery organizations and work together to educate and train the workforce. Leaders of academic health centers should engage leaders from the marketplace, and collaborate to produce tomorrow's workforce. Presidents, deans, and faculty must get together and understand what is transpiring in the healthcare marketplace, and also why they risk losing their relevance. Right now, retraining time and cost is a major burden for the health system. It takes 2-3 years just to retrain new physicians and allied health professionals because practitioners require a whole new set of skills in the emerging paradigm. New graduates must possess some understanding of systems of care—particularly those systems that are horizontally integrated with employed physicians, nurses, pharmacists, or other healthcare professionals.

This will require us to ask some salient questions. What is our role in the new system? How do we design these new systems of care? How do we understand the information infrastructure, which is increasingly important to improving outcomes? How do we use real-time outcome information on the service line to improve quality, reduce cost, and monitor outcomes? Right now, our knowledge of informatics is very poor, and this will need to change.

Interprofessional team concepts are poorly taught within academic health centers. Graduates of health professions schools really have little idea what teams are or how teams can achieve outcomes by working together as equals. At the same time, within the marketplace of health, teams are already being deployed, and yet there is no agreement on how those teams should be composed, how those teams should be trained, and how they should be evaluated, particularly in the context of “triple-aim” outcomes.

In the future, there will need to be a new kind of relationship between academic health centers and the marketplace of health. We will need to work together on issues such as workforce development, curriculum and experiential education redesign, and new financial models that are win-win for everyone.

10

Advancing Collaborative Global Education Programs

Author Commentary

CHAPTER ABSTRACT:

In the new era of globalization, health education institutions around the world are collaborating with one another in establishing education programs through cooperation, communication, information, and resources sharing. This chapter reviews the main forms and models of collaborative education programs, discusses the barriers and challenges of advancing collaborative global education programs, and offers strategies to overcome these barriers.

A thorough search and review of the literature gave us a comprehensive picture of international cooperation in medical education, from which we worked out the framework and content for this chapter. We wanted to provide the reader with comprehensive and useful information on the existing types of collaborative global education programs and the challenges and barriers that may hinder the successful implementation of such programs, and, more importantly, some strategies for coping with these challenges. The writing process is also a learning process. We learned much from the experiences at other universities and institutions—both overseas and domestic, and reflected on and summarized our own practice.

In this era of globalization, in order to achieve excellence in medical education, collaboration is a must and has forward-looking significance. Review and summarization of such collaboration is definitely necessary, and will no doubt promote further collaboration in a virtuous cycle. Global collaboration in medical education plays an essential role in cultivating our students to become qualified health professionals with overall competencies, critical thinking, and team spirit—who are able to tackle health challenges both at home and abroad.

Advancing collaborative global programs in health professions education is a daunting task. We need to make every effort to ensure effective and sustainable development of such programs, including:

1. Substantial and ample support from the institutional leadership should be in place. Leadership support is the key factor in advancing collaborative global education programs.
2. We need to mobilize resources to enhance investment in collaborative global education programs. In the process of carrying out the programs, quality and equity are two major concerns.
3. We need to continuously improve the management mechanism of such programs. For example, we should attach great importance to program quality monitoring and evaluation so as to achieve better outcomes in the future. In the meantime, research in advancing collaborative global education programs should also be encouraged since we need to reflect on the current approaches and problems, and then look for innovative solutions.

As leaders of academic health centers, we first need to have a global perspective in transforming our institutions. We attach great importance to international cooperation. Academic health center leaders need to communicate and cooperate with their international peers and discuss the trends of transformation in medical education, research, and healthcare. We must learn from each other's experiences, and then work out appropriate strategies to tackle the new challenges as we go forward in healthcare's changing landscape.

Yang Ke, MD

*Executive Vice President
Peking University,
Beijing, China*

11

The Future of Graduate Medical Education: Is There a Path Forward?

Author Commentary

CHAPTER ABSTRACT:

Graduate Medical Education (GME) is an integral component of medical education, evolving from an apprenticeship model to an important constituency of the modern academic health center. Applying a thorough, critical examination, the authors conclude that disruptive innovation in how GME programs are organized and constructed is needed to teach future physicians how to better utilize evidence-based medicine in tandem with a focus on quality, safety, and cost. In evoking a new approach to GME, this chapter envisions a sustainable path forward.

Philip A. Pizzo, MD

*Former Dean,
School of Medicine
David and Susan Heckerman
Professor of Pediatrics and of
Microbiology and Immunology
Founding Director,
Stanford Distinguished
Careers Institute
Stanford University*

The historical concept of graduate medical education residency training (GME) must be placed into a modern context, and new realities need to be conveyed, learned, and taught. Along with that, we should examine how GME contributes to the future physician workforce and how it can play a role in providing solutions for healthcare in the United States.

GME remains an integral component of a physician's education, but the traditional emphasis on hospital-based disease management is in need of fairly dramatic change. We need to modernize our approach to GME. It must still include an understanding of evidence-based disease management, but it must also include a renewed focus on health outcomes, quality, safety, and cost of care. The healthcare workforce of the future needs to be equipped to care for patients in an ambulatory setting, and as part of a healthcare team. As healthcare becomes more population based, we will need to move away from our traditional siloed approach. Healthcare workers will increasingly focus on the health and wellness of patients in the communities where they live.

This is a major challenge for academic health centers. Even today, residents or graduate trainees are integral to the healthcare workforce of hospitals. For many decades, residents have been the “go-to” providers of care, particularly in hospital settings. As a result, hospitals have become dependent on their residents to provide care, particularly in acute care. Because funding for GME is largely from Medicare, teaching hospitals have also become economically dependent on the current GME funding model. Hospitals will need to recalibrate the role of trainees and how they are funded, and emphasize their role as learners, rather than just as service providers. This is a substantial change, and it will require a new paradigm for how patients are cared for in the hospital setting and how academic health centers pay for these services.

We also should take a more holistic view around what our future physicians need to know, and equip them for the care they will need to provide. Physicians will still care for patients with disease, but it will be less hospital-based, and more focused on maintaining health and managing patients with chronic disease. This is of particular concern as we confront the needs of an aging population. The demographic realities have led some to conclude that we will have a shortage of physicians in the future, and while there is little doubt that we will need more physicians, the mechanisms and assessments that have been performed have been based on the historical role of doctors, rather than the role they will play in the future. The healthcare workforce of the future will use technology in ways that will significantly alter and modify the way physicians engage with patients and should engage other professionals (including nurses, social workers, pharmacists, etc.) in new team-based models of care delivery.

12

Guiding the Future of Graduate Medical Education through “Enlightened” Accreditation Policy

Author Commentary

CHAPTER ABSTRACT:

The impact of accreditation processes on the quality of medical education is enhanced by harmonization across the medical education continuum and with other health professions.

This chapter explores how if the committees, councils, boards, and agencies charged with accreditation fully embrace these opportunities, enlightened accreditation policies could serve as a vehicle for promoting evidence-based educational innovation rather than as an impediment to future creativity.

**Michael F. Collins,
MD, FACP**
Chancellor

*University of Massachusetts
Medical School*

Accreditation in the United States is a complex process and it's also rather siloed, such that medical, nursing, and residency programs are all accredited in different ways. We've been breaking down the silos in education; for example, students from the nursing school are side by side with students from the medical school. In the future, we'll have to explore possibilities for collaboration between various accreditation agencies. This has already begun with the ACGME and the AOA.

In the United States, accreditation is largely a voluntary process. Of course programs need to be accredited, but it's a self-study and volunteer process. This is a tremendous gift to the professions themselves as working professionals dedicate a significant portion of their time to accredit other programs. This ensures that high standards are being applied to all our programs. We have the finest programs in the world, and they remain excellent because of our peer-review process.

Leaders in academic health centers need to work with accrediting bodies to ensure they maintain pace with the rate of change. Residency training programs are undergoing major accreditation changes, and the LCME is watching this process closely with development of milestones that students must achieve upon graduation. As a result, educational processes are evolving. We must challenge ourselves in our programs, and throughout our institutions, to adapt innovative teaching methods; but, as we do so, it's vital that we emphasize accreditation expectations. For example, we are about to engage in accreditation for our nursing school. I have to make the case that the landscape has changed, requiring our nursing and medical students to work more closely with one another.

The entire institution mobilizes during an accreditation, and for good reason. Accreditation affords enormous institutional opportunity. The process begins with self-study. We take a step back, examine all the standards, and we ask ourselves: are we meeting those standards? The process takes about 18 months, and we dedicate the time of very senior people to the enterprise. Self-reflection provides the opportunity for self-action. Standards are increasingly challenging, so the institution needs to stay at the cutting edge and find ways to maintain quality.

Academic health centers are a tremendous asset to our country. Future directions in healthcare could be influenced by a more enlightened view of accreditation in which accreditation takes the lead in fostering innovation in health sciences education—including interprofessional education and competency-based frameworks for evaluating learning needs across the continuum from pre-medical to undergraduate medical to graduate medical education and beyond.

13

The Compelling Need for Education Reform: A Futurist's View of Health Professions Education

Author Commentary

CHAPTER ABSTRACT:

To keep pace with rapid changes in healthcare delivery, academic health centers must change their approach to health professions education, aligning with the geographic locus of care and becoming as interprofessional as the clinical contexts into which students will graduate. This chapter presents a framework for an enhanced health professions education that will enable students to thrive in this new learning environment.

Topics in medical education have historically been somewhat separated or fragmented, and future progress hinges on our appreciation and development of important new synergies and interconnections. In my experience over the past 30 years, for example, medical education has been medicine-content-focused. That is, we teach students “here’s the kidney, here’s what we need to know about the kidney, here are things that can go wrong in the kidney,” and so forth. But if medical students are to succeed and lead in today’s highly-complex, rapidly-changing healthcare environment, they need to learn a wide range of additional skills—such as leadership, educational technologies, experiential learning in diverse settings, and the whole dimension of healthcare delivery science.

In that regard, I am struck by the connections and synergies among and between those new dimensions of medical education, which need to be embedded into the curriculum. We can no longer train students just to be doctors because we are no longer focused on just the heart, lungs, or the kidney. If we are going to reform the healthcare system, we must simultaneously reform the educational system. We have to prepare doctors to be able to practice in the new environment. These realities make the curriculum more complicated, but at the same time more interesting.

The new themes that increasingly have to be part of medical education raise a host of interesting questions. For example, what does it mean to be a leader—whether you are in solo practice, a large group practice, or a large academic health center? How do you measure how you are doing in your practice? How do you provide the best care of the highest quality at the lowest cost? We need to be attuned to the importance of training students in measurements—including critical appraisal skills, quantitative analysis, and systems design and improvement—as well as in the contextual elements of medicine, such as policy, economics, and disparities.

One interesting challenge for medical schools is that faculty may not be experts in these areas. For example, our students have repeatedly asked for content on resilience: How do you rebound from bad news or a bad outcome? Most medical schools have to turn to experts outside their faculty to get that kind of information. Similarly, many schools have to turn to their business school for leadership training. We often also have to look outside for expertise in such areas as teaching technology.

There is a need to create infrastructures that allow for better alignment of medical education inside the professional nature of healthcare. The data is pretty clear that we need learning platforms, contexts, and

**Wiley W. Souba,
MD, ScD, MBA**
*Former Vice President
for Health Affairs
Former Dean of the Geisel
School of Medicine
Emeritus Dean
Professor of Surgery
Dartmouth College*

opportunities for medical students to learn together with nursing students, pharmacy students, residents, and other practitioners; patient care is now entirely team-based. It may sound obvious, but how do you create the infrastructure to do that? How do you do that when you don't have a nursing school?

Another implication, of course, is funding. How can we afford to change medical education in the ways that it needs to be changed in an era when traditional sources of revenues—such as tuition, indirect costs from grants, support from hospitals, and reimbursements—are flat or even in decline? Related questions concern how we pay faculty. If, for example, we expect faculty to generate a certain level of Relative Value Units (RVUs), what about research faculty? Is there a research RVU equivalent? What happens if someone loses their grant? How do you compensate teaching faculty? How do we compensate clinical faculty? These complicated questions will continue to challenge leaders as we move ahead.



SECTION III

THE CHALLENGE OF DISCOVERY

14

The Changing Spectrum of Biomedical and Clinical Research

Author Commentary

CHAPTER ABSTRACT:

The landscape of extramural funding for biomedical and clinical research has been undergoing substantial change over the last five years. Among the drivers of change is diminished NIH funding, fewer training opportunities, reduced interest among physicians to pursue research careers, and an aging faculty at academic health centers. This chapter offers a framework to enhance research competitiveness—including reengineering academic health center practices to successfully achieve a vibrant faculty, a more efficient operating research model, and a governance with sufficient flexibility to adapt in a highly-dynamic competitive context.

**Howard J. Federoff,
MD, PhD**

*Executive Vice President for
Health Sciences
Executive Dean of the School
of Medicine
Georgetown University
Medical Center*

We tried in our chapter to capture the trajectory of the decline in research funding as it relates to the biomedical research enterprise, and discuss the implications of that with regard to what operating models might be effective in this current era. Writing the chapter gave us an opportunity to develop a more granular understanding and to comprehensively update ourselves around a lot of data with which we were familiar.

I think the most important takeaway message is that we need to restructure and reorganize the way that we think about biomedical research. Some of the historical mechanisms used to sustain that activity are no longer relevant. We need to think about a series of new concepts. Some of this has to do with the structure and support of the enterprise. In addition, we also need to investigate new concepts around the way we encourage, incentivize, and reward investigators as they seek and find financial support—both individually and, more likely in the future, collaboratively. And then, how does one think about the faculty as able to meet the tripartite mission, and what does one do in thinking about building the faculty of the future, given that it will be different than that of the past.

Whether and how what we learned is applicable to other institutions is going to be variable. But some of the tenets that we espoused are not unique to our organization. In some cases, some of the principles we discussed can be readily adopted. In other cases, our principles might be a little more challenging to adopt, depending on some of the legacy, historical, and cultural issues at given institutions.

It is always productive to work with colleagues to try to frame an understanding of the depth of a problem that you confront regularly, and have in that time the ability to reflect on it in a more systematic and comprehensive way. I believe these exercises are important for all of us in the academy, especially as we try to do more with less.

15

Managing, Funding, and Supporting Research

Author Commentary

CHAPTER ABSTRACT:

Providing a research environment that entwines new medical knowledge with education, training, and clinical care is one of the most important things a medical school can do to improve health. Research administration has become increasingly more costly, requires specialized knowledge, and can no longer exist without expectations of high-level performance. This chapter outlines an approach to growing and managing the research enterprise, applying a targeted appropriations model that strategically invests resources to meet the long-range financial plan of the medical school, and configuring that plan to support the goals of the university.

One of the interesting reflections that resulted from writing our chapter was a strong realization of how far we have come in galvanizing research at Feinberg. We started with a relatively small research portfolio that we have grown by more than 300 percent since the early 2000s. Research has really become a hallmark of the university and an area of growth that we have trumpeted.

The fact that the co-authors for this chapter include the dean of our medical school, our vice president for research, and our vice dean for finance and administration underscores the power of linking business principles with the traditions of academics to develop best practices. Sometimes applying what can be categorized as “corporate ways” of approaching problems can lead to breakthroughs in how we manage and govern medical centers.

As the Affordable Care Act changes healthcare reimbursement and delivery and the NIH budget continues to compete for limited federal fiscal resources, there will be increased pressures on academic health centers to stay relevant and solvent. Developing a coordinated approach among all medical partners will likely be the only viable way to address this new reality. For example, a hospital relates to a medical school through funds flows for research and education growth, support for academic efforts by clinician educators, and shared opportunities to incorporate advances in education and research into new and novel therapies delivered in the hospital setting. A hospital benefits from the relationship through differentiated products in a rapidly consolidating marketplace. A hospital with clinical trials, physician scientists, and the ability to demonstrate cutting-edge care will create a strong value proposition in the marketplace.

In terms of the partnerships between universities and schools, central administration depends heavily on its medical school for the reputational impact it has on rankings and for the boundless opportunities for collaborative teaching and research activities. Also, in some fully integrated systems, clinical surplus helps sustain the core academic mission of the university. In this new era and uncertain environment, aligning incentives for both shared success and shared opportunities for cost synergies across all these relationships will be vitally important tools.

With respect to research optimization, an important lesson from our chapter is how important it is to share best practices and strategies with other institutions and their leaders. As with fundamental research, findings and translation are accelerated by having others implement the approaches that led to success.

Another finding that I think comes through in the chapter is how important central planning is and, in other cases, how important not having central planning is. There is, in fact, a spectrum of central management. At certain levels, central management can motivate constructive entrepreneurialism. At other levels, it can lead to suboptimal infighting and isolationism. For example, as we discuss in the chapter, while we believe universities should decentralize their medical schools, medical schools are best off centralizing their departments. This subtle dynamic is important to understand in order to foster growth.

Another key takeaway is the importance of metrics. But equally important—if not more so—is executing against these metrics. Vision without execution is simply hallucination. You have to have the tools, processes, and will to act upon the information the numbers provide. In terms of developing metrics, an institution may be able to find models from peers, but often external benchmarks and approaches are only the start. An institution must look long and hard at its own set of data, and its own situation, and determine what approaches will best suit its needs and the many factors that the organization must manage.

I hope that this chapter—and this book—prompt further conversations on these important topics. It would be our great wish that we have stimulated constructive conversation amongst our academic health center colleagues. While there are occasions for us to compete for the best recruits or the next big grant, we must also acknowledge those occasions where we must work together. We are held in the public trust to advance knowledge, train the next generation, and deliver care to patients. Given the challenges brewing just off the horizon, we will all be better off facing them together. This chapter is our contribution to that conversation.

Craig Johnson, MBA
*Vice Dean for Finance
and Administration
Feinberg School
of Medicine
Northwestern University*

16

Transformative Changes to Embrace, Manage, and Exploit “Big Data”

Authors’ Commentary

CHAPTER ABSTRACT:

Technological advances in research and electronic health records have shifted the emphasis at academic health centers from a focus on data generation to one of data management and analysis.

Transformation of the academic health center environment, workflow, and workforce is needed to fully exploit the potential of “big data” in accelerating the discovery and application of new biomedical knowledge. This chapter provides a detailed framework for how academic health centers can establish their own big data resource initiatives to exploit large national databases and merge data from throughout their research and clinical enterprises.

While it is easy to talk about “big data,” it is much more complicated to put an infrastructure in place that effectively addresses the realities of exploiting big data in meaningful ways. Part of the complexity stems from the fact that there are various sorts of big data. For example, some big data exist in forms that are relatively easy to compute, such as claims data from insurance. By contrast, though, the electronic health record, with its abundance of free text, produces data that are more daunting to process.

We were well aware of those issues before we undertook this chapter, but writing our thoughts in this form confirmed and underscored that, when it comes to making sense of big data, the vision and the reality remain far apart because of how challenging a problem it is. Individual academic health centers have the opportunity to establish big data resource initiatives that can exploit large national databases, merge data from throughout their research and clinical enterprises, and accelerate the discovery and application of new biomedical knowledge. But doing so effectively requires that each academic health center carefully plan the right big data environment, workflow, and workforce.

Based on our experiences at Pitt, we found that it is important to adequately plan a computing infrastructure. Big data, both from clinical care and research, are only valuable if they are recorded with care, using a nomenclature that permits subsequent merging and sharing for integrated analyses. It is imperative to plan an infrastructure that anticipates growth in data volume and expansion of data types as well as to invest in developing an institutional culture that fundamentally understands the importance of big data. Healthcare personnel at every level, from clinic intake staff to physicians, must work with a mindset that ensures the entry of complete, accurate, and uniform data—good data “hygiene.”

In terms of infrastructure, rather than reinvent the wheel, academic health centers should explore partnerships that can help them gain the expertise they need—such as university partners and other collaborators who can help design and implement an appropriate infrastructure—and help them avoid mistakes, including overspending, that result too often when an institution tries to go it alone. At Pitt, we took advantage of existing expertise in the schools of health sciences, other parts of the university, and in Pittsburgh at large. We describe some of these partnerships in the chapter, in the hope that they might be illustrative for other academic health centers.

In fact, we recently announced a new and very substantial agreement related to healthcare and big data. This agreement engages our

Arthur S. Levine, MD

*Senior Vice Chancellor for the
Health Sciences
John and Gertrude Petersen
Dean, School
of Medicine
Professor of Medicine and
Molecular Genetics
University of Pittsburgh*

Michelle L. Kienholz

*Science Communications,
Institute for
Personalized Medicine
University of Pittsburgh*

**Rebecca S. Crowley,
MD, MS**

*Professor of
Biomedical Informatics
Department of
Biomedical Informatics
Chief Information Officer,
Institute for
Personalized Medicine
Director, Biomedical
Informatics Graduate
Training Program
University of Pittsburgh*

Jeremy M. Berg, PhD

*Associate Senior Vice
Chancellor for Science
Strategy and Planning
Health Sciences
Pittsburgh Foundation Chair
and Director, Institute for
Personalized Medicine
Professor of Computational
and Systems Biology
University of Pittsburgh*

University, Carnegie Mellon University (CMU), and the University of Pittsburgh Medical Center (UPMC). UPMC holds one of the largest patient data-bases in the United States; CMU has a top-tier computer science/machine learning program; and, our medical school has leading departments of biomedical informatics and computational biology. The goal of this agreement is to identify aspects of this new tri-partite platform that can be commercialized. UPMC will provide abundant capital in support of commercialization.

As with so many innovations, it is important for academic health centers to do their homework before plunging into the vital but challenging world of big data.

17

Bridging Science and Practice—A Case Study: The Military Translation of Innovative Responses to Urgent Military Medical Needs Into Widespread Clinical Practice

Author Commentary

CHAPTER ABSTRACT:

Armed conflict requires the Department of Defense's Military Health System to consider new ways to assess and implement approaches to combat injuries for which older methods prove to be inadequate. This chapter highlights the many developments that have already been incorporated into civilian practice, and demonstrates that a focused, empirical approach may offer an alternative means of carefully evaluating novel modalities where randomized controlled trials are impractical.

Charles L. Rice, MD

President

*Uniformed Services University
of the Health Sciences*

Writing this chapter forced me to think in more depth than I had before about the enormous array of clinical research that is conducted in the Department of Defense. That research covers a broad spectrum of issues, some of which are particular to the military, but much of which are relevant to the civilian world. The other thing that struck me is the talented group of people conducting research across the military.

One instructive message from the chapter is the need to be adaptive in how a research agenda is shaped to address truly critical problems. One particular example is the joint theater trauma registry. When I was learning surgery, the idea that you would use a tourniquet to stop hemorrhage in an extremity was considered an absolute anathema because of earlier experience leading to limb loss. But in studying experiences around injuries caused by improvised explosive devices, researchers found that stopping hemorrhage by use of a tourniquet was an absolutely essential part of immediate care. Another example is in the way that laboratory values for resuscitating trauma patients using old models of saline solution and whole blood proved to be out of date, at least in dealing with patients who manifested massive hemorrhage.

Neither the tourniquet nor the change in the resuscitation paradigm was subjected to a prospective, double-blind, randomized controlled trial. In field medicine, there simply isn't time for that. But there was a constant, iterative process with feedback that does provide solid and convincing evidence about the appropriate way to proceed. That tells me that clinical investigators need to think of approaches to research questions that go beyond what we were always taught as a gold standard—the prospective, randomized, controlled trial. I think adaptive approaches to urgent clinical problems are essential.

Further, our chapter suggests that leaders have to be willing to consider research approaches that go beyond the traditional ones, and to think creatively and innovatively—always being cognizant, of course, of both ethical and legal requirements.

Finally, I hope that this chapter will help readers who are in civilian institutions to understand that there is a very vibrant and responsible clinical research community in the military, and that it welcomes partnerships with civilian institutions and researchers.

18

How Research Can and Should Inform Public Policy

Authors' Commentaries

CHAPTER ABSTRACT:

Too often, health policies are not based on the best available research evidence. This evidence should not be blindly applied, but rather used to inform policy, taking into account pertinent cultural, social, political, and economic realities. This chapter addresses approaches to “package” evidence in user-friendly ways, the barriers inhibiting evidence-informed health policy, and how academic health centers can take steps to advance and transform health policy.

Writing this chapter helped crystallize for me the opportunities that academic health centers and researchers have to use their work to address important societal questions. By that, I mean that we should define the questions that society, patients, and healthcare need answered and then work to provide evidence that will help inform policy.

The chapter underscores that it is not as simple as just generating scientific data and evidence, and then the policy follows. It is not evidence-based policy, but evidence-informed policy. As we generate evidence, we need to put that in the context of local cultures, norms, and economic realities and use the evidence in concert with policymakers to inform and generate the best policy. Researchers and policymakers need to work together. When those two worlds collaborate—when policymakers bring their skills in understanding their constituents and communities and combine that with the evidence that is generated by researchers—the result is policy that is the most beneficial and effective.

Academic health centers and their leaders, faculty, and researchers need to reach out beyond their own walls to connect with policymakers and the community. Through meaningful conversations, researchers can gain a deeper understanding of the context in which they are asking their research questions. They can also develop a more intuitive sense of how they can communicate their findings back to policymakers so that research can be used most effectively to help generate policy.

In addition, academic health centers have an opportunity to look at the kinds of questions they are asking. Are we addressing the questions that society, communities, and policymakers really care about? Are we asking the right questions? Are we asking them in the right way? Are we generating the type of evidence that is truly needed? Only by careful listening and by thinking in the complex way that policymakers have to think can we be the most useful and accomplish the ultimate, joint goal of improving health. This allows academic health centers the opportunity to think about research in new ways.

First, they can think about research more broadly. How can it inform the big societal questions? Second, they can approach research via partnerships. Research is not something that can be effectively done solely by academicians in isolation. If we can reach out to policymakers and community members, then we will all have more success with research and heighten its impact.

Finally, there are huge opportunities for new models where academia comes together with government, philanthropy, and industry. When all those stakeholders collaborate to generate evidence that informs health policy, it creates a very powerful and exciting way to move research forward in the future. By being part of these new collaborative models of research, academic health centers can increase the impact of their research and optimize evidence-informed health policy.

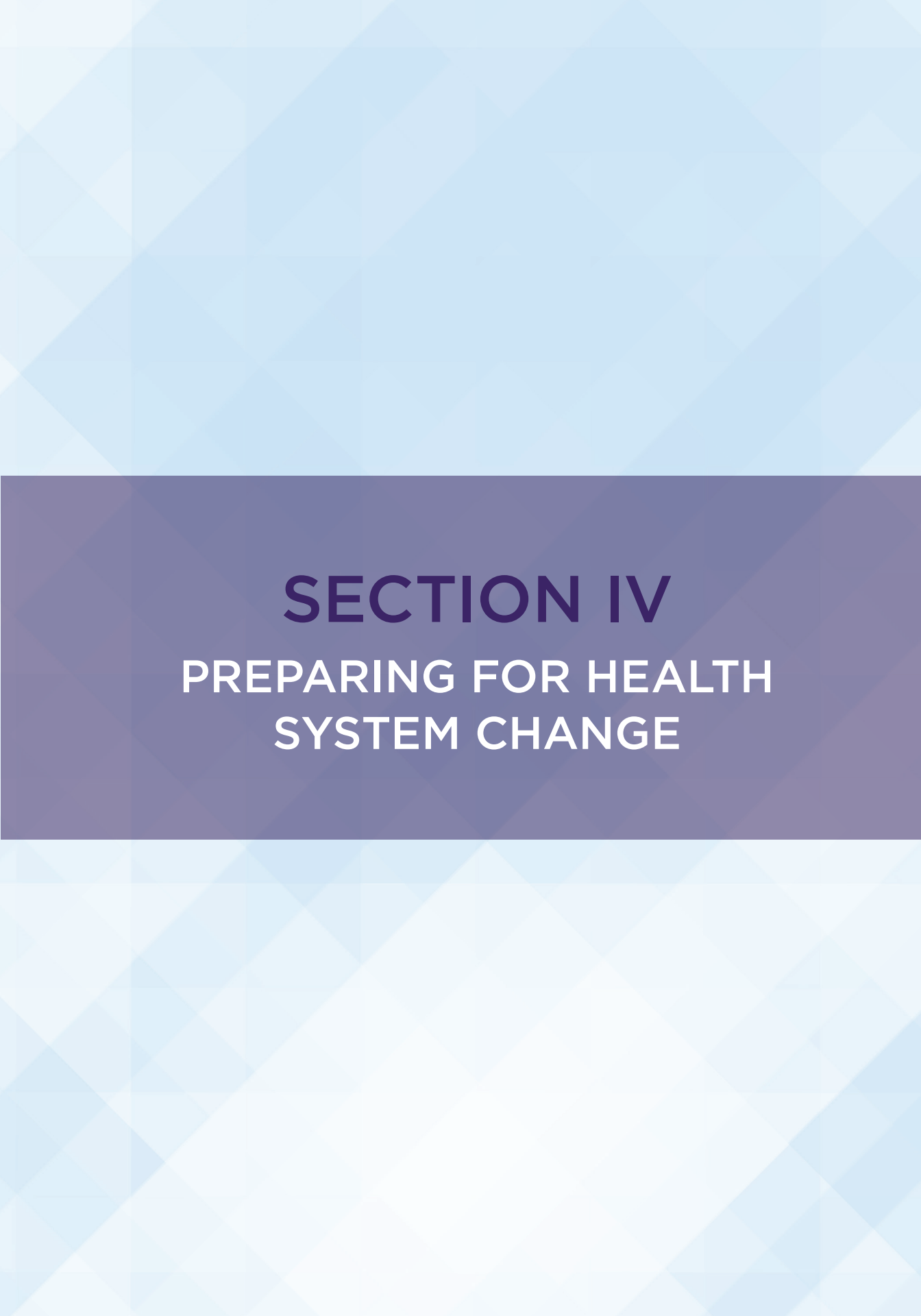
Claire Pomeroy, MD, MBA

*President
Albert and Mary
Lasker Foundation*

Fred Sanfilippo, MD, PhD

*Professor of Pathology &
Laboratory Medicine and
Health Policy & Management
Emory University
Director, Emory-Georgia
Tech Healthcare
Innovation Program*

For me, one of the most important take-home messages from this chapter is that research can be incredibly useful and powerful in helping to shape policy; but, if misused, research can also be very misleading. I always have had a strong belief that bad data is usually worse than no data. Likewise, bad research is worse than no research. Unfortunately with health policy, particularly because it is so politically charged, some research is simply focused on trying to prove one point or perspective, which is pretty easy to do if you don't take other factors into consideration when you are looking for a particular answer. This happens in basic research all the time—if you don't bring in the right covariates and confounders, you often come up with an answer that may serve your hypothesis but may in fact be wrong in other contexts and real-world situations.



SECTION IV

PREPARING FOR HEALTH SYSTEM CHANGE

19

Population Health and the Patient

Author Commentary

CHAPTER ABSTRACT:

Through innovations in health-related research, teaching, and service, academic health centers can train the healthcare workforce and lead innovations in the delivery and dissemination of high-quality, affordable, patient-centered care.

By recognizing and addressing the stark reality that social determinants of health significantly influence the health and wellbeing of populations, academic health centers can promote health equity.

The authors identify manageable priority areas that academic health centers can focus on to empower and activate patients in self-management of disease and to contribute to health promotion and disease prevention.

Interwoven in this chapter are two themes that need to come together: the connection between social determinants of health and interprofessional care. First, we are clearly in an age when we need to address population health. When we talk about that, we quickly get to the factors that impact health that are not classically thought of as biologic in nature—other than one’s genetic makeup—such as the environment in which you live, education level, and level of income. All those factors impact health. Second, if we want to have a healthy population or return people to health, particularly those people with chronic diseases, then we have to think about team-based care.

In regard to the first theme—population health—academic health centers are beginning to understand both the need to address the social determinants of health in education, research, and service delivery and how to meet that need. As just one factor in a complicated landscape, the trajectory of reimbursements further compels hospital partners to make sure that they address the social determinants of health for the populations they serve.

That links directly to the second theme—team-based care. Leaders of academic health centers need to fully understand and embrace the fact that healthcare, particularly in terms of addressing chronic diseases and whether it is to return people to health or to keep people from getting chronic diseases, is about much more than a physician or another kind of healthcare provider seeing a patient, making a diagnosis, and writing the correct prescription. It is about considering all the factors that affect health—such as environment, education, income, toxic stress levels, and so forth. Given that social determinants of health are beginning to be acknowledged as core to the mission of academic health centers, we have to commit to making sure that the students for whom we are responsible are educated in a way that fosters “team.”

Thinking in this way has several important implications. For one, it suggests that leaders of academic health centers need to think about—and recruit for—the healthcare workforce in the context of teams. Our workforces can no longer be just about physicians and nurses—they also have to include social workers, lawyers, community health workers, and all the other practitioners that contribute to care. That’s one thing that leaders of academic health centers need to appreciate now.

That leads to a final point. As leaders of academic health centers, we need to appreciate the fact that we were educated and have practiced in an era when our education, training, delivery of healthcare, teaching of healthcare, and our study of healthcare have all been very much siloed. Given that, we cannot simply turn around and suddenly say to the faculty

Jay A. Perman, MD
President
University of Maryland,
Baltimore

and the academic health center workforce that it's a whole new ballgame and now we all have to work with each other.

While we underscore the importance of preparing students to work in an environment that emphasizes teams, we have to be cognizant of the fact that the very people that we are asking to educate those students were not prepared that way. That's perhaps a long-winded way of saying that ongoing faculty and staff development will be critical components as we move forward in team-based care.

20

The Changing Delivery of Patient Care

Author Commentary

CHAPTER ABSTRACT:

Many academic health centers in the United States are currently undergoing a major transformation to maintain their leadership position in the evolving healthcare landscape. These enterprises are evolving into high-value, integrated, transparent systems that effectively compete for market share and can impact the health of large populations. This chapter explores how the changing dynamics of patient care, including by teams and large data sets, are impacting academic health centers.

It was the Polish astronomer Copernicus who showed that the earth wasn't the center of the universe. A similar revolution in thinking is underway in academic medicine. The ivory tower is no more. The same applies to our traditional "hub and spoke" model. The hospital is no longer the center of our universe. It is really the patient who is at the center. We now have a group of delivery systems that rotate around the patient, and that whole group needs to be seamless and integrated.

We are in an era of a dynamic healthcare landscape. As we look at health delivery, health insurance, and health outcomes, they are changing at historic speed. At the same time, as an academic medical center we have an inherent wealth of knowledge, especially in our missions of education and research. Another way to think about this is that academic medical centers have unique brands. Effectively leveraging our brand and utilizing the talents that we have will help us succeed in this era of transformation.

As we work to meet the Triple Aim, integrating systems and processes that help us create value is absolutely critical. Through such integration, we can decrease our costs, improve our quality, and deliver on our value proposition. In that regard, academic medical centers are integrated in key ways that bolster our overall strength. In employing our own workforce, we have more control over quality metrics, how we manage utilization, and how we get people to adhere to best practice in clinical care pathways. Such integration helps us achieve our value proposition and should be an area of focus.

As we become integrated organizations and work to improve quality and lower costs, we also need to think about how our people work together. One of our central challenges today is changing our culture to make it more interprofessional, patient-centric, and focused on population management. Specifically, we need to think about how we can work effectively in interprofessional teams that leverage the knowledge that each individual brings to the table. Integrating an interprofessional team approach into our culture may be one of our biggest challenges.

Population health management also mandates that we change our culture and move from fee-for-service to a population health management approach. As we move to population health, and as markets become more competitive, we can no longer remain in our ivory towers. We have to go where the patients are and work with them in multiple locations, facilities, and settings.

We need to be creative in establishing partnerships, including collaborating with organizations with which we may not have partnered traditionally. At the University of Rochester, we are partnering in new ways with a hospital some 90 miles away. One of their neurosurgeons

**Bradford C. Berk,
MD, PhD**

*Former Senior Vice President
for Health Sciences
Former Chief Executive
Officer, Medical Center and
Strong Health System
Director, Rochester
Neurorestorative Institute
University of Rochester*

actually drives here every two weeks to treat some of his more difficult patients with our faculty members—he learns from them, and they learn from him.

Many academic medical centers are going beyond the word “center” altogether. For example, we recently unveiled a new brand, UR Medicine, which refers to all the clinical sites affiliated with the University of Rochester, including hospitals, labs, physician practices, nursing homes, and outpatient treatment centers. This change reflects what I believe is an evolution in ways that academic medical centers and systems now view themselves.

21

CHAPTER ABSTRACT:

Healthcare delivery is undergoing radical changes as it experiences influences such as the Affordable Care Act, cost transparency, and increased healthcare consumerism. Academic health centers are poised to help develop and lead strategies and tactics to be successful in this changing market.

This chapter outlines how putting a strategic focus on the patient and driving better patient-centered tactics will help organizations and providers be successful in the new healthcare market.

James Merlino, MD

*Former Chief
Experience Officer
Cleveland Clinic Health System
President and Chief Medical
Officer of Strategic Consulting
Press Ganey*

Making the Patient Paramount

Author Commentary

The first thing that everyone in healthcare should do is frame the fact that we are here for patients. We serve people. Those people are just like us. We are all part of an ecosystem. Every one of us will be a patient one day. Really, it is starting with putting patients at the center and having conversations about that.

Keeping the patient at the center requires a willingness to lead, an ability to execute, and a desire or passion to constantly think about putting the patient at the center of everything that we do. As I was putting the chapter together and thinking about it organizationally, what should have seemed intuitive was that anyone can do this. It is not rocket science. It really is not that complicated for providers or healthcare organizations.

Developing the culture first is really important. That is hard to do because often when people start messing around with the culture it is viewed as an attack against the organization. The challenge is not so much about changing the culture per se, but is really about how we need to develop to get where we need to be. This is about people taking care of people; and if we don't start with that first, we are probably behind.

There is no better time than right now in healthcare to implement a patient-centered strategy. When looking at the changing environment, a lot of times the first reaction for many is to put our heads in the sand and say 'woe is me' and it is all bad; healthcare as we know it will be destroyed. But I don't see it like that. This is an opportunity to implement healthcare reform at a higher standard. We should embrace transparency. We should embrace the patient-centered aspects of this. We should embrace the opportunity to get healthcare silos to work together. This is an opportunity.

22

CHAPTER ABSTRACT:

The goals of advancing patient safety, improving quality of care, providing transparency, and engaging patients pose certain challenges to academic health centers as implementation of the 2010 Patient Protection and Affordable Care Act continues. The post-ACA environment demands: increased efficiency; detailed focus on all aspects of clinical care and operations; and, rapid translation and dissemination of promising new initiatives in close partnership with multiple stakeholders. This chapter offers several recommendations for academic health centers as the obvious leaders in patient safety and empowerment.

Positioning Academic Health Centers for Quality, Safety, and Patient Empowerment

Authors' Commentary

Ratings of patients' experience with hospital care now comprise approximately 25 percent of the Centers for Medicare & Medicaid Services' (CMS) value-based purchasing payment. Improving the patient experience is a goal that academic physicians, trainees, and everyone else who comes into contact with patients could achieve immediately if we applied sufficient effort.

There are four key take-home messages from our chapter. The first is not original to our research, but goes to the reality that faculty in academic health centers tend to be "eminence-based" as opposed to "evidence-based." Clearly, we need to find ways to ensure that faculty rely more regularly on evidence versus personal experience alone. Many senior faculty in academic health centers are highly respected for their research. But too often that means that they provide care based on just their experience. Having done things one way for a long time, they may not necessarily know all of the data on how best to manage patients. We have learned the hard way that this just isn't good enough.

Given the nature of medicine today, team-based research and practice is tremendously important. The second key message is that the data show that faculty are not yet as effective as they need to be in working in teams. That is not surprising. Many of today's senior faculty entered the practice of medicine at a time when autonomy was a defining characteristic. Even now, the National Institutes of Health typically grants money to a principal investigator (although it is moving toward team-based research). Teamwork is not a given, and learning how to practice in teams is going to require active training. Further, metrics need to be developed that demonstrate the value of team-based care.

Third, the idea of the one-day-a-week clinician just does not work anymore. It used to be that we could offer researchers who wanted to see patients the opportunity to do so once a week. Today, however, unless that person has truly phenomenal talents—and there are such exceptions—medicine is so complicated that the traditional one-day-a-week clinician simply cannot meet the standards that outstanding practice centers are held to in terms of availability, efficiency, and effectiveness. That strongly suggests that if one is going to be a full-time researcher, one probably needs to concentrate on that role and probably shouldn't practice.

Fourth, we need to think more carefully and thoroughly about rewarding teaching. We need to find better ways to recognize and reward those who can and do teach effectively. The great teacher almost never becomes a bad teacher. One way to look at tenure is that it is a "bet" on the future contributions of a faculty member. Perhaps for the great teacher, tenure should be awarded on the basis of teaching excellence.

There are two potentially disruptive ideas in our chapter. One is that some academic health centers might consider a path in which the AHC hospital is “quaternary” and cares only for patients with conditions requiring research, referring patients with more common conditions to other network partners. We may have to stop competing for the normal procedures that make money; it is a waste of time for academic faculty. The real value of the academic health center comes from advancing the state of medicine, not competing for appendectomies. Teaching should be done in all parts of the network. If we are to realize the full value of academic medicine, academic health centers need to be paid differently. We outline some options for payment in our chapter.

The second potentially disruptive idea concerns research in the academic health center. We know that research in clinical departments was bolstered in the early days of Medicare when ample money was available. But those funds are no longer available. Consequently, we can no longer rely on the principle of clinical cross-subsidization for either research or teaching. Today, both teaching and research need to be paid for on their own. One suggestion of ours is to house basic research—i.e., not involving the patient directly—in basic science departments that might be part of university-wide research enterprises and part of the university’s basic science budget. The university could decide how much it wants to subsidize basic research, and the rest could be supported by grants and indirect costs. The rare faculty members who can take their own bench research to the bedside could receive appointments such as “University Professor.”

Carolyn M. Clancy, MD

*Interim Under Secretary
for Health, Veterans Health
Administration
U.S. Department of
Veterans Affairs*

**Arthur Garson, Jr.,
MD, MPH**

*Director, Health Policy Institute
Texas Medical Center*

Recognizing that academic health centers will continue to play a vital role in medical education, research, and clinical care, we offer a range of further ideas in such areas as leadership, mission, continuous learning and improvement, and transparency and patient engagement. One of our observations in writing this chapter was that there are surprisingly few data that demonstrate the superiority of academic health centers in the care of patients. That gap provides an opportunity, however, for academic health centers and health services researchers in academic health settings to, in essence, prove how good they are.

23

Information Technology and Better Health: Overcoming the Risks

Author Commentary

CHAPTER ABSTRACT:

Information technology (IT) holds the promise to transform academic health centers by making healthcare more effective in meeting the needs of individual patients; but, doing so demands careful planning to surmount the challenges of deploying complex systems. This chapter provides a system engineering approach for anticipating and reducing the risk of IT projects. Central to this approach is defining requirements from a user perspective at the time a project is conceived and using those requirements to ensure that the system operates as intended, meeting the needs of the enterprise and its patients.

Many risks are associated with IT projects, and CEOs of academic health centers need to pay attention to those risks. There is a methodology for managing those risks and if you implement the methodology, those risks can be greatly diminished.

For example, I have found that it is easy for various types of IT projects to go off the rails due to absence of planning and/or failure to communicate among the many parties that participate. This is particularly an issue for large-scale projects. Consider integration of the electronic health record—a large-scale project in which most health centers have engaged. In many ways, the EHR drives the organization and touches every piece of it. It needs to be designed so that it supports the organization's mission. That isn't just about implementing the software itself. Making the EHR work in purely practical terms means that it works from a functional standpoint in supporting the mission. Aligning those two goals while still keeping the project on time and on budget is a universal challenge. Managing the associated risk is critically important.

IT projects demand technical skills from your IT staff. But who are the right people? I believe there are two alternatives for project oversight. Either might work under the right circumstances. You always have to involve business and IT, and so who ends up leading and driving the project for completion is an important choice. One option is to put someone with strong business knowledge in charge of the project—versus someone who is stronger on the IT side. There are two perspectives on that issue, however my preference is more from the business side.

Managing large-scale IT projects in academic health centers should start with creating the requirements. It is very important to take a comprehensive look across the different IT platforms, prioritize them, and assess how they all need to interface with each other. It is extraordinarily difficult to get this right, in large part because software is likely acquired from multiple vendors. The software should communicate effectively, much the same as you want your staff to communicate. That needs to be conceptualized at the start.

Rather than deciding to buy software here and there, with the idea that you can figure out later how they can best work with each other, a broad systems vision is necessary from the onset. What are the pieces of technology that you would like to implement over time? What is the strategy for acquiring those pieces of software? How do you coordinate their development over time? How do you make them work with each other? I view that kind of planning as a crucial first step that needs to be undertaken prior to going out and executing a contract with a vendor. While it is often tempting to simply get a project started, planning in advance is vitally important.

Randolph W. Hall, PhD
Vice President of Research
University of Southern
California

Over the last five years, USC has invested significantly in software. In financial systems, research, HR, personnel management, and health records, almost every system in the university has been changed to something new. Implementation doesn't always work the way we hope it will work. All kinds of challenges come up along the way. When we have tried to implement too many IT projects at once, software fatigue comes into play. Employees need to learn pieces of software and change sometimes ingrained behaviors. Looking across all of the major systems to be implemented, it is critical to address them over time rather than try to tackle them all at once.

24

CHAPTER ABSTRACT:

Consolidation in the healthcare industry is driven by a number of factors. Classically, the major driver has been access to capital; but more recently, physician alignment and employment also has been a major issue. The implementation of the Affordable Care Act has further encouraged competition, while declining reimbursements have forced consolidation in order to take advantage of economies of scale and to increase leverage with private payers in a given market. This chapter explores the factors driving consolidation, examines specific cases, and outlines the pitfalls academic health centers must avoid in order to remain competitive in a rapidly-changing healthcare industry.

Market Consolidation and Alignment

Author Commentary

While the movement toward consolidation in healthcare has been based in large part on the goal of reducing costs, it seemingly has resulted in increased prices, at least in certain markets. Almost all the literature I reviewed shows that when a system achieves a significant market share via horizontal integration, it can command significantly higher prices. This has now been repeated in multiple markets where hospital systems have become larger by, in many cases, acquiring community hospitals or merging with other systems.

The Affordable Care Act, in pushing for the formation of Accountable Care Organizations where alignment between physicians and hospitals is critical, has stimulated many hospitals and health systems to acquire physician practices, which results in vertical integration. The leverage that results once a significant volume of physician practices has been acquired also, in many cases, has resulted in higher prices. Higher prices also may result in certain communities where the reputation of a hospital or system is such that higher prices can be demanded because payers can't afford not to have them in the system based on demand from their beneficiaries.

Consolidation in the healthcare industry is destined to continue. I think that, in most major cities, we will see a couple of dominant systems, if that has not already occurred. In part, this is to defuse some of the leverage that resides with the payers. In our own market in Philadelphia, with really only two payers dominating the market and almost complete fragmentation on the provider side, there is considerable discussion about consolidation. I think payers will try to offset some of that in any way that they can—often by playing one system against another. Circumstances will vary from city to city, depending on the level of concentration on the provider side vis-à-vis that level on the payer side. The formation of limited networks may also offset some price increases as systems may compete to be included, and the deciding factor ultimately may be price.

Another phenomenon we will see is some of the larger urban systems looking to expand in suburban areas, recognizing that the site of care and the cost of care are important, especially as we look toward some of the risk models that we are all getting into with payers. It is becoming increasingly important to provide care in the most appropriate and cost-effective settings for systems to continue to survive.

I believe we are going to see more and more physicians aligning themselves with hospitals or health systems, either with an employed arrangement or some other relationship. Anyone in a leadership position needs to be looking at how best to align physicians, whether they are employed or independent, with the goals and vision of the organization. In the long run, this type of alignment may be more easily achieved in an employment model.

Academic health center leaders need to be deeply cognizant of the market in which they exist. They need to be looking at how they interact with payers, and whether they are set up to provide care in the most cost-effective setting for the problem being treated. In a risk-sharing model, keeping people out of the emergency room and out of the inpatient setting—essentially prospectively managing wellness—is going to be the way that we can work most efficiently and best utilize the healthcare dollar.

The situation right now is very dynamic. Things are changing almost on a day-to-day basis. The full implications of the implementation of the ACA are not yet known. A number of states have not accepted Medicaid expansion. In those that have, people who may have been previously uninsured are availing themselves of insurance, and when they do, they tend to use it; so I think access is going to continue to be an issue. Accordingly, we need to position ourselves to address the demands that will be placed upon us as more people are insured. That means we have to be looking at the most efficient ways to practice medicine. Clearly, that is going to involve not just physicians but other healthcare providers—nurse practitioners, dietitians, pharmacists, physical therapists—in population management strategies. Every major system, and every hospital for that matter, needs to be looking at ways to align with their physicians and to be prepared to work with them to achieve high-quality, cost-effective care in risk-sharing arrangements with payers.

Larry R. Kaiser, MD, FACS

*Senior Executive Vice
President for the
Health Sciences
President & CEO, Temple
University Health System
Dean, School of Medicine
Temple University*

SECTION V

CONCLUSION

25

Academic Health Center Transformation: Future Shock or Future Success?

Author Commentary

CHAPTER ABSTRACT:

Academic health centers are vital institutions that are central to health and well-being. A combination of societal, scientific, and economic forces are disrupting the traditional approaches to educating the next generation of health professionals, conducting biomedical and clinical research, and providing comprehensive and advanced patient care. This chapter reviews the impact of these forces in three specific areas: interprofessional health professions education; the lab-based research investigator; and the impact of a changing health system. It then focuses on the challenges of successful leadership in this new era for academic health centers and concludes with some overarching guidelines for the path forward.

**Steven A. Wartman,
MD, PhD, MACP**

*President/CEO
Association of Academic
Health Centers*

Editing this book and reflecting on my own thoughts in developing this final chapter served to underscore the full complexity of the organizations that we call academic health centers. I have gained an even deeper appreciation of the dedication and thoughtfulness of their leadership teams. While every academic health center has its unique culture, the challenges and opportunities being faced are quite similar. As this book abundantly points out, academic health centers have a tradition of thriving—even in challenging times—and I expect they will continue to do so.

As I discuss in my chapter, I believe that the central challenges for academic health centers pivot around leadership and alignment. That is, skilled leadership is vital for the success of every academic health center. Equally fundamental is the importance of aligning the institution internally so that the missions of education, research, and patient care truly support each other.

In this era of healthcare reform, scientific and technologic advances, patient empowerment, and economic challenges, every academic health center needs to examine itself closely to determine its strengths and weaknesses and, more importantly, clarify those areas where it can truly make a difference. We in academe have an unfortunate tendency to try to emulate and perhaps surpass institutions that are above us in the so-called conventional rankings. I do not believe this is a meaningful strategy in the coming environment. (Indeed, I am not sure it was the best plan to begin with.) I believe institutions can do better than merely planning on moving up in the rankings. Rather, they should identify those particular areas where they can truly make a difference and excel. The focus then becomes the alignment of their strategic vision and budgetary planning in ways that will best advance progress toward specifically identified goals.

Apart from their essential role in upholding and advancing society's health and well-being, academic health centers are also critical engines for economic growth and development. They anchor their communities, whether we think about that in local or state contexts or even country-wide. In education, and especially in their research missions, they house and harness the tremendous force of the knowledge economy—perhaps the dominant force of the 21st century. Reading the insightful chapters in this volume as a whole reinforces for me the inestimable value that academic health centers add to society and its citizenry.

ASSOCIATION OF ACADEMIC HEALTH CENTERS

1400 Sixteenth Street, NW, Suite 720
Washington, DC 20036 | 202-265-9600
www.aahcdc.org



Association of Academic Health Centers®
Leading institutions that serve society