
A MODEL FOR HEALTHCARE ADMINISTRATION EDUCATION TO MEET NEEDS OF DISRUPTIVE CHANGE IN HEALTHCARE

RIGOBERTO I. DELGADO, PhD, MBA, SANDRA MURDOCK, FACHE,
DRPH & ELIZABETH GAMMON, PhD, CPA

ABSTRACT

Healthcare is undergoing significant changes, and there is growing demand for healthcare administrators with skills to operate in such an environment. A challenge for educators, however, is developing and implementing appropriate educational programs which meet the emerging needs of the healthcare sector. In this paper, we present a theoretical framework which we use to explain different approaches for improving education in health administration under an environment that we define as systematic disruptive change. This type of change was brought about by healthcare reform and implies sector-wide impact in healthcare including pharmaceutical and equipment manufacturers, providers, payers, and patients. It involves substantial changes in institutional performance evaluation, and reimbursement and mandates for time-specific adoption of procedures and innovations. From the perspective of effective healthcare management educational programs, we propose models which involve a combination of competency-based curricula, life-long learning programs, and cooperative efforts between education institutions and regional healthcare institutions.

Please address correspondence to: Rigoberto I. Delgado, PhD, MBA, Department of Economics and Finance, College of Business Administration, University of Texas at El Paso, 500 W. University Ave., El Paso, Texas 79968. Phone: (915) 747-7097; Email: rdelgado16@utep.edu

INTRODUCTION

In healthcare, adjusting to change has become the norm, and healthcare administrators require personnel with skills to operate in such environment. A challenge for educators, however, is implementing programs which foster a student's ability to thrive in an environment of disruptive change. In this paper, we first describe existing models of disruptive technological change to explain the extent to which innovations impact business processes and create needs at the educational system level. We then use models of disruptive change as the basis for presenting a theoretical model that we call systemic disruptive change in healthcare. These are macro, or large-scale, disruptions influencing entire industries and requiring profound business-wide process change with strict timelines for adoption. From the perspective of systemic disruptive change, we develop a theoretical framework to explain recent emphasis on emerging educational approaches (e.g., competency-based education) and to propose approaches for improving education in healthcare administration.

The literature suggests that university education, like businesses, needs to develop agility capabilities to meet process transformational requirements resulting from disruptive innovations (Mukerjee, 2014). However, there are two levels of impediments for creating effective educational programs under disruptive market conditions. First, there is a lack of understanding on the part of industry managers regarding the nature and permanence of change. For example, writing in 2014 in the *Harvard Business Review*, Rita Gunther McGrath, observes that "Managers still assume that stability is the normal state of affairs and change is the unusual state" (McGrath, 2014). Second, health administration education (HAE) literature acknowledges the lack of interest on the part of HAE educators to embrace approaches to meet complex demands in the marketplace (Marshall, 2010). Authors point to the gap between HAE competency-based graduate education and successful performance of program graduates in the workplace (Rissi, Wallace, & Gelmon, 2015), and have proposed a set of innovation competencies to drive graduates' ability to innovate (Pillay & Morris, 2016). These studies highlight how innovations in industries have important consequences for educators since changes in technology drive education and training of the labor force.

Business managers must have a clear understanding of the nature of change affecting industry in order to provide clear direction to company employees and provide appropriate solutions to emerging needs (Mukerjee, 2014). Likewise, in order to close the gap between what is taught in the classroom and what is needed in the workplace, HAE faculty need to understand not only how innovations impact industry, but must understand the effect industry changes have on emerging needs within the educational sector. This does not

necessarily imply disruptive change in the way education is delivered alone, but considers also how changes in industry force the educational system to anticipate industry needs (P. M. A. Baker, Bujak, & DeMillo, 2012). The goal of this paper is to advance our understanding of disruptive change in the current environment of healthcare and to provide a theoretical foundation for the development of appropriate HAE approaches.

DEFINING DISRUPTIVE CHANGE

Bower and Christensen (1995) introduced the concept of disruption in the for-profit sector, focusing on response to change that resulted in loss of market leadership. As the work on disruption matured, Christensen settled on the phrase “disruptive innovation” to describe the positive direction of change. Disruptive innovation meets three criteria:

- Enabling technology – an invention or innovation that makes a product more affordable and accessible to a wider population.
- Innovative business model – a business model that targets non-consumers (new customers who previously did not buy products or services in a given market) or low-end consumers (the least profitable customers). This is most easily accomplished by new entrants since they are not locked into existing business models.
- Coherent value network – a value network in which upstream and downstream suppliers, partners, distributors, and customers are each better off when the disruptive technology prospers (The Christensen Institute, 2018).

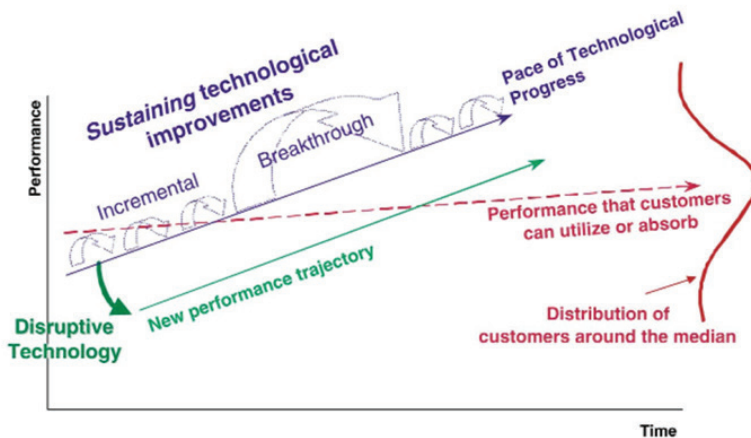
Christensen expanded his focus from for-profits to the not-for-profits arenas of education and healthcare (C. Christensen & Armstrong, 1998; C. M. Christensen, Bohmer, & Kenagy, 2000; J. W. Kenagy & Christensen, 2002; J. W. Kenagy & Christensen, 2002; Ulwick, Christensen, & Grossman, 2003; Hwang & Christensen, 2008; C. Christensen, Johnson, & Michael, 2008; C. M. Christensen, Grossman, & Hwang, 2009). The hypothesis of disruptive innovation in healthcare describes a sector where disruption has failed to significantly affect hospital practice or physician group practices, but where disruption if treated appropriately can lead to health improvements and lower population health costs (C. Christensen, Waldeck, & Fogg, 2017).

DISRUPTIVE CHANGE FROM WITHIN AND DISRUPTIVE CHANGE FROM ABOVE, A THEORETICAL MODEL

In the previous section, we discussed and defined disruptive change. In this section, we provide a model to explain the effect of disruptive change in the healthcare sector and implications for the kind of approaches needed in healthcare administration education. Figure 1 shows a traditional interpretation of disruptive change reflecting the impact of business innovators introducing new technologies to compete with companies within a similar sector (C. M. Christensen, Aaron, & Clark, 2003). Note that expected adoption of new technology is modeled linearly, as incumbent organizations respond to the threat of new entrants to the market place. Industry performance under this linearly-adopting scenario also shows an incremental pattern as more businesses adopt innovations.

Figure 1

Christensen model of disruptive change



Source: C. M. Christensen et al., 2003.

The process illustrated in Figure 1 is appropriate for cases of innovations affecting sector-specific segments of the economy (e.g., public transport with ride-sharing companies such as Uber; education with online teaching; communication with the cell phone) or functional areas within the enterprise (e.g., financial processes using a relational database system like Hyperion). These are innovations fostered and pushed by the private sector as a way of competing and delivering additional value. In this case, a gradual incremental assimilation

of innovations takes place. Even innovation breakthroughs can be understood with the Christensen model, but these changes might imply differing rates of adoption depending on legal constraints (e.g., patents), technological limitations, and economies of scale. The adoption rate of technologies does follow a normal distribution range covering early and late adopters alike.

However, the Christensen model does not necessarily apply to systemic disruptive changes. Systemic disruptions are considered macro, or large-scale, changes impacting an entire industry – or several industries – requiring the use of various innovations for all levels of business processes and having strict adoption requirements for the survival of an enterprise. Such is the case for the healthcare sector and the changes introduced by healthcare reforms. These reforms are mandated by the federal government affecting a number of sectors within healthcare (i.e., hospitals, insurance, pharmaceutical, equipment manufacturers) and requiring substantial changes in the way these stakeholders are evaluated and compensated (e.g., value-based medicine). Further, these changes are significant because they require time-specific adoption of procedures and innovation with given deadlines (e.g., use of electronic health records), and might be accompanied by financial incentives to encourage or accelerate change. On the other hand, performance assessment and provider reimbursement in the healthcare sector are based on measures of health outcomes. The interrelated triple aim of reducing cost, improving the patient experience, and improving population health (Berwick, Nolan, & Whittington, 2008) illustrates another precept of systemic disruptive change in the healthcare sector. Healthcare providers are now often required to have a population perspective as the basis for maintaining the long-term health of a community.

Thus, systemic disruption in healthcare conserves many of the features described by Christensen and mentioned earlier, plus it includes other factors as illustrated in table 1 below. Compared to disruptive innovations reflected by the Christensen model, or changes within (industry-driven), systemic disruptions are mandated by large government institutions. We consider this disruptive change from above (government-driven). Systemic disruptive change responds to wide-reaching distortions in the marketplace, which is what prompts government to act with legislative measures.

In our present case, the expanding cost of healthcare, medical resources concentrating in a small proportion of the population, issues of unequal access to healthcare, and market imperfections in the healthcare sector have been considered important factors which justified the establishment of the Affordable Care Act (D. Baker, 2017; Kuramoto, 2014). At the same time, it is important to recognize the influence of an important demographic factor which magni-

fies the conditions of current systemic disruption. This is the wave of aging Baby Boomers nearing retirement age who will require significant medical resources. Further, a large proportion of medical and clinical personnel are members of the Baby Boomer generation are nearing retirement. For example, it is estimated that by 2030 there will be a shortage of up to 105,000 physicians due to practitioner retirements coupled with increasing Baby Boomer healthcare needs (Buerhaus, Skinner, Auerbach, & Staiger, 2017). This implies a double effect from the shift in demand for medical services and decreasing number of professionals able to provide medical services.

Table 1

Comparison between Disruptive Changes and Systemic Disruptive Change

Criteria	Features	Disruptive Change*	Systemic Disruptive Change		
Systemic disruptive change	Sector-specific disruptive change	Enabling Technology	Cost-reducing, demand-increasing, innovations	X	X
		Innovative Business Model	Business model which enables reaching new customer segments	X	X
		Coherent Value Network	Economic improvements along entire supply-production continuum	X	X
	Multi-sector government-mandated change		Multi-sector change requirements; fixed industry-wide adoption timelines; performance and reimbursement metrics based on health outcomes; population health is the norm; inter-institutional cooperation is required; government intervention driven by sociodemographic factors, or market efficiency failures.		X

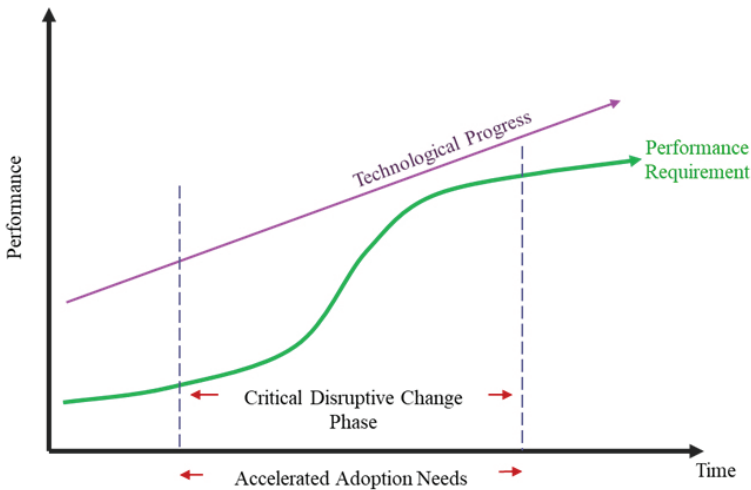
*Source: The Christensen Institute, 2018

Systemic disruptive changes are characterized by a phase we define as critical disruptive change. This is brought about by the requirements for accelerated adoption of new norms, or systems of operation. As seen in Figure

2, during the critical disruptive change phase there is a need for accelerated adoption and improvement of performance. As an example, the American Recovery and Reinvestment Act of 2009 required providers of healthcare services to adopt and use medical electronic records with a deadline of January 1, 2014. Providers received financial incentives to facilitate Medicare and Medicaid providers switching to electronic health records, and penalties for those not complying with the mandate (Centers for Medicare & Medicaid Services, 2013). This phase, however, is also characterized by a lack of linearity, or predictability, which is compounded by the uncertain final outcome of healthcare reform. This condition, in fact, is already identified by healthcare professionals as a major point of stress in the system (Buerhaus et al., 2017).

Figure 2

A model of systematic disruptive change

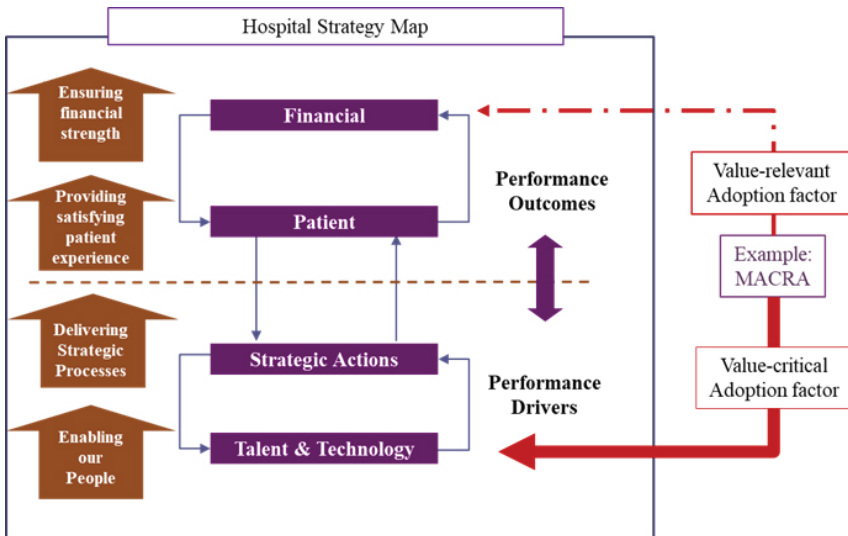


Systemic disruptions are also likely to have varying impact on healthcare operations at the functional level. We use the case of MACRA (Medicare Access and CHIP Reauthorization Act) to illustrate, given that this regulation introduced significant changes to reimbursements and is considered a systematic disruptive change throughout the healthcare sector. Figure 3 presents a strategy map summarizing the critical functional areas of a hospital including performance drivers (e.g., talent and technology development, strategic enterprise processes) and outcomes (e.g., patient satisfaction, financial strength). A strategy map is a tool first presented by Kaplan and Norton

(Kaplan & Norton, 2001b, 2001a) to provide a graphical representation of an organization’s strategy. This tool has been used by several authors (Chan, 2009; McLaughlin & Olson, 2017) to understand opportunities for improvement within the enterprise. For this case, MACRA is likely to affect to a high degree the area of technology and, as a consequence, the procedures involving the finance functions. For hospital managers, the former area becomes a value-critical factor in the enterprise that will require significant technology upgrading as well as retraining personnel (i.e., talent development). The financial impact will likely require training of personnel as well as efficiencies are incorporated.

Figure 3

Critical areas within a healthcare organization affected by systematic disruptive change



Note: Strategy map section source: McLaughlin & Olson, 2017

SYSTEMIC DISRUPTIVE CHANGE AND HEALTHCARE ADMINISTRATION EDUCATION

Systemic disruptive changes in healthcare create a need for new approaches for imparting HAE. The law-imposed mandates for fast adoption of new technology within a limited timeline, for example, created high demand for experts in healthcare and IT. Academic programs in different institutions

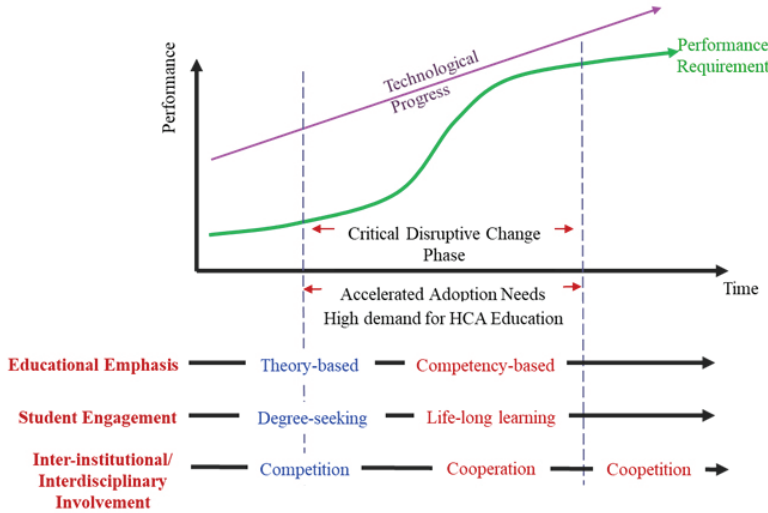
were also forced to create appropriate training programs in response to the growth in IT/healthcare careers (University of South Florida, 2017).

The possible extent of systematic disruptive changes effects on HAE is illustrated in Figure 3, implying that the accelerated adoption needs phase requires modification at three distinct levels. First, an HAE's educational emphasis requires moving away from theory-based practices and towards a competency-based curriculum development. This is illustrated by the policies highlighted by professional organizations such as American College of Healthcare Executives' recommendations on professional development (Candio et al., 2014). Second, there is a shift in student's purpose (i.e., student engagement) in education from a degree-seeking position to a life-long learning focus. This change demands adapting knowledge transfer. For example, in a life-long education setting, particularly in the area of healthcare administration, instructors are required to assume the role of facilitators while students become responsible for defining goals, identifying educational resources, and providing evaluations on a program's effectiveness in transferring knowledge (Collins, 2009). Further, life-long learning requires involving students in outside-of-the-classroom initiatives such as workplace peer-to-peer learning (Pype et al., 2014). In one case, Iowa State University implemented active collaboration between faculty in order to adapt appropriate teaching strategies which fit the needs of a generation of students wanting to succeed in an evolving business environment based on the premise of life-long learning (Elliott et al., 2016).

Third, at the institutional level, HAE programs are required to engage in cooperative efforts involving competing institutions. In the long-term – and post the critical disruptive change phase – HAE programs are expected to rely heavily on cooperation strategies between educational institutions. There is considerable evidence suggesting the benefits educational institutions can gain through cooperation agreements including improved scholarly performance by students (Muijs & Rumyantseva, 2014). Two of the authors of this paper are engaging students from their respective educational programs (Masters of Health Administration at the Texas Woman's University and MBA concentration in healthcare management at the University of Texas at El Paso) in an interactive, remote joint class modules and a research project. As a first step, the goal is to have students learn challenges of healthcare management at different regions of the country and with different population groups. The second step is for the two institutions to expand the joint course to the global level where students interact with institutions in other countries and gain a worldview of healthcare management. It should be understood that cooperation does not only refer to relationships between educational institutions, but should consider the ultimate end user of HAE: the healthcare sector.

Figure 4

Healthcare administration education requirements in systemic disruptive change environments



It is clear that in order to establish a working cooperative relationship with the healthcare sector, it is important to understand how systematic disruptive change impacts the enterprise. It is through this analysis that educators can anticipate industry needs and develop appropriate educational programs. Consider, for example, the effect of MACRA (Medicare Access and CHIP Reauthorization Act) illustrated previously with the use of a strategy map. Understanding these changes on specific functional areas of the healthcare system can help educators plan for targeted course content. The lack of linearity of this disruption mandates that the ties between programs and the healthcare sector become tighter and interactions more frequent. Consequently, HAE program directors and faculty must monitor the healthcare sector to quickly identify and respond by creating appropriate, responsive and contemporary educational programs.

CONCLUSIONS

In this paper, we present a theoretical framework used to explain the need for different approaches in healthcare management education. The basis of this model is what we define as systemic disruptive change in healthcare. This type of change in response to healthcare reform affects the entire sector

including pharmaceutical and equipment manufacturers, providers, payers, and patients. It involves substantial changes in institutional performance evaluation and reimbursement, and mandates time-specific adoption of procedures and innovation. As a result, we also support the notion that healthcare management education needs to implement different approaches to help meet the challenges of a systemic disruptive healthcare environment. Further, our theoretical framework provides the basis to explain the expansion of competency-based curricula, and justifies the need to engage students in life-long learning programs, as well as engage in cooperative efforts with other education institutions and regional healthcare institutions.

REFERENCES

- Baker, D. (2017). The Economics of the Affordable Care Act. Retrieved from <https://www.ineteconomics.org/perspectives/blog/the-economics-of-the-affordable-care-act>
- Baker, P. M. A., Bujak, K. R., & DeMillo, R. (2012). The Evolving University: Disruptive Change and Institutional Innovation. *Procedia Computer Science*, 14, 330–335.
- Berwick, D. M., Nolan, T. W., & Whittington, J. (2008). The Triple Aim: Care, Health, And Cost. *Health Affairs*, 27(3), 759–769.
- Bower, J. L., & Christensen, C. M. (1995). Disruptive technologies: catching the wave. *Harvard Business Review*, 73(1), 43–53.
- Buerhaus, P. I., Skinner, L. E., Auerbach, D. I., & Staiger, D. O. (2017). Four Challenges Facing the Nursing Workforce in the United States. *Journal of Nursing Regulation*, 8(2), 40–46.
- Candio, C. M., –Chairman Jack Bailey, F. W., Ann Blouin, F. S., Anita Halvorsen, F. J., Ed Hamilton, F., John Harrington Jr, F. L., ... Additional Contributor Douglas Klegon, C. A. (2014). Professional Development Task Force 2014 – 2015 Annual Report. Retrieved from <https://ache.org/ProfessionalDevelopmentTaskForce/FINAL-REPORT-RECOMMENDATIONS.pdf>
- Centers for Medicare & Medicaid Services. (2013). 2009-06-16. Retrieved September 18, 2017, from <https://www.cms.gov/Newsroom/MediaReleaseDatabase/Fact-sheets/2009-Fact-sheets-items/2009-06-16.html>

- Chan, Y.-C. L. (2009). How strategy map works for Ontario's health system. *International Journal of Public Sector Management, 22*(4), 349–363.
- Christensen, C. M., & Armstrong, E. G. (1998). Disruptive technologies: A credible threat to leading programs in continuing medical education? *Journal of Continuing Education in the Health Professions, 18*(2), 69–80.
- Christensen, C. M., Horn, M. B., & Johnson, C. W. (2008). *Disrupting class: How disruptive innovation will change the way the world learns*. New York: McGraw-Hill.
- Christensen, C. M., Aaron, S., & Clark, W. (2003). Disruption in Education. In and J. M. Maureen Devlin, Richard Larson (Ed.), *The Internet and the University: Forum 2001* (pp. 19–44). Boulder, Colorado: EDUCASE and Forum for the Future of Higher Education. Retrieved from <https://www.educause.edu/ir/library/pdf/erm0313.pdf>
- Christensen, C. M., Bohmer, R., & Kenagy, J. (2000). Will Disruptive Innovation Cure Health Care ? *Harvard Business Review, 78*(October), 102–112.
- Christensen, C. M., Grossman, J. H., & Hwang, J. (2009). *The innovators prescription: A disruptive solution for health care*. New York: Mcgraw-Hill.
- Christensen, C., Waldeck, A., & Fogg, R. (2017). How Disruptive Innovation Can Finally Revolutionize Healthcare. *Innosight Industry Horizons, 1–28*. Retrieved from <https://www.christenseninstitute.org/wp-content/uploads/2017/06/How-Disruption-Can-Finally-Revolutionize-Healthcare.pdf>
- Collins, J. (2009). Lifelong Learning. *RadioGraphics, 29*(2), 613–621.
- Elliott, E. R., Reason, R. D., Coffman, C. R., Gangloff, E. J., Raker, J. R., Powell-Coffman, J. A., & Ogilvie, C. A. (2016). Improved Student Learning through a Faculty Learning Community: How Faculty Collaboration Transformed a Large-Enrollment Course from Lecture to Student Centered. *CBE Life Sciences Education, 15*(2).
- Hwang, J., & Christensen, C. M. (2008). Disruptive Innovation In Health Care Delivery: A Framework For Business-Model Innovation. *Health Affairs, 27*(5), 1329–1335.

- Kaplan, R. S., & Norton, D. P. (2001a). Transforming the balanced scorecard from performance measurement to strategic management: Part I. *Accounting Horizons*, 15(1), 87–104.
- Kaplan, R. S., & Norton, D. P. (2001b). Transforming the balanced scorecard from performance measurement to strategic management: Part II. *Accounting Horizons*, 15(2), 147–60.
- Kenagy, J. w., & Christensen, C. M. (2002). Disruptive Innovation – New Diagnosis and Treatment for the Systemic Maladies of Healthcare. World Markets Series, Business Briefing Global Healthcare. Retrieved from <https://www.hbs.edu/faculty/Pages/item.aspx?num=12025>
- Kenagy, J. W., & Christensen, C. M. (2002). Disruptive Innovation: A New Diagnosis for Health Care's "Financial Flu." *Healthcare Financial Management*, 56(5), 62–6.
- Kuramoto, F. (2014). The Affordable Care Act and Integrated Care. *Journal of Social Work in Disability & Rehabilitation*, 13(1–2), 44–86.
- Marshall, S. (2010). Change, technology and higher education: Are universities capable of organisational change? *Research in Learning Technology*, 18(3).
- McGrath, R. (2014). Management's Three Eras: A Brief History. *Harvard Business Review*. Retrieved from <https://hbr.org/2014/07/managements-three-eras-a-brief-history>
- McLaughlin, D. B., & Olson, J. R. (2017). *Healthcare Operations Management* (Third). Chicago, Illinois: Health Administration Press.
- Muijs, D., & Rumyantseva, N. (2014). Coopetition in education: Collaborating in a competitive environment. *Journal of Educational Change*, 15(1), 1–18.
- Mukerjee, S. (2014). Agility: A Crucial Capability for Universities in Times of Disruptive Change and Innovation, Australian Universities' Review, 2014. *Australian Universities' Review*, 56(1), 56–60.
- Pillay, R., & Morris, M. H. (2016). Changing Healthcare by Changing the Education of its Leaders: An Innovation Competence Model. *Journal of Health Administration Education*, 33(3), 393–410.

- Pype, P., Symons, L., Wens, J., Van den Eynden, B., Stes, A., & Deveugele, M. (2014). Health care professionals' perceptions towards lifelong learning in palliative care for general practitioners: a focus group study. *BMC Family Practice, 15*, 36.
- Rissi, J. J., Wallace, N. T., & Gelmon, S. B. (2015). Preparing Competent Health Management Graduates in an Era of Health System Reform. *The Journal of Health Administration Education, 32*(1), 79–101.
- The Christensen Institute. (2018). Disruptive Innovation. Retrieved January 3, 2018, from https://www.christenseninstitute.org/disruptive-innovations/?gclid=EA1aIQobChMI2L3Dn_Xv1QIVUy-BCh2rGga-EAAYASAAEgJucPD_BwE
- Ulwick, A. W., Christensen, C. M., & Grossman, J. H. (2003). A prescription for health care cost reform. *Strategy & Innovation, 1*(1), 12–13.
- University of South Florida. (2017). Federal Mandate for Electronic Medical Records | USF Health Online. Retrieved September 18, 2017, from <https://www.usfhealthonline.com/resources/healthcare/electronic-medical-records-mandate/>

Reproduced with permission of copyright owner.
Further reproduction prohibited without permission.